**Problem Statement 3:-**

**Develop Social Networking Website MyFriends.**

Structure of Given Problem:

src/

 └── main/

      ├── java/

      │    ├── com/

      │    │    ├── example/

      │    │    │    ├── BusinessException.java

      │    │    │    ├── RegistrationBO.java

      │    │    │    └── RegistrationServlet.java

      │    │    └── example/

      │    │         └── dao/

      │    │              └── RegisterDAO.java

      │    └── model/

      │         └── User.java

      │

      └── webapp/

           ├── error.jsp

           ├── registration.jsp

           └── success.jsp

**REGISTRATIONBO.JAVA**

package com.example;

import com.example.dao.RegisterDAO;

import Model.User;

public class RegistrationBO {

public int validateUser(User user) throws BusinessException {

        if (user.getFirstName() == null || user.getFirstName().isEmpty() ||

                user.getLastName() == null || user.getLastName().isEmpty() ||

                user.getCountry() == null || user.getCountry().isEmpty() ||

                user.getLanguagesKnown() == null || user.getLanguagesKnown().length ==0 ||

                user.getGender() == null) {

            throw new BusinessException("All fields must be filled.");

        }

        RegisterDAO registerDAO = new RegisterDAO();

        return registerDAO.insertUser(user);

    }

}

**REGISTRATIONSERVLET.JAVA**

package com.example;

import java.io.IOException;

import javax.servlet.RequestDispatcher;

import javax.servlet.ServletException;

import javax.servlet.http.\*;

import com.example.dao.RegisterDAO;

import Model.User;

import javax.servlet.annotation.WebServlet;

@WebServlet("/RegistrationServlet")

public class RegistrationServlet extends HttpServlet {

    protected void doPost(HttpServletRequest req, HttpServletResponse res) throws ServletException, IOException {

        String firstName = req.getParameter("firstName");

        String lastName = req.getParameter("lastName");

        String country = req.getParameter("country");

        String[] languagesKnown = req.getParameterValues("languagesKnown");

        String gender = req.getParameter("gender");

        if (firstName == null || firstName.isEmpty() || lastName == null || lastName.isEmpty() ||

                country == null || country.isEmpty() || languagesKnown == null || languagesKnown.length == 0 || gender == null) {

                req.setAttribute("errorMessage", "All fields are required!");

                RequestDispatcher dispatcher = req.getRequestDispatcher("error.jsp");

                dispatcher.forward(req, res);

                return;

            }

            User user = new User(firstName, lastName, country, languagesKnown, gender);

            RegistrationBO registrationBO = new RegistrationBO();

            try {

                int registrationId = registrationBO.validateUser(user);

                req.setAttribute("registrationId", registrationId);

                RequestDispatcher dispatcher = req.getRequestDispatcher("successPage.jsp");

                dispatcher.forward(req, res);

            } catch (BusinessException e) {

                req.setAttribute("errorMessage", e.getMessage());

                RequestDispatcher dispatcher = req.getRequestDispatcher("error.jsp");

                dispatcher.forward(req, res);

            }

    }

}

**REGISTERDAO.JAVA**

package com.example.dao;

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

import java.sql.Statement;

import com.example.BusinessException;

import Model.User;

public class RegisterDAO { private static final String URL = "jdbc:mysql://localhost:3306/friends"; private static final String DB\_USER = "root"; private static final String DB\_PASSWORD = "Password@12";

public int insertUser(User user) throws BusinessException {

    int registrationId = 0;

    try {

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

        //Connection conn = DriverManager.getConnection(URL, DB\_USER, DB\_PASSWORD);

        //Connection conn = DriverManager.getConnection("jdbc:mysql://localhost:3306/friends", "root", "Password@12");

        try (Connection conn = DriverManager.getConnection(URL, DB\_USER, DB\_PASSWORD);

                PreparedStatement stmt = conn.prepareStatement(

                        "INSERT INTO users (firstName, lastName, country, languagesKnown, gender) VALUES (?, ?, ?, ?, ?)",

                        Statement.RETURN\_GENERATED\_KEYS)) {

               stmt.setString(1, user.getFirstName());

               stmt.setString(2, user.getLastName());

               stmt.setString(3, user.getCountry());

               stmt.setString(4, String.join(",", user.getLanguagesKnown()));

               stmt.setString(5, user.getGender());

               stmt.executeUpdate();

               try (ResultSet rs = stmt.getGeneratedKeys()) {

                   if (rs.next()) {

                       registrationId = rs.getInt(1);

                   }

               }

           }

       } catch (ClassNotFoundException e) {

           throw new BusinessException("JDBC Driver not found: " + e.getMessage());

       } catch (SQLException e) {

           throw new BusinessException("Database Error: " + e.getMessage());

       }

       return registrationId;

   }

}

**USER.JAVA**

package Model;

public class User {

private String firstName;

private String lastName;

private String country;

private String[] languagesKnown;

private String gender;

private String registrationId;

public User(String firstName, String lastName, String country, String[] languagesKnown, String gender) {

this.firstName = firstName;

this.lastName = lastName;

this.country = country;

this.languagesKnown = languagesKnown;

this.gender = gender;

}

public String getFirstName() { return firstName; }

public String getLastName() { return lastName; }

public String getCountry() { return country; }

public String[] getLanguagesKnown() { return languagesKnown; }

public String getGender() { return gender; }

public String getRegistrationId() { return registrationId; }

public void setRegistrationId(String registrationId) {

this.registrationId = registrationId;

}

}

ERROR.JSP

<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

<head>

<title>Error</title>

<style>

.error { color: red; }

</style>

</head>

<body>

<!-- <p class="error">Invalid Input. Please fill all the fields correctly.</p> -->

<h2 style="color: red;">Error: <%= request.getAttribute("errorMessage") %></h2>

<a href="registration.jsp">Go back</a>

</body>

</html>

REGISTRATION.JSP

<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

<head>

<title>User Registration</title>

<style>

.error { color: red; }

</style>

</head>

<body>

<form action="RegistrationServlet" method="post">

<label>First Name:</label>

<input type="text" name="firstName"><br>

<label>Last Name:</label>

<input type="text" name="lastName"><br>

<label>Country:</label>

<select name="country">

<option value="">Select</option>

<option value="India">India</option>

<option value="USA">USA</option>

</select><br>

<label>Languages Known:</label>

<input type="checkbox" name="languagesKnown" value="telugu"> Telugu

<input type="checkbox" name="languagesKnown" value="hindi"> Hindi

<input type="checkbox" name="languagesKnown" value="english"> English

<input type="checkbox" name="languagesKnown" value="kannada"> Kannada<br>

<label>Gender:</label>

<input type="radio" name="gender" value="Male"> Male

<input type="radio" name="gender" value="Female"> Female<br>

<input type="submit" value="Register">

<input type="reset" value="Reset">

</form>

<p id="errorMsg" style="color: red;">

<%= request.getAttribute("errorMessage") != null ? request.getAttribute("errorMessage") : "" %>

</p>

</body>

</html>

SUCCESSPAGE.JSP

<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

<head>

<title>Registration Successfull</title>

</head>

<body>

<h1>Registration Successfull!</h1>

<%-- <p>Your Registration ID is: ${registrationId}</p> --%>

<p>Your Registration ID is: <%= request.getAttribute("registrationId") %></p>

</body>

</html>