**Example of Information Engineering design method**

The COMPANY database keeps track of a company's employees, departments, and projects. Suppose that after the requirements collection and analysis phase, the database designers provided the following description of the "miniworld"- the part of the company to be represented in the database:

1. The company is organized into departments. Each department has a unique name, a unique number, location, and a particular employee who manages the department. We keep track of the start date when that employee began managing the department.

2. A department controls a number of projects, each of which has a unique name, a unique number, and a single location.

3. We store each employee's name, social security number, address, salary, sex, and birth date. An employee is assigned to one department but may work on several projects, which are not necessarily controlled by the same department. We keep track of the number of hours per week that an employee works on each project.

**Assignment 1:**

**Submitted on 30-10-2014**

Consider the following set of requirements for a university database that is used to keep track of students' transcripts.

a . The university keeps track of each student's name, student number, and social security number, current address and phone, permanent address and phone,

birthdate, sex, class (freshman, sophomore, ... , graduate), major department, minor department (if any), and degree program (B.A., B.S., ... , Ph.D.).

Both social security number and student number have unique values for each student.

b. Each department is described by a name, department code, office number, office phone, and college. Both name and code have unique values for each department.

c. Each course has a course name, description, course number, number of semester hours, level, and offering department. The value of the course number is unique for each course.

d. Each section has an instructor, semester, year, course, and section number. The section number distinguishes sections of the same course that are taught during the same semester/year; its values are 1,2,3, ... , up to the number of sections taught during each semester.

e. A grade report has a student, section, letter grade, and numeric grade (0, 1, 2,

3, or 4).