



UNIVERSITI MALAYSIA TERENGGANU

CSM3023 – WEB PROGRAMMING 2

BACHELOR OF COMPUTER SCIENCE (MOBILE COMPUTING) WITH HONORS

LAB 6 – JSP: Saving and Retrieving Data from Database

SEMESTER II 2023/2024

Prepared for:

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Prepared by:

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(S66355)

Link Github :

<https://github.com/arifhaikal2001/CSM3023-LAB-6.git>

Task 1

Code :

SampleInsertionRecord.jsp

```
<%--
    Document : SampleInsertionRecord
    Created on : 31 May 2024, 11:44:17 am
    Author : McBois
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page language="java"%>
<%@page import="java.sql.*"%>
<!DOCTYPE html>
<html>
    <html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Lab 6 - Task 1</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.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@123");
            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 VALUE(?)";

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

```

<br>
<%
    //Assign each value to respective columns for Book'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();

    if (result > 0){
%>
<br>
<%
    out.println("Step 5: Close database connection...!");

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

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

```

Create table on workbench

```

1      CREATE TABLE FirstTable (NAME VARCHAR(45))

```

Output :



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

Task 2

Code :

insertAuthor.jsp

```
<%--
  Document   : insertAuthor
  Created on : 31 May 2024, 12:36:52 pm
  Author    : McBois
--%>

<%@ page language="java" contentType="text/html; charset=UTF-8"
    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>
    <h2>Lab 6 - Task 2 - Perform creating and retrieving records via JSP page</h2>
    <form action="processAuthor.jsp" method="post">
      <fieldset>
        <legend>Author Registration</legend>
        <table>
          <tr>
            <td>Author No:</td>
            <td><input type="text" name="authno" required></td>
          </tr>
          <tr>
            <td>Name:</td>
            <td><input type="text" name="name" required></td>
          </tr>
          <tr>
            <td>Address:</td>
            <td><input type="text" name="address" required></td>
          </tr>
          <tr>
            <td>City:</td>
            <td><input type="text" name="city" required></td>
          </tr>
          <tr>
            <td>State:</td>
            <td><input type="text" name="state" required></td>
          </tr>
          <tr>
            <td>Zip:</td>
            <td><input type="text" name="zip" required></td>
          </tr>
        </table>
        <br>
```

```

        <input type="submit" value="Submit">
        <input type="reset" value="Cancel">
    </form>
</body>
</fieldset>

<br><br>
<footer>
    &copy;2024 ARIF HAIKAL
</footer>
</html>

```

processAuthor.jsp

```

<%--
    Document   : processAuthor
    Created on : 31 May 2024, 12:54:52 pm
    Author    : McBois
--%>

<%@ page contentType="text/html" pageEncoding="UTF-8"%>
<%@ page language="java"%>
<%@ page import="java.sql.*" %>
<jsp:useBean id="myAuthor" class="lab6.com.Author" scope="request"/>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Process Author</title>
    </head>
    <body>
        <h1>Lab 6 - Task 2 - Perform creating and retrieving records via JSP page</h1>

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

        <%
            int result;

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

            String myURL = "jdbc:mysql://localhost:3306/csm3023";
            Connection myConnection = DriverManager.getConnection(myURL, "root",
"admin@123");

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

            PreparedStatement 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());

        result = myPS.executeUpdate();
        if (result > 0){
            out.println("<p style='color:blue;'>\tRecord successfully added into Author
table...!\</p>");
            out.print("<p style='color:blue;'>" + "Record with author no " +
myAuthor.getAuthno() + " successfully created..!" + "</p>");
            out.print("<p style='color:blue;'>" + "Details of record are; " + "</p>");
            out.print("<p style='color:blue;'>Name : " + myAuthor.getName() + "</p>");
            out.print("<p style='color:blue;'>Address : " + myAuthor.getAddress() + "</p>");
            out.print("<p style='color:blue;'>City : " + myAuthor.getCity() + "</p>");
            out.print("<p style='color:blue;'>State : " + myAuthor.getState() + "</p>");
            out.print("<p style='color:blue;'>Zip : " + myAuthor.getZip() + "</p>");

            //Step 5: 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>

```

Author.java

```

package lab6.com;

/**
 *
 * @author McBois
 */
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;
}
}

```

Create table on workbench

