



# **UNIVERSITI MALAYSIA TERENGGANU**

## **Faculty Of Computer Sciences and Mathematics**

### **Web Based Application Development CSM3023**

#### **Lab Report 6**

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Bachelor of Computer Science (Mobile Computing) with Honors.

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Task 1:

Code:

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page language="java"%>
<%@page import="java.sql.*"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>JSP Page</title>
  </head>
  <body>
    <h1>Lab 6 - Task 1 - Sample Insertion records into MySQL through JSP's page</h1>
    <%
      int result;

      //Step 1: Load JDBC driver...
      Class.forName("com.mysql.cj.jdbc.Driver");
      out.println("Step 1: MySQL driver loaded...!");
    %>
    <br>
    <%
      //Step 2: Establish the connection...
      String myURL = "jdbc:mysql://localhost:3306/csm3023";
      Connection myConnection = DriverManager.getConnection(myURL, "root", "admin");
      out.println("Step 2: Database is connected...!");
    %>
    <br>
    <%
      //Step 3: Create a PreparedStatement object..
      out.println("Step 3: Prepared Statements created...!");

      //Prepared SQL Query as a String...
      String sInsertQry = "INSERT INTO firsttable VALUES(?)";

      //Call method preparedStatement
      PreparedStatement myPS = myConnection.prepareStatement(sInsertQry);
    %>
    <br>
    <%
      //Assign each value to respective columns for Books's table.. (C-Create)
      out.println("Step 4: Perform insertion of record..!");
      String name = "Welcome to access MySQL database with JSP....!";
      myPS.setString(1, name);

      result = myPS.executeUpdate();
    %>
  </body>
</html>
```

```

        if (result > 0){
        %>
        <br>
        <%
            out.println("Step5: Close data connection...!");

            out.println(" ");
            out.println("Database connection is closed...!");

            out.print("<p>" + "The record : (" + name + ") is successfully created...!" + "</p>");
        }
        //Step 5: Close database connection...!
        myConnection.close();
    %>
</body>
</html>

```

Output:

## Lab 6 - Task 1 - Sample Insertion records into MySQL through JSP's page

Step 1: MySQL driver loaded...!  
 Step 2: Database is connected...!  
 Step 3: Prepared Statements created...!  
 Step 4: Perform insertion of record...!  
 Step5: Close data connection...! Database connection is closed...!

The record : (Welcome to access MySQL database with JSP.....!) is successfully created...!

	Name
▶	Welcome to access MySQL database with JSP.....!
	Welcome to access MySQL database with JSP.....!

Task 2:

Coding

insertAuthot.jsp:

```

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Lab 6 Task 2</title>
    </head>
    <body>

```

```
<h1>Lab 6 - Task 2 - Perform creating and retrieving records via JSP page</h1>
<fieldset>
  <legend>Author Registration</legend>
  <form action="processAuthor.jsp" method="post">
    <table>
      <tr>
        <td>
          <label for="authno">Author No</label>
        </td>
        <td>
          <input type="text" id="authno" name="authno" placeholder="E.g. UKxxxxxx">
        </td>
      </tr>
      <tr>
        <td>
          <label for="name">Name</label>
        </td>
        <td>
          <input type="text" id="name" name="name" placeholder="Enter your name">
        </td>
      </tr>
      <tr>
        <td>
          <label for="address">Address</label>
        </td>
        <td>
          <input type="text" id="address" name="address" placeholder="Enter your address">
        </td>
      </tr>
      <tr>
        <td>
          <label for="city">City</label>
        </td>
        <td>
          <input type="text" id="city" name="city" placeholder="Enter your city">
        </td>
      </tr>
      <tr>
        <td>
          <label for="state">State</label>
        </td>
        <td>
          <input type="text" id="state" name="state" placeholder="Enter your state">
        </td>
      </tr>
      <tr>
        <td>
          <label for="zip">Zip</label>
        </td>
        <td>
          <input type="text" id="zip" name="zip" placeholder="Enter your zip">
        </td>
      </tr>
    </table>
  </form>
</fieldset>
```

