**INFO 579 Week 7 Final Project Report**

Course:  INFO 579: SQL/NoSQL Databases for Data and Information Sciences

Module/Week: 7 - Week of August 12, 2024

**Topic: Week 7 Final Project Report**

NOTE: The assignment document must provide the below information. Up to 5 points may be deducted due to the lack of the below information.

Student’s Full Name:

Course Title:

Term name and year: Example, Summer 2024

Submission Week: [example, Week 7 Final Project Report]

Instructor’s Name:

Date of Submission:

The above information must be provided at the upper left corner of the first page of the document.

Each answer(s) must be preceded by the question/ title of the topic/article of the assignment.

Acceptable File: PDF.

File Name Format: Name your file according to this convention: INFO579\_ Final Project\_Report\_Lastname.pdf. Submission must be made in a single document.

NOTE: There will be a 20% deduction of points for any late submission.

**Week 2 Final Project Update 1: Total Points - 25**

Week 2 Final Project Update 1:

1. Come up with a business plan for which you need to collect and store data

2. Come up with the data about your business. Example: like the one I gave you for the assignment.

**Requirements:** As part of the Final Project Update 1, submit a single-spaced one page report:

1. A brief description of your project.

2. The data you will use and the source of that data.

3. Upload the data file (like the one I gave you to do the assignments).

Week 4 Final Project Update 2: **Total Points - 25**

3. Develop a Conceptual Model. Consider 4 or 5 entities. Make sure you have at least one many-to-many relationship. Explain with data why it's a many-to-many relationship.

4. Develop a Logical Model using the Conceptual Model. Make sure you come up with a junction entity to resolve the many-to-many relationship.

Week 7 Final Project Report: **Total Points - 100**

5. Develop the physical model based on the Logical Model

6. Create tables using a database system. Insert data into the database tables. You must provide the DDL (CREATE TABLE statements), INSERT statements, and SELECT statements.

Details: Create the tables that you have come up with (the table must be based on the Physical Model).

(a) Columns, Primary Key (PK), Data Type and length, and NULL/NOT NULL need to be implemented, per the Physical Model.

(b) Show the table definition (DDL) that you implemented (not in a graphical view).

(c) Insert the complete set of data that you have come up with and show the insert statements used.

7. Create a variety of SQL queries to retrieve data from one or many tables:

1. Retrieve the data from each table by using the SELECT \* statement and order by PK column(s).

Show the output. Make sure you show the print screen of the complete set of rows and columns.

The rows must be ordered by PK column(s).

2. Write an SQL involving the junction table and two other related tables. You must use the INNER JOIN to connect with all three tables. The database that you created must be included in your SQL queries.

3. Write an SQL by including two or more tables and using the LEFT OUTER JOIN. Show the results and sort the results by key field(s). Interpret the results compared to what an INNER JOIN does.

4. Write a single-row subquery. Show the results and sort the results by key field(s). Interpret the output.

5. Write a multiple-row subquery. Show the results and sort the results by key field(s). Interpret the output.

6. Write an SQL to aggregate the results by using multiple columns in the SELECT clause. Interpret the output.

7. Write a subquery using the NOT IN operator. Show the results and sort the results by key field(s). Interpret the output.

8. Write a query using a CASE statement. Show the results and sort the results by key field(s). Interpret the output.

9. Write a query using the NOT EXISTS operator. Show the results and sort the results by key field(s). Interpret the output.

10. Write a subquery using the NOT NULL operator in the inner query. Show the results and sort the results by key field(s). Interpret the output.

**SUBMISSION REQUIREMENT:**

Submit the final report with details of each phase of the project starting from the problem statement. That means you must submit all the above 7 steps (includes the requirements of Update 1, Update 2, and steps 5, 6, and 7). Provide a summary (two paragraphs) of your work at the very end of the report.

**Upload your submission to the Week 7 Final Project Report Dropbox in D2L.**