```

13  CREATE TABLE AUTHOR (
14      authno VARCHAR (15) PRIMARY KEY,
15      NAME VARCHAR(40),
16      address VARCHAR(40),
17      city VARCHAR(40),
18      state VARCHAR(40),
19      zip VARCHAR(40)
20  )

```

Output :

Lab 6 - Task 2

localhost:8080/Lab6/insertAuthor.jsp

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

Author Registration

Author No:

Name:

Address:

City:

State:

Zip:

Submit

Cancel

©2024 ARIF HAIKAL

Process Author

localhost:8080/Lab6/processAuthor.jsp

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

Record successfully added into Author table...!

Record with author no S66355 successfully created..!

Details of record are;

Name : ARIF HAIKAL

Address : 11, JALAN BUKIT MEWAH 54A

City : KAJANG

State : Selangor

Zip : 43000

	authno	NAME	address	city	state	zip
	S66355	ARIF HAIKAL	11, JALAN BUKIT MEWAH 54A	KAJANG	Selangor	43000

Task 3

Code :

insertStudent.jsp

```
<%--
    Document : insertStudent
    Created on : 1 Jun 2024, 4:14:38 pm
    Author : McBois
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Student Registration</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>
                </table>
            </form>
        </fieldset>
    </body>
</html>
```

```

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

```

processStudent.jsp

```

<%--
    Document   : processStudent
    Created on : 1 Jun 2024, 4:37:38 pm
    Author    : McBois
--%>

<%@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>processStudent</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@123");
            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 style='color:blue;'>" + "Record with student no " +
myStudent.getStuno()
                + " successfully created..!" + "</p>");
            out.print("<p style='color:blue;'>" + "Details of record are; " + "</p>");
            out.print("<p style='color:blue;'>Student ID : " + myStudent.getStuno() + "</p>");
            out.print("<p style='color:blue;'>Name : " + myStudent.getName() + "</p>");
            out.print("<p style='color:blue;'>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

```

<%--
    Document   : errorStudent.jsp
    Created on : 1 Jun 2024, 4:41:04 pm
    Author    : McBois
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>errorStudent</title>
    </head>
    <body>
        <form id="errorFrm" action="insertStudent.jsp" method="post">
            <h1>Lab 6 - Task 1 - Perform creating and retrieving records via JSP page</h1>
            <p>Error occur when inserting record...!</p>
            <p>Error Message: ${exception.getMessage()}</p>

```

```
<br>
</form>
</body>
</html>
```

student.java

```
package lab6.com;

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

/**
 *
 * @author McBois
 */
public class Student {

    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 re-enter!";
        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;
    }
}
```

```
}  
}
```

Create table on workbench

```
13 CREATE TABLE student (  
14     stuno VARCHAR(15) PRIMARY KEY,  
15     stuname VARCHAR(50),  
16     stuprogram VARCHAR(40)  
17 )
```

Output :

Student Registration

Student No

Name

Program

©2024 ARIF HAIKAL

processStudent

Record successfully added into Student table...!

Record with student no S66355 successfully created..!

Details of record are;

Student ID : S66355

Name : ARIF HAIKAL

Program : BSc. in Networking

	stuno	stuname	stuprogram
▶	S66355	ARIF HAIKAL	BSc. in Networking

Task 4

Code :

