CSIS 2300- Project Specifications

The general purpose of this project is to provide students hands-on experience in database design and implementation.

At the end of the project, students are expected to fulfill the following objectives:

1. Be able to apply requirements gathering techniques as a prelude to database design.
2. Be able to develop the conceptual and logical design of a database system.
3. Be able to implement the database design in the database management software
4. Be able to successfully present the development of the database in front of a forum.

Project Instructions

1. System Selection- Student/s will choose a system which will be the subject of their database design. The system should be based on an actual entity or department.
   Output: Name of the System
2. Requirement Gathering-During this phase students have to understand the current system and ferret out the data requirements. To be able to do these students has to conduct interviews, observe business transactions, or study reports.
   Output: Detailed narrative description of the system
3. Conceptual Design-Based on the information, students can now begin to design a conceptual view of the data. The focus is on the data irrespective of the actual DBMS that students will be using. The conceptual design should show the meaning and structure of data, and it should reflect all the data requirements of the system.
   Output: Entity Relationship Diagram
4. Logical Design- The conceptual model is further refined to develop a logical view of data while still maintaining DBMS independence. The logical design contains more detailed relational specifications. Some of the refinements of this phase are the identification of constraints and normalization of tables.
   Output: Revised ERD diagram or Entity representations
5. Physical Design and Implementation- The logical design is then implemented in a chosen database management system by converting the entities in the logical design into actual tables.
   Output: Table structures, Create queries of tables
6. Data management- Students are then required to insert sample data in the tables using SQL students:
   Output:
   a. At least three insert queries on all tables.
   b. At least three update queries on two tables.
   c. At least 2 delete queries on two tables.

7. Queries- Part of the data management is to be able to extract data from the database using SQL queries. Students are required to show the following queries with data results.
   Output: Queries with results

   a. A select query that extracts all fields in a table.
   b. A select query that extracts specific fields in a table.
   c. A select query that extract fields from two or more tables and uses a condition to filter query results.
   d. A select query that extracts fields from two or more tables and uses a pattern search as a filter.
   e. Two select queries that demonstrates the use of group by with aggregate functions.

f. A select query that demonstrates the use of group by with having clause and sorts the data in a descending format.
g. A select query that utilizes a subquery.

8. Presentation- Students will present their project at the end of the term. Each presentation will last for 15 minutes. During the presentation, students should be ready to demonstrate their skills.

The Project Document will have the following table of contents.

1. Title Page (Title of the project, names of students, Professor's name, section, date)
2. Requirement Analysis (Narrative Description of the requirements)
3. Conceptual Design(Initial ERD diagram)
4. Logical Design(Revised ERD diagram or table structures)
5. Physical Design(Table structures, SQL create queries)
6. Data Management(Insert, Update and Delete Queries)
7. Queries(Select Queries with results)