

CourseLab 2.4

User Manual



A powerful, yet easy-to-use, e-Learning authoring tool that offers a programming-free WYSIWYG environment for creating high-quality interactive e-Learning content which can be published on the Internet, Learning Management Systems (LMS), CD-ROMS and other devices.

CourseLab 2.4 User Manual

Contents

1. INTRODUCTION	7
1.1. PREREQUISITES.....	7
1.2. SYSTEM REQUIREMENTS	7
2. COURSELAB OVERVIEW	8
2.1. ABOUT COURSELAB	8
2.2. COMPLIANCE TO STANDARDS	9
3. E-LEARNING COURSES.....	9
3.1. WHAT IS AN E-LEARNING COURSE?	9
3.2. E-LEARNING COURSE STRUCTURE: LEARNING MODULES, CHAPTERS	10
3.2.1. LEARNING MODULES	10
3.2.2. FOLDERS	10
3.3. LEARNING MODULE STRUCTURE: SLIDE, FRAME.....	12
3.3.1. SLIDE	12
3.3.2. FRAME	12
3.4. SPECIAL SLIDES: TITLE-SLIDE, MASTER-SLIDE.....	12
3.4.1. TITLE-SLIDE	12
3.4.2. MASTER-SLIDE	13
4. CREATING A LEARNING COURSE - FROM CONCEPTION TO PUBLISHING	13
4.1. THE COURSE SCENARIO - THINGS TO CONSIDER:	13
4.2. CREATING A NEW LEARNING COURSE	14
4.3. EDITING A MODULE	16
4.3.1. THE EDITING MODULE DESIGN SETTINGS	16
4.3.2. EDITING A TITLE-SLIDE	18
4.3.3. EDITING A MASTER-SLIDE.....	18
4.3.4. EDITING A SLIDE.....	19
4.3.4.1. NAMING A SLIDE.....	19
4.3.4.2. SLIDE ID	20
4.3.4.3. SELECTING THE MASTER-SLIDE FOR THE SLIDE.....	20
4.3.4.4. SLIDE CONTENT	21
4.3.4.5. SLIDE COMMENTS.....	21
4.3.4.6. SLIDE TRANSITIONS	21
4.3.5. CREATE AND REMOVE SLIDES. CHANGE THE ORDER OF SLIDES	22
4.3.6. MODULE AND SLIDE PREVIEW	22
4.4. ADD MODULES: CHANGING THE ORDER OF MODULES.....	23
4.5. ADDING FOLDERS	24
4.7. PUBLISHING A COURSE.....	24

4.7.1. MODULE RUNTIME SETTINGS	25
4.7.2. COURSE RUNTIME SETTINGS	27
4.7.3. THE COURSE PUBLICATION WIZARD	28
5. OBJECTS.....	29
5.1. OBJECT AND OBJECT POSITIONING WITHIN A FRAME	29
5.2. TYPES OF OBJECTS: INTERNAL AND COMPLEX.....	29
5.3. INTERNAL OBJECTS.....	30
5.3.1. TEXT BOX.....	30
5.3.1.1. INSERTING TEXT BOX	30
5.3.1.2. EDITING TEXT. EDITING MODES	30
5.3.1.3. INSERT A TABLE INTO TEXT.....	31
5.3.1.3. INSERT A PICTURE INTO A TEXT BOX.....	32
5.3.2. PICTURES.....	33
5.3.2.1. INSERTING A PICTURE	33
5.3.2.2. VALID GRAPHIC FILE FORMATS.....	33
5.3.2.3. CHANGE THE SIZE OF PICTURE.....	35
5.3.2.4. OPTIMIZING PICTURES	36
5.3.3. SECTION “CLIP ART”	36
5.4. AUTOSHAPES	37
5.5. COMPLEX OBJECTS.....	37
5.5.1. EXTERNAL ELEMENTS	37
5.5.1.1. “EXTERNAL FILE” OBJECT	37
5.5.1.2. EXTERNAL URL.....	38
5.5.1.3. IFRAME	38
5.5.2. POPUP WINDOWS	40
5.5.2.1. “RELIEF” POPUP WINDOW	40
5.5.2.2. THE “STANDARD” POPUP WINDOW	41
5.5.3. BALLOONS.....	42
5.5.3.1. “SIMPLE” BALLOON.....	43
5.5.3.2. “STANDARD” BALLOON.....	44
5.5.3.3. “CONVEX” BALLOON.....	45
5.5.3.4. “GRADIENT” BALLOON.....	46
5.5.3.5. “THINK” BALLOON	47
5.5.4. DESIGN ELEMENTS.....	48
5.5.4.1. GRADIENT AREAS	48
5.5.4.2. CLICK AREA	49
5.5.4.3. NOTIFIER	50
5.5.5. TITLE-SLIDE OBJECTS.....	52
5.5.5.1. START MODULE BUTTON.....	52
5.5.5.2. TITLE-SLIDE POPUP	53
5.5.6. RICH MEDIA OBJECTS.....	54
5.5.6.1. FLASH-MOVIE.....	54
5.5.6.2. SHOCKWAVE-MOVIE	56
5.5.6.3. VIDEO CLIPS	57
OBJECT EVENTS.....	59

5.5.6.4. JAVA APPLETS	62
5.5.7. NAVIGATION OBJECTS.....	64
5.5.7.1. THE NAVIGATION MENU	64
5.5.7.3. THE “CONTENTS” TAB	67
5.5.7.4. THE “HELP” TAB.....	70
5.5.7.5. THE “CALCULATOR” TAB.....	73
5.5.7.6. “SETTINGS” TAB	75
5.5.7.7. THE “ABOUT” TAB	79
5.5.7.8. “NEXT” BUTTON.....	81
5.5.7.9. “PREVIOUS” BUTTON.....	83
5.5.7.10. SLIDE NAME	85
5.5.7.11. “SOUND” BUTTON	85
5.5.7.12. “CLOSE MODULE” BUTTON	87
5.5.7.13. “REPLAY SLIDE” BUTTON.....	88
5.5.7.14. “SIMPLE” PROGRESS BAR	89
5.5.7.15. “EXTENDED” PROGRESS BAR	91
5.5.7.16. “HELP” POPUP WINDOW.....	92
5.5.7.17. “CONTENTS” POPUP WINDOW	95
5.5.7.18. FRAME NAVIGATOR.....	98
5.5.7.19. COMMENTS OBJECT	99
5.5.8. CHARACTERS	101
5.5.8.2. THE “TALKING HEAD” CHARACTER	105
5.5.9. LISTS.....	109
5.5.9.1. BULLETED LIST.....	109
5.5.9.2. THE “SIMPLE” LIST	113
5.5.9.3. “STANDARD” LIST	117
5.5.9.4. THE “STANDARD” BLOCK-LIST	121
5.5.9.5. THE “STANDARD” LIST ITEM.....	121
5.5.9.6. THE “SIMPLE” LIST ITEM	122
5.5.10. TEXT BOXES.....	123
5.5.10.1. THE SHADOW TEXT BOX	123
5.5.10.2. THE “RELIEF” TEXT BOX.....	125
5.5.10.3. “SIMPLE” TEXT BOX.....	127
5.5.11. FORM CONTROLS	130
5.5.11.1. TEXT FIELD.....	130
5.5.11.2. HIDDEN TEXT FIELD	133
5.5.11.3. THE TEXT AREA	135
5.5.11.4. CHECKBOX	138
5.5.11.5. THE GROUP OF RADIO BUTTONS.....	140
5.5.11.6. THE DROP-DOWN MENU	143
5.5.11.7. BUTTON	145
5.5.12. SIMULATIONS.....	146
5.5.12.1. THE “TASK CONTROLLER” OBJECT	146
5.5.12.2. THE “TEST STRUCTURE” OBJECT.....	150
5.5.12.3. THE “RESULTS BY SELECTIONS” OBJECT	151
5.5.13. QUESTIONS	153
5.5.13.1. THE SINGLE CHOICE QUESTION OBJECT.....	153
5.5.13.2. OBJECT “MULTIPLE SELECT QUESTION”	161
5.5.13.3. THE “ORDERED ITEMS QUESTION” OBJECT	168
5.5.13.4. THE “NUMERIC FILL-IN-BLANK QUESTION” OBJECT.....	175
5.5.13.5. THE “TEXT FILL-IN-BLANK QUESTION” OBJECT	183
5.5.13.6. OBJECT “MATCHING PAIRS QUESTION”	191

5.5.14. TESTS.....	199
5.5.14.1. THE TEST OBJECT	199
CREATING A TEST.....	200
5.5.14.2. THE CURRENT RESULTS OBJECT.....	208
5.5.14.3. RESULTS BY OBJECTIVES	210
5.6. SCENARIOS.....	212
5.7. CURSORS	213
6. HANDLING OBJECTS	216
6.1. COMMON SETTINGS OF ALL OBJECTS	216
OBJECT ALLOCATION WITHIN A FRAME.	216
6.1.1. THE OBJECT’S BACKGROUND AND BORDER COLOR, OPACITY.	216
6.1.2. SIZING AND SCALING.	217
6.1.3. ROTATING AN OBJECT	218
6.1.4. OBJECT POSITION WITHIN A FRAME AND PERMISSION TO MOVE OBJECT.....	219
6.1.5. MODIFYING COMMON SETTINGS FOR THE GROUP OF THE OBJECTS.	219
6.1.6. ALIGNING OBJECTS.....	219
6.1.7. DISTRIBUTING OBJECTS EVENLY	220
6.1.8. CHANGING AN OBJECTS Z-ORDER.....	221
6.2. EFFECTS. CONTROLLING DISPLAY TIME.....	222
6.2.1. OBJECTS DISPLAY TIME. TIMELINE PANEL.	222
6.2.2. OBJECT ENTRY AND EXIT EFFECTS	224
6.3. BINDING SOUNDS TO OBJECTS	225
6.4. OBJECT PROPERTIES.....	226
6.4.1. COMMON OBJECT PROPERTIES	226
6.4.2. SPECIFIC OBJECT PROPERTIES.....	226
7. MULTIFRAME ANIMATION	227
7.1. USING FRAMES	227
7.2. FRAME DISPLAY TIME	227
8. ACTIONS AND EVENTS	229
8.1. THE “EVENT – ACTION” MECHANISM.....	229
8.2. EVENTS GENERATED BY THE COURSELAB PLAYER.....	230
8.2.1. SLIDE AND FRAME EVENTS	230
8.2.2. EVENTS COMMON TO ALL OBJECTS.....	231
8.3. CUSTOM OBJECT EVENTS	232
8.4. ACTIONS.....	232
8.4.1. VARIABLES AND OBJECT PROPERTIES IN ACTION PARAMETERS	232
8.4.2. BUILT-IN ACTIONS.....	233
8.4.2.1. EXECUTION ACTIONS.....	233
8.4.2.2. SERVICE ACTIONS.....	238
8.4.2.3. USING JAVASCRIPT.....	240
8.4.2.3.1. ACTION JAVASCRIPT.....	240
8.4.2.3.2. INCLUDING JAVASCRIPT IN MODULE.JS FILES	241
8.4.2.4. ACTIONS WITH SCORES AND STATUSES	241
9. SCORES.....	243
9.1. OBJECTIVES	243
9.2. RULES	244

10. SCREEN CAPTURE AND CREATING SIMULATIONS OF OTHER APPLICATIONS.....	245
10.1. WHAT NEEDS TO BE DONE PRIOR TO RECORDING THE SIMULATION?	245
10.2. SCREEN CAPTURE WIZARD.....	246
10.3. MODIFYING PARAMETERS SETTINGS WHILE IN CAPTURE MODE	246
10.4. CAPTURE FRAMES.....	247
10.5. SPECIAL CAPTURE MODE.....	247
10.6. EDITING CAPTURED FRAMES	248
11. IMPORT MICROSOFT POWERPOINT PRESENTATIONS	249

1. Introduction

1.1. Prerequisites

This manual assumes that the intended audience already has a working knowledge of the Microsoft Windows® operating system and its basic operations - such as handling files and folders and interactions with Dialogs and Menus - and has general computer skills including using a Mouse and Keyboard.

Graphics, audio, video, and other rich-media objects are external to the CourseLab system so will not be covered in this document. For additional information about Windows® or graphic software, please refer to the corresponding software vendor's documentation.

1.2. System Requirements

Minimum system requirements for working with CourseLab:

- Microsoft® Windows® 2000/XP/2003;
- Internet Explorer 6.0 or higher;
- 50MB hard drive space;

Minimum system requirements for viewing learning modules:

- Microsoft® Windows® 98, Me, NT 4.0, 2000, XP, 2003 (limited support for Microsoft® Windows® 95 *), and Linux
- Internet Explorer 5.0 (Internet Explorer 5.5 or higher recommended), Mozilla FireFox 1.0 or higher, Netscape® 7.2 or higher, limited support** for Opera 9.0 and higher and Safari 3.0 (Win) and higher
- JavaScript enabled
- XML support enabled (Microsoft® XML Parser 3.0 or higher recommended for Internet Explorer***)

* Microsoft® XML Parser 3.0 cannot be installed on Microsoft® Windows® 95 system. Therefore, no data will be transferred from the Learning Module to the Learning Management System using AICC protocols.

** Some effects may not work

*** If the Microsoft® XML Parser 3.0 component is missing, some Objects in the Learning Module may malfunction in Internet Explorer.

2. CourseLab Overview

2.1. About CourseLab

CourseLab is a powerful, yet easy-to-use, e-learning authoring system that offers a programming-free environment for creating high-quality interactive e-learning courses which can be published on the Internet, Learning Management Systems (LMS), CD-ROMS and other devices.

Key features of CourseLab:

- A WYSIWYG (What You See Is What You Get) environment for creating and managing high-quality interactive e-learning content.
- No HTML or other programming skills required.
- Object-oriented Model allowing the construction of e-Learning content of almost any complexity - as easy as putting together building blocks.
- Scenario feature enables building complex multi-Object interactions with one mouse click.
- Interface is based on an Open Object Model and enables you to easily extend and enhance existing libraries of Objects and templates, including those created by the user.
- Built-in test creation capabilities.
- Embedded mechanisms for animating Objects.
- Insert rich-media content like Macromedia® Flash®, Shockwave®, Java®, and video in different formats.
- Easy insertion and synchronization of sound files.
- Import PowerPoint® presentations into the learning material (requires optional PowerPoint Import Pack).
- Screen capture mechanism enables emulating the functionality of different software (requires optional Screen Capture Pack).
- Simple intuitive Action description language.
- Access to additional functionality of the Course Player for advanced users via JavaScript.
- No Java® required for Course Player.

2.2. Compliance to Standards

Learning modules created using CourseLab are compliant with the following e-Learning standards:

- AICC (<http://www.aicc.org/>)
- SCORM 1.2 (<http://www.adlnet.org/>)
- SCORM 2004 (SCORM 1.3) (<http://www.adlnet.org/>)

3. E-Learning Courses

3.1. What is an e-Learning Course?

An E-Learning Course comprises structured, thematically self-contained learning material which can be distributed to the learner through the Internet or from memory devices such as hard drives, CDs and Flash cards. Typically, an e-Learning Course contains self-learning material but, unlike books or manuals, also provides the following:

- Powerful multimedia content – graphics, animation and other rich-media material (audio and video in different formats, Flash-movies, Java applications and others).
- Interaction – navigation through the learning material can depend on Actions taken by the user.
- Different options for assessing and evaluating gathered knowledge (tests, exercises). Incorporation of an e-Learning Course into a Learning Management System and communication between them which enables efficient management of the overall learning process.

Within a Learning Management System, the e-Learning Course is considered an *independent learning unit* which can be assigned to deliver content and assess the level of learning. Upon completion of an e-Learning Course, various reports can be generated by the Learning Management System.

From an Educational Methodology perspective, e-Learning Courses correspond to conventional Learning Courses – assuming that each e-Learning Course includes all the necessary self-educational learning material and also tests for comprehension of the learning material.

3.2. E-Learning Course Structure: Learning Modules, Chapters

An E-Learning Course consists of structured sets of **Learning Modules**. Depending on the structure of the learning content, modules can be grouped into **Chapters**. Chapters are arranged using a **Chapter Hierarchy** structure.

3.2.1. Learning Modules

The **Learning Module** is the fundamental building block of the course hierarchy and represents a set of author-structured Slides. During the learning process, the learner, by default, is led from one Slide to another sequentially. If desired, the author of the learning Module can define a different order for the Slides to appear (for example: depending on the result of the test).

A Learning Module can be used for *educational* purposes if it only contains learning material. The Learning Module can also be employed for *assessment* of the learned lessons if it also contains tests and exercises. It is a common practice to combine learning material and tests into one single Learning Module – when a user has completed the learning material, they are tested within that same Learning Module.

In a **Learning Management System** the Learning Module is one of the components of a Learning Course and the only *dynamic* structural unit. The LMS collects information from the Learning Module about progress and testing. When processing information about status of all Learning Modules, the LMS registers the completion state of sections of the Course and also of the Learning Course itself, according to the rules defined by that particular Learning Management System.

From an educational Methodology point of view, a Learning Module corresponds to a lesson or lecture – meaning it should contain thematically coherent and complete learning material.

3.2.2. Folders

Learning Modules created in CourseLab can be thematically combined in **Folders**. Folders can be grouped inside other folders - resulting in a complex course hierarchy structure. Although there is no limitation on the number of folders OR number of sub-folders within a folder, it is strongly recommended that you avoid using an overly complex hierarchy structure. You do not want to discourage students from pursuing your course just because the structure is too hard to comprehend.

A folder usually contains Learning Modules and/or other folders. The folder in a distance Learning System is a structural entity, or unit. No information about the state of the folder is transmitted to the Learning Management System from the Learning Modules. The LMS makes changes to the state of folders based on information received from its Learning Modules and other Folders.

From an educational Methodology point of view, a folder contains a series of thematically grouped lectures or lessons.

3.3. Learning Module Structure: Slide, Frame

3.3.1. Slide

The Slide (interactive webpage) is the main building block of the Learning Module.

Slides are used by the author to contain the learning material, tests, and exercises. The sequence and navigation of Slides is predefined by the author.

A Slide consists of **Frames**. Depending on complexity, the number of frames can vary (e.g. using animations or software simulations can significantly increase the number of frames). Every Slide has at least one frame.

Slides are not individually accessible by the Learning Management System. The **Learning Module** is the smallest system-managed unit.

From an educational Methodology perspective, a Slide is employed to express a single point of view, thought, or idea inside of the Learning Module.

3.3.2. Frame

A **Frame** is a component of a Slide. Every piece of content is placed inside its own Frame – so the Frames on a Slide could contain graphics, a button, text or a video. The Frame is the smallest structural unit of a Learning Module. Even though there is no limitation to the number of Frames within a Slide, we recommend no more than 30-40 Frames per Slide; otherwise the Slide will load up extremely slow.

As with Slides, Frames are not accessible by the **Learning Management System** individually. The Learning Module is the smallest system managed unit.

From an educational Methodology perspective, a **Frame** is not a self-contained unit.

3.4. Special Slides: Title-Slide, Master-Slide

Every Module contains **Special Slides**: Title-Slide and Master-Slide (one or several).

3.4.1. Title-Slide

The **Title-Slide** is the introductory page of the Learning Module and appears on the computer screen as the Learning Module launches. The system pre-loads the main part of the Module and loads the introductory page in the background, which makes it faster for the user.

Important! Only text, pictures, special Objects, the “Start Module” button and the “Title-Slide Popup” window can be placed and edited on the Title- Slide. This is because the main code for the Module is still loading while the Title-Slide displays.

3.4.2. Master-Slide

All Slides in the Learning Module are created on top of the **Master-Slide**. The Master Slide is a Slide that contains various elements that are common to all, or several, Slides. The Master Slide could contain logos, navigation Objects (Next / Previous), Help buttons, etc. There is no limit to the number of Master-Slides and, hypothetically, each Slide with assessment or content could have a Master-Slide. That would be rather inefficient and should be avoided. In practice, one Master-Slide should be enough. Note that the Master Slide is a background Slide (Slide content will be placed on top of it) but it also can contain interactive components such as navigation buttons.

4. Creating a Learning Course - from conception to publishing

4.1. The Course Scenario - Things to consider:

The following should be taken under consideration while creating a Learning Course:

The thematic presentation of the Learning Course must be consistent.

Stay focused. There is no need to pause – and do not follow the usual teaching approach of blending some funny story into the studying material. Each student will set their own pace to absorb the material.

Do not provide too many alternatives. A tree-like Course structure is not as good as a linear type course. It sends learners different directions and some parallel paths of the tree-like structure may end up not being covered at all. The only exception for using a more complex structure is when you need to provide an example which is relevant to the main Objective. Note, this example should just be an additional illustration to the learning material which could be skipped without causing any damage to the overall learning process. And again, if above mentioned example is an essential part of the main course, it should loop back into the linear Course structure.

Pieces of the Learning Material should be reasonably sized.

Break down the Learning Material into chunks of learning content.

Build a clear hierarchy structure. If learning material is extensive, break it down into coherent thematic Modules – clear and consistent story lines and content. It is not recommended to group more than one learning subject into one Module; better to use more Modules in the course than overload the Modules with different subjects.

One Topic per Slide. Overloading a Slide with several related topics is not recommended. Most likely the student will remember none of those concurrent topics. This does not mean that the entire learning material within a larger topic should be placed on one Slide; in most cases that will be impossible.

Use Interactive Multimedia features

Use multimedia and graphics. E-Learning has a huge advantage over conventional learning because it can incorporate multimedia content. Animations and Flash-movies are often more easily understood than lengthy text descriptions and should be used as much as possible when exploring topics.

Learn as you practice. Allow audience to interact with the material as it significantly improves the process of memorizing the material. Where appropriate, enable onscreen Actions to demonstrate different results by the manipulation of their parameters. Use quizzes as knowledge checks along the way.

4.2. Creating a New Learning Course

1. Start CourseLab.
2. On the "Start Page" screen, select "Create New Course" (if CourseLab is already running, go to menu **File – New – Course**, or select the "New Course" icon, or use the *Ctrl-Shift-N* key combination). A new Course Wizard will open.
3. Click the "Next" button to start creating new Course.
4. Insert a new course name and specify the folder where the course files will be located (if it does not exist, it will be created automatically) and press "Next".

*NOTE: Unlike "Naming the Course", where any symbols can be used, when naming a Course Folder, do not use the special characters (@, #, \$, ^, %, &, *, and quotation marks).*

New Course [X]

Name and location of new course
Provide course name and folder location where course will be created.

Name:
How the Space Shuttle works

Folder:
STS001

Location:
C:\Courses

Course will be created at C:\Courses\STS001.

< Back Next > Cancel

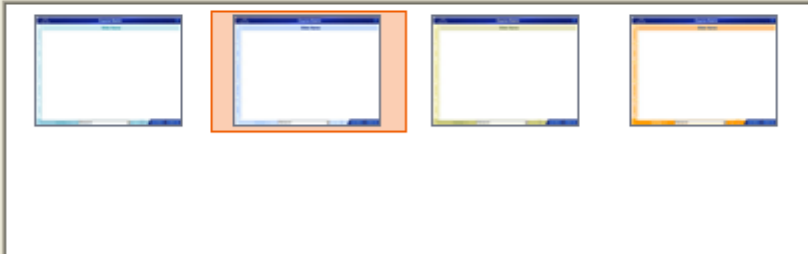
By default, every course created contains a single Module to begin with but you can continue to add as many Modules as you need.

New Course [X]

First module
Provide module name and select design template.

Module Name:
The Space Shuttle basics

Standard



< Back Next > Cancel

5. On the next page of the Wizard:
- insert name of the first Module,
 - Select a Module design template and press “Next”.

NOTE: there are no restrictions on using special symbols when naming a Module.

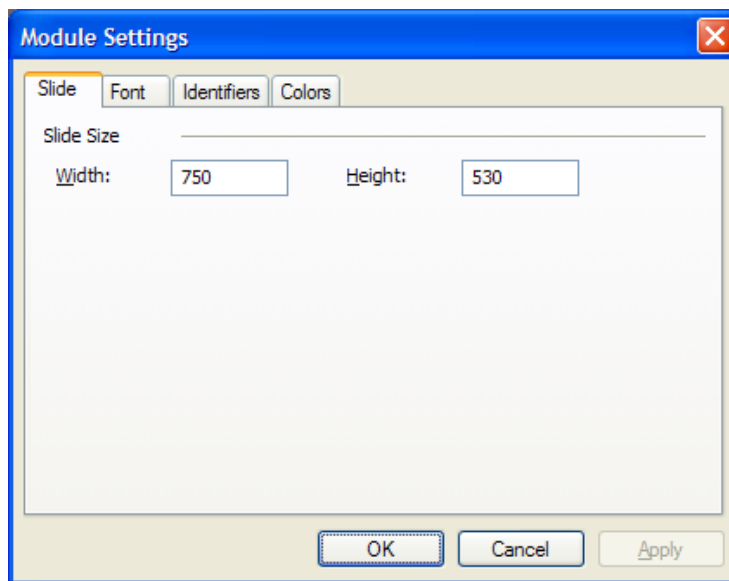
Press “Finish” to exit the “New Course” wizard. Your course is now created and you may add more Modules or Folders as you progress. Don’t forget to save your work regularly as you build up the course.

4.3. Editing a Module

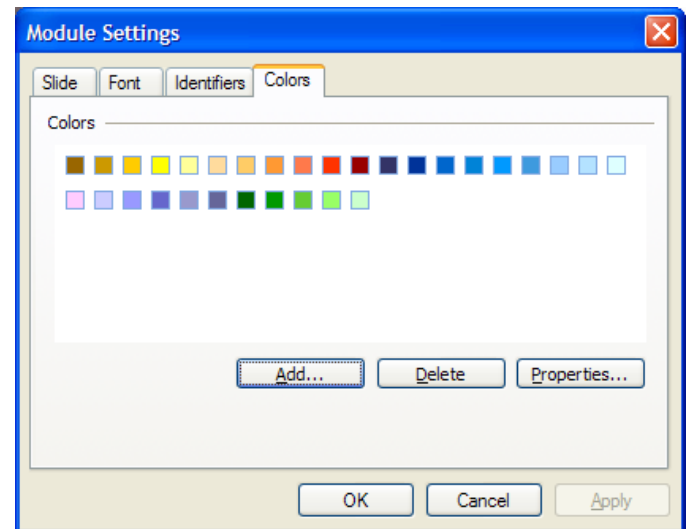
4.3.1. The Editing Module Design Settings

You are able to change each new Module’s width and height, change the font for every text insertion, change a Module’s color palette, and change the prefixes of identifiers for Slides, frames and other Objects as necessary. Select from the menu, **Module – Design Settings** or use the *Alt-F7* key combination.

A Module’s width and height can be changed according to your layout design for the Module. However, since all Modules have fixed width and height, you should always consider the users display resolution as your main limitation – your course should fit into the smallest likely display. The built-in CourseLab Module templates are designed to fit into 800x600 pixels (750x530 and 792x536 templates) and 1024x768 pixels (1018x682 templates) display resolutions. Also, keep in mind that changing a Module’s width and height might require further adjustment to the Title-Slide and Master-Slide for the Module. Change these settings only when absolutely necessary.

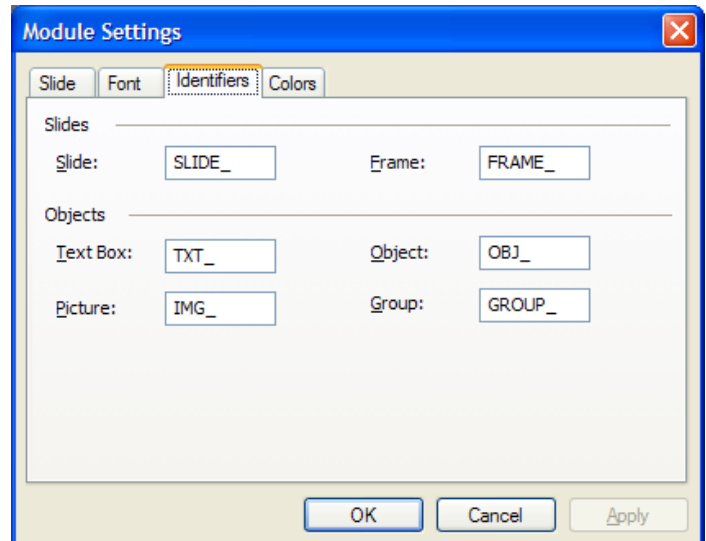


A Module's color palette is designed to save time when selecting fill colors - it contains the frequently used colors for the Module. A Module is not limited by the number of selected palette colors - you can always use a standard color picker instead.

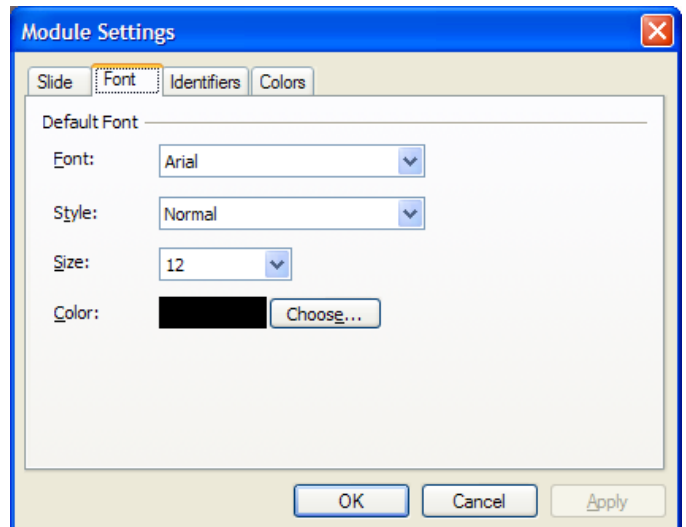


Identifiers for Slides, frames and other Objects should not be changed without good reason.

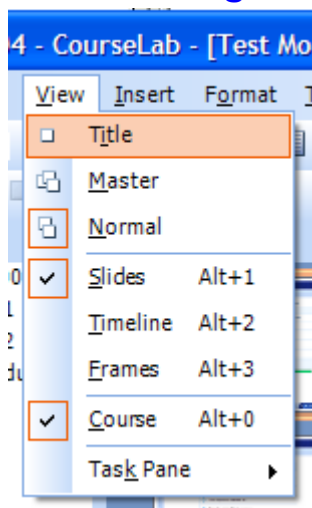
IMPORTANT! Prefixes for Object identifiers must contain only Latin alphabet letters, numbers and the underscore character (they must not start with a digit though).



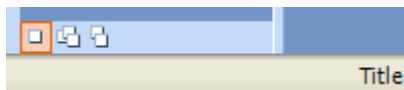
The most common change is a change of default font.



4.3.2. Editing a Title-Slide



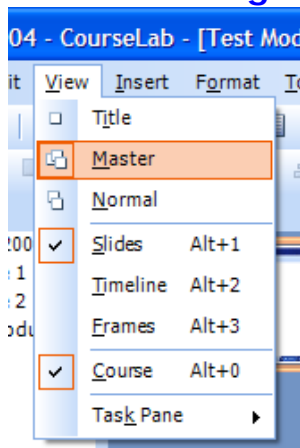
To turn on the Title-Slide editing mode, choose the **View – Title** sub-menu or the corresponding quick switching button in the Slide's Panel.



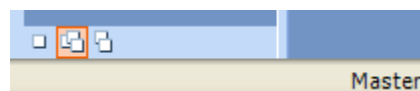
On the Title-Slide you can change a picture, add a Logo, or insert a Module name and instructions prior to creating a Module (for example, using the *"Title-Slide Popup" window Object*).

If necessary, you can modify the look of the "Start Module" button. The "Start Module" button can be displayed in two ways: **Inactive** (displayed from the moment the system starts loading the Module until the Module is loaded) and **Active** (displayed when the code for the Module is loaded). You should pre-edit your pictures in your Graphic Editor and change picture qualities using the "Properties" context Menu option (right mouse-click).

4.3.3. Editing a Master-Slide



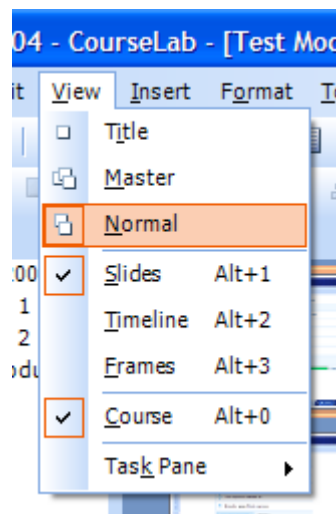
To turn on the Master-Slide's editing mode, use the **View – Master** sub-menu or the quick- switching button in the Slide's panel.



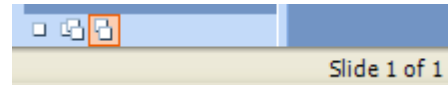
You can change the pictures on the Master-Slide, add a common Slides background picture, insert a Logo, specify the Module's name, and so on. The appearance of the Objects on the Master-Slide can be modified to suit the overall design of the Module.

LIMITATION: Links, animation effects, and Events are disabled on the Master-Slide because it is the background for other Slides. There is also a limitation on using Objects: you can only use pictures, text boxes, auto shapes and special Objects from the "Navigation" folder. All other Master-Slide editing features are based on the WYSIWYG editing mode.

4.3.4. Editing a Slide



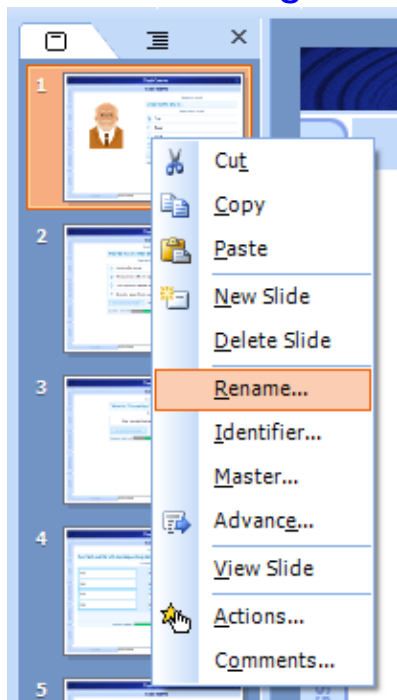
To turn on the regular Slide's editing mode use the **View – Normal** sub-menu or the quick switching button in the Slide's Panel.



The following settings of the Slide can be edited:

- Name of the Slide
- Slide ID
- Select the Master-Slide for the Slide
- Content of the Slide
- Slide Comments
- Next Slide transition settings

4.3.4.1. Naming a Slide



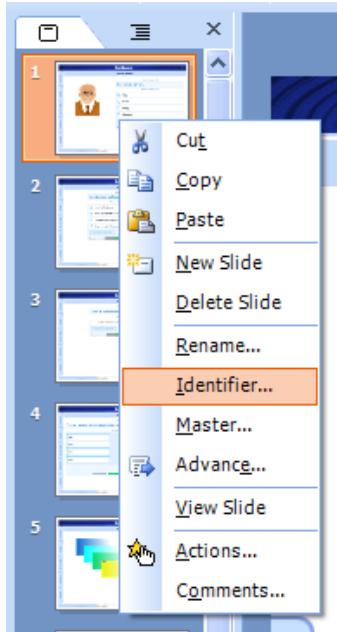
Usually, the name of a Slide reflects the main topic of a Slide. The name of a Slide appears in a Frame on the Slide (because the Master-Slide has a corresponding Object "Slide Name", which enables display of this text). The Slide name is mentioned in the table of contents of the Module (again, as long as the Master-Slide contains the corresponding "Contents" Objects) even if the name is not displayed on the Slide itself.

By default, the newly created Slide is titled "Untitled". To change the name of a Slide, right-click the Slide icon in Slides panel and choose **Rename** from Context menu. There are no limitations for naming a Slide.

NOTE: The newly edited Slide name will not be displayed in edit mode; but it will be visible in the viewing mode.

4.3.4.2. Slide ID

The Slide ID is used for internal programming purposes only (establishing relationship among the Slides, enabling process of Slide transition, etc.). By default, CourseLab sets a Slide ID automatically for every new Slide and usually there's no need to change it.

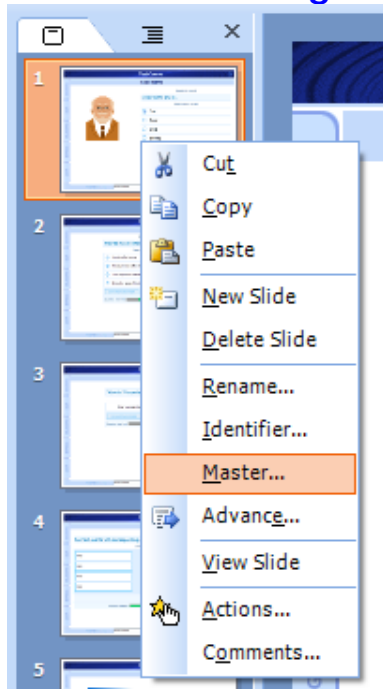


If you need to change a Slide ID, right click on the icon of the chosen Slide in the Slide Panel and select **Identifier** from the context menu.

Please note that:

- The Slide ID must contain only Latin alphabet letters, numbers and underscore character
- The ID must not start with a digit
- Changing a Slide ID may require the revision and adjustment of all corresponding Actions and relationships for that Slide
- IDs must be unique for all Slides, Frames, and Objects within a Module – two Slides of the same Module cannot share the same ID. If you attempt to change a Slide's ID, the entered data is automatically invalidated

4.3.4.3. Selecting the Master-Slide for the Slide



As previously mentioned, a Learning Module may contain several Master-Slides.

The Master-Slide is the background for associated Slides and can be modified while in editing mode: right click on the Slide from the Slide Panel and select **Master** from the context menu. In the popup window select the desired Master-Slide.

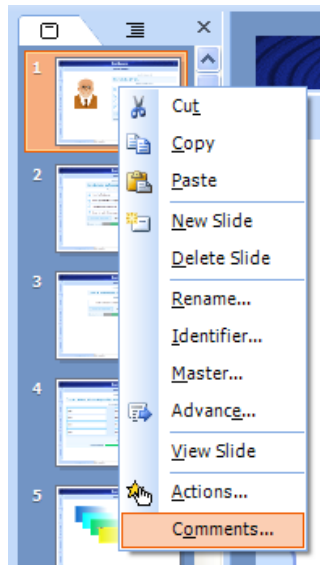
By default, when a Module is created, the first Slide created is linked to the first Master-Slide from the list of the Module's Master-Slides, regardless of the number of Master-Slides for that Module.

After that, every newly created Slide is based on the Master-Slide that is associated with the previous Slide. For example, the foundation for new Slide 11 will be the Master-Slide of Slide 10.

4.3.4.4. Slide Content

To insert pictures, texts, and Objects into a Frame on the Slide, the **Insert – Picture**, **Insert – Text Box**, and **Insert – Object** sub-menus can be used, or the corresponding Panel buttons. Complex Objects can be inserted directly from the library of Objects either by double-clicking on the selected Objects or by dragging and dropping the Object into the working area. Please refer to the **Object allocation** section of this document for more details on the specifics of Object allocation.

4.3.4.5. Slide Comments

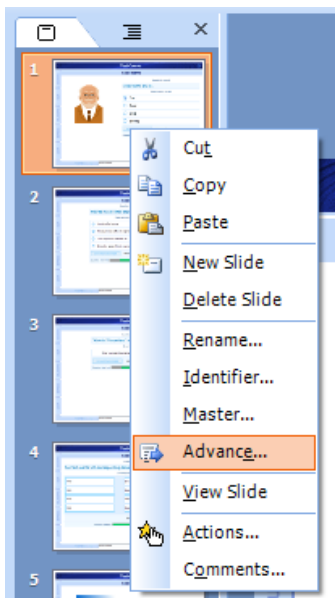


Slide Comments is for additional text that can be attached to the Slide. It can contain the author's comments and remarks to the Slide, or comments to the Slide that have been imported from a PowerPoint presentation.

Slide Comments is not part of the viewable Slide area, and it is non Object, therefore it cannot be displayed as usual text Object. Special Objects are used to display comments to the learner (please refer to **Complex Objects - Navigation** section of this document).

To add or edit comments to the Slide, right click the Slide icon in the Slide Panel and select **Comments** from the context menu. A RichText editing window will appear. Add or Edit the text.

4.3.4.6. Slide Transitions



By default, it is assumed that navigation to the next Slide will be performed by a click on the "Next" button or by other user-activated navigation Actions. This is the most common situation when a user is in control of the timing of each Slide.

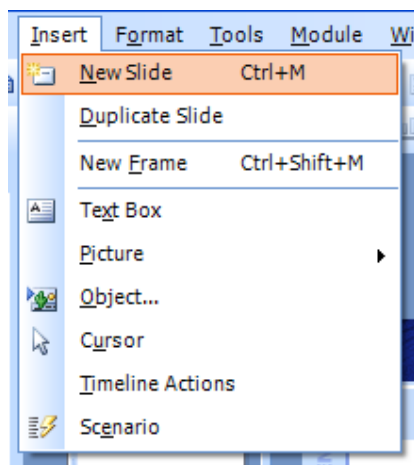
However, there are instances when the timing must be set to transition to the next Slide regardless of any Action from the user. In order to change the default transition settings, right click the target Slide icon from the Slide Panel and select **Advance** from the context menu.

In the open window, modify the "Wait for Action" setting to "Immediate". Transition to the next Slide will occur automatically right after all the elements for the

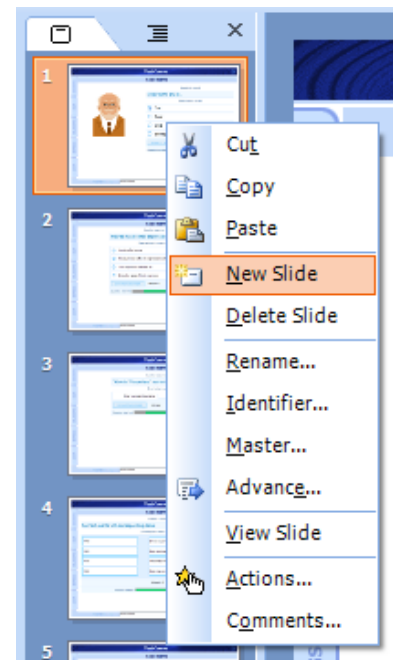
current Slide have been displayed.

Please refer to the "Actions" section of this document for other Methods of programming Slide transitions.

4.3.5. Create and remove Slides. Change the order of Slides



When a Module is created, it already contains one Slide. To add a new Slide, go to the **Insert** menu and select **New Slide** (or use *Ctrl-M* shortcut keys), otherwise, right click on the Slide Panel and select **New Slide** from the context menu. Note, that the new Slide will be placed right after the



currently selected Slide vs. being placed last position on the list of Slides.

You can always adjust position of a Slide: left click on the icon representing the Slide that you would like move and drag this Slide to the desired location while holding down the left mouse button.

To delete a Slide, select the Slide you want to delete and press the *Del* key. Alternatively, on the **Edit** menu, select **Delete Slide** or use **Delete Slide** from the Slide's context menu.

Remember, that you can always reverse Slide deletion by using **Undo** under the **Edit** menu.

4.3.6. Module and Slide Preview

While editing, it is always possible to preview what the Learning Module will look like in a Web Browser.

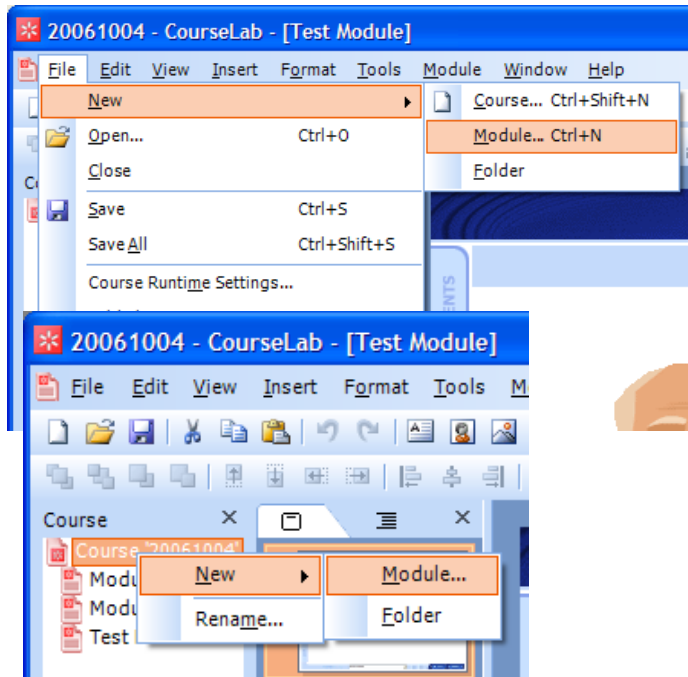


For viewing of the entire Module select **Module – View Module** (or press the *F5* key, or press the corresponding button on

toolbar). The Module will be loaded into the separate browser window, which will be limited by the configured width and height of the Learning Module. For Slide preview, select **Module – View Slide** sub-menu (or press *Shift-F5*). The Module will be loaded into the default Browser Window which is limited by width and height according to the size of the Learning Module. It will automatically transition to the selected Slide for display.

4.4. Add Modules: Changing the order of Modules.

When a new Learning Course is created, it contains a single Module. If that is not enough, you can add your required number of Modules and group them into the Folders.

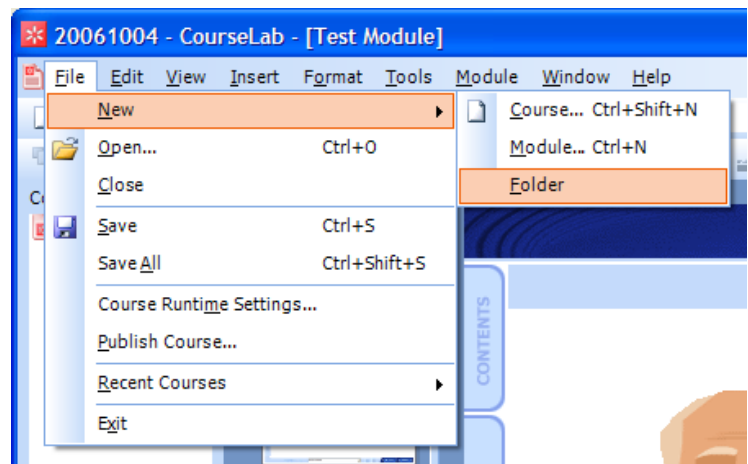


To add new Module to the Course you can either select **File – New – Module** sub-menu (or use *Ctrl-N* shortcut keys), or use the context menu by right clicking on the name of the Course from the “Course” panel. Add the required number of Modules and fill them with the learning content.

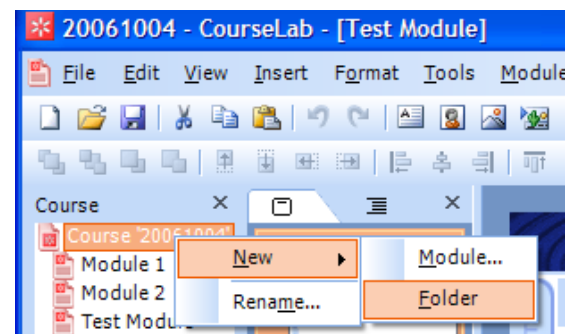
To change the Module’s order, drag the Module (in the Course panel) to the parent element (Course or Folder). The dragged Module will be placed at the end of the list of Modules.

4.5. Adding Folders

When a new Learning Course is created, it contains a single Module which is not placed in a Folder. As the number of the Modules increases, it might be necessary to group the Modules into the Folders. To add a new Folder to the Course you can either select the **File – New – Folder** or use the context menu by right-clicking the name of the Course from the "Course" panel. Add the required number of Folders and fill them with the Modules.



To change the Folder's order do the following: in the Course panel, drag a Folder, with the mouse button, to the parent element (Course or Folder). The dragged Folder will be placed at the end of the list.



4.7. Publishing a Course

After completing all editing tasks, your Course can be published. Publishing a Course creates a fully-functional standalone (separate from CourseLab) version of the Learning Course which is intended for use on a CD, in a Learning Management System and so on. During the publishing process, only those elements which are required for displaying the Course are copied into a folder which is separate from the folder that contains the editable version of the Course. The editable version remains unchanged during publishing.

There are different output choices for Course publishing:

- For launching from a CD
- For distribution in a Learning Management System, which supports the AICC standard
- For distribution in a Learning Management System, which supports the SCORM 1.2 standard
- For distribution in a Learning Management System, which supports the SCORM 2004 standard

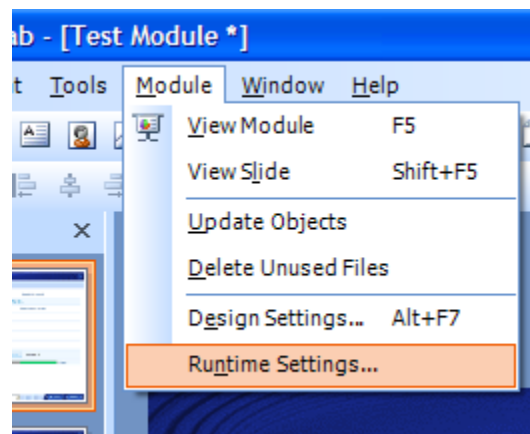
The sequence of publishing steps is as follows:

1. Specify the runtime settings for each Module
2. Specify the Course runtime settings
3. Launch the "Publish Course" wizard

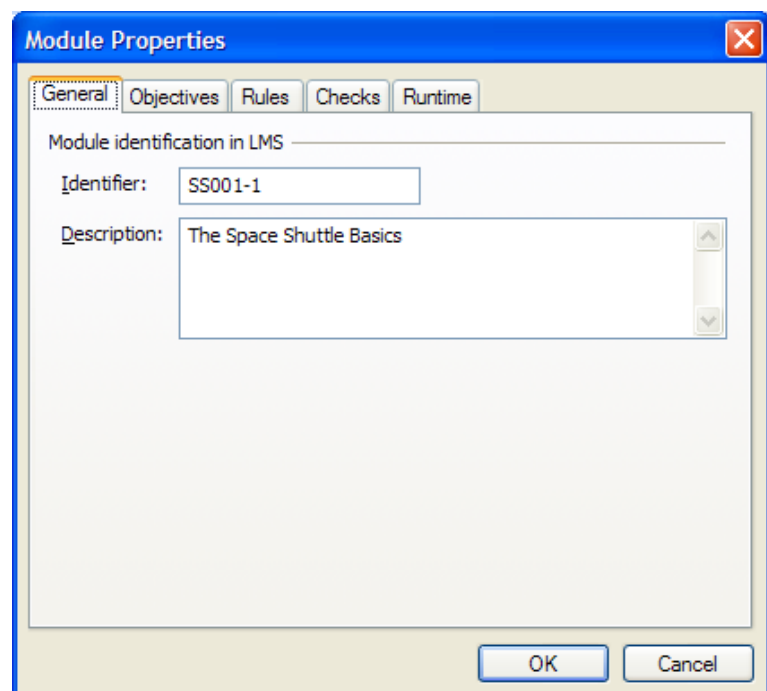
4.7.1. Module runtime settings

Prior to publishing it is necessary to specify runtime settings for **each Module** in the Course.

Select **Module – Runtime Settings**. A "Module Properties" dialog window opens up.



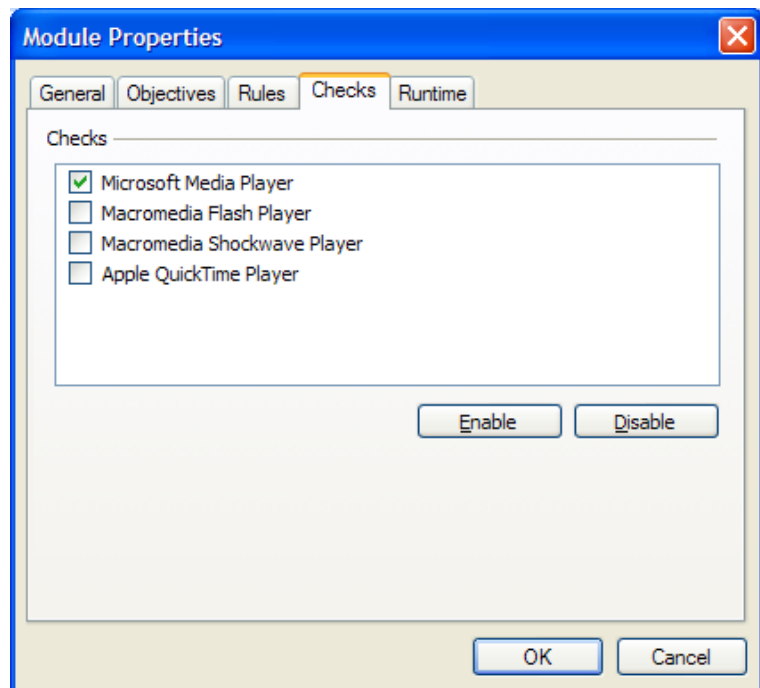
In most cases, the LMS needs a Module ID, Module Name and Module Description to represent the Module to the user. The actual name of the CourseLab Module will be used in the LMS "as is" - it will be inserted into the metadata files automatically. To define the Module ID and Description, select the "General" tab and fill in the "Identifier" and "Description" fields under the "Module identification in LMS" section.



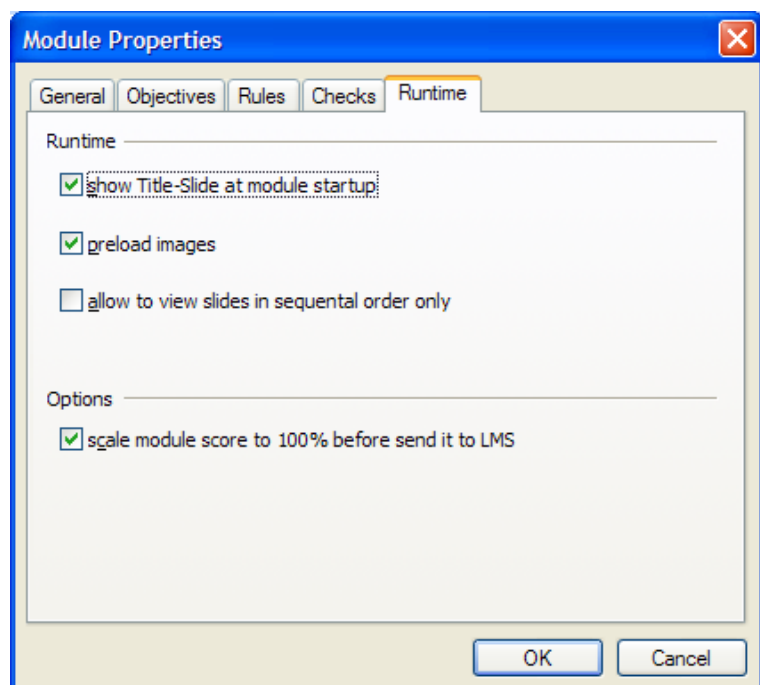
The **Identifier** is a short Module ID which will be used in the Learning Management System.

Description is a brief informal description of the Course, which will be used within the Learning Management System in the Module card.

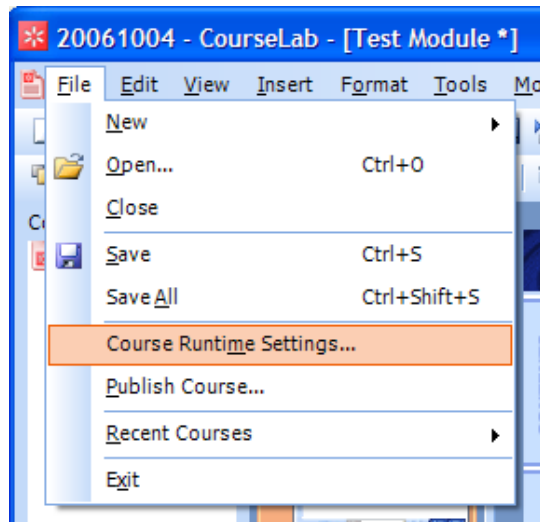
Use the "Checks" tab to specify the software components that need to be checked for availability on a student's computer prior to launching Module. For example, if you have inserted sound files or a video clip in AVI format, it will be useful to check if Windows Media Player is installed on student's computer.



Use the "Runtime" tab to specify any extra execution parameters. Specifying parameters in the "Objectives" and "Rules" tabs is described in greater details in the **Score** section.



4.7.2. Course runtime settings

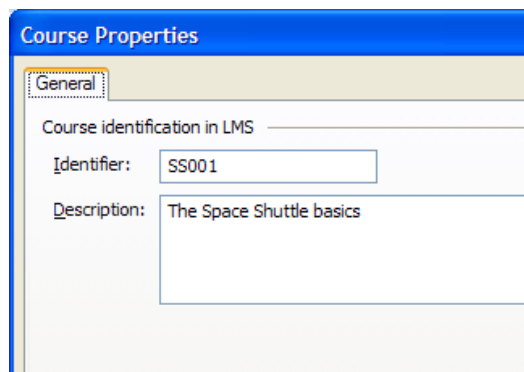


Prior to publishing, you must specify the runtime settings for the Course.

Select **File – Course runtime settings**. A “Course Properties” dialog window opens up.

In most cases, an LMS will require a Course ID, Course Name and Course Description. The actual name of the CourseLab Module will be used in the LMS “as is” - it will be inserted into the metadata files automatically.

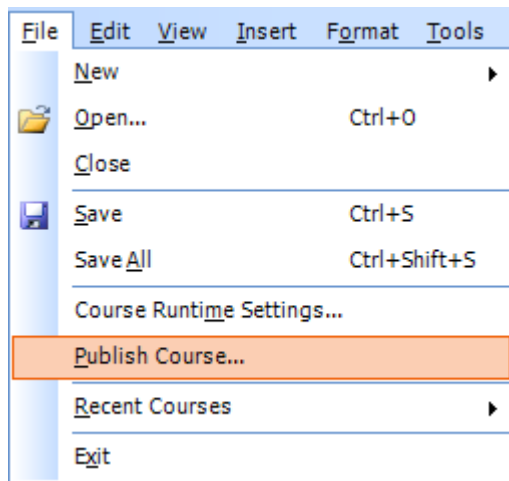
To create a Course ID and Description, fill in the “Identifier” and “Description” fields under “Course identification in the LMS” section.



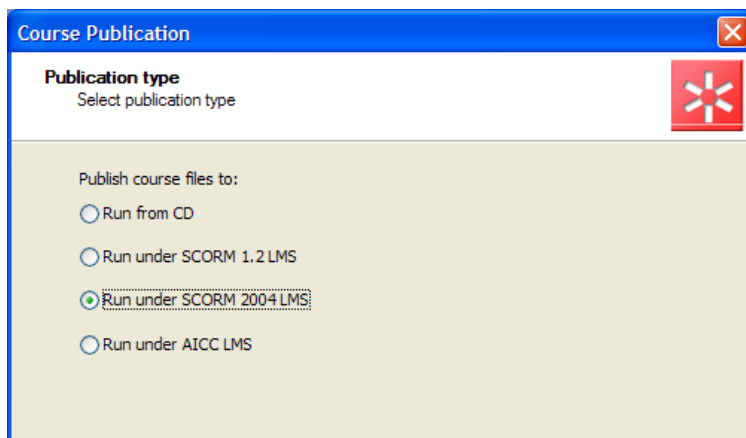
The **Identifier** is a short Module ID which will be used in the LMS.

Description is a brief informal description of the Course, which will be used in the LMS.

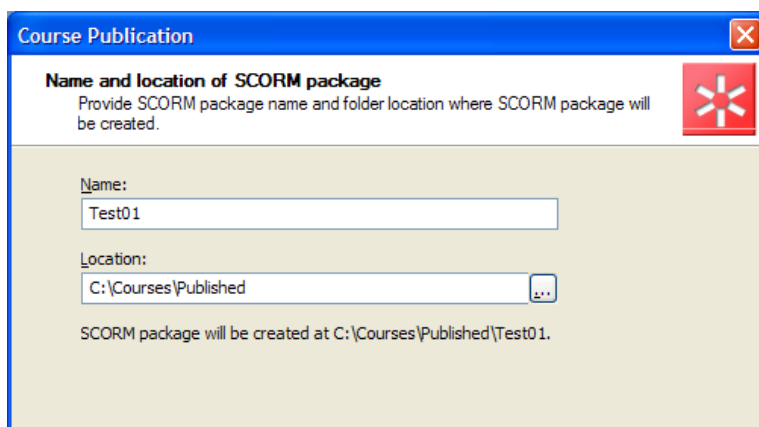
4.7.3. The Course Publication Wizard



Select **File – Publish Course** to begin publishing your Course. Follow the wizard instructions to complete publishing.



Select the desired publication type – an AICC or SCORM compliant package or a folder for CD. If one of the LMS publishing options is selected, CourseLab will generate a ZIP archive, structured according to the selected standard (AICC or SCORM).



If the “Publishing for CD” option is selected, CourseLab will generate a folder set with an *autorun.html* file. *Autorun.html* is a very simple HTML file that cannot be edited in CourseLab but you can make changes to it in any text or HTML editor.

Create a name for the package (or CD folder) and select the location where it will be saved. Click the “Next” button and wait while the course is published.

5. Objects

5.1. Object and Object positioning within a Frame

The **Object** is the basic element of CourseLab, the “building block” of each Learning Module. You may construct a Learning Module of any complexity by employing a variety of Objects and building relationships among them. When you insert an Object of any shape into a Frame it is placed into a Rectangular Placeholder. You can change the size and orientation of this Rectangular Placeholder.

There are 3 types of Objects that fit inside the Rectangular Placeholder:

- An Object that can automatically adjust its size to the size of Rectangular Placeholder (For example, pictures, and AutoShapes resize their height and width to fit the Rectangular Placeholder)
- An Object that can resize by itself (autofit to contents depending, for example, on the amount of the text)
- A fixed-size Object

5.2. Types of Objects: Internal and Complex

Two main types of Objects are used in CourseLab for building up learning Module: internal and complex.

Internal Objects are the primary and most frequently used Objects; they are built into CourseLab. In fact, you can create an entire learning Module solely using internal Objects such as:

- text boxes (can include text, tables, pictures)
- pictures and autoshapes

Since these are the most commonly used types of Object, editing buttons have been conveniently placed on the toolbar.

Complex Objects are external to CourseLab and loaded into the CourseLab using the Open Object Interface.

In software simulations the special Object **Cursor** can also be used.

5.3. Internal Objects

5.3.1. Text Box

A **Text Box** can be embedded in an editor Object for creating areas within a Frame containing formatted text and tables.

5.3.1.1. Inserting Text Box

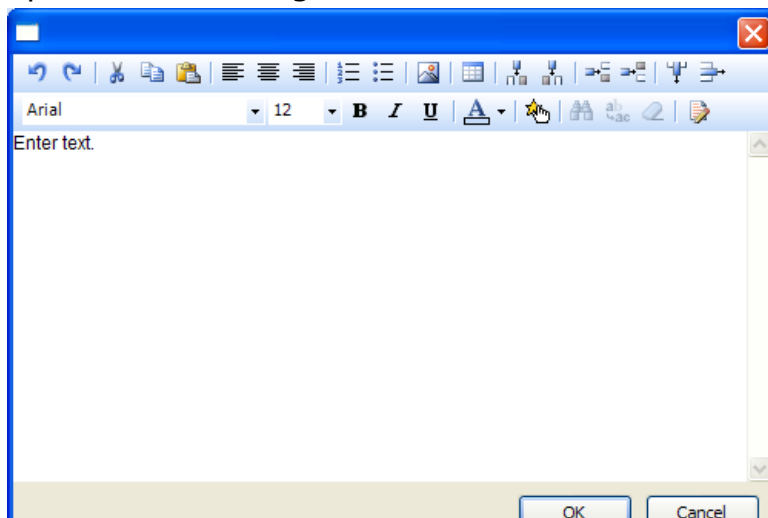
You can add a Text Box to a Frame as follows:

Click the "Insert" menu option and select "Text Box", or choose the "Text Box" icon from the toolbar.

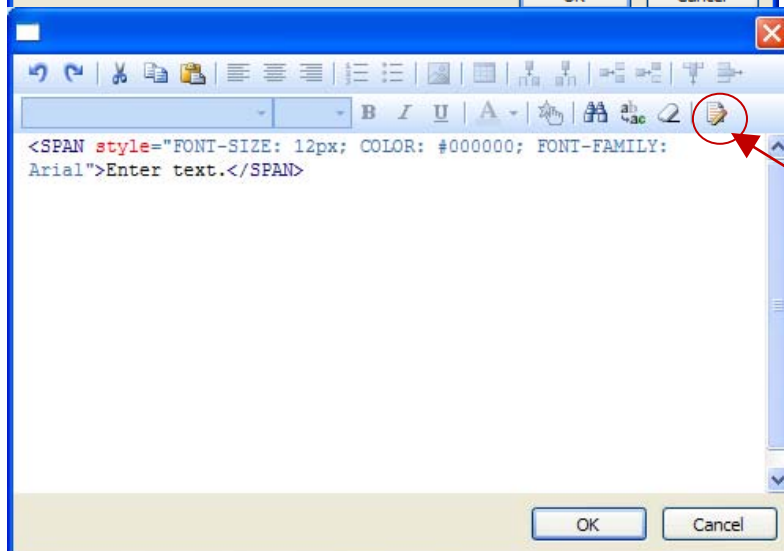
An area of text appears on the Slide with the "Enter Text" instruction on it. Alternatively, copy the desired text to the Clipboard (CTRL-C) and paste it right into the Frame (CTRL-V). This insertion Method will more convenient in many cases.

5.3.1.2. Editing Text. Editing Modes

Double click Text Box or use the "Edit text" option from the context menu to open a text editing window.



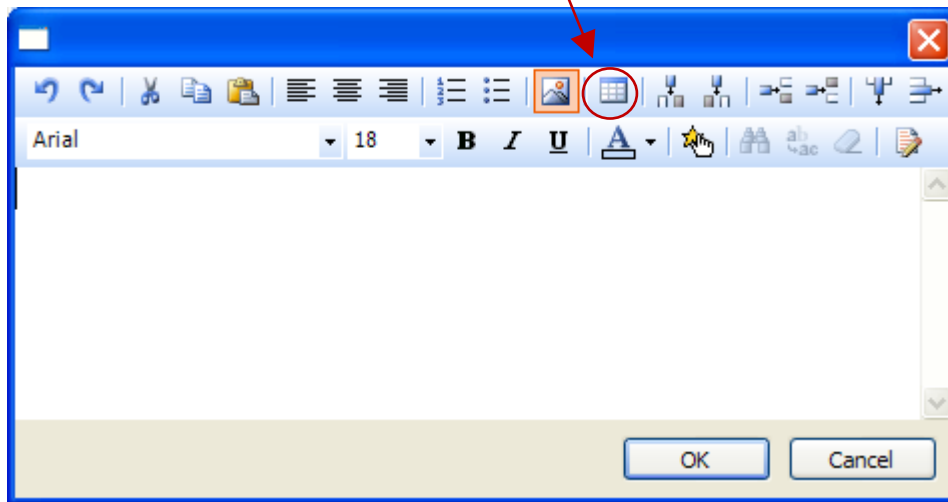
By default, a text editing window opens up in Rich Text Format mode and you can edit text just like in any other text editor - modify font, style, size, specify different format settings for paragraphs and lists, and so on. The edited text will eventually be converted into HTML code for the learning Module.