```
        </td>
        <td>
            <input type="text" id="zip" name="zip" placeholder="Enter your zip">
        </td>
    </tr>
    <tr>
        <td>
            <button type="submit" value="Submit">Submit</button>
            <button type="reset" value="Reset">Cancel</button>
        </td>
    </tr>
</table>
</form>
</fieldset>
<footer><p>&copy;2024-Muhd Imran</p></footer>
</html>
```

Author.java

```
package lab6.com;

public class Author {
    private String authno;
    private String name;
    private String address;
    private String city;
    private String state;
    private String zip;

    public String getAuthno() {
        return authno;
    }
    public void setAuthno(String authno) {
        this.authno = authno;
    }
    public String getName() {
        return name;
    }
    public void setName(String name) {
        this.name = name;
    }
    public String getAddress() {
        return address;
    }
    public void setAddress(String address) {
        this.address = address;
    }
}
```

```

public String getCity() {
    return city;
}
public void setCity(String city) {
    this.city = city;
}
public String getState() {
    return state;
}
public void setState(String state) {
    this.state = state;
}
public String getZip() {
    return zip;
}
public void setZip(String zip) {
    this.zip = zip;
}
}

```

processAuthor.jsp

```

<%@ page contentType="text/html" pageEncoding="UTF-8" %>
<%@ page language="java" %>
<%@ page import="java.sql.*" %>
<!DOCTYPE html>
<html>
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>JSP Page</title>
</head>
<body>
    <h1>Lab 6 - Task 2 - Perform creating and retrieving records via JSP page</h1>
    <jsp:useBean id="myAuthor" class="lab6.com.Author" scope="request"/>
    <jsp:setProperty name="myAuthor" property="*" />
    <%
        Connection myConnection = null;
        PreparedStatement myPS = null;
        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            String myURL = "jdbc:mysql://localhost:3306/csm3023";
            myConnection = DriverManager.getConnection(myURL, "root", "admin");

            String sInsertQry = "INSERT INTO author(authno, name, address, city, state, zip) VALUES(?, ?, ?, ?,
?, ?)";
            myPS = myConnection.prepareStatement(sInsertQry);

```

```

        myPS.setString(1, myAuthor.getAuthno());
        myPS.setString(2, myAuthor.getName());
        myPS.setString(3, myAuthor.getAddress());
        myPS.setString(4, myAuthor.getCity());
        myPS.setString(5, myAuthor.getState());
        myPS.setString(6, myAuthor.getZip());

        int result = myPS.executeUpdate();
        if (result > 0) {
            out.println("Record successfully added into Author table...!");
            out.print("<p>Record with author no " + myAuthor.getAuthno() + " successfully
created..!</p>");
            out.print("<p>Details of record are:</p>");
            out.print("<p>Name: " + myAuthor.getName() + "</p>");
            out.print("<p>Address: " + myAuthor.getAddress() + "</p>");
            out.print("<p>City: " + myAuthor.getCity() + "</p>");
            out.print("<p>State: " + myAuthor.getState() + "</p>");
            out.print("<p>Zip: " + myAuthor.getZip() + "</p>");
        }
    } catch (Exception e) {
        e.printStackTrace();
        out.println("<p>Error: " + e.getMessage() + "</p>");
    } finally {
        if (myPS != null) {
            try {
                myPS.close();
            } catch (SQLException e) {
                e.printStackTrace();
            }
        }
        if (myConnection != null) {
            try {
                myConnection.close();
            } catch (SQLException e) {
                e.printStackTrace();
            }
        }
    }
}

