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DBMSL

Assignment No. : 13

Aim

Implement MySQL / Oracle database connectivity with PHP/ Python/Java. Implement database navigations operation using ODBC/JDBC.

Objective

To learn the connectivity of MySQL with JDBC.

Theory

JDBC stands for Java Database Connectivity, which is a standard Java API for db independant connectivity between Java programming language and a wide range of databases.

JDBC is a specification that provides a complete set of interfaces that allows for portable access to an underlying database.

In Eclipse perform following steps:

- File → new → give project name → ok.
- Right click Project name → build path → configure build path → add .jar file under classpath.
- Create class
- In MySQL, first create a database with name & one table with appropriate name

JDBC main interfaces:

- Class.forName() – load the driver's class into memory at runtime.

- DriverManager - Used to register driver for a specific database types and to establish a db connection with server via its getConnection() method.
- Connection - Represents an established db connection (session) from which we can create statements to execute and retrieve results.
- Statement & Prepared Statements - Used to execute static and parameterised SQL queries. Statement is super interface of prepared statement.
  - * boolean execute() - executes a general sql query. Returns true if query returns a result set.
  - * int executeUpdate() - Executes an INSERT, UPDATE or DELETE, sql statement. Returns a no. indicating no. of rows affected.
- ResultSet executeQuery - Executes a SELECT statement and returns a resultset object.
- Result set - Contains table data returned by a SELECT query. Use this object to iterate over resultant using next() method.
- SQLException - This checked exception is declared to be thrown by all the above methods. So, we have to catch this exception explicitly when calling above classes' method.

Conclusion

Thus, we have learnt the connection of MySQL with JDBC.

MySQL JDBC

```
package p.DB;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;

public class DemoJDBC
{
	Statement stmt;
	Connection con;
	ResultSet rs;

	public DemoJDBC()
	{
		try
		{

			Class.forName("com.mysql.cj.jdbc.Driver");

	con=DriverManager.getConnection("jdbc:mysql://@localhost:3306/account","root","546dgf
95@12368.");
			stmt=con.createStatement();

		}
		catch(SQLException e)
		{
			e.printStackTrace();
		}
		catch(Exception e)
		{
			e.printStackTrace();
		}
	}

	public void retrieveData()
	{
		try
		{
			rs=stmt.executeQuery("select * from accounts_table");

			while(rs.next())
			{
				int accNoDb=rs.getInt(1);
				String accType=rs.getString(2);
```

```
                        float accBal=rs.getFloat(3);
                        System.out.println("["+accNoDb+" "+accType+" "+accBal+"]");
                    }
                }
                catch(Exception e)
                {
                    e.printStackTrace();
                }
        }

        public void insertData()
        {
                try
                {
                    int updateCount=stmt.executeUpdate("insert into accounts_table
values(1003,'Savings',35000.0)");
                    if(updateCount>0)
                        System.out.println("query executed well(insert)");
                }
                catch(Exception e)
                {
                    e.printStackTrace();
                }
        }

        public void deleteData()
        {
                try
                {
                    int delete=stmt.executeUpdate("delete from accounts_table where
AccountNo=1001");
                    System.out.println("Deleted record");
                    retrieveData();
                }
                catch (Exception e)
                {
                    e.printStackTrace();
                }
        }

        public void updateData()
        {
                try
                {
                    int update=stmt.executeUpdate("update accounts_table set
AccountBalance='0' where AccountNo=3");
                    System.out.println("Updated record");
                    retrieveData();
```

```
		}
		catch(Exception e)
		{
			e.printStackTrace();
		}
	}

	public static void main(String[] args)
	{
		DemoJDBC j=new DemoJDBC();
		j.insertData();
		j.retrieveData();

		System.out.println("----------------------------");
		j.deleteData();
		System.out.println("----------------------------");
		j.updateData();
	}

}
```

OUTPUT

```
query executed well(insert)
[1 Savings 10000.0]
[2 Demat 20000.0]
[3 Current 99999.0]
[1001 Savings 35000.0]
[1002 Savings 35000.0]
[1003 Savings 35000.0]
----------------------------
Deleted record
[1 Savings 10000.0]
[2 Demat 20000.0]
[3 Current 99999.0]
[1002 Savings 35000.0]
[1003 Savings 35000.0]
----------------------------
Updated record
[1 Savings 10000.0]
[2 Demat 20000.0]
[3 Current 0.0]
[1002 Savings 35000.0]
[1003 Savings 35000.0]
```