

The University of Michigan - Dearborn
Department of Computer and Information Science

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CIS421 Database Management Systems

Fall 2023

Assignment 3 (Relational Database Group Project)
Due in class on November 30, 2023

Total points: 50

This is a group project. You can have 5 ~ 7 students in each group. Each group needs to turn in a project report and give a presentation of about 10 minutes duration. Each project will be evaluated based on a number of criteria such as correctness, efficiency, difficulty level, quality of the report, presentation, cooperation, and so on. All the students in a group will receive the same points for the project.

The objectives of the project are to obtain experience in:

- collecting and analyzing data and functional requirements for an enterprise in the real world;
- applying the ER model in a database design procedure (conceptual database design);
- creating a relational database for an enterprise;
- designing useful queries for a database application;
- using SQL and other facilities on a real DBMS.

The DBMS that can be used for the project is Oracle or MySQL (www.mysql.com). The specific tasks of the project are the following:

- choose an enterprise that you are familiar with;
- describe the database requirements for the enterprise informally;
- specify your database requirements using an ER diagram;
- convert your ER diagram into a relational database schema;
- create your relations in the database schema on MySQL and load some sample data into the database;
- design and run some (at least 10) useful SQL queries/updates on your database.

Your report should include, but is not limited to, the following items:

- a description of the application background,
- a specification of the database requirements,
- the ER diagram,
- the relational database schema,
- the sample database (instance),

- the SQL statements,
- the query/update results.

This is a team work. Cooperation and responsibilities are important. The report should mention each group member's main responsibilities in the project, such as specifying database requirements, designing the ER diagram, loading data, designing queries, etc. Make sure that everyone in a group knows how to execute the designed queries on your DBMS in case he/she is asked to demonstrate the queries on the system.