%>
</body>
</html>

```

Output:

**Lab 6 - Task 2 - Perform creating and retrieving records via JSP page**

Author Registration

Author No

123456

Name

Fuad

Address

Malaysia

City

KT

State

UMT

Zip

23

Submit

Cancel

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**Lab 6 - Task 2 - Perform creating and retrieving records via JSP page**

Record successfully added into Author table...!  
Record with author no 123456 successfully created...!  
Details of record are:  
Name: Fuad  
Address: Malaysia  
City: KT  
State: UMT  
Zip: 23

Reflection:

1. What have you learnt from this exercise?

I have learn how to using JSP to insert records and retrieve them from MySQL database.

2. Define step by step before you successfully perform the transaction in a database.

- Load JDBC driver.
- Establish the connection.
- Create a PreparedStatement object.
- Execute the query.
- Close database connection.



### Task 3:

#### Coding

insertStudent.jsp:

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>Lab 6 Task 3</title>
  </head>
  <body>
    <fieldset>
      <legend>Student Registration</legend>
      <form action="processStudent.jsp" method="post">
        <table>
          <tr>
            <td>
              <label for="stuno">Student No</label>
            </td>
            <td>
              <input type="text" id="stuno" name="stuno" placeholder="E.g.: UKXXXXXX">
            </td>
          </tr>
          <tr>
            <td>
              <label for="name">Name</label>
            </td>
            <td>
              <input type="text" id="name" name="name" placeholder="Enter your name">
            </td>
          </tr>
          <tr>
            <td><label for="program">Program</label></td>
            <td>
              <select id="program" name="program">
                <option value="BSc. Soft. Eng.">BSc. Soft. Eng.</option>
                <option value="BSc. with IM">BSc. with IM</option>
                <option value="BSc. in Networking">BSc. in Networking</option>
                <option value="BSc. in Robotics">BSc. in Robotics</option>
              </select>
            </td>
          </tr>
          <tr>
            <td>
              <button type="submit" value="Submit">Submit</button>
              <button type="reset" value="Reset">Cancel</button>
            </td>
            <td>
            </td>
          </tr>
        </table>
      </form>
    </fieldset>
  </body>
</html>
```

```
        </td>
      </tr>
    </table>
  </form>
</fieldset>
<footer>
  <p>&copy;2024-Muhd Imran</p>
</footer>
</body>
</html>
```

Student.java:

```
package lab6.com;

import java.util.regex.Matcher;
import java.util.regex.Pattern;

public class Student {
    //Create attributes...
    private String stuno;
    private String name;
    private String program;

    public String getStuno() {
        Pattern pt = Pattern.compile("[A-Z0-9]*");
        Matcher mt = pt.matcher(stuno);
        boolean bl = mt.matches();
        String valid = "";
        String invalid = "Invalid input please reenter!";
        if(bl == true){
            valid = stuno;
        }else{
            valid = invalid;
        }
        return valid;
    }

    public void setStuno(String stuno) {
        this.stuno = stuno;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
```

```

    this.name = name;
}

public String getProgram() {
    return program;
}

public void setProgram(String program) {
    this.program = program;
}
}

```

processStudent.jsp:

```

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page language="java"%>
<%@page import="java.sql.*"%>
<%@page errorPage="errorStudent.jsp"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Lab 6 Task 3</title>
    </head>
    <body>
        <jsp:useBean id="myStudent" class="lab6.com.Student" scope="request"/>
        <jsp:setProperty name="myStudent" property="*" />

        <%
            int result;

            //Step 1: Load JDBC driver..
            Class.forName("com.mysql.cj.jdbc.Driver");
            System.out.println("Step 1: MySQL driver loaded...!");

            //Step 2: Establish the connection
            String myURL = "jdbc:mysql://localhost:3306/csm3023";
            Connection myConnection = DriverManager.getConnection(myURL, "root", "admin");
            System.out.println("Step 2: Database is connected...!");

            //Step 3: Create a PreparedStatement object...
            System.out.println("Step3: Prepared Statements created...!");
            String sInsertQry = "INSERT INTO student(stuno, stuname, stuprogram) VALUES(?, ?, ?)";
            System.out.println("\tSQL Query: " + sInsertQry);

            //Call method preparedStatement

