Roll No: 31147

**Assignment 2**

**Problem Statement :**

Design and Develop SQL DDL statements which demonstrate the use of SQL objects such as creation of: Table, View, Index

**Objectives:**

1) Understand MySQL the open source relational SQL Database Management System.

2) Understand the DDL statements in MySQL

3) Understand managing and storing data and using index and view.

**Outcomes:**

1) Will be able to implement JDBC to connect to database;

2) Preform Creating of Index and View on MySQL table

3) Perform Operation of Views.

**S/W & H/W Requirements:**

1) Operating System (Windows / Ubuntu)

2) MySQL Database

3) Eclipse

4) JDBC Connector

**Theory:**

**What is MySQL ?**

It is a type of relational database in which data is stored in the form of tables with columns and rows. Tables can be related to each other.

**What are JDBC?**

JDBC is Java Database Connectivity. It is a standard API for connecting Java to databases. It can make connections to a database. Create SQL statements and execute SQL queries. Viewing and Modifying the records.

**What is Views in MySQL?**

Views are data objects which include the contents of the table. Views are copies of base tables. Views like tables have columns. Views can be used to insert, delete, update data from tables. They are for security reasons for hiding the real table name.

**What is Index in MySQL?**

It improves the speed of operations in a table. Indexes can be created using one or more column . The INSERT and UPDATE operations will take more time where a index is created. While SELECT statement will take less time.

**Two Tier Architecture:**

It is a client-server architecture. It consists of two layers: Client Tier & Database. It is less secured as client can communicate with databases directly.

In two-tier, the application logic is either buried inside the User Interface on the client or within the database on the server (or both). With two-tier client/server architectures, the user system interface is usually located in the user’s desktop environment and the database management services are usually in a server that is a more powerful machine that services many clients.

An advantage of this type is that maintenance and understanding is easier, compatible with existing systems. However this model gives poor performance when there are a large number of users.

**Basic Statements For Views:**

1) Creating View

CREATE OR REPLACE VIEW view\_name AS SELECT \* FROM table\_name;

2) Drop View

DROP VIEW view\_name;

3) Update View

UPDATE VIEW view\_name SET column\_name=”Value”;

3) Showing Views in Database

SHOW FULL TABLES WHERE TABLE\_TYPE LIKE “%VIEW%”;

4) Insert into View

INSERT INTO view\_name VALUES(data\_1,data\_2, data\_3, data\_4);

5) Select data from views

SELECT \* FROM view\_name;

**Basic Statements For Index:**

1) Create Index

CREATE INDEX index\_name ON table\_name(column\_name1,column\_name2);

2) Create a unique index

CREATE UNIQUE INDEX index\_name ON table\_name(column\_name1,column\_name2);

3) Drop Index

ALTER TABLE table\_name DROP INDEX index\_name;

**Steps for connecting to JDBC:**

1. Import JDBC connector file using eclipse.
2. In the main file include the driver using ***Class.forName(“com.mysql.jdbc.Driver”);***
3. Connect to the database using

***Connection connection = DriverManager.getConnection(“jdbc:mysql://localhost:3306/db\_name”);***

1. Creating Statement object for executing queries

Statement statement = connection.createStatement();

1. Execute Queries

**ResultSet rs = statement.executeQuery(“SELECT \* FROM customer;”);**

1. Execute Update

***statement.executeUpdate(“CREATE OR REPLACE VIEW cust\_view as SELECT cust\_no,cust\_fname FROM customer;”)***

***ResultSet rs = statement.executeQuery(“SELECT \* FROM cust\_view;”);***

***statement.executeUpdate(“DROP VIEW cust\_view;”);***

***statement.executeUpdate(“CREATE INDEX cust\_index ON customer(cust\_fname,cust\_lname;”)***

***statement.executeUpdate(“ALTER TABLE customer DROP INDEX cust\_index;”)***

**Conclusion:**

Learnt how to use JDBC to connect to the database. Got to know how Views and Index helps in ways by providing security(Views) and by improving the speed of operations (Index).