UNIVERSITI MALAYSIA TERENGGANU

CSM3023 – WEB BASED APPLICATION DEVELOPMENT

BACHELOR OF COMPUTER SCIENCE (MOBILE COMPUTING) WITH HONORS

LAB 7

SEMESTER II 2023/2024

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Index.jsp

```jsp
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Sample Perform CRUD Using Java Servlet</title>
    </head>
    <body>
        <h1>Sample Perform CRUD Using Java Servlet</h1>
        <jsp:forward page="/UserController?action=listUser"/>
    </body>
</html>
```

ListUser.jsp

```jsp
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
<%@taglib uri="http://java.sun.com/jsp/jstl/fmt" prefix="fmt"  %>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>JSP Page</title>
    </head>
    <body>
        <p>List of Users..!</p>
        <table border="1">
            <thead>
                <tr>
                    <th>User Id</th>
                    <th>First Name</th>
                    <th>Last Name</th>
                    <th colspan="2">Action</th>
                </tr>
            </thead>
            <tbody>
            <c:forEach items="${users}" var="user">
                <tr>
                    <td><c:out value="${user.userid}"/></td>
                    <td><c:out value="${user.firstname}"/></td>
                    <td><c:out value="${user.lastname}"/></td>
                    <td> <a href="UserController?action=edit&userid=<c:out value="${user.userid}"/>">Update</a></td>
                    <td> <a href="UserController?action=delete&userid=<c:out value="${user.userid}"/>">Delete</a></td>
                </tr>
            </c:forEach>
            </tbody>
        </table>
        <p><a href="UserController?action=insert">Add User</a></p>
    </body>
</html>
```

User.jsp

```jsp
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>New Record</title>
    </head>
    <body>
        <h1>New Record</h1>
        <form name="frmAddUser" action="UserController" method="POST">
            <table border="0">
                <tbody>
                    <tr>
                        <td>User ID: </td>
                        <td><input type="text" name="userid" value="" size="25" required></td>
                    </tr>
                    <tr>
                        <td>First Name: </td>
                        <td><input type="text" name="firstname" value="" size="25" required></td>
                    </tr>
                    <tr>
                        <td>Last Name: </td>
                        <td><input type="text" name="lastname" value="" size="25" required></td>
                    </tr>
                    <tr>
                        <td><input type="hidden" name="action" value="insert" required></td>
                    </tr>
                    <tr>
                        <td><input type="submit" value="Submit"></td>
                        <td><input type="reset" value="Cancel"></td>
                    </tr>
                </tbody>
            </table>

        </form>
    </body>
```

editUser.jsp

```jsp
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>JSP Page</title>
    </head>
    <body>
        <p>Updating User Profile</p>
        <form name="frmEditUser" action="UserController" method="post">
            <table border="0">
                <tbody>
                    <tr>
                        <td>User Id</td>
                        <td><input type="text" name="userid" readonly="readonly" value="<c:out value="${user.userid}"/>" size="25"></td>
                    </tr>
                    <tr>
                        <td>First Name</td>
                        <td><input type="text" name="firstname" value="<c:out value="${user.firstname}"/>" size="40"></td>
                    </tr>
                    <tr>
                        <td>Last Name</td>
                        <td><input type="text" name="lastname" value="<c:out value="${user.lastname}"/>" size="40"></td>
                    </tr>
                    <tr>
                        <td><input type="hidden" name="action" value="edit"></td>
                    </tr>
                    <tr>
                        <td><input type="submit" name="submit" value="Submit"></td>
                    </tr>
                </tbody>
            </table>
        </form>
    </body>
</html>
```

UserDAO

```java
package com.DAO;

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

import java.util.ArrayList;
import java.util.List;
import com.model.User;
import com.util.DBConnection;

public class userDAO {
    private Connection connection;

    public userDAO() throws ClassNotFoundException{
        connection = DBConnection.getConnection();
    }

    public void addUser(User user) {
        try{
            PreparedStatement preparedStatement = connection.prepareStatement("INSERT INTO users (userid, firstname, lastname) VALUES (?,?,?)");
            preparedStatement.setString(1, user.getUserid());
            preparedStatement.setString(2, user.getFirstname());
            preparedStatement.setString(3, user.getLastname());
            preparedStatement.executeUpdate();
        }
        catch(SQLException e){
            e.printStackTrace();
        }
    }

    public void deleteUser(String userid){
        try{
            PreparedStatement preparedStatement = connection.prepareStatement("delete from users where userid=?");
            preparedStatement.setString(1, userid);
            preparedStatement.executeUpdate();
        }
        catch(SQLException e){
            e.printStackTrace();
        }
    }

    public void updateUser(User user){
        try{
            PreparedStatement preparedStatement = connection.prepareStatement("UPDATE users SET firstname=?, lastname=? WHERE userid = ?");
            preparedStatement.setString(1, user.getFirstname());
            preparedStatement.setString(2, user.getLastname());
            preparedStatement.setString(3, user.getUserid());
            preparedStatement.executeUpdate();
        }
        catch(SQLException e){
            e.printStackTrace();
        }
    }

    public List<User> getAllUsers(){
        List<User> users =  new ArrayList<User>();
        try{
            Statement statement = connection.createStatement();
            ResultSet rs = statement.executeQuery("SELECT * FROM users");
            while (rs.next()) {
                User user = new User();
                user.setUserid(rs.getString("userid"));
                user.setFirstname(rs.getString("firstname"));
                user.setLastname(rs.getString("lastname"));
                users.add(user);
            }
        }
```

```java
            }
        catch(SQLException e){
            e.printStackTrace();
        }
        return users;
    }

    public User getUserById(String userid){
        User user = new User();
        try{

            PreparedStatement preparedStatement = connection.prepareStatement("SELECT * FROM users WHERE userid = ?");
            preparedStatement.setString(1, userid);
            ResultSet rs = preparedStatement.executeQuery();

            while(rs.next()){
                user.setUserid(rs.getString("userid"));
                user.setFirstname(rs.getString("firstname"));
                user.setLastname(rs.getString("lastname"));
            }
        }
        catch (SQLException e){
            e.printStackTrace();
        }
        return user;
    }

}
```