```

```

PreparedStatement myPS = myConnection.prepareStatement(sInsertQry);

//Assign each value to respective columns for Student's table.. (C-Create)
myPS.setString(1, myStudent.getStuno());
myPS.setString(2, myStudent.getName());
myPS.setString(3, myStudent.getProgram());

result = myPS.executeUpdate();
if (result > 0){
    out.println("\tRecord successfully added into Student table...!");
    out.print("<p>" + "Record with student no " +myStudent.getStuno()+ " successfully created..!" +
"</p>");
    out.print("<p>" + "Details of record are; " + "</p>");
    out.print("<p>Student ID : " + myStudent.getStuno() + "</p>");
    out.print("<p>Name : " + myStudent.getName() + "</p>");
    out.print("<p>Program : " + myStudent.getProgram() + "</p>");
}
//Step5: close database connection..!
System.out.println("Step 5: Close database connection..!");
myConnection.close();
System.out.println(" ");
System.out.println("Database connection is closed..!");
%>
</body>
</html>

```

errorStudent.jsp:

```

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Lab 6 Task 3</title>
    </head>
    <body>
        <form id="errorFrm" action="insertStudent.jsp" method="post">
            <h1>Lab 6 - Task 3 - Create Record Contrained by Regular Expression In JSP</h1>
            <p>Error occur when inserting record...!</p>
            <p>Error Message: ${exception.getMessage()}</p>
            <br>
        </form>
    </body>
</html>

```

Output:

Student Registration

Student No

12489

Name

Ahmad Salam

Program

BSc. with IM

Submit

Cancel

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Record successfully added into Student table...!

Record with student no 12489 successfully created..!

Details of record are;

Student ID : 12489

Name : Ahmad Salam

Program : BSc. with IM

Student Registration

Student No

56789

Name

Rosnah Azman

Program

BSc. Soft. Eng.

Submit

Cancel

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Record successfully added into Student table...!

Record with student no 56789 successfully created..!

Details of record are;

Student ID : 56789

Name : Rosnah Azman

Program : BSc. Soft. Eng.

Student Registration

Student No

67342

Name

Liew Cheng Huat

Program

BSc. in Robotics

Submit

Cancel

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Record successfully added into Student table...!

Record with student no 67342 successfully created..!

Details of record are;

Student ID : 67342

Name : Liew Cheng Huat

Program : BSc. in Robotics

	stuno	stuname	stuprogram
▶	12489	Ahmad Salam	BSc. with IM
	56789	Rosnah Azman	BSc. Soft. Eng.
	67342	Liew Cheng Huat	BSc. in Robotics

Reflection:

1. What have you learnt from this exercise?

Learnt how to use JSP Standard Action, scriptlets and regular expression to insert records and retrieve them from MySQL database.

2. Define step by step before you successfully perform the transaction in a database.

- Load JDBC driver.
- Establish the connection.
- Create a PreparedStatement object.
- Execute the query.
- Close database connection.

#### Task 4:

#### Coding

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page import="java.sql.*"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>Student 2024/2025</title>
    <style>
      table{
        border-collapse: collapse;
      }
      td, th{
        border: 1px solid #999;
        padding: 0.5rem;
        text-align: left;
      }
      th{
        background: gold;
      }
    </style>
  </head>
  <body>
    <h1>Task 4: Retrieving record via JSP page</h1>

    <%
      out.print("<table>");
      out.print("<thead>");
      out.print("<tr>");
      out.print("<th>" + "ISBNNo" + "</th>");
      out.print("<th>" + "Author" + "</th>");
      out.print("<th>" + "Title" + "</th>");
      out.print("</tr>");
      out.print("</thead>");
      out.print("<tbody>");
    %>

