ITWS-4250/6250 Database Applications and Systems

Lab 7

**Instructions:**

* Create a lab7 folder in your repos.
* All answers should be in either word or text files.
* Include a readme file in your lab7 folder
* When done commit.
* Include a link to your repo in your readme
* Zip up the lab7 folder and submit to LMS

**Questions:**

1. Explain three tier architecture

It is a common environment for database.

Application server – It is used to bring out the business logic, the application’s core function by processing programming commands.

Database server – It is used to stored data independent from application and web servers, and it provides operations to use the data.

Web server – It provides the interface for users to use the application. This layer can fetch data from the database layer by sending commands and display the result to users.

1. Explain create and Execute statements used in Java with an example each?

“Creating Statement” is the statement to create a SQL statement. After executing a statement, the object contains the database result will be generated.

Ex. resultObj = connectObj.createStatement();

“resultObj”is the object for the database result.

“connectObj” is the object to create a connection.

“Execute statement”is used to execute a query. Users can get the query result repeatedly by calling the command below.

ResultObj rObj= connectObj.executeQuery(query);

“ResultObj”is the object for returned query result.

“connectObj” is the object to create a connection.

1. When to use Prepared statement over Simple statement and why?

Both are used to access data in database.

If you use simple statement, it will return the query result once you set the command. It is useful for commands that only execute few times, for example, CREATE, ALTER and DROP.

On the other hand, Prepared statement allows users to input parameters at runtime and use the command for multiple times. It is useful to execute any SQL query and bring the user better performance.

4) Describe the various components of SQL environment?

* Data Manipulation Language (DML) contains CRUD operations including INSERT, UPDATE, DELETE and LOCK.
* Data Definition Language (DDL) is used to create the structure of the database including CREATE, DROP, ALTER, TRUNCATE and RENAME.
* Data Control Language (DCL) contains the manipulations for data access and permission including GRANT and REVOKE.

5) What's the difference between a relation schema and database schema?

Relation schema is the collection of attributes which contains the information of attributes. For example, the table name, column names and data type for each attribute.

Database schema is the collection of the relation schemas which contains the structure and constrains for relations.

6) Give an example of how will you query two tables having same name in a database but belonging to two different schemas?

Specify the schema names before the database names and connects them with a dot.