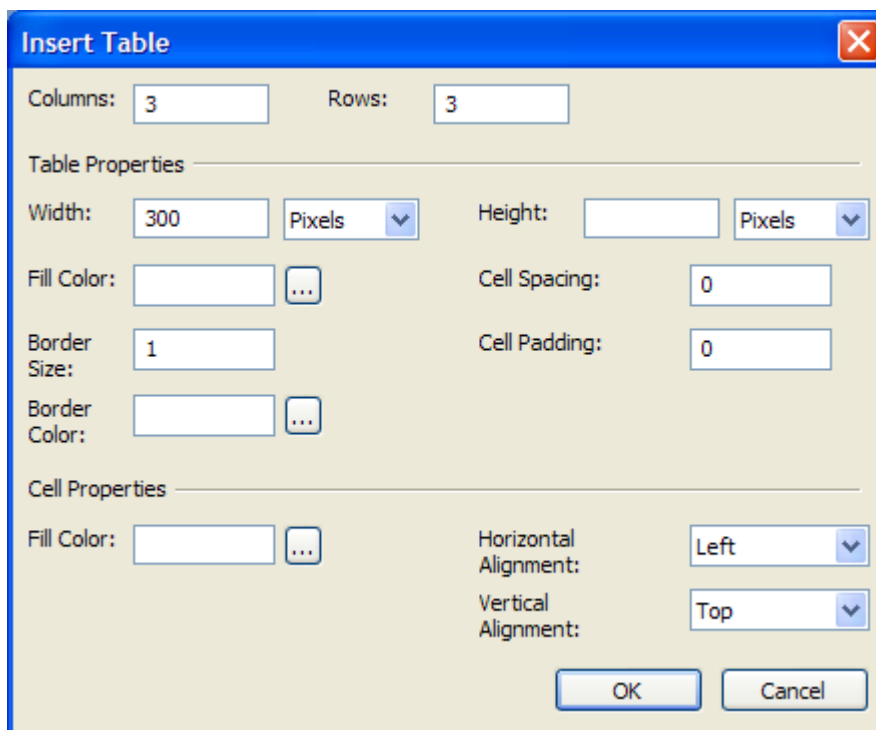
Those familiar with HTML coding can switch to the HTML mode by selecting the "Edit HTML" button.

5.3.1.3. Insert a Table into Text

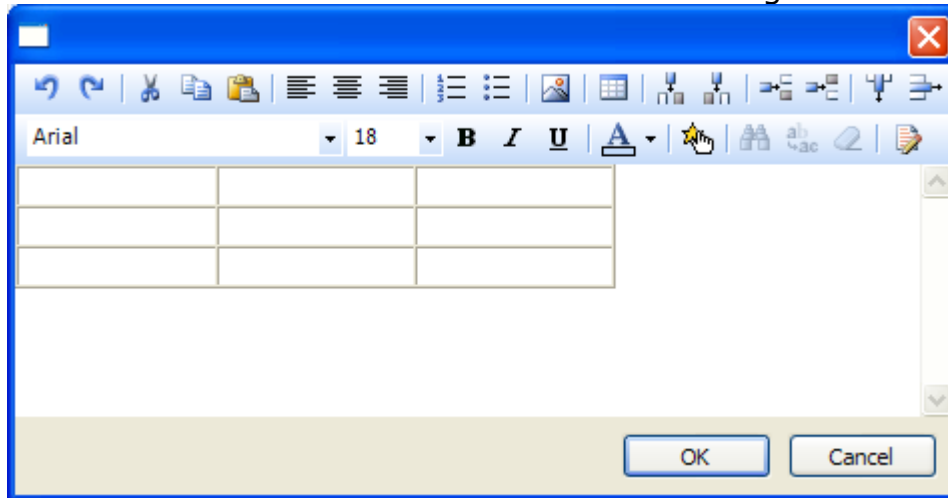
To insert a table, click the "Insert Table" button in the text editing window.



In the **Insert Table** dialog screen, specify the number of columns and rows and other parameters.



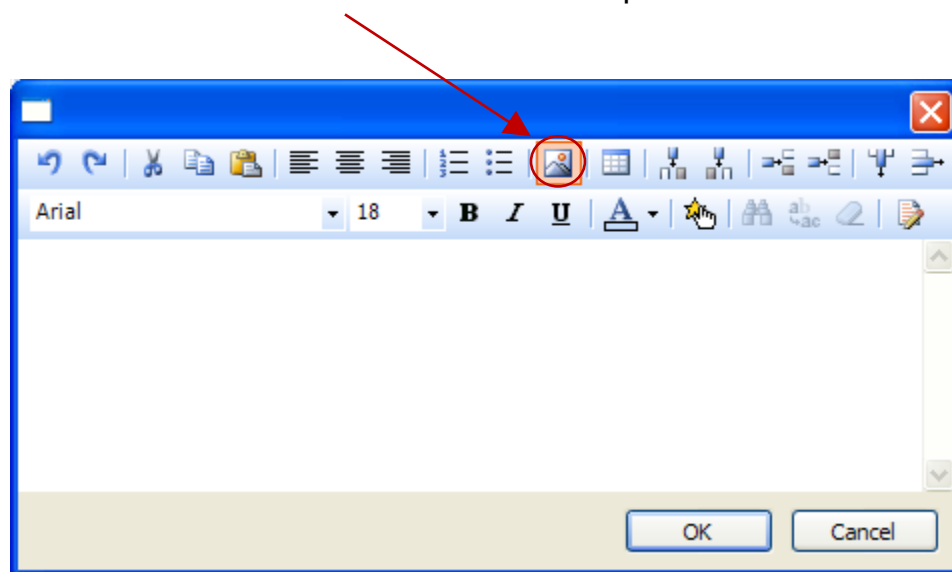
After pressing the "OK" button, a table appears in the text editing screen. You can insert text into the cells while in editing mode.



Use the "Table Properties" option from the context menu (right-click inside the table's border) if you need to modify settings for already inserted table. Note, that there are buttons to quickly insert and delete rows and columns. They are located right next to the "Insert Table" button. Use the "Cell Properties" option, from the context menu, to modify settings for a single cell.

5.3.1.3. Insert a Picture into a Text Box

You can also insert a picture right inside the text. While in editing mode, click the "Insert Picture" button and locate the picture file.



5.3.2. Pictures

CourseLab enables the insertion of graphics into a learning Module but has no graphic editing features.

5.3.2.1. Inserting a Picture



To insert a picture into a Frame you can either choose "Picture" from the "Insert" menu or click the "Insert Picture From File" icon on the toolbar.

Locate the picture on your computer and press the "Open" button. The picture will be inserted into the Frame and the picture file will be copied into the "Images" folder of the current learning Module. If the file being copied already exists, the user will be prompted to cancel file overwriting.

LIMITATION: Since Learning Modules can be hosted on the Internet, all file names of the pictures should be web-safe, in particular it is recommended to only use letters and numbers from the Latin alphabet; no spaces and no special characters.

5.3.2.2. Valid Graphic File Formats

Any internet-friendly graphic file formats can be used in a learning course. Because learning courses can be hosted on the Internet, it is strongly recommended that you use small graphic files in compressed graphic formats such as GIF, JPG, and PNG. Each format has some advantages and disadvantages, which should be taken under consideration. Below is the brief overview of these formats.

GIF (Graphics Interchange Format)

GIF is the most common format for Internet graphics as it is supported by all Browsers and majority of graphic editors. GIFs use a special compression algorithm (limited to 256 or less colors and simple linear compression along the horizontal axis) allowing for a very small size of graphic file if there are large areas of the same color. It is therefore not suitable for storing photos and images with the large grated areas - the stored image will have a large file size and poor quality.

*GIFs support transparency (you can choose a **single color** in the image that will be rendered as invisible, allowing the background to show through when the image is viewed on a Web page) but you have to remember that GIF supports only 1-bit transparency: each pixel for the given color (so called Alpha Channel) is completely removed.*

The latest version of the GIF format supports animation created by stringing together various still images. GIF animation can be used in a learning Module. The CourseLab editor will not play a GIF animation – only the first GIF image is displayed on the Slide in editing mode. The GIF animation will display properly when the course is published.

JPG (JPEG, Joint Photographic Experts Group)

JPG is one of the most common formats for graphic images on the Internet and is supported by all Browsers and most graphic editors. When JPG compression is executed, the source image is divided into square blocks with specific color and brightness information (so called chrominance/luminance scheme) created for each block, which enables coding of this area. The human eye is more sensitive of them to the details of shapes than to color information therefore JPG compression reduces color information to Variable size while using 256-grade brightness scale. The degree of color information depends on the user-defined quality setting. Having said that, JPG format is very practical for displaying smooth color transitions and well suited for compressing photos and pictures with high color gradient areas. However, if the source image has multiple contrasting color changeovers, the compressed image will degrade depending on the level of compression (there will be mottled areas around color's edges). JPG allows the user to choose the balance between file size and image quality but choosing a higher quality can make the file size very large and slow to upload. Most Internet graphics are set to 72 dots per inch (dpi). Unlike GIFs, the JPEG format does not support transparency.

PNG (Portable Network Graphics)

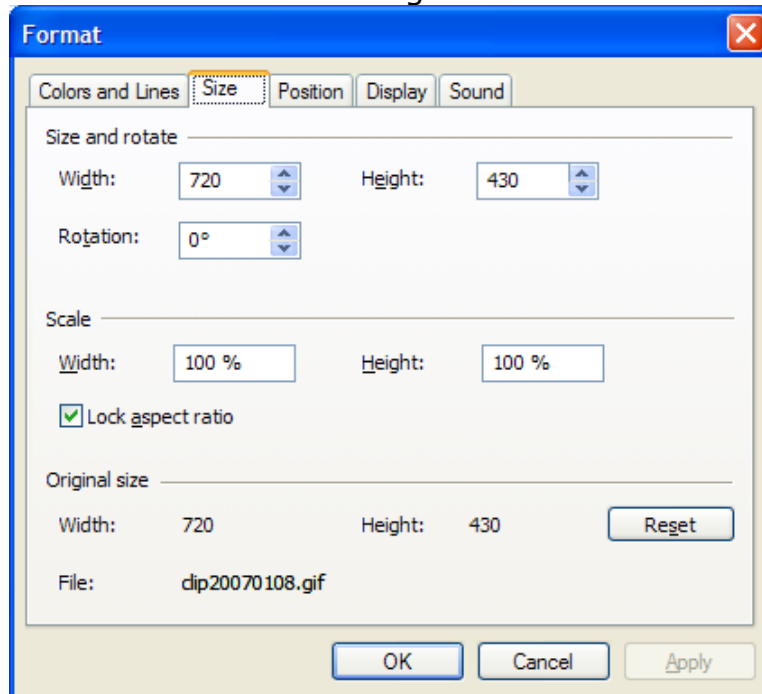
The Portable Network Graphics (PNG) format was designed to replace the older and simpler GIF and JPG formats. When saving at an 8-bit depth (PNG-8) the format is comparative to GIF (in general, it provides about 15% better compression ratio than GIF, since PNG-8 performs compression along both horizontal and vertical axes). When saving to a 24-bit depth (PNG-24), the format provides high-quality color changeovers and a very good level of file compression. PNG supports transparency and preserves the quality of the color changeovers regardless of the underlying color. The only disadvantage of the PNG format is that it has limited support in older versions of Internet Browsers and limited support by some graphic editors. Nevertheless, since the older versions of Browsers are not supported in CourseLab Courses, we encourage using this format if possible.

Other Formats

You can use other graphical formats which are supported by Internet Browsers, such as BMP, WMF, and others. However, consider the fact that some Browsers display these formats incorrectly. Besides, BMP files (and other non-compressed formats) are very large in size. The choice is yours - if you are confident that images will be displayed correctly and network traffic permits it – you may use these types of format in your Course.

5.3.2.3. Change the Size of Picture

Once picture is inserted, you may format it within CourseLab using the "Size" tab on the "Format Picture" dialog window.

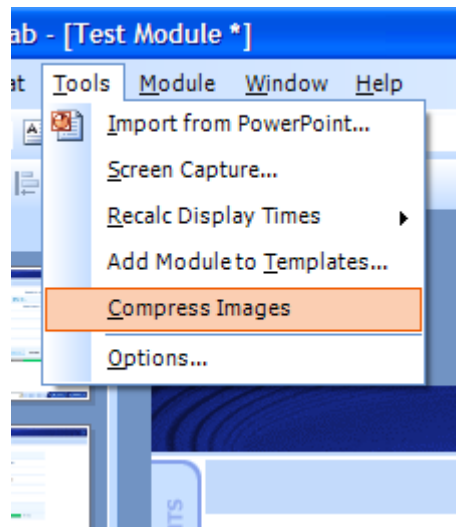


Things to consider:

- When you enlarge a picture you are not changing the amount of information stored in the image file and the quality will definitely suffer.
- The browser's ability to minimize pictures is far from perfect compared to a graphic editor's. Just remember that any formatting changes you apply to a picture on a Slide will not affect the size of the loaded image file.

We do not recommend making significant changes to the format of the picture when editing a Slide. If one of the picture parameters is to be modified by more than 10-20%, we suggest using an external graphic editor. The internal CourseLab format editing feature should only be used for slight formatting changes (not to exceed 10-20% modifications in size).

5.3.2.4. Optimizing Pictures



After a picture is inserted and its size is changed to fit the Slide layout, it is recommended that you optimize the file size of the picture. Use **Tools – Compress Images** to optimize image files.

All scaled pictures in the Module will be automatically resized to fit their user-defined width and height exactly, compressed with maximal picture quality, and re-saved. Pictures that are in BMP, WMF, and EMF formats will be converted and re-saved in PNG format to minimize file sizes.

5.3.3. Section “Clip Art”

For inserting frequently used pictures it is convenient to use the **Clip Art** section in the tasks area.

It displays thumbnail images in a **Clip Art** folder on the computer. To add a picture to the Slide, drag the thumbnail image into the working area.

Unlike using the **Insert Picture From File** menu, this insertion Method eliminates the inconvenience of specifying the path to the picture file each time within “Open” dialog box.

Use **Insert – Picture – Clip Art** sub-menu, or use the “Insert Clip Art” icon on the toolbar, to start using them Clip Art folder.

In the right part of the main editor window, a tasks area will open up displaying the selected “Images collection”.

Click “**Browse...**” at the bottom of the “Clip Art” section to designate the folder which will be accessible in the Clip Art panel. In the opened “Browse For Folder” dialog box, select the folder containing pictures.

It is a good idea to preload this Clip Art with the pictures you plan to use in your course.

5.4. AutoShapes

AutoShapes is a group of special Objects based on vector controls (arrows, stars, curves, rectangles etc.). Depending on the vector structure, AutoShapes can be resized to any size without losing form and quality. AutoShapes Objects are accessible from the CourseLab Task Panel. Use **Insert – Picture – AutoShape** to start using AutoShapes section. To insert an Object, select the desired tab in the AutoShapes section on the Task Panel and double-click on the Object.

5.5. Complex Objects

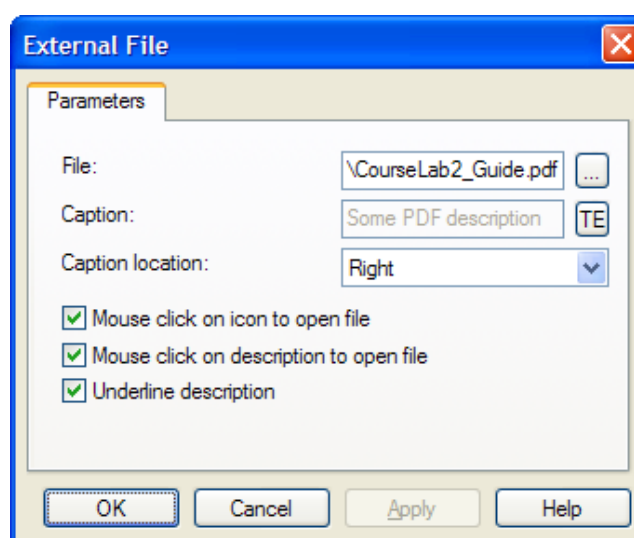
5.5.1. External Elements

5.5.1.1. “External File” Object

The “External File” Object enables the opening of external files such as: documents, pictures, movies, etc., in a separate Browser window.

What types of files are supported by the Object?

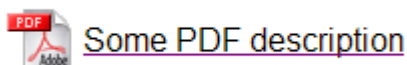
The Object is not limited by file types. At the same time, Browsers restrict the opening of some file types. To bypass this, you may open any file which is NOT RESTRICTED BY BROWSERS, in a separate Browser window. For some conventional file types, Object can place the corresponding icon into the Frame. If of undefined file types, the Text document icon will be displayed.



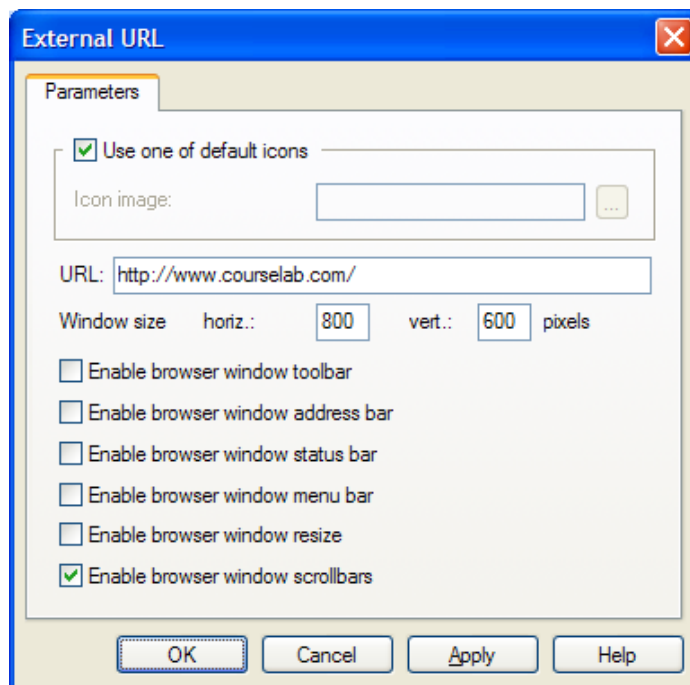
After inserting an Object into a Frame, specify the **path to the file** which you are going to open. Next, the File will be copied into the “Images” folder of the current learning Module. Input the file’s **Caption** and choose the location of the Caption according to the position of the icon. Select the activation Event **to open the file**:

- mouse click only on Icon;
- mouse click only on Caption;
- mouse click either on Icon or on Caption.

Example of a PDF file appearing as an External File on the Frame:



5.5.1.2. External URL



The External URL Object is used for opening an external Link in a separate Browser window. The exceptional feature of the "External URL" Object is its ability to fully control the settings of the Browser window being opened.

The settings are: size of the Browser window and Browser navigation restrictions (but with limited availability since Microsoft introduced additional Security settings in Windows XP SP2).

After inserting an Object into the Frame, specify the **URL** which you are going to open. Remove the checkmark if you prefer not to use the **standard icon**. After the "Display Icon" field becomes active, select the desired image, the file will be copied into the "Images" folder of the learning Module. Select **size** for the browser window to be opened, and other settings as appropriate.

Example of an External File icon:



5.5.1.3. IFRAME

The IFRAME Object is used for opening external web-content (from a file or a distant server) into the area on the Frame.

WARNING! This Object must be placed on top of ALL other Objects on the Frame - otherwise errors may arise due to specific nature of this HTML Element.

NOTE! This Object is able to load content from other domains, therefore browser's security restrictions (i.e. cross-domain security) may apply to this Object. There's no possibility to override browser security settings from content.

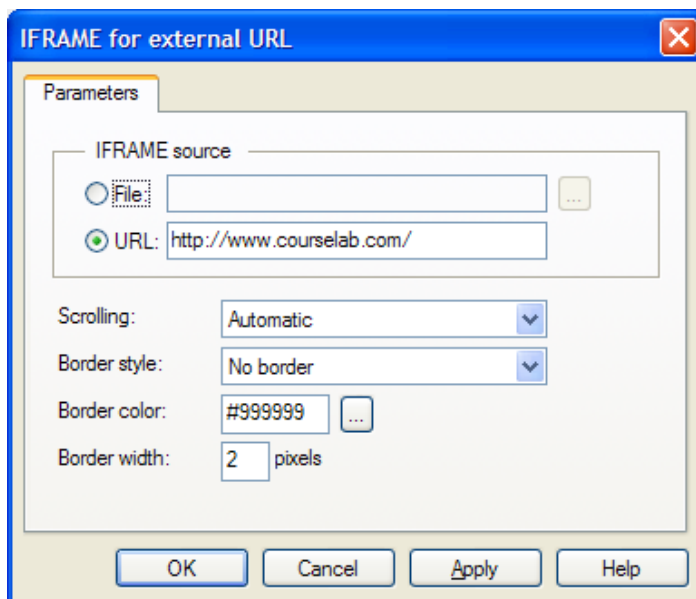


Example of an IFRAME icon in the Edit area

The same IFRAME in Runtime mode:



After inserting an Object into a Frame, specify the **URL** or file which you are going to open, and specify appearance settings, if necessary.



Object Methods

The state of the Object can be modified using **Methods**.

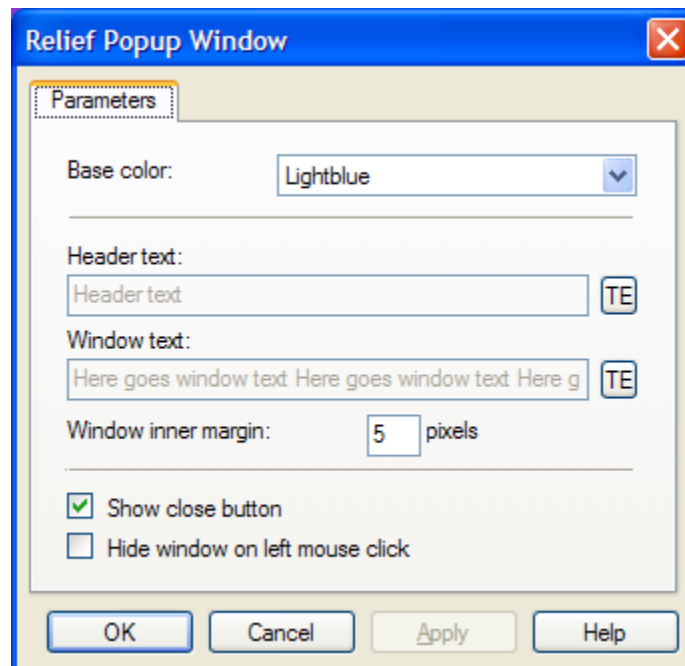
Method name	Execution Result
REPLACE SOURCE	Replaces URL of IFRAME content.

5.5.2. Popup Windows

Popup windows are used for displaying various explanations to the text on the Slide. Basically, the text size for explanations is considerably bigger than the one used for the similar Balloon type of Objects. Therefore, a Popup window can be activated by clicking on the link or button. It does not close automatically, but remains open. Compared to the Balloon type of Object, the Popup window type has its own windows closing mechanism.

5.5.2.1. “Relief” Popup Window

Once an Object is inserted into the Frame, open the “Format Object” dialog window.



Select **color scheme for the Object**. The “Base color” refers to the color of the window title and border. The background color for the part of the window containing the main text is usually white.

Input text for the **header** and the **main part** of the window. By default, the header text is centered and has a font corresponding to the default font of your selected learning Module. You can change these settings while in editing mode.

Specify a value for **text margin**. Text margin defines the space between the border of the window and the text block.

Define **window closing rule**: it can be closed by clicking on the popup window “Close” button (which looks similar to conventional Windows “Close” button) or by clicking anywhere within a popup window. Note, you can omit selecting a closing rule but it will be your responsibility to define a closing procedure.

Example of the Relief Popup Window:



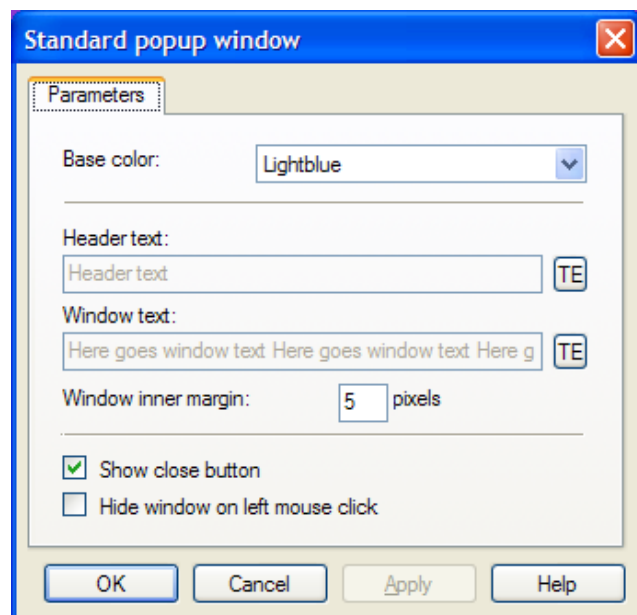
Depending on the purpose of the inserted popup window, it might be necessary to disable the display of the popup right after loading the Frame and define Actions enabling the display of a popup window.

Object Events

Since the "Convex" popup Object has its own closing mechanism, it is capable of generating the closing Event. While building a Frame, we can use the closing Event to initiate various Actions.

Reference in the Action Editor	Triggered Upon
On Close Popup	Right after a user initiates Object closing

5.5.2.2. The "Standard" Popup Window



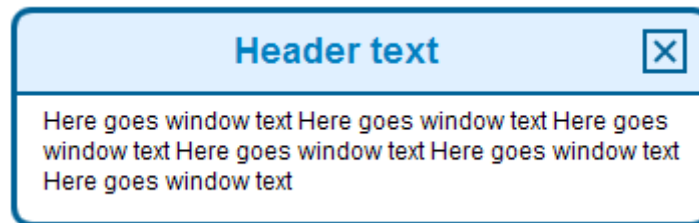
Once an Object is inserted into the Frame, open the "Format Object" dialog window. Select the **color scheme for the Object**. The "Base color" refers to the color of the window title and border. The background color for the part of the window containing the main text is usually white. Input some text for the **title** and the **main part** of the window. By default, the title text is centered and has a font corresponding to the default font of the selected learning Module. You can change these settings while in the editing mode. Specify a value for the **text**

margin. Text margin defines the space between the border of the window and the text block.

Define the **window closing rule**: it can be closed by clicking on the popup window "Close" button (which looks similar to conventional Windows "Close" button) or by clicking anywhere within a popup window. Note, you can omit

selecting the closing rule but it will be your responsibility to define a closing procedure.

Example of a Standard Popup Window appearance **on the Frame**:



Depending on the purpose of an inserted popup window, it might be necessary to disable the display of the popup right after Frame loading and define the Actions enabling the display of the popup window.

Object Events

Since the "Convex" popup Object has its own closing mechanism, it is capable of generating the closing Event. While building a Frame, we can use the closing Event for initiating various Actions.

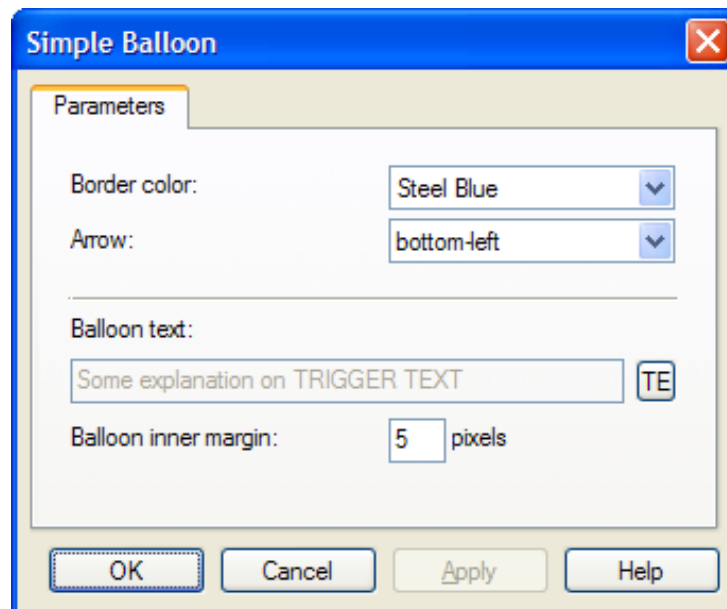
Reference in the Action Editor	Triggered Upon
On Close Popup	Right after user initiates Object closing

5.5.3. Balloons

Balloon Objects are used for opening various text instructions on the Slide. In general, the amount of text in a Balloon instruction is relatively small (smaller than the instructions used for the similar Popup window types of Objects). The Balloon Object is intended to open up when the user's mouse moves over an "active" area and closes when the user's mouse moves away from the active area. the Balloon types of Objects do not have their own closing mechanism. Compared to Popup window type of Object, Balloon Objects retain the pointer arrow.

5.5.3.1. "Simple" Balloon

After inserting the Object into a Frame, adjust the size and position the Object in relation to the Frame structure. Open the "Properties" dialog screen.

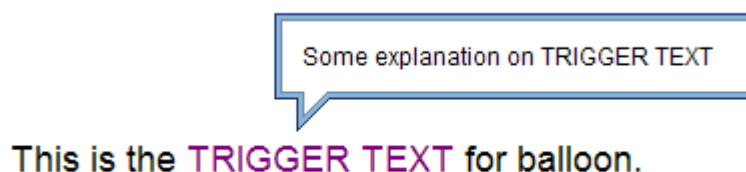


Select a **color scheme** according to the overall design of the Slide. Press the "Apply" button to observe changes. Select **direction of arrow pointer** and input **Balloon text**.

If necessary, specify a value for **text margin**. Text margin defines the space between the window border and the text.

After you are done with parameters settings, place the Balloon the way that the arrow points right into the link or active area. The Balloon opens up when the user's mouse moves over that link or active area.

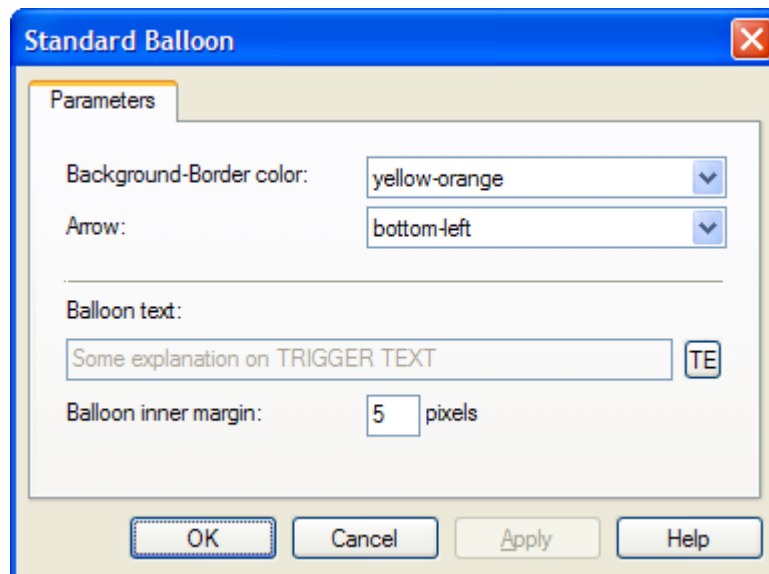
Example of a Simple Balloon appearing **on the Frame**:



Depending on the purpose of the inserted Balloon, it might be necessary to disable the display of Balloon right after Frame loading and define Actions enabling the display of Balloon.

5.5.3.2. "Standard" Balloon

After inserting an Object into the Frame, adjust the size and position the Object in relation to the Frame structure. Open the "Properties" dialog screen.

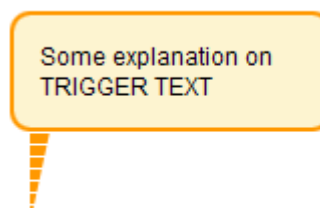


Select a **color scheme** according to the overall design of the Slide. Press the "Apply" button to observe changes. Select **direction of arrow pointer** and input **Balloon text**.

If necessary, specify a value for **text margin**. Text margin defines the space between the window border and the text.

After you are done with the parameters settings, place the Balloon the way that the arrow points right into the link or active area. The Balloon opens up when the user's mouse moves over that link or active area.

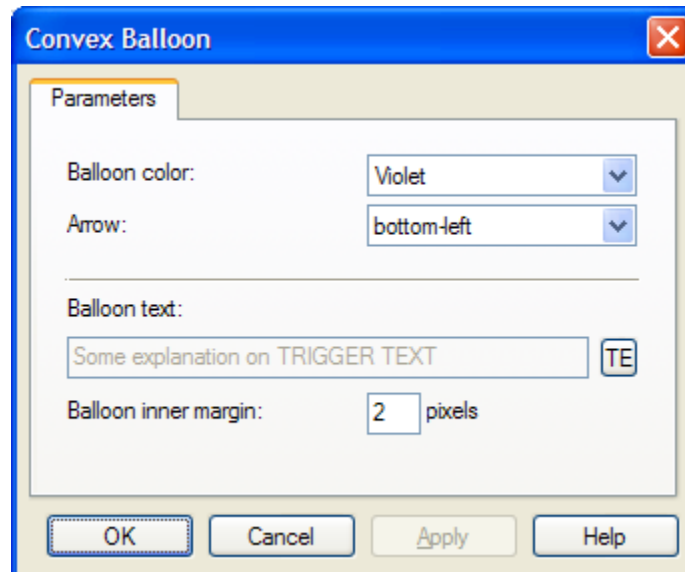
Example of a Standard Balloon appearing **on the Frame**:



Depending on the purpose of the inserted Balloon, it might be necessary to disable the display of the Balloon right after Frame loading and then define Actions enabling the display of the Balloon.

5.5.3.3. "Convex" Balloon

After inserting this Object into a Frame, adjust the size and position of the Object in relation to the Frame structure. Open the "Properties" dialog screen.

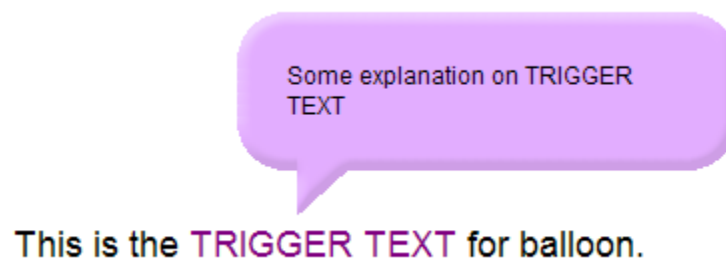


Select a **color scheme** according to the overall design of the Slide. Press the "Apply" button to observe changes. Select the **direction of arrow pointer** and input the **Balloon text**.

If necessary, specify a value for the **text margin**. Text margin defines the space between the window border and the text.

After you are done with the parameters settings, place the Balloon so that the arrow points right into the link or active area. The Balloon opens up when the user's mouse moves over that link or active area.

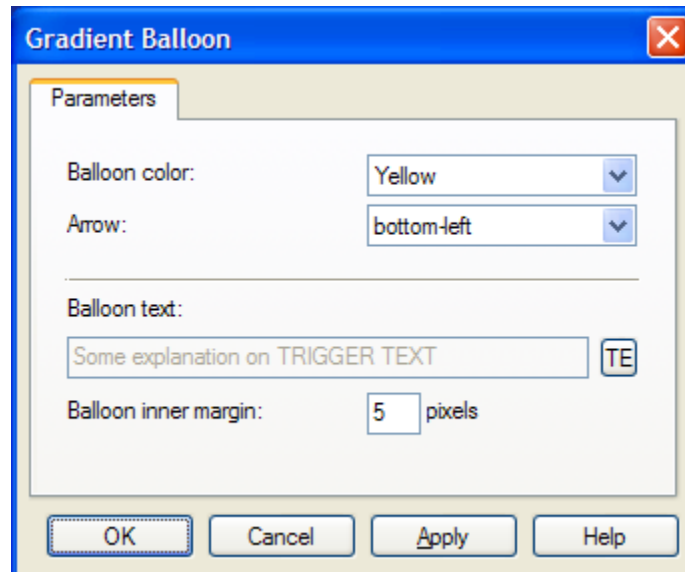
Example of a Convex Balloon appearing **on the Frame**:



Depending on the purpose of the inserted Balloon, it might be necessary to disable the display of the Balloon right after Frame loading and then define Actions enabling the display of Balloon.

5.5.3.4. "Gradient" Balloon

After inserting this Object into the Frame, adjust the size and position the Object in relation to the Frame structure. Open the "Properties" dialog screen.



Select a **color scheme** according to the overall design of the Slide. Press the "Apply" button to observe changes. Select the **direction of arrow pointer** and input **Balloon text**.

If necessary, specify a value for **text margin**. Text margin defines the space between the window border and the text.

After you are done with the parameters settings, place the Balloon so that arrow points right into the link or active area. The Balloon opens up when the user's mouse moves over that link or active area.

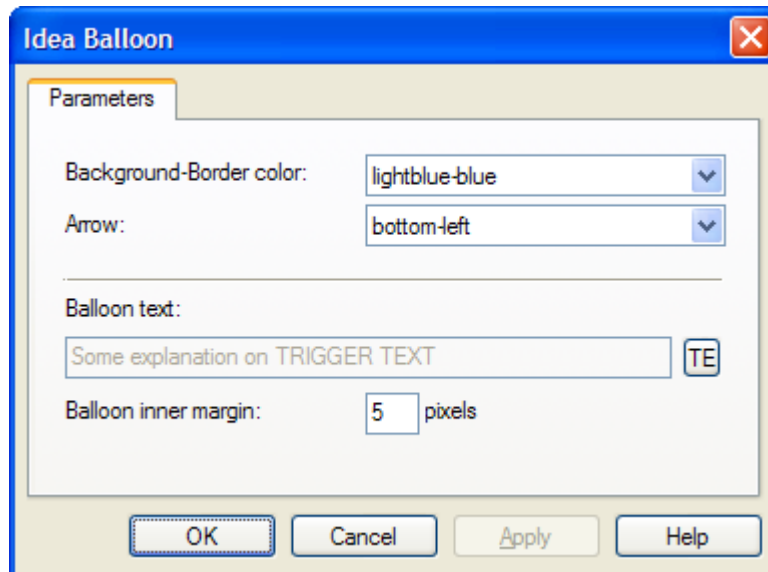
Example of a Gradient Balloon appearing **on the Frame**:



Depending on the purpose of the inserted Balloon, it might be necessary to disable the display of Balloon right after Frame loading and then define Actions enabling the display of Balloon.

5.5.3.5. "Think" Balloon

After inserting this Object into the Frame, adjust the size and position the Object in relation to the Frame structure. Open the "Properties" dialog screen.

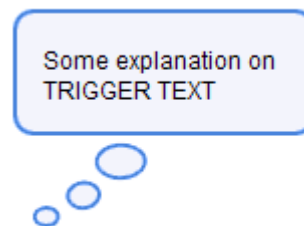


Select **color scheme** according to the overall design of the Slide. Press "Apply" button to observe changes. Select **direction of arrow pointer** and input **Balloon text**.

If necessary, specify a value for **text margin**. Text margin defines the space between the window border and the text.

After you are done with the parameters settings, place the Balloon so that arrow points right into the link or active area. The Balloon opens up when the user's mouse moves over that link or active area.

Example of a Think Balloon appearing **on the Frame**:



This is the TRIGGER TEXT for balloon.

Depending on the purpose of inserted Balloon, it might be necessary to disable the display of the Balloon right after Frame loading and the define Actions enabling display of Balloon.

5.5.4. Design Elements

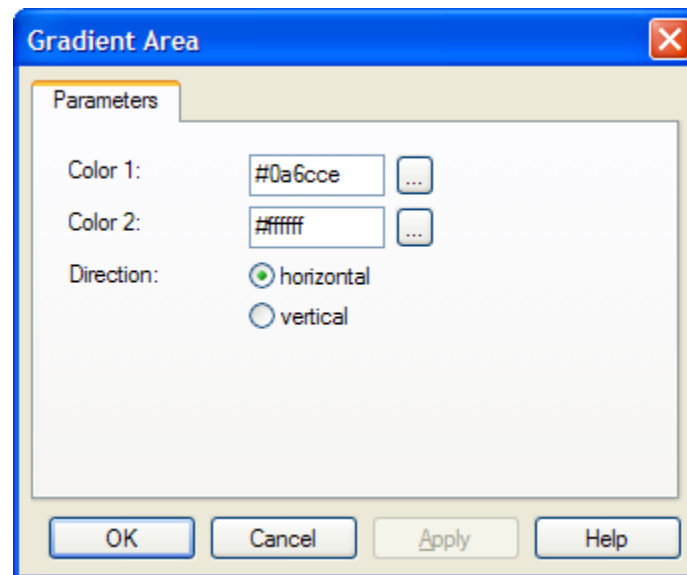
Design Elements is group of Objects that is used for decorating and other purposes. In fact, these are the simplest Objects used for creating learning material.

5.5.4.1. Gradient areas

The **Gradient areas** types of Objects are generally used for decoration purposes.



After inserting this Object into a Frame, adjust the size and position the Object in relation to the Frame structure. Open the “Properties” dialog screen.

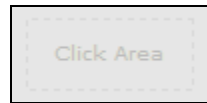


Select a **color for the start and the end** of the Gradient areas according to the selected design of the Slide. Click “Apply” to view changes.
Select the direction of the gradient – vertical or horizontal.

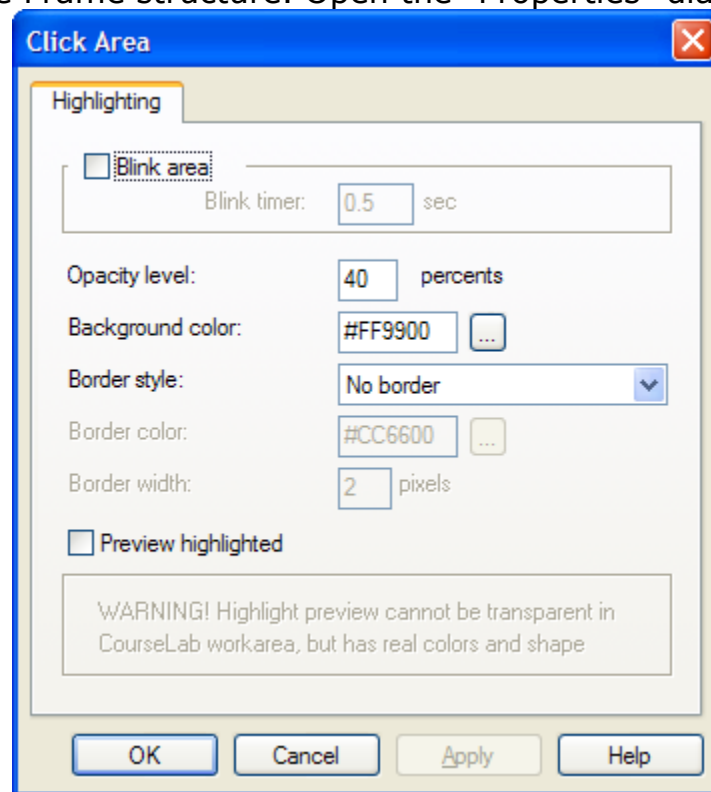
5.5.4.2. Click Area

The **Click Area** type of Object is used for defining a transparent click area anywhere on the Frame. Transparent by default, a click area can be made visible (and blinking) using Object Methods. This may be useful, for example, to highlight the click area if of an incorrect click.

The Object is **invisible by default**; therefore the Object's placeholder is displayed in Edit mode:



After inserting this Object into a Frame, adjust the Object's size and position in relation to the Frame structure. Open the "Properties" dialog screen.



On the **Highlighting** tab you can select the blinking timer, background color, border parameters and opacity of the Object in the Highlight mode. Check the **Preview highlighted** checkmark to preview Object's Highlight mode. Be aware that it is not possible to display transparency for this Object in the CourseLab Edit mode, therefore only the background and border can be previewed.

Object Methods

The state of this Object can be modified using these **Methods**.

Method name	Execution Result
HIGHLIGHT ON	Turns the Object to the Highlight mode.
HIGHLIGHT OFF	Turns the Object back to Invisible mode.

5.5.4.3. Notifier

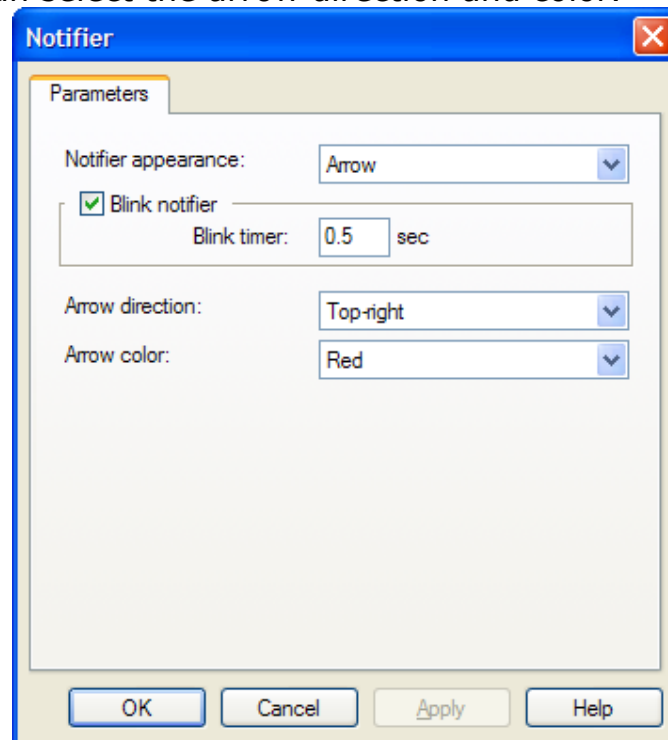
The **Notifier** type of Object is used to attract the learner's attention to a part of the Frame. There are three different shapes, which can be used as (optionally blinking) notifiers: arrow, transparent rectangle with visible corners and colored transparent rectangular area.

Examples of Notifier appearance:

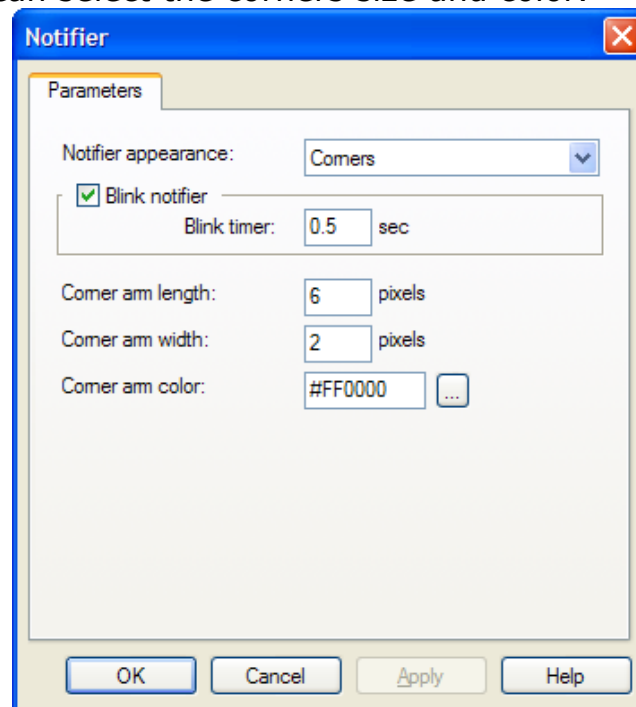


After inserting this Object into a Frame, open the “Properties” dialog screen. Depending on the selected Object **appearance**, you can change various parameters:

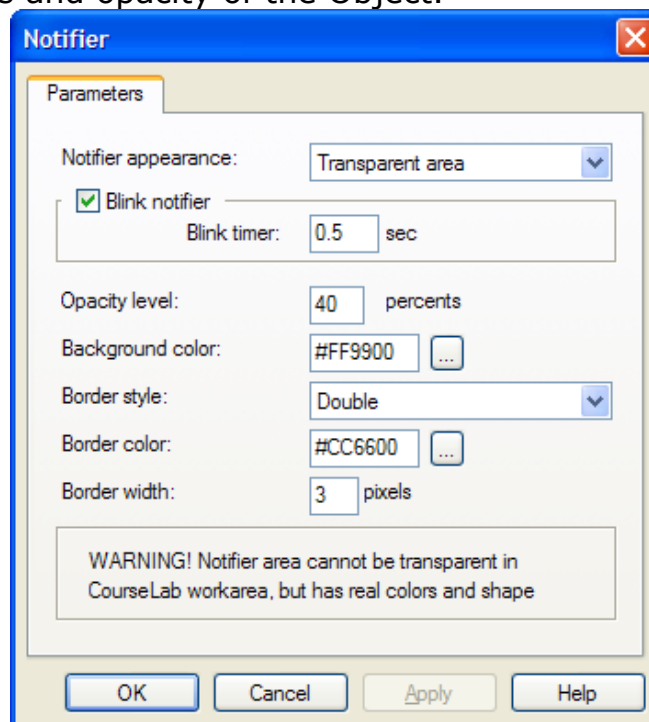
For **arrow** you can select the arrow direction and color.



For **Corners** you can select the corners size and color.



For **Transparent area** you can select the blinking timer, background color, border parameters and opacity of the Object.



Be aware that it is not possible to display transparency for this Object in CourseLab Edit mode – only the background and border can be previewed.

5.5.5. Title-Slide Objects

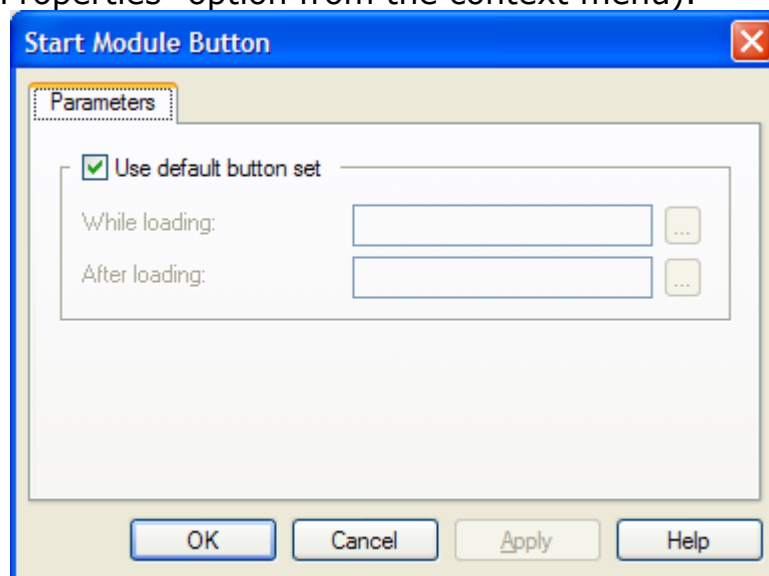
The Title-Slide group of Objects is used only on the Title-Slide.

5.5.5.1. Start Module Button

The Start Module Button appears in an inactive state on the Title-Slide while the main block of Module is loading and becomes active only when the Module is fully loaded.

Select the Title-Slide. Insert an Object into the Frame (double click on icon in the "Object" panel or drag Object with the mouse).

Open the "Properties" dialog screen (double click on the Object within a Slide or select the "Properties" option from the context menu).



By default, the standard Start Module Button is used. If you wish to use different button, then create 2 images using any graphical editor:

- The First picture will be displayed while the main block of the Module is loading (specify the path in the "Picture before loading" field).
- The second picture will be displayed after the main block of the Module is loaded (specify the path in the "Picture after loading" field).

Example appearance of the standard Start Module Button **on the Title-Slide**:



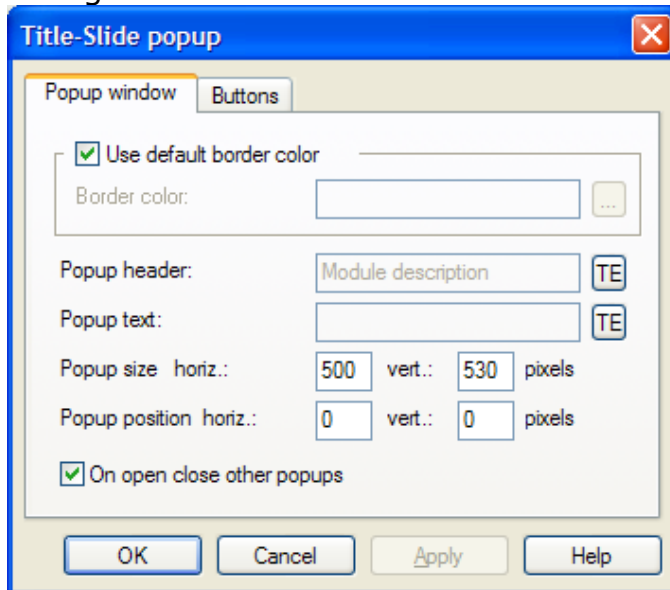
5.5.5.2. Title-Slide Popup

The Title-Slide Popup button and window appears on the Title-Slide and may be useful for providing descriptions or help instructions.

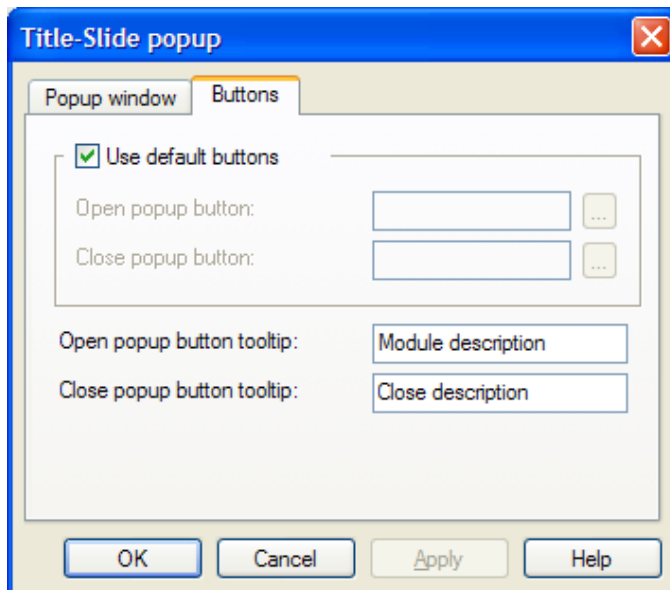
Example appearance of a Title-Slide Popup button Object:



Select Title Slide. Insert the Object into the Frame. Open the “Properties” dialog screen.



On the **Popup window** tab you can define the popup window size and border, window header and text (these are Rich Text fields). If **On open close other popups** checkmark is set, then only one (the last opened) popup window will be displayed.



By default, the standard Start Module button is used. If you wish to use a different button, then create two corresponding images in a graphic editor.

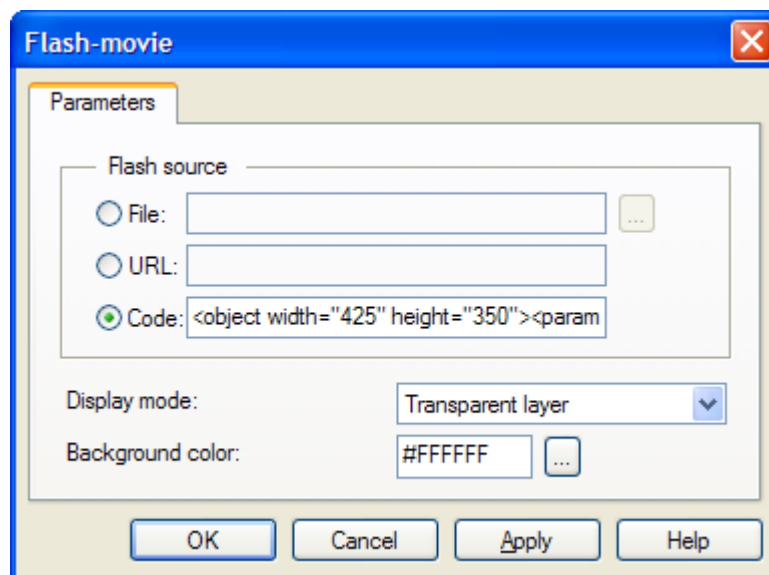
5.5.6. Rich Media Objects

5.5.6.1. Flash-Movie

The Flash-movie Object is used for playing Adobe Flash Movies or video clips converted to Flash. Adobe Flash movie files have the .swf extension.

IMPORTANT! The Adobe Flash Player software should be installed on the computer for playing Flash-movies. You can get the latest free-of-charge version of the Adobe Flash Player at <http://www.adobe.com/>). To ensure correct functionality of the learning Course, remember to turn on the feature which checks whether or not Flash Player has been installed on the target machine, before loading the learning Module (menu "Module – Runtime Settings – Checks").

Insert the Flash-movie Object into the Frame. Open the "Properties" dialog screen.



Specify the **Flash-movie source**. There are three options:

- **Local file** (the file will be automatically copied into the "Images" folder of the learning Module);
- **URL** - the full URL of Flash-movie;
- **Code** - this option allows you to insert code from YouTube and similar video websites. The Object will try to determine the Flash-movie URL from this code. However, use this option with great care, because is potentially erroneous.

Be aware, that the **URL** and **Code** options refer to external content, therefore this Flash-movie becomes subject to Flash Player security settings (cross-domain security).

Select the playing mode. Adobe Flash Player supports the following window modes for playing the movie:

- **Opaque, on top of all layers (Window Mode).** The Flash movie plays in its own virtual window in the Frame above the core browser display window, therefore no other Objects in the Frame can cover or overlap the Flash-movie Object. The Background color for the Flash-movie precisely corresponds to the one selected by the user.
- **Transparent layer (Transparent Mode).** The Flash movie plays in a separate layer of the Frame and overlaps other Objects placed underneath. However, Objects placed on top can overlap the Flash movie. If the background color for the Frame is not defined by the user and the Flash movie has transparent areas, then **the Objects layered underneath** will be showing through the transparent portions of the movie. However, be aware that transparent mode is resource-consuming, animation performance might be slower.
- **Opaque layer (Opaque Mode).** The Flash-movie plays in a separate layer of the Frame and overlaps other Objects placed underneath. However, the Objects placed on top can overlap the Flash-movie. Compared to transparent mode Flash-movie in opaque mode will always have the background color defined, even if you do not explicitly specify a Background color (White is the default color).

If necessary, you can specify background color for the Flash-movie Object.

LIMITATION: During insertion of the Flash-movie Object, the content for this Object is unknown to the CourseLab editor; therefore Flash-movie placeholder will be displayed in the editing mode instead.

Object Methods

Flash-movie playback can be controlled using the Object's built-in Methods.

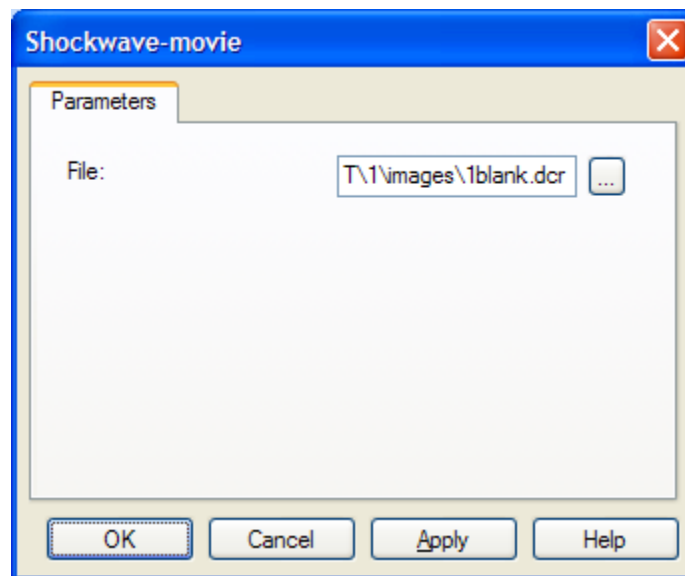
Method Name	Execution Result
PLAY	Starts Flash-movie playback
STOP	Stops Flash-movie playback.
REWIND	Rewinds Flash-movie to the beginning frame.
PAUSE	Pauses Flash-movie playback.
CONTINUE	Continues Flash-movie playback (from PAUSE)

5.5.6.2. Shockwave-movie

The Shockwave-movie Object is used for playing Adobe Shockwave movies that have been created using Adobe Shockwave technology. Adobe Shockwave movie files have .dcr extension. Adobe Shockwave technology is far more versatile than Flash. The wider range of features has a drawback in terms of the size of the Shockwave movie, complexity of creation, and the requirement to have Adobe Shockwave player installed. Although the Adobe Shockwave player is distributed free of charge, it has a bigger size and it is less universal compared to Flash Player. Nevertheless, if you have a Shockwave movie, you can insert it into the Frame just as easy as Flash-movie.

IMPORTANT! The Adobe Shockwave Player software should be installed on the , and all users' computers, for the playing Shockwave-movies. The latest free of charge version of Adobe Shockwave Player is always available at <http://www.adobe.com>. To ensure correct functionality of the learning Course, remember to turn on the feature which checks whether or not the Shockwave Player has been installed on the target machine before loading the learning Module (menu "Module – Runtime Settings – Checks").

Insert the Shockwave-movie Object into the Frame. Open the "Properties" dialog screen.



Specify the **path to the Shockwave-movie file**, which you are going to insert. The file will be automatically copied into the "Images" folder of the current learning Module.

LIMITATION: During insertion of the Shockwave-movie Object, the content for this Object is unknown to the CourseLab editor and the movie placeholder will be displayed in the editing mode instead.

5.5.6.3. Video Clips

The **Video Clip** Object is used for playing video clips of different formats. Windows Media Player is used by default for playing MPEG, AVI, and WMV formats.

For the FireFox Browser family it is recommended to install the latest version of Microsoft Windows Media Player plug-in from Port 25 Team:

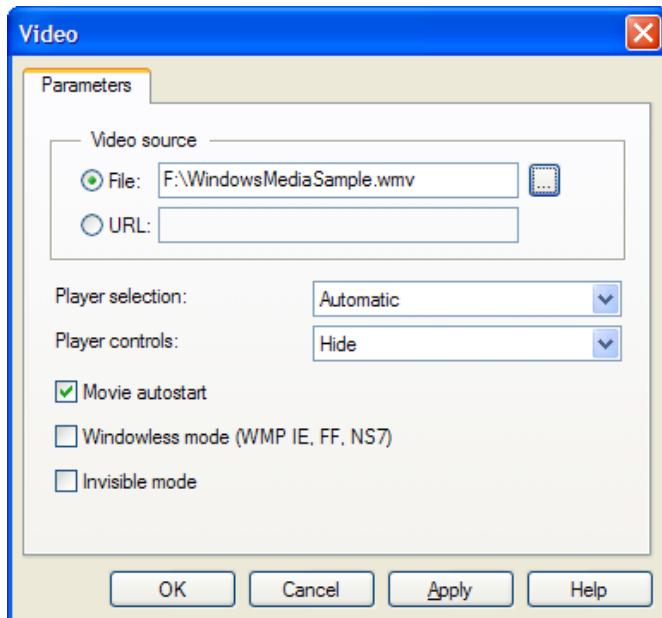
<http://port25.technet.com/pages/windows-media-player-firefox-plugin-download.aspx>

The QuickTime Player is used by default for playing QuickTime MOV and 3gp formats. Note, that the QuickTime Player must be installed on the learner's computer: <http://www.apple.com/quicktime/>

Real Player is used by default for playing clips in Real Media RM, RAM and RPM files. Note that the RealMedia Player must be installed on the learner's computer: <http://www.real.com/>

IMPORTANT! This additional software should be installed on the computer for playing video clips. To ensure correct functionality of the learning Course remember to turn on the feature, which checks whether or not required software has been installed on the target machine before loading the learning Module ("Module menu – Runtime Settings – Checks").

LIMITATION: During the insertion of the Video Clip Object, the content for this Object is unknown to the CourseLab editor so the Video clip placeholder will be displayed in the editing mode instead.



Insert the Video Clip Object into the Frame and open the "Properties" dialog screen.

Specify the **Video source**. There are two options:

- **File** - specify the path to the Video file you are going to insert (the file will be automatically copied into the "Images" folder of the learning Module).
- **URL** - full URL to video file.

Note that the URL option refers to external content so this Video clip is subject to the Browser security settings of each user.

The **Player selection** option allows you to specify the desired player software. Note that, depending on this option and the selected video source, the Object placeholder may change the appearance of the player. For example, this is the Windows Media Player placeholder on the picture.



Display of the **player controls** can be further adjusted:

If the **Movie Autostart** check box is selected, the Video clip is launched as soon as it is loaded, otherwise the user should manually select the "Play" button using the video controls or Object Methods.

Windowless mode enables launching the Windows Media Player as an inline element (i.e. in which case it can be overlapped by other Objects), otherwise it will be launched in the window mode (and by default it cannot be overlapped by other Objects). Note, that not all players and Browsers support windowless mode.

Invisible mode allows launching the player software as a hidden element. This mode could be used, for example, for playing audio files in the background.

Object Events

The "Video Clip" Object is capable of generating Events according to the user's Actions and the interpretation of those Actions by the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects, depending on the current state of the Object "Video Clip". Events are available from the "Events manipulation mechanism" (yellow cells contain Events used only for streaming media).

Reference in the Action Editor	Triggered Upon
Playing Tick	Fires every second while the player is playing media. Use it with currentPosition property to create time-binded Actions.
Change Play State	Fires at the moment when playing state of the media is changed (state itself doesn't matter - just changed).
Play Stopped	At the moment when playing of media stops (no matter was it learner's click or the end of media).
Play Paused	At the moment when playing of media becomes paused.
Play Started	At the moment when playing of media starts (position doesn't matter).
Play Begin	At the moment when playing of media starts from the beginning.
Play Resumed	At the moment when playing of media starts from the paused state.
End Of Media	At the moment when playing of media stops on the end of media.
Position Changed	Fires when current position is changed by Slider control or Method.
Media Changed	At the moment when player media is changed.
Media Error	At the moment when player generates media error.
Waiting Server Response	At the moment when player starts for waiting server response.
Reconnect To Server	At the moment when player starts reconnecting to server.
Start Buffering Media	At the moment when player starts buffering.
Preparing Media	At the moment when media is loaded and player starts preparing.
Media Is Ready	At the moment when media is loaded and player is ready to start.

Object Methods

The state of this Object can be modified using these Methods.

Method name	Execution Result
PLAY	Start playing clip.
STOP	Stops playing clip.
PAUSE	Pauses playing. Use PLAY Method to continue from paused.
SET PROPERTY	Sets one of the player properties.
REPLACE MEDIA	Replaces video source of player.

Object Specific Properties

Along with common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means the current Object ID).

Note, that these properties are available only for Windows Media Player and QuickTime Player - not for Real Player.

Method name	Execution Result
PLAY	Start playing clip.
STOP	Stops playing clip.
PAUSE	Pauses playing. Use PLAY Method to continue from paused.
SET PROPERTY	Sets one of the player properties.
REPLACE MEDIA	Replaces video source of player.

Object Specific Properties

Along with common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID).

Note, that these properties are available only for Windows Media Player and QuickTime Player - not for Real Player.