queryStudent.jsp

```
<%--
    Document : queryStudent
    Created on : 1 Jun 2024, 5:11:38 pm
    Author : McBois
--%>

<%@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>Lab 6 - Task 4</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>");
        %>
        <%
            Class.forName("com.mysql.cj.jdbc.Driver");
            System.out.println("Step 1: MySQL driver loaded...!");

            String myURL = "jdbc:mysql://localhost:3306/csm3023";
```

```
Connection myConnection = DriverManager.getConnection(myURL, "root",
"admin@123");
System.out.println("Step 2: Database is connected...!");

Statement myStatement = myConnection.createStatement();

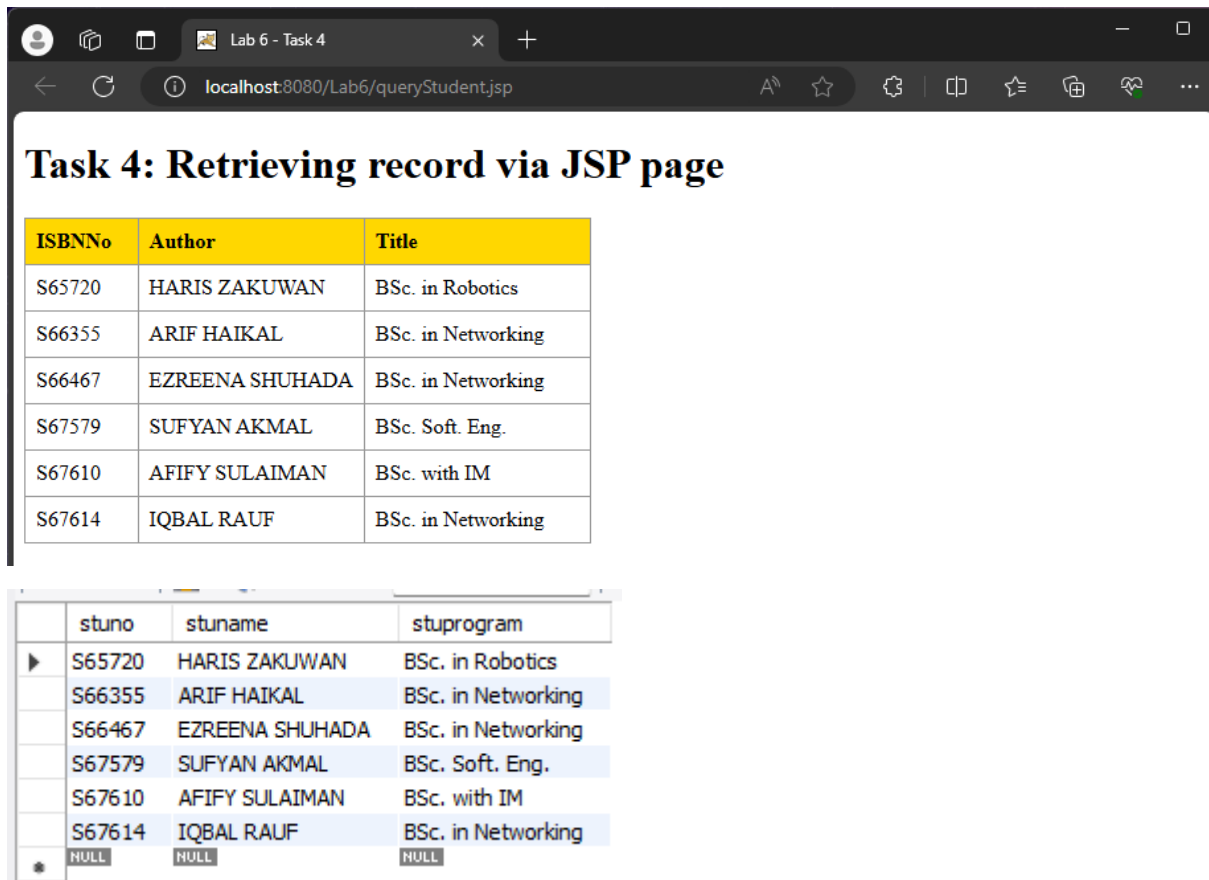
String myQuery = "SELECT * FROM student";
ResultSet myResultSet = myStatement.executeQuery(myQuery);

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>");
}

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 :



The screenshot shows a web browser window with the address bar displaying 'localhost:8080/Lab6/queryStudent.jsp'. The page title is 'Lab 6 - Task 4'. The main content is titled 'Task 4: Retrieving record via JSP page'.

Below the title, there is a table with the following data:

ISBNNo	Author	Title
S65720	HARIS ZAKUWAN	BSc. in Robotics
S66355	ARIF HAIKAL	BSc. in Networking
S66467	EZREENA SHUHADA	BSc. in Networking
S67579	SUFYAN AKMAL	BSc. Soft. Eng.
S67610	AFIFY SULAIMAN	BSc. with IM
S67614	IQBAL RAUF	BSc. in Networking

Below this table, there is a database table view showing the same data with columns stuno, stuname, and stuprogram. The table has 7 rows, including a header row and a row with NULL values.

	stuno	stuname	stuprogram
▶	S65720	HARIS ZAKUWAN	BSc. in Robotics
	S66355	ARIF HAIKAL	BSc. in Networking
	S66467	EZREENA SHUHADA	BSc. in Networking
	S67579	SUFYAN AKMAL	BSc. Soft. Eng.
	S67610	AFIFY SULAIMAN	BSc. with IM
	S67614	IQBAL RAUF	BSc. in Networking
✱	NULL	NULL	NULL

Task 5

Code :

registerMarathon.jsp

