



EXPECTATIONS

As a team, create the **database application** for the scenario of your term project.

- / **Develop the application** effectively and professionally.
 - / Choose a development stack (see the proposal requirements for options). Your stack must:
 - / Be freely available. Open source is preferred. Proprietary is allowed.
 - / Be widely available. Industry standards are preferred.
 - / Use a relational database management system (RDBMS) which supports SQL queries.
 - / Use a programming language and any frameworks which are suitable for the database.
 - / Use any database administration (DBA) tools which are helpful and appropriate for the database.
 - / Follow best practices and conventions for programming and software engineering.
 - / Make a graphical client, terminal client, server process, web site, or instance of a similar medium which fulfills the goals.
 - / An intuitive user experience with a working interface is required.
 - / Release quality with finished assets and a polished interface is preferred.
 - / Prototype quality with placeholder assets and a rough interface is allowed.
 - / Only use assets with rights or permissions. Don't use assets obtained unethically, illegally, or without consent.
 - / Access and mutate the database using SQL queries.
 - / Handwritten SQL queries are preferred.
 - / Use prepared queries which are safe against injection actions, when needed.
 - / SQL queries generated by DBA tools are allowed only if they are curated and revised manually.
 - / API calls in lieu of SQL queries and non-SQL query languages are forbidden unless they are used only incidentally.
- / **Produce the functionality and data** defined in your proposal.
 - / Justify any reasonable modifications to that functionality since your proposal.
 - / Employ enough CRUD (create/read/update/delete) queries to fulfill the meaningful, complex, and achievable goals of your scenario, not just retrieval-only queries. You must include:
 - / All DDL schema queries for your scenario from your previous artifact, revised as needed.
 - / All necessary DML select queries based on the goals of your scenario.
 - / All necessary DML insert, update, and delete queries based on the goals of your scenario.
 - / One or more transactions or views which complement the goals of your scenario.
 - / One or more stored procedures or functions, triggers, or assertions which complement the goals of your scenario.
 - / Furnish enough data to fully evidence the capabilities of the CRUD queries.
 - / Try to reuse as much of your example data as possible from your previous artifacts.
 - / Only use data which is realistic, inoffensive, and professional. Don't use data which is unsafe for work or school.
 - / Only use data obtained ethically. Don't use personal, confidential, or sensitive data without consent.
 - / Follow the constraints of the relational model and your schema queries.
- / **Optimize the performance** using indexes and document the following steps in a narrative.
 - / Create some non-primary indexes on the database structures and values which complement the goals of your scenario.
 - / Pick suitable types of indexes which theoretically improve the efficiency of your CRUD queries.
 - / Analyze the performance of your application with and without the indexes to verify any practical improvements.

Finally, as a team, create a **video demonstration** of your database and application (see the corresponding expectations).

ASSESSMENT

As a team, submit your proposal deliverables to the assignment submission page in eCampus.

- / **Create and attach a credits table** with the actual contributions of your team members as a PDF file (1 page).
- / **Create and attach a disclosure** of known met and unmet expectations as a PDF file (1 page).
- / **Attach your full application** as a project archive.
 - / Include any source code, SQL scripts, assets, and instructions to replicate your database and execute your application.
- / **Attach your indexing narrative** as a PDF document.

You earn a complete grade if you meet all expectations with feedback from the instructor.