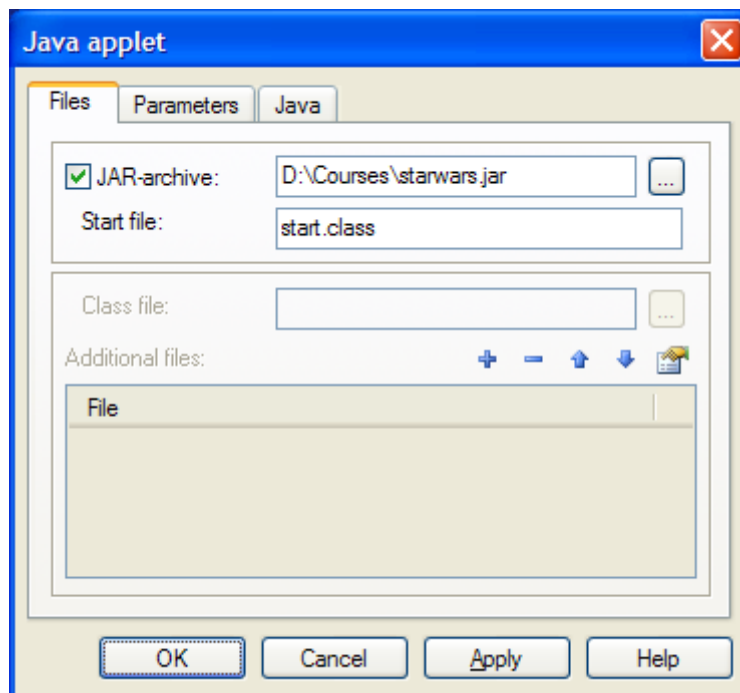
Property	Returns	Syntax
autoStart	Returns 1 if AutoStart is set to true, 0 otherwise.	\$OBJ_ID.autoStart
mute	Returns 1 if mute sound is set to true, 0 otherwise.	\$OBJ_ID.mute
volume	Returns current sound volume (range 0-100).	\$OBJ_ID.volume
currentMedia	Returns current media name (if exists), empty string otherwise.	\$OBJ_ID.currentMedia
duration	Returns full media duration in seconds.	\$OBJ_ID.duration
currentPosition	Returns current position in media in seconds.	\$OBJ_ID.currentPosition
currentState	Returns current Object state (tokens: "undefined", "stopped", "paused", "playing", "forward", "backward", "buffering", "waiting", "ended", "preparing", "ready", "reconnect").	\$OBJ_ID.currentState
url	Returns current media URL if available.	\$OBJ_ID.url
isOnline	(WMP only) Returns 1 if player Object has access to the network, 0 otherwise.	\$OBJ_ID.isOnline

5.5.6.4. Java Applets

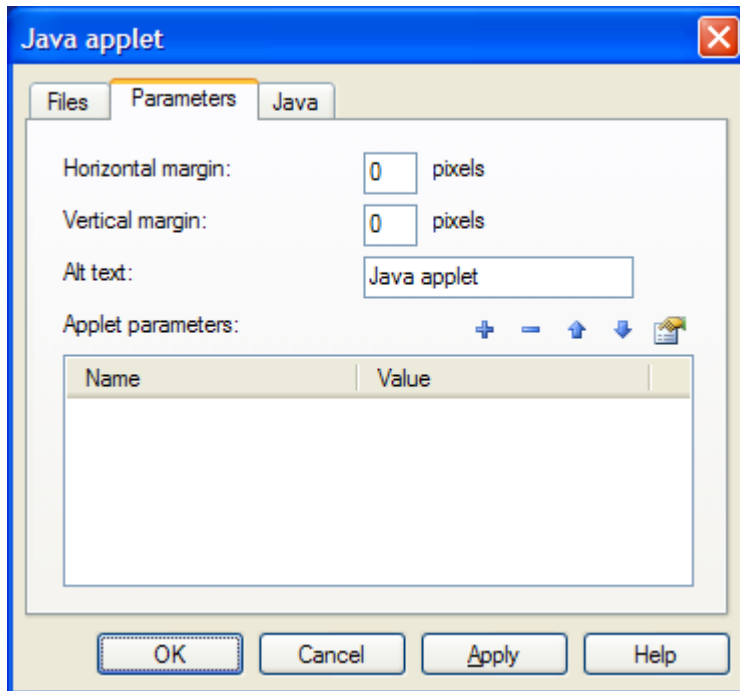
The **Java Applet** Object is used for inserting Java Applets into the learning Course.

IMPORTANT! Java Virtual Machine should be installed on the computer for running Java Applets (free download at <http://www.sun.com/>). To ensure correct functionality of the learning Course, remember to turn on the feature, which checks whether or not Java has been installed on the target machine before loading the learning Module (menu "Module – Runtime Settings – Checks").

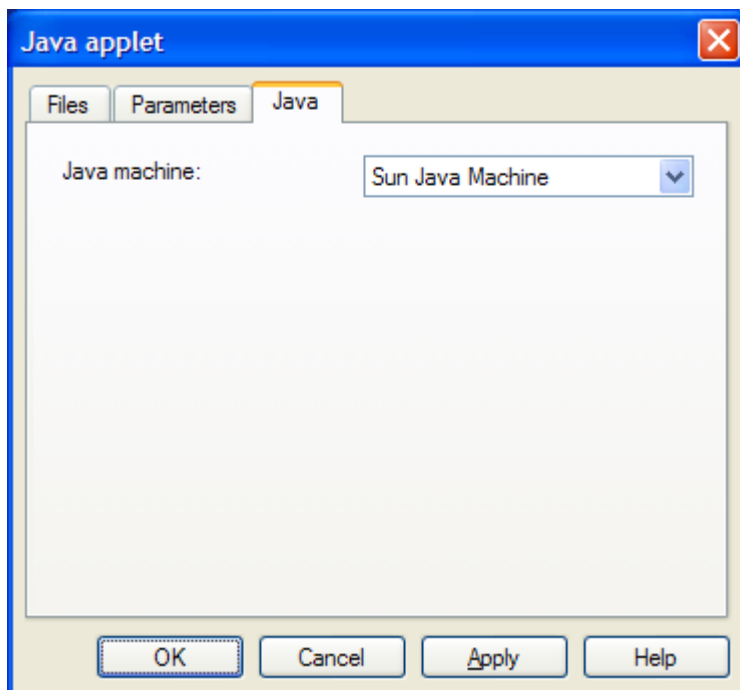
Insert the Java Applet Object into the Frame. Open the "Properties" dialog screen.



Specify the **path to the Java Applet** you are going to insert. Depending on the applet, it can be single JAR-archive or set of files. You should specify the path to the archive and main (start) file in the first case, and the main class file and all additional files in second case. Next, the Applet file(s) will be automatically copied into the "Images" folder of the current learning Module.



On the **Parameters** tab you can define **horizontal and vertical margins** (the space between the Object border and actual Java Applet window), **alternate text** (will be displayed for the user if the Java environment is not installed), and **applet parameters** (will be transferred to applet upon applet start).



On the **Java** tab you can specify preferred Java Virtual Machine (Sun or Microsoft).

LIMITATION: During insertion of the Java Applet, the content for this Applet is unknown to the CourseLab editor so the Java Applet placeholder will be displayed in the editing mode instead.

5.5.7. Navigation Objects

Navigation Objects enable transitions among Slides and Frames. The majority of Navigation Objects have some usage limitations so be cautious when implementing.

5.5.7.1. The Navigation Menu

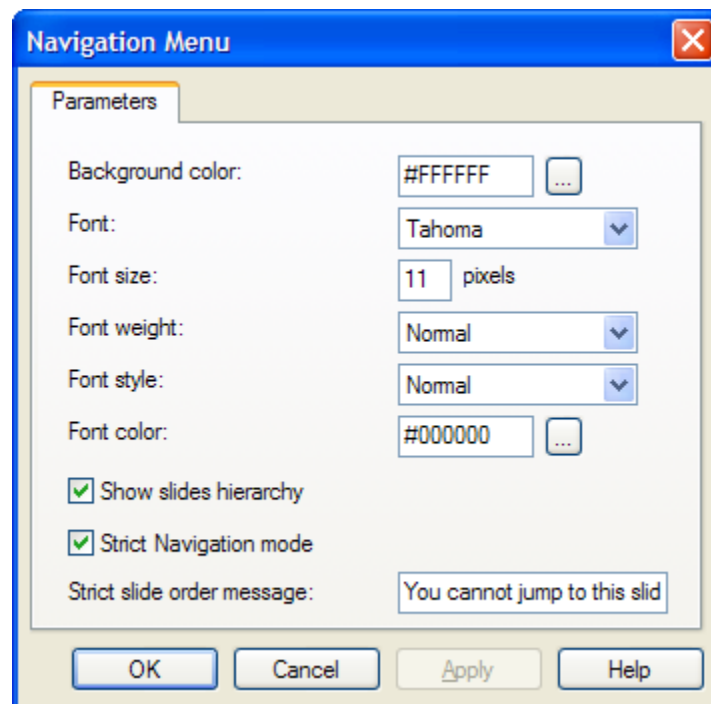
The Navigation Menu enables tracking of the current Slide name and an instant transition to another Slide upon selection of its name (if there are no restrictions for such a transition by other conditions)

LIMITATION: This Object can ONLY be placed ON THE MASTER-SLIDE.

Example of the appearance a Navigation Menu:



Position this Object on the Master-Slide and open the “Properties” dialog screen.



You can modify different Navigation menu display settings. The option “**Show Slide hierarchy**” allows you to modify the display mode of the Slide’s structure in the Module.

Strict Navigation Mode – automatic blocking of the navigation Object from the moment the Slide was opened until all Objects on this Slide, displayed in the Timeline panel of the frame, were played back.

Strict Slide order message will be displayed if the learner tries to jump more than one Slide further and **strict Slide order** mode is enabled in the Module run-time settings.

Object Methods

The state of this Object can be modified using these Methods.

Method name	Execution Result
DISABLE ACCESS	Restrict access to Navigation menu.
ENABLE ACCESS	Permit access to Navigation menu.

Object Specific Properties

Along with common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

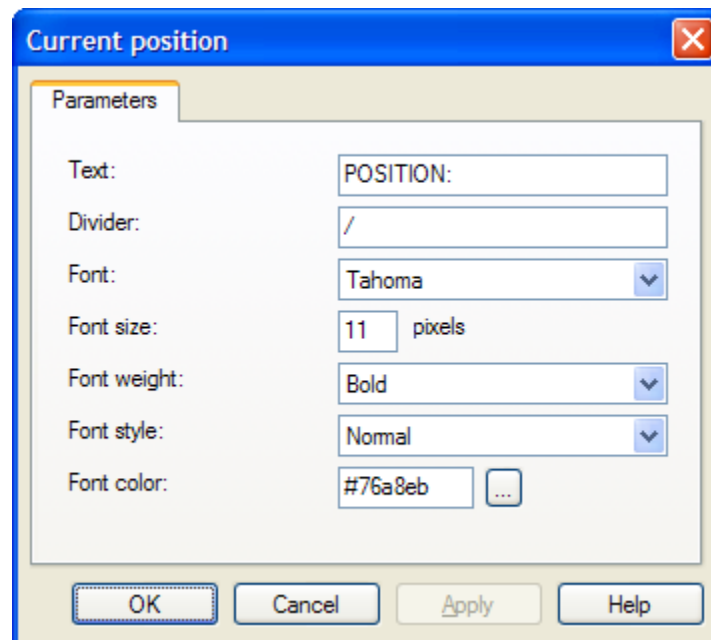
Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled; 0 otherwise.	\$OBJ_ID.disabled
selectedID	Returns ID of current Slide	\$OBJ_ID.selectedID
selectedName	Returns Slidename of current Slide	\$OBJ_ID.selectedName
selectedNumber	Returns number of current Slide	\$OBJ_ID.selectedNumber
totalEntries	Return total number of selector options	\$OBJ_ID.totalEntries

5.5.7.2. Current Position

The Current Position Object enables the tracing of the Slide number against the total number of Slides.

LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.

Position this Object on the Master-Slide and open the “Properties” dialog screen.



By default, the Object displays the following label: “POSITION: N/M” (where N is a Slide number, and M is a total number of Slides). You can modify the text, divider, and some other display parameters according to the overall design of the learning Module.

In this example, the Navigation Menu shows that we are positioned at Slide 1 of 2: POSITION: 1/2

Object Specific Properties

Along with common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

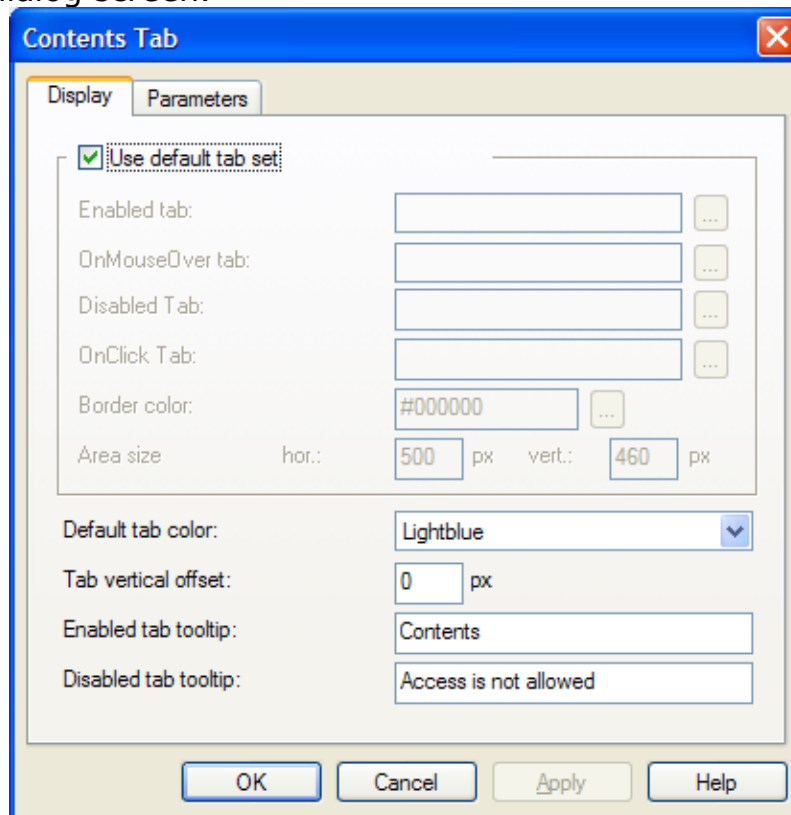
Property	Returns	Syntax
currentPosition	Returns number of current Slide	\$OBJ_ID.currentPosition

5.5.7.3. The “Contents” tab

The **Contents tab** enables the displaying of the list of Slide names within the Module and the ability to transition to other Slides by selecting their names (as long as the transition to the selected Slide is in agreement with other conditions).

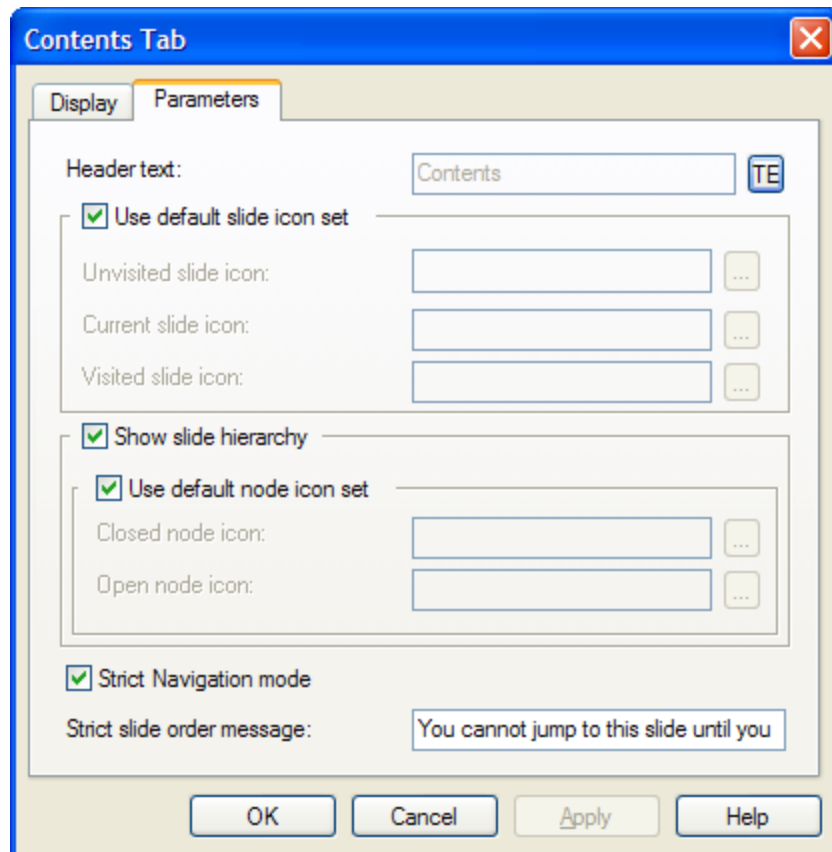
LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.

Add this Object to the Master-Slide. Position it the way you prefer. Open the “Properties” dialog screen.



On the **Display** tab you can specify a tab’s display parameters. If the default tab set is used, you can select color, change vertical margin with relation to the top border of the Object, and specify mouse-over tool-tip messages for both active and inactive tabs.

If the default tab set option is unchecked you can use custom images for displaying tabs, and changing an Object’s border size, and color.



On the **Parameters** tab you can specify additional parameters. The **Use standard Slides icons** option enables you to replace the Slide's icons, if desired.

The option "**Show Slide hierarchy**" enables you to modify the display mode of the Slide's structure in the Module. You can also replace images which represent hierarchy connectors, if desired.

Strict Navigation Mode – automatic blocking of the navigation Object from the moment the Slide is opened until all Objects on this Slide, displayed in the Timeline panel of the Frame, have been played back.

Strict Slide order message will be displayed if the learner tries to jump more than one Slide ahead as long as the **strict Slide order** mode has been enabled in the Module run-time settings.

Example of Contents Tab appearance:



Object Methods

The state of this Object can be modified using these Methods.

Method name	Execution Result
DISABLE ACCESS	Restrict access to Contents Tab.
ENABLE ACCESS	Permit access to Contents Tab.
OPEN TAB	Opens Tab (if access is not disabled)
CLOSE TAB	Closes Tab

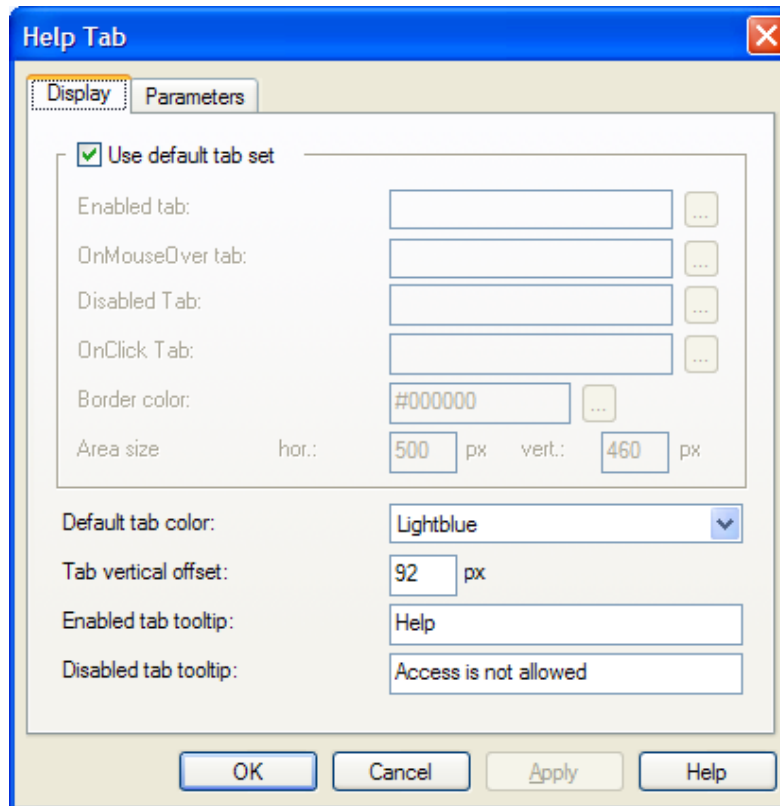
Object Specific Properties

Along with the common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled, 0 otherwise.	\$OBJ_ID.disabled
open	Returns 1 if Object is currently open, 0 otherwise.	\$OBJ_ID.open

5.5.7.4. The “Help” tab

The “**Help**” tab enables the display of the Help information block for the whole Module.



LIMITATION: This Object can only be placed ON THE MASTER-SLIDE.

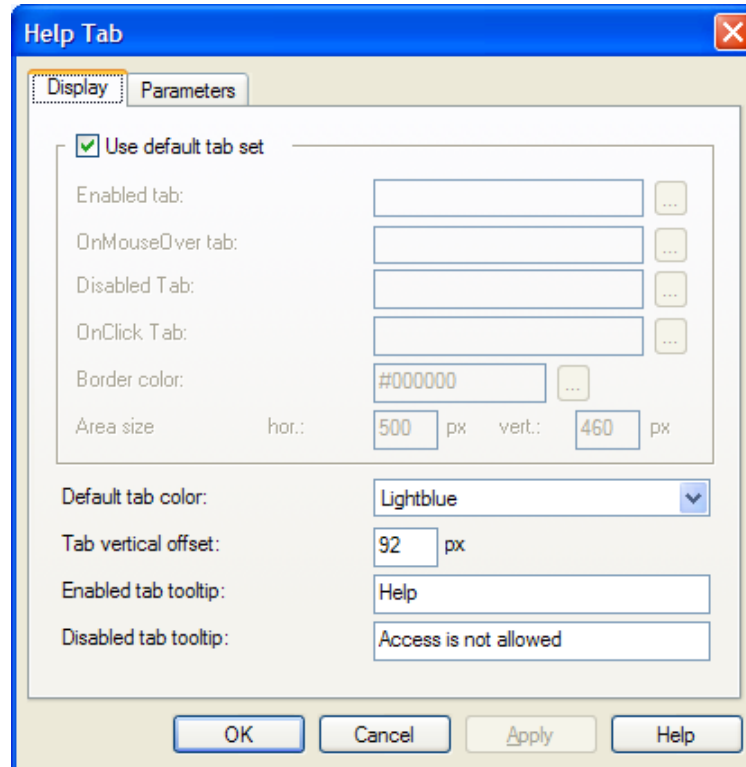
Position this Object on the Master-Slide and open the “Properties” dialog screen.

On the **Display** tab you can specify the tab’s display parameters. If the default tab set is used, you can select color, change vertical margin with relation to the top border of the Object, and specify mouse-over tool-tip messages for both active and inactive tabs.

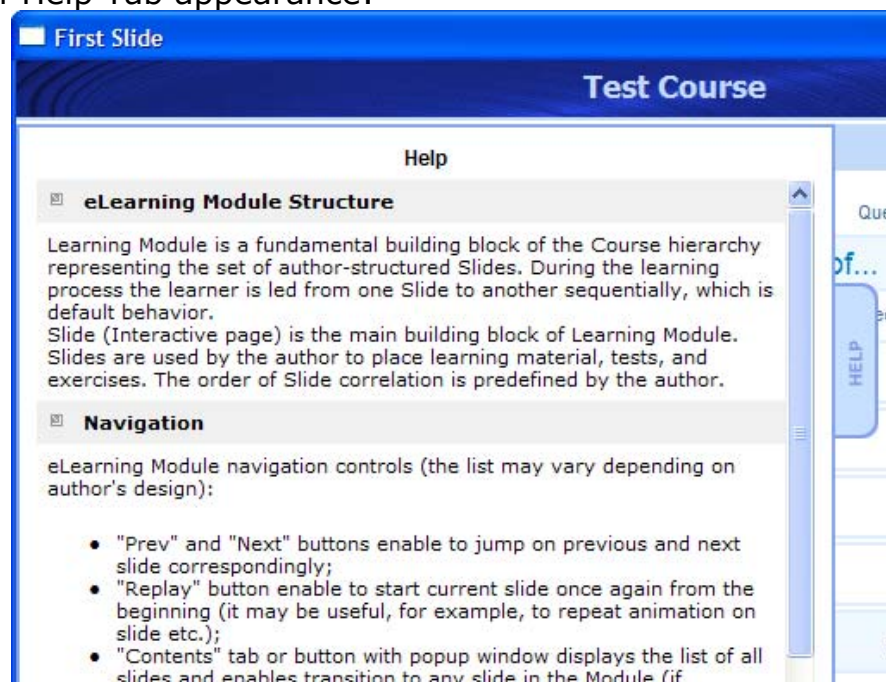
If the default tab set option is unchecked, you can use custom images for displaying tabs and change the Object’s border size, and color.

On the Parameters tab you can modify the label of the Help tab and insert Help text into the text editable field.

Strict Navigation Mode – automatic blocking of the navigation Object from the moment the Slide is opened until all Objects on this Slide, displayed in the Timeline panel of the Frame, were played back. By default, Strict Navigation Mode for the “Help” tab is turned off.



Example of Help Tab appearance:



Object Methods

The state of this Object can be modified using these Methods.

Method name	Execution Result
DISABLE ACCESS	Restrict access to Contents Tab.
ENABLE ACCESS	Permit access to Contents Tab.
OPEN TAB	Opens Tab (if access is not disabled)
CLOSE TAB	Closes Tab

Object Specific Properties

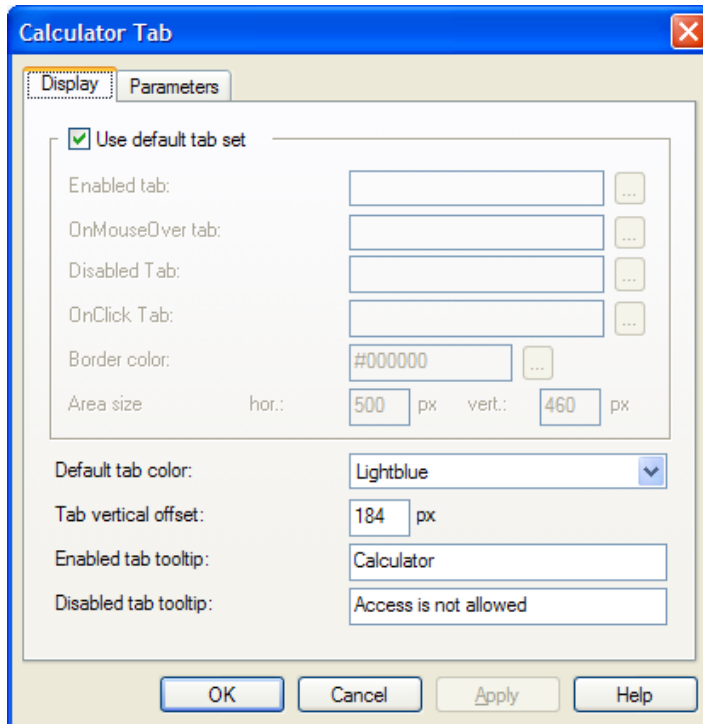
Along with the common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled; 0 otherwise.	\$OBJ_ID.disabled
open	Returns 1 if Object is currently open, 0 otherwise.	\$OBJ_ID.open

5.5.7.5. The “Calculator” tab

The “**Calculator**” tab enables the display of the Calculator which can be used for calculations inside the Module.

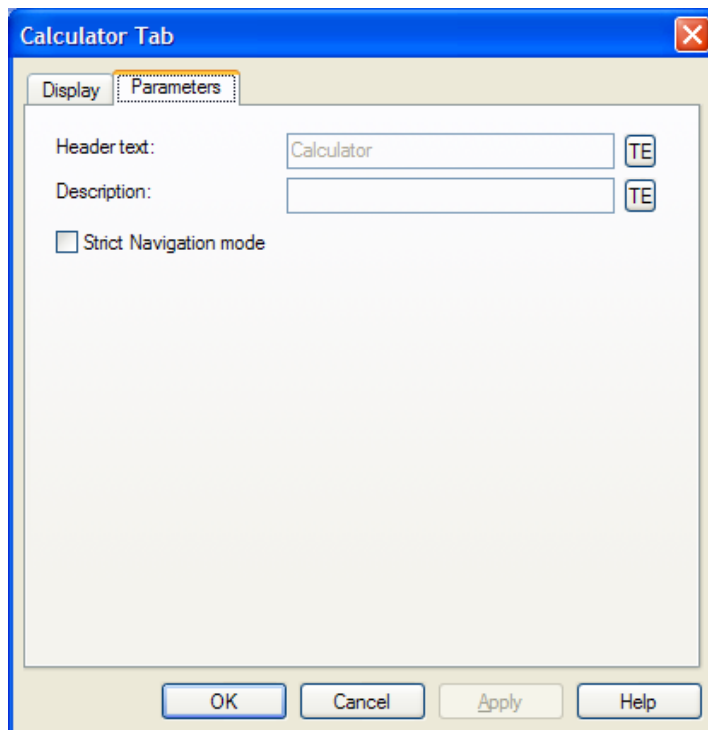
LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.



Position this Object on the Master-Slide and open the “Properties” dialog screen.

On the **Display** tab you can specify the tab’s display parameters. If the default tab set is used, you can select the color, change vertical margin with relation to the top border of the Object, and specify mouse-over tool-tip messages for both active and inactive tabs.

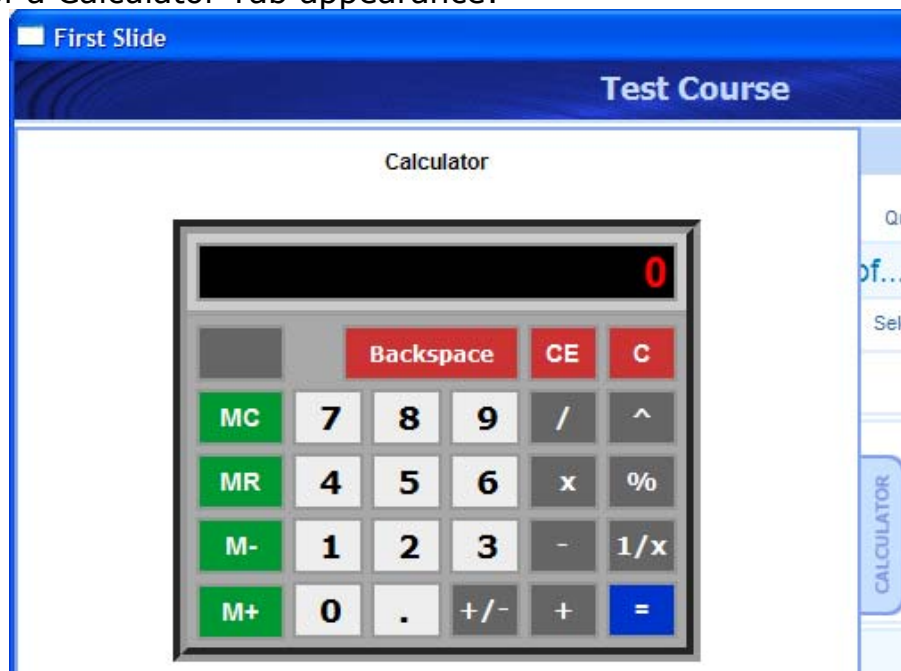
If the default tab set option is unchecked, you can use custom images for displaying tabs and change the Object’s border size, and color.



On the **Parameters** tab you can modify the label of the “Calculator” tab and insert instructions on using the Calculator into the text-editable field.

Strict Navigation Mode – automatic blocking of the navigation Object from the moment the Slide is opened until all Objects on this Slide, displayed in the Timeline panel of the Frame, were played back. By default, Strict Navigation Mode for the “Calculator” tab is turned off.

Example of a Calculator Tab appearance:



Object Methods

The state of this Object can be modified using these Methods.

Method name	Execution Result
DISABLE ACCESS	Restrict access to Contents Tab.
ENABLE ACCESS	Permit access to Contents Tab.
OPEN TAB	Opens Tab (if access is not disabled)
CLOSE TAB	Closes Tab

Object Specific Properties

Along with common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

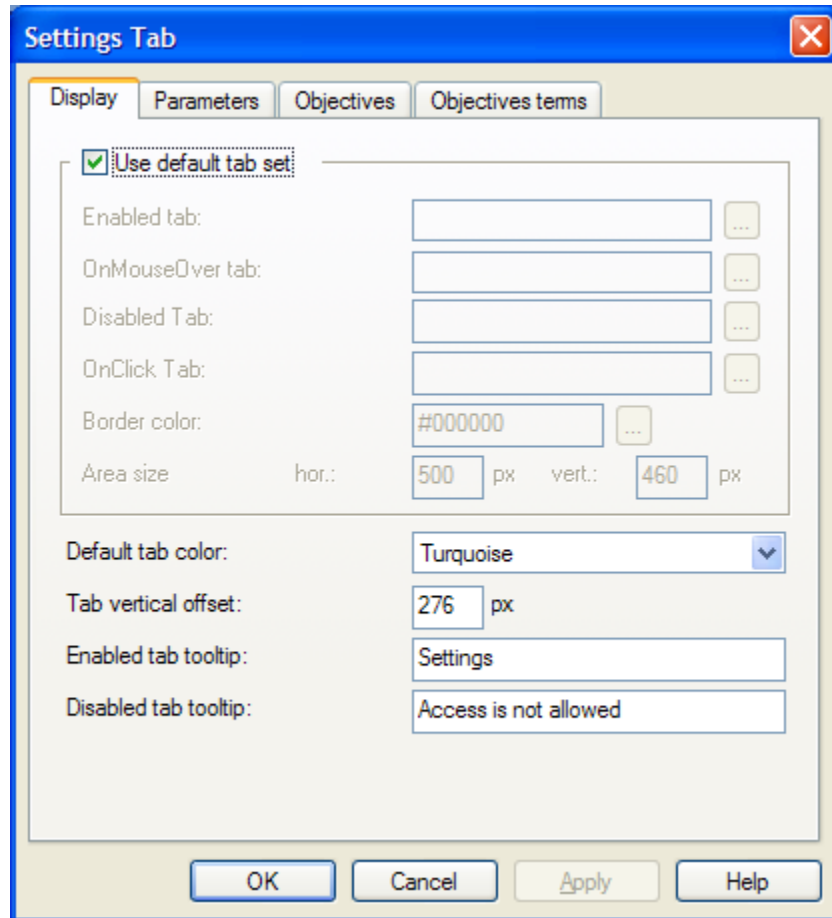
Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled, 0 otherwise.	\$OBJ_ID.disabled
open	Returns 1 if Object is currently open, 0 otherwise.	\$OBJ_ID.open
value	Returns current value from calculator display	\$OBJ_ID.value

5.5.7.6. "Settings" tab

The "**Settings**" tab enables the display of current Settings for the Module.

LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.

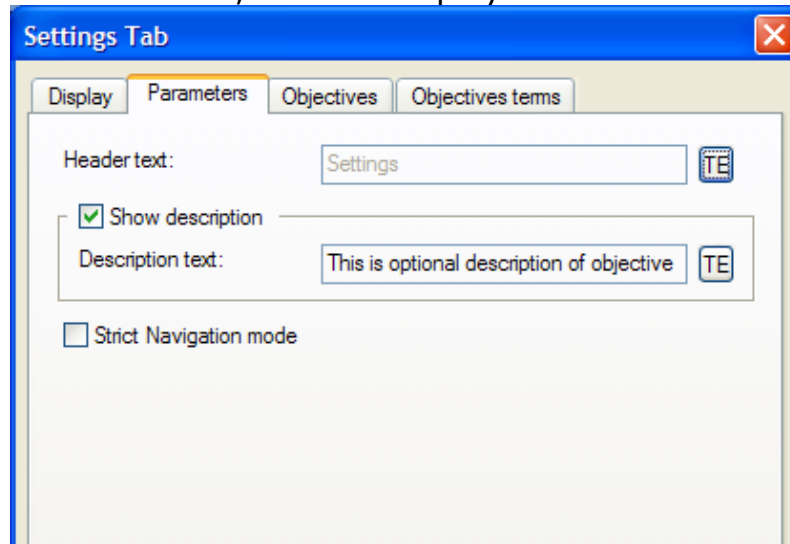
Position this Object on the Master-Slide and open the "Properties" dialog screen.



If the **default tab** is checked, you can select the color, change vertical margin with relation to the top border of the Object, and specify mouse-over tool-tip messages for both enabled and disabled tabs.

If the **default tab** option is unchecked you can use custom images for displaying tabs and change the Object's border size, and color. You can modify the header of the Settings tab and insert description texts into the Rich Text fields.

Strict Navigation Mode – automatic blocking of the navigation Object from the moment the Slide opens until all Objects on this Slide, displayed in the Timeline panel of the Frame, have been played back.



The screenshot shows the 'Settings Tab' dialog box with the 'Parameters' tab selected. The 'Header text' field contains 'Settings'. The 'Show description' checkbox is checked, and the 'Description text' field contains 'This is optional description of objective'. The 'Strict Navigation mode' checkbox is unchecked.

Settings Tab

Display Parameters Objectives Objectives terms

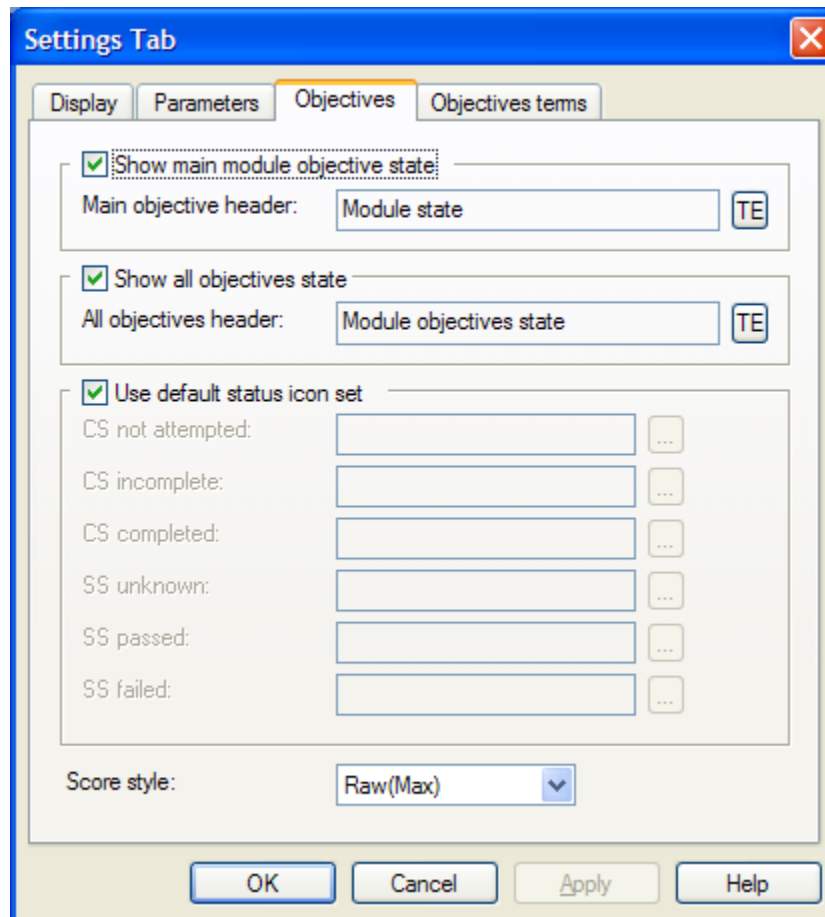
Header text: Settings TE

☒ Show description

Description text: This is optional description of objective TE

☐ Strict Navigation mode

On the **Objectives** tab you can select which Module parameters will be displayed.



The screenshot shows the 'Settings Tab' dialog box with the 'Objectives' tab selected. The 'Show main module objective state' checkbox is checked, and the 'Main objective header' field contains 'Module state'. The 'Show all objectives state' checkbox is checked, and the 'All objectives header' field contains 'Module objectives state'. The 'Use default status icon set' checkbox is checked. Below this, there are six rows for status icons: 'CS not attempted:', 'CS incomplete:', 'CS completed:', 'SS unknown:', 'SS passed:', and 'SS failed:'. Each row has a text field and a button with three dots. The 'Score style' dropdown menu is set to 'Raw(Max)'.

Settings Tab

Display Parameters Objectives Objectives terms

☒ Show main module objective state

Main objective header: Module state TE

☒ Show all objectives state

All objectives header: Module objectives state TE

☒ Use default status icon set

CS not attempted: ...

CS incomplete: ...

CS completed: ...

SS unknown: ...

SS passed: ...

SS failed: ...

Score style: Raw(Max) v

OK Cancel Apply Help

On the **Objectives terms** tab you can define messages and tooltips that will be presented to learner.

The 'Settings Tab' dialog box has four tabs: 'Display', 'Parameters', 'Objectives', and 'Objectives terms'. The 'Objectives terms' tab is selected. It contains the following fields:

- Objectives table heading: Objective name
- Score table heading: Score
- Completion status tooltip: Completion status:
- Success status tooltip: Success status:

Below these fields is a section titled 'Status values' with the following fields:

- Unknown: unknown
- Not attempted: not attempted
- Incomplete: incomplete
- Completed: completed
- Succeeded: passed
- Failed: failed

At the bottom are buttons for 'OK', 'Cancel', 'Apply', and 'Help'.

Example of Settings Tab appearance:

The 'Settings' dialog box shows the following content:

Settings

This is optional description of objectives.

Module state

<input checked="" type="checkbox"/>	<input type="checkbox"/>	Total score	5(10)
-------------------------------------	--------------------------	--------------------	-------

Module objectives state

	Objective name	Score	
<input type="checkbox"/>	<input type="checkbox"/>	n1	0(5)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Second obj	0(10)

On the right side of the dialog box, there is a vertical tab labeled 'SETTINGS'.

Object Methods

The state of this Object can be modified using these Methods.

Method name	Execution Result
DISABLE ACCESS	Restrict access to Contents Tab.
ENABLE ACCESS	Permit access to Contents Tab.
OPEN TAB	Opens Tab (if access is not disabled)
CLOSE TAB	Closes Tab

Object Specific Properties

Along with the common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

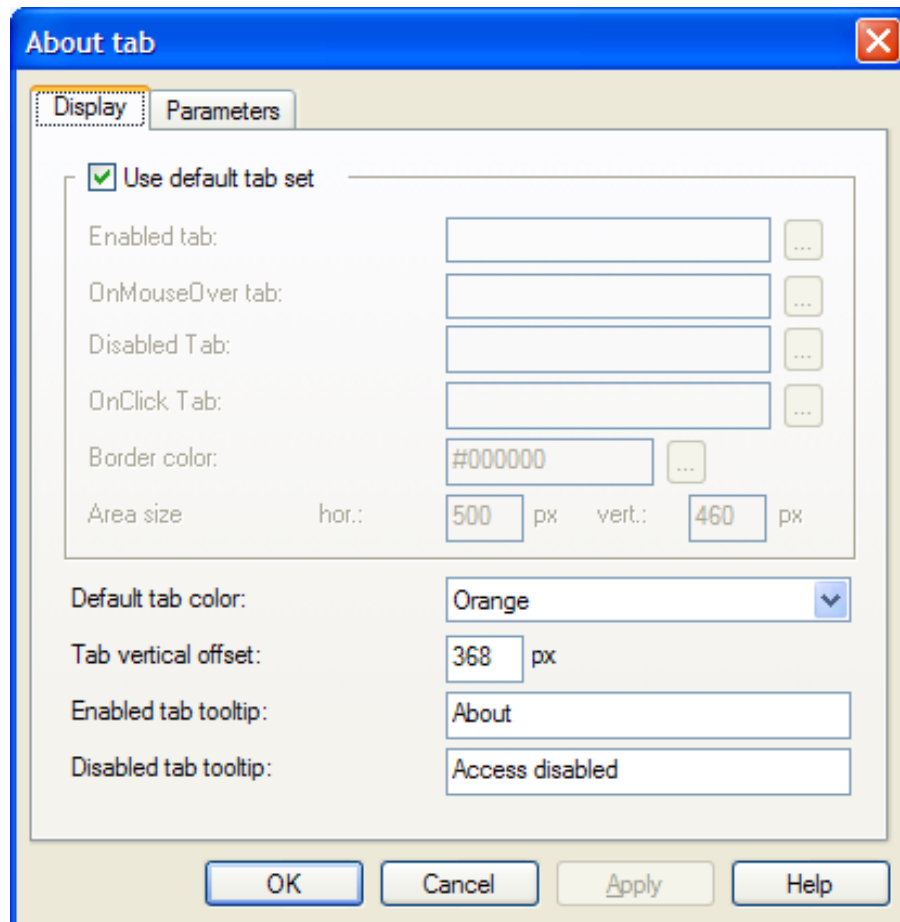
Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled, 0 otherwise.	\$OBJ_ID.disabled
open	Returns 1 if Object is currently open, 0 otherwise.	\$OBJ_ID.open

5.5.7.7. The “About” tab

The “**About**” tab enables display of the information text block for the Module.

LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.

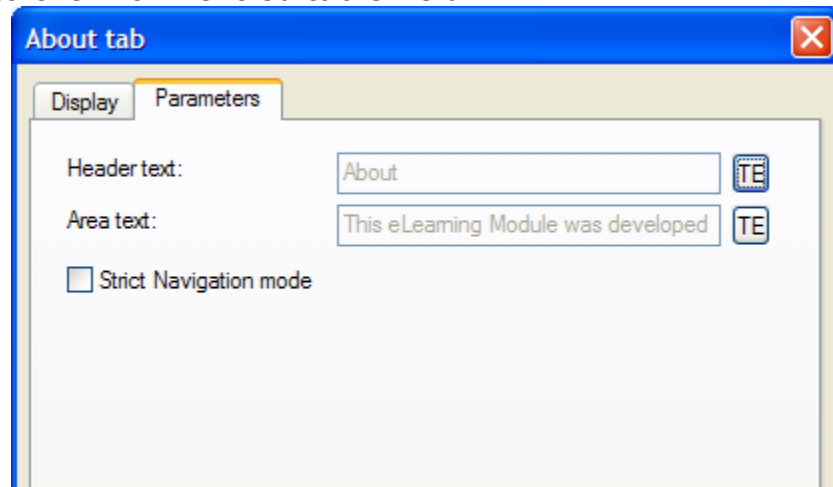
Position this Object on the Master-Slide and open the “Properties” dialog screen.



On the **Display** tab you can specify the tab’s display parameters. If the default tab set is used, you can select the color, change the vertical margin with relation to the top border of the Object, and specify mouse-over tool-tip messages for both active and inactive tabs.

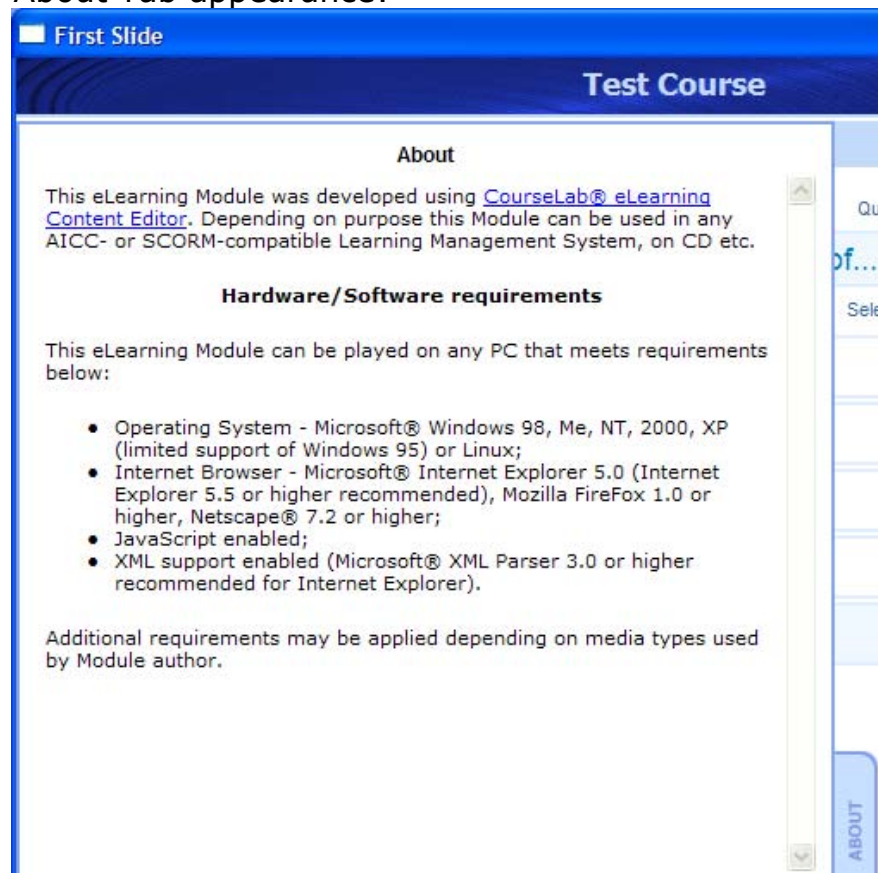
If default tab set option is unchecked you can use custom images for displaying tabs and change the Object’s border size, and color.

On the **Parameters** tab you can modify the label of the Help tab and insert Help text into the Rich Text editable field.



Strict Navigation Mode – automatic blocking of the navigation Object from the moment the Slide is opened until all Objects on this Slide, displayed in the Timeline panel of the Frame, have been played back. By default, Strict Navigation Mode for the "About Course" tab is turned off.

Example of About Tab appearance:



Object Methods

The state of this Object can be modified using these Methods.

Method name	Execution Result
DISABLE ACCESS	Restrict access to Contents Tab.
ENABLE ACCESS	Permit access to Contents Tab.
OPEN TAB	Opens Tab (if access is not disabled)
CLOSE TAB	Closes Tab

Object Specific Properties

Along with the common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled, 0 otherwise.	\$OBJ_ID.disabled
open	Returns 1 if Object is currently open, 0 otherwise.	\$OBJ_ID.open

5.5.7.8. "Next" Button

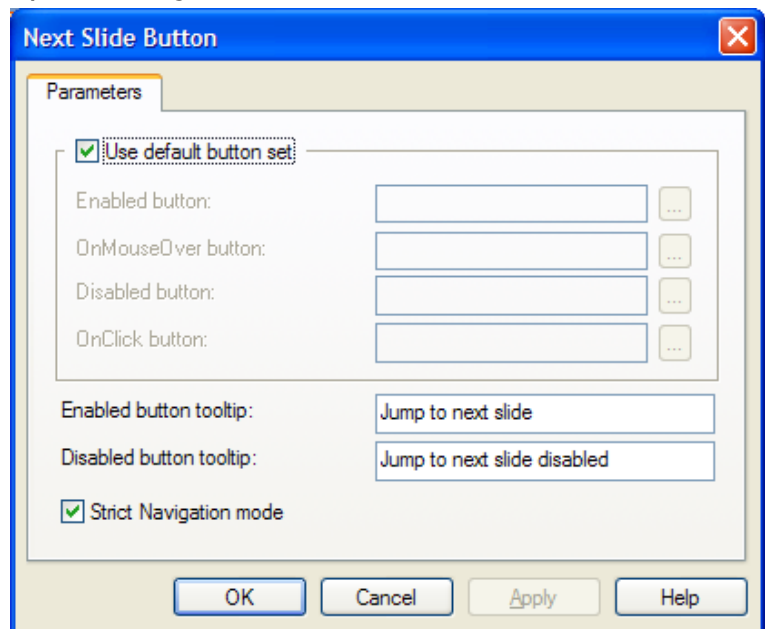
The **"Next"** Button Object is a special Object which enables transition to the next Slide.

LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.

Position this Object on the Master-Slide and open the "Properties" dialog screen.

By default, the standard "Next" button is used. If you prefer to use a different button, remove the check mark on "Use default button set".

Fields for specifying the path to the new pictures become active. Use any graphic editor to create the following four pictures:



- The first picture displays the button in its enabled state (specify the path to the image under "Enabled Button")
- The second picture will replace the first one If user moves the mouse over the enabled button (specify the path to the image under "OnMouseOver Button").
- The third picture displays the disabled button (specify the path to the image under "Disabled Button")
- The fourth picture displays the button being pressed (specify the path to the image under "OnClick Button")

You can specify mouse-over tool-tip messages for both enabled and disabled buttons.

Strict Navigation Mode – automatic blocking of the navigation Object from the moment the Slide is opened until all Objects on this Slide, displayed in the Timeline panel of the Frame, have played back.

The standard Next Button:



Object Methods

The state of this Object can be modified using these Methods.

Method name	Execution Result
DISABLE ACCESS	Restrict access to Button.
ENABLE ACCESS	Permit access to Button.

Object Specific Properties

Along with common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

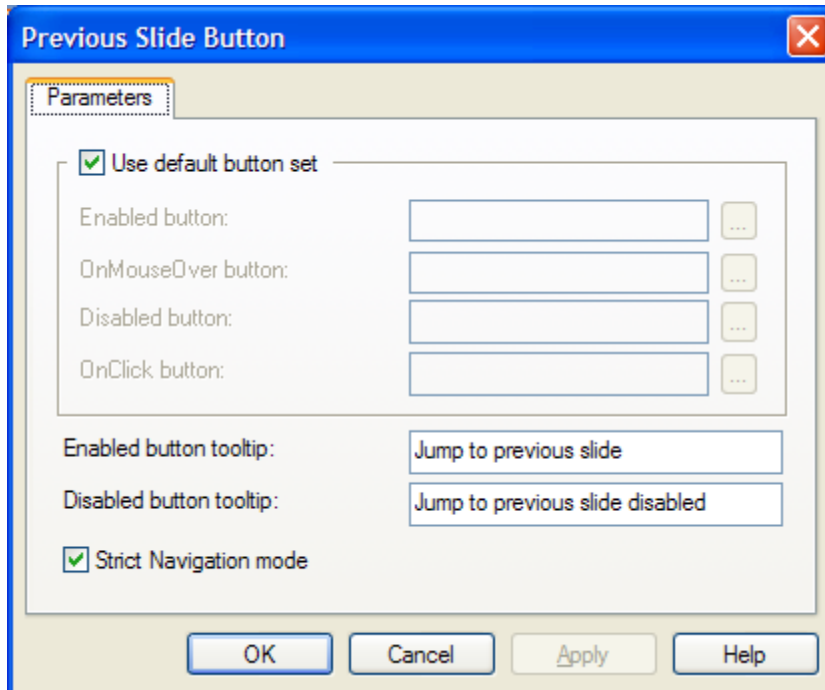
Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled, 0 otherwise.	\$OBJ_ID.disabled

5.5.7.9. “Previous” Button

The “**Previous**” Button Object is a special Object which enables transition back to the previous Slide from the current Slide. The user can navigate through most courses using the Next and Previous buttons.

LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.

Position this Object on the Master-Slide and open the “Properties” dialog screen.



By default, the standard “Previous” button is used. If you prefer to use a different button, remove the checkmark on “Use default button set”. Fields for specifying path to your new pictures become active. Use any graphic editor to create the following four pictures:

- The first picture displays the button in its enabled state (specify the path to the image under “Enabled Button”)
- The second picture will replace the first one if the user moves the mouse over the enabled button (specify the path to the image under “OnMouseOver Button”).
- The third picture displays the disabled button (specify the path to the image under “Disabled Button”)
- The fourth picture displays the button being pressed (specify the path to the image under “OnClick Button”)

You can specify mouse-over tool-tip messages for both enabled and disabled buttons.

Strict Navigation Mode – automatic blocking of the navigation Object from the moment the Slide is opened until all Objects on this Slide, displayed in the Timeline panel of the Frame, have played back.

The standard Previous Button:



Object Methods

The state of this Object can be modified using these Methods.

Method name	Execution Result
DISABLE ACCESS	Restrict access to Button.
ENABLE ACCESS	Permit access to Button.

Object Specific Properties

Along with common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

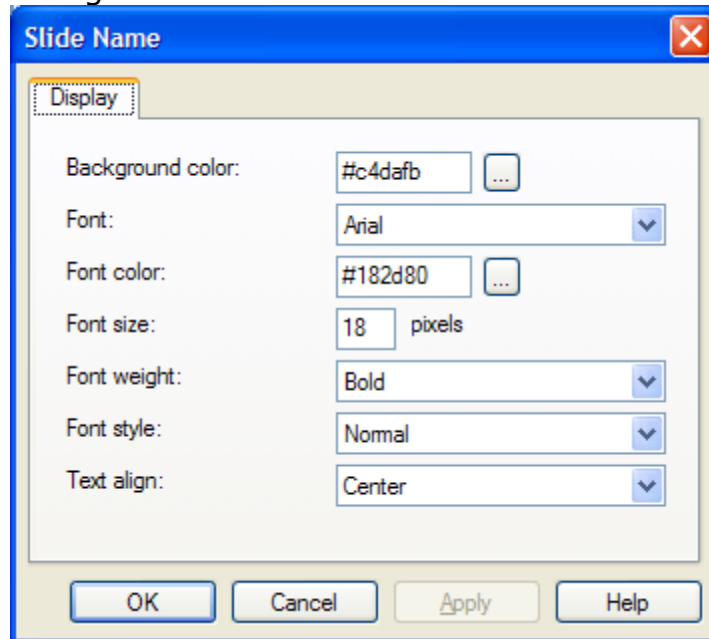
Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled, 0 otherwise.	\$OBJ_ID.disabled

5.5.7.10. Slide Name

The Slide Name Object enables you to automatically display the current Slide name defined in the Editor.

LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.

Add this Object to the Master-Slide. Position it the way you prefer (usually, located on the top portion of the Master Slide, just like the heading). Open the "Properties" dialog screen.



There you can modify the background color and font settings for the Slide Name according to the overall design of the learning Module.

LIMITATION: The Slide Name will be displayed completely only while playing the actual Course. The name substitute will be displayed while in the editing mode.

Example of Slide Name appearance:



Object Specific Properties

Along with the common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

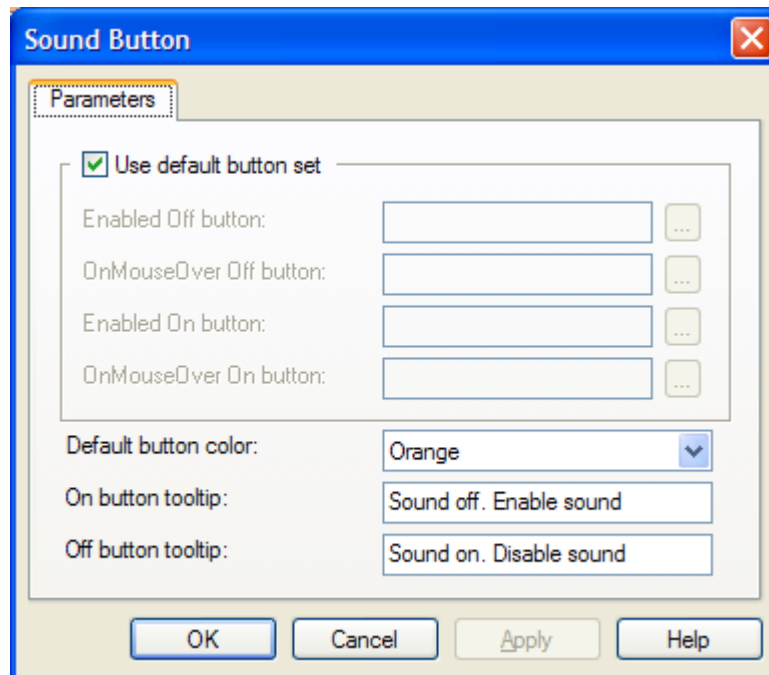
Property	Returns	Syntax
slideName	Returns Slidename of current Slide	\$OBJ_ID.slideName

5.5.7.11. "Sound" Button

The “**Sound**” Button Object is a special Object which enables turning on and off the audio feature of the Module.


LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.

Position this Object on the Master-Slide and open the “Properties” dialog screen.



By default, the standard “Sound” button is used. If you prefer to use a different button, uncheck “Use default button set”. Fields for specifying the path to the new pictures become enabled. Create following four pictures:

- The first picture displays the “Sound” button in the “On” state and the button can be pressed to turn the Sound Off (specify the path to the image under “Enabled Off Button”)
- The second picture will replace the first one when the user moves the mouse over the enabled button (specify the path to the image under “OnMouseOver Off Button”).
- The third picture displays the “Sound” button in the “Off” state and the button can be pressed to turn the Sound On (specify the path to the image under “Enabled On Button”)
- The fourth picture will replace the third one when the user moves the mouse over the enabled turn On button (specify the path to the image under “OnMouseOver On Button”).

You can also specify mouse-over tool-tip messages for both active and inactive buttons. The standard Sound Button: 

Object Methods

The state of this Object can be modified using these Methods.

Method name	Execution Result
TOGGLE SOUND	Toggles sound on and off

Object Specific Properties

Along with the common Object properties, this Object has a specific property that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

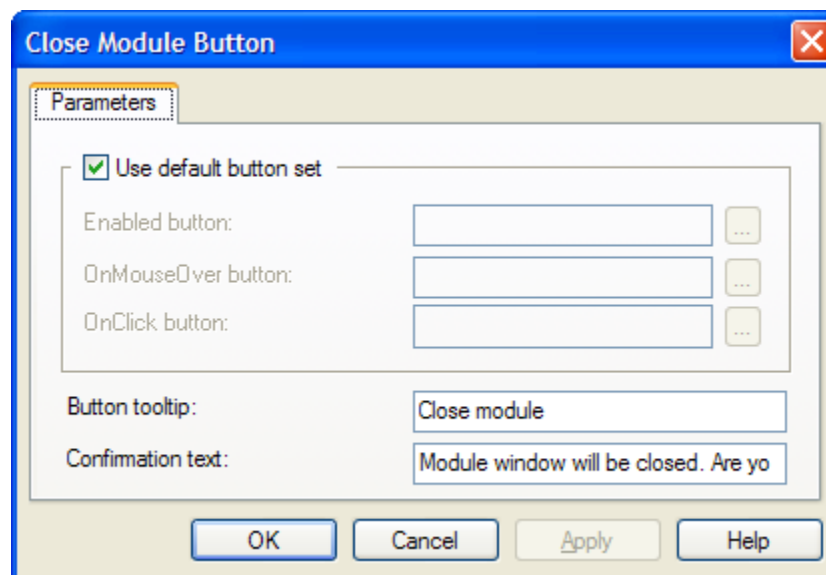
Property	Returns	Syntax
soundOn	Returns 1 if Object is sound is currently on, 0 otherwise.	\$OBJ_ID.soundOn

5.5.7.12. "Close Module" Button

The **"Close Module"** Button Object is a special Object which enables the correct closing of the learning Module.

LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.

Position this Object on the Master-Slide and open the "Properties" dialog screen.



By default, the standard "Close Module" button is used. If you prefer to use different button, remove the checkmark on "Use default button set". Fields for specifying path to the pictures become enabled. Use any graphic editor to create the following three pictures:

- The first picture displays the button in its enabled state (specify the path to the image under "Enabled Button").
- The second picture will replace the first one when the user navigates the mouse over the button (specify the path to the image under "OnMouseOver button").
- The third picture will replace the second one when the button is clicked (specify path to the image under "OnClick button").

You can also specify mouse-over tool-tip messages for the active button and the notification text to be displayed before closing the Module.

Example of a Close Module Button appearance:

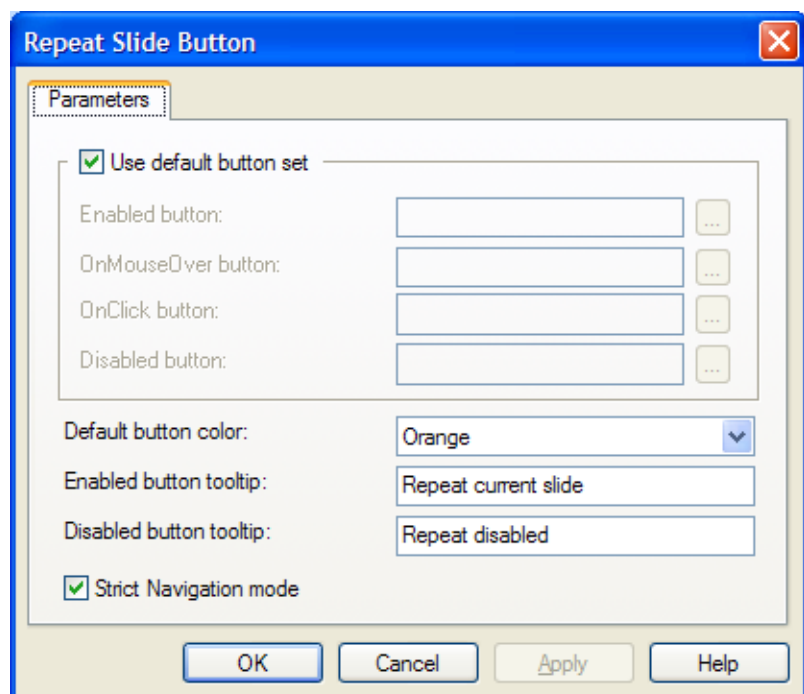


5.5.7.13. "Replay Slide" Button

The "Replay Slide" Button Object is a special Object which enables current Slide reloading (for example, to repeat animation used in the Slide).

LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.

Position this Object on the Master-Slide and open the "Properties" dialog screen.




By default, the standard "Replay Slide" button is used. If you prefer to use a different button, uncheck "Use default button set". Fields for specifying a path to the new pictures become enabled. Use any graphic editor to create the following four pictures:

- The first picture displays the button in its enabled state (specify the path to the image under "Enabled Button")
- The second picture will replace the first one when the user moves the mouse over the enabled button (specify the path to the image under "OnMouseOver Button").
- The third picture displays the button being pressed (specify the path to the image under "OnClick Button")
- The fourth picture displays the disabled button (specify the path to the image under "Disabled Button")

You can also specify mouse-over tool-tip messages for both active and inactive buttons.

Strict Navigation Mode – automatic blocking of the navigation Object from the moment the Slide is opened until all Objects on this Slide, displayed in the Timeline panel of the Frame, are played back.

Example of Close Module Button appearance: 

Object Methods

The state of the Object can be modified using the DISABLE ACCESS and ENABLE ACCESS Methods.

Method name	Execution Result
DISABLE ACCESS	Restrict access to Button.
ENABLE ACCESS	Permit access to Button.

Object Specific Properties

Along with the common Object properties, this Object has one specific property that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

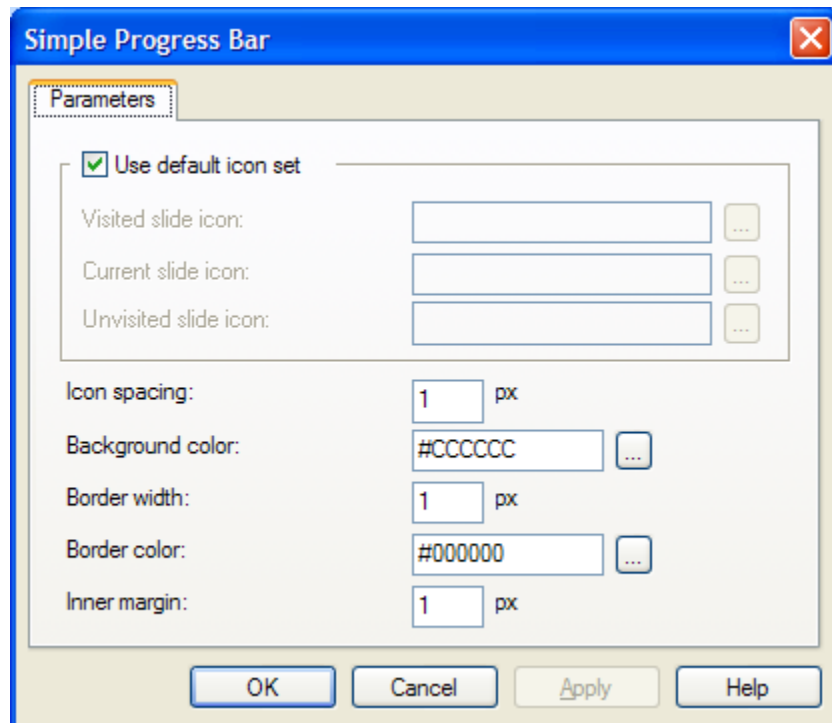
Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled, 0 otherwise.	\$OBJ_ID.disabled

5.5.7.14. "Simple" Progress Bar

The **"Simple" Progress Bar** is a special Object which indicates the number of visited Slides relative to the total number of the Slides.

LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.
Position this Object on the Master-Slide and open the “Properties” dialog screen.

