CS 4433 – Databases

Web-based Database –Part III

Using your *web browser* run the below queries. In all cases the user enters data at the browser and views the results of the queries on the browser.

1. Display the tables in your database and their contents

2. Implement the following queries that modify the contents of a table. In all cases display the contents of the table before the query is executed and after the query is executed:
   (a) Insert two rows
   (b) Update the contents of two rows
   (c) Delete two rows

3. Implement the following queries. In all cases show the contents of the original tables before the query is executed and the results after the query is executed:
   (a) A query that involves one table only
   (b) A query that uses the GROUP construct and two or more aggregation operators on a single table
   (c) A query that uses the GROUP construct and two or more aggregation operators that require data from two or more tables
   (d) A query that requires a join operation on two or more tables (it can be any kind of join as long as it serves a useful purpose)

4. Implement the following views. In In all cases show the contents of the original tables before the query is executed and the view *after* the query is executed:
   (a) Create a view from a single table
   (b) A query on the view created in 3(a) above. Display the results of the query on the view
   (c) Create a view on two or more tables
   (d) A query on the view created in 3(c) above. Display the results of the query on the view

5. Implement the following queries that change the schema of tables or the database
   (a) Add a new table or relation to the database. Show the tables in the database before and after the new table is added
   (b) Delete a table or relation from the database. Show the tables in the database before and after the table is deleted
   (c) Add a new field to a table schema. Display the contents of the original table and the modified table
   (d) Delete a field from a table schema. Display the contents of the original table and the contents of the modified table

6. Implement the following indexes. In both cases run a query that uses the index. Display the results of the query
   (a) An index on the primary key
   (b) An index on the secondary key

7. Implement the following types of queries. In both cases show the contents of the original tables before the query is executed and the results after the query is executed:
   (a) A subquery that uses at least two tables
   (b) A correlated subquery that uses at least two tables

8. Implement
   (a) Tuple based checks
   (b) Trigger
   Show that the check and trigger is working as expected

9. Implement a stored procedure with at least one loop. Show it is working as expected.

10. Implement a cursor. Run the cursor and show the results.

11. Interface a high level programming language with SQL to execute a query. For example, user input is captured using a high level language.

Note: Different combinations of Nos. 8, 9, 10 and 11 may be implemented as one program. Four separate programs are not expected, unless you wish to do so.

Deliverables:

Demonstration
Demonstrate your web-based database to the TA on or before Wednesday April 27

Report
Submit your code with comments for Nos. 8, 9, 10 and 11 to D2L on or before Wednesday April 27