    <%
      //Step 1: Load JDBC driver..
      Class.forName("com.mysql.cj.jdbc.Driver");
      System.out.println("Step 1: MySQL driver loaded...!");

      //Step 2: Establish the connection
      String myURL = "jdbc:mysql://localhost:3306/csm3023";
      Connection myConnection = DriverManager.getConnection(myURL, "root", "admin");
      System.out.println("Step 2: Database is connected...!");
```

```

//Step 3: Create a PreparedStatement object...
Statement myStatement = myConnection.createStatement();

String myQuery = "SELECT * FROM student";
ResultSet myResultSet = myStatement.executeQuery(myQuery);

while(myResultSet.next()){
    out.print("<tr>");
    out.print("<td width=\"20%\">" + myResultSet.getString(1) + "</td>");
    out.print("<td width=\"40%\">" + myResultSet.getString(2) + "</td>");
    out.print("<td width=\"40%\">" + myResultSet.getString(3) + "</td>");
    out.print("</tr>");
}
//Step5: close database connection..!
System.out.println("Step 5: Close database connection..!");
myConnection.close();
System.out.println(" ");
System.out.println("Database connection is closed..!");

    out.print("</tbody>");
    out.print("</table>");
%>
</body>
</html>

```

Output:

## Task 4: Retrieving record via JSP page

ISBNNo	Author	Title
12489	Ahmad Salam	BSc. with IM
56789	Rosnah Azman	BSc. Soft. Eng.
67342	Liew Cheng Huat	BSc. in Robotics

Reflection

1. What have you learnt from this exercise?

I have learned how to use Java Scriptlet to query a list of records.

2. Explain the differences when using Statement() and PreparedStatement().

PreparedStatement makes your code more readable and easier to maintain since it separates the SQL query from the data, while Statement uses string concatenation, which can make the code messy and hard to manage.



Task 5:

Coding

registerMarathon.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>Marathon 2024</title>
  </head>
  <body>
    <h1>Marathon 2024</h1>
    <fieldset>
      <legend>Marathon Registration</legend>
      <form action="processMarathon.jsp" method="post">
        <table>
          <tr>
            <td>
              <label for="icno">IC No</label>
            </td>
            <td>
              <input type="text" id="icno" name="icno" placeholder="E.g.: 921110-10-2514">
            </td>
          </tr>
          <tr>
            <td>
              <label for="name">Name</label>
            </td>
            <td>
              <input type="text" id="name" name="name" placeholder="Enter your name">
            </td>
          </tr>
          <tr>
            <td>
              <label for="category">Category</label>
            </td>
            <td>
              <select id="category" name="category">
                <option value="5 KM">5 KM</option>
                <option value="7 KM">7 KM</option>
                <option value="10 KM">10 KM</option>
              </select>
            </td>
          </tr>
          <tr>
            <td>
            </td>
          </tr>
        </table>
      </form>
    </fieldset>
  </body>
</html>
```

```
        <button type="submit" value="Submit">Submit</button>
        <button type="reset" value="Reset">Cancel</button>
    </td>
</tr>
</table>
</form>
</fieldset>
<footer>
    <p>&copy;Marathon 2024</p>
</footer>
</body>
</html>
```

Marathon.java

```
package lab6.com;

public class Marathon {
    private String icno;
    private String name;
    private String category;

    public String getIcno() {
        return icno;
    }

    public void setIcno(String icno) {
        this.icno = icno;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public String getCategory() {
        return category;
    }

    public void setCategory(String category) {
        this.category = category;
    }
}
```

## Database.java

```
package lab6.com;

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

public class Database {
    private static Connection myConnection = null;
    private static String myURL = "jdbc:mysql://localhost:3306/csm3023";
    private int result = 0;

    public static Connection getConnection() throws ClassNotFoundException{
        if(myConnection != null){
            return myConnection;
        }
        else try{
            Class.forName("com.mysql.cj.jdbc.Driver");
            myConnection = DriverManager.getConnection(myURL, "root", "admin");
        }
        catch(SQLException e){
            e.printStackTrace();
        }
        return myConnection;
    }

    public void closeConnection() throws ClassNotFoundException
    {
        try{
            myConnection.close();
        }
        catch(SQLException e){
            e.printStackTrace();
        }
    }
}
```

