Foundation Training '25

CC Programming-Foundations

Instructions

- Use **Workbench** for executing queries
- Practice writing correct syntax independently
- Debug and document any errors encountered and how you resolved them
- Maintain a `.sql` file with all your written queries as part of the submission

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◇ Tasks

Task 1 : Design an ERD (Entity Relationship Diagram)

Problem Statement

Objective:
Design an ERD for a simple **college management system** including the following entities:

- **Users** (instead of Students)
- **Courses**
- **Professors**
- **Enrollments**

Requirements:

- A user can enroll in multiple courses.
- A course can have multiple users.
- A course is taught by one professor.
- A professor can teach multiple courses.

Deliverable:
Draw your ERD showing:

- Tables
- Primary keys & foreign keys
- Relationships (1-1, 1-many, many-many)

You can use free tools like dbdiagram.io, draw.io, or even draw it on paper and take a picture.

Task 2 : Create a Sample Database and Table

Problem Statement

Objective:
Using **MySQL Workbench**, create a new database named `college_db` and a table named `users`.

Table Structure:

Column Name	Data Type	Constraint
user_id	INT	PRIMARY KEY, AUTO_INCREMENT
name	VARCHAR(100)	NOT NULL
age	INT	CHECK (age >= 16 AND age <= 30)
department	VARCHAR(50)	
email	VARCHAR(100)	UNIQUE

Task 3 : Insert and Modify Data

Problem Statement

Objective:
Insert at least 5 user records into your `users` table. Then:

- Update one user's department.
- Delete one user based on any condition.

Instructions:

- Write the `INSERT`, `UPDATE`, and `DELETE` queries on your own.
- Test them in MySQL Workbench and debug any issues.

Task 4 : Basic Queries

Problem Statement

Objective:
Practice writing basic `SELECT` queries for retrieving information.

Examples (Write Your Own Queries):

- Display all users
- Display users from a specific department
- Display users older than a specific age
- Filter using different operators (>, <, =, !=)