UserController

```java
import java.io.IOException;
import java.io.PrintWriter;
import jakarta.servlet.ServletException;
import jakarta.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse;

import com.DAO.userDAO;
import com.model.User;
import jakarta.servlet.RequestDispatcher;

public class UserController extends HttpServlet {

    private static String INSERT = "/user.jsp";
    private static String EDIT = "/editUser.jsp";
    private static String LIST_USER = "/listUser.jsp";
    private userDAO dao;

    public UserController() throws ClassNotFoundException {
        super();
        dao = new userDAO();
    }

    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {

        String forward="";
        String action = request.getParameter("action");

        if (action.equalsIgnoreCase("delete")){
            String userid = request.getParameter("userid");
            dao.deleteUser(userid);
            forward = LIST_USER;
            request.setAttribute("users", dao.getAllUsers());
        }
        else if(action.equalsIgnoreCase("edit")){
            forward = EDIT;
            String userid = request.getParameter("userid");
            User user = dao.getUserById(userid);
            request.setAttribute("user", user);
        }

        else if(action.equalsIgnoreCase("listUser")){
            forward = LIST_USER;
            request.setAttribute("users", dao.getAllUsers());
        }

        else if(action.equalsIgnoreCase("insert")){
            forward=INSERT;
        }

        RequestDispatcher view = request.getRequestDispatcher(forward);
        view.forward(request, response);
    }
```

```java
@Override
protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {

    String action = request.getParameter("action");

    User user = new User();
    user.setUserid(request.getParameter("userid"));
    user.setFirstname(request.getParameter("firstname"));
    user.setLastname(request.getParameter("lastname"));

    if(action.equalsIgnoreCase("edit")){
        dao.updateUser(user);
    }
    else{
        dao.addUser(user);
    }

    RequestDispatcher view = request.getRequestDispatcher(LIST_USER);
    request.setAttribute("users", dao.getAllUsers());
    view.forward(request,response);
}

@Override
public String getServletInfo() {
    return "Short description";
}// </editor-fold>
}
```

```sql
CREATE TABLE users(
userid VARCHAR(15),
firstname VARCHAR(35),
lastname VARCHAR(15),
CONSTRAINT users_userid_pk PRIMARY KEY(userid)
);
```

OUTPUT

List of Users..!

User Id	First Name	Last Name	Action
202	MARLIANTI	PIARLIS	Update Delete

Add User

New Record

User ID:	205
First Name:	MAR
Last Name:	LIANTI

Submit   Cancel

Updating User Profile

User Id	202
First Name	MARLIA
Last Name	PIARLIS

Submit

List of Users..!

User Id	First Name	Last Name	Action
202	MARLIA	PIARLIS	Update Delete
205	MAR	LIANTI	Update Delete