## MarathonDAO.java

```
package lab6.com;

import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.SQLException;
import lab6.com.Database;
```

```

public class MarathonDAO {
    private Connection connection;
    private int result = 0;
    public MarathonDAO() throws ClassNotFoundException{
        connection = Database.getConnection();
    }
    public int addDetails(Marathon marathon){
        try{
            String mySQL = "INSERT INTO marathon(icno, name, category) VALUES (?, ?, ?)";
            PreparedStatement preparedStatement = connection.prepareStatement(mySQL);

            System.out.println("IC no  = " + marathon.getIcno());
            System.out.println("Name   = " + marathon.getName());
            System.out.println("Category= " + marathon.getCategory());

            //Parameters
            preparedStatement.setString(1, marathon.getIcno());
            preparedStatement.setString(2, marathon.getName());
            preparedStatement.setString(3, marathon.getCategory());
            result = preparedStatement.executeUpdate();
        }catch(SQLException e){
            e.printStackTrace();
        }
        return result;
    }
}

```

processMarathon.jsp

```

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page language="java"%>
<%@page import="java.sql.*"%>
<%@page import="lab6.com.Database"%>
<%@page import="lab6.com.Marathon"%>
<%@page import="lab6.com.MarathonDAO"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Marathon 2024</title>
    </head>
    <body>
        <jsp:useBean id="myMarathon" class="lab6.com.Marathon" scope="request"/>
        <jsp:setProperty name="myMarathon" property="*" />

        <%

```

```

int result;
//Step 1: create Database object...
Database myDB = new Database();

MarathonDAO object1 = new MarathonDAO();

//Step 2: Add the records...
result = object1.addDetails(myMarathon);

//Step 3: Determine whether the transactions is success..
if(result > 0){
    System.out.println("\tRecord successfully added into Book's table...!");
    out.print("<p>" + "Record with IC No " + myMarathon.getIcno() +
        " successfully created..!" + "</p>");
    out.print("<p>" + "Details of record are: " + "</p>");
    out.print("<p>Ic NO  : " + myMarathon.getIcno() + "</p>");
    out.print("<p>Name   : " + myMarathon.getName() + "</p>");
    out.print("<p>Category : " + myMarathon.getCategory() + "</p>");
}else{
    out.print("<p>Crazyy this is an error! maybe you already registerd before?</p>");
}

//Step 4: Close database connection..!
System.out.println("Step 5: Close database connection...!");
myDB.closeConnection();
System.out.println(" ");
System.out.println("Database connection is closed...!");
%>
</body>
</html>

```

Output:

## Marathon 2024

### Marathon Registration

IC No	<input type="text" value="020106-01-0213"/>
Name	<input type="text" value="Ahmad Amirul Ashman"/>
Category	<input type="text" value="7 KM"/> ▼
<input type="button" value="Submit"/> <input type="button" value="Cancel"/>	

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Reflection:

1. What have you learnt from this exercise?

Learned how to use JavaBeans to perform SQL transaction using PreparedStatement().

2. Describe the benefits of using JavaBeans

It offer reusability, encapsulation, ease of use, event handling, and persistence. These benefits make them a powerful tool for building modular, maintainable, and interactive Java applications.