```
<%--
    Document : registerMarathon
    Created on : 1 Jun 2024, 10:33:42 pm
    Author : McBois
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Marathon Registration</title>
    </head>
    <body>
        <h1>Marathon Registration</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>
                </table>
            </form>
        </fieldset>
    </body>
</html>
```

```

        </select>
    </td>
</tr>
<tr>
    <td>
        <br>
        <button type="submit" value="Submit">Submit</button>
        <button type="reset" value="Reset">Cancel</button>
    </td>
</tr>
</table>
</form>
</fieldset>
<br>
<footer>
    &copy;2024 ARIF HAIKAL
</footer>
</body>
</html>

```

processMarathon.jsp

```

<%--
    Document   : processMarathon
    Created on : 1 Jun 2024, 10:42:55 pm
    Author    : McBois
--%>

<%@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</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 style='color:red;'>" + "Record with IC No " + myMarathon.getIcno()
+
        " successfully created..!" + "</p>");
    out.print("<p style='color:red;'>" + "Details of record are: " + "</p>");
    out.print("<p style='color:red;'>Ic NO   : " + myMarathon.getIcno() + "</p>");
    out.print("<p style='color:red;'>Name   : " + myMarathon.getName() + "</p>");
    out.print("<p style='color:red;'>Category : " + myMarathon.getCategory() +
"</p>");
    }else{
        out.print("<p style='color:red;'>Crazyy this is an error! maybe you already
registered 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>
<br>
<footer>
    &copy;2024 ARIF HAIKAL
</footer>
</html>

```

Marathon.java

```

package lab6.com;

/**
 *
 * @author McBois
 */
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;
import java.util.logging.Level;
import java.util.logging.Logger;

import lab6.com.Marathon;

/**
 *
 * @author McBois
 */
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@123");
        }
        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;

/**
 *
 * @author McBois
 */
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());

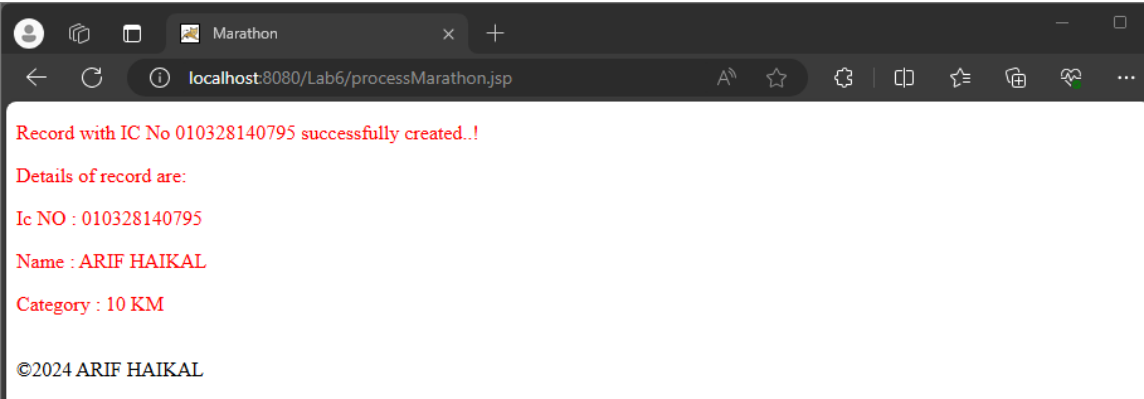
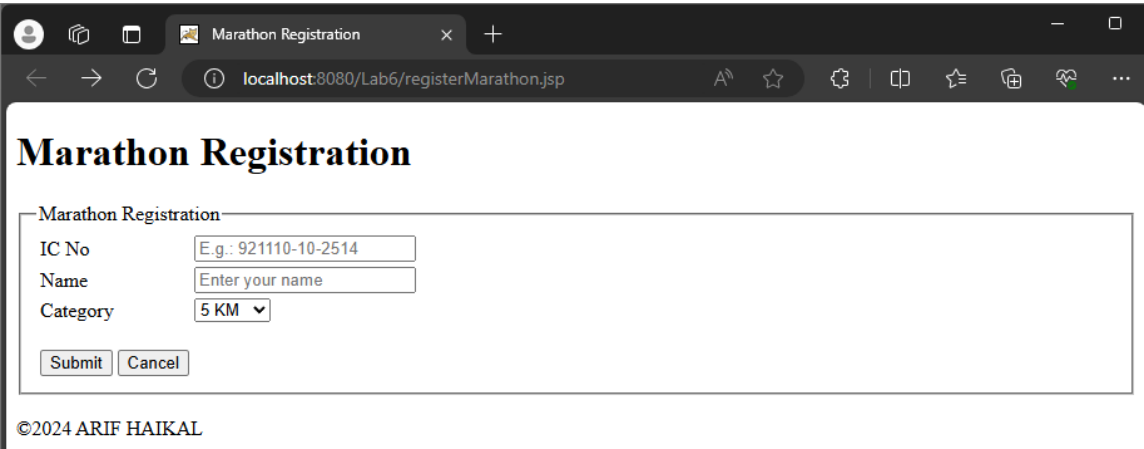
            //Parameters
            preparedStatement.setString(1, marathon.getIcno());
            preparedStatement.setString(2, marathon.getName());
            preparedStatement.setString(3, marathon.getCategory());
            result = preparedStatement.executeUpdate();
        }catch(SQLException e){
   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

```

Create table on workbench