Example of Simple Progress Bar appearance:



By default, the standard Slide’s icons are used. If you wish to use different icons – uncheck the option. Fields for inserting pictures become available. Create 3 images using your graphical editor:

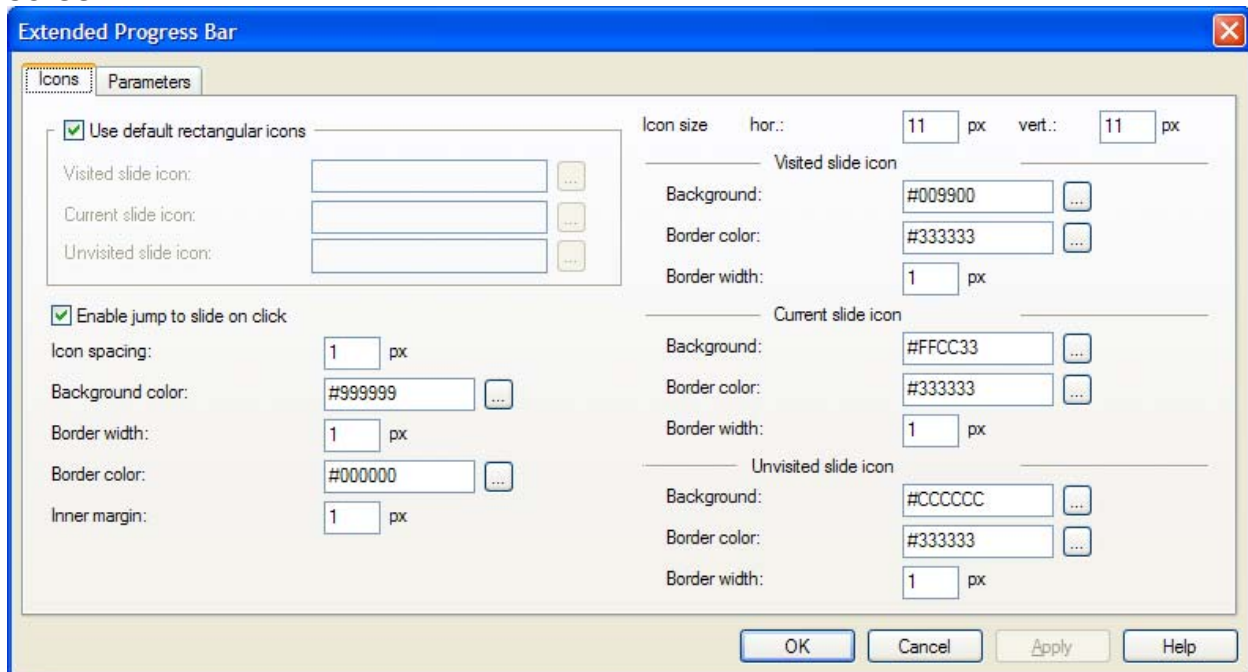
- The first image will display indicating already visited Slides.
- The second image will display indicating the current Slide.
- The third image will be displayed indicating the Slides which are yet to be displayed.

You can also modify the appearance parameters for the background of the progress-indicator.

5.5.7.15. "Extended" Progress Bar

The "Extended" **Progress Bar** is a special Object which shows the number of visited Slides relative to the total number of the Slides. Unlike the "Simple" progress-indicator, the "Extended" Progress Bar displays the name of the current Slide; it also enables exploring the names of other Slides and enables transition to them.

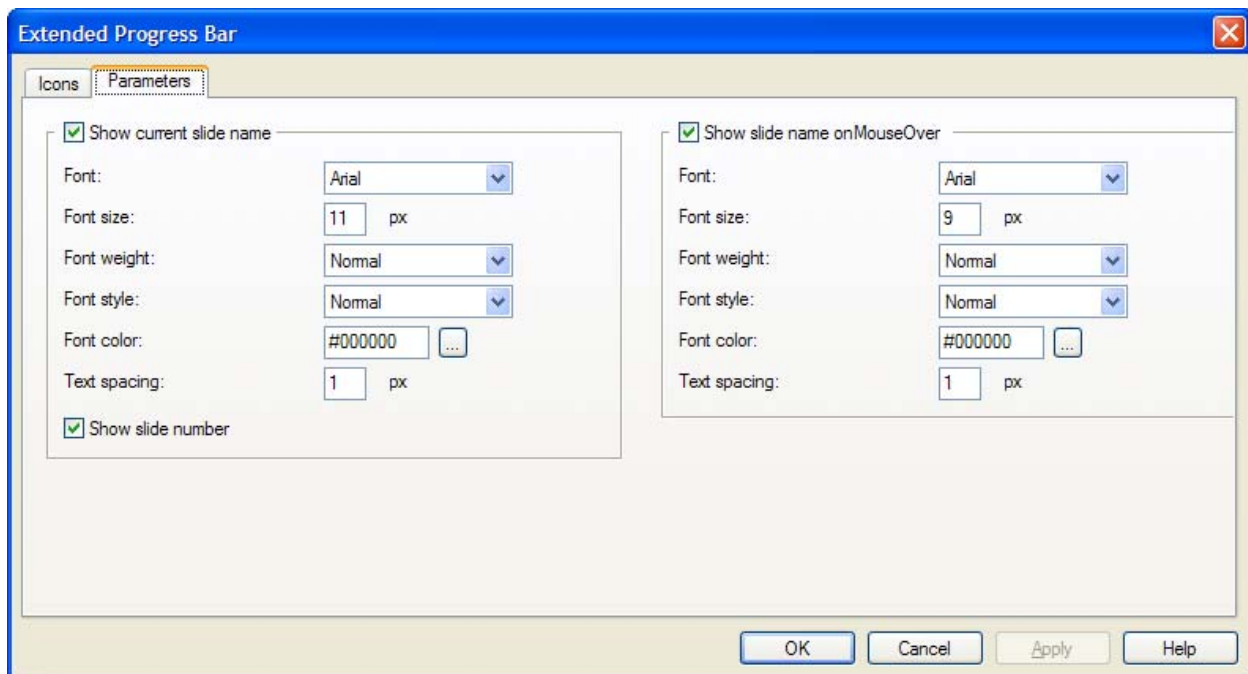
LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.
Position this Object on the Master-Slide and open the "Properties" dialog screen.



By default, the standard Slide's icons are used. If you wish to use different icons, uncheck the option. Fields for inserting pictures become available. Create 3 images using your graphical editor:

- The first image will display indicating the place of already visited Slide.
- The second image will display indicating the current Slide.
- The third image will display indicating the Slides which are yet to be displayed.

If standard elements are used, you can modify their appearance. You can also modify appearance parameters for the background of the progress-indicator.



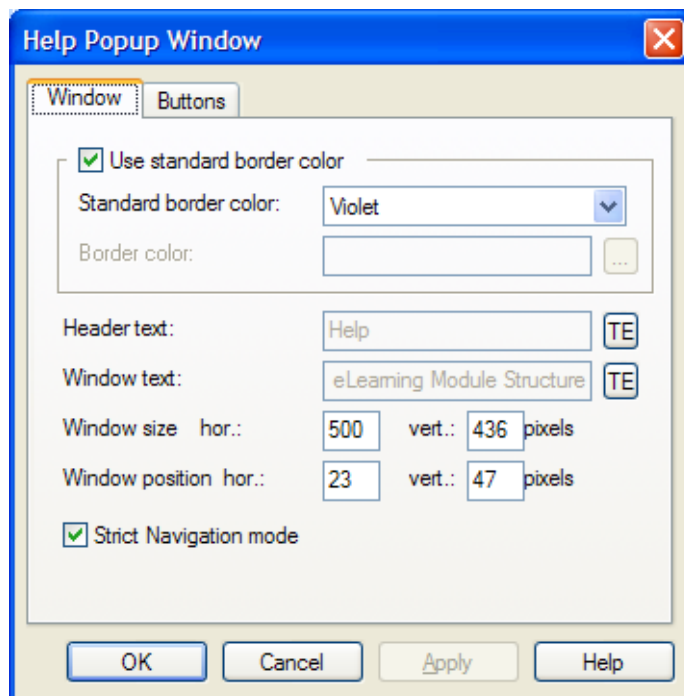
On the Parameters tab you can specify which Slide parameters will be displayed.

Example of the Extended Progress Bar:



5.5.7.16. "Help" Popup Window

The **"Help" Popup Window** Object enables the display of the Help content for the learning module.



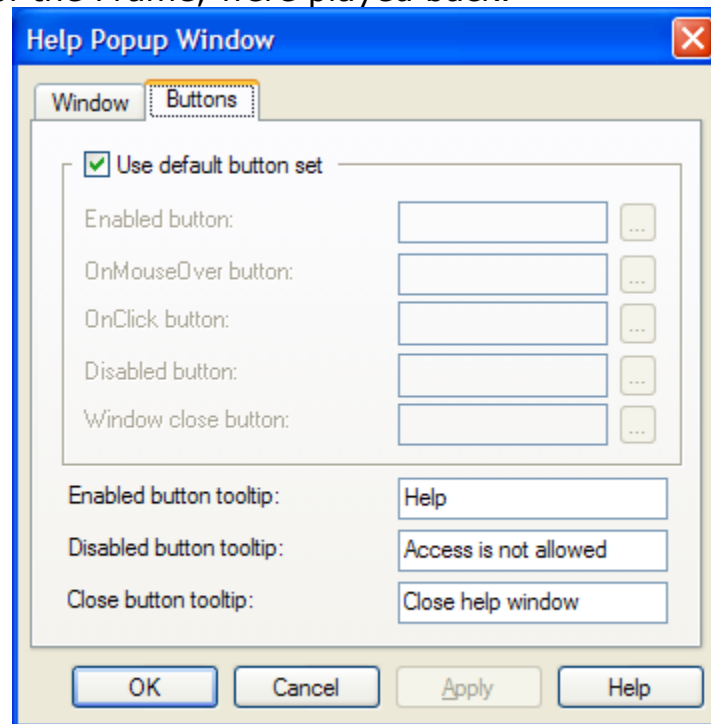
The Object consists of two parts: a button to call the Object and a popup window with help content. Only the "Help" button is visible in editing mode.

LIMITATION: This Object can be placed only ON THE MASTER-SLIDE Add the Object to the Master-Slide. Position the "Help" button and open the "Properties" dialog screen.

In the opened dialog you can select the base color for the Object according to the overall design of the learning Module. You can also modify the title text and style.

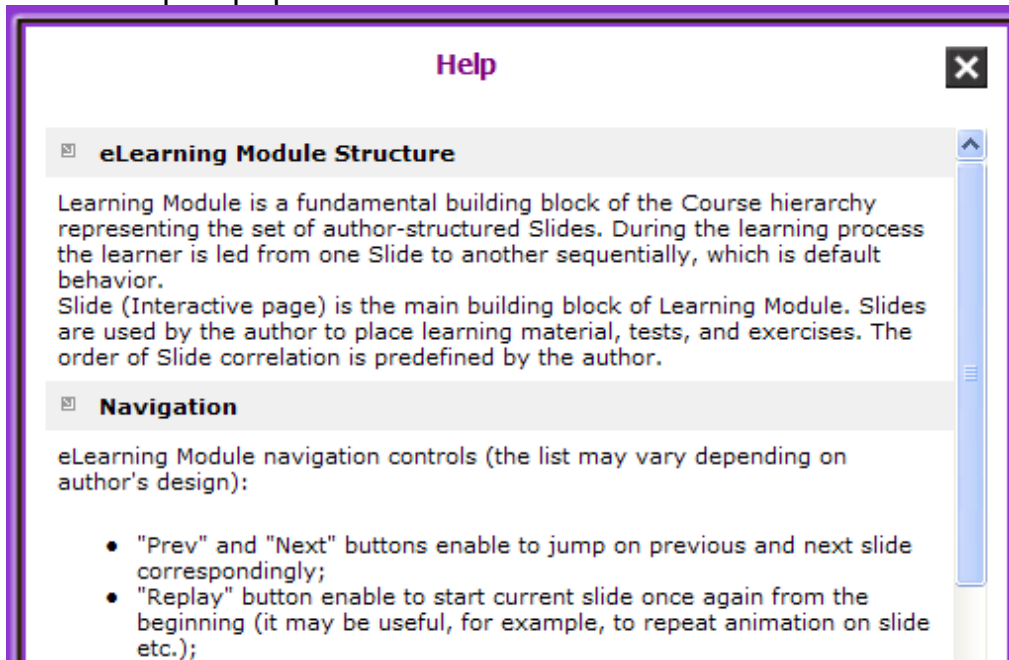
You may input Help content into the “Window text” field which is in Rich Text Format mode - that enables insertion of formatted text, tables, pictures, and so on. The width of the text area is limited so avoid using tables and pictures that exceed 450 pixels in width. You can modify the size and location of the pop-up Help window according to the design of the learning Module. However, there are technical limitations to significant width and height changes.

Strict Navigation Mode – automatic blocking of the navigation Object from the moment the Slide opens until all Objects on this Slide, displayed in the Timeline panel of the Frame, were played back.



On the **Buttons** tab you can specify the button’s properties. If the “Use default button set” option is unchecked you can use custom images for displaying buttons. You can also specify mouse-over tool-tip messages for both active and inactive buttons.

Example of a Help Popup Window:



Object Methods

The state of the Object can be modified using the DISABLE ACCESS and ENABLE ACCESS Methods.

Method name	Execution Result
DISABLE ACCESS	Restrict access to Button.
ENABLE ACCESS	Permit access to Button.

Object Specific Properties

Along with common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

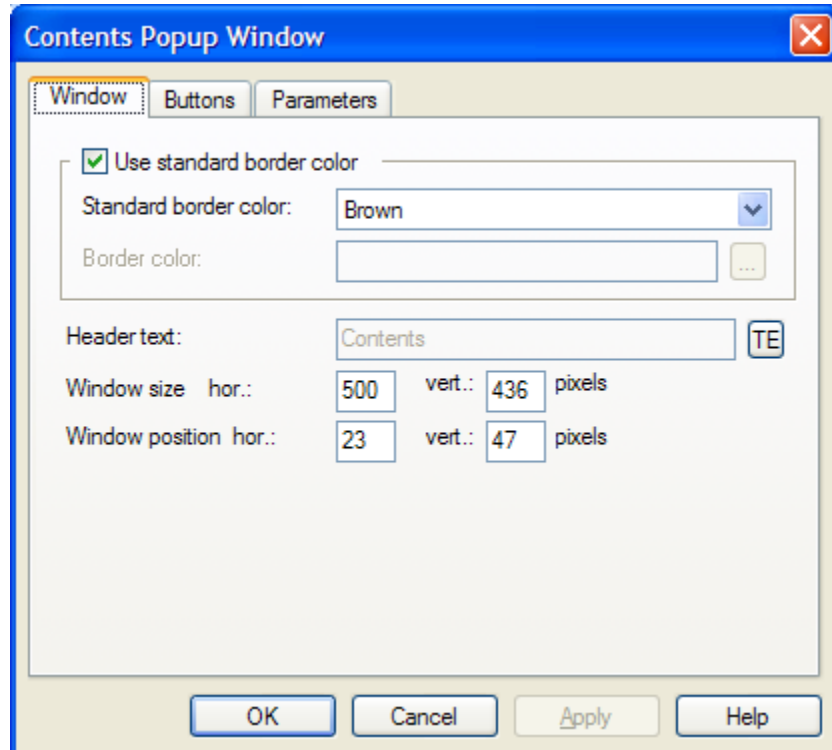
Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled, 0 otherwise.	\$OBJ_ID.disabled
open	Returns 1 if Object is currently open, 0 otherwise.	\$OBJ_ID.open

5.5.7.17. "Contents" Popup Window

The "**Contents**" popup window enables the display of current Module contents, indicates visited Slides, and allows navigation within a Module. The Object consists of two parts: a button to call the Object and a "Contents" popup window. Only the "Contents" button is visible in editing mode.

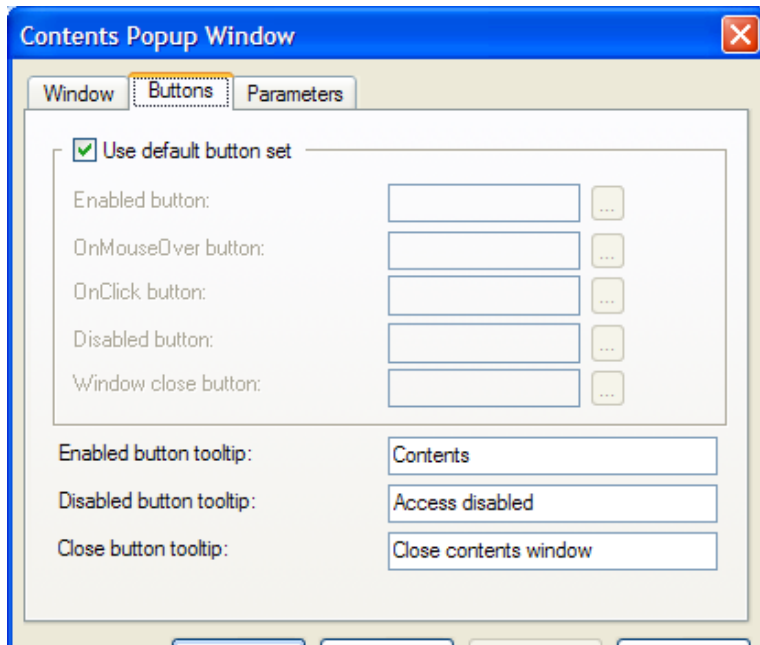
LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.

Add the Object to the Master-Slide. Position the "Contents" button the way you prefer. Open the Properties" dialog screen.

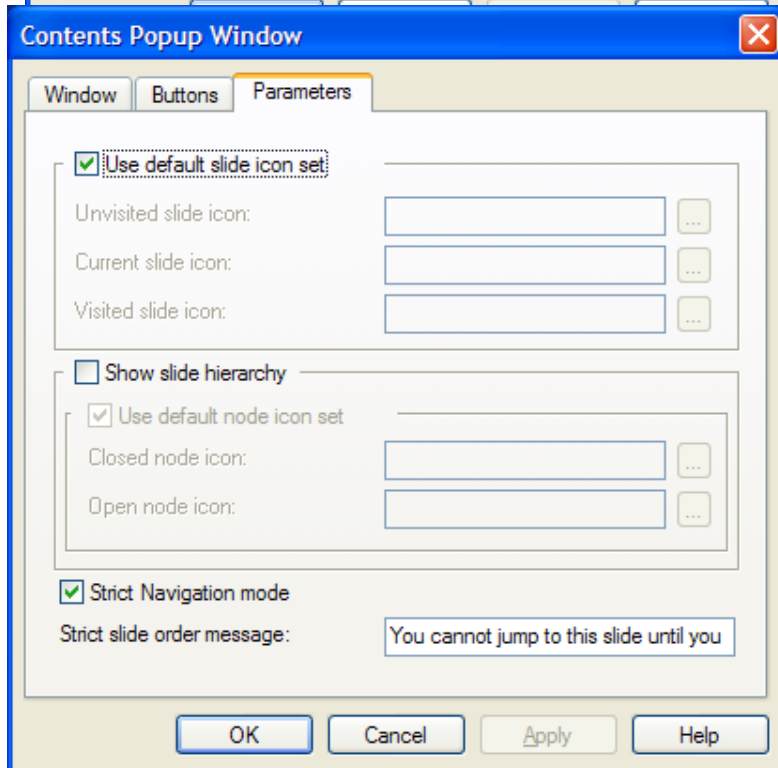


In the opened dialog you can select the base color for the Object according to the overall design of the learning Module. Also, you can modify the title text and style.

You can modify the size and location of the pop-up Help window according to the design of the learning Module but there are technical limitations for significant width and height changes.



On the **Buttons** tab you can specify a button's properties. If the "Use default button set" option is unchecked you can use custom images for displaying buttons. You can also specify mouse-over tool-tip messages for both active and inactive buttons.



On the **Parameters** tab you can specify the display parameters. The **Use default Slide icon set** option enables you to replace the Slide's icons, if desired.

The option "**Show Slide hierarchy**" enables you to modify the display mode of the Slide's structure in the Module. You can replace images that represent hierarchy connectors, if desired.

Strict Navigation Mode – automatic blocking of the

navigation Object from the moment the Slide opens until all Objects on this Slide, displayed in the Timeline panel of the Frame, are played back.

The **Strict Slide order message** will be displayed if the learner tries to jump more than one Slide ahead when the **strict Slide order** mode is enabled in Module run-time settings.

Object Methods

The state of the Object can be modified using these Methods.

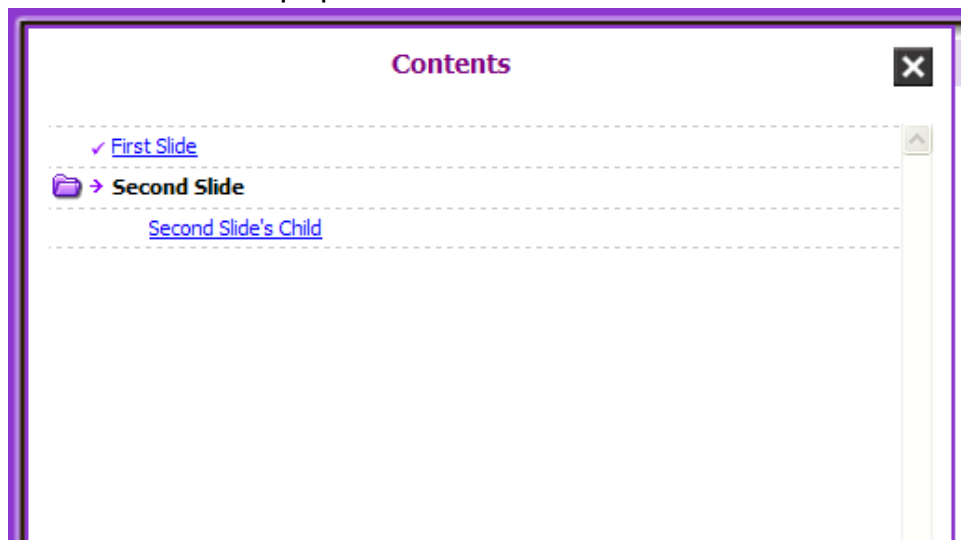
Method name	Execution Result
DISABLE ACCESS	Restrict access to Contents Tab.
ENABLE ACCESS	Permit access to Contents Tab.

Object Specific Properties

Along with common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
DISABLED	Returns 1 if Object is currently disabled, 0 otherwise.	\$OBJ_ID.disabled
OPEN	Returns 1 if Object is currently open, 0 otherwise.	\$OBJ_ID.open

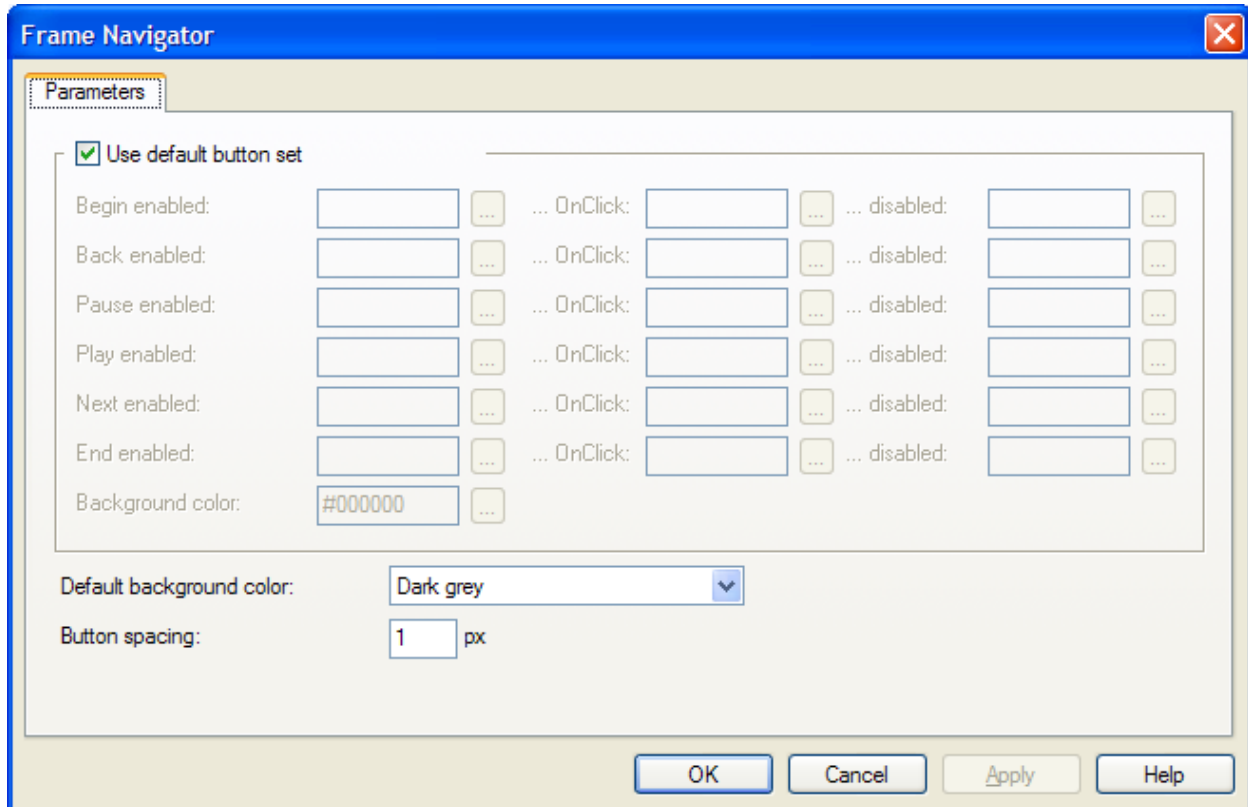
Example of a Contents Popup Window:



5.5.7.18. Frame Navigator

The Frame Navigator is a special Object which indicates the number of visited Frames in a particular Slide relative to the overall number of Frames in the Slide.

Position this Object on the Slide and open the "Properties" dialog screen..



By default, the standard button set is used. If you prefer to use a different button, remove the check mark at "Use default button set". Fields for specifying the path to the pictures become active. Use any graphic editor to create pictures.

Example of a Frame Navigator Object:

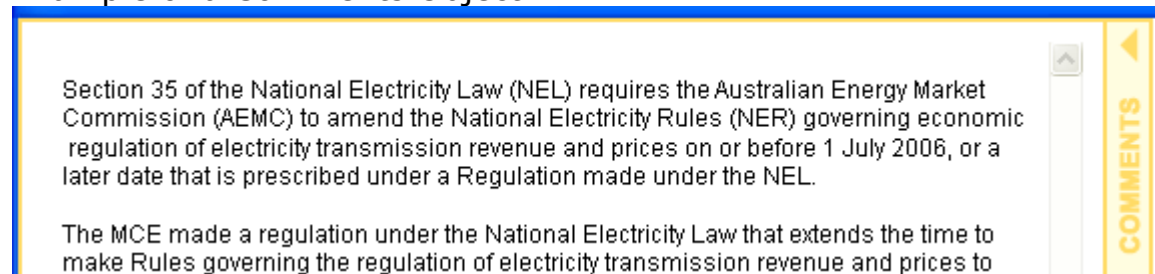


5.5.7.19. Comments Object

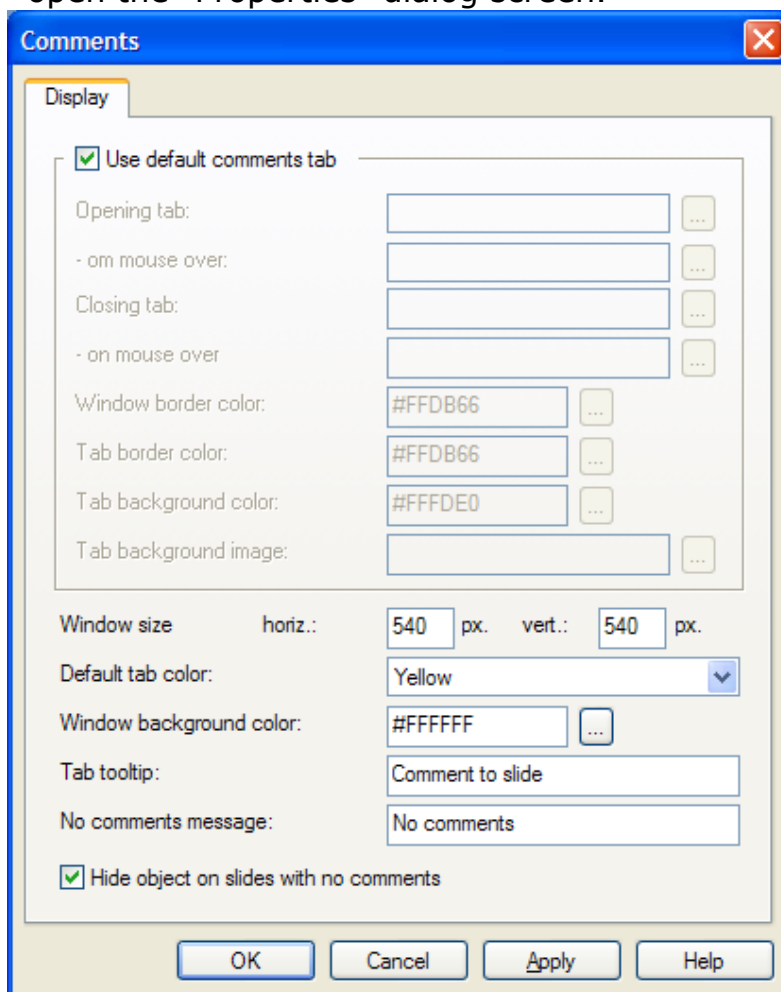
The Comments Object enables you to automatically display comments to the current Slide - those defined by the author or imported from PowerPoint. The Object default parameters are optimized for "Import" templates (intended for importing PowerPoint presentations), but this is not a limitation – this Object can be used on any other template.

LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.

Example of a Comments Object:



Add the Object to the Master-Slide, position it on the left window border and open the "Properties" dialog screen.



If the **Use default comments tab** is checked you can select the default tab color, change the comments window size, specify mouse-over tool-tip messages and the message that appears when no Slide comments are present. Note, that the **window background color** will be used for all comments, except for those imported from PowerPoint where the background color is specified in the PowerPoint source.

If the **Use default comments tab** option is unchecked, then you can use custom images for displaying tabs, changing the comments window size or changing the Object's

border color.

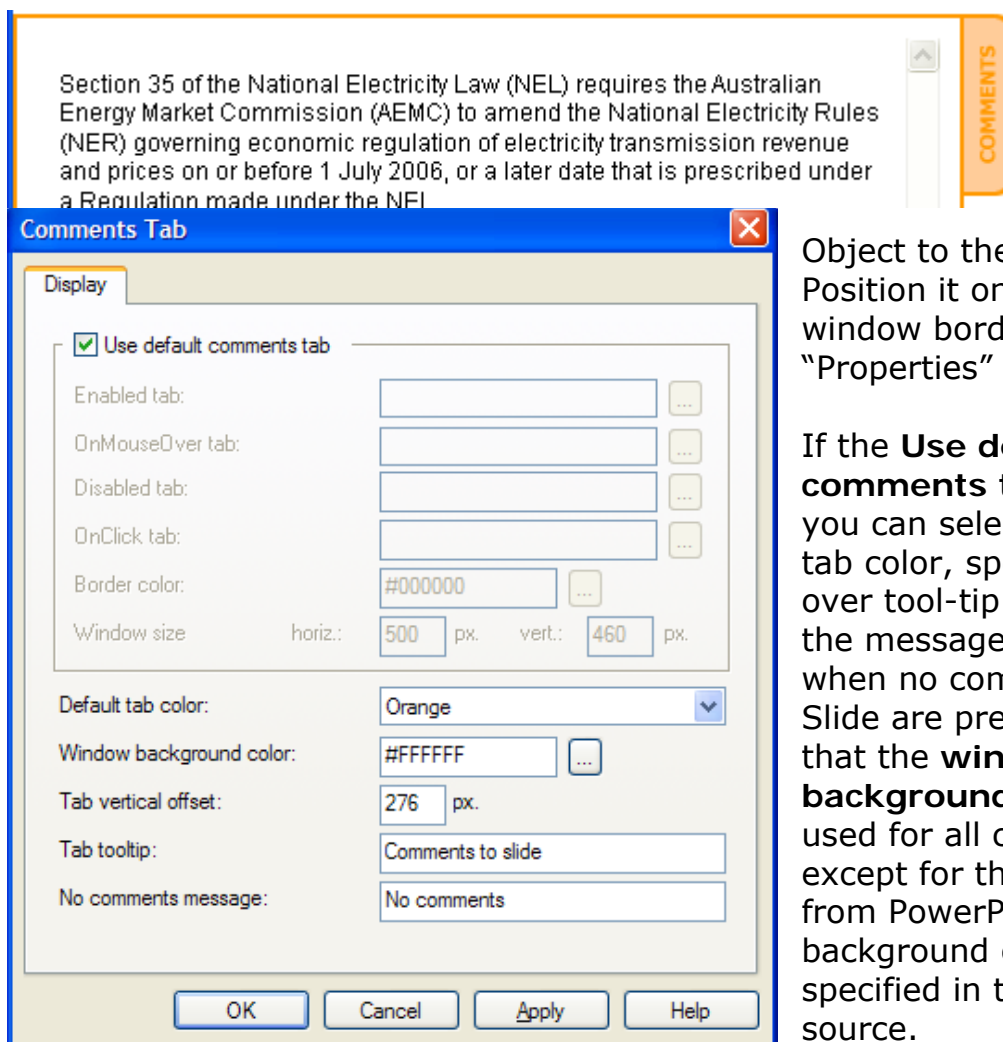
The checkmark "**Hide Object on Slides with no comments**" can be useful to attract learner attention. If it is checked (default state), then the Object will appear only on Slides where the comments are present.

5.5.7.20. Comments Tab Object

The Comments Tab Object enables you to automatically display comments to the current Slide - those defined by the author or imported from PowerPoint. The default Object parameters are optimized for "Standard" templates, but this is not limitation - the Object can be used on any other template.

LIMITATION: This Object can be placed only ON THE MASTER-SLIDE.

Example of a Comments Tab Object:



Add the Object to the Master-Slide. Position it on the left window border. Open the "Properties" dialog screen.

If the **Use default comments tab** is checked, you can select the default tab color, specify mouse-over tool-tip messages and the message that appears when no comments to the Slide are present. Note, that the **window background color** will be used for all comments, except for those imported from PowerPoint where background color has been specified in the PowerPoint source.

If the **Use default comments tab** option is unchecked, then you can use custom images for displaying tabs, change comments window size, change Object's border color.

5.5.8. Characters

An “Agent” is an animated character with a set of basic Actions which can be launched using this Object’s Methods.

IMPORTANT! The Agent is created using Adobe Flash technology so make sure to turn on this feature which checks whether or not Flash Player has been installed on the target machine before loading the learning Module.

Example of an Agent:

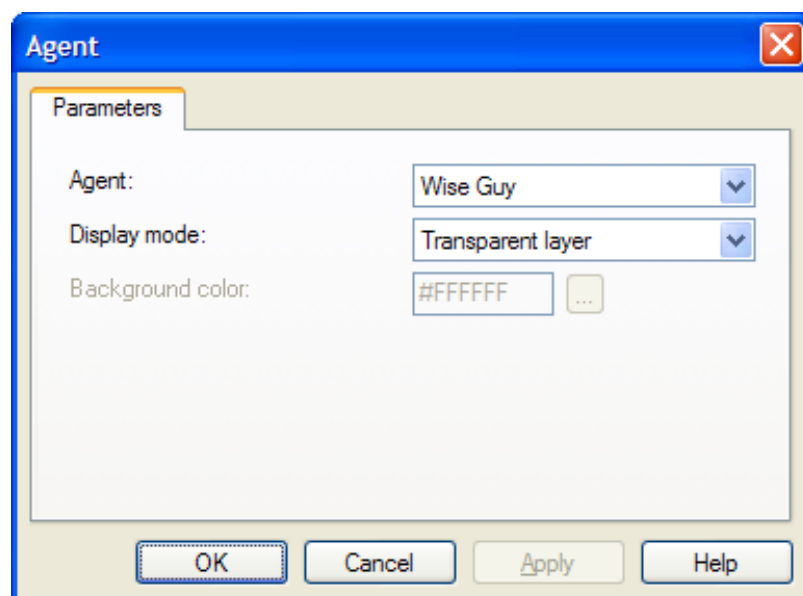


You can specify an Agent’s appearance and display parameters (similar to Flash-movie display settings, in fact, an Agent is a Flash-movie).

Agent control

By default, an Agent is displayed in “idle” mode for an indefinite period of time.

Use Object Methods to control the Agent.



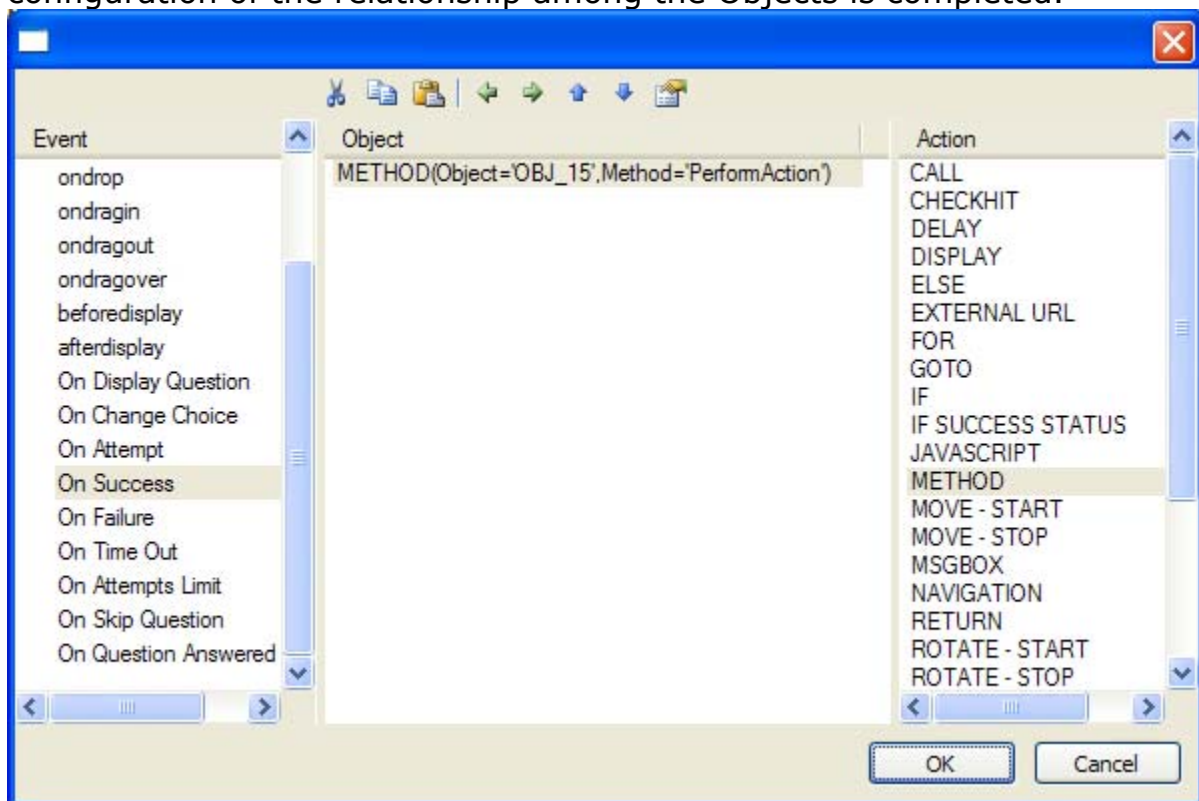
Object Methods, (functions embedded in the Object, which modify the state of the Agent) are used to control the Agent.

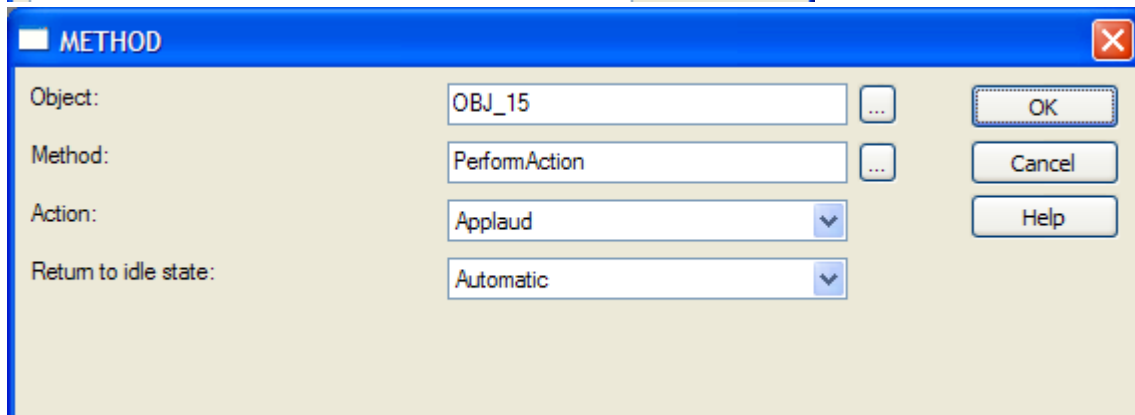
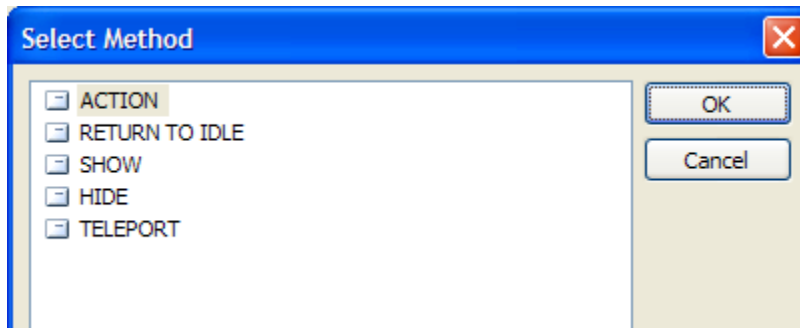


Picture a situation when we have both a question and an Agent character presented in a Slide. The Agent's task is to applaud when the provided answer to the question is correct.

Here is the sequence of the necessary Actions:

1. Memorize character ID and open "Actions" screen for the "Question" Object.
2. Select "Correct Answer" in the "Event" panel.
3. Select "METHOD" in the "Action" panel.
4. Specify parameters for the selected Action – select character ID; in the "Select Method" screen specify "ACTION" with the following parameters: "Applaud" and "Return upon completion". Confirm your choice. At this point, configuration of the relationship among the Objects is completed.





In this example, the Event of the "Question" Object has been used for launching the Action. However, any other Events or delayed Actions can be employed for the same purpose.

Object Methods

The following Methods can be used when working with Agent Character:

- **ACTION** – forces the Agent to execute some of the Actions defined in the Object. It has 2 parameters: Action itself (which needs to be executed) and an option for returning back to the idle state (the Agent can automatically return to the idle state or remain in the current state awaiting the return command).
- **RETURN TO THE IDLE STATE** – takes Agent back to the idle mode.
- **SHOW/HIDE** – is used to turn on/off display of the Object with effects.
- **TELEPORTATION** - relocates Agent into a location, specified by coordinates, using effects.

Let us review the "ACTION" Method in greater details. Almost all Actions embedded into the Object have two execution phases: Action execution and return to idle state.

When you select automatic return into the idle mode, the above-mentioned Action phases will be automatically executed one after another. When we select **wait for signal to return to idle** mode, only the first phase - execution of the Action itself - is launched. The **return to idle state** is

postponed until you use the **"RETURN TO THE IDLE STATE"** Method or launch any other Action (in that case, before the new Action can be executed, the Object returns to the idle state automatically).

Things to consider, when working with Actions:

Actions: **Talk, Walk left/right** cannot automatically return to the idle mode. The Agent will continue talking and walking until ordered to terminate the Action.

Actions, such as **Yawn, Head-nod in agreement, Head-shake in disagreement (so called simple Actions, marked with *)**, will always return to the idle state upon completion.

Sequence of Actions

If the agent receives a command for a new Action while it is not in the idle mode (meaning it is in the process of completion of a previous Action) this command is stored in the agent's "commands queue" and new Action is postponed until the previous one finishes execution. The "Command queue" of the "Agent" role is based on the FIFO (First In First Out) data handling concept: i.e. each new incoming Action command is added to the end of the **execution line**. Therefore, by employing the "Command queue" you can create any sequence of Actions for the character.

5.5.8.2. The “Talking Head” Character

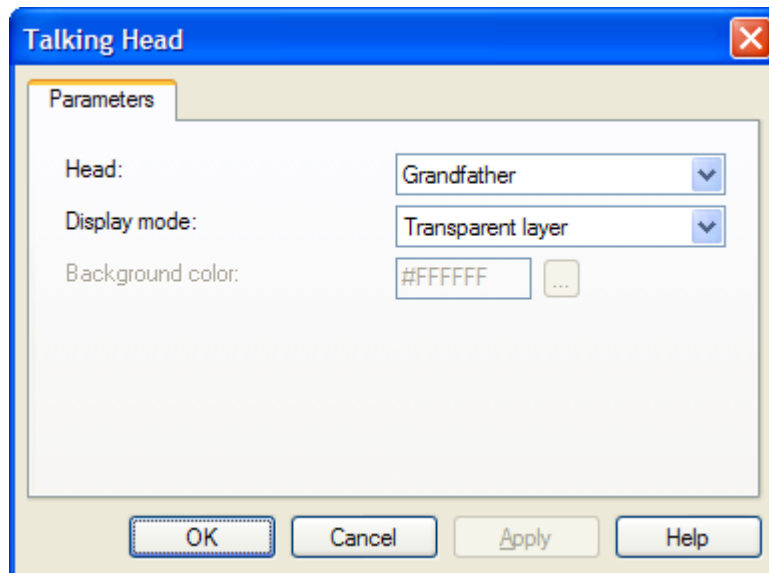
The talking Head is an animated character with a set of basic Actions; these Actions can be launched using Object’s Methods.

IMPORTANT! The Talking Head is created using Adobe Flash technology, thus make sure to turn on the feature, which checks whether or not Flash Player has been installed on the target machine before loading the learning Module.

Example of a Talking Head:



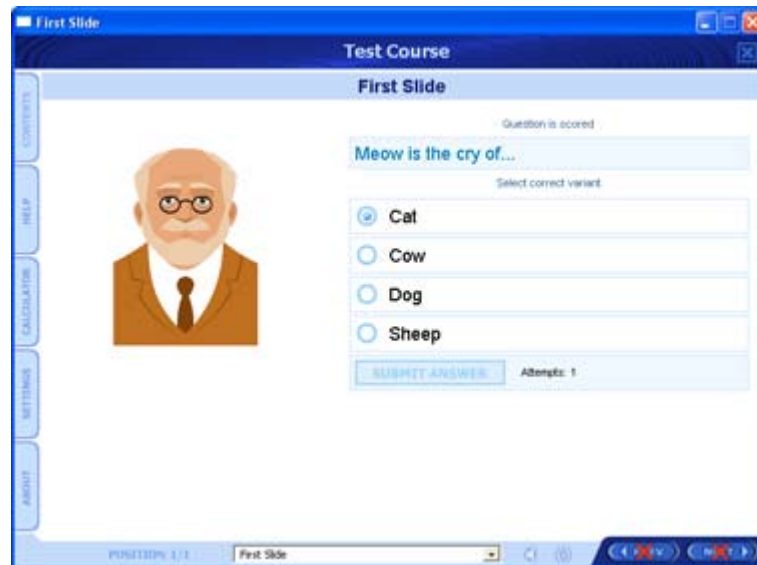
The Talking Head is actually a Flash movie so its appearance and display parameters can be manipulated in a similar manner.



Talking Head control

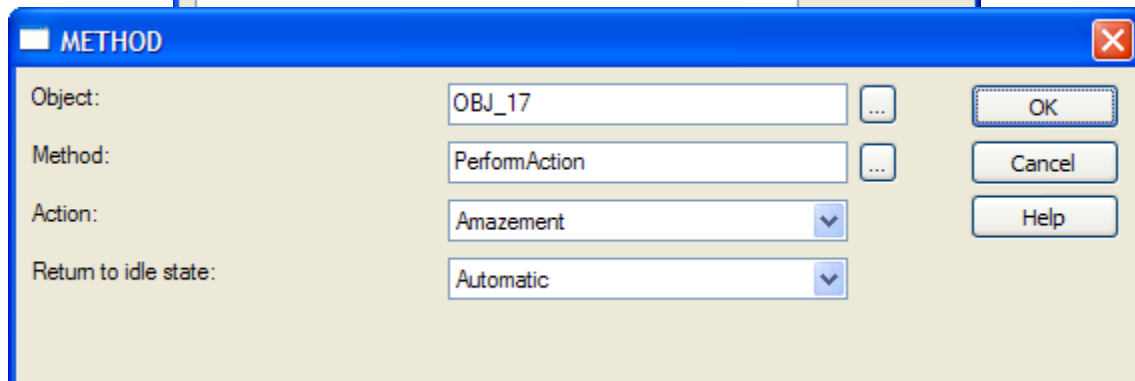
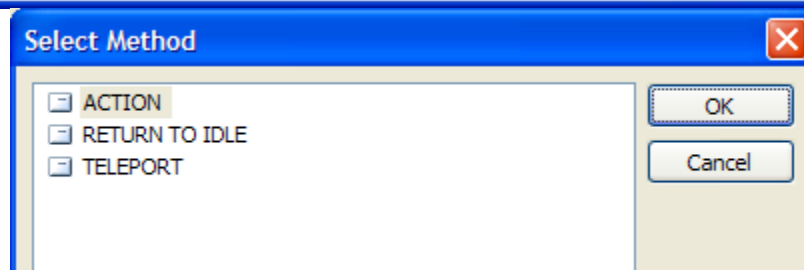
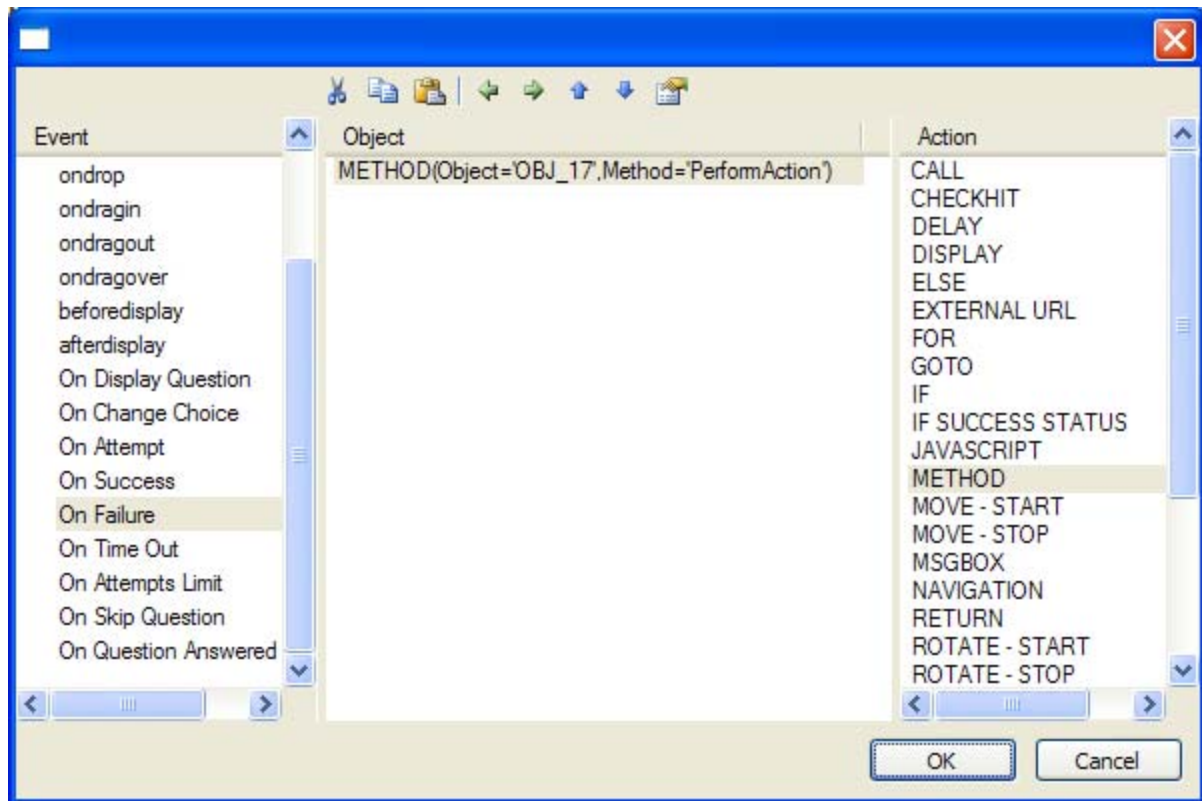
Use Methods of the Objects to control Talking Head.

By default, the Talking Head is displayed on "idle" mode for an indefinite period of time. Object Methods (i.e. functions embedded in the Object) which modify the state of the Agent, are used to control the Talking Head.



Picture the situation when we have both a question and a Talking Head character presented in a Slide. The Talking Head's task is to be amazed when the provided response to the question is incorrect. Here is the sequence of necessary Actions:

1. Memorize the character ID and open the "Actions" screen for the "Question" Object.
2. Select "Correct Answer" in the "Event" panel.
3. Select "METHOD" in the "Action" panel.
4. Specify the parameters for the selected Action – select character ID; in the "Select Method" screen specify "ACTION" with the following parameters: "Amazement" and "Automatic" return to idle state. Confirm your choice. At this point, the configuration of the relationship among the Objects is completed.



In the above example, the Event of the "Question" Object has been used for launching Action. However, any other Events or delayed Actions can be employed for the same purpose.

Object Methods

The following Methods can be used when working with Talking Head Character:

- **Action** – forces the Talking Head to execute some of the Actions defined in the Object. It has two parameters: Action itself (which needs to be executed) and the option to return back to the idle state (the Talking Head can automatically return to the idle state or remain in the current state awaiting the return command).
- **RETURN TO IDLE** – takes Talking Head back to the idle mode.
- **TELEPORT** - relocates the Talking Head into a location specified by coordinates, using effects.

Let us review the "ACTION" Method in greater detail. Almost all Actions embedded into the Object have two execution phases: Action execution and return to idle state. When you select automatic return into the idle mode, above mentioned Action phases will be automatically executed one after another. When we select the wait for signal to return to idle mode, only the first phase - execution of the Action itself is launched; the return to idle mode phase is postponed until you use the "**RETURN TO IDLE**" Method, or by launching any other Action (in this case, before the new Action can be executed Object returns to the idle state automatically).

Things to consider, when working with Actions:

Action **Talk** cannot automatically return to the idle mode. Talking Head will continue talking until ordered to terminate Action.

Such Actions as **Agree, Disagree (so called simple Actions, marked with *)**, will always return to the idle state upon completion.

Sequence of Actions

If the Talking Head receives a command for a new Action while it is not in the idle mode (meaning it is in the process of completion of previous Action) this new command is stored in the Talking Head's "commands queue" and the new Action is postponed until the previous one is finishing execution. The "Command queue" of the "Talking Head" character is based on the FIFO (First In First Out) data handling concept: i.e. each new incoming Action command is added to the end of the **execution line**. Therefore, by employing "Command queue" you can create any sequence of Actions for the character.

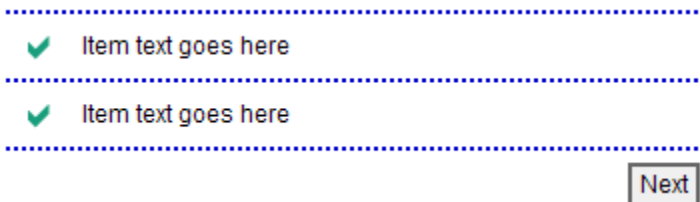
5.5.9. Lists

5.5.9.1. Bulleted List

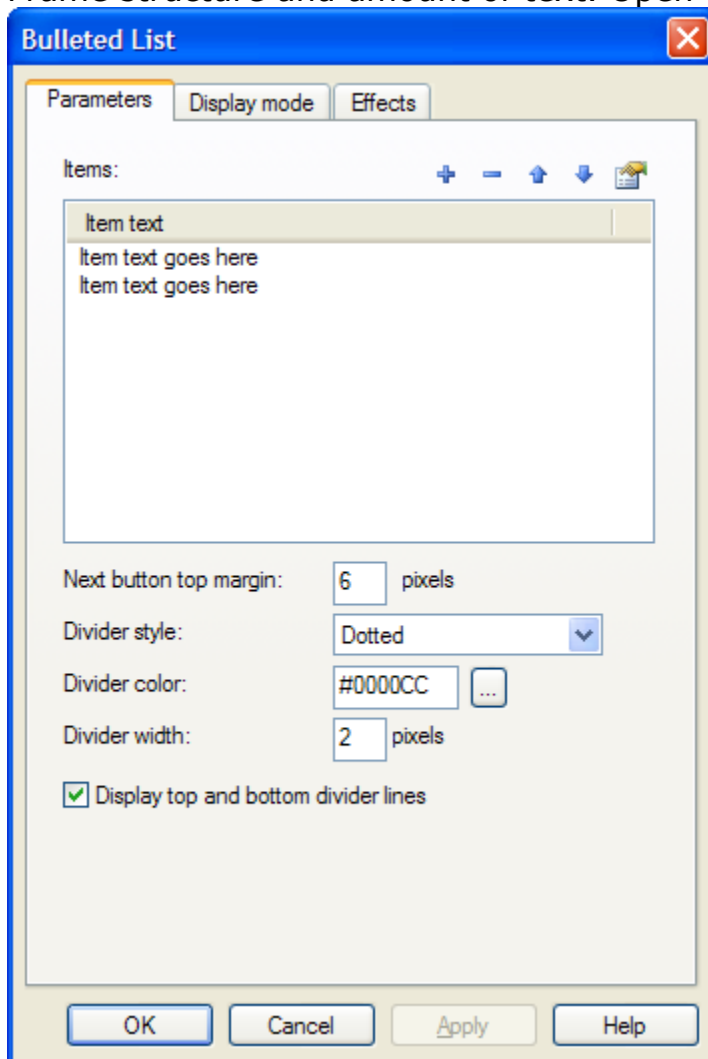
The Bulleted List Object is used for creating a sequentially appearing list of statements. It contains a list of items with built-in display manipulation mechanisms.

IMPORTANT! Since the Bulleted list Object contains built-in display mechanisms, the actual duration might not be in accordance with the duration specified in the Time panel for the Frame

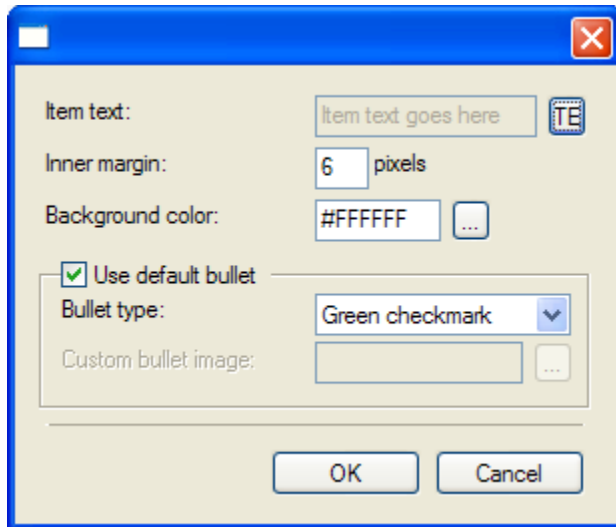
Example of a Bulleted list:




Add this Object to the Frame. Adjust the size and position it in relation to the Frame structure and amount of text. Open the "Properties" dialog screen.




Set the button top margin (if you plan to use it) and the divider lines between list items. Fill in the statements list. You can select a bullet type and other appearance parameters for each list item.





Item text: 

Inner margin: pixels

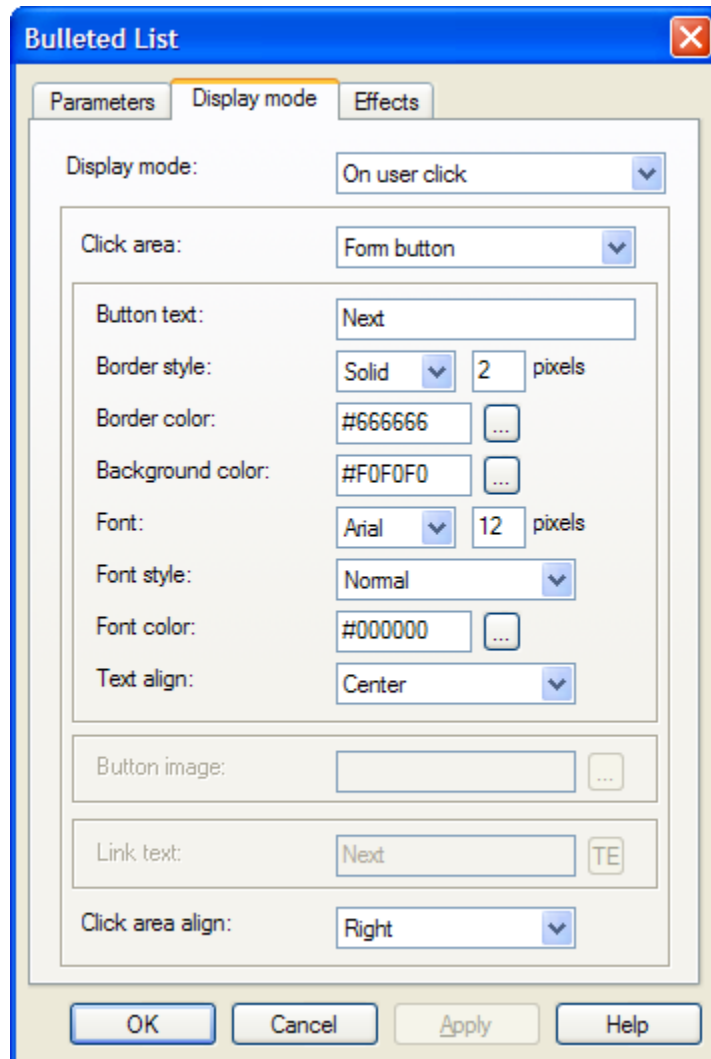
Background color: 


☒ Use default bullet

Bullet type: 


Custom bullet image: 


Select the "Display mode" tab in the "Properties" dialog screen to set the parameters of the item displaying.




Bulleted List 


Parameters **Display mode** Effects


Display mode: 


Click area: 


Button text:


Border style:  pixels


Border color: 


Background color: 


Font:  pixels


Font style: 

Font color: 

Text align: 

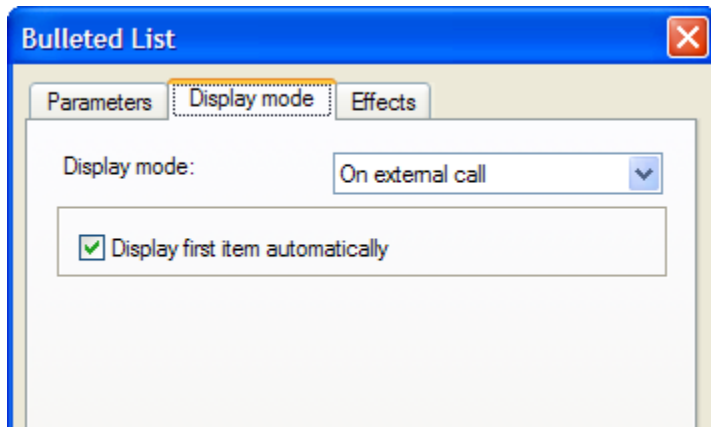
Button image: 

Link text: 

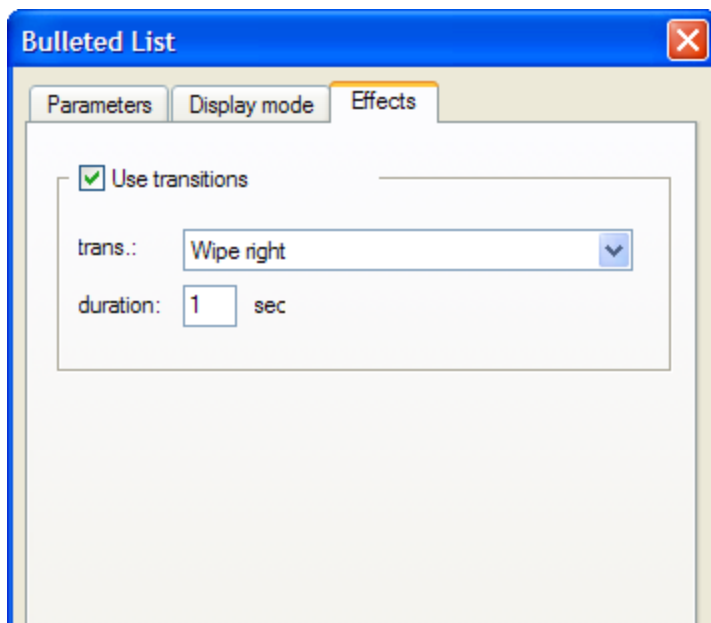
Click area align: 

Depending on the selected display mode, the parameters list on this tab will be different. The default mode is **On user click** (this mode includes text link, form and image buttons - all controls that are activated with a mouse click). Define the button or link parameters.

In **Delayed auto** mode, the only available parameter is **Item display delay** (in seconds).



The third mode - On external call - means that no list controls will be displayed and items will appear only when Object's Method NEXT ITEM will be used. The only parameter here is **Display first item automatically**.



Select "Effects" tab.

If the "Use Transitions" check box is marked, you can choose any of the standard **transition effects**. Positive numbers (greater than 0) are used to set the **Time of the transition** in seconds.

LIMITATIONS: Due to a lack of transition support in some Browsers, transition effects might be substituted to the closest available in Browsers other than Internet Explorer.

Object Events

The "Bulleted List" Object is capable of generating Events according to the user's Actions and the interpretation of the Actions by the Object. When combined with Actions Events, it can be employed for building up intellectual behavior models for other Objects depending on the current state of the "Bulleted List" Object.

Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
On Display Item	At the moment when Item begins to display

Object Methods

The state of the Object can be modified using these Methods.

Method name	Execution Result
NEXT ITEM	Start displaying of next item in queue.

Object Specific Properties

Along with common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

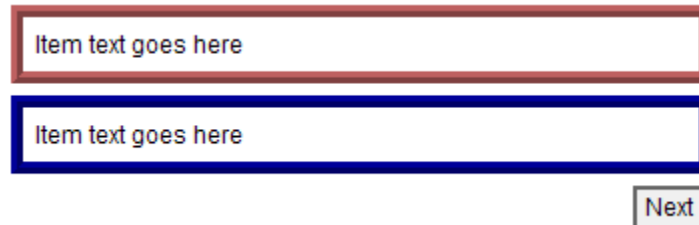
Property	Returns	Syntax
lastItem	Returns number of last displayed item.	\$OBJ_ID.lastItem
nextItem	Returns number of next displayed item.	\$OBJ_ID.nextItem
totalItems	Returns total number of items.	\$OBJ_ID.totalItems

5.5.9.2. The “Simple” List

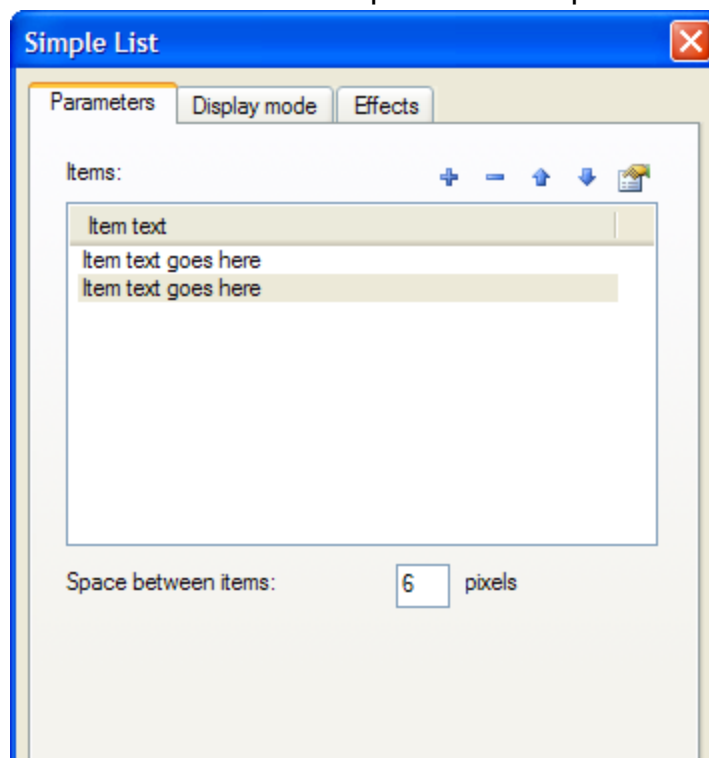
The **Simple List** Object is used for creating a sequentially appearing list of statements. It contains the list of items and built-in display manipulation mechanisms.

