

Assignment No A9

Title: Database Connectivity:

Write a program to implement MySQL/Oracle database connectivity with any front end language to implement Database navigation operations (add, delete, edit etc.)

Objective: To understand the database connectivity.

Theory:

Software Required and Steps:

- Eclipse
- JDK 1.6
- MySQL
- Java-MySQL Connector

Connection to database with Java:

The interface for accessing relational databases from Java is Java Database Connectivity (JDBC). Via JDBC you create a connection to the database, issue database queries and update as well as receive the results.

JDBC provides an interface which allows you to perform SQL operations independently of the instance of the used database. To use JDBC, you require the database specific implementation of the JDBC driver.

MySQL JDBC driver(Connector):

To connect to MySQL from Java, you have to use the JDBC driver from MySQL. The MySQL JDBC driver is called MySQL Connector/J. You find the latest MySQL JDBC driver under the following URL: <http://dev.mysql.com/downloads/connector/j>.

The download contains a JAR file which we require later.

To connect Java application with the MySQL database, we need to follow following steps.

1. Driver class: The driver class for the mysql database is **com.mysql.jdbc.Driver**.

2. Connection URL: The connection URL for the mysql database is **jdbc:mysql://localhost:3306/db1** where jdbc is the API, mysql is the database, localhost is the server name on which mysql is running, we may also use IP address, 3306 is the port number and sonoo is the database name. We may use any database, in such case, we need to replace the db1 with our database name.

3. Username: The default username for the mysql database is **root**.

4. Password: It is the password given by the user at the time of installing the mysql database.

In Eclipse perform following steps:

1. File - New – Java Project –Give Project Name – ok
2. In project Explorer window- right click on project name-newclass- give Class name - ok
3. In project Explorer window- right click on project name- Build path- Configure build path- Libraries- Add External Jar - JavaMySQL Connector

4. In MySQL first Create one Database with name db1 and one table with name stud(name,age)

Steps to be perform in Java to write Code:

1. Import packages

```
import java.sql.*;
```

2. Load Driver

```
Class.forName("oracle.jdbc.driver.OracleDriver");
```

3. Create connection

```
Connection con = DriverManager.getConnection(  
"jdbc:mysql://localhost:3306/DatabaseName","username","passwd ")
```

4. Creates a Statement object for sending SQL statements to the database

```
Statement stmt = con.createStatement() ;
```

5. Executing SQL Statements

executeUpdate – This Method is used for insert, update and delete queries

- Example

```
String sql = "INSERT INTO stud VALUES ('Ankita',21)";  
stmt.executeUpdate(sql);
```

6. Get ResultSet (SELECT Query)

```
String sql1 = "SELECT name, age FROM stud";  
//Write a select query in any string variable  
ResultSet rs = stmt.executeQuery(sql1);  
//executeQuery used to run the select query and store the result in ResultSet  
while (rs.next()) //Iterate through ResultSet till data is found  
{  
String name1 = rs.getString("name");  
//Store name data into name1 variable  
int age1 = rs.getInt("age");  
//Store age data into age1 variable  
}
```

7. Close connection

- stmt.close();
- con.close();

Conclusion: Here we understood the how to implement MySQL/Oracle database connectivity with any front end language.