Exercise:

Coding

insertUser.html

```
<!DOCTYPE html>
<!--
Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
Click nbfs://nbhost/SystemFileSystem/Templates/JSP_Servlet/Html.html to edit this template
-->
<html>
  <head>
    <title>Department of Quality UMT</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <h1>Department of Quality UMT</h1>
    <fieldset>
      <legend>User Registration</legend>
      <form action="processUser.jsp">
        <table>
          <tr>
            <td>
              <label for="username">Username</label>
            </td>
            <td>
              <input type="text" id="username" name="username" placeholder="Enter a username">
            </td>
          </tr>
          <tr>
            <td>
              <label for="password">Password</label>
            </td>
            <td>
              <input type="password" id="password" name="password" placeholder="Enter a
password">
            </td>
          </tr>
        </table>
      </form>
    </fieldset>
  </body>
</html>
```

```

        </td>
    </tr>
    <tr>
        <td>
            <label for="firstname">Firstname</label>
        </td>
        <td>
            <input type="text" id="firstname" name="firstname" placeholder="E.g.:Jamal">
        </td>
    </tr>
    <tr>
        <td>
            <label for="lastname">Lastname</label>
        </td>
        <td>
            <input type="text" id="lastname" name="lastname" placeholder="E.g.:bin Abdullah">
        </td>
    </tr>
    <tr>
        <td>
            <button type="submit" value="Submit">Submit</button>
            <button type="reset" value="Reset">Cancel</button>
        </td>
    </tr>
</table>
</form>
</fieldset>
<footer>
    <p>&copy;Quality UMT - 2024</p>
</footer>
</body>
</html>

```

processUser.jsp

```

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page language="java"%>
<%@page import="java.sql.*"%>
<%@page errorPage="login.jsp"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Department of Quality UMT</title>
    </head>
    <body>
        <jsp:useBean id="myUser" class="lab6.com.User" scope="request"/>
    </body>
</html>

```

```

<jsp:setProperty name="myUser" property="*" />

<%
    int result;

    //Step 1: Load JDBC driver..
    Class.forName("com.mysql.cj.jdbc.Driver");
    System.out.println("Step 1: MySQL driver loaded...!");

    //Step 2: Establish the connection
    String myURL = "jdbc:mysql://localhost:3306/csm3023";
    Connection myConnection = DriverManager.getConnection(myURL, "root", "admin");
    System.out.println("Step 2: Database is connected...!");

    //Step 3: Create a PreparedStatement object...
    System.out.println("Step3: Prepared Statements created...!");
    String sInsertQry = "INSERT INTO userprofile(username, password, firstname, lastname)
VALUES(?, ?, ?, ?)";
    System.out.println("\tSQL Query: " + sInsertQry);

    //Call method preparedStatement
    PreparedStatement myPS = myConnection.prepareStatement(sInsertQry);

    //Assign each value to respective columns for Student's table.. (C-Create)
    myPS.setString(1, myUser.getUsername());
    myPS.setString(2, myUser.getPassword());
    myPS.setString(3, myUser.getFirstname());
    myPS.setString(4, myUser.getLastname());

    result = myPS.executeUpdate();
    if (result > 0){
        out.println("\tRecord successfully added into User table...!");
        out.print("<p>" + "Record with Username " + myUser.getUsername()
            + " successfully created..!" + "</p>");
        out.print("<p>" + "Details of record are; " + "</p>");
        out.print("<p>Username : " + myUser.getUsername() + "</p>");
        out.print("<p>Firstname : " + myUser.getFirstname() + "</p>");
        out.print("<p>Lastname : " + myUser.getLastname() + "</p>");
    }
    //Step5: close database connection..!
    System.out.println("Step 5: Close database connection..!");
    myConnection.close();
    System.out.println(" ");
    System.out.println("Database connection is closed..!");
%>
</body>
</html>