IMPORTANT! Since the Simple list Object contains built-in display mechanisms, the actual duration might not be in accordance with the duration specified in the Time panel for the Frame.

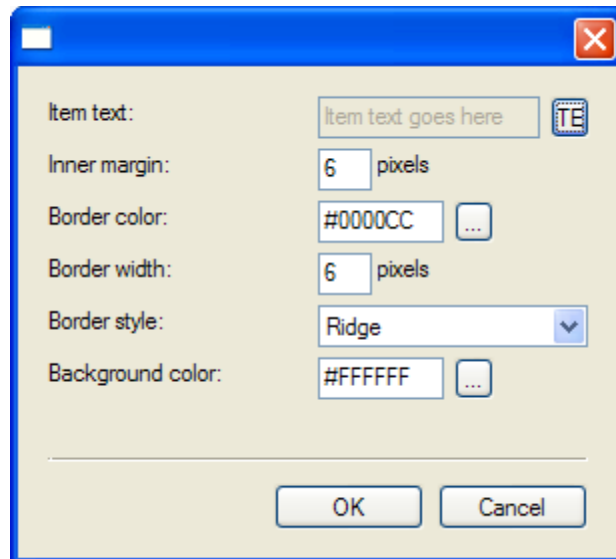
Example of Simple list appearance:



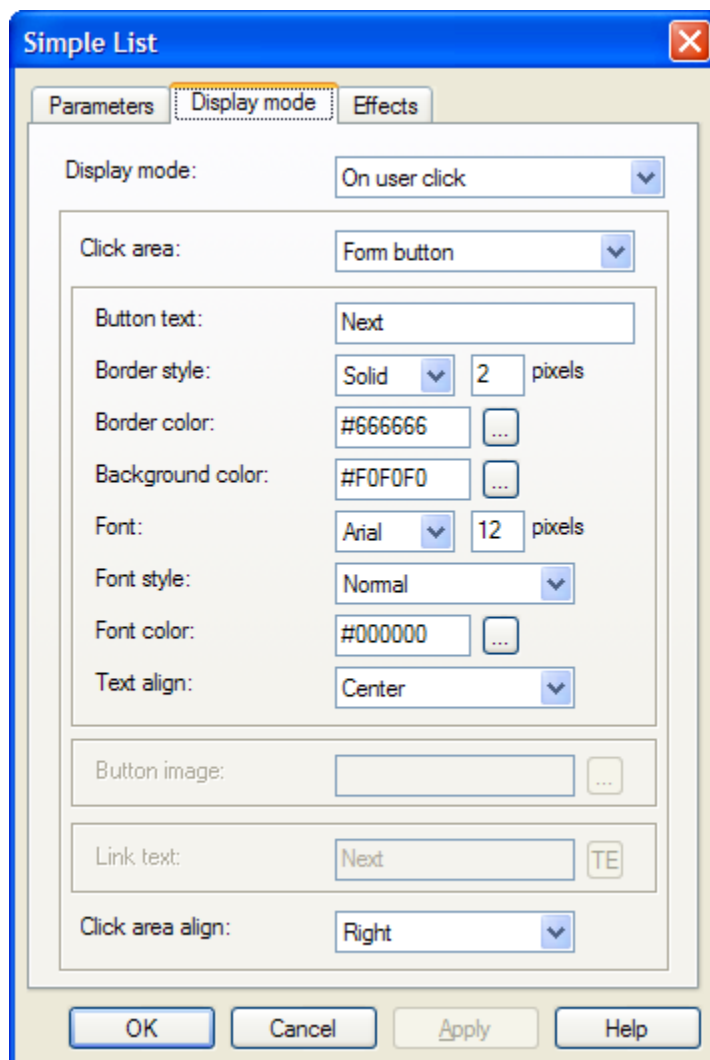
Add the Object to the Frame. Adjust its size and position in relation to the Frame structure and amount of text. Open the “Properties” dialog screen.



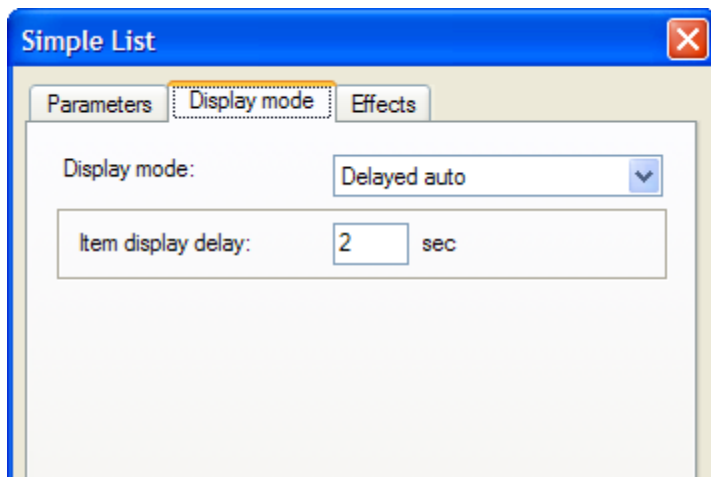
Fill in the statements list. You can select the item appearance parameters for each list item.



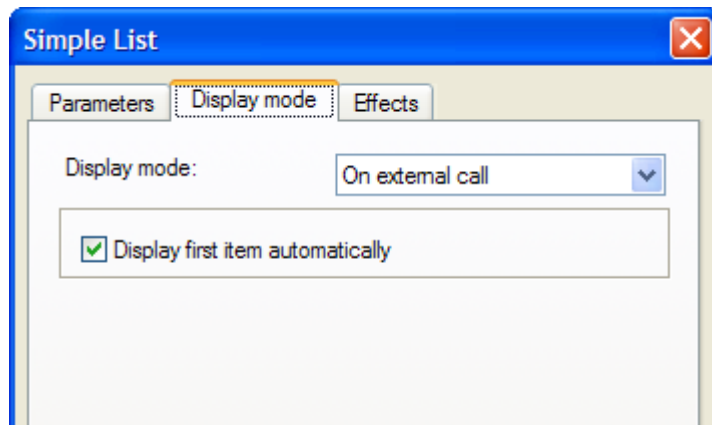
Select the "Display mode" tab in "Properties" dialog screen to set parameters of item displaying.



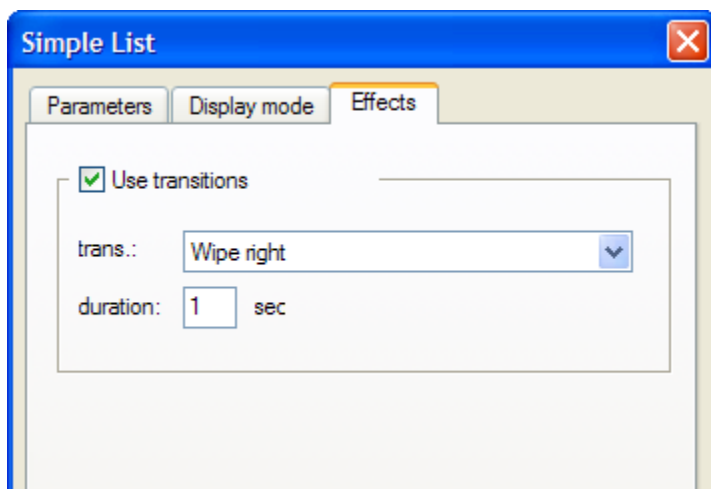
Depending on the selected display, the mode parameters list on this tab will be different. The Default mode is **On user click** (this mode include the text link, form and image buttons - all controls that are activated with a mouse click). Define the button or link parameters.



In the **Delayed auto** mode, the only available parameter is **Item display delay** (in seconds).



The third mode - On external call - means that no list controls will be displayed and items will appear only when the Object's Method NEXT ITEM is be used. The only parameter here is **Display first item automatically**.



Select the "Effects" tab.

If the "Use Transition" check box is marked, you can choose any of the standard **transition effects**. Positive numbers (greater than 0) are used to set the **Time of the transition** in seconds.

LIMITATIONS: Due to the lack of transition support in some Browsers, transition effects might be substituted to the closest available in Browsers other than Internet Explorer.

Object Events

The "Simple List" Object is capable generating Events according to the user's Actions and the interpretation of those Actions by the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects - depending on the current state of the Object "Simple List".

Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
On Display Item	At the moment when Item begins to display

Object Methods

The state of the Object can be modified using these Methods.

Method name	Execution Result
NEXT ITEM	Start displaying of next item in queue.

Object Specific Properties

Along with common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

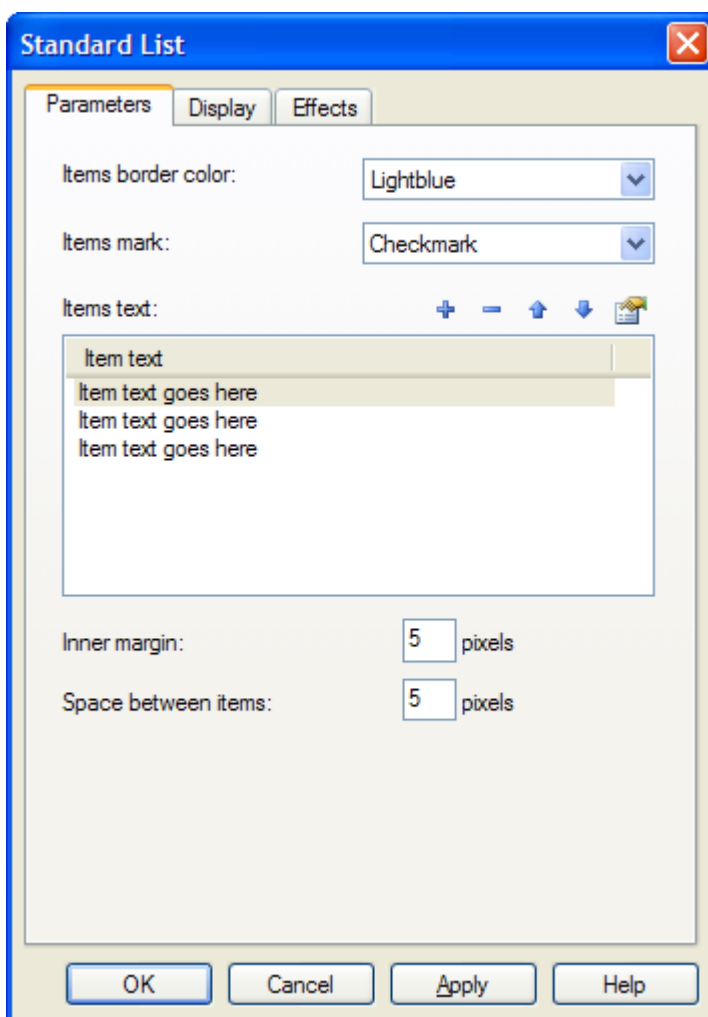
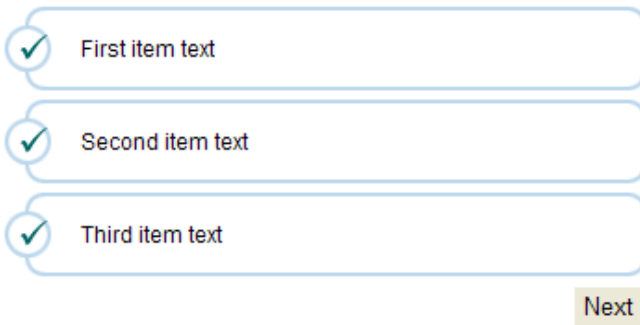
Property	Returns	Syntax
lastItem	Returns number of last displayed item.	\$OBJ_ID.lastItem
nextItem	Returns number of next displayed item.	\$OBJ_ID.nextItem
totalItems	Returns total number of items.	\$OBJ_ID.totalItems

5.5.9.3. "Standard" List

The **"Standard" List** Object is used for creating a sequentially appearing list of statements. The Object consists of "Standard" list items. It contains the list of items with built-in display manipulation mechanisms.

IMPORTANT! Since the Standard list Object contains built-in display mechanisms, the actual duration might not be in accordance with the duration specified in the Time panel for the Frame.

Example of a Standard list:



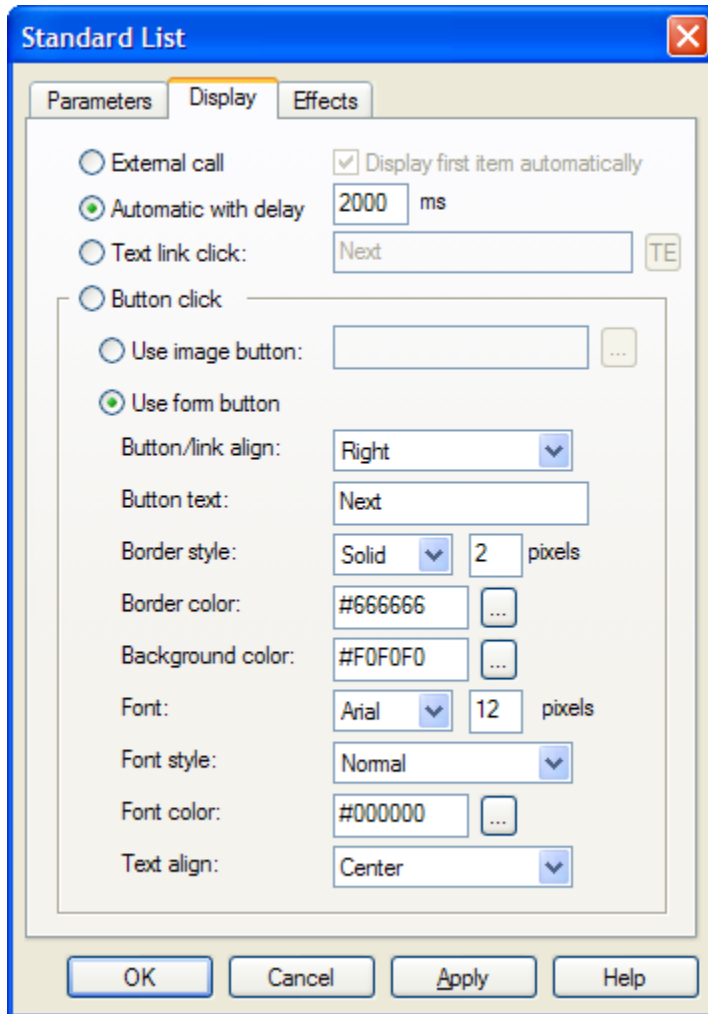
Add the Object to the Frame. Adjust the size and position an Object in relation to the Frame structure and the amount of text. Open the "Properties" dialog screen (Double click on the Object or select the "Properties" item from the context menu).

Select **border color for the list items** according to the overall design.

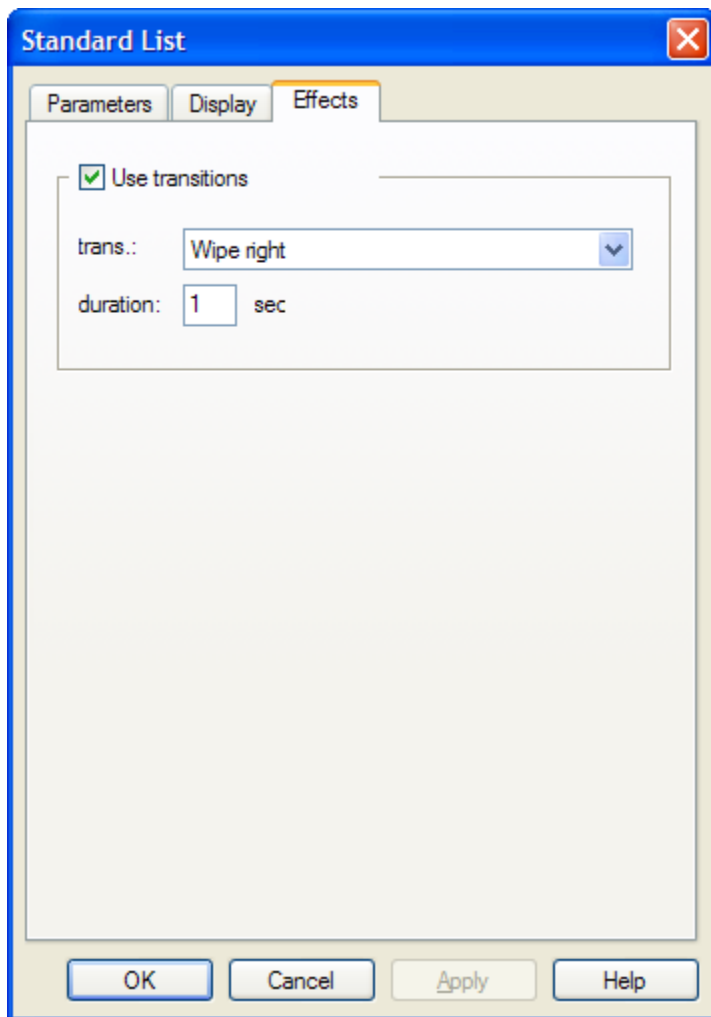
Select **option type for the list Item**.

Input **text for the list items**. Specify a value for **inner margin**. The text margin defines the space between border of the window and text block.

Select the "Display" tab in the "Properties" dialog screen.

The image shows a 'Standard List' dialog box with three tabs: 'Parameters', 'Display', and 'Effects'. The 'Display' tab is active. It contains several settings for displaying a list. At the top, there are three radio buttons: 'External call', 'Automatic with delay' (which is selected), and 'Text link click:'. The 'Automatic with delay' option has a text field with '2000' and a unit dropdown set to 'ms'. To the right of these is a checked checkbox labeled 'Display first item automatically' and a 'TE' button. Below the radio buttons is a 'Button click' section with two options: 'Use image button:' (disabled) and 'Use form button' (selected). The 'Use form button' section includes a 'Button/link align:' dropdown set to 'Right', a 'Button text:' field with 'Next', a 'Border style:' dropdown set to 'Solid' with a '2' pixel width, a 'Border color:' field with '#666666', a 'Background color:' field with '#F0F0F0', a 'Font:' dropdown set to 'Arial' with a '12' pixel size, a 'Font style:' dropdown set to 'Normal', a 'Font color:' field with '#000000', and a 'Text align:' dropdown set to 'Center'. At the bottom of the dialog are four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.

This Object enables displaying the list of items either consecutively, in **automatic mode** with user defined time delays, or by accepting user input in from a pressed **button** or a clicked **text link**. The **On external call** mode means that no list controls will be displayed and items will appear only when the Object's Method NEXT ITEM is to be used. The only parameter here is **Display first item automatically**.



Select "Effects" tab.

If the "Use Transitions" check box is marked, you can choose any of the standard **transition effects**. Positive numbers (greater than 0) are used to set the **Time of the transition** in seconds.

LIMITATIONS: Due to lack of transition support in some Browsers, transition effects might be substituted to closest available in Browsers other than Internet Explorer.

Object Events

The "Standard List" Object is capable generating Events according to the user's Actions and by interpretation of the Actions by the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects - depending on the current state of the Object "Standard List".

Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
On Display Item	At the moment when Item begins to display

Object Methods

The state of the Object can be modified using this Method.

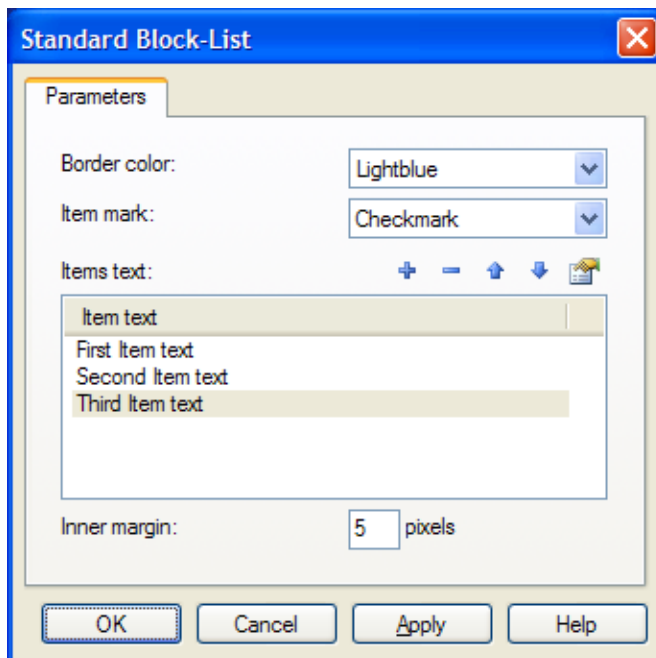
Method name	Execution Result
NEXT ITEM	Start displaying of next item in queue.

Object Specific Properties

Along with common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
lastItem	Returns number of last displayed item.	\$OBJ_ID.lastItem
nextItem	Returns number of next displayed item.	\$OBJ_ID.nextItem
totalItems	Returns total number of items.	\$OBJ_ID.totalItems

5.5.9.4. The "Standard" Block-List

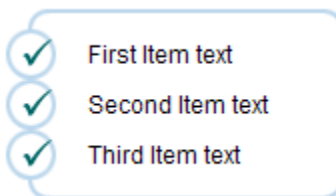


The "**Standard**" **Block-List** Object is used for creating lists of semantically related block statements which will be displayed simultaneously. Add the Object to the Frame. Adjust size and position the Object in relation to the Frame structure and amount of text.

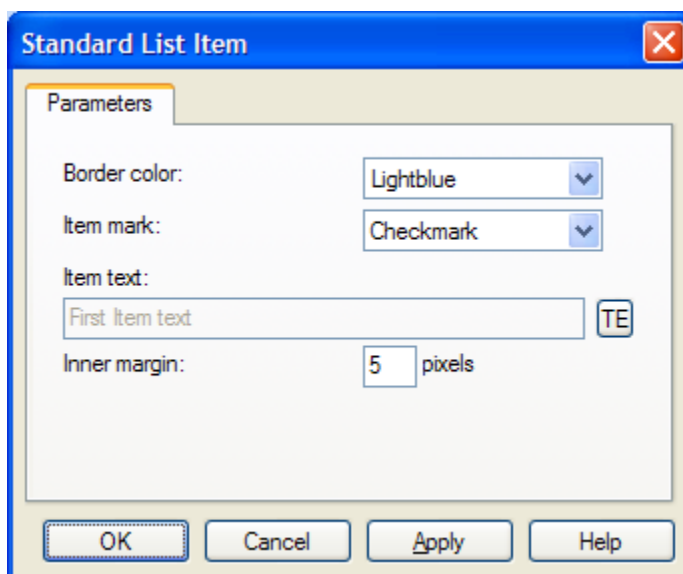
Open the "Properties" dialog screen - Select **border color for the list block** according to the overall design - Select **option type for the list Item** - Input **text for the list items**.

Specify a value for **inner margin**. Text margin defines the space between the border of the window and text block.

Example of a Standard Block-List:



5.5.9.5. The "Standard" List Item



The Standard List Item Object is used for creating Lists which contain clearly highlighted statements.

Add the Object to the Frame. Adjust the size and position the Object in relation to the Frame structure and amount of text. Open the "Properties" dialog screen.

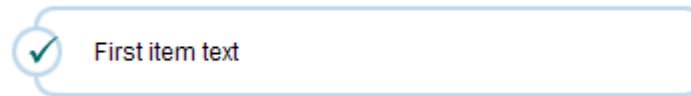
Select a **Border Color** of item according to the overall design.

Select an **Item Mark** type for the List Item.

Input an **Item Text** for the list item.

Specify an **Inner Margin** value for the text margin. Text margin defines the space between border of the window and the text block.

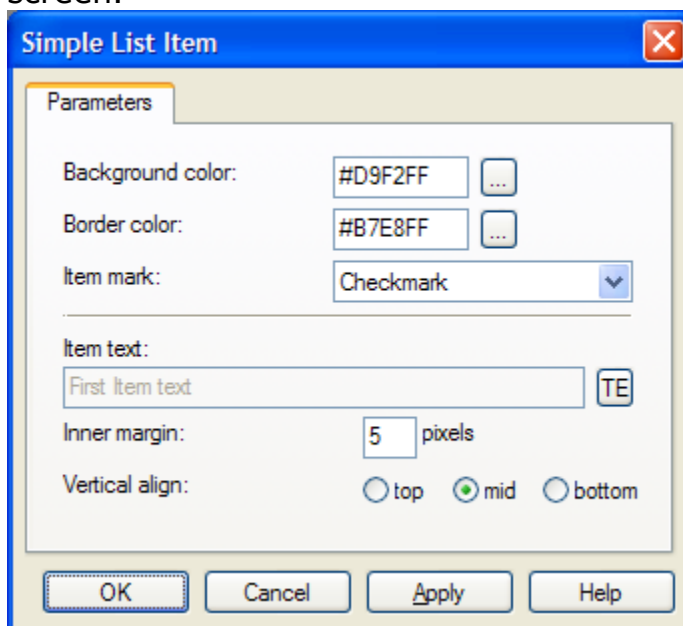
Example of a Standard List Item:



5.5.9.6. The "Simple" List Item

The Simple List Item Object is used for creating Lists which contain clearly highlighted statements.

Add the Object to the Frame. Adjust size and position the Object in relation to the Frame structure and amount of text. Open the "Properties" dialog screen.



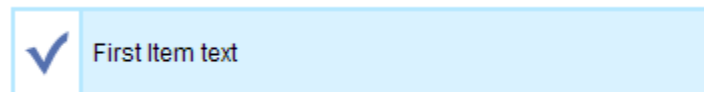
Select an item **Background color** and a **border color** according to the overall design.

Select an **Item mark** option type for the List Item.

Input an **Item text** for the list item.

Specify a value for the **Inner margin**. The text margin defines the space between border of the window and text block.

Example of a Simple List Item:

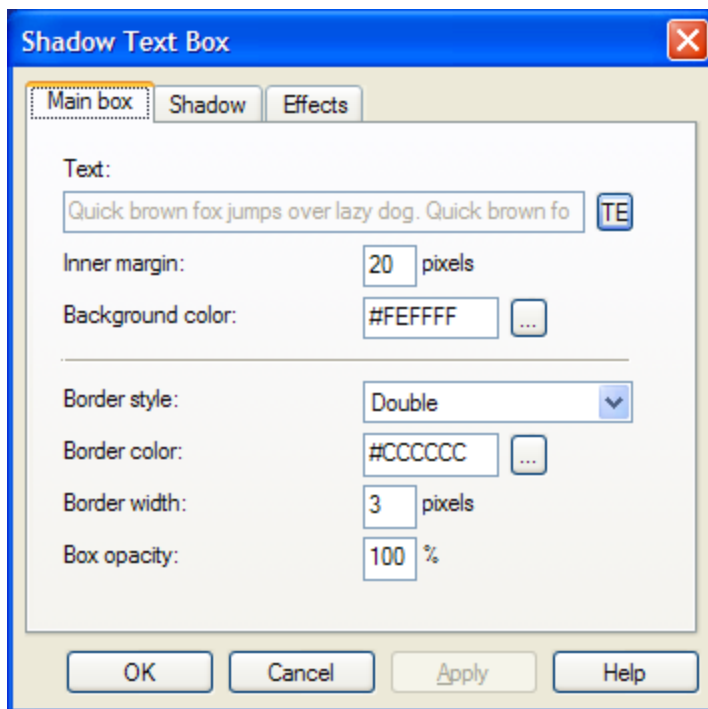


5.5.10. Text Boxes

5.5.10.1. The Shadow Text Box

The **Shadow Text Box** Object enables creating a text box with modified display settings - including shadow effects. Compared to a regular embedded text box, a Shadow Text Box enables using special effects for text appearance.

IMPORTANT! Internet Explorer 5.5 and above should be used for correct shading display although the text box will be visible in older versions of the Browser.



Add the Object to the Frame. By default, the Object is placed in the center of the Frame. Adjust the size and position the Object according to the prospective Frame structure. Open the "Properties" dialog screen.

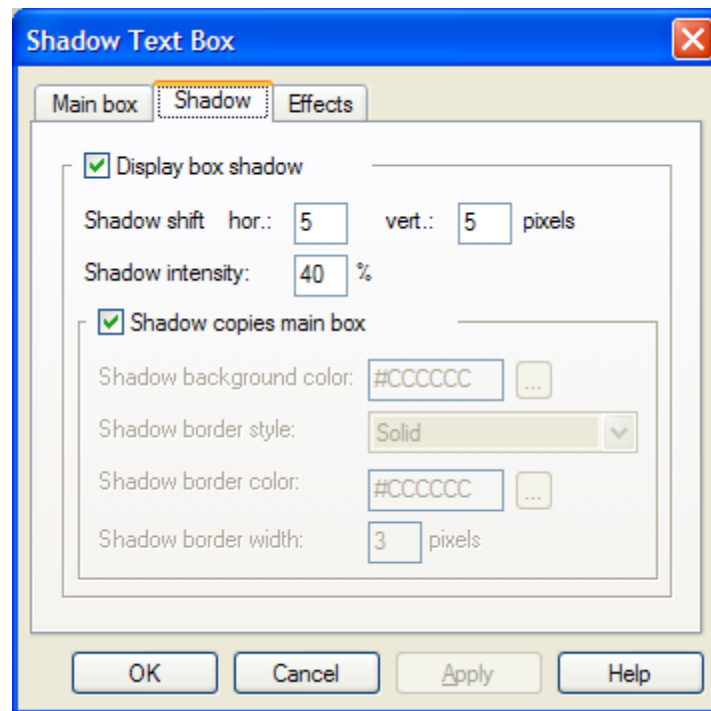
To input text into the **text box**, press "TE" button beside the text input field. The format of the input area is Rich Text, therefore all font settings (size, color, and style) will be saved as you type the text in.

If desired, modify the value for **inner margin**. Text margin defines the space between the border of the box and the text.

You can change the text box background color.

You can modify style, color, and width for the text box border.

Finally, you can modify opacity of the main box. Please be advised that any changes applied to the opacity, affects the border of the text box as well. If the text box Shading is on, it is **not recommended** to use opacity of less than 100%.



Use the “Shadow” tab to specify display settings for the shading effect. The key control is the **“Display Box Shadow”** check box. If the **“Display Box Shadow”** check box is not checked, then all other settings are disabled for editing.

If the text box Shading is on, you can specify vertical and horizontal

Shadow Shift with relation

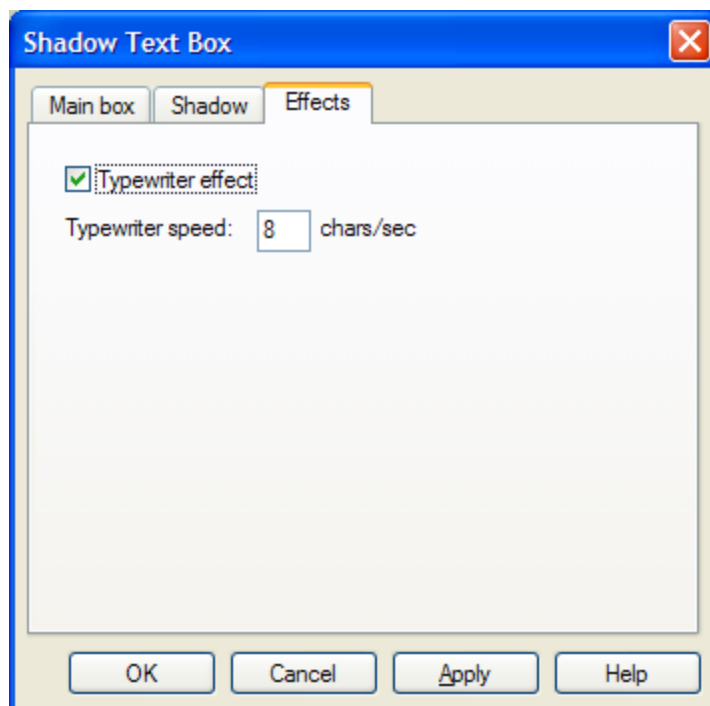
to the main box as well as **opacity**. We recommend using opacity of 40%, which is the default opacity value.

The next check box is

“Shadow copies the main box”. If this check box is

marked, shading box settings - such as background color, style, color, and width of the box border - will be copied from the main box settings (this will look more natural when combined with 40%

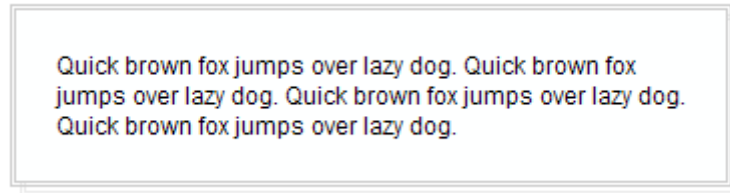
opacity). However, if you need to change the shading display



according to the main block, you can uncheck the “**Shadow copies the main box**” check box and shading box settings become available for editing.

On the “Effects” tab you can enable character iteration display mode for the text in the main box. In this case you can specify text occurrence frequency rate.

Example of a Shadow Text Box:

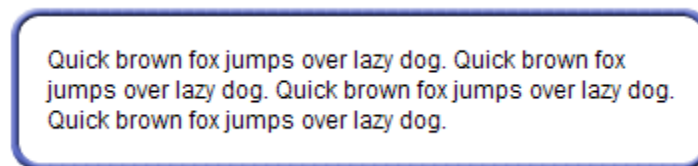


5.5.10.2. The “Relief” Text Box

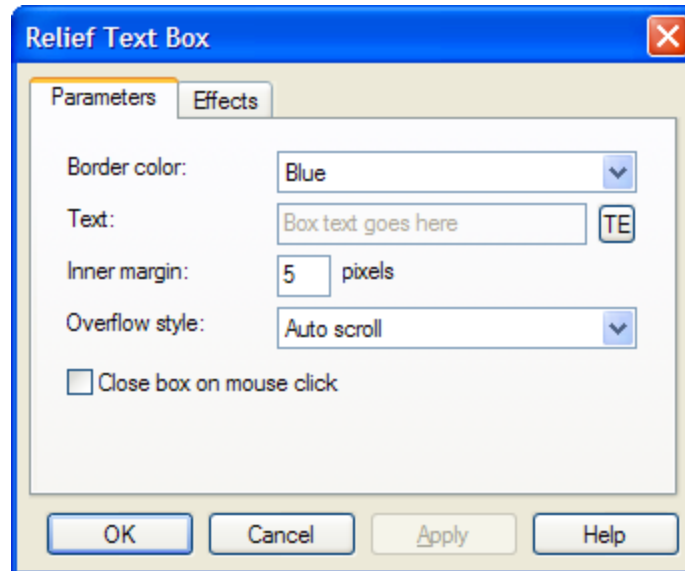
The Relief Text Box enables placing the desired text into a box with convex borders. Compared to the regular embedded text box, this Text Box enables special effects and scrolling of text.

*Note, that this Object makes text substitutions in Rich Text. Text substitutions can be values from Variables and Object properties. Because the Rich Text format is quite complex, additional options for the substitution area are used - double curle brackets. Text substitutions will be applied only for double curle brackets areas. For example **{{ \$OBJ_19.x }}** will be substituted by the value of the X coordinate of OBJ_19 Object's top-left corner, and **{{ #att_left }}** will be substituted by the value of the CourseLab Variable named att_left. If no substitution is found, all double curle brackets areas will remain intact.*

Example of a Relief Text Box Object:



Add the Object to the Frame. By default, the Object is placed in the center of the Frame. Adjust the size and position according to the prospective Frame structure. Open the “Properties” dialog screen.



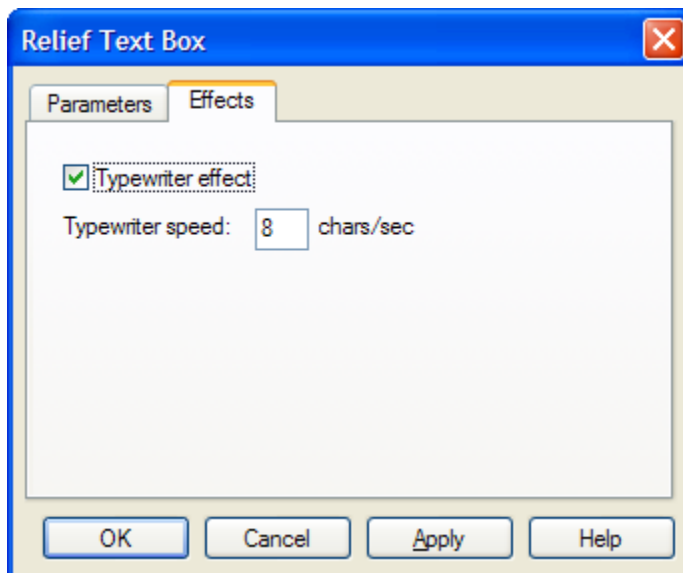
Select the **Border Color** according to the overall design.

To input text into the **Text** box, press the "TE" button of the corresponding field. The format of the input area is Rich Text so all font settings (size, color, and style) will be saved as you type the text in.

If needed, modify the value for **Inner margin**. The text margin defines the space between the box border and text. By default, the text margin is equal to 5 pixels. Set the **Overflow style** if needed - the default value is

Autoscroll and is suitable for most cases.

If the appropriate checkbox is marked, the text box can be **closed on a mouse click** from anywhere within a box.



On the "Effects" tab you can enable a character iteration display mode for the text in the main box. In this case you can choose the text occurrence frequency rate.

Object Events

This Object is capable of generating Events according to the user's Actions and the interpretation of the Actions by the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects - depending on the current state of the Object.

Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
Object Closed	Object is closed
Text Refreshed	After text is refreshed
Text Added	After text is added
Typewriter End	After the moment when typewriter effect types last text character.

Object Methods

The state of the Object can be modified using these Methods.

Method name	Execution Result
CLOSE OBJECT	Closes the Object.
RESIZE OBJECT	Changes the size of the Object. Note that top-left corner position of the Object is fixed.
REFRESH TEXT	Refreshes the text in the Object. Can be useful if the text contains dynamically changed substitutes.
ADD TEXT	Adds the text to the current text. Note that the style of closest paragraph will be used for new text.

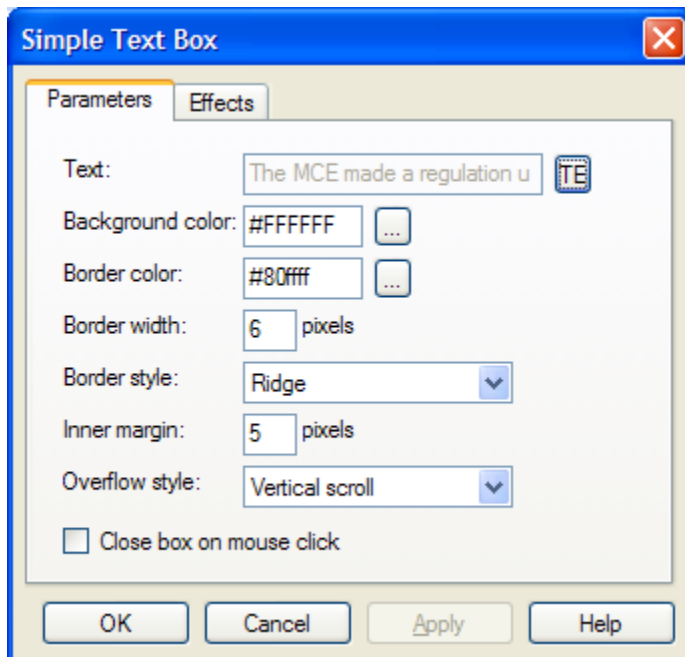
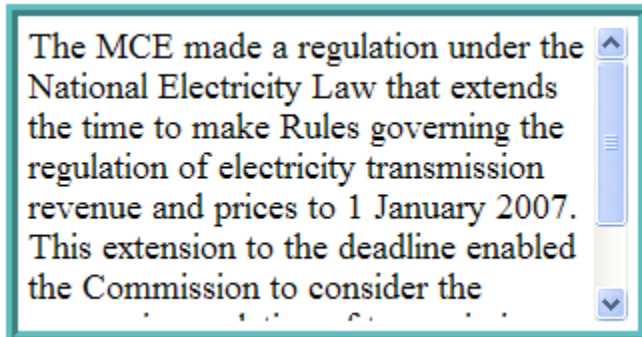
5.5.10.3. "Simple" Text Box

The **Simple Text Box** enables placing the desired text into the box with an optional border and different scrolling settings. Unlike the standard embedded text box, this Text Box enables scrolling and special effects.

Note, that this Object is able to make text substitutions in Rich Text. Text substitutions can be values from Variables and Object properties. Because the Rich Text format is quite complex, additional options for the substitution area are used - double curle brackets. Text substitutions will be applied only for double curle brackets areas. For example `{{ $OBJ_19.x }}` will be substituted by the value of the X coordinate of OBJ_19 Object's top-left

corner, and `{{#att_left}}` will be substituted by the value of the CourseLab Variable named `att_left`. If no substitution is found, all double curly brackets areas will remain intact.

Example of a **Simple Text Box** Object:



Add the Object to the Frame. By default, the Object is placed in the center of the Frame. Adjust the size and position the Object according to the prospective Frame structure.

Open the "Properties" dialog screen.

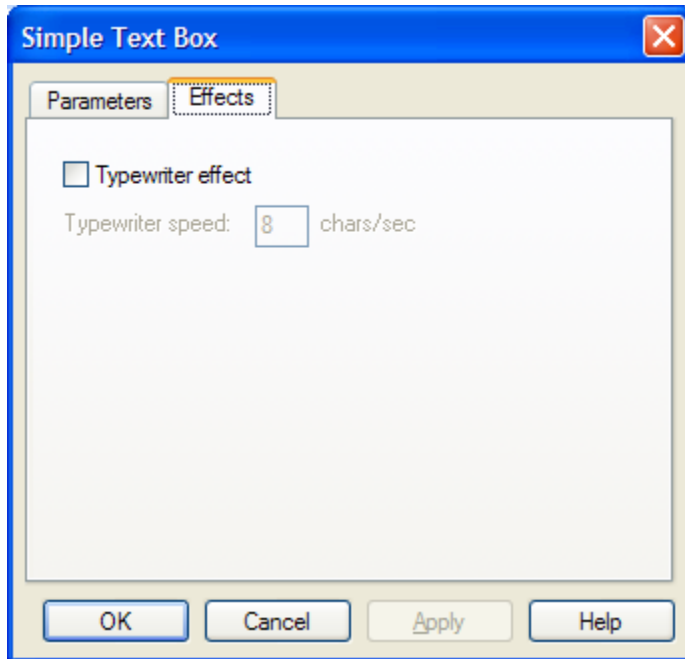
Select color and other settings of the box border according to the overall design.

To input text into the text box, press "TE" button of the

corresponding field. The format of input area is Rich Text so all font settings (size, color, and style) will be saved as you type the text in.

If needed, modify the value for **inner margin**. Inner margin defines the space between the box border and the text. By default, the text margin is equal to 5 pixels. Set the **Overflow style** if needed - the default value is **Autoscroll** and is suitable for most cases.

If the appropriate checkbox is marked, the text box can be **closed on mouse click** anywhere within a box.



On the "Effects" tab you can enable a character iteration display mode for the text in the main box. You can specify text occurrence and frequency rate.

Object Events

This Object is capable of generating Events according to the user's Actions and by interpretation of other Actions by the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects depending on the current state of the Object.

Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
Object Closed	Object is closed
Text Refreshed	After text is refreshed
Text Added	After text is added
Typewriter End	After the moment when typewriter effect types last text character.

Object Methods

The state of the Object can be modified using these Methods.

Method name	Execution Result
CLOSE OBJECT	Closes the Object.
RESIZE OBJECT	Changes the size of the Object. Note, that top-left corner position of the Object is fixed.
REFRESH TEXT	Refreshes the text in the Object, Can be useful if the text contains dynamically changed substitutes.
ADD TEXT	Adds the text to the current text. Note that the style of closest paragraph will be used for new text.

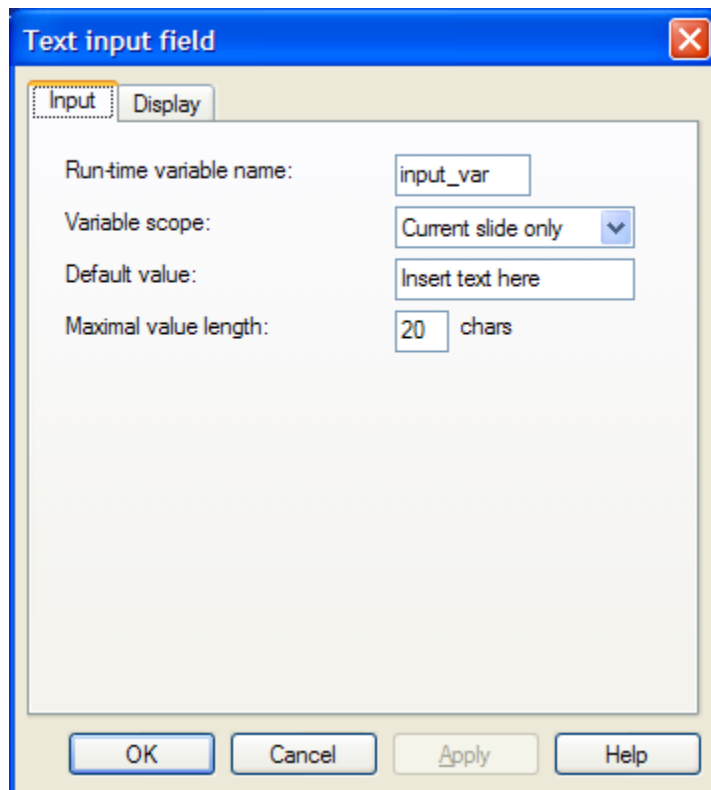
5.5.11. Form Controls

5.5.11.1. Text Field

The **Text Field** enables a user to input text using the keyboard. Inserted values are accessible in the form of Variables within CourseLab and may be employed in different Actions.

Example of Text Field appearance:

Insert text here



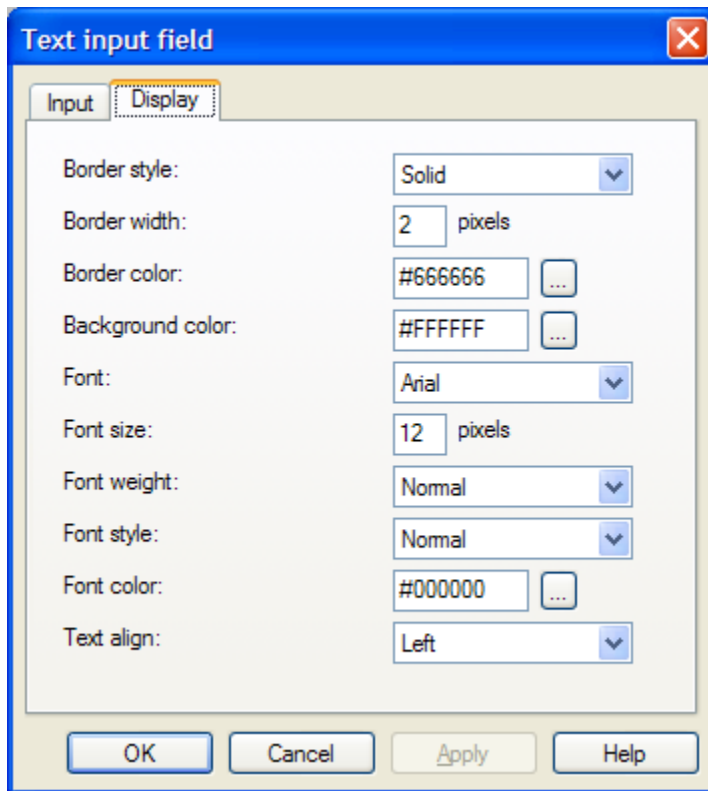
Add an Object to the Frame. Adjust the size and position the Object in relation to the Frame structure.

Open the "Properties" dialog screen.

Specify the Variable name which will be used for storing user input.

*LIMITATION: Variable names must contain **only Latin alphabet letters, and numbers, and must not start with a digit**. Variable names must be unique within a Slide.*

If necessary, specify the **default text** which will be displayed in the field once the Object loads up. If necessary, you may set restrictions on the user-input length of value in characters.



Use "Display Settings" tab to specify the field's appearance.

Object Events

The Object "Text Field" is capable generating Events according to the user's Actions and interpretation of the Actions by the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects depending on the current state of the Object "Text Field".

Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
On Leave Field	At the moment when text is inserted and cursor leaves field

Object Methods

The state of the Object can be modified using these Methods.

Method name	Execution Result
DISABLE INPUT	Restrict access to input field.
ENABLE INPUT	Permit access to input field.
SET VALUE	Set input field value

Object Specific Properties

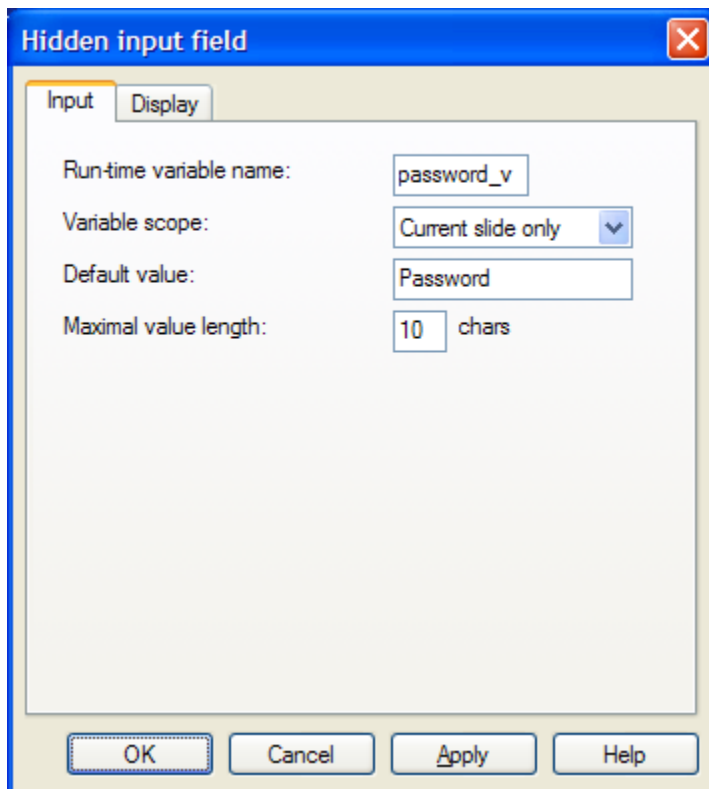
Along with the common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled, 0 otherwise.	\$OBJ_ID.disabled
value	Returns current input field value.	\$OBJ_ID.value

5.5.11.2. Hidden Text Field

The Hidden Text Field enables a user to input text or numbers using their keyboard. On the display, the input text is replaced with bullets. The inserted values are accessible in the form of Variables within CourseLab and may be employed in different Actions.

Example of Hidden Text Field appearance:



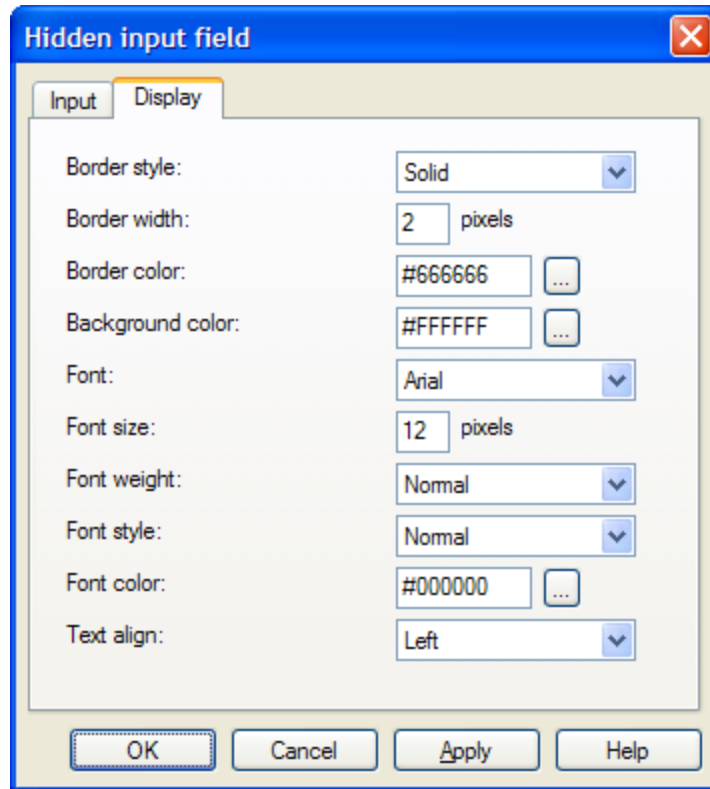
Add the Object to the Frame. Adjust size and position an Object in relation to the Frame structure. Open the "Properties" dialog screen.

Specify the **Variable name** which will be used for storing a user's input.

***LIMITATION:** Variable names must contain **only Latin alphabet letters, and numbers, and must not start with a digit.** Variable names must be unique within a Slide.*

If necessary, insert **default text**, which will be displayed in the field once the Object loads up.

If necessary, you may set restrictions on user-input length of value in characters.



Use the "Display Settings" tab to specify the field's appearance.

Object Events

The "Hidden Text Field" Object is capable generating Events according to the user's Actions and to interpretation of the Actions by the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects depending on the current state of the "Hidden Text Field" Object.

Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
On Leave Field	At the moment when text is inserted and cursor leaves field

Object Methods

The state of this Object can be modified using these Methods.

Method name	Execution Result
DISABLE INPUT	Restrict access to input field.
ENABLE INPUT	Permit access to input field.
SET VALUE	Set input field value

Object Specific Properties

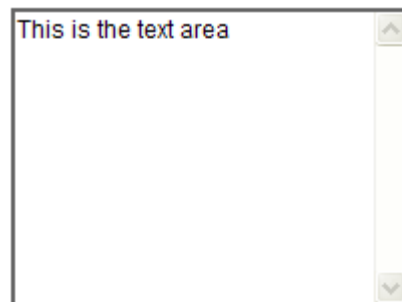
Along with the common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled, 0 otherwise.	\$OBJ_ID.disabled
value	Returns current input field value.	\$OBJ_ID.value

5.5.11.3. The Text Area

Text Area enables a user to enter large amount of text using keyboard. Moving forward, inserted values are accessible in the form of Variables within CourseLab and may be employed in different Actions.

Example of a Text Area:



Text input area

Input Display

Run-time variable name:

Variable scope:

Default value:

Text wrapping:

Add the Object to the Frame. Adjust size and position the Object in relation to the Frame structure. Open the "Properties" dialog screen. Specify a **Variable name**, which will be used for storing the user's input.

*LIMITATION: Variable names must contain **only Latin alphabet letters, and numbers, and must not start with a digit**. Variable names must be unique within a Slide.*

Text input area

Input Display

Border style:

Border width: pixels

Border color:

Background color:

Font:

Font size: pixels

Font weight:

Font style:

Font color:

Text align:

OK Cancel Apply Help

If necessary, specify the **default text** which will be displayed in the text area once the Object loads up.

If necessary, specify text wrapping rules. The default behavior for the Text Area is to automatically move to a new line once the length of text line exceeds the right margin. This is "Virtual" text wrapping - if you enlarge the Text Area, the text will wrap at the different position. Other wrapping rules:

Automatically move to a new line and insert CRLF (carriage return /line feed) character once the length of text line exceeds the

right margin. If the Text Area is enlarged, the wrap point will remain at the same position.

Move to a new line only when the "Enter" button is pressed, otherwise, the horizontal scroll bar will be displayed once the length of text line exceeds the right margin.

Note: By pressing the "Enter" key, a "Hard Return" is inserted in either one of the above mentioned cases.

Object Events

The "Text Area" Object is able to generate Events according to the user's Actions and interpretation of the Actions by the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects depending on the current state of the "Text Area" Object. Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
On Leave Field	At the moment when text is inserted and cursor leaves field

Object Methods

The state of the Object can be modified using these Methods.

Method name	Execution Result
DISABLE INPUT	Restrict access to input field.
ENABLE INPUT	Permit access to input field.
SET VALUE	Set input field value

Object Specific Properties

Along with the common Object properties, this Object has some specific properties, that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

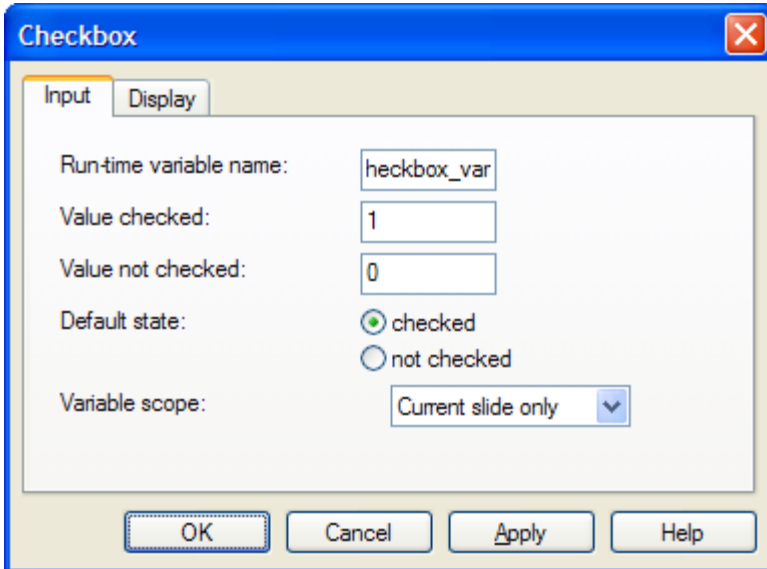
Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled, 0 otherwise.	\$OBJ_ID.disabled
value	Returns current input field value.	\$OBJ_ID.value

5.5.11.4. CheckBox

CheckBox allows users to make Yes/No selections. Inserted values are accessible in the form of Variables within CourseLab and may be employed in different Actions.

Example of a CheckBox:

☒ CheckBox Description



Add the Object to the Frame. Adjust the size and position the Object in relation to the Frame structure. Open the "Properties" dialog screen.

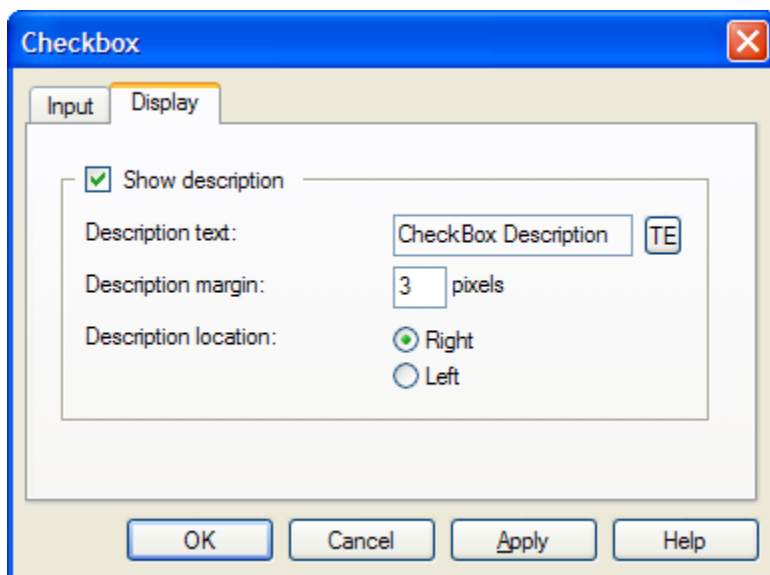
Specify a Variable name, which will be used for storing user's input.

*LIMITATION: Variable names must contain **only Latin alphabet letters, and numbers, and must not start with a digit.** Variable names must be unique within a Slide.*

Specify a value for the Variable if a user marks the CheckBox.

Specify the initial condition, which is whether or not the CheckBox is "checked" after the Object loads up.

Use the "Display Settings" tab to specify the CheckBox display.



The essential CheckBox is "**Show description**". If it is not marked, all other tab parameters are disabled for editing and only CheckBox will be displayed on the Slide.

If the "**Show description**" CheckBox is selected you can input **description text** into the field - in Rich Text Format mode. If needed, modify the value for **text margin**. Text margin

defines the space between CheckBox border and text. You can also specify the alignment (right or left) of the text description in the CheckBox.

Object Events

The "CheckBox" Object is capable of generating Events according to the user's Actions and interpretation of the Actions by the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects depending on the current state of the "CheckBox" Object.

Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
On Check	User sets checkmark
On Uncheck	User removes checkmark
On Change State	User sets or removes checkmark. This Event is triggered right before Events mentioned above.

Object Methods

The state of the Object can be modified using these Methods.

Method name	Execution Result
DISABLE INPUT	Restrict access to checkbox.
ENABLE INPUT	Permit access to checkbox.
SET STATE	Set checkbox state

Object Specific Properties

Along with the common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled, 0 otherwise.	\$OBJ_ID.disabled
value	Returns 1 if Object is currently checked, 0 otherwise.	\$OBJ_ID.value

5.5.11.5. The Group of Radio Buttons

A **Group of Radio Buttons** enables a user to make a single Yes/No selection for one out of several values. Inserted values are accessible in the form of Variables within CourseLab and may be employed in different Actions.

Example of a Group of Radio Buttons:

- ☐ Variant 1
- ☒ Variant 2

Add the Object to the Frame. Adjust the size and position the Object in relation to the Frame structure. Open the “Properties” dialog screen.

The screenshot shows the 'Radio Button Group' dialog box with the 'Input' tab selected. It contains the following fields and controls:

- Run-time variable name:** A text box containing 'radio_var'.
- Variable scope:** A dropdown menu set to 'Current slide only'.
- Value list:** A table with three columns: Description, Value, and Checked.

Description	Value	Checked
Variant 1	100	no
Variant 2	200	yes

Specify the variable name, which will be used for storing user’s input.

*LIMITATION: Variable names must contain **only Latin alphabet letters, and numbers, and must not start with a digit.** Variable names must be unique within a Slide.*

Fill in the list of possible variable values. Open the Input screen by clicking the “+” icon. Enter the text description for the selected value into the field, which is in Rich Text Format mode.

Specify a value for the Variable if a user marks the Radio Button.

Specify the **initial condition**, which is whether or not the Radio Button is checked after Module loads up.

LIMITATION: No more than one value should be initially selected for this type of Object.

The screenshot shows the 'Radio Button Group' dialog box with the 'Display' tab selected. It contains the following controls:

- Show descriptions:** A checked checkbox.
- Description margin:** A text box containing '3' followed by the unit 'pixels'.
- Description location:** Two radio buttons, 'Right' (which is selected) and 'Left'.

Use the “Display” tab to specify the Radio Button display.

The essential CheckBox is “**Show description**”. If it is not marked, all other tab parameters are disabled for editing and only Radio Buttons will be displayed on the Slide.

If the “**Show description**” CheckBox is selected, the

description text of the radio buttons will be displayed. If necessary, modify the value for the **text margin**. Text margin defines the space between Radio Button and text. Additionally, you can specify the alignment (right or left) of the text description according to the Radio Buttons.

Object Events

The "Group of Radio Buttons" Object is capable generating Events according to the user's Actions and interpretation of the Actions by the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects depending on the current state of the "Group of Radio Buttons" Object.

Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
On Change State	User sets checkmark on Radio Button.

Object Methods

The state of the Object can be modified using these Methods.

Method name	Execution Result
DISABLE INPUT	Restrict access to radio group.
ENABLE INPUT	Permit access to radio group.

Object Specific Properties

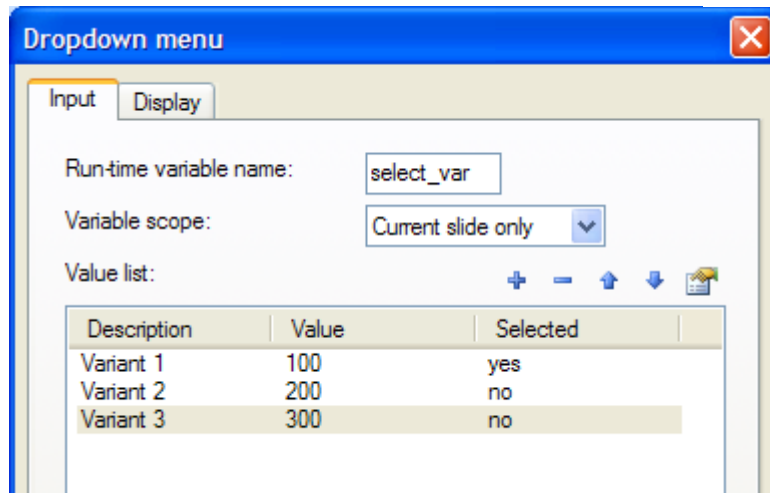
Along with the common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled, 0 otherwise.	\$OBJ_ID.disabled
value	Returns value of currently checked radio button.	\$OBJ_ID.value

5.5.11.6. The Drop-down Menu

The **Drop-down Menu** enables users to make single-choice selections from multiple options. Inserted values are accessible in a form of Variables within CourseLab and may be employed in different Actions.

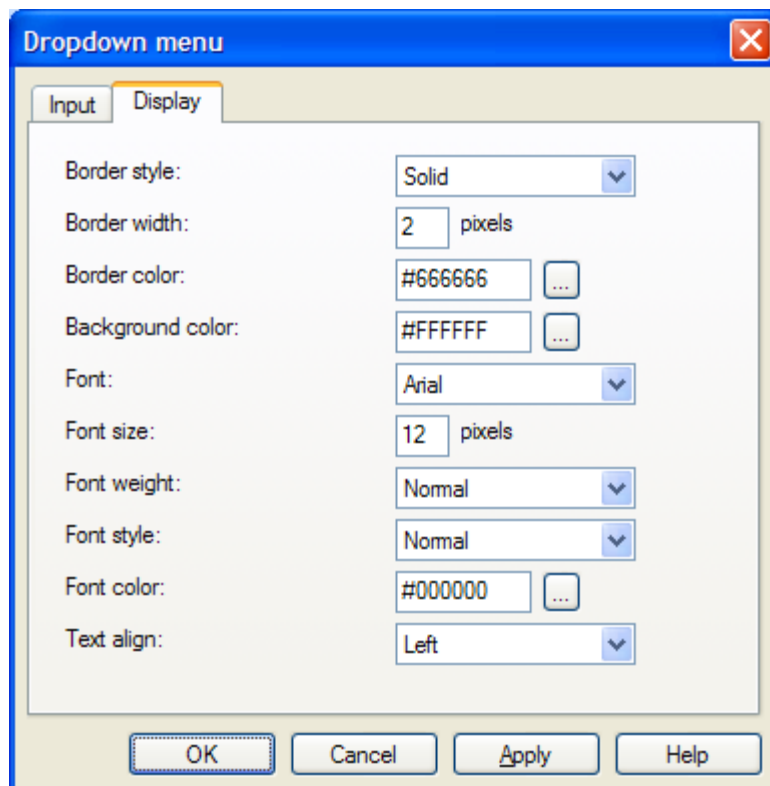
Example of Drop-down Menu appearance:



Description	Value	Selected
Variant 1	100	yes
Variant 2	200	no
Variant 3	300	no

Add the Object to the Frame. Adjust the size and position the Object in relation to the Frame structure. Open the "Properties" dialog screen. Specify a variable name which will be used for storing user's input.