```
20 CREATE TABLE marathon (  
21     icno VARCHAR(15) PRIMARY KEY,  
22     name VARCHAR(50),  
23     category VARCHAR(10)  
24 )
```

Output :



	icno	name	category
▶	010328140795	ARIF HAIKAL	10 KM
✱	NULL	NULL	NULL

Exercise

Code :

insertUser.html

```
<!DOCTYPE html>
<html>
  <head>
    <title>Exercise</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <h1>User Registration</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>
          <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>
                <br>
                <button type="submit" value="Submit">Submit</button>
                <button type="reset" value="Reset">Cancel</button>
            </td>
        </tr>
    </table>
</form>
</fieldset>
</body>
<br>
<footer>
    &copy;2024 ARIF HAIKAL
</footer>
</html>

```

processUser.jsp

```

<%--
    Document   : processUser
    Created on : 1 Jun 2024, 11:51:34 pm
    Author    : McBois
--%>

<%@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>Exercise</title>
    </head>
    <body>
        <jsp:useBean id="myUser" class="lab6.com.User" scope="request"/>
        <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@123");

```



```

        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

```

<%--
    Document   : login
    Created on : 1 Jun 2024, 11:51:43 pm
    Author    : McBois
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Exercise</title>
    </head>
    <body>
        <h1>Login</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>");
  }
%>
</body>
</html>

```

doLogin.jsp

```

<%--
  Document   : doLogin
  Created on : 1 Jun 2024, 11:51:48 pm
  Author    : McBois
--%>

<%@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>Exercise</title>
</head>
<body>
  <h1>Login</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"));

          // 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>
```

main.jsp

```
<%--
  Document   : main
  Created on : 1 Jun 2024, 11:51:57 pm
  Author      : McBois
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page language="java"%>
<%@ page import="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>Exercise</title>
  </head>
  <body>
    <%
      // Retrieve user object from session
      lab6.com.User user = (lab6.com.User) session.getAttribute("user");

      // Check if user object exists in session
      if (user != null) {
    %>
    <h1>Welcome, <%= user.getFirstname() %> <%= user.getLastname() %></h1>
    <p>Your username is: <%= user.getUsername() %></p>

    <p><a href="logout.jsp">Logout</a></p>
    <%
      } else {
        // If user object does not exist in session, redirect to login page
        response.sendRedirect("login.jsp");
      }
    %>
  </body>
</html>
```

Create table on workbench

```
27 CREATE TABLE userprofile (  
28     username VARCHAR(15) PRIMARY KEY,  
29     password VARCHAR(10),  
30     firstname VARCHAR(50),  
31     lastname VARCHAR(50)  
32 )
```

Output :

User Registration

User Registration

Username

Enter a username

Password

Enter a password

Firstname

E.g.:Jamal

Lastname

E.g.:bin Abdullah

Submit

Cancel

©2024 ARIF HAIKAL

Login

User Login

Username

Enter a username

Password

Enter a password

Submit

Cancel

Record successfully added into User table...!

Record with Username muhdarifhaikal successfully created..!

Details of record are;

Username : muhdarifhaikal

Firstname : Arif

Lastname : Haikal

	username	password	firstname	lastname
	muhdarifhaikal	admin@123	Arif	Haikal
	NULL	NULL	NULL	NULL