```



login.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>Department of Quality UMT</title>
  </head>
  <body>
    <h1>Department of Quality UMT</h1>
    <fieldset>
      <legend>User Login</legend>
      <form action="doLogin.jsp">
        <table>
          <tr>
            <td>
              <label for="username">Username</label>
            </td>
            <td>
              <input type="text" id="username" name="username" placeholder="Enter a username">
            </td>
          </tr>
          <tr>
            <td>
              <label for="password">Password</label>
            </td>
            <td>
              <input type="password" id="password" name="password" placeholder="Enter a
password">
            </td>
          </tr>
          <tr>
            <td>
              <button type="submit" value="Submit">Submit</button>
              <button type="reset" value="Reset">Cancel</button>
            </td>
          </tr>
        </table>
      </form>
    </fieldset>
    <%
      String errorMessage = request.getParameter("error");
      if (errorMessage != null && !errorMessage.isEmpty()) {
        out.println("<p style='color: red'>" + errorMessage + "</p>");
      }
    %>
    <footer>
```

```
<p>&copy;Quality UMT - 2024</p>
</footer>
</body>
</html>
```

doLogin.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@ page import="java.sql.*, lab6.com.User" %>
<%@ page import="java.io.*, java.util.*" %>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>Department of Quality UMT</title>
  </head>
  <body>
    <h1>Department of Quality UMT</h1>
    <%
      // Retrieve username and password from the request
      String username = request.getParameter("username");
      String password = request.getParameter("password");

      // Check if username and password are not null and not empty
      if (username != null && !username.isEmpty() && password != null && !password.isEmpty()) {
        // Establish database connection
        Connection conn = null;
        PreparedStatement pstmt = null;
        ResultSet rs = null;
        try {
          Class.forName("com.mysql.cj.jdbc.Driver");
          String myURL = "jdbc:mysql://localhost:3306/csm3023";
          conn = DriverManager.getConnection(myURL, "root", "admin");

          // Query to check if the username and password are valid
          String query = "SELECT * FROM userprofile WHERE username = ? AND password = ?";
          pstmt = conn.prepareStatement(query);
          pstmt.setString(1, username);
          pstmt.setString(2, password);
          rs = pstmt.executeQuery();

          if (rs.next()) {
            // If user exists and credentials are valid, redirect to main.jsp
            User user = new User();
            user.setUsername(rs.getString("username"));
            user.setFirstname(rs.getString("firstname"));
            user.setLastname(rs.getString("lastname"));
          }
        } catch (Exception e) {
          e.printStackTrace();
        }
      }
    %>
```

```

        // Set user object in session for later use
        session.setAttribute("user", user);
        response.sendRedirect("main.jsp");
    } else {
        // If invalid username or password, redirect back to login.jsp with error message
        response.sendRedirect("login.jsp?error=Invalid+username+or+password");
    }
} catch (Exception e) {
    e.printStackTrace();
} finally {
    // Close resources
    if (rs != null) rs.close();
    if (pstmt != null) pstmt.close();
    if (conn != null) conn.close();
}
} else {
    // If username or password is empty, redirect back to login.jsp with error message
    response.sendRedirect("login.jsp?error=Username+and+password+are+required");
}
%>
</body>
</html>

```

User.java

```

package lab6.com;

public class User {
    private String username;
    private String password;
    private String firstname;
    private String lastname;

    public String getUsername() {
        return username;
    }

    public void setUsername(String username) {
        this.username = username;
    }

    public String getPassword() {
        return password;
    }

    public void setPassword(String password) {

```

```
        this.password = password;
    }

    public String getFirstname() {
        return firstname;
    }

    public void setFirstname(String firstname) {
        this.firstname = firstname;
    }

    public String getLastname() {
        return lastname;
    }

    public void setLastname(String lastname) {
        this.lastname = lastname;
    }
}
```

Output:

## Department of Quality UMT

User Registration

Username

Amoran

Password

.....

Firstname

Muhd

Lastname

Amoran

Submit

Cancel

©Quality UMT - 2024

Record successfully added into User table...!

Record with Username Amoran successfully created..!

Details of record are;

Username : Amoran

Firstname : Muhd

Lastname : Amoran

# Department of Quality UMT

User Login

Username

Amoran

Password

.....

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## Welcome, Muhd Amoran

Your username is: Amoran

[Logout](#)