*LIMITATION: Variable names must contain **only Latin alphabet letters, and numbers, and must not start with a digit.** Variable names must be unique within a Slide.*



Fill in the list of possible Variable values. Open the Input/Edit screen by clicking the "+" icon. Enter the text description for the selected value into the field. Specify the **value** for the variable if a user selects that particular menu item. Specify the **initial condition**, which is whether or not the Menu-Item is selected after

Module loads up. *LIMITATION: No more than one value should be initially selected for this type of Object.*

Use the "Display" tab to specify the Drop-down menu display.

Note: these settings will affect all menu-items.

Object Events

This Object is able to generate Events according to the user's Actions and interpretation of the Actions by the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects depending on the current state of the Object.

Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
On Select Item	User selects Menu Item

Object Methods

The state of the Object can be modified using these Methods.

Method name	Execution Result
DISABLE INPUT	Restrict access to input field.
ENABLE INPUT	Permit access to input field.

Object Specific Properties

Along with the common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
disabled	Returns 1 if Object is currently disabled, 0 otherwise.	\$OBJ_ID.disabled
value	Returns currently selected value.	\$OBJ_ID.value
selectedName	Returns currently selected item description.	\$OBJ_ID.selectedName

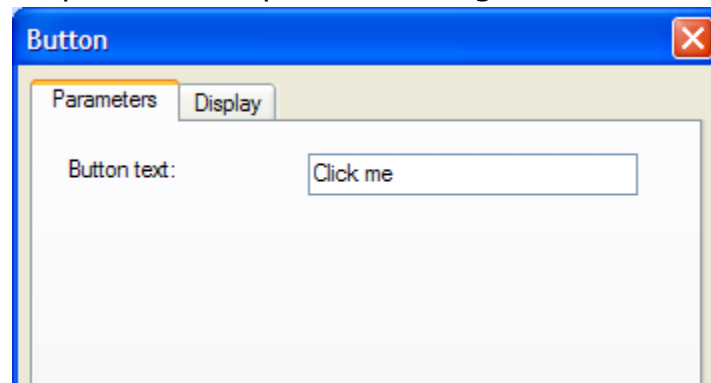
5.5.11.7. Button

A pressed **Button** enables the triggering of previously created Actions.

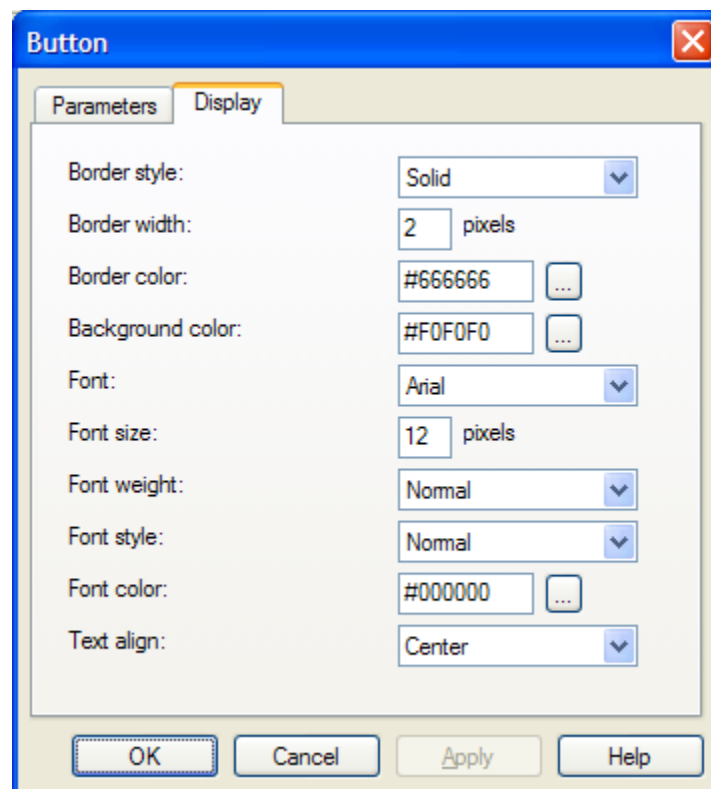
Example of a Button appearance:



Add this Object to the Frame. Adjust its size and position in relation to the Frame structure. Open the "Properties" dialog screen.



The only parameter on the first tab is the Button label. Enter the Button text.



Use the "Display" tab to design the Button display.

5.5.12. Simulations

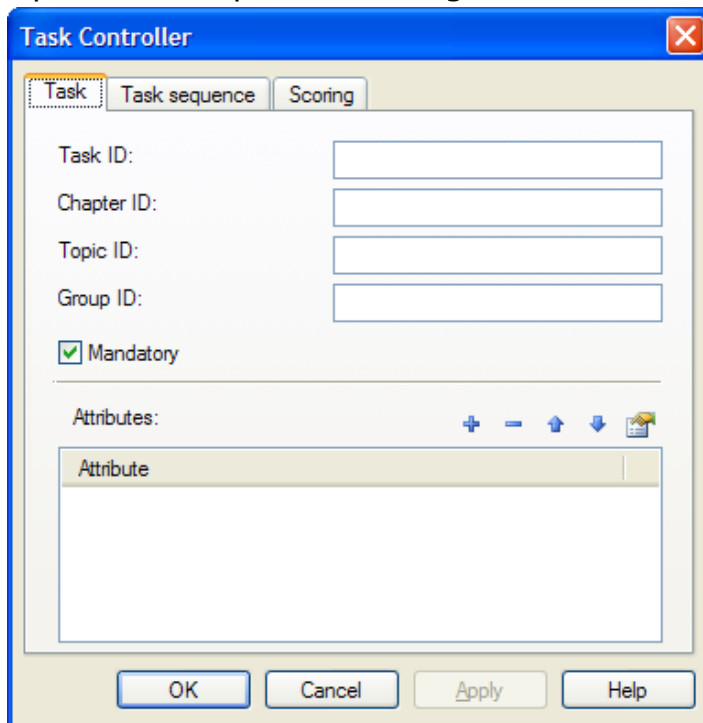
The "Simulation" group of Objects includes special Objects which enable you to test for the correct sequence of Actions in software simulations.

5.5.12.1. The "Task controller" Object

The "**Task controller**" Object is a special Object, which contains the correct scenario for a multi-step interactive task. This Object is not visible to the student. The "**Task controller**" Object works in close cooperation with the "Test Structure" Object by forwarding status information about completion of the exercise.

LIMITATIONS: Only one "Task controller" Object per Slide.

Since this is an invisible Object there is no need to allocate it within a Slide. Open the "Properties" dialog screen.



On the "Task" tab, fill in fields that are specific to task.

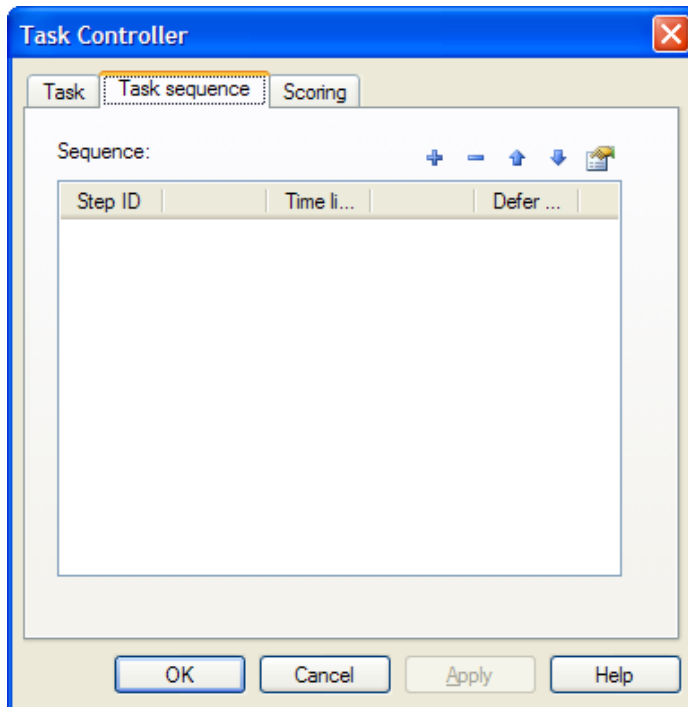
The **Task ID** is unique within the Module as an identifier of a unique task (for example, it can be assembled using identifiers of the Chapter, Topic, and so on).

Chapter/Topic/Group ID – indicates the level of test structure hierarchy.

If the option "**Mandatory**" – is selected, then specified exercise will have the best chances to be included into the

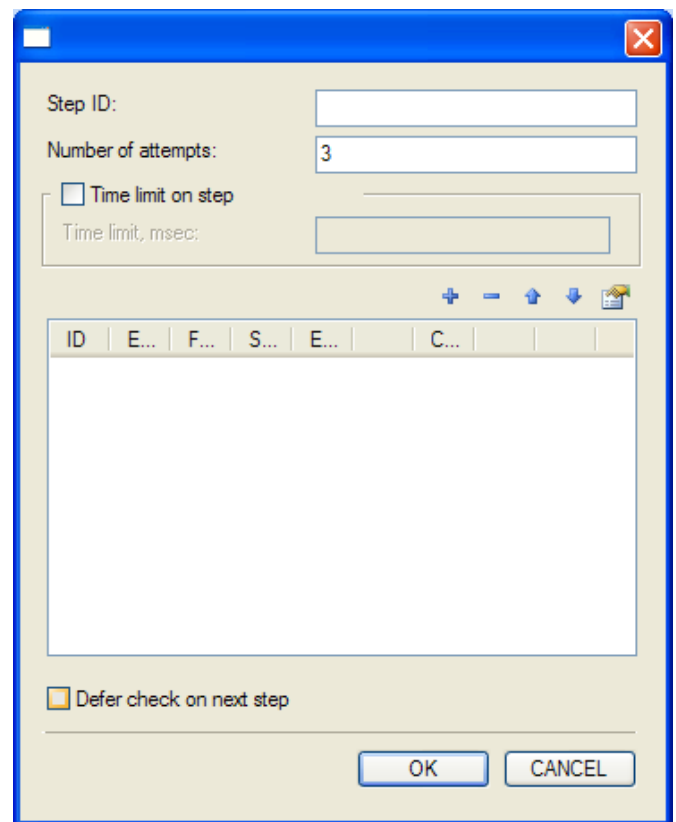
collection of the tasks, which will be offered to the user at beginning of the test (this depends on the Method of selection specified for the Test Structure Object).

Attributes are additional parameters independent of the Chapter/Topic/Group hierarchy. These parameters are used when building more complicated selections of tasks upon test start up.



The step by step task instructions are described on the "Task sequence" tab. Each **Step** is a necessary Action performed by the user (mouse click or text input).

As soon as the Slide is launched, the Object is waiting for the user's response to the conditions of the first step – for example, enter an answer to a question. If the condition was successfully fulfilled by the user, the Object automatically switches its mode to the waiting mode for the user to provide response for the *next* step conditions, and so on, until the sequence of the correct steps is performed.



Step parameters

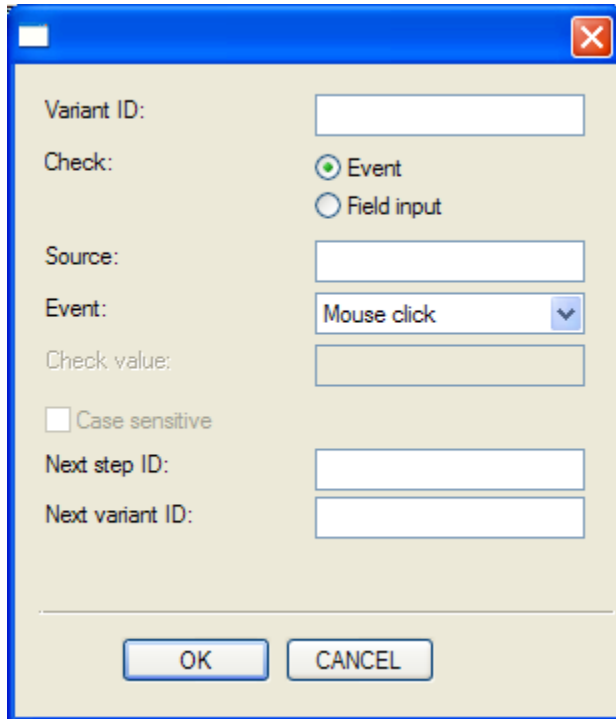
The **Step ID** is used to specify each step inside the list of steps. It must be unique for each task.

Number of attempts – defines the number of unsuccessful tries, after reaching this limit, the task execution will end with failure.

Time limit on step – this will terminate task execution if a user exceeds the time allocated for the step completion (it is recommended to use only if necessary).

Check on the next step – a verification check for the current step will be “postponed” and will be executed for both current and next step together. This verification Method is typically used for the text fields input (it is almost impossible to correctly define the moment when user is finished with their input. Hence, verification is only performed, for example, when user presses an “OK” button on the next step).

A Step can have “multiple paths”: one or more different correct variants **of the Actions** can be defined. Let us review how to specify the Action variant.

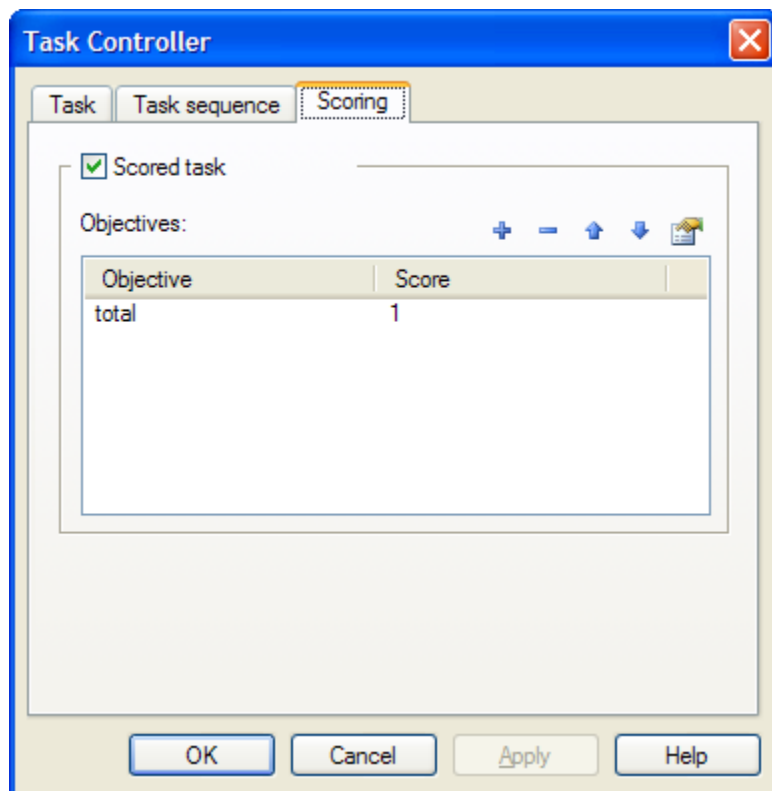


The **Variant ID** is a unique identifier within a step.

The **Check** option defines whether or not a certain Event (for example, mouse click or keyboard input) will be checked.

Source – defines the identifier of the Event’s source (source identifier is used for calling the Action METHOD – REDIRECT Action of the Test Structure Object) or source of the text being verified (in this case, the source identifier is the Variable name of the text field). If check text input is selected, then both fields for the checked string and “Match Case” option become accessible.

If upon completion of the action, which corresponds to certain alternative, it is necessary to switch to a waiting mode for the Action which is different from the next in the list of steps, then it is necessary to specify identifiers for the step and the variant and establish the waiting mode for them.



If these fields are *not* filled, the transition to the next step occurs (default behavior). If only the “Next Step” field is filled and the system will be waiting for all possible variants of this step to be executed. If both fields are filled, the system will be waiting only for the specified variant of the step to be executed.

On the **Scoring** tab you can specify one or more Objectives to which a task score will be recorded. You can specify different values for Objectives.

Object events

The “Task Structure” Object is a complex type of Object which is capable of generating events, depending on a user’s Actions and also depending on the interpretation of these Actions by the Object. In combination with Actions these Events can be employed for building up intellectual behavior models for other Objects depending on the current state of the Object.

Reference in the Action Editor	Triggered Upon
On Attempt	At the moment of answer acceptance, but before answer evaluation
On Success	At the moment of Action (step) evaluation, If the Action is correct.
On Failure	At the moment of Action (step) evaluation, If the Action is incorrect.
On Step End	At the moment of current step completion, before transition to the waiting mode for the next step.
On Attempts Limit	After Action (step) evaluated, If the number of attempts decreased to zero.
On Task End	Task completion is finished (no matter how successful or unsuccessful it was).

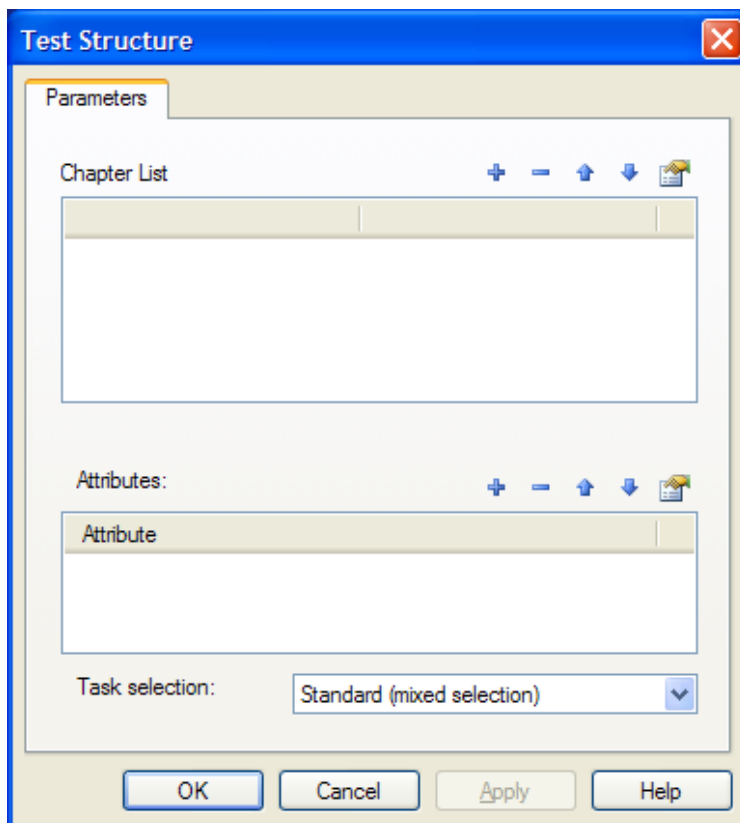
5.5.12.2. The “Test Structure” Object

The “Test Structure” Object is a special Object which manages tasks selection and display according to predefined conditions. This Object appears in the form of a “Next Question” button.

Next question

The “Test Structure” Object functions in close cooperation with “Task Controller” Object by receiving from them the status information about completion of the task.

LIMITATIONS: This Object must be located only on the Master Slide.
Insert the Object into the Slide. Open the “Properties” dialog screen.



The Chapter List contains the list of Chapter headings to which tasks are linked. You can define the number of questions to be displayed for each chapter and for every topic within a chapter.

ATTENTION! IDs of the chapters used for selecting tasks, must precisely match IDs used for tasks specifications.

Attributes are additional filters independent of the Chapter/Topic/Group hierarchy. These filters will be applied to selections of tasks.

Task selection – the method of selection which will be used for building test during Module launching.

- **Standard** selection – specifically corresponds to the chosen number of the tasks from each topic/chapter.
- **Mandatory** selection – selects all tasks marked as mandatory from each topic/chapter. In addition, if quantity allowance is not exceeded, selection will supplement with other additional tasks.
- **All groups** selection – selects single question from each group.
- **Fast** selection – selects single question from each chapter, and is used for tuning purposes.

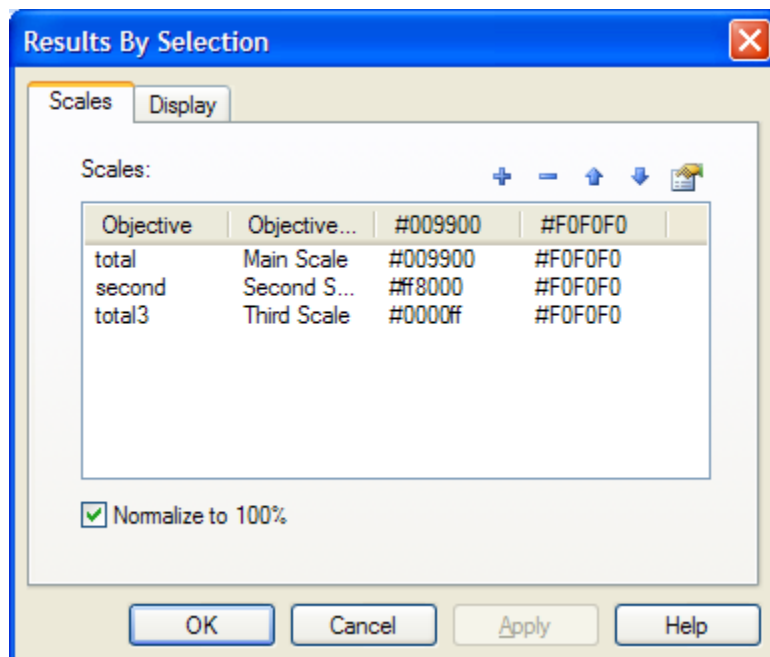
Object Methods

Reference in the Action Editor	Execution Method
REDIRECT ACTION	Any Action that needs to be verified is forwarded into the Test Structure Object, which automatically defines current Task Controller Object and redirects Action to it.

5.5.12.3. The “Results by selections” Object

The “**Results by selections**” Object enables providing results upon test completion for the different Objectives of the module, counting only those exercises included in the current selection. Under such conditions, the maximum possible result on the Objective scale is not the maximum value specified upon setting Objectives for the Module, but rather the maximum available score points which can be received for the current Objective within the test that has just been completed (i.e. maximum for selection).

Main Scale	<div></div>	100%
Second Scale	<div></div>	100%
Third Scale	<div></div>	100%

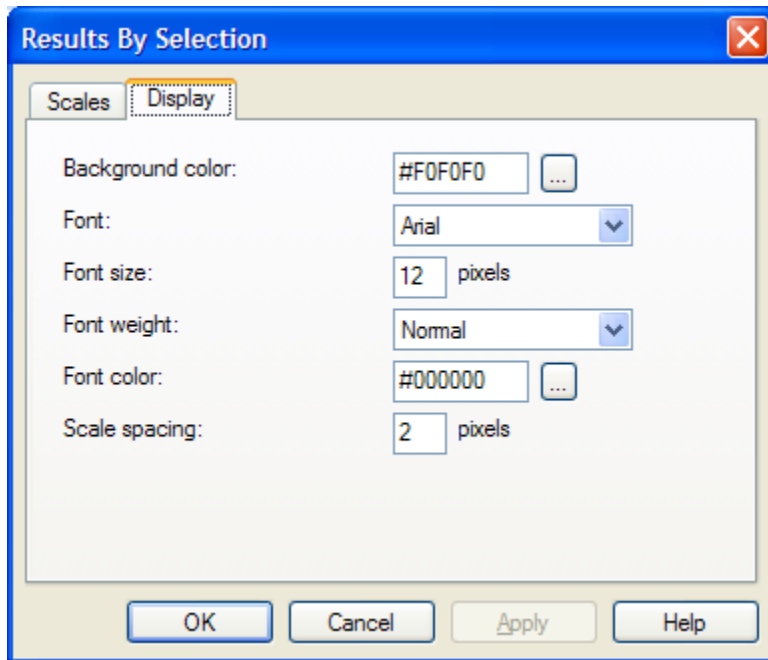


The “Results by selections” Object functions in close cooperation with the “Test Structure” Object by receiving information from it about the content of the selections.

Insert this Object into the Slide and open the “Properties” dialog screen.

The list of available Objectives enables the specification of appearance settings for each objective,

as well as providing an informal description for display in the table. If required, you can check **Normalize to 100%** for a better representation of results.



You can use the "Display" tab to select parameters for the appearance of the Object and its scales.

5.5.13. Questions

The current version of CourseLab supports the following types of questions:

- single choice
- multiple select
- ordered items
- numerical fill-in-blank
- text fill-in-blank
- matching pairs

You can insert any type of question at any time as well as a test (using the “Test” Object) containing any combination of the above questions. Let us describe these Objects in more detail.

5.5.13.1. The Single Choice Question Object

The **Single Choice question** Object enables a user to choose one correct item from a list of possible answers:

Question is scored

Meow is the cry of...

Select correct variant

☐ Cat

☐ Cow

☐ Dog

☒ Sheep

SUBMIT ANSWER Attempts: 3


Question time limit: 3 sec






Creating a Question

Add the Question Object to the Frame. Open the “Properties” dialog screen (double click on the Object within a Slide or select the “Properties” option from the context menu).

Single Choice Question

Feedback Display Messages
 Question Limitations Scoring

Question text: 

Variants:     

Variant text goes here	Correct answer
Cat	yes
Cow	no
Dog	no
Sheep	no

☐ Shuffle variants on display

OK Cancel Apply Help

In the opened dialog select the "Question" tab. To input the question's text, press the "TE" button of the corresponding field. The format of the input area is RichText so all font settings (size, color, and style) will be saved as you type the text in.

Use the "+" button to specify as many possible answers as needed. In the opened sub-dialog screen press the "TE" button of the corresponding field and insert the text of the possible answer. Select the checkbox for correct answer. *LIMITATION: No more than one answer should be marked as the correct one otherwise result will be incorrect.*

Single Choice Question

Feedback Display Messages
 Question Limitations Scoring

☒ Calculate number of attempts automatically
 Number of attempts:

☒ Time limit for the answer
 Time limit (sec):

☐ Allow skip question
 Skipped question is: ☐ just skipped ☒ failed

☐ Allow recurring approaches

Alternatively, you can edit entered answers by pressing the "Edit" button under the "List" menu.

Select the "Shuffle variants on display" check box if you want answers to be displayed in **random order**. Otherwise, answers will be displayed in the order they were inserted. Use the "Up" and "Down" arrows to change the order.

Use the "Limitations" tab to set the following restrictions:

Number of attempts. If the number of attempts is not supposed to be defined automatically (i.e. checkbox "Define automatically" is not checked), the "Number of Attempts" field is available for input. There you can specify the number with respect to the level of question complexity or testing Methodology.

The following formula is used for **Automatic attempts calculation**: the number of attempts equals the number of possible answers minus one (for example, 3 attempts for question with 4 answers, 4 attempts for questions with 5 answers, and so on). If the automatic attempts calculation is selected, the number specified in the "Number of Attempts" field is ignored.

Time limit for the answer. Upon time expiration the user can make no further answer selections, and the question will be validated for correctness even if the "Check Answer" button is not pressed. If the correct answer is chosen just before the time expiration, it will be credited to the user.

Possibility to skip the question. If this option is selected, the user is able to ignore the question by pressing the "Skip Question" button. The author of the course can specify whether or not the skipped question will be classified as **skipped** (with opportunity to provide the answer later) or counted as **failed** (without a chance for another attempt).

Possibility to reset stored result and answer the question once again (recurring approaches).

Single Choice Question

Feedback Display Messages
 Question Limitations **Scoring**

☒ Credit question

Weight of a question/attempt:

Crediting method: ☒ fixed score ☐ regressive

Objectives: + - ↑ ↓ 📄

Objective
total

OK Cancel Apply Help

Use the “Scoring” tab to specify the scoring parameters for the question. The essential CheckBox is “Credit Question”. If it is not marked, all other scoring parameters are disabled and will be ignored when presenting the question to the user. Such questions are referred as **not credited** questions. These questions are frequently used to prepare the user for the next Slide Topic, to keep the user focused, and so forth.

For the **credited** question, the following options are available:

- Base weight of a question/attempt – the base number of points for the question (or attempt for regression Method). This number is used to calculate the Total score for the question. If the fixed crediting Method is used, the base weight of the question equals the total score.
- The following crediting Methods can be used:
 - **Fixed** (Upon the correct response the user gets the same score regardless the number of attempts. This score is equal to the base weight)

- **Regression Method** (In this case the user is getting the highest possible score for providing the correct answer from the first try; the number of points decreases on the second try and so forth, until all tries are used). The maximum number of points in this case is equal to the **base number of points multiplied by the number of attempts**. The Regression Method enables a more accurate performance evaluation but requires applying additional requirements to question parameters. It is important that the number of tries for this Method should not exceed the automatically calculated one (which is the number of possible answers minus one); otherwise the regression Method will become ineffective.
- **Objectives.** Received points can be stored in one or several Objectives simultaneously. Remember, that only the Objective “total” always exists (which is inserted into the list of Objectives by default). The “total” Objective is used to store the scores for ALL the questions, which will be used to determine the final score for completing the learning Module. Should you decide to record points for the current question into the additional Objectives, make sure that the corresponding Objective is created (Go to menu “Module” - “Runtime Settings” - select “Objectives” tab).

The screenshot shows the 'Single Choice Question' dialog box with the 'Feedback' tab selected. The 'Question' tab is also visible. The 'Feedback' tab contains the following settings:

- ☐ Display right answer
- ☒ Display feedback messages (with a 'View' button to the right)
- Correct answer: [Correct] [TE] ☐
- Incorrect answer: [Incorrect] [TE] ☐
- No more attempts: [No more attempts left] [TE] ☐
- Timeout: [Time is out] [TE] ☐
- Offset horizontal: [100] pixels
- Offset vertical: [50] pixels
- ☒ Hide messages automatically (with a sub-section containing 'after' [3] 'sec')

Use the “Feedback” tab to specify feedback options, which define what shall be displayed upon another attempt to respond (correct or incorrect) and after completing the question. You may permit the **display of correct answer** upon question completion by marking corresponding check box. If student has used off all the attempts for response, or if the time has expired then the correct answer will be displayed; user will not be credited for this answer.

This option may be used when the main Objective of the question is educating rather than testing.

You may permit or restrict the **feedback messages**. You can modify the text of feedback messages, which is in RichText format. **Feedback messages** are displayed in the separate small window during Module playback. You can modify **display coordinates** for this window (the coordinates are given relative to the Object's upper left corner) Note, that there is a check box displayed next to every Edit button for the text feedback; it enables to turn On/Off display of feedback messages in CourseLab Editor. By default, all check boxes are empty to avoid overloading the question Object with too many details.

The screenshot shows a dialog box titled "Single Choice Question" with a close button (X) in the top right corner. The dialog has three tabs: "Question", "Limitations", and "Scoring". The "Display" sub-tab is selected under the "Limitations" tab. The "Display" sub-tab contains the following settings:

- Skin:** Basic (dropdown menu)
- Basic color:** Lightblue (dropdown menu)
- Button skin:** Variant 1 (dropdown menu)
- ☐ **Use custom buttons**
 - Submit button (idle): [text box] [button icon]
 - Submit button (over): [text box] [button icon]
 - Skip button (idle): [text box] [button icon]
 - Skip button (over): [text box] [button icon]
- ☐ **Use custom spots**
 - Empty spot: [text box] [button icon]
 - Checked spot: [text box] [button icon]
- Submit button tooltip:** Submit answer [text box]
- Skip button tooltip:** Skip question [text box]

At the bottom of the dialog are four buttons: OK, Cancel, Apply, and Help.

On the "Display" and "Messages" tabs you can select appearance settings for the Object and edit the information and warning messages.

Object Events

The "Single Choice Question" Object is capable generating Events according to the user's Actions and by interpretation of the Actions of, the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects depending on the current state of the Object "Single Choice Question".

Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
On Display Question	The question is fully loaded and all elements of the question are displayed
On Change Choice	The User changes selected item
On Attempt	At the moment of answer acceptance, but before answer evaluation
On Success	At the moment of answer evaluation, If the answer is correct.
On Failure	At the moment of answer evaluation, If the answer is incorrect.
On Time Out	At the moment of time expiration for the answer (if defined)
On Attempts Limit	After answer evaluated, If the number of attempts decreased to zero.
On Skip Question	After "Skip Question" button is pressed
On Question Answered	After answer is evaluated and no more attempts left (on timeout or on attempts limit)

Object Specific Properties

Along with common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
questionMode	Returns current question mode (tokens: "normal", "review").	\$OBJ_ID.questionMode
questionType	Returns "choice".	\$OBJ_ID.questionType
questionDuration	Returns allowed question duration in seconds (if exists).	\$OBJ_ID.questionDuration
questionTimer	Returns current question timer value in seconds (if exists).	\$OBJ_ID.questionTimer
itemQuantity	Returns total variants quantity.	\$OBJ_ID.itemQuantity
questionValue	Returns current question value (spot values divided by "~": for example, "0~1~0~0" - 0 corresponds to empty spot, 1 - to checked spot). Note, that the order of spots is always as it was defined in Object - no matter shuffled or not.	\$OBJ_ID.questionValue
attemptsLast	Returns current number of attempts.	\$OBJ_ID.attemptsLast
attemptsTotal	Returns allowed number of attempts.	\$OBJ_ID.attemptsTotal

5.5.13.2. Object “Multiple Select Question”

The **Multiple Select Question** Object enables a user to choose one or several correct items from a list of possible answers.

Question is scored

Which states are in North America?

Select all correct variants

<input checked="" type="checkbox"/>	Arizona
<input checked="" type="checkbox"/>	Alaska
<input type="checkbox"/>	Hawaii
<input checked="" type="checkbox"/>	Visconsin


SUBMIT ANSWER Attempts: 3






Question time limit: 3 sec

Creating a question

Multiple Select Question

Feedback Question Display Limitations Messages Scoring

Question text: Which states are in North America? 

Variants:     

Variant text goes here	Correct answer
Arizona	yes
Alaska	yes
Hawaii	no
Visconsin	yes

☐ Shuffle variants on display

Add the Question Object to the Frame. Open the “Properties” dialog screen (double click on Object within a Slide or select “Properties” option from the context menu).

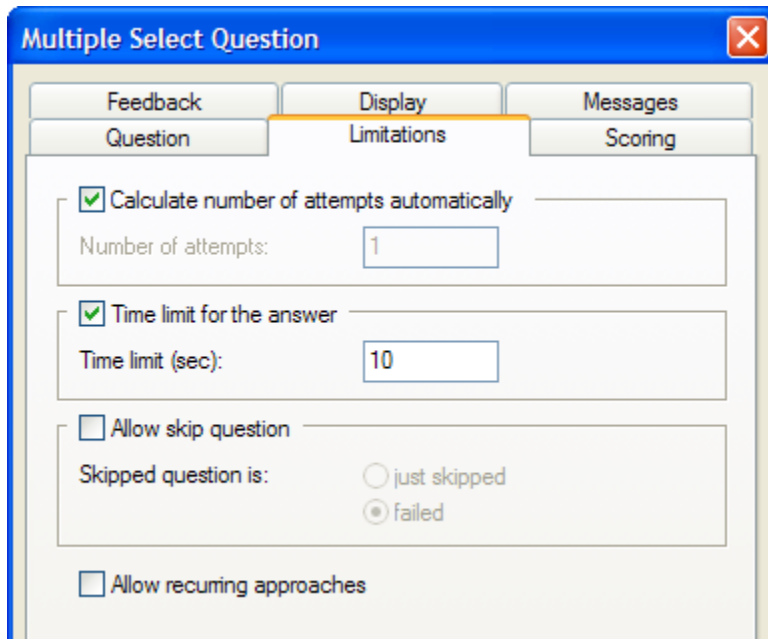
To input a question’s text, press the “TE” button of the corresponding field. The format of the input area is RichText so all font settings (size, color, and style) will be saved as you type the text in.

Use the “+” button to specify **possible answers** - as many as needed. In

the opened sub-dialog screen press the "TE" button of the corresponding field and insert the text for the possible answer. Select checkbox for correct answer.

Alternatively, you can edit the entered answers by pressing the "Edit" button under the "List" menu.

Select the "Shuffle variants on display" check box if you want answers to be displayed in **random order**. Otherwise, the answers will be displayed in the order they were inserted. Use the "Up" and "Down" arrows to change the order.

The image shows a screenshot of a software dialog box titled "Multiple Select Question". It has a blue title bar with a close button (X) on the right. Below the title bar are four tabs: "Feedback", "Display", "Messages", and "Limitations". The "Limitations" tab is currently selected and highlighted with an orange border. Inside the "Limitations" tab, there are several settings: 1. A checked checkbox labeled "Calculate number of attempts automatically" with a text input field next to it containing the number "1". 2. A checked checkbox labeled "Time limit for the answer" with a text input field next to it containing the number "10". 3. An unchecked checkbox labeled "Allow skip question". Below it, the text "Skipped question is:" is followed by two radio button options: "just skipped" (which is unselected) and "failed" (which is selected). 4. An unchecked checkbox labeled "Allow recurring approaches" at the bottom.

Use "Limitations" tab to set the following restrictions:
Number of attempts. If the number of attempts is not supposed to be defined automatically (i.e. checkbox "Define automatically" is not checked), the "Number of Attempts" field is available for input. There you can specify the number with respect to the level of question complexity or testing Methodology.

The following formula is used for **Automatic attempts calculation**: number of attempts equals the number of possible answers minus one (for example, 3 attempts for question with 4 answers, 4 attempts for questions with 5 answers, and so on). If an automatic attempts calculation is selected, the number specified in the "Number of Attempts" field is ignored.

Time limit for the answer. Upon time expiration the user will be restricted from making further answer selections, and the question will be validated for correctness even if the "Check Answer" button is not pressed. If the correct answer is chosen just before time expiration, it will be credited to the user.

Possibility to **skip the question**. If this option is selected the user is able to ignore the question by pressing the "Skip Question" button. The author of the course can specify whether or not the skipped question will be classified as **skipped** (with opportunity to provide the answer later) or counted as **failed** (without a chance for another attempt).

Possibility to **reset stored result** and answer the question once again (recurring approaches).

The screenshot shows a software interface for configuring a 'Multiple Select Question'. The 'Scoring' tab is active, showing options for crediting the question. The 'Credit question' checkbox is checked. The weight is set to 1, and the 'fixed score' method is selected. An objective named 'total' is listed.

Use the "Scoring" tab to specify scoring parameters for the question. The essential CheckBox is "Credit Question". If it is not marked, all other scoring parameters are disabled and will be ignored when presenting the question to the user. Such questions are referred as **not credited** questions. These questions are frequently used to prepare the user for the next Slide Topic, to keep the user focused, and so forth. In a **credited** question the

following options are available:

- **Base weight of a question/attempt** – the base number of points for the question (or attempts for the regression Method). This number is used to calculate the Total score for the question. If the fixed crediting Method is used, the base weight of the question equals the total score.
- The following crediting Methods can be used:
 - **Fixed** (Upon the correct response user gets the same score regardless the number of attempts. This score is equal to the base weight)
 - **Regression** Method (In this case the user is getting the highest possible score for providing the correct answer from the first try; the number of points is decreasing on the second try and so forth, until all tries are used). The maximum number of points in this case is equal to the **base number of points multiplied by the number of attempts**. Regression Method enables more accurate performance evaluation but requires applying additional requirements to question parameters. It is important that the number of tries for this Method should not exceed the automatically calculated one (which is number of possible answers minus one); otherwise the regression Method will become ineffective.

- **Objectives.** Received points can be stored in one or several Objectives simultaneously. Remember, that only the Objective “total” always exists (inserted into the list of Objectives by default). The “total” Objective is used to store the scores for ALL the questions, and will be used to determine the final score for completing the learning Module. Should you decide to record points for the current question into the additional Objectives, make sure that the corresponding Objective is created (Go to menu “Module” - “Runtime Settings” - select “Objectives” tab).

Use the “Feedback” tab to specify feedback options, which define what shall

be displayed upon another attempt to respond (correct or incorrect) and after completing the question.

You may permit the **display of correct answer** upon question completion by marking the corresponding check box. If the student has used up all the attempts for response, or if the time has expired, then the correct answer will be displayed; the user will not be credited for this

answer. This option may be used when the main Objective of the question is educating rather than testing.

You may permit or restrict the **feedback messages**. You can modify the text of feedback messages, which is in RichText format. **Feedback messages** are displayed in the separate small window during Module play back.

Multiple Select Question [X]

Question Limitations Scoring
Feedback Display Messages

Skin: Basic [v]
Basic color: Lightblue [v]
Button skin: Variant 1 [v]

☐ Use custom buttons

Submit button (idle): [] ...
Submit button (over): [] ...
Skip button (idle): [] ...
Skip button (over): [] ...

☐ Use custom spots

Empty spot: [] ...

You can modify **display coordinates** for this window (the coordinates are given relative to the Object's upper left corner) Note, that there is a check box displayed next to every Edit button for the text feedback; it enables to turn On/Off display of feedback messages in CourseLab Editor. By default, all check boxes are empty to avoid overloading the question Object with too many details.

Multiple Select Question [X]

Question Limitations Scoring
Feedback Display Messages

Credited: Credited question
Not credited: Not credited question
Attempts: Attempts:
Time limit: Time limit:
Question instruction: Select all correct variants
Correct answer: CORRECT ANSWER
Last question state: LAST QUESTION STATE
Skipped: QUESTION IS SKIPPED
Skipped and failed: QUESTION IS SKIPPED AND FAILED

Warning messages

Continued: Continued approach. Number of attempt
Already answered: This question is already answered. Rec
Recurring approach: This question is already answered. Pres
Skip and fail confirmation: Skipped question will be evaluated as f

OK Cancel Apply Help

On the "Display" and "Messages" tabs you can select appearance settings for the Object and edit the information and warning messages.

Object Events

The "Multiple Select Question" Object is capable generating Events according to the user's Actions and interpretation of the Actions by the Object. When combined with Actions Events it can be employed for building up intellectual behavior models for other Objects depending on the current state of the Object "Multiple Select Question".

These Events are available using the built-in CourseLab Events manipulation mechanism:

Reference in the Action Editor	Triggered Upon
On Display Question	The question is fully loaded and all elements of the question are displayed
On Change Choice	User changes selected item (set or removes any checkmark)
On Attempt	At the moment of answer acceptance, but before answer evaluation
On Success	At the moment of answer evaluation, If the answer is correct.
On Failure	At the moment of answer evaluation, If the answer is incorrect.
On Time Out	At the moment of time expiration for the answer (if defined)
On Attempts Limit	After answer evaluated, If the number of attempts decreased to zero.
On Skip Question	After "Skip Question" button is pressed
On Question Answered	After answer is evaluated and no more attempts left (on timeout or on attempts limit)

Object Specific Properties

Along with common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
questionMode	Returns current question mode (tokens: "normal", "review").	\$OBJ_ID.questionMode
questionType	Returns "select".	\$OBJ_ID.questionType
questionDuration	Returns allowed question duration in seconds (if exists).	\$OBJ_ID.questionDuration
questionTimer	Returns current question timer value in seconds (if exists).	\$OBJ_ID.questionTimer
itemQuantity	Returns total variants quantity.	\$OBJ_ID.itemQuantity
questionValue	Returns current question value (spot values divided by "~": for example, "0~1~1~0" - 0 corresponds to empty spot, 1 - to checked spot). Note, that the order of spots is always as it was defined in Object - no matter shuffled or not.	\$OBJ_ID.questionValue
attemptsLast	Returns current number of attempts.	\$OBJ_ID.attemptsLast
attemptsTotal	Returns allowed number of attempts.	\$OBJ_ID.attemptsTotal

5.5.13.3. The “Ordered Items Question” Object

Ordered Items types of questions require from the user to specify the right order of presented items.

Question is scored

How to make coffee espresso?

Place variants in correct order

◆ Enjoy the taste of fresh espresso

◆ Grind coffee beans

◆ Turn espresso machine on

◆ Place ground coffee in espresso machine

Attempts: 3

Question time limit: 15 sec

Creating a question

Order Question

Feedback Question Display Limitations Messages Scoring

Question text: How to make coffee espresso? TE

Variants: + - ↑ ↓

Variant text

Grind coffee beans

Place ground coffee in espresso machine

Turn espresso machine on

Enjoy the taste of fresh espresso

Add the Question Object to the Frame. By default, the Object is placed in the center of the Frame. Adjust the size and position the Object with respect to the prospective Frame structure. Open the “Properties” dialog screen (double click on the Object within a Slide or select “Properties” option from the context menu).

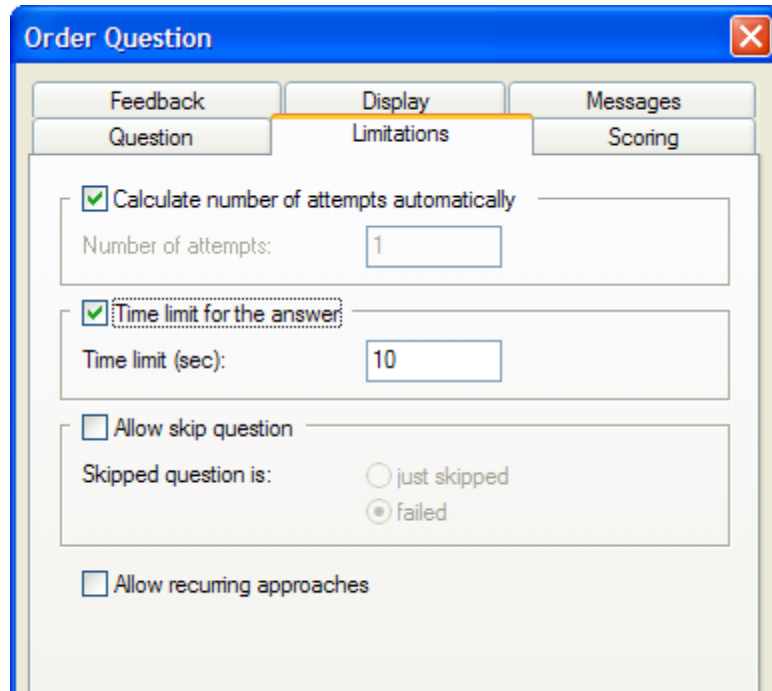
To input question’s text, press the “TE” button of the corresponding field. The format of input area is RichText so all font settings (size, color, and style) will be saved as you type the text in.

Use the “+” button to specify **possible answers** - as many as needed. In the opened sub-dialog screen press the “TE” button of the corresponding field and insert the text of the variant.

Alternatively, you can edit entered answers by pressing the "Edit" button under the "List" menu.

Note, that for this type of question the correct Order of Items will be the **order specified by author**. Question items are ALWAYS presented randomly to the user. Use the "Up" and "Down" arrows to change items order.

Use the "Limitations" tab to set the following restrictions:

The image shows a screenshot of a software window titled "Order Question". It has a blue title bar with a close button (X) on the right. Below the title bar are three tabs: "Feedback", "Display", and "Messages". The "Display" tab is selected and highlighted with an orange underline. Under the "Display" tab, there are three sub-tabs: "Question", "Limitations", and "Scoring". The "Limitations" sub-tab is selected. The main area of the window contains several settings: 1. A checked checkbox "Calculate number of attempts automatically" with a text input field "Number of attempts:" containing the value "1". 2. A checked checkbox "Time limit for the answer:" with a text input field "Time limit (sec):" containing the value "10". 3. An unchecked checkbox "Allow skip question" with a group box "Skipped question is:" containing two radio buttons: "just skipped" (unselected) and "failed" (selected). 4. An unchecked checkbox "Allow recurring approaches".

Number of attempts. If the number of attempts is not supposed to be defined automatically (i.e. the checkbox "Define automatically" is not checked), the "Number of Attempts" field is available for input. There you can specify the number with respect to the level of question complexity or testing Methodology.

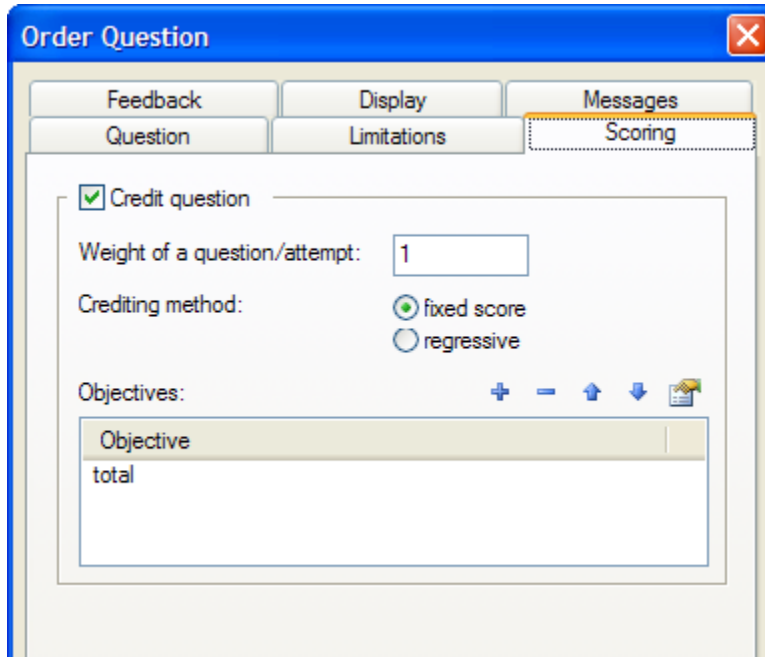
The following formula is used for the **Automatic attempts calculation**:
number of attempts equals the number of possible

answers minus one (for example, 3 attempts for question with 4 answers, 4 attempts for questions with 5 answers, and so on). If the automatic attempts calculation is selected, the number specified in the "Number of Attempts" field is ignored.

Time limit for the answer. Upon time expiration user will be restricted from making further answer selections and the question will be validated for correctness even if the "Check Answer" button is not pressed. If the correct answer is chosen just before time expiration, it will be credited to the user.

Possibility to skip the question. If this option is selected, the user is able to ignore the question by pressing "Skip Question" button. The author of the course can specify whether or not skipped question will be classified as **skipped** (with opportunity to provide the answer later) or counted as **failed** (without a chance for another attempt).

Possibility to reset stored result and answer the question once again (recurring approaches).

The screenshot shows a software window titled "Order Question" with a blue header bar and a red close button. Below the header are five tabs: "Feedback", "Display", "Messages", "Question", and "Scoring". The "Scoring" tab is selected and highlighted with a yellow border. Inside the "Scoring" tab, there is a section with a checked checkbox labeled "Credit question". Below this, there is a label "Weight of a question/attempt:" followed by a text input field containing the number "1". Underneath, the "Crediting method:" is shown with two radio buttons: "fixed score" (which is selected) and "regressive". At the bottom of this section, there is a label "Objectives:" followed by a list box containing the word "total". To the right of the list box are four small icons: a plus sign, a minus sign, an up arrow, and a down arrow.

Use the "Scoring" tab to specify the scoring parameters for the question. The essential CheckBox is the "Credit Question". If it is not marked, all other scoring parameters are disabled, therefore they will be ignored when presenting the question to the user. Such questions are referred as **not credited** questions. These questions are frequently

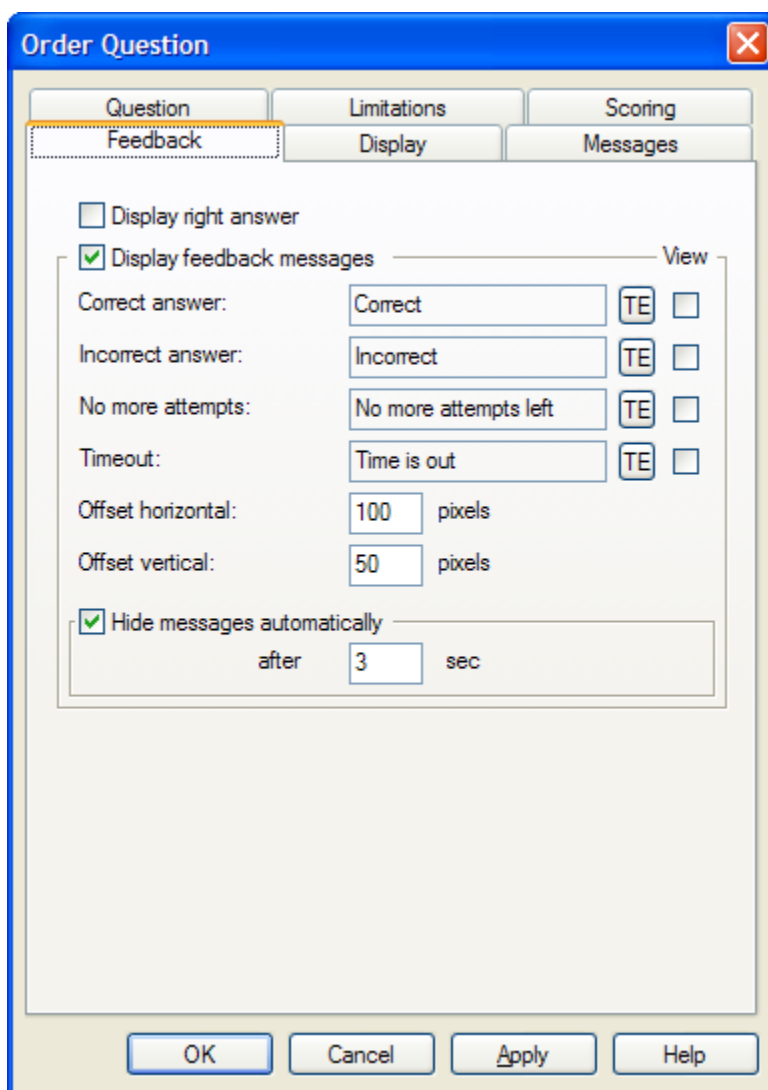
used to prepare the user for the next Slide Topic, to keep the user focused, and so forth.

On the **credited** question the following options are available:

- **Base weight of a question/attempt** – the base number of points for the question (or attempt for regression Method). This number is used to calculate the Total score for the question. If the fixed crediting Method is used, the base weight of the question equals the total score.
- The following crediting Methods can be used:
 - **Fixed** (Upon entering the correct response, the user gets the same score regardless the number of attempts. This score is equal to the base weight)
 - **Regression** Method (In this case user is getting the highest possible score for providing the correct answer on the first try; the number of points is decreasing on the second try and so forth, until all tries are used). The maximum number of points in this case is equal to the **base number of points multiplied by the number of attempts**. The Regression Method enables more accurate performance evaluation but requires applying additional requirements to the question parameters. It is important that the number of tries for this Method should not exceed the

automatically calculated one (which is number of possible answers minus one); otherwise the regression Method will become ineffective.

- **Objectives.** Received points can be stored in one or several Objectives simultaneously. Remember, that only the Objective “total” always exists (it is inserted into the list of Objectives by default). The “total” Objective is used to store the scores for ALL the questions, which will be used to determine the final score for completing the learning Module. Should you decide to record points for the current question into the additional Objectives, make sure that the corresponding Objective is created (Go to menu “Module” - “Runtime Settings” - select “Objectives” tab).



The screenshot shows the 'Order Question' dialog box with the 'Feedback' tab selected. The dialog has four tabs: 'Question', 'Limitations', 'Scoring', and 'Feedback'. The 'Feedback' tab is active, showing options for displaying feedback messages. The 'Display right answer' checkbox is unchecked. The 'Display feedback messages' checkbox is checked. Below this, there are four rows of feedback messages: 'Correct answer:', 'Incorrect answer:', 'No more attempts:', and 'Timeout:'. Each row has a text input field and a 'TE' checkbox. The 'Correct answer' field contains 'Correct', 'Incorrect answer' contains 'Incorrect', 'No more attempts' contains 'No more attempts left', and 'Timeout' contains 'Time is out'. The 'Offset horizontal' is set to 100 pixels and 'Offset vertical' is set to 50 pixels. The 'Hide messages automatically' checkbox is checked, and the 'after' field is set to 3 seconds. At the bottom, there are four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.

Message	Text	TE
Correct answer:	Correct	<input type="checkbox"/>
Incorrect answer:	Incorrect	<input type="checkbox"/>
No more attempts:	No more attempts left	<input type="checkbox"/>
Timeout:	Time is out	<input type="checkbox"/>

Use the “Feedback” tab to specify the feedback options which define what shall be displayed upon another attempt to respond (correct or incorrect) and after completing the question.

You may permit the **display of correct answer** upon question completion by marking the corresponding check box. If the student has used up all the attempts for response, or if the time has expired then the correct answer will be displayed; the user will not be credited for this answer. This option may be used when the main Objective of the question is educating rather than testing.

You may permit or restrict the **feedback messages**. You can modify the text of feedback messages, which is in RichText format. **Feedback messages** are displayed in a separate small window during Module play back. You can modify **display coordinates** for this window (the coordinates are given relative to the Object's upper left corner) Note, that there is a check box displayed next to every Edit button for the text feedback; it enables you to turn On/Off the display of feedback messages in the CourseLab Editor. By default, all check boxes are empty to avoid overloading the question Object with too many details. On the "Display" and "Messages" tabs you can select the appearance settings for the Object and edit the information and warning messages.

The 'Order Question' dialog box is shown with the 'Display' tab selected. The 'Question' tab is also visible. The 'Limitations' and 'Scoring' tabs are at the top. The 'Display' tab contains the following settings:

- Skin:** Basic (dropdown)
- Basic color:** Lightblue (dropdown)
- ☐ **Use custom buttons**
 - Submit button (idle):** [text box] [icon]
 - Submit button (over):** [text box] [icon]
 - Skip button (idle):** [text box] [icon]
 - Skip button (over):** [text box] [icon]
- ☐ **Use custom spots**
 - Up enabled:** [text box] [icon]
 - Up disabled:** [text box] [icon]
 - Down enabled:** [text box] [icon]
 - Down disabled:** [text box] [icon]
- Submit button tooltip:** Submit answer
- Skip button tooltip:** Skip question

Buttons at the bottom: OK, Cancel, Apply, Help.

The 'Order Question' dialog box is shown with the 'Messages' tab selected. The 'Question' and 'Display' tabs are also visible. The 'Messages' tab contains the following settings:

- Credited:** Credited question
- Not credited:** Not credited question
- Attempts:** Attempts
- Time limit:** Time limit
- Question instruction:** Place variants in correct order
- Correct answer:** CORRECT ANSWER
- Last question state:** LAST QUESTION STATE
- Skipped:** QUESTION IS SKIPPED
- Skipped and failed:** QUESTION IS SKIPPED AND FAILED

Warning messages

- Continued:** Continued approach. Number of attempt
- Already answered:** This question is already answered. Rec
- Recurring approach:** This question is already answered. Pres
- Skip and fail confirmation:** Skipped question will be evaluated as f

Buttons at the bottom: OK, Cancel, Apply, Help.

Object Events

The "Ordered Items Question" Object is capable generating Events according to the user's Actions and interpretation of those Actions by the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects depending on the current state of the Object "Ordered Items Question".

These Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
On Display Question	The question is fully loaded and all elements of the question are displayed
On Move Item	User moves any item
On Attempt	At the moment of answer acceptance, but before answer evaluation
On Success	At the moment of answer evaluation, If the answer is correct.
On Failure	At the moment of answer evaluation, If the answer is incorrect.
On Time Out	At the moment of time expiration for the answer (if defined)
On Attempts Limit	After answer evaluated, If the number of attempts decreased to zero.
On Skip Question	After "Skip Question" button is pressed
On Question Answered	After answer is evaluated and no more attempts left (on timeout or on attempts limit)

Object Specific Properties

Along with common Object properties, this Object has some specific properties, that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
questionMode	Returns current question mode (tokens: "normal", "review").	\$OBJ_ID.questionMode
questionType	Returns "range".	\$OBJ_ID.questionType
questionDuration	Returns allowed question duration in seconds (if exists).	\$OBJ_ID.questionDuration
questionTimer	Returns current question timer value in seconds (if exists).	\$OBJ_ID.questionTimer
itemQuantity	Returns total variants quantity.	\$OBJ_ID.itemQuantity
questionValue	Returns current question item order (spot numbers starting from 0 divided by "~": for example, "3~1~0~2" - "0~1~2~3" in this case corresponds to correct order).	\$OBJ_ID.questionValue
attemptsLast	Returns current number of attempts.	\$OBJ_ID.attemptsLast
attemptsTotal	Returns allowed number of attempts.	\$OBJ_ID.attemptsTotal

5.5.13.4. The “Numeric Fill-in-Blank Question” Object

Numeric fill-in-blank questions require from the user to enter the correct number into the answer field using keyboard.

Question is scored

How many stars are on the flag of USA?

Enter numeric value

Hint: how many states you know? 50

SUBMIT ANSWER Attempts: 1

Question time limit: 6 sec

Creating a question

Numeric Fill-In-Blank Question

Feedback Display Messages

Question Limitations Scoring

Question text: How many stars are on the flag of USA? **TE**

Variants: + - ↑ ↓

Explanation	Max.length
	10

Add a Question Object to the Frame. Open the “Properties” dialog screen (double click on the Object within a Slide or select “Properties” option from the context menu).

To input a question’s text, press the “TE” button of the corresponding field. The format of the input area is RichText, therefore all font settings (size, color, and style) will be saved as you type the text in.

Use the “+” button to specify **possible answers**

- as many as needed.

Specify the **approximate length** of the entry field in symbols. We recommend allowing some extra space for that purpose. For example, if the desired answer is 3.224 then the field size is 5 symbols (including the decimal point). We recommend using double the size of the desired length (4 symbols in this example) so that user does not get a hint about the correct answer.

If necessary, enter a description message for the answer field. The description message will appear to the left of the answer field and may contain, for example, units of measure for the answer. Specify **conditions**

for the correct answer. Use the "+" menu button to add conditions to the list of conditions menu - as many as needed. Fill in the list of conditions for validating an answer in the opened sub-dialog screen. In a simple case only a single condition is used (for example, when the entered answer must exactly match some number).

If you need to specify the interval of numbers (for example when the answer should be the number in the range of 7 to 8) you should specify two conditions: a) greater than 7 b) less than 8. Therefore any number in the range of 7 to 8 (excluding 7 and 8 otherwise different conditions should be used: greater or equal to 7 AND less or equal to 8) will be treated as a correct answer.

IMPORTANT! When user's response is checked, there is no difference whether comma or dot symbols are used as a decimal separator. However, for specifying the correct answer in CourseLab editor, it is recommended to use decimal *POINT*.

The screenshot shows a dialog box titled "Numeric Fill-In-Blank Question" with a close button (X) in the top right corner. The dialog has four tabs: "Feedback", "Display", "Messages", and "Limitations". The "Limitations" tab is currently selected and highlighted with an orange underline. Inside the "Limitations" tab, there are several settings: "Number of attempts:" with a text box containing the value "1"; a checked checkbox for "Time limit for the answer" with a sub-field "Time limit (sec):" containing the value "10"; an unchecked checkbox for "Allow skip question" with a sub-field "Skipped question is:" containing two radio button options, "just skipped" and "failed" (which is selected); and an unchecked checkbox for "Allow recurring approaches".

Use "Limitations" tab to set the following restrictions:

1. **Number of attempts.** "Number of Attempts" field is always available for input (there is no automatic attempts calculation rule). There you can specify the number of answer attempts with respect to the level of question complexity or testing Methodology.
2. **Time limit for the answer.** Upon time expiration user will be restricted to make further answer selections, and the question will be validated for correctness even if "Check Answer" button is not pressed. If the correct answer is chosen just before time expiration, it will be credited to the user.
3. Possibility to **skip the question**. If this option is selected user is able to ignore the question by pressing "Skip Question" button. The author of the

course can specify whether or not skipped question will be classified as **skipped** (with opportunity to provide the answer later) or counted as **failed** (without a chance for another attempt).

4. Possibility to reset stored result and answer the question once again (recurring approaches).

The screenshot shows a dialog box titled "Numeric Fill-In-Blank Question" with a close button (X) in the top right corner. The dialog has five tabs: "Feedback", "Display", "Messages", "Question", and "Limitations". The "Scoring" tab is currently selected. Inside the "Scoring" tab, there is a section titled "Credit question" with a checked checkbox. Below this, there is a label "Weight of a question/attempt:" followed by a text box containing the number "1". To the right of this is a "Crediting method:" label with two radio buttons: "fixed score" (which is selected) and "regressive". Below these is an "Objectives:" label with a list box containing the text "Objective" and "total". To the right of the list box are four small icons: a plus sign, a minus sign, an up arrow, and a down arrow. At the bottom of the dialog are four buttons: "OK", "Cancel", "Apply", and "Help".

Use "Scoring" tab to specify scoring parameters for the question. The essential CheckBox is "Credit Question". If it is not marked, all other scoring parameters are disabled, therefore they will be ignored when presenting question to the user. Such questions are referred as **not credited** questions. These questions are frequently used to prepare the user for the next Slide Topic, to keep the user focused, and so forth.

The following options are available in the **credited** question:

- **Base weight of a question/attempt** – base number of points for the question (or attempt for regression Method). This number is used to calculate the Total score for the question. If fixed crediting Method is used, the base weight of question equals the total score.

- The following crediting Methods can be used:
 - **Fixed** (upon the correct response the user gets the same score regardless the number of attempts. This score is equal to the base weight)
 - **Regression** Method (in this case user is getting the highest possible score for providing the correct answer from the first try; the number of points is decreasing on the second try and so forth, until all tries are used). The maximum number of points in this case is equal to the **base number of points multiplied by the number of attempts**. Regression Method enables more accurate performance evaluation but requires applying additional requirements to question parameters. It is important that number of tries for this Method should not exceed the automatically calculated one (which is number of possible answers minus one), otherwise regression Method will become ineffective.
- **Objectives.** Received points can be stored in one or several Objectives simultaneously. Remember, that only Objective "total" always exists (which is inserted into the list of Objectives by default). The "total" Objective is used to store scores for ALL the questions, which will be used to determine the final score for completing the learning Module. Should you decide to record points for the current question into the additional Objectives, make sure that the corresponding Objective is created (Go to menu "Module" - "Runtime Settings" - select "Objectives" tab).

Use "Feedback" tab to specify feedback options, which define what shall be displayed upon another attempt to respond (correct or incorrect) and after completing the question.

The screenshot shows a dialog box titled "Numeric Fill-In-Blank Question" with a blue border and a close button (X) in the top right corner. The dialog has three tabs: "Question", "Limitations", and "Scoring". The "Feedback" sub-tab is selected under the "Question" tab. The "Display" sub-tab is also visible. The "Messages" sub-tab is visible under the "Scoring" tab. The "Feedback" sub-tab contains the following options:

- ☐ Display right answer
- ☒ Display feedback messages

Below these options, there are four rows of text input fields, each with a "TE" button and a checkbox:

Text	TE	Checkbox
Correct answer: Correct	TE	<input type="checkbox"/>
Incorrect answer: Incorrect	TE	<input type="checkbox"/>
No more attempts: No more attempts left	TE	<input type="checkbox"/>
Timeout: Time is out	TE	<input type="checkbox"/>

Below these rows, there are two offset settings:

- Offset horizontal: 100 pixels
- Offset vertical: 50 pixels

At the bottom, there is a checkbox for "Hide messages automatically" which is checked, followed by a text input field containing "3" and the unit "sec".

At the bottom of the dialog, there are four buttons: "OK", "Cancel", "Apply", and "Help".

You may permit the **display of correct answer** upon question completion by marking corresponding check box. If student has used off all the attempts for response, or if the time has expired then the correct answer will be displayed; user will not be credited for this answer. This option may be used when the main Objective of the question is educating rather than testing.

