Experiment 01

ER Diagram: University Transcript Management

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AIM:

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

Problem Statement:

The university keeps track of each student's name, student number, Social Security number, current address and phone number, permanent address and phone number, birth date, gender, class (freshman, sophomore, ..., graduate), major department, minor department (if any), and degree program (B.A., B.S., ..., Ph.D.). Some user applications need to refer to the city, state, and ZIP Code of the student's permanent address and to the student's last name. Both Social Security number and student number have unique values for each student.

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

 b. 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.

 c. 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.

 d. A grade report has a student, section, letter grade, and numeric grade (0,1, 2, 3, or 4).

Design an Entity-Relationship diagram for the mail order database and enter the design using a data-modeling tool such as ERWin/free tool. Specify key attributes of each entity type, and structural constraints on each relationship type. Note any unspecified requirements and make appropriate assumptions to make the specification complete.

THEORY:

The Entity Relationship Diagram explains the relationship among the entities present in the database. ER models are used to model real-world objects like a person, a car, or a company and the relation between these real-world objects. In short, the ER Diagram is the structural format of the database