

Grading

- Final 60 %
- Midterm 10 %
- Lab Sessions and HW 30 %

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Major Topics

- Interviewing
 - Interview preparation
 - Question types
 - Arranging questions
 - The interview report
- Joint Application Design (JAD)
 - Involvement
 - Location
- Questionnaires
 - Writing questions
 - Using scales
 - Design
 - Administering

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Questionnaire Language

- Simple
- Specific
- Short
- Not patronizing
- Free of bias
- Addressed to those who are knowledgeable
- Technically accurate
- Appropriate for the reading level of the respondent

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Measurement Scales

- The two different forms of measurement scales are:
 - Nominal
 - Interval

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Nominal Scales

- Nominal scales are used to classify things.
- It is the weakest form of measurement.
- Used to get totals for each category.

What type of software do you use the most?

- 1 = Word Processor
- 2 = Spreadsheet
- 3 = Database
- 4 = An Email Program

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Interval Scales

- An interval scale is used when the intervals are equal.
- There is no absolute zero.

How useful is the support given by the Technical Support Group?

NOT USEFUL					EXTREMELY
AT ALL					USEFUL
1	2	3	4	5	

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Validity And Reliability

- Validity is the degree to which the question measures what the analyst intends to measure.
- Reliability of scales refers to consistency in response, or the likelihood of getting the same results if the same questionnaire was administered again under the same conditions.

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Problems with Scales

- Leniency
- Central tendency
- Halo effect

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Leniency

- Caused by easy raters
 - Solution: move the "average" category to the left or right of center

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Central Tendency

- Central tendency occurs when respondents rate everything as average.
 - Improve by making the differences smaller at the two ends.
 - Adjust the strength of the descriptors.
 - Create a scale with more points.

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Halo Effect

- When the impression about an item in one question carries into the next question.
 - Solution: change the focus from items to traits, by placing one trait and several items on each page.

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Designing the Questionnaire

- Allow ample white space.
- Allow ample space to write or type in responses.
- Make it easy for respondents to clearly mark their answers.
- Be consistent in style.

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Order of Questions

- Place most important questions first.
- Cluster items of similar content together.
- Introduce less controversial questions first.

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When Designing a Web Survey, Keep in Mind that There Are Different Ways to Capture Responses (Figure 4.13)

Name	Appearance	Purpose
One-line text box	<input type="text"/>	Used to obtain a small amount of text and limit the answer to a few words
Scrolling text box	<input type="text"/>	Used to obtain one or more paragraphs of text
Check box	<input type="checkbox"/>	Used to obtain a yes-no answer (e.g., Do you wish to be included on the mailing list?)
Radio button	<input type="radio"/>	Used to obtain a yes-no or true-false answer
Drop-down menu	<input type="text"/>	Used to obtain more consistent results (Respondent is able to choose the appropriate answer from a predetermined list [e.g., a list of state abbreviations])
Push button	<input type="button" value="Button"/>	Most often used for an action (e.g., a respondent pushes a button marked "Submit" or "Clear")

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Methods of Administering the Questionnaire

- Convening all concerned respondents together at one time
- Personally administering the questionnaire
- Allowing respondents to self-administer the questionnaire
- Mailing questionnaires
- Administering over the Web or via email

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Electronically Submitting Questionnaires

- Reduced costs.
- Collecting and storing the results electronically.

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Summary

- Interviewing
 - Interview preparation
 - Question types
 - Arranging questions
 - The interview report
- Joint Application Design (JAD)
 - Involvement and location
- Questionnaires
 - Writing questions
 - Using scales and overcoming problems
 - Design and order
 - Administering and submitting

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Information Gathering: Unobtrusive Methods

Systems Analysis and Design, 8e
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Learning Objectives

- Recognize the value of unobtrusive methods for information gathering.
- Understand the concept of sampling for human information requirements analysis.
- Construct useful samples of people, documents, and events for determining human information requirements.
- Create an analyst's playscript to observe decision-maker activities.
- Apply the STROBE technique to observe and interpret the decision-maker's environment and their interaction with technologies.

