IT2140 - Database Design and Development

Department of Information Technology, Faculty of Computing

Year 2 semester 1 (2025)

Tutorial 05

Learning outcomes:

- Evaluate real-world scenarios and model them using Enhanced Entity Relationship (EER) diagrams.

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1. Draw an EER diagram to cater the following requirements.

   The members of an online auctioning site are identified by a unique member id and their names, email addresses, phone numbers and postal addresses should be maintained. A member may be a buyer or a seller. A buyer has a shipping address, and a seller has a bank account number and routing number. Items are posted by a seller. Buyer places Bid on Item. The bidding price and the time of bid placement are recorded. Items are identified by a unique item number assigned by the system. Items are also described by an item title, an item description, a starting bid price and bidding increment. Item has a category with a category number. A category is identified by the category number and the item number together.

2. Draw an EER diagram to cater the following requirements.

   A Person has a NIC (unique), age and a name. Professor is a Person with the following attributes: rank and research specialty. Projects have a project number (unique), a sponsor (e.g. NSF), a starting date, ending date and a budget. Graduate students are also persons. Graduate students need to store information about the degree program (e.g. M.S. or Ph.D.) that they are enrolled. Each project is managed by one professor (known as the project's principal investigator). Each project is worked on by one or more professors (known as the project's co-investigators). Professors can manage and/or work on multiple projects. Each project is worked on by one or more graduate students (known as the project's research assistants). Graduate students can work on multiple projects. Departments have a department number, a department name, and a main office. Departments have a professor (known as the chairman) who runs the department. Professor's work in one or more departments, and for each department that they work in, a time percentage is associated with their job. Graduate students have one major department in which they are working on their degree. Each graduate student has another, more senior graduate student (known as a student advisor) who advises him or her on what courses to take.