CYPRUS INTERNATIONAL UNIVERSITY

CMPE343
Database Management Systems and Programming I

Instructor: Prof Dr Melike Şah Direkoğlu and Assis Prof Dr Yasemin Bay
Project (15%)
Report Due Date: 21th of December 2025

Project Presentations: Between 22-30 December 2025

In this project, you are asked to design and implement a database that will store all the necessary information for a specific domain. You can form groups up to 4 students. **Each group will be assigned to a project domain by the course coordinator. Please add your group member names to the provided Google spreadsheet on the Moodle Webpage.**

After designing the database, you will insert, delete and update data.

Your database design should contain at least **6 tables**. You are free to design the database anyway you like, but the following requirements should be considered:

- Design foreign keys to other tables, in order to, visualize and relate information from different tables.
- Write queries to insert, delete or update data from tables.
- Write complex SQL queries that contain joins, function (character, date, numeric and advanced) to illustrate complex querying of the database.

The project will have 3 phases:

DESIGN: The database should be designed and should be demonstrated with ER Diagrams and DDL statements. Foreign keys, primary keys, constraints, default values should also be indicated with relational model.

Use any cloud based platform that support database such as **Railway, Render, Supabase, Firebase, AWS** or others to implement your design. **Create one project account in your preferred online platform and invite other project members as collaborator.**

POPULATE DATA: Using DML statements to **insert/update/delete** data to/from your database. Show the inserted records into your tabels.

QUERIES: Write at **least 15 SQL queries** retrieving, displaying and showing statistical information to help management (use join operations, subqueries, group by, order by, sum, average, count, string functions, data function, and other functions, etc.)

GITHUB: All information about the project including ERD diagram, DDL, DML and SQL queries must be published in a GitHub page. Create one project repository in GitHuB and invite other project members as collaborator. So that everyone has an access to it.

Optional: Optionally you can create a simple user interface that interacts with your created database to insert, update, delete or view information from table record.

At the end of this project, you will submit a report that should contain the following structure **as well as present your project in the class**

Report Structure
Project members and their contributions

1. **Introduction**
   - An introduction giving brief information and assumptions about the system
2. **Database**
   - ER Diagram,
   - Data Definition Language Details (DDL), including all necessary constraints,
   - Data Manipulation Language (DML)
3. **Queries**
   - Show your queries and screen shot of the results for each query. Make sure the screen shot is readable.
4. **User Interface (optional)**
   - Screen shots that demonstrates how users interact with the database.

❖ Individual or group work (max 4 people) is accepted.