You may permit or restrict the **feedback messages**. You can modify the text of feedback messages, which is in RichText format. **Feedback messages** are displayed in the separate small window during Module play back.

You can modify **display coordinates** for this window (the coordinates

are given relative to the Object's upper left corner)

Note, that there is a check box displayed next to every Edit button for the text feedback; it enables to turn On/Off display of feedback messages in CourseLab Editor. By default, all check boxes are empty to avoid overloading the question Object with too many details.

Use "Display" tab to select color scheme for the main elements of the question with respect to the Module design.

The image shows a dialog box titled "Numeric Fill-In-Blank Question" with a close button (X) in the top right corner. The dialog has four tabs: "Question", "Limitations", "Display" (which is selected and highlighted with an orange border), and "Scoring". Below the tabs are two sub-tabs: "Feedback" and "Messages". The "Display" tab contains the following settings:

- Skin:** Basic (dropdown menu)
- Basic color:** Lightblue (dropdown menu)
- Border style:** Solid (dropdown menu)
- Border width:** 2 pixels (text input)
- Background color:** #FFFFFF (text input with a color picker icon)
- Font:** Arial (dropdown menu)
- Font size:** 12 pixels (text input)
- Font color:** #000000 (text input with a color picker icon)
- ☐ **Use custom buttons** (checkbox)
 - Submit button (idle): (text input with a color picker icon)
 - Submit button (over): (text input with a color picker icon)
 - Skip button (idle): (text input with a color picker icon)
 - Skip button (over): (text input with a color picker icon)
- Submit button tooltip:** Submit answer (text input)
- Skip button tooltip:** Skip question (text input)

At the bottom of the dialog are four buttons: "OK", "Cancel", "Apply", and "Help".

Use the "Messages" tab to modify texts of notifications and warnings for the question.

The image shows a software dialog box titled "Numeric Fill-In-Blank Question". It has a blue title bar with a close button (X) in the top right corner. Below the title bar are five tabs: "Question", "Limitations", "Scoring", "Feedback", and "Messages". The "Messages" tab is currently selected and highlighted with an orange border. The dialog is divided into two main sections. The top section contains labels on the left and text input fields on the right. The bottom section is titled "Warning messages" and also contains labels and input fields. At the very bottom are four buttons: "OK", "Cancel", "Apply", and "Help".

Label	Text
Credited:	Credited question
Not credited:	Not credited question
Attempts:	Attempts:
Time limit:	Time limit:
Question instruction:	Enter numeric value
Correct answer:	CORRECT ANSWER
Last question state:	LAST QUESTION STATE
Skipped:	QUESTION IS SKIPPED
Skipped and failed:	QUESTION IS SKIPPED AND FAILED

Warning messages

Label	Text
Continued:	Continued approach. Number of attempt
Already answered:	This question is already answered. Rec
Recurring approach:	This question is already answered. Pres
Skip and fail confirmation:	Skipped question will be evaluated as f
Numeric only:	Please enter only numbers and signs

Buttons: OK, Cancel, Apply, Help

Object Events

Object "Numerical Fill-in-Blank Question" is capable generating Events according to the user's Actions and interpretation of the Actions by the Object. When combined with Actions Events can be employed for building up intellectual behavior models for other Objects depending on the current state of the Object "Numerical Fill-in-Blank Question".

Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
On Display Question	The question is fully loaded and all elements of the question are displayed
On Attempt	At the moment of answer acceptance, but before answer evaluation
On Success	At the moment of answer evaluation, If the answer is correct.
On Failure	At the moment of answer evaluation, If the answer is incorrect.
On Time Out	At the moment of time expiration for the answer (if defined)
On Attempts Limit	After answer evaluated, If the number of attempts decreased to zero.
On Skip Question	After "Skip Question" button is pressed
On Question Answered	After answer is evaluated and no more attempts left (on timeout or on attempts limit)

Object Specific Properties

Along with common Object properties, this Object has some specific properties, that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
questionMode	Returns current question mode (tokens: "normal", "review").	\$OBJ_ID.questionMode
questionType	Returns "numeric".	\$OBJ_ID.questionType
questionDuration	Returns allowed question duration in seconds (if exists).	\$OBJ_ID.questionDuration
questionTimer	Returns current question timer value in seconds (if exists).	\$OBJ_ID.questionTimer
itemQuantity	Returns total variants quantity.	\$OBJ_ID.itemQuantity
questionValue	Returns current question field value (if there is more than one input field, then returns string: values divided by "~").	\$OBJ_ID.questionValue
attemptsLast	Returns current number of attempts.	\$OBJ_ID.attemptsLast
attemptsTotal	Returns allowed number of attempts.	\$OBJ_ID.attemptsTotal

5.5.13.5. The “Text Fill-in-Blank Question” Object

Text fill-in-blank types of questions require the user to fill the correct answer into the blank spaces using the keyboard. In general, the entered text can contain numbers, but when user’s response is evaluated, the numbers are interpreted as text characters rather than numbers.

Question is scored

"Alice in Wonderland" was written by ...

Enter text string

Enter name and surname

SUBMIT ANSWER Attempts: 1

Question time limit: 3 sec

Creating a question

Add the Question Object to the Frame. Open “Properties” dialog screen (double click on Object within a Slide or select “Properties” option from the context menu).

Text Fill-In-Blank Question

Feedback Display Messages
Question Limitations Scoring

Question text: "Alice in Wonderland" was written by... TE

Variants: + - ↑ ↓

Explanation	Max.length
	10

In the opened dialog select the "Question" tab. To input the question's text, press the "TE" button of the corresponding field. The format of the input area is RichText so all font settings (size, color, and style) will be saved as you type the text in.

Use the "+" button to specify the **possible answers** - as many as needed.

Specify the **approximate length** of the entry field in symbols. We recommend allowing some extra space for that purpose.

If necessary, enter the description message for the answer field. The Description message appears to the left of the answer field and may contain answer format instructions, for example, "Use capital letters to answer". Specify **conditions for the correct answer**. In the conditions list menu, add as many conditions as needed using the "+" menu button. Fill in the list of conditions for validating an answer in the opened sub-dialog screen. In a simple case, only the single condition is used (for example, when the entered answer must exactly match the specified word).

You can also set the condition "Contain". In this case the entered answer will be validated on whether or not it contains the character string specified by author. For example, if "Contain" "point" condition is set, either one of the following words will be considered as correct answers: Pointing, pointless, and pinpoint.

Lastly, you can set the "Match Case" condition to match case when validating the answer. In this case, for the above mentioned example the word "Pointing" which starts with a capital letter will not be considered as correct answer.

Use the "Limitations" tab to set the following restrictions:

The screenshot shows the 'Text Fill-In-Blank Question' dialog box with the 'Limitations' tab selected. The 'Number of attempts' is set to 1. The 'Time limit for the answer' is checked and set to 10 seconds. The 'Allow skip question' option is unchecked. The 'Skipped question is:' section has 'failed' selected. The 'Allow recurring approaches' option is unchecked.

Number of attempts. The "Number of Attempts" field is always available for input (there is no automatic attempts calculation rule). There you can specify the number of answer attempts with respect to the level of question complexity or testing Methodology.

Time limit for the answer. Upon time expiration the user will be restricted from making further answer selections and the question will be validated for correctness even if the "Check Answer" button is not pressed. If the correct answer is chosen just before time

expiration, it will be credited to the user.

Possibility to skip the question. If this option is selected the user is able to ignore the question by pressing the "Skip Question" button. The author of the course can specify whether or not the skipped question will be classified as **skipped** (with an opportunity to provide the answer later) or counted as **failed** (without a chance for another attempt).

The screenshot shows the 'Text Fill-In-Blank Question' dialog box with the 'Scoring' tab selected. The 'Credit question' checkbox is checked. The 'Weight of a question/attempt' is set to 1. The 'Crediting method' is set to 'fixed score'. The 'Objectives' section shows a table with one row: 'Objective' and 'total'.

Possibility to reset stored result and answer the question once again (recurring approaches).

Use the "Scoring" tab to specify the scoring parameters for the question. The essential CheckBox is the "Credit Question". If it is not marked, all other scoring parameters are disabled and will be

ignored when presenting the question to the user. Such questions are referred as **not credited** questions. These questions are frequently used to prepare the user for the next Slide Topic, to keep the user focused, and so forth.

In a **credited** question the following options are available:

- **Base weight of a question/attempt** – the base number of points for the question (or attempt for the regression Method). This number is used to calculate the Total score for the question. If the fixed crediting Method is used, the base weight of question equals the total score.
- The following crediting Methods can be used:
 - **Fixed** (Upon the correct response user gets the same score regardless the number of attempts. This score is equal to the base weight)
 - **Regression Method** (In this case user is getting the highest possible score for providing the correct answer from the first try; the number of points is decreasing on the second try and so forth, until all tries are used). The maximum number of points in this case is equal to the **base number of points multiplied by the number of attempts**. The Regression Method enables more accurate performance evaluation but requires applying additional requirements to question parameters. It is important that the number of tries for this Method should not exceed the automatically calculated one (which is the number of possible answers minus one), otherwise the regression Method will become ineffective.
- **Objectives.** Received points can be stored in one or several Objectives simultaneously. Remember, that only the Objective “total” always exists (it is inserted into the list of Objectives by default). The “total” Objective is used to store the scores for ALL the questions, which will be used to determine the final score for completing the learning Module. Should you decide to record points for the current question into the additional Objectives, make sure that the corresponding Objective is created (Go to menu “Module” - “Runtime Settings” - select “Objectives” tab).

The screenshot shows a dialog box titled "Text Fill-In-Blank Question" with a close button (X) in the top right corner. The dialog has four tabs: "Question", "Limitations", "Scoring", and "Feedback". The "Feedback" tab is selected and highlighted with an orange border. Inside the "Feedback" tab, there are several options and input fields:

- ☐ Display right answer
- ☒ Display feedback messages (with a "View" button to its right)
- Correct answer: [Correct] [TE] ☐
- Incorrect answer: [Incorrect] [TE] ☐
- No more attempts: [No more attempts left] [TE] ☐
- Timeout: [Time is out] [TE] ☐
- Offset horizontal: [100] pixels
- Offset vertical: [50] pixels
- ☒ Hide messages automatically (with a sub-section containing "after [3] sec")

Use the "Feedback" tab to specify the feedback options which define what shall be displayed upon another attempt to respond (correct or incorrect) and after completing the question. You may permit the **display of correct answer** upon question completion by marking the corresponding check box. If the student has used up all the attempts for response, or if the time has expired, then the correct answer will be displayed; the user will not be credited for this answer. This option may be used when the main Objective of the question is educating rather than

testing.

You may permit or restrict **feedback messages** and you can modify the text of feedback messages (which are in RichText format). **Feedback messages** are displayed in a separate, small window during Module play back. You can modify the **display coordinates** for this window (the coordinates are given relative to the Object's upper left corner). Note that there is a check box displayed next to every Edit button for text feedback; it enables you to turn On/Off the display of feedback messages in the CourseLab Editor. By default, all check boxes are empty to avoid overloading the Question Object with too many details.

Text Fill-In-Blank Question

Question Limitations Scoring
Feedback Display Messages

Skin: Basic

Basic color: Lightblue

Border style: Solid

Border width: 2 pixels

Background color: #FFFFFF

Font: Arial

Font size: 12 pixels

Font color: #000000

☐ Use custom buttons

Submit button (idle):

Submit button (over):

Skip button (idle):

Skip button (over):

Submit button tooltip: Submit answer

Skip button tooltip: Skip question

OK Cancel Apply

Use the "Display" tab to select the color scheme for the main elements of the question with respect to the Module design.

Use the "Messages" tab to modify texts of notifications and warnings for the question.

Text Fill-In-Blank Question

Question Limitations Scoring
Feedback Display Messages

Credited: Credited question

Not credited: Not credited question

Attempts: Attempts:

Time limit: Time limit:

Question instruction: Enter text string

Correct answer: CORRECT ANSWER

Last question state: LAST QUESTION STATE

Skipped: QUESTION IS SKIPPED

Skipped and failed: QUESTION IS SKIPPED AND FAILED

Warning messages

Continued: Continued approach. Number of attempt

Already answered: This question is already answered. Rec

Recurring approach: This question is already answered. Pres

Skip and fail confirmation: Skipped question will be evaluated as f

OK Cancel Apply Help

Object Events

The "Text Fill-in-Blank Question" Object is capable of generating Events according to the user's Actions and interpretation of the Actions by the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects depending on the current state of the Object "Text Fill-in-Blank Question".

Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
On Display Question	The question is fully loaded and all elements of the question are displayed
On Attempt	At the moment of answer acceptance, but before answer evaluation
On Success	At the moment of answer evaluation, If the answer is correct.
On Failure	At the moment of answer evaluation, If the answer is incorrect.
On Time Out	At the moment of time expiration for the answer (if defined)
On Attempts Limit	After answer evaluated, If the number of attempts decreased to zero.
On Skip Question	After "Skip Question" button is pressed
On Question Answered	After answer is evaluated and no more attempts left (on timeout or on attempts limit)

Object Specific Properties

Along with common Object properties, this Object has some specific properties, that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
questionMode	Returns current question mode (tokens: "normal", "review").	\$OBJ_ID.questionMode
questionType	Returns "text".	\$OBJ_ID.questionType
questionDuration	Returns allowed question duration in seconds (if exists).	\$OBJ_ID.questionDuration
questionTimer	Returns current question timer value in seconds (if exists).	\$OBJ_ID.questionTimer
itemQuantity	Returns total variants quantity.	\$OBJ_ID.itemQuantity
questionValue	Returns current question field value (if there is more than one input field, then returns string: values divided by "~").	\$OBJ_ID.questionValue
attemptsLast	Returns current number of attempts.	\$OBJ_ID.attemptsLast
attemptsTotal	Returns allowed number of attempts.	\$OBJ_ID.attemptsTotal

5.5.13.6. Object “Matching Pairs Question”

Matching pairs type of questions require from the user to match the provided question items.

Question is scored

Connect events with corresponding dates

Connect pairs to match correctly

1492	Discovery of America
1903	First airplane
1945	First man on the Moon
1969	The end of World War II

Attempts: 3

Question time limit: 4 sec

Creating a question

Add the Question Object to the Frame.

Matching Pairs Question

Feedback Display Messages

Question Limitations Scoring

☒ Display question text

Question text:

Variants:

Base text	Match text
1492	Discovery of America
1903	Firs airplane
1945	The end of World War II
1969	First man on the Moon

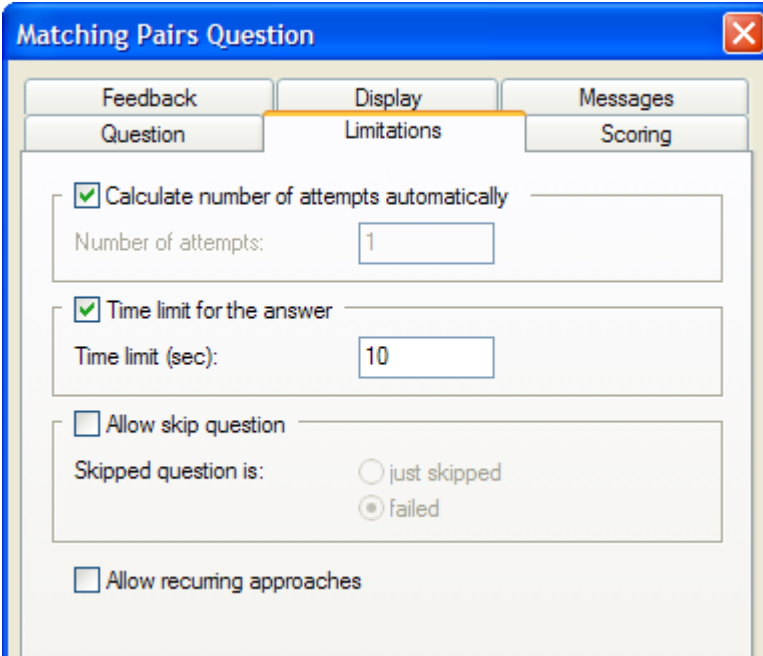
IMPORTANT! The Matching pairs type of question is space-consuming when placed into the Frame, therefore we do not recommend setting the width of the Object to less than 700 pixels.

Open the “Properties” dialog screen (double click on the Object within a Slide or select the “Properties” option from the context menu).

In the opened dialog select the "Question" tab. To input a question's text, press the "TE" button of the corresponding field. The format of the input area is RichText so all font settings (size, color, and style) will be saved as you type the text in. Considering the specifics of matching pairs questions, it is not always necessary to display the text of the question (the Object description will always be displayed in the Slide). Remove the corresponding check mark if you want the question text to not be displayed.

Specify **variants of matching question items**. In the list of answers menu add as many variants of matching question items as needed using the "+" menu button. In the opened sub-dialog pairs editor screen press the "TE" button of the corresponding field and insert the text of the base item and its corresponding match which is in RichText format. Please remember, that there are size limitations for entering both the base items and matches, therefore try using short texts and small fonts. Inserted question items appear in the List of items. If desired, you can edit entered items by pressing the "Edit" button under the "List" menu.

Note, that in matching pairs types of questions, the correct matching pairs will be the ones **specified by author**. Unlike the question base items, which will be displayed in the order they were inserted, the matches will ALWAYS be displayed in random order.

The image shows a screenshot of a software dialog box titled "Matching Pairs Question". It has a blue title bar with a close button (X) in the top right corner. Below the title bar are four tabs: "Feedback", "Display", "Messages", and "Limitations". The "Limitations" tab is currently selected and highlighted with an orange border. Inside the "Limitations" tab, there are several settings: 1. A checked checkbox labeled "Calculate number of attempts automatically" with a text input field next to it containing the number "1". 2. A checked checkbox labeled "Time limit for the answer" with a text input field next to it containing the number "10". 3. An unchecked checkbox labeled "Allow skip question". Below it, the text "Skipped question is:" is followed by two radio buttons: "just skipped" (which is unselected) and "failed" (which is selected). 4. An unchecked checkbox labeled "Allow recurring approaches".

Use the "Limitations" tab to set the following restrictions:

Number of attempts. If the number of attempts is not supposed to be defined automatically (i.e. the checkbox "Define automatically" is not checked), the "Number of Attempts" field is available for input. There you can specify the number with respect to the level of question complexity or testing Methodology.

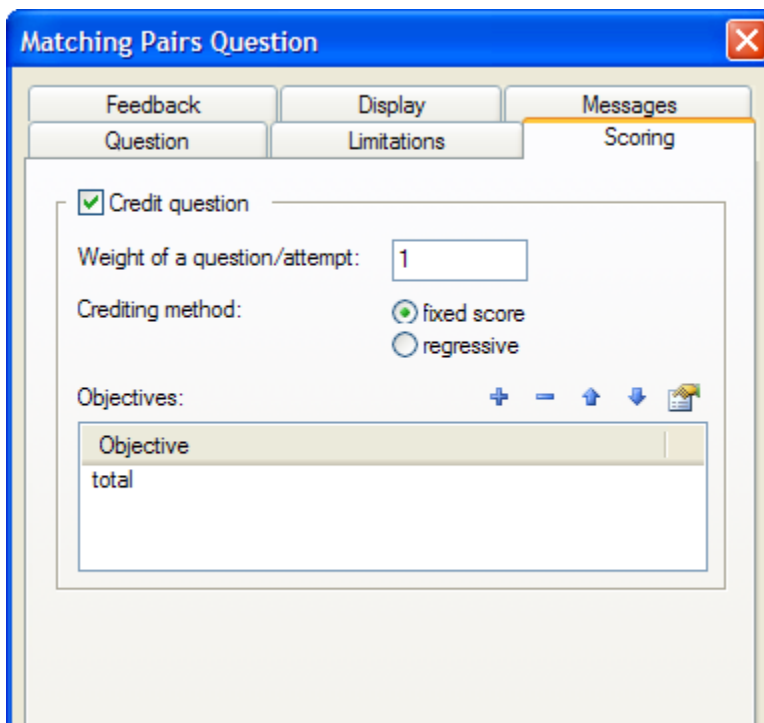
The following formula is used for **Automatic attempts calculation**: the number of attempts equals to number of possible answers minus one (for example, 3 attempts for question with 4 answers, 4 attempts for questions with 5 answers and so on). If the automatic attempts

calculation is selected, the number specified in the "Number of Attempts" field is ignored.

Time limit for the answer. Upon time expiration user will be restricted to make further answer selections, and the question will be validated for correctness even if "Check Answer" button is not pressed. If the correct answer is chosen just before time expiration, it will be credited to the user.

Possibility to **skip the question**. If this option is selected user is able to ignore the question by pressing "Skip Question" button. The author of the course can specify whether or not skipped question will be classified as **skipped** (with opportunity to provide the answer later) or counted as **failed** (without a chance for another attempt).

Possibility to reset stored result and answer the question once again (recurring approaches).



The screenshot shows a software window titled "Matching Pairs Question" with a standard Windows-style title bar (blue with a red close button). Inside the window, there are five tabs: "Feedback", "Display", "Messages", "Question", and "Limitations". The "Scoring" tab is currently selected and highlighted with an orange border. The "Scoring" tab contains the following elements:

- A checked checkbox labeled "Credit question".
- A text field labeled "Weight of a question/attempt:" with the value "1" entered.
- A section labeled "Crediting method:" with two radio buttons: "fixed score" (which is selected) and "regressive".
- A section labeled "Objectives:" with a list box containing the word "total". Above the list box are four small icons: a plus sign, a minus sign, an up arrow, and a down arrow.

Use the "Scoring" tab to specify scoring parameters for the question. The essential CheckBox is "Credit Question". If it is not marked, all other scoring parameters are disabled, therefore they will be ignored when presenting question to the user. Such questions are referred as **not credited** questions. These questions are frequently used to prepare the user for the next Slide Topic, to keep the user focused, and so forth.

If of the **credited** question the following options are available:

- **Base weight of a question/attempt** – the base number of points for the question (or attempt for regression Method). This number is used to calculate the Total score for the question. If the fixed crediting Method is used, the base weight of question equals the total score.
- The following crediting Methods can be used:
 - **Fixed** (Upon the correct response user gets the same score regardless the number of attempts. This score is equal to the base weight)
 - **Regression** Method (In this case the user is getting the highest possible score for providing the correct answer from the first try; the number of points is decreasing on the second try and so forth, until all tries are used). The maximum number of points in this case is equal to the **base number of points multiplied by the number of attempts**. The Regression Method enables more accurate performance evaluation but requires applying additional requirements to question parameters. It is important that the number of tries for this Method should not exceed the automatically calculated one (which is number of possible answers minus one), otherwise regression Method will become ineffective.
- **Objectives.** Received points can be stored in one or several Objectives simultaneously. Remember, that only the Objective “total” always exists (it is inserted into the list of Objectives by default). The “total” Objective is used to store scores for ALL the questions and will be used to determine the final score at completion of the learning Module. Should you decide to record points for the current question into the additional Objectives, make sure that the corresponding Objective is created (Go to menu “Module” - “Runtime Settings” - select “Objectives” tab).

Use the "Feedback" tab to specify feedback options which define what shall be displayed upon another attempt to respond (correct or incorrect) and after completing the question.

The screenshot shows a dialog box titled "Matching Pairs Question" with a close button (X) in the top right corner. The dialog has three tabs: "Question", "Limitations", and "Scoring". The "Feedback" tab is selected and highlighted with an orange border. Below the tabs, there are three sub-tabs: "Feedback", "Display", and "Messages". The "Feedback" sub-tab is active. It contains the following options and fields:

- ☐ Display right answer
- ☒ Display feedback messages (with a "View" link to its right)
- Correct answer: [Correct] [TE] ☐
- Incorrect answer: [Incorrect] [TE] ☐
- No more attempts: [No more attempts left] [TE] ☐
- Timeout: [Time is out] [TE] ☐
- Offset horizontal: [100] pixels
- Offset vertical: [50] pixels
- ☒ Hide messages automatically (with a field "after [3] sec")

You may permit the **display of correct answer** upon question completion by marking the corresponding check box. If the student has used up all attempts for a response, or the time has expired, then the correct answer will be displayed; the user will not be credited for this answer. This option may be used when the main Objective of the question is educating rather than testing.

You may permit or restrict **feedback messages**. You can modify the text of feedback messages in RichText format. **Feedback messages** are displayed in the separate small window during Module play back. You can modify **display coordinates** for this window (the coordinates are given relative to the Object's upper left corner). Note that there is a check box displayed next to every Edit button for the text feedback; it enables you to turn On/Off display of feedback messages in CourseLab Editor. By default, all check boxes are empty to avoid overloading the question Object with too many details.

On the "Display" tab you can select appearance settings for the Object.

The image shows a software dialog box titled "Matching Pairs Question". It has a blue title bar with a close button (X) in the top right corner. Below the title bar are four tabs: "Question", "Limitations", "Scoring", and "Messages". The "Display" tab is currently selected and highlighted with an orange underline. The "Display" tab contains several settings:

- Skin:** A dropdown menu set to "Basic".
- Basic color:** A dropdown menu set to "Lightblue".
- Base width:** A text input field containing "250" followed by the unit "pixels".
- Match width:** A text input field containing "350" followed by the unit "pixels".
- Use custom buttons:** An unchecked checkbox. Below it is a group box containing four rows of button configuration:
 - Submit button (idle):** A text input field with an empty field and a browse button (three dots).
 - Submit button (over):** A text input field with an empty field and a browse button (three dots).
 - Skip button (idle):** A text input field with an empty field and a browse button (three dots).
 - Skip button (over):** A text input field with an empty field and a browse button (three dots).
- Submit button tooltip:** A text input field containing "Submit answer".
- Skip button tooltip:** A text input field containing "Skip question".

At the bottom of the dialog box are four buttons: "OK", "Cancel", "Apply", and "Help".

Use the "Messages" tab to modify texts of notifications and warnings for the question.

The screenshot shows a dialog box titled "Matching Pairs Question" with a close button (X) in the top right corner. The dialog has five tabs: "Question", "Limitations", "Scoring", "Feedback", and "Messages". The "Messages" tab is currently selected and highlighted with an orange border. Below the tabs, there are two sections of text input fields. The first section contains labels on the left and text boxes on the right for: "Credited:", "Not credited:", "Attempts:", "Time limit:", "Question instruction:", "Correct answer:", "Last question state:", "Skipped:", and "Skipped and failed:". The second section, separated by a horizontal line, is titled "Warning messages" and contains labels on the left and text boxes on the right for: "Continued:", "Already answered:", "Recurring approach:", and "Skip and fail confirmation:". At the bottom of the dialog, there are four buttons: "OK", "Cancel", "Apply", and "Help".

Label	Text
Credited:	Credited question
Not credited:	Not credited question
Attempts:	Attempts:
Time limit:	Time limit:
Question instruction:	Connect pairs to match correctly
Correct answer:	CORRECT ANSWER
Last question state:	LAST QUESTION STATE
Skipped:	QUESTION IS SKIPPED
Skipped and failed:	QUESTION IS SKIPPED AND FAILED

Warning messages

Label	Text
Continued:	Continued approach. Number of attempt
Already answered:	This question is already answered. Rec
Recurring approach:	This question is already answered. Pres
Skip and fail confirmation:	Skipped question will be evaluated as f

OK Cancel Apply Help

Object Events

The "Numerical Fill-in-Blank Question" Object is capable of generating Events according to the user's Actions and interpretation of those Actions by the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects depending on the current state of the Object "Numerical Fill-in-Blank Question".

Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
On Display Question	The question is fully loaded and all elements of the question are displayed
On Move Item	User moves any item
On Attempt	At the moment of answer acceptance, but before answer evaluation
On Success	At the moment of answer evaluation, If the answer is correct.
On Failure	At the moment of answer evaluation, If the answer is incorrect.
On Time Out	At the moment of time expiration for the answer (if defined)
On Attempts Limit	After answer evaluated, If the number of attempts decreased to zero.
On Skip Question	After "Skip Question" button is pressed
On Question Answered	After answer is evaluated and no more attempts left (on timeout or on attempts limit)

Object Specific Properties

Along with common Object properties, this Object has some specific properties, that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
questionMode	Returns current question mode (tokens: "normal", "review").	\$OBJ_ID.questionMode
questionType	Returns "oto" (one-to-one match).	\$OBJ_ID.questionType
questionDuration	Returns allowed question duration in seconds (if exists).	\$OBJ_ID.questionDuration
questionTimer	Returns current question timer value in seconds (if exists).	\$OBJ_ID.questionTimer
itemQuantity	Returns total variants quantity.	\$OBJ_ID.itemQuantity
questionValue	Returns current match item order (match numbers starting from 0 divided by "~": for example, "3~1~0~2" - "0~1~2~3" in this case corresponds to correct order).	\$OBJ_ID.questionValue
attemptsLast	Returns current number of attempts.	\$OBJ_ID.attemptsLast
attemptsTotal	Returns allowed number of attempts.	\$OBJ_ID.attemptsTotal

5.5.14. Tests

5.5.14.1. The Test Object

“Test” Object is the structured set of questions (or single question in the simple case).

“Test” Object supports every type of the questions used in CourseLab:

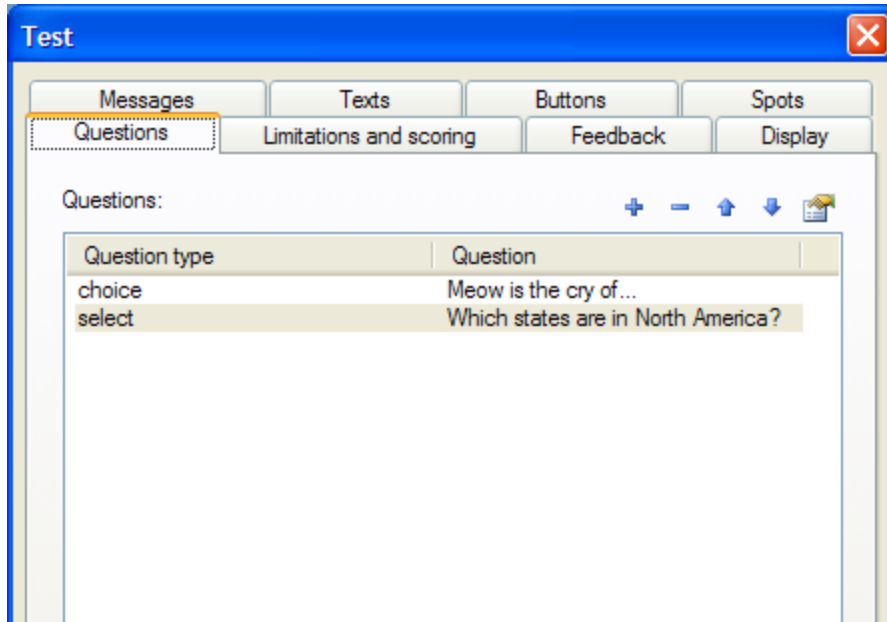
- single choice
- multiple select
- ordered items
- numeric fill-in-blank
- text fill-in-blank
- matching pairs

Creating a Test

Add the Object to the Frame.

LIMITATION: During editing the substitute of the Object is displayed.

Open the "Properties" dialog screen (double click on the Object within a Slide or select the "Properties" option from the context menu).



Use the "Questions" tab to add any number of questions to the list of the questions by pressing the "+" button. The opened edit screen practically duplicates the Object "Question" edit window of the corresponding type, the only difference is that some common-to-all test parameters are missing. Please see the corresponding question Object descriptions for more details.

WARNING! If you plan to use this Module within an LMS, limits on the amount of stored data may apply depending on the e-learning standard used and the LMS properties. Every test question stores its data (and the length of data depends on the complexity of the question), therefore it is recommended to not exceed 30-40 questions in test. The only standard that allows a large amount of data to be stored is SCORM 2004.

The image shows a 'Test' dialog box with a blue title bar and a close button (X) in the top right corner. The dialog has several tabs: 'Messages', 'Texts', 'Buttons', 'Spots', 'Questions', 'Limitations and scoring' (which is selected and highlighted with an orange underline), 'Feedback', and 'Display'. The 'Limitations and scoring' tab contains the following options:

- ☒ Scored test
- ☒ Enable time limitation for test
- ☒ Limit test duration
 - Test time limit: min sec
- ☐ Allow recurring approaches
- ☐ Display question images

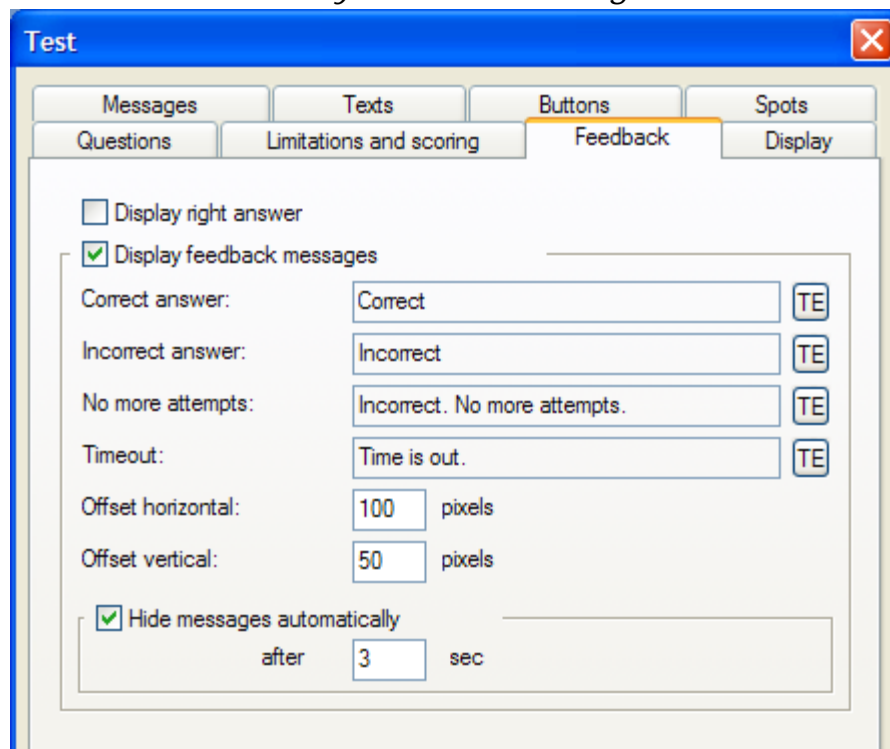
At the bottom of the dialog are four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.

You can set the test as “**not credited**”, if needed (for example when the test is a part of the learning process or an additional exercise rather than knowledge testing) by removing “Scored Test” mark on the “Limitations and Scoring” tab. You can permit or restrict timing questions (Use “Enable time limitation for test” check box) if timing is defined. In addition, you can specify a time limit for the whole test (use “Limit test duration” check box and corresponding field).

You can permit the option of skipping the question by marking the corresponding check box; however, the question will be classified as **skipped** (with opportunity to provide the answer later). Besides that, you can allow a second run for the test. If this option is unchecked, the user will be prompted with a message stating that test has already been taken and

only test results can be viewed. If this option is marked, the student will be prompted with the same warning message as above, but with the two options available to choose from: one is to take test again and second is to see the test results. If the test is taken again, all previous test results are discarded. Finally, you can permit or restrict the display of pictures related to the questions for the entire Test.

IMPORTANT! You can not set up the Objective for storing results of the entire test, instead, when editing, each question specifies the parameters and settings for the required Objective(s). Such approach allows maximum flexibility when evaluating test results.



The screenshot shows a 'Test' dialog box with a blue title bar and a close button. It has several tabs: 'Messages', 'Texts', 'Buttons', 'Spots', 'Questions', 'Limitations and scoring', 'Feedback' (selected), and 'Display'. The 'Feedback' tab contains the following settings:

- ☐ Display right answer
- ☒ Display feedback messages
- Correct answer:
- Incorrect answer:
- No more attempts:
- Timeout:
- Offset horizontal: pixels
- Offset vertical: pixels
- ☒ Hide messages automatically
- after sec

You may permit or restrict the **feedback messages**. You can modify the text of feedback messages which are in RichText format. **Feedback messages** are displayed in the separate small window during Module playback. You can modify **display coordinates** for this window (the coordinates are given relative to the Object's upper left corner). Note, that there is a check box displayed next to every Edit button for text feedback; it enables you to turn On/Off the display of feedback messages in the CourseLab Editor. By default, all check boxes are empty to avoid overloading the question Object with too many details.

The image shows a 'Test' dialog box with a blue title bar and a close button. It contains several tabs: 'Messages', 'Texts', 'Buttons', 'Spots', 'Questions', 'Limitations and scoring', 'Feedback', and 'Display'. The 'Display' tab is selected. The settings are organized into sections: 'Skin' (Basic), 'Basic color' (Lightblue), 'Numeric/text input field parameters' (Border style: Solid, Border width: 2 pixels, Background color: #FFFFFF), 'Font' (Arial, Font size: 12 pixels, Font color: #000000), and 'Matching pairs parameters' (Base width: 250 pixels, Match width: 350 pixels). At the bottom are 'OK', 'Cancel', 'Apply', and 'Help' buttons.

Category	Property	Value
Skin	Skin	Basic
	Basic color	Lightblue
Numeric/text input field parameters	Border style	Solid
	Border width	2 pixels
	Background color	#FFFFFF
	Font	Arial
Font	Font size	12 pixels
	Font color	#000000
	Matching pairs parameters	
Matching pairs parameters	Base width	250 pixels
	Match width	350 pixels

On the "Display" tab you can select the appearance settings for the Object.

On the "Messages" and "Texts" tabs you can edit the information and warning messages of the test.

The image shows two overlapping windows titled "Test".

The background window is on the "Messages" tab. It has sub-tabs: "Messages", "Texts", "Buttons", and "Spots".

- Information messages:**
 - Correct answer: CORRECT ANSWER
 - Last question state: LAST QUESTION STATE
 - Skipped: QUESTION IS SKIPPED
 - Skipped and failed: QUESTION IS SKIPPED AND FAILED
- Warning messages:**
 - Continued: Continued approach. Starting from first unanswered
 - Already answered: Test is already answered. Recuming approach is not
 - Recuming approach: This test is already answered. Press OK to clear stor
 - Skip and fail confirmation: Skipped question will be evaluated as failed. Are you
 - Still unanswered: There are unanswered questions. Continue
 - Numeric only: Please enter only nu

Buttons: OK, Cancel

The foreground window is on the "Texts" tab. It has sub-tabs: "Messages", "Texts", "Buttons", and "Spots".

- Single choice: Select correct variant
- Multiple select: Select all correct variants
- Ordering: Place variants in correct order
- Numeric fill-in-blank: Enter numeric value
- Text fill-in-blank: Enter text string
- Pair match: Connect pairs to match correctly
- Attempts text: Attempts:
- Scored test text: Credited:
- Not scored test text: Not credited:
- Question number text: question
- From text: from
- Question timer text: Question time limit:
- Test timer text: Test time limit:
- Stopped test text: Test is stopped
- All Answered text: All questions are answered
- No More Answered text: No more answered questions

Buttons: OK, Cancel, Apply, Help

On the "Buttons" and "Spots" tabs you can define custom question and test buttons and active spots for single choice, multiple select and order type of questions.

The 'Test' dialog box is shown with the 'Buttons' tab selected. The 'Use default buttons' checkbox is checked. Below it, there are six rows of text labels followed by input fields and a three-dot button: 'Submit answer:', 'Submit answer over:', 'Skip question:', 'Skip question over:', 'Next question:', and 'Next question over:'. At the bottom, there are three rows of text labels followed by input fields: 'Submit button tooltip:', 'Skip button tooltip:', and 'Next question button tooltip:'. The 'OK' and 'Cancel' buttons are at the bottom right.

Label	Input Field	Button
Submit answer:		...
Submit answer over:		...
Skip question:		...
Skip question over:		...
Next question:		...
Next question over:		...

Label	Input Field
Submit button tooltip:	Submit answer
Skip button tooltip:	Skip question
Next question button tooltip:	Next question

The 'Test' dialog box is shown with the 'Spots' tab selected. The 'Use default active spots' checkbox is checked. Below it, there are eight rows of text labels followed by input fields and a three-dot button: 'Single choice unchecked:', 'Single choice checked:', 'Multiple select unchecked:', 'Multiple select checked:', 'Ordering up active:', 'Ordering up inactive:', 'Ordering down active:', and 'Ordering down inactive:'. The 'OK' and 'Cancel' buttons are at the bottom right.

Label	Input Field	Button
Single choice unchecked:		...
Single choice checked:		...
Multiple select unchecked:		...
Multiple select checked:		...
Ordering up active:		...
Ordering up inactive:		...
Ordering down active:		...
Ordering down inactive:		...

Object Events

The "Numerical Fill-in-Blank Question" Object is capable of generating Events according to the user's Actions and interpretation of the Actions by the Object. When combined with Actions, Events can be employed for building up intellectual behavior models for other Objects depending on the current state of the "Numerical Fill-in-Blank Question" object.

Events are available using the built-in CourseLab Events manipulation mechanism.

Reference in the Action Editor	Triggered Upon
On Display Question	The question is fully loaded and all elements of the question are displayed
On Choice Change	Item configuration changed in single choice question
On Select Change	Item configuration changed in multiple select question
On Item Order Change	Item configuration changed in order question
On Numeric Value Change	Value changed in numeric question
On Text Value Change	Value changed in text question
On Matching Change	Item configuration changed in matching pairs question
On Attempt	At the moment of answer acceptance, but before answer evaluation
On Success	At the moment of answer evaluation, If the answer is correct.
On Failure	At the moment of answer evaluation, If the answer is incorrect.
On Question Time Out	At the moment of time expiration for the answer (if defined for question)
On Attempts Limit	After answer evaluated, If the number of attempts decreased to zero.
On Skip Question	After "Skip Question" button is pressed
On Question End	After answer is evaluated and no more activities left in this question
On Test Timer Tick	Every second while test timer is active
On Test Time Out	At the moment of time expiration for the whole test (if defined)
On Test End	After all questions are answered or test timeout

Object Specific Properties

Along with common Object properties, this Object has some specific properties that can be used in Actions and in text substitutions (\$OBJ_ID below means current Object ID):

Property	Returns	Syntax
testMode	Returns current test mode (tokens: "normal", "review").	\$OBJ_ID.testMode
questionNumber	Returns current question number (starting from 0, first question has 0 number).	\$OBJ_ID.questionNumber
totalQuestionQuantity	Returns total questions quantity in current test.	\$OBJ_ID.totalQuestionQuantity
testDuration	Returns allowed test duration in seconds (if exists).	\$OBJ_ID.testDuration
testTimer	Returns current test timer value in seconds (if exists).	\$OBJ_ID.testTimer
questionType	Returns current question type (tokens: "choice", "select", "range", "numeric", "text", "oto").	\$OBJ_ID.questionType
questionDuration	Returns allowed question duration in seconds (if exists).	\$OBJ_ID.questionDuration
questionTimer	Returns current question timer value in seconds (if exists).	\$OBJ_ID.questionTimer
itemQuantity	Returns total variants quantity.	\$OBJ_ID.itemQuantity
questionValue	Returns current question answer value (format corresponds to question type).	\$OBJ_ID.questionValue
attemptsLast	Returns current number of attempts.	\$OBJ_ID.attemptsLast
attemptsTotal	Returns allowed number of attempts.	\$OBJ_ID.attemptsTotal

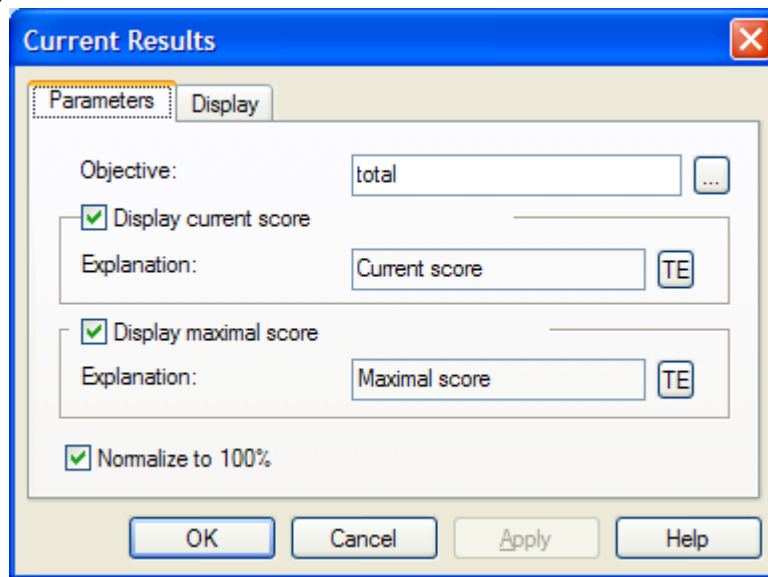
5.5.14.2. The Current Results Object

The "Current Results" Object is used for displaying to the user current results for the one of the Objectives.

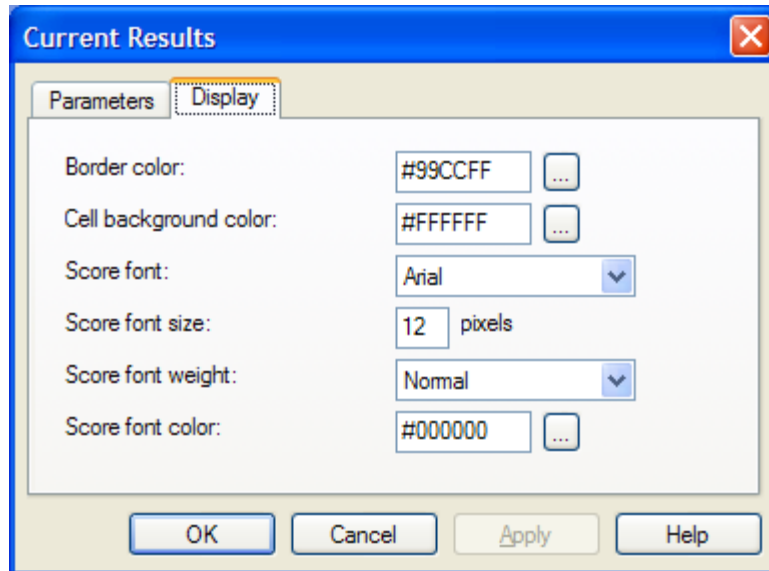
Current score	0
Maximal score	100

Note, that this Object is created when the Slide is loaded, therefore it cannot display score changes automatically. Therefore, use REFRESH Object Method if you wish to display up-to-date values.

Add the Object to the Frame. Open the "Properties" dialog screen (double click on the Object within a Slide or select the "Properties" option from the context menu).



The field for specifying the Objective is the main field on the "Parameters" tab. You can specify parameters that should be displayed and modify description messages to each of them. The **Normalize to 100% checkbox** allows presenting the number of points, not only as actual number, but also as a percentage of the maximum number of points.



Use the "Display" tab to select the color scheme for the main elements of the Object, and also to specify font settings for displaying points.

Object Methods

The state of the Object can be modified using this Method.

Method name	Execution Result
REFRESH	Refreshes current score values.

Object Specific Properties

Along with common Object properties, this Object has some specific properties, that can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
ObjectiveID	Returns Objective identifier.	\$OBJ_ID.ObjectiveID
rawScore	Returns raw Objective score.	\$OBJ_ID.rawScore
scaledScore	Returns scaled Objective score (if can be calculated).	\$OBJ_ID.scaledScore
maxScore	Returns maximal Objective score (if defined).	\$OBJ_ID.maxScore

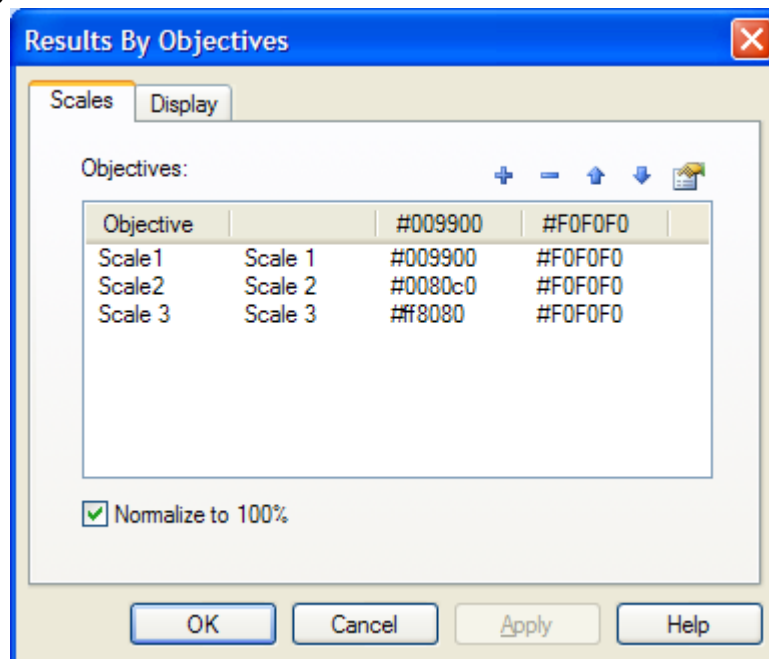
5.5.14.3. Results by Objectives

The “**Results by Objectives**” Object is used for displaying the current results of several Objectives simultaneously.

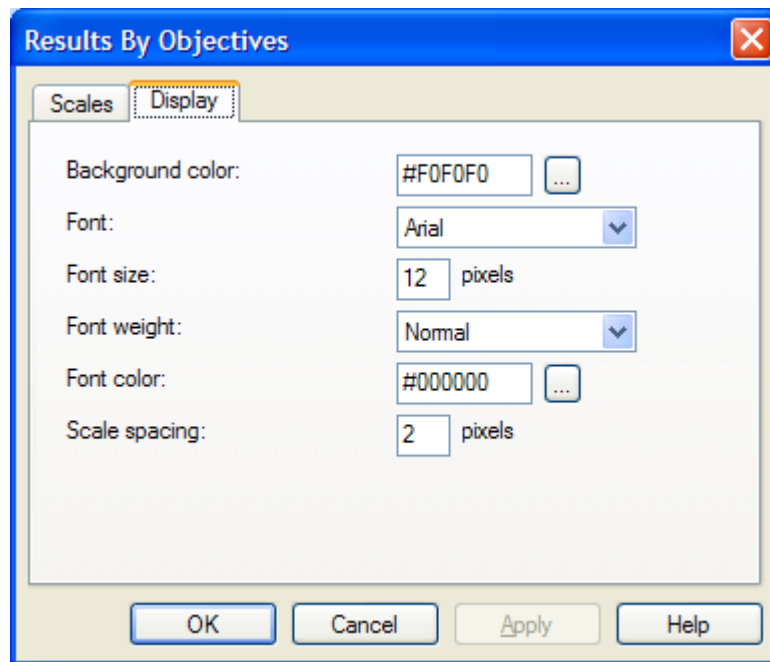
Scale 1	<div></div>	100%
Scale 2	<div></div>	10%
Scale 3	<div></div>	100%

Note, that this Object is created when the Slide is loaded, therefore it cannot display score changes automatically. Use the REFRESH Object Method if you wish to display up-to-date values.

Insert the Object into the frame. Open the “Properties” dialog screen (double click the Object within a Slide or select the “Properties” option from the context menu).



Use the “Scales” tab for defining the list of Objectives results to be presented and specify the parameters for displaying the results. The **Normalize to 100%** checkbox allows the display of the number of points not only as an actual number, but also as a percentage of the maximum number of points.



Use the "Display" tab to select the color scheme for the main elements of the Object, and also to specify font settings for displaying points.

Object Methods

The state of the Object can be modified using this Method.

Method name	Execution Result
REFRESH	Refreshes current score values.

5.6. Scenarios

CourseLab scenarios are templates for building interactions between multiple Objects. Scenarios enable a course author to define required parameters and get content into the Slide right away.

Even though the same task could be accomplished by placing text and pictures on a Slide, and by specifying interactions between them, the use of scenarios significantly speeds up the process.

Let's review scenario utilization by using the example of a "Products catalogue" scenario. To place the "Products catalogue" into the Slide, open the "scenario" section on the tasks pane. Use the context menu of the scenario icon to choose the "Insert" item.

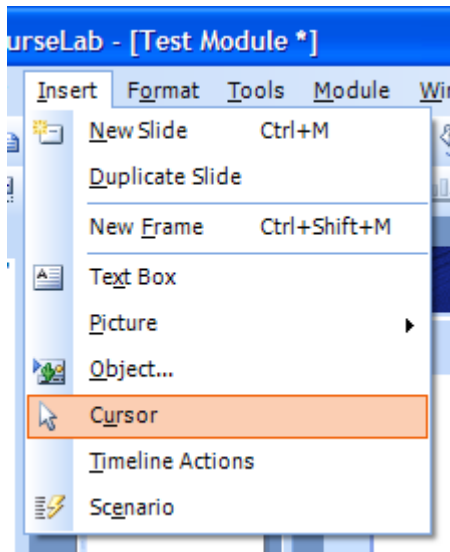
To change parameters of the scenario, open the "Frame structure" section on the task pane. Select "Edit scenario..." from the context menu on the scenario identifier. A Dialog window opens up where you can specify the parameters for the scenario.

For each product the following is defined:

- Name of the product.
- File containing the picture of the product.
- Formatted text describing the product.

Upon the completion of all parameters, there will be list of the product's names displayed on the Slide. When one of the product's names from the list is selected, a card for corresponding product opens up.

5.7. Cursors

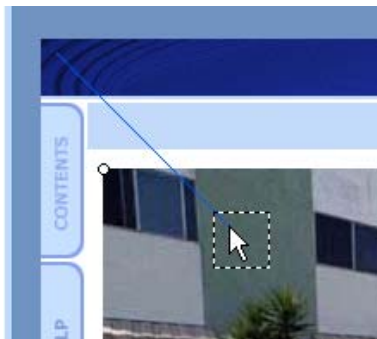


Learning Courses designed for teaching software programs can contain software simulations. Usually, the simulation is a sequence of frames. For example, a moving cursor points to a predefined menu item. Then a mouse click is imitated and then the next Frame displays the result of the mouse click. The special "Cursor" Object is used to mimic mouse movements.

If, during the recording of a simulation, the checkbox "Capture Cursor" is checked, the cursor Object will be inserted into the frames automatically. However, the cursor Object can

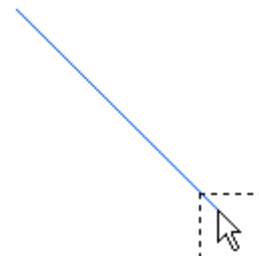
be added to existing frames as well. To do so, select **Cursor** item from the "Insert" menu.

The Cursor will be placed on the current Frame.



Cursor movement path

The blue line to the cursor represents cursor movement path.



To change the starting point of the cursor movement, hold down the Ctrl key and double-click into the desired point inside a frame. In such a way you can modify the starting point of the cursor but **only on the first Frame within a Slide**. For all subsequent frames the starting point of the cursor movement will be the cursor's end point from the previous Frame.

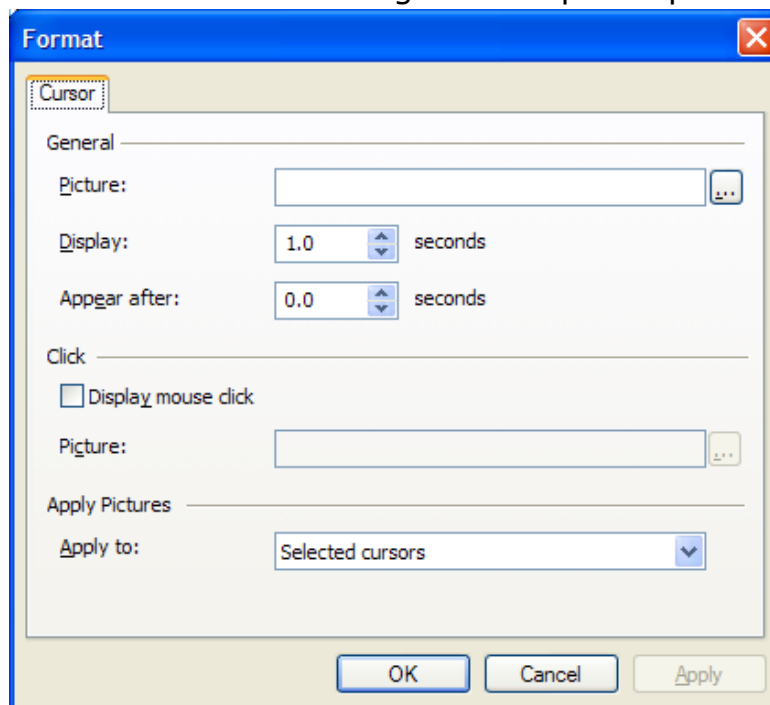
In order to modify the cursor's end point, simply drag the cursor icon to the desired point on the Slide.

Select the "**Previous Frame**" menu item from the cursor context menu to merge the final position of the cursor with the cursor's end position from the previous Frame.

Select the "**Next Frame**" menu item from the cursor context menu to merge the final position of the cursor with the cursor's end position on the next Frame.

Time of cursor movement

It is possible to specify the cursor movement starting time and the duration of the cursor's movement. Select the "**Format Cursor**" menu item from the cursor context menu. A "Format" dialog screen opens up.



The "Display" field contains information regarding duration of the cursor movement.

The "Appear after" field contains information regarding cursor movement starting time.

Within the same Frame it is possible to create complex multiple cursor movement paths by adding several cursors. It is obvious, that for each subsequent cursor the movement start time must be later than the movement end time of the previous cursor.

For all cursors with the “Display mouse click” setting turned on, the duration of the click is 0.7 second. This time period needs to be considered when defining display time for the Frame, and when specifying setting “Appear After” for the next cursor in the frame.

6. Handling Objects

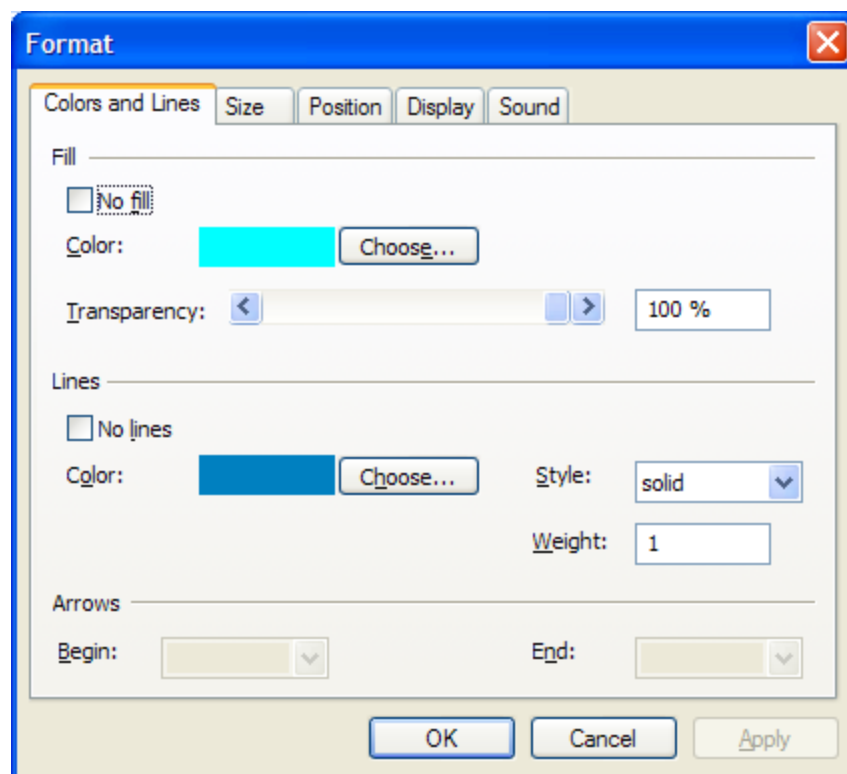
6.1. Common settings of all Objects.

Object allocation within a Frame.

In the previous chapters of this manual we have described the specific properties of different Objects. In addition, there are properties that are common to all Objects. Such properties can be accessed using “Format Object” (“Format Picture”, “Format TextBox”, and “Format AutoShape”) from the context menu.

6.1.1. The Object’s background and Border Color. Opacity.

When you insert any Object into a Frame, it is placed into the rectangular placeholder. Use “Color” tab on the “Format” screen to specify placeholder’s background color.



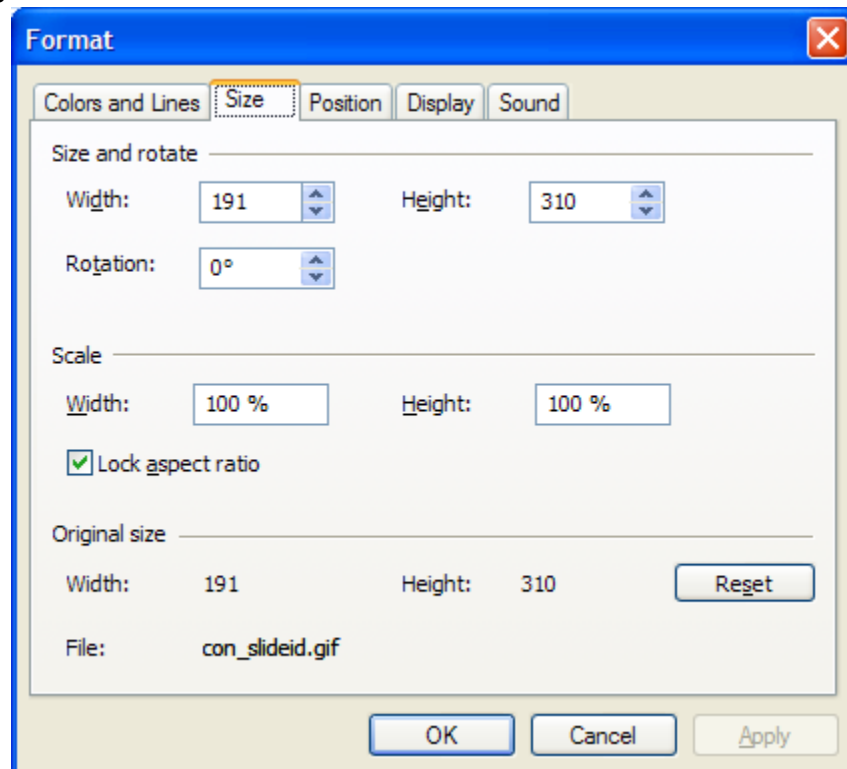
Note that these parameters pertain only to the Object’s placeholder, rather than the Object itself. If the Objects fit the entire rectangular placeholder (for example pictures), it is appropriate to specify the placeholder’s background color only when the pictures contain transparent areas.

Exceptions: AutoShapes Objects, where changes to placeholder's background and border color apply to the AutoShapes directly.

On the same "Color" tab, move the "Transparency" Slider to modify the opacity of the Object's placeholder as well as the opacity of the Object itself.

6.1.2. Sizing and Scaling.

The simplest Method to change the size of an Object is to click and drag the sizing handle inside of the editor window. The size of the Object's placeholder will change accordingly. However, for precise sizing use the "Format Object" item from the context menu.



Use the "Size" tab on the "Format" screen to specify the size of the Object's rectangular placeholder. Depending on the Object type, there are three variants of Object allocation within the Rectangular Placeholder:

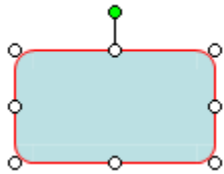
- the Object fills up all available space inside the placeholder.
- the Object will resize its width to fit the Rectangular Placeholder and automatically adjust its height size to fit content (for example, depending on the amount of the text).
- the Object will not change its size despite the placeholder's size modifications (for example, some buttons are fixed-size).

You can also change the size using relative values of the scale parameters in proportion or by length or height only.

6.1.3. Rotating an Object

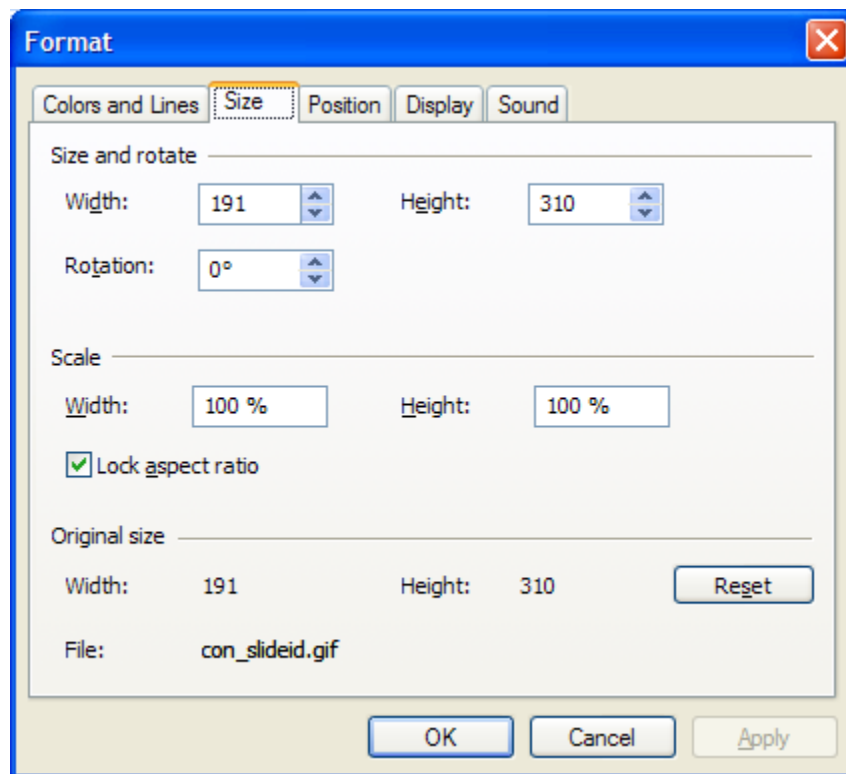
Any Object in the learning Module can be entirely rotated by any angle.

LIMITATION: Object rotating can be correctly displayed only using Internet Explorer – in any other Browser the Object will not be rotated.



Use the mouse to grab the rotating (green color) handle and rotate the Object right inside of the editor window.

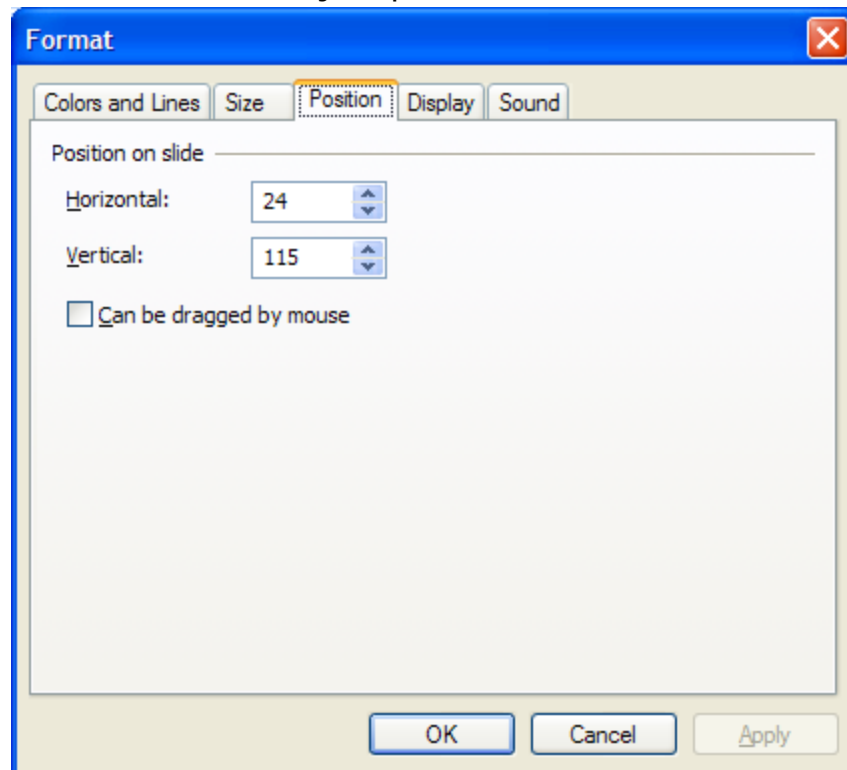
For more specific angle settings use the "Format Object" item from the context menu. Use the "Size" tab on the "Format" screen to specify precise rotating angle.