Add User

Exercise

indexProfile.jsp

```jsp
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Index Profile</title>
    </head>
    <body>
        <jsp:forward page="/userProfileServlet?action=profileList"/>
    </body>
</html>
```

```jsp
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
<%@taglib uri="http://java.sun.com/jsp/jstl/fmt"  prefix="fmt"  %>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>JSP Page</title>
    </head>
    <body>
        <h1>List User Profile</h1>
        <table border="1">
            <thead>
                <tr>
                    <th>Username</th>
                    <th>Ic Number</th>
                    <th>First Name</th>

                </tr>
            </thead>
            <tbody>
            <c:forEach items="${userProfiles}" var="user">
                <tr>
                    <td><c:out value="${user.username}"/></td>
                    <td><c:out value="${user.icno}"/></td>
                    <td><c:out value="${user.firstname}"/></td>

                </tr>
            </c:forEach>
            </tbody>
        </table>
                <p><a href="userProfileServlet?action=insert">Add User</a></p>

    </body>
</html>
```

```java
public class userProfileDAO {
    private Connection connection;

    public userProfileDAO() throws ClassNotFoundException{
        connection = DBConnection.getConnection();
    }

    public void addUser(userProfile userp) {
        try{
            PreparedStatement preparedStatement = connection.prepareStatement("INSERT INTO userProfiles (username, icno, firstname) VALUES (?,?,?)");
            preparedStatement.setString(1, userp.getUsername());
            preparedStatement.setString(2, userp.getIcno());
            preparedStatement.setString(3, userp.getFirstname());
            preparedStatement.executeUpdate();
        }
        catch(SQLException e){
            e.printStackTrace();
        }
    }
    public List<userProfile> getAllUsers(){
        List<userProfile> userp = new ArrayList<userProfile>();
        try{
            Statement statement = connection.createStatement();
            ResultSet rs = statement.executeQuery("select * from userprofiles");
            while (rs.next()) {
                userProfile user = new userProfile();
                user.setUsername(rs.getString("username"));
                user.setIcno(rs.getString("icno"));
                user.setFirstname(rs.getString("firstname"));
                userp.add(user);
            }
        }
        catch(SQLException e){
            e.printStackTrace();
        }
        return userp;
    }
```

UserProfileController

```java
import com.DAO.userProfileDAO;
import com.model.userProfile;
import jakarta.servlet.RequestDispatcher;
import java.io.IOException;
import java.io.PrintWriter;
import jakarta.servlet.ServletException;
import jakarta.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse;
```

```java
public class userProfileServlet extends HttpServlet {

    private static String INSERT = "/EntryForm.jsp";
    private static String LIST_USER = "/profileList.jsp";
    private userProfileDAO dao;

    public userProfileServlet() throws ClassNotFoundException{
        super();
        dao = new userProfileDAO();
    }
    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {

        String forward = "";
        String action = request.getParameter("action");

        if (action.equalsIgnoreCase("profileList")){
            forward = LIST_USER;
            request.setAttribute("userProfiles", dao.getAllUsers());
        }
        else if(action.equalsIgnoreCase("insert")){
            forward=INSERT;
        }
        RequestDispatcher view = request.getRequestDispatcher(forward);
        view.forward(request, response);
    }
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        String action = request.getParameter("action");

        userProfile userp = new userProfile();
        userp.setUsername(request.getParameter("username"));
        userp.setIcno(request.getParameter("icno"));
        userp.setFirstname(request.getParameter("firstname"));

        if(action.equalsIgnoreCase("insert")){
            dao.addUser(userp);
        }
        RequestDispatcher view = request.getRequestDispatcher(LIST_USER);
        request.setAttribute("userProfiles", dao.getAllUsers());
        view.forward(request, response);
    }
    @Override
    public String getServletInfo() {
        return "Short description";
    }// </editor-fold>

}
```

List User Profile

Username	Ic Number	First Name
marlianti17	010328020143	MARLIANTI
marlianti16	222222222222222	MAR

Add User

Entry Form

Username: mas

Icno: 1111111111111111

Firstname: MAR

Submit Cancel

2)

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

        <form action="StudentServlet" method="post">
            <label>Student ID: </label>
            <input type="text" name="studid"><br><br>

            <label>Student Name: </label>
            <input type="text" name="name"><br><br>

            <input type="submit" name="Submit">

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

```jsp
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page import="jakarta.servlet.http.HttpSession"%>
<%@page import="com.model.Student"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>comfirm Register</title>
    </head>
    <body>
        <h1>Comfirm Registration</h1>

            <%

                Student student = (Student) session.getAttribute("student");
            %>

            <p>Student ID: <%=student.getStudentid()%></p>
            <p>Student Name: <%=student.getName()%></p>
        <form action="notificationRegister.jsp" method="Post">
            <input type="submit" value="Preceed">
        </form>
    </body>
</html>
```

```jsp
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>JSP Page</title>
    </head>
    <body>
        <h1>Registration Successful</h1>
    </body>
</html>
```

```java
import com.model.Student;
import jakarta.servlet.http.HttpSession;
/**
 *
 * @author marli
 */
public class StudentServlet extends HttpServlet {


    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        String studid = request.getParameter("studid");
        String name = request.getParameter("name");

        Student stud = new Student();
        stud.setStudentid(studid);
        stud.setName(name);

        HttpSession session = request.getSession();
        session.setAttribute("student", stud);

        response.sendRedirect("comfirmRegister.jsp");
    }

    @Override
    public String getServletInfo() {
        return "Short description";
    }// </editor-fold>

}
```

```java
public class Student {
    private String studentid;
    private String name;

    public String getStudentid() {
        return studentid;
    }

    public void setStudentid(String studentid) {
        this.studentid = studentid;
    }

    public String getName() {
        return name;
    }

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

}
```

Output

Student Registration

Student ID: s66353

Student Name: MARLIANTI BT MUF PIARI

Submit

Comfirm Registration

Student ID: s66353

Student Name: MARLIANTI BT MUF PIARLIS

Preceed

Registration Successful