**Objective:**

The goal of this week’s task is to design ER diagrams for various database scenarios, starting with simple systems and progressively moving toward more complex structures. You will identify the entities, their attributes, and the relationships among them, and then represent these visually in an ER diagram.

**Task 1: Construct an ER diagram for a Student Enrollment System**

Entities:Student: (sid, sname, ccode, dob, address), Course: (ccode, cname, fees)

**Problem Statement:**

Enroll in

course

*Student*

Design an ER diagram for a system where students can enroll in courses. Each student has a unique ID (sid), a name (sname), a course code (ccode), date of birth (dob), and an address. Each course has a unique code (ccode), a course name (cname), and associated fees.

**Task 2: Construct an ER diagram for a University System**

Entities:Student: (sid, sname, ccode, dob, address)

Course: (ccode, cname, fees)

Department: (did, dname, location)

**Problem Statement:**

course

Enroll in

Student

department

Expand the student enrollment system to include departments. Each student is enrolled in a course, and each course belongs to a department. The department has a unique ID (did), a name (dname), and a location. Create an ER diagram for this scenario.

**Task 3: Construct an ER diagram for a University System with Faculty**

Entities:Student: (sid, sname, ccode, dob, address)

Course: (ccode, cname, fees)

Department: (did, dname, location)

Faculty: (fid, fname, sal, designation, doj, did)

**Problem Statement:**

course

enrollin

Student

teaches

Faculty

department

Now, include faculty in your university system. Faculty members teach courses and belong to departments. Each faculty member has a unique ID (fid), a name (fname), a salary (sal), a designation (designation), a date of joining (doj), and they are associated with a specific department (did). Design an ER diagram for this system.

**Task 4: Construct an ER diagram for an Employee-Department System**

Entities:Employee: (eid, ename, salary, doj, comm)

Department: (did, dname, location)

**Problem Statement:**

Design an ER diagram for a system where employees work in departments. Each employee has a unique ID (eid), a name (ename), salary (salary), date of joining (doj), and commission (comm). Each department has a unique ID (did), a name (dname), and a location. Capture the relationships between employees and departments.

office

employee

department