IMPORTANT! The Browser's capabilities are used for Object rotating when displaying the learning Module. Due to some Browser limitations, the quality of the rotated Object can be affected.

6.1.4. Object position within a Frame and permission to move Object.

Use the "Position" tab on the "Format" screen to set the the initial position for the top left corner of the Object placeholder within a frame.




The term "initial" is used intentionally, because ultimately you can cause the Object to be dragged by the mouse when the checkbox "Can be dragged by mouse" is on the same tab – in this case, learner can drag the specified Object within a frame.

LIMITATION: An Object that can be dragged can not be moved by MOVE-START action




6.1.5. Modifying common settings for the group of the Objects.

If you select a group of Objects on the Frame you can modify common settings for that entire group. In the opened "Format" dialog screen, the only filled in fields are those that have identical parameter values pertaining to all Objects. If fields are empty it means that parameter values for selected Objects are different or not defined.




6.1.6. Aligning Objects

Two or more Objects on the Slide can be aligned relative to each other using these toolbar buttons. 


Horizontal Alignment



-  **Align Left.** This button aligns the selected Objects horizontally, relative to the border of the left most Object from the selection
-  **Align Center.** This button aligns vertical centerlines of the selected Objects, based on the centerline of the widest Object from the selection.
-  **Align Right.** This button aligns the selected Objects horizontally, relative to the border of the right most Object from the selection.

Vertical Alignment

-  **Align Top.** This button aligns the selected Objects vertically, relative to the border of the top most Object from the selection.
-  **Align Middle.** This button aligns horizontal centerlines of the selected Objects, based on the centerline of the highest Object from the selection.
-  **Align Bottom.** This button aligns the selected Objects vertically, relative to the border of the lowest Object from the selection.

6.1.7. Distributing Objects evenly

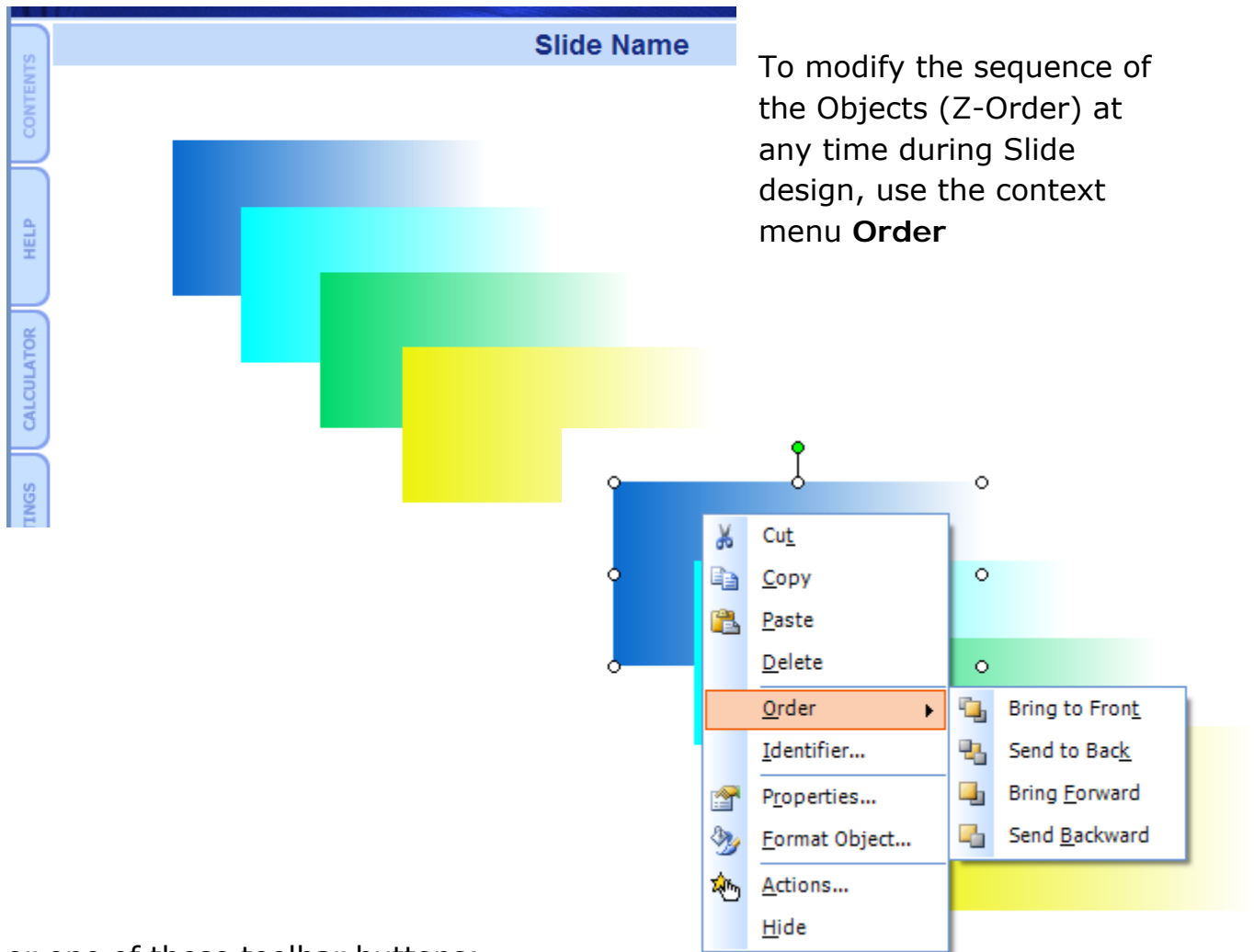
Three or more Objects on a Slide can be evenly distributed using these toolbar buttons. 

-  **Distribute Horizontally.** This button distributes the selected Objects evenly between the left and right outermost Objects from the selection.
-  **Distribute Vertically.** This button distributes the selected Objects evenly between the top and bottom outermost Objects from the selection.

NOTE: In fact, Objects placeholders are distributed, therefore some inaccuracy may occur if an Object does not fills up all available space inside the placeholder.





6.1.8. Changing an Objects Z-Order

Objects within a Slide appear sequentially. This can easily be illustrated if Objects are positioned using cascading (see picture below). The newly created Objects displayed first, therefore they are covered by The Objects, which were created later.



or one of these toolbar buttons:



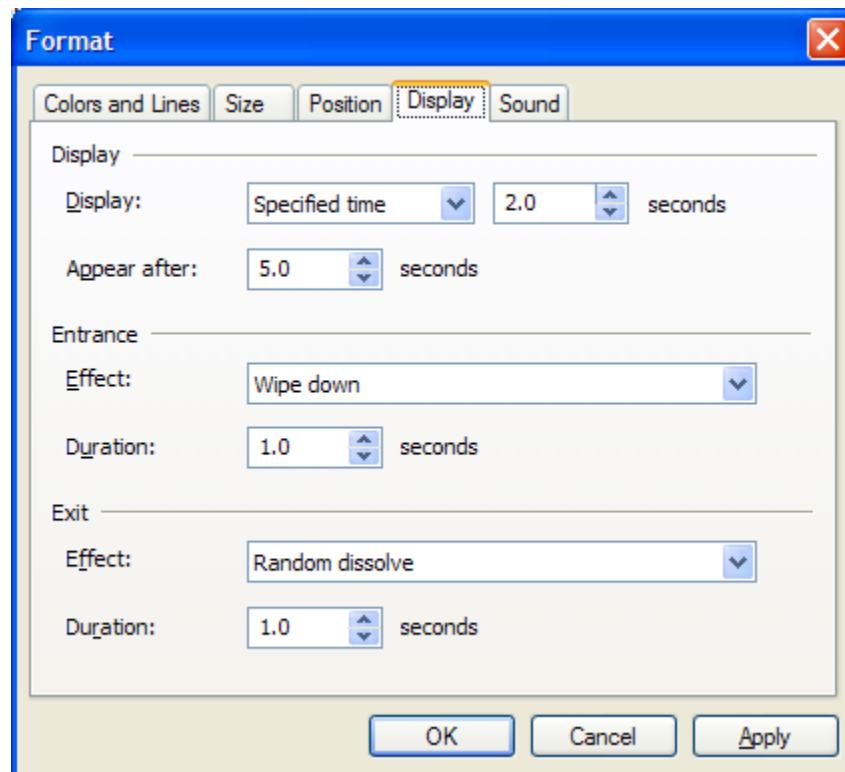
-  **Bring to Front.** Selected Object will be placed on the top of all other Objects.
-  **Send to Back.** Selected Object will be placed beneath any other Object.
-  **Bring Forward.** Selected Object will be moved one step up.
-  **Send Backward.** Selected Object will be moved one step down.

6.2. Effects. Controlling display time.

6.2.1. Objects display time. Timeline Panel.

It is possible to define the start time for displaying an Object on a Slide and also the duration of the Object's display. It is also possible to specify that an Object should be displayed only when triggered by certain event.

To modify an Object display start time and display duration - select the **Format...** item from the Object context menu. This "Format" dialog screen opens up.



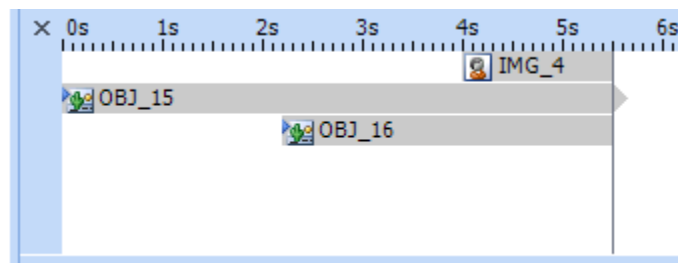
On the "Display" tab of the "Format" window you can define the following parameters:

- **Object display mode** You can choose one of four options:
 - **None** – Object will not be displayed at all. This mode is used when the Object is to be displayed only by an Action from the user.
 - **Rest of Frame** – the Object will be shown from the moment the display was turned on up until the transition to the next Frame within the same Slide (or to another Slide, if the current Frame is the last one or the only one on the Slide).
 - **Rest of the Slide** - Object will be shown from the moment the display was turned on, up until the transition to the next Slide

- **Specified time** – the Object will be shown from the moment display was turned on until the specified time.
- **Appear after.** Defines the delay of the Object display start time relative to the Frame display start time.

Besides specifying an Object's display time, you can also use visual controls on the **"Timeline"** panel.

Select **View – Timeline** to open "Timeline" panel. A "Timeline" panel opens up on the top portion of the module's window.



On the panel there is a timeline containing all Objects on the current Frame. The thin grey colored vertical line represents the time limit for the Frame display end time. If the Slide consists of several Frames, this is the time the transition to the next Frame occurs. The Frame display time can be modified by dragging the grey colored vertical line to the left or to the right along the timeline.

Stripe lines with Object's identifiers in the "Frame timing" panel represent the duration of the Object display. The left boundary of the stripe line represents the Object display start time. The right boundary of the stripe line represents the time when the Object will disappear. You can change the Object display start time and the duration of the Object display by dragging (using the mouse) the borders of the stripe lines or the stripe line itself. If the Object display mode is set to "Rest of the Slide" the stripe line ends with a small grey triangle outside the time limit of current Frame.

A Stripe line with a mouse cursor on it represents the duration time of the cursors movement. The empty spots on the stripe lines represent time during which the cursor remains still.

IMPORTANT! If the "Display Click" setting is specified in the cursor's properties, you should ensure that the pause before the next cursor move, or before the Frame display end time, is not less than 0.7 seconds.

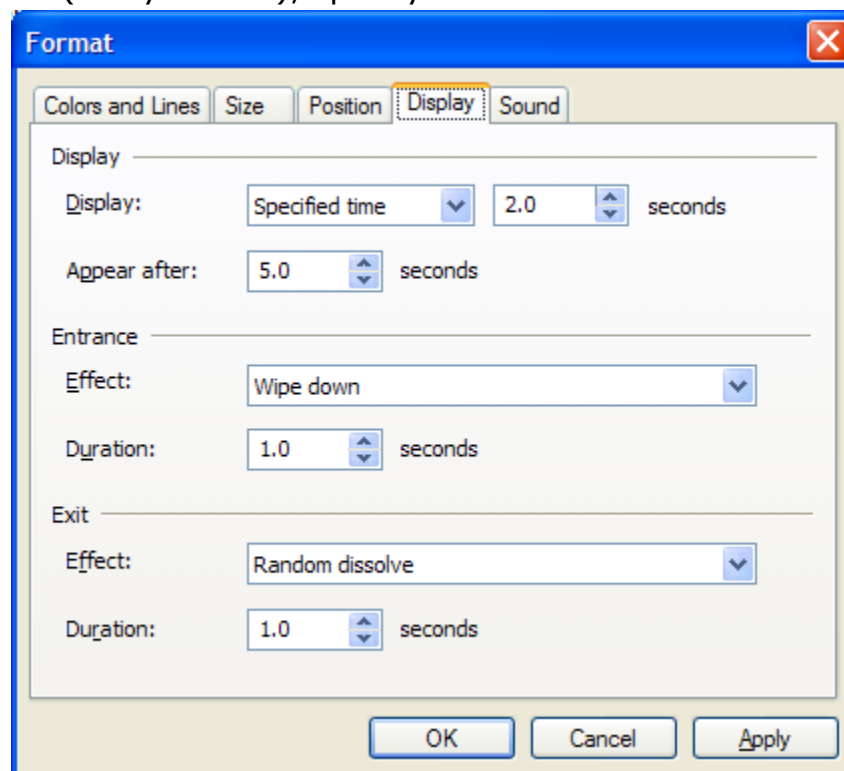
6.2.2. Object entry and exit effects

By default, Objects are displayed on the Frame in their entirety. However, to make the learning process even more interactive, you can specify certain display effects.

Use the "Display" tab on the "Format" screen to specify an Object's entry transition. CourseLab (and consequently the CourseLab player) contains 24 built-in entry transitions.

LIMITATION: The full set of effects displays correctly only in Internet Explorer Browser. In all other Browsers the set of effects is limited. If a selected effect is not supported by a particular Browser, the CourseLab player will automatically replace the effect with one supported by the current browser.

For each effect (entry or exit), specify the duration in seconds.



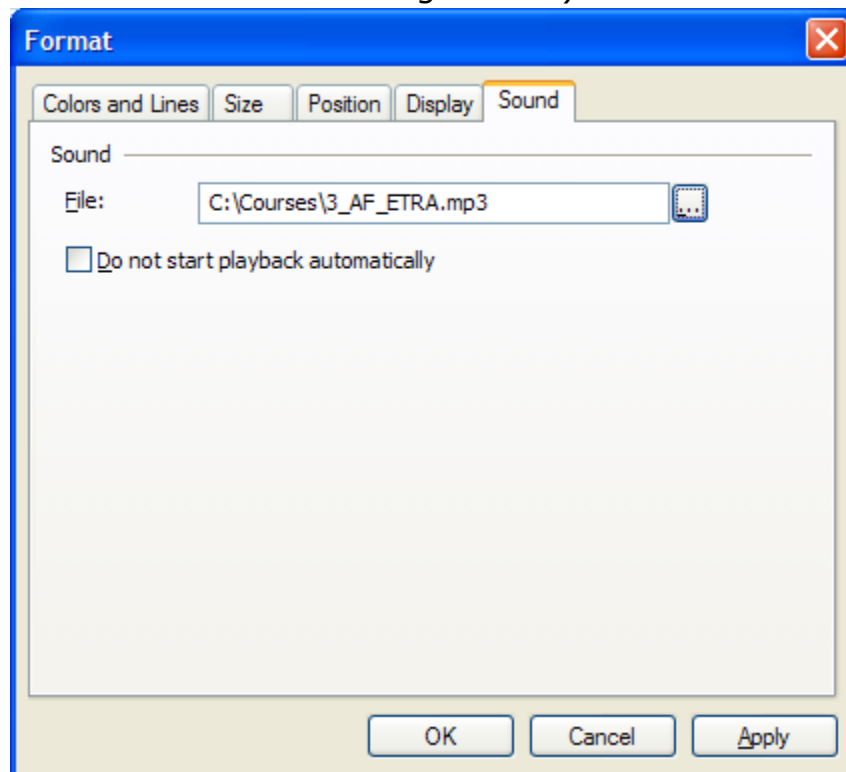
It is important to remember, that:

- Unlike the time of the entry effect execution, which is included in the time of Object execution, the time of exit effect is not included in the time of Object execution and this effect will be carried out in "overtime".

- Effects, as well as other common settings, are applicable to the Object's placeholder. Therefore, if the placeholder's size is much bigger than the size of the actual Object, the effect execution against an empty placeholder space might take extra time.
- Effects can be used at the time of the Object's appearance and also at the time of Object display (or closing) initiated by the DISPLAY Action.

6.3. Binding sounds to Objects

In the learning Module created by CourseLab you can bind audio files to any Object. Use the "Sound" tab on the "Format" dialog screen, select the audio file to be bound with the Object (the file will be automatically copied into the "Images" folder of the current learning Module).



By default, the sound will start playing right after the Object appears on the frame. This feature can be turned off by checking the "Disallow autoplay" check box. In this case the audio file will be bound to the Object, however for playing the sound, the special Action "SOUND" should be used.

The following audio formats can be used: Adobe Flash (*.swf), or any format supported by the Windows Media Player (*.wav, *.wma, *.mp3 and so on).

IMPORTANT! When using audio files, make sure to turn ON the feature under ("Module menu – Runtime Settings"), which checks whether or not the system has the required component for playing specific audio formats.

6.4. Object Properties

Object Properties are those parameters of an Object which can be used in Actions and text substitution.

6.4.1. Common Object Properties

Common Object Properties are properties that belong to every CourseLab Object, and can be used in Actions and in text substitutions (OBJ_ID below means current Object ID):

Property	Returns	Syntax
x	Returns the X coordinate of the top-left corner of the Object's position on the Frame. For a moving Object it is always start the position, as defined in Edit mode.	\$OBJ_ID.x
y	Returns the Y coordinate of the top-left corner of the Object's position on the Frame. For a moving Object it is always the start position, as defined in Edit mode.	\$OBJ_ID.y
w	Returns the width of the Object in pixels.	\$OBJ_ID.w
h	Returns the width of the Object in pixels.	\$OBJ_ID.h

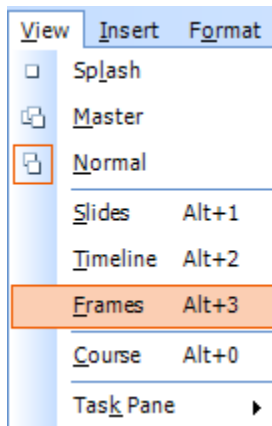
6.4.2. Specific Object Properties

Specific Object Properties are parameters of an Object which can be used for Actions and text substitutions. Depending on the type of the Object there could be a different set of specific properties (or none). Read the corresponding Object's topic to find which properties are available.

7. Multiframe animation

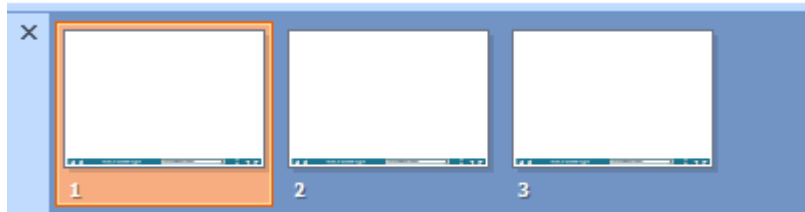
Initially a the Slide contains only one single Frame. It is possible to achieve an animation effect by creating a sequence of the Frames with a predefined duration of playback assigned to each Frame.

7.1. Using Frames



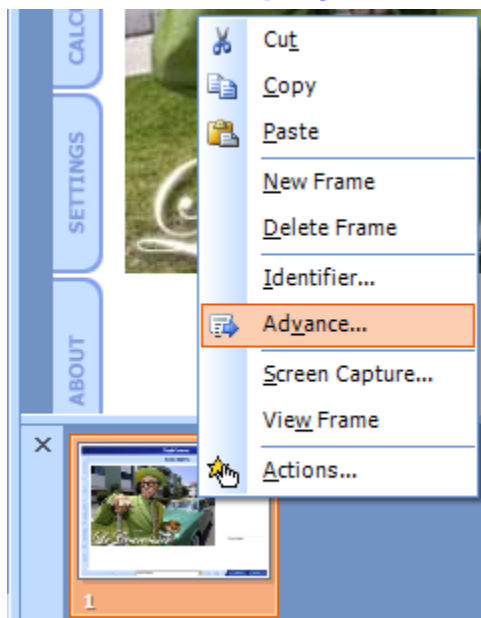
Use the "Frames" panel for managing the Frames on the Slide. To open "Frames" panel, select **View – Frames**.

In the bottom part of the Module window the "Frames" panel opens up.



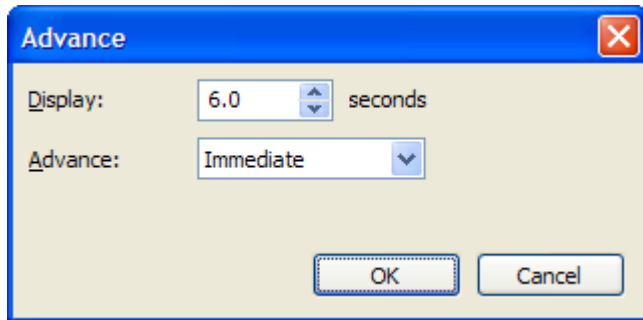
Add as many frames as necessary. Make appropriate changes to each of them to reflect the animation sequence.

7.2. Frame display time



Each individual Frame has its own display time. To modify the display time in the "Frames" panel select the **Advance...** item from the frame's context menu.

The "Advance" dialog screen opens up.



Define the display time in seconds.

IMPORTANT! The specified Frame's display time has a higher priority over the display time of the Objects within the same Frame. If this time is less than the display time of some included Objects, then those Objects will not be displayed at all.

Specify the Method of transition to the next Frame with the "Advance" setting. By default, the transition to the next Frame takes place at the end of the frame's display time (setting "Immediate"). The Alternative setting is "Wait for Action" – it means stopping at the end of the frame's display. In this case, creation of an Action which will trigger transition to the next Frame, will be of your responsibility.

8. Actions and Events

8.1. The “Event – Action” Mechanism

All interactions between Objects in CourseLab learning modules are based/built on the “Event – Action” mechanism.

An **Event** is a signal originated either by the Object or during the course by the user. Generally, Events are generated when the state of an Object changes (for example, at the moment of Object appearance) otherwise Events are generated externally (for example, by mouse click on the Object). Events are used for triggering Actions when creating relationships inside a Module.

Actions are predefined changes of an Object state and/or Module variables which are used for creating complex Object behavior.

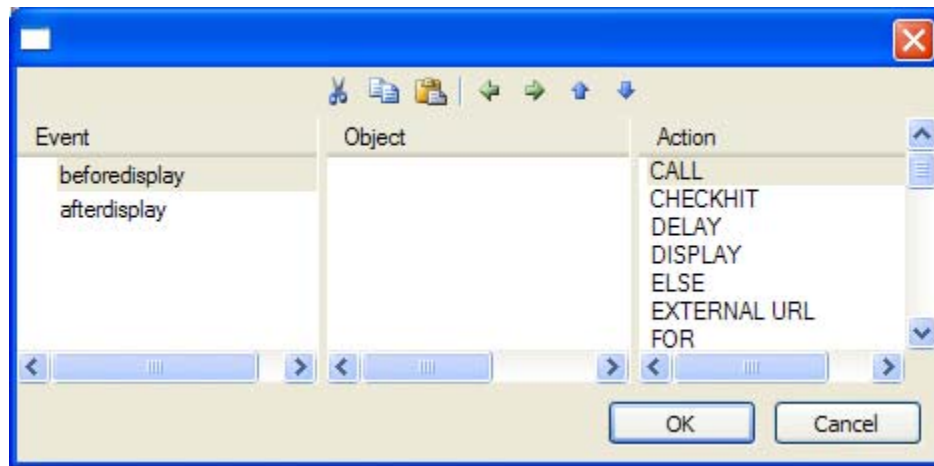
The Event trigger could be either a Frame or a Slide or one of the Objects on the Frame. In the first case, All Events are generated by the CourseLab player; in the second case, the common Events for all Objects are generated by the CourseLab player and all Object-specific Events are generated directly in the Object’s code.

For illustration purposes, and to better understand the “Event – Action” mechanism, let us review the following example:

Picture a street with a pedestrian crosswalk equipped with two traffic lights - one for pedestrians, and another one for vehicles. At the red signal of the vehicle traffic light the traffic stops, and starts again when red signal switches its color to green. Respectively, the pedestrians start crossing the crosswalk on the green signal and stop at red. In the example described above in the Event of “red signal of the traffic light for vehicles”, the “Car” type of Objects performed the Action “Stop”. In the Event of “green signal of the traffic light for vehicles” , the “Car” type of Objects performed the Action “Start”. “Pedestrians” type of Objects performs similar Actions but using Events of its own traffic light. The source for the Events in both cases is the two traffic lights.

8.2. Events generated by the CourseLab Player

8.2.1. Slide and Frame Events

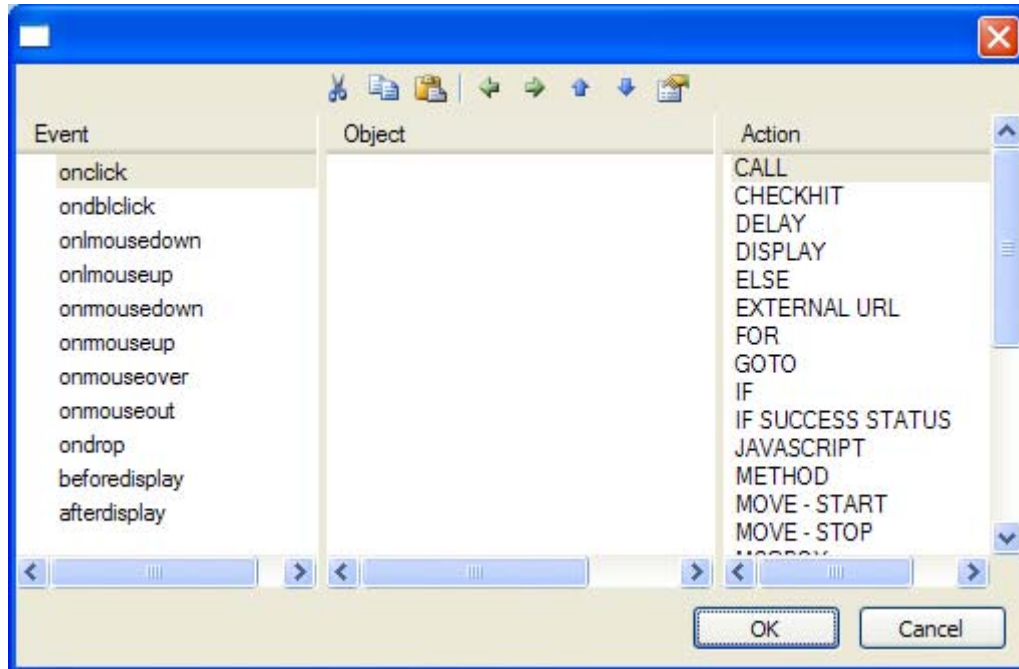


Each Slide and Frame of the Learning Module is generating the following two events:

- The **"beforedisplay"** Event arises at the moment when all Objects of the current Frame are fully loaded, right before displaying the first Object from the list (remember, that even if all Objects are to be displayed simultaneously, in practice the first Object to be displayed is the one which is located underneath all other Objects). Even though both the Slide's "beforedisplay" Events and the Slide's first Frame "beforedisplay" Events occur virtually simultaneously, the order of triggering is as follows: The Slide's "beforedisplay" Event will occur first, and next, the Frame's "beforedisplay" Event will follow.
- The **"afterdisplay"** Event occurs at the moment the last Object from the list on the current Frame is displayed. Please note, that the "afterdisplay" Event indicates that all Objects intended for automatic display have been displayed and this Event has no relationship with the transition to the next Frame or Slide. Even though "afterdisplay" Events for the last Frame and Slide occur virtually simultaneously, the order of triggering is as follows: The Frame's "afterdisplay" Event will occur first, and next, the Slide's "DISPLAY END" Event will follow.

In the most common case scenario when a Slide contains only one Frame, the "beforedisplay" and "afterdisplay" Events occur virtually simultaneously.

8.2.2. Events common to all Objects



Any Object located on the Frame can be the source for the following events:

- the "**onclick**" Event is generated by the user by left mouse click directly within an Object.
- the "**ondblclick**" Event is generated by a mouse double-click directly within an Object. The pause between the clicks, which indicates whether this is double-click rather than two single clicks, corresponds to the mouse properties defined under the operating system settings on the user's computer.
- the "**onmousedown**" Event is generated when the left mouse button is pressed down within an Object.
- the "**onmouseup**" Event is generated when the pressed left mouse button is released within an Object..
- the "**onrmousedown**" Event is generated when the right mouse button is pressed down within an Object.
- the "**onrmouseup**" Event is generated when the pressed right mouse button is released within an Object..
- the "**onmouseover**" Event is generated when the mouse cursor reaches the outside border of the Object, i.e. at the Object's "Entry" point.
- the "**onmouseout**" Event is generated when the mouse cursor reaches the inside border of the Object, i.e. at the Object's "Exit" point.

- the “**ondrop**” Event is generated when the dragged Object is dropped. It is important to understand, that if one Object is dragged and dropped over another Object, the second (target) Object would be the source of the generated event.
- the “**beforedisplay**” Event is generated right before displaying the current Object
- the “**afterdisplay**” Event is generated at the moment of finishing Object display (at the end of an effect execution, if the transition effect has been used at display)

8.3. Custom Object Events

Besides general events, which are common to all Objects, there is a set of Objects (usually these are complex Objects, for example, questions), which can generate custom Events (specific to each Object). For example, “Question” types of Objects can generate Events such as On Success, On Failure, On Attempts Limit, and other Events specific to the test questions. However, when it comes to managing these Events they are treated the same as any other Event. Custom Objects Events are described in the corresponding sections under the “Object”.

8.4. Actions

To create Actions you can either employ **built-in Actions** (which are listed in the Action Panel), or use JavaScript if you are familiar with this language.

8.4.1. Variables and Object properties in Action parameters

If the Action parameter is the plain text string or number (i.e. not an Object ID, Slide ID or time), then it can contain CourseLab variable values and/or other Object’s property values.

Syntax for variables: `#var_name` (where *var_name* is the name of the variable and # means that variable **value** should be used).

Syntax for properties: `$OBJ_ID.property` (where *OBJ_ID* is the Object ID, *property* is the property name and \$ means that property **value** should be used).

Note that if the corresponding variable or property does not exist, then the string will remain intact!

8.4.2. Built-in Actions

Actions vary depending on the target they refer to; they are classified as **execution Actions** (in fact, executing some Actions against the Objects) and **service Actions** (intended for managing the execution of other Actions or for assigning variables).

Some of the service Actions can have **dependant Actions**, i.e. the execution of such Actions depends on the execution results of the given service action. Dependant Actions, in the sequence of Actions, are distinguished by a right indent according to the parent action.

8.4.2.1. Execution Actions

EXTERNAL URL

The **EXTERNAL URL Action** enables the opening of resource, that is external to the Learning Module, in the new Browser Window. The EXTERNAL URL Action has a single parameter, which is the URL to be opened in the new Window. The URL should be specified according to Internet addressing protocol, for example: <http://www.courselab.com/> .

RETURN

The **RETURN Action** performs a transition to the Slide where the **CALL Action** was previously executed. It does not have any parameters.

ROTATE - START

The **ROTATE - START Action** initiates Object rotating. ROTATE - START Action has three parameters:

- **Object ID** is the identifier of the Object to be rotated. Object ID can be either selected from the "Select Object" dialog (press the button next to the field to open this dialog), or inserted as a text input (sometimes this approach is more convenient).
- **Angle** is a numerical field, which indicates the angle and direction in degrees (input items can only be digits; no special characters are allowed). The positive value refers to rotating clockwise and the value with "minus" symbol (negative) refers to rotating counter-clockwise. You can even rotate an Object more than one full turn, specifying an angle parameter of more than 360 degrees.
- **Duration** – numeric field, which defines time of rotation in seconds. Zero value corresponds to the instant rotation of the Object.

Limitations:

An Objects rotation is supported only by Internet Explorer Browsers, rotation is not supported by other Browsers.

Any Object that can be dragged by a mouse, can not be rotated. For this type of Object, this Action will be ignored.

ROTATE - STOP

The **ROTATE - STOP Action** stops Object rotation. The ROTATE STOP Action has two parameters:

- **Object ID** is the identifier of the Object which will be rotated. Object ID can be either selected from the "Select Object" dialog (press the button next to the field to open this dialog), or inserted as a text input (sometimes this approach is more convenient).
- **All Objects** is a field with «Yes/NO» value options. If "Yes" is selected, the rotation of all currently rotating Objects will be interrupted; the value of the Object ID parameter will be ignored. If "No" is selected, only the rotation of the Object specified in the Object ID parameter will be interrupted.

Limitations:

Object rotation is supported only by Internet Explorer Browsers, rotation is not supported by other Browsers.

Any Object that can be dragged by a mouse, can not be rotated. For this type of Object, this Action will be ignored.

CALL

The **CALL Action** initiates the transition to a specific Frame of any Slide.

The CALL Action has two parameters:

- **Frame** is the identifier of the Frame where the transition will go to. Frame ID can be either selected from the "Select Slide and Frame" dialog (press the button next to the field to open this dialog), or inserted as a text input (sometimes this approach is more convenient). Note that this parameter is valid only if the **Option** parameter is set to "Specified Frame".
- The **Option** parameter determines the Frame where transition will go to. If "Specified Frame" (default value) is selected, the transition will be performed to the Frame specified in the Frame parameter. If any other value ("Next Frame", "Next Slide", "Previous Frame", "Previous Slide") is selected, the Frame parameter will be ignored.

During execution of the CALL action, the identifier of the current Slide remains in memory as a parameter for the RETURN Action.

MOVE - START

The **MOVE - START Action** initiates the moving of an Object within a frame.

There are five parameters:

- **Object ID** is the identifier of the Object, which will be moved. Object ID can be either selected from the "Select Object" dialog (press button next to the field to open this dialog), or inserted as a text input (sometimes this approach is more convenient).
- **X** – is a numerical field which defines the Object's horizontal shift in pixels. Depending on the **Additive** parameter this value can be either absolute (i.e. counted off frame's top left corner), or relative to the current value. The inserted value can be located within a Frame as well as outside the Frame (in which case the Object will be moved outside the Frame and will become invisible).
- **Y** – is a numerical field which defines the Object's vertical shift in pixels. Depending on the **Additive** parameter this value can be either absolute (i.e. counted off frame's top left corner), or relative to the current value. The inserted value can be located within a Frame as well as outside the Frame (in which case the Object will be moved outside the Frame and will become invisible).
- **Additive** – is a field with «Add/Replace» value options. If "Add" is selected, the inserted X and Y shifts will be added to the current X and Y coordinates (i.e. the Object will be moved according to the added coordinates relative to the Object's current position). If "Replace" is selected, the specified X and Y shifts define the absolute coordinates of the point where the Object will be moved.
- **Duration** – is a numeric field which defines the time in seconds of the Object relocation. A Zero value corresponds to instant Object relocation.

Limitation: Any Object that can be dragged by mouse, can not be moved and this Action will be ignored.

MOVE - STOP

The **MOVE - STOP Action** interrupts the movement of the selected Object or all currently moving Objects. The MOVE - STOP Action has the following two parameters:

- **Object ID** is the identifier of the Object for which movement needs to be interrupted. Object ID can be either selected from the "Select Object" dialog (press the button next to the field to open this dialog), or inserted as a text input (sometimes this approach is more convenient to use). If the movement of all Objects needs to be

interrupted (please see "All Objects" parameter below) the input value for the Object field is ignored (and it may be left blank).

- **All Objects** is a field with «Yes/NO» value options. If "Yes" is selected, the movements of all currently moving Objects will be interrupted; the input value for the Object parameter will be ignored. If "No" is selected, only the movement of the Object specified in the "Object" parameter will be cancelled.

SOUND

The **SOUND Action** either initiates or stops playback of the audio file.

Sound Action has three parameters:

- **Object ID** is the identifier of the Object with associated audio file for, which playback needs to either be started, or stopped (binding the audio file to the Object described in the "Objects" section). If the "File" parameter is not empty, the input value for this field is ignored (and it may be left blank) and the Action will be performed against the file specified in the "File" parameter instead of the Object.
- Employ the **"File"** parameter to specify the path to the audio file for which playback needs to be either started or stopped. Use the "Select File" dialog (press the button next to the field to open this dialog) to specify the audio file for playback and it will be automatically copied into the "Images" folder of the Module. The Audio file can be in Macromedia Flash Player (*.swf) format or any other format supported by Windows Media Player (*.mp3, *.wav, *.wma, and others). If the "File" parameter is not empty, the input value for this field will have higher priority than the value of the "Object" parameter, thus the Action will be performed against the file specified in the "File" parameter instead of the Object. The value of the "Object" parameter will be ignored.
- **Action** parameter is a field with «Start/Stop» value options. If "Start" is selected, the selected audio file (explicitly specified or bound to the Object) will start playing. The "Stop" value will stop playback of the selected audio file.

IMPORTANT! For playing different audio formats, remember to turn on the feature which checks whether or not the required software has been installed on the target machine before loading the learning Module (menu "Module – Runtime Settings – Checks").

METHOD

The **Method Action** enables launching the execution of **Methods – Actions built into the Object** However, it should be taken into consideration that

not all types of Objects have built-in Methods (Usually, only complex types of Objects like "Agent" have built-in Methods).

There are two steps in specifying parameters for the "Method" action. At the first step, only the following two parameters are accessible, and they should be specified strictly in the following order:

- The **Object ID** is the identifier of the Object which Method should launch.
- The **Method** which should be launched.

Further, if the selected Method has associated input parameters, additional entry fields will appear for inserting the Method's parameters.

NAVIGATION

The **Navigation Action** enables turning ON/OFF the capability for transition to another Slides of the Module. For example, the necessity to turn off the transition capability may arise if you wish to allow users to move to the next Slide only after they complete the appointed tasks.

Navigation Action has two parameters:

- The **Navigation Objects** parameter determines the set of navigation Objects which need to be turned ON/OFF.
- The **Action** parameter is a field with «Allow/Restrict» value options.

GOTO

The **GOTO Action** initiates the transition to the specified Frame of any Slide. GOTO Action has two parameters:

- **Frame** is the identifier of the Frame where the transition will go to. The Frame ID can be either selected from the "Select Slide and Frame" dialog (press the button next to the field to open this dialog), or inserted as a text input (sometimes this approach is more convenient). Note that this parameter is valid only if the **Option** parameter is set to "Specified Frame".
- The **Option** parameter determines the Frame where transition will go to. If "Specified Frame" (default value) is selected, the transition will be performed to the Frame specified in the Frame parameter. If any other value ("Next Frame", "Next Slide", "Previous Frame", "Previous Slide") is selected, the Frame parameter will be ignored.

Unlike the similar CALL action, the identifier of the current Slide does not remain in memory.

DISPLAY

The **Display Action** enables turning ON/OFF the Object display. This is the most frequently used action. It has four parameters:

- **Object ID** is the identifier of the Object which must be either displayed, or hidden.
- **Display** parameter is the field with «Show/Hide» value options.
- **Effect** parameter is the field where you can select an effect that will be used for this action. If the "Object" value is selected, then the effect type will be read from Object's properties.
- **Duration** is a numeric field which defines the effect time in seconds.

MSGBOX

The **MSGBOX Action** enables the display of the alert message for the user with the text specified in the single "Text" parameter for this action. When necessary, you can use the variable #var_name for insertion into the text (please refer to VARIABLE section). If the variable with that specific name is found, the variable's value will replace the variable's name; if not - no changes will occur.

8.4.2.2. Service Actions

IF ... ELSE

Conditional Action. Conditional Action, by itself, does not perform any noticeable changes to the Frame, it is rather intended for managing the execution of other Actions. This Action enables the launching of different dependant Actions (or sequences of Actions) according to the condition being evaluated.

Condition is the only parameter for this action. Condition can be any conditional expression which results to true or false Boolean values (usually comparisons). If the condition is satisfied (value is *true*), the dependant Actions will be executed.

NOTE: Conditions are evaluated using JavaScript, therefore Javascript conditional operators should be used.

If alternatives are used when the conditional expression is not satisfied (value is *false*), the ELSE Action can be added **as a dependant Action** to the IF action, and an alternative sequence of Actions dependant to the ELSE Action is inserted.

DELAY

A **DELAY Action** that is inserted into the sequence of Actions will interrupt the Action's execution either for the specified time, or until the next Action performed by the user.

There are two parameters for the DELAY action:

- The **Duration** parameter defines the delay time in seconds for interrupting the sequence of Actions. If the parameter "Wait for action" is set to "Yes", then the "Delay" parameter will be ignored.
- The **Infinite** parameter is a field with "Yes/No" value options. If "Yes" is selected, the sequence of Actions will be interrupted indefinitely, until some Action from the user is performed. The **Duration** parameter will be ignored in this case. If "No" is selected, the sequence of Actions will be interrupted for the time specified in the **Duration** field.

VARIABLE

The **Variable Action** defines a variable and its value, or, if a variable with the specified name already exists, the variable's value will be changed.

There are three parameters:

- The **Name** parameter defines variable name, which can be further used in expressions. *Important: the variable name must contain only Latin alphabet letters and numbers, and must not start with a digit.*
- The **Value** parameter defines the initial variable value. The Value parameter could be either text or number.
- The **Scope** parameter is a field with «Current Slide/Entire Module» value options. If the "Current Slide" option is selected, the variable will be accessible only within the currently selected Slide; upon transition to any other Slide this variable will be discarded. If the "Entire Module" option is selected, the variable is accessible for all the Slides within a Module.

To modify an existing variable's value, use the same "Variable" action. In this case, in the "Name" field, specify the name of existing variable.

A variable's value may be used in various expressions (generally, in the conditional statements for the IF action). To insert a variable value into an expression, use the "#" prefix symbol in front of the variable name. For example, if a variable name is *var_name*, then *#var_name* should be used for inserting the variable value into the expression.

CHECKHIT

This Action is used for verifying the particular Object that was dropped onto the target Object. Typically, this Action is triggered by the **ondrop** Event generated by the Object-target.

The only parameter for this Action is:

- **Object ID** is the identifier of the Object being dragged, which is to be verified according to compliance.

If the identifier of the Object being dragged is identical to the specified one, the sequence of Actions under the current Action will be executed.

SEQUENTIALLY

The **SEQUENTIALLY Action** enables launching of dependant Actions in strict sequential order, i.e. each next Action will be launched only upon completion of the previous one, unlike the usual routine, where Actions are launched in predefined order; however the previous Action may not even have finished.

TIMER

The **"Timer" Action** is used for the delayed launching of dependant Actions. **Duration** is the only parameter, and it defines the delay time in seconds.

FOR

The **"FOR" Action** is used for executing a dependant Action's specified number of times. There are three parameters:

- "From" is a starting value for the cycle counter
- "To" is an ending value for the cycle counter
- The "Step" parameter defines the iteration step for the cycle counter.

The variable used for the cycle counter has a fixed name **cc** (shortcut for Cycle Counter) and is accessible using **#cc** (please refer to the VARIABLE section).

8.4.2.3. Using JavaScript

If you are familiar with the JavaScript programming language you can use JavaScript code in two ways:

8.4.2.3.1. Action JAVASCRIPT

Action JAVASCRIPT enables the execution of JavaScript code. This Action has a single parameter – JavaScript text field - which contains the submitted JavaScript code. However, you can use only inline code here (functions are not supported in this action).

Important! Remember, it is your responsibility to verify the correctness of the JavaScript code you create.

8.4.2.3.2. Including JavaScript in module.js files

Every Module has its own *module.js* file which can be used for inserting custom JavaScript code - including custom functions - which can be addressed from JAVASCRIPT Actions. The file *module.js* is located in the Module folder and can be edited using Notepad or any suitable programming tool.

Important! Remember, it is your responsibility to verify the correctness of the JavaScript code you create.

8.4.2.4. Actions with scores and statuses

SET SCORE

The **SET_SCORE** Action changes the score for a specified Objective.

It has 4 parameters:

- **Objective** is the identifier of the Objective, the score of which will be modified as a result of execution of SET SCORE action.
- **Source** – text field, which specifies the source of the current score modification. This value is used for further score modification. For example, it can contain the ID of some two-step task, every step of which has different scores. In this case the **Source** parameter of SET SCORE Action for every step must be the same (because both steps are parts of one task).
- **Add** – indicates how the value of the **Score** parameter will be used for the specified source. This parameter is a field with “Add/Replace” value options. In the first case, the specified score will be added to any already existing in the given Objective score from specified source. In the second case, the score value from the specified source will be replaced with the new one.
- **Score** – a numeric field for assigning a value to the score.

SET COMPLETION STATUS

The **SET COMPLETION STATUS** Action changes the Completion Status for the specified Objective.

It has two parameters:

- **Objective** is the identifier of the Objective, the Completion Status of which will be changed as a result of Action execution.
- **Status** parameter represents the value assigned to the Objective’s Completion Status. The Status can have one of the following values:
 - Unknown – No information on completion.

- Not Attempted – Completion of the Objective has not started yet.
- Incomplete – Completion of the Objective has started, but it is not finished yet.
- Complete – Completion of the Objective has finished.

Upon launching the Learning Module, the Completion Status for all Objectives is set to “Unknown”.

SET SUCCESS STATUS

The **SET SUCCESS STATUS Action** changes the Success Status for the specified Objective.

It has two parameters:

- **Objective** is the identifier of the Objective, the Success Status of which will be changed as a result of Action execution.
- **Status** parameter represents the value assigned to the Objective’s Success Status. The Status can have one of the following values:
 - Unknown
 - Failed
 - Passed

Upon launching Learning Module, the Success Status for all Objectives is set to “Unknown”.

IF SUCCESS STATUS

The **IF SUCCESS STATUS Action** executes a set of dependant Actions according to the Success Status for the specified Objective.

It has two parameters:

- **Objective** is the identifier of the Objective, the Success Status of which must be verified.
- **Status** parameter represents the value which will be used for verifying correspondence of actual Objective’s Success Status. The Status can have one of the following values:
 - Unknown
 - Failed
 - Passed

9. Scores

Scores in Learning Modules created with CourseLab are based on using Objectives.

9.1. Objectives

An Objective is a special parameter for evaluating Learning Module completion.

There might be one or several Objectives in a single Module. Technically, there is no limitation on the number of learning Objectives; however, such limitations can be introduced when using certain International standards of data transfer protocol (for example, in SCORM 1.2 the number of Objectives can not exceed 100).

Each Objective has a Score, Success Status and Completion Status.

Success Status can have one of the following values:

- Unknown
- Failed (Objective is not accomplished)
- Passed (Objective is accomplished)

Completion Status can have one of the following values:

- Unknown
- Not Attempted (completion of the Objective is not started yet).
- Incomplete (completion of the Objective is started, but it is not finished yet)
- Complete (completion of the Objective is finished).

One of the Objectives for the Module must have the defined setting “**Module Objective**”. The Module translates the results of completion of this Objective to the Learning Management Systems as a result of completion for the entire Module. By default, this Objective is named “total”.

During Module execution, the properties of the Objectives change either by employing special Actions (please refer to 8.4.1.4. Actions with scores and statuses), or by employing Actions built into the complex Objects (for example, the “Question” Objects record a score into the defined Objective by itself).

To add a new Objective:

- Select Module – Runtime Settings...
- In the opened “Runtime Settings” dialog screen go to the “Objectives” tab.
- On the “Objectives” tab press the “Add” button.
- Use the “Objective” dialog screen to specify Objective’s settings.

9.2. Rules

A Rule presents a set of conditions. If the conditions are satisfied, the status of the indicated Objective will change. Using Rules allows transferring control regarding both Success and Completion Status to the runtime player, i.e. status will be changed automatically.

To add a Rule:

- Select **Module – Runtime Settings...**
- In the opened "Runtime Settings" dialog screen go to the "Rules" page.
- On the "Rules" tab press the "Add" button.

For each Rule specify the following:

- The **Identifier of the Objective** whose status will be changed due to the Rule execution.
- **Success Status** for the specified Objective (If Rule must change it).
- **Completion Status** for the specified Objective (If Rule must change it).
- **Conditions.** Each condition defines one of the following checks:
 - **Slides Visited.** Condition is satisfied if, during Module execution, all the Slides in sequence, including the ones with defined identifiers, were viewed by the student.
 - **Objective Score.** Condition is satisfied if the value of the actual Objective's score for the defined condition is, for example, greater or equal to the specified value. For comparison of the specified score with actual score, the following operators are employed: <, >, =, <=, >=, and <>.
 - **Objective Success.** Condition is satisfied if the actual value of the Objective Success Status corresponds to the specified one.
 - **Objective Completion.** Condition is satisfied if the actual value of the Objective Completion Status corresponds to the specified one.
- The logical expression among the conditions. If the conditions are satisfied, the Rule will be executed. The different logical conditions are connected to each other by the following logical operators: AND, OR, XOR, and NOT. To change the logical operation, select the desired operation from the list and press the "Operation" button. The logical operators can be grouped by using round parentheses. Select the conditions from the list and press the "Group" button to add parentheses. Select conditions inside of parentheses and press the "Ungroup" button to remove parentheses.

Rules allow building of cascading Rules – when the status of the single Objective depends on the status of other Objectives.

IMPORTANT! Rules are executed at every Slide transition sequentially from first to last in the list. This means that the Rule for “strong” Status must be executed later (for example, the Rule for “Complete” Completion Status must be placed after “Incomplete” Rule).

10. Screen Capture and Creating Simulations of other Applications

Learning courses are created for many purposes. One of the most common objectives is instructing learners how to use various software programs. To facilitate the creation of software simulations, CourseLab contains a built-in screen-capture feature so no additional software needs to be installed. Simulations are recorded directly into the editor and can be edited later as normal frames. The Internet Browser’s capabilities allow replaying of such animated simulations. No additional components (Flash, Shockwave, Media Player, etc.) are required.

10.1. What needs to be done prior to recording the simulation?

Create a learning Module (or select an already created one) to insert the simulation into. Select (or create a new) Slide for placing the simulation. The Editor allocates each simulation session into a single Slide and automatically adds necessary frames; there is no need to add frames manually. Define the size of the free space on the Frame within the Slide where the simulation will be fitted - this is the requirement for setting up simulation recording.

IMPORTANT! CourseLab does not support auto scaling for captured screens. Screen captures will be performed only within user defined area in scale of 1:1. Therefore, make sure that defined size of the captured screen enables recording all required information from the target software. If of size insufficiency, you might need to change template of the current Slide to increase size of recording area.

Specify a graphic format for storing screen captures. Select the “Settings” item from the “Service” menu, on the “Screen Capture” tab specify the desired file format. As long as you do not have any specific restrictions, we recommend using PNG format for screen capturing, since this format performs best in terms of quality and size of the saved files.

Even though you can correct results later on, you should determine the screen capturing scenario beforehand, in order to avoid mistakes.

10.2. Screen Capture Wizard

While on the Slide which is to be used for recording the simulation, select the "Capture Screens" item from the "Tools" menu and the Screen Capture Wizard opens up.

From the drop-down menu select the program to record the simulation from. Mark the "Capture Cursor" check box if you need to record mouse clicks and movements. Clicks and movements will be captured automatically, once the recording starts. On the next Wizard's screen specify the position for the top left corner of the area for placing simulations within a Frame. By default, the position of the top left corner of the area for recording simulations within a Frame is equal to the top left corner of the Frame (position 0,0), however there are instances where it is not acceptable. For example, if there is a title located at the top of the frame, then top left corner of the area for recording should be placed underneath by adding Frame title's height in pixels into the "Vertical" field.

The next window of the Wizard defines the location and size of the area on the monitor to be captured. The editor will try to adjust the captured application window to the specified size automatically, if possible.

After specifying these parameters you will come to the Wizard's last screen before entering screen capture mode. Before starting the capture, familiarize yourself with controls available in the capture mode, including the capture mode exiting option.

10.3. Modifying parameters settings while in capture mode

After switching to the capture mode, CourseLab minimizes to the icon on the windows taskbar and a red rectangular enclosure appears which limits the area of capture.

As mentioned before, the editor will try to adjust a captured application window to the specified area size. However, some programs will not allow this. In that case, you can manually adjust screen capture area to fit the target window, or opposite, target window to fit screen capture area. You can modify screen capture area by dragging border or by using context menu of the capture area.

Adjusting the screen capture area to fit the target window.

Right click within the red enclosure which limits the capture area. Select the "Adjust Enclose" item from the context menu. Screen capture area will

automatically adjust its size to the current window size of the target application.

Adjusting the target window to fit the screen capture area.

Right click within the red enclosure which limits capture area. Select the "Adjust Window" item from the context menu. The Editor will automatically attempt to adjust the size of the target window to the size of the screen capture area. If the target program does not allow such change, adjust the size manually.

Precise sizing of the screen capture area and recording position.

Right-click inside the red enclosure which limits the capture area. Select the "Size" item from the context menu. In the opened window you can modify the numerical values for size and position of the screen capture area. Use another tab of the "Size" screen to modify position of the top left corner of the area within a Frame where the capture recording will be inserted.

10.4. Capture Frames

Make sure that all desired information fits well inside the screen capture area. Press the *PrintScrn* key and the first Frame will be captured. Go to the next step in the target program, and press *PrintScrn* one more time. Using *PrintScrn*, continue capturing all the changes that you apply to the target program, until you complete recording based on the desired scenario.

IMPORTANT! If you marked "Capture Cursor" check box before entering the capture mode all mouse's clicks and movements will be recorded automatically. However, remember that mouse click does not automatically capture the screen, do not forget pressing PrintScrn where appropriate.

When the capture scenario is completed, double-click the CourseLab icon on the taskbar. The CourseLab Editor will be restored.

10.5. Special capture mode

In addition to capturing the entire window of the target program, you can also record part of the screen capture area to the Frame as a separate picture without interrupting capturing flow. It can be usefull, for example, for a drop-down menu imitation (you can save the menu as a separate picture and further use editor's capabilities for manipulating this picture).

Press the "Shift-PrintScrn" combination to enter the special capture mode.

The target program freezes up and in addition to the red you will see the blue enclosure Frame indicating the special capture mode. Modify the size of the special capture area by dragging the border and press "PrintScrn". The content within the blue area will be captured on the current Frame as a

separate picture. You can enter or modify the identifier name to make it more self-explanatory before saving the picture (remember, that identifier names should contain only Latin alphabet letters, numbers, and the underscore character).

Use the same technique for “cutting” any number of the pictures from the current captured screen, by sequentially changing the size and location of the blue screen capture area and by pressing the “PrintScrn”.

After you finish “cutting”, you can go back to the main capture repository by pressing “Shift-PrintScrn”. The blue enclose Frame will disappear and captured program will “unfreeze”; also the “PrintScrn” button will continue capturing the entire area.

10.6. Editing captured frames

So you have your captured screens, and you are back to CourseLab.

All captured frames are now present on the Frame Panel. Sometimes, if the “Capture Cursor” mode is “On”, the very first Frame will be empty, it means that capturing mouse movements took place prior to the first screen capture. You may simply remove this frame.

Review all the captured screens. Make sure that all the necessary screens are captured. Repeat capturing if any screens are missing.

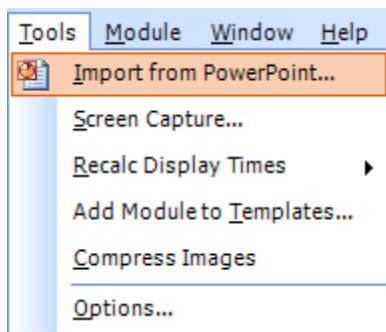
The blue tracing lines on the Frame are reflections of the mouse movements (they will not be visible when replaying). When required, you can modify the location of the mouse clicks (you can drag them) and/or remove unwanted clicks completely, in this case the trace of the mouse path will be automatically adjusted.

Note that you can also modify the cursor shape, speed of movements, and time duration for holding down the mouse button. To accomplish these modifications, right-click on the cursor image and select “Format Cursor” from the context menu.

However, the captured set of frames is not quite finished and should be considered “groundwork” for future editing. Most likely you are going to need to provide additional supporting explanations in a form of balloons or popup windows.

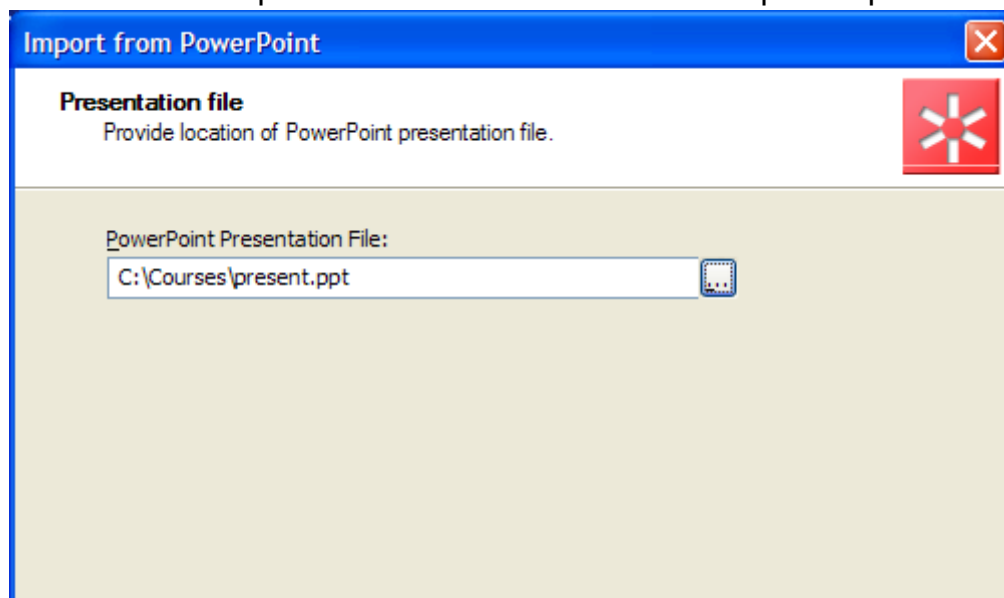
From the editor's point of view, each captured Frame can be treated as a typical Frame (the only difference is the recorded mouse movements). On any of the captured frames you can insert additional Objects from the Objects library (balloons, popup, pictures, etc.) On all captured frames you can use Actions, change timeouts and so on, just like with any other frames. By default, the replay time for a particular Frame is defined by the time spent on mouse movements. However, you can manually change a Frame display time, if necessary. Right-click on the necessary Frame and use the "Transition" item from the context menu. Specify the required timeout for the frame.

11. Import Microsoft PowerPoint presentations

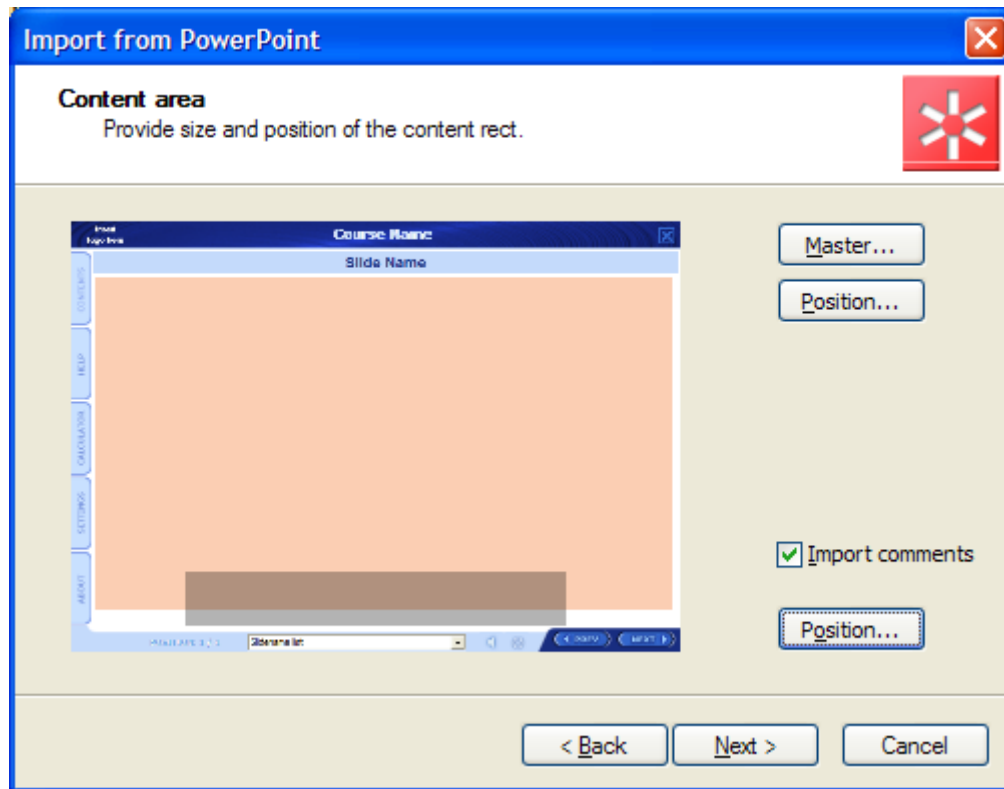


CourseLab allows importing content from Microsoft PowerPoint presentations into a Learning Module. To accomplish import, select the "Import from PowerPoint" command from the "Tools" menu.

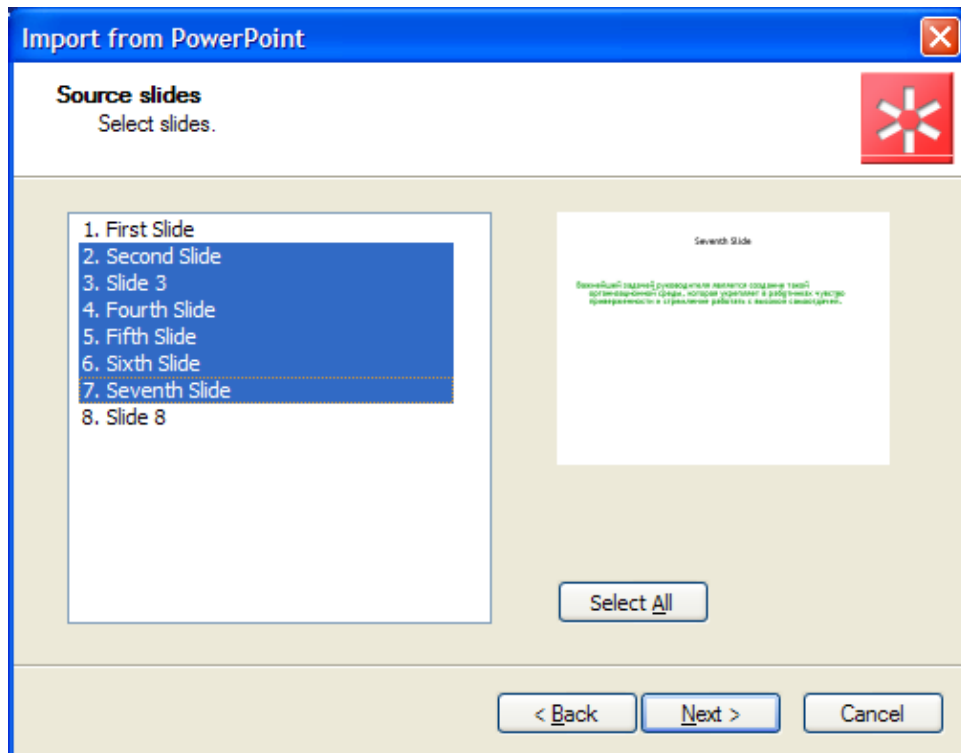
The "Import from PowerPoint" wizard opens up.



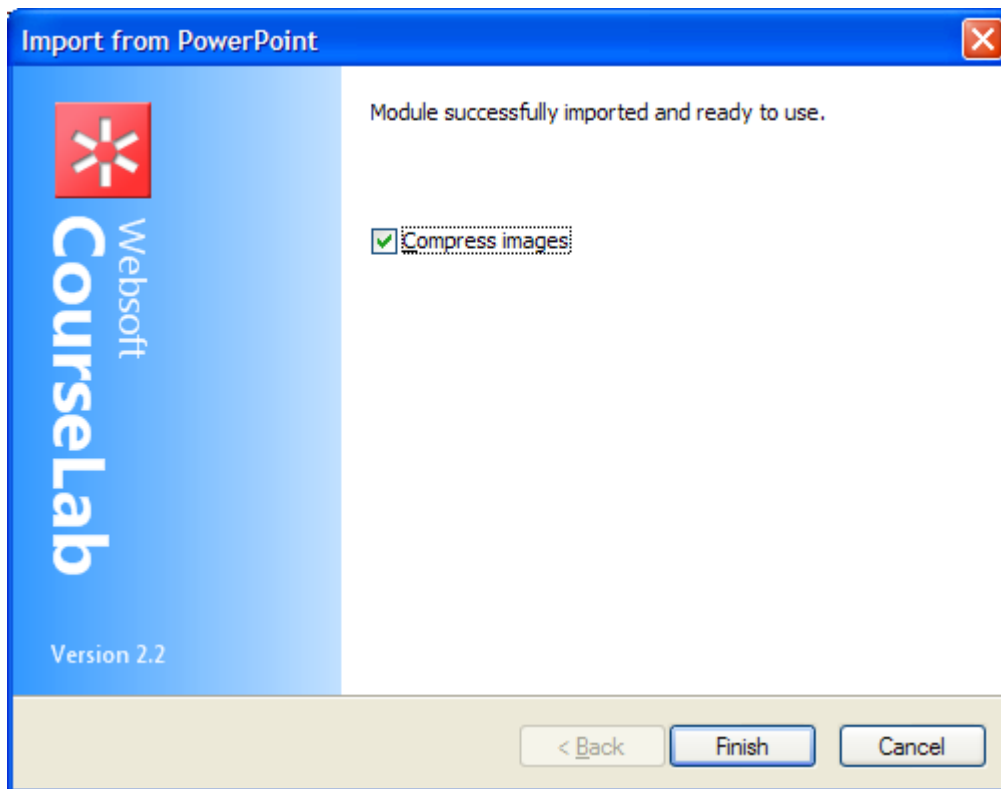
Specify the path to the MS PowerPoint presentation to be imported and press the "Next" button.



Specify the Master-Slide (press "Master" button to select) which will be the base for the imported presentation. The pink area on the Wizard's screen represents the imported presentation. Press the "Position" button to specify the position of the imported presentation on the Slide and scaling. You can import comments to Slides if necessary and position it on the Slide the same way as the presentation main body (grey area represents comments). Press the "Next" button to proceed.



On the next wizard page you can select the Slides to be imported. Hold down the Ctrl key to select Slides. Press the "Next" button and start processing. Depending on the size of presentation, it can take up to several minutes to import presentation.



You may want to compress imported images upon import completion (all scaled images will be automatically resized and converted to PNG format if necessary). Press "Finish" to return to editing mode.

In general, imported Slides reproduce the corresponding PowerPoint Slides. You can further modify these Slides, if desired.