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Unobtrusive Methods

- Less disruptive
- Insufficient when used alone
- Multiple methods approach
- Used in conjunction with interactive methods

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Major Topics

- Sampling
- Quantitative document analysis
- Qualitative document analysis
- Observation
- STROBE
- Applying STROBE

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Sampling

- A process of systematically selecting representative elements of a population
- Involves two key decisions:
 - What to examine
 - Which people to consider

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Need for Sampling

The reasons systems analysts do sampling are:

- Containing costs
- Speeding up the data gathering
- Improving effectiveness
- Reducing bias

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Sampling Design

- To design a good sample, a systems analyst must follow four steps:
 - Determining the data to be collected or described
 - Determining the population to be sampled
 - Choosing the type of sample
 - Deciding on the sample size

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Four Main Types of Samples the Analyst Has Available (Figure 5.1)

	Not Based on Probability	Based on Probability
Sample elements are selected directly without restrictions	Convenience	Simple random
Sample elements are selected according to specific criteria	Purposive	Complex random (systematic, stratified, and cluster)

The systems analyst should use a complex random sample if possible.

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The Sample Size Decision

- Determine the attribute.
- Locate the database or reports where the attribute can be found.
- Estimate the proportion of population that has the attribute
- Make the subjective decision regarding the acceptable interval estimate i .
- Choose the confidence level, and lookup z .
- Calculate the standard error.
- Determine the sample size.

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Calculate the Standard Error of the Proportion

$$\sigma_p = i/z$$

i = interval estimate

z = confidence coefficient found in the confidence level lookup table

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Determine the Sample Size n

$$n = \frac{p(1-p)}{\sigma_p^2} + 1$$

σ_p = standard error

p = the proportion of the population having the attribute

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Example: A. Sembly Company

- What percentage of orders contain errors:
- Determine that you are looking for orders with mistakes (in names, add.etc).
- Locate order forms from the past six months.
- Examine order forms and conclude that $p=5\%$.
- Subjective decision of acceptable interval $i = \pm 0.02$
- Look up confidence coefficient z -value = 1.96.
- Calculate $\sigma_p = i / z = 0.02/1.96 = 0.0102$.
- Determine n ; $n = 458$.

$$n = \frac{p(1-p)}{\sigma_p^2} + 1 = 457.55$$

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A Table of Area under a Normal Curve Can Be Used to Look up a Value Once the Systems Analyst Decides on the Confidence Level (Figure 5.2)

First decide on the confidence level ...

Confidence Level	Confidence Coefficient (z value)
99%	2.58
98	2.33
97	2.17
96	2.05
95	1.96
90	1.65
80	1.28
50	0.67

... then look up the z value.

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Investigation

- The act of discovery and analysis of data
- Hard data: need to examine both
 - Quantitative
 - Qualitative

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Analyzing Quantitative Documents

- Reports used for decision making
need to obtain some of the documents that is used to run the business (recent costs, recent labor)
- Performance reports
- Records: check for errors, look for chance to improve design, observe number and type of transactions
- Data capture forms: collect examples, types of forms (is the form field entirely? Are there forms never used? All copies circulated? Is there hard copy for the web form distrib.
- Ecommerce and other transactions

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Analyzing Qualitative Documents

- Key or guiding metaphors
- Insiders vs. outsiders mentality
- What is considered good vs. evil
- Graphics, logos, and icons in common areas or Web pages
- A sense of humor

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Analyzing Qualitative Documents

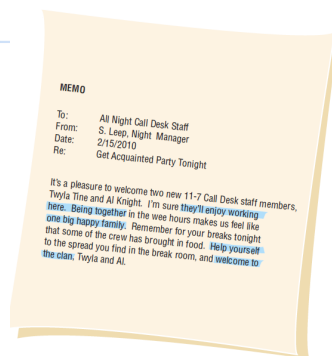
- Email messages and memos
- Signs or posters on bulletin boards
- Corporate Web sites
- Manuals
- Policy handbooks

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Analysis of Memos Provides Insight into the Metaphors that Guide the Organization's Thinking (Figure 5.6)



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Observation

- Observation provides insight on what organizational members actually do.
- See firsthand the relationships that exist between decision makers and other organizational members
- Can also reveal important clues regarding HCI concerns

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