**Online Quiz Portal Source Code**

**JSP code**

**index.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Online Quiz Portal</title>

<style>

body {

text-align: *center*;

}

h1 {

margin-top: *50px*;

}

h3 {

margin-top: *30px*;

}

ul {

list-style-type: *none*;

padding: *0*;

}

ul li {

display: *inline-block*;

margin: *10px*;

}

ul li a {

text-decoration: *none*;

}

</style>

</head>

<body>

<h1>Online Quiz Portal</h1>

<h3><a href=*"userregister.jsp"*>User Registration</a></h3>

<h3><a href=*"userlogin.jsp"*>User Login</a></h3>

<h3><a href=*"adminlogin.jsp"*>Admin Login</a></h3>

</body>

</html>

**userregistration.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Registration Page</title>

<style>

body {

display: *flex*;

justify-content: *center*;

align-items: *center*;

height: *100vh*;

}

h1 {

margin-top: *50px*;

}

h2 {

text-align: *center*;

}

form {

text-align: *center*;

}

table {

width: *80%*;

}

input[type="text"],

input[type="email"],

input[type="password"],

input[type="date"] {

width: *100%*;

padding: *10px*;

margin-bottom: *10px*;

}

</style>

</head>

<body>

<div align=*"center"*>

<h1>Online Quiz Portal</h1>

<h2>Registration Page</h2>

<form action=*"registerServlet"* method=*"POST"*>

<table>

<tr>

<td><input type=*"text"* name=*"name"* placeholder=*"Name"*></td>

</tr>

<tr>

<td><input type=*"email"* name=*"email"* placeholder=*"Email"*></td>

</tr>

<tr>

<td><input type=*"password"* name=*"password"* placeholder=*"Password"*></td>

</tr>

<tr>

<td><input type=*"date"* name=*"dob"* placeholder=*"Date of Birth"*></td>

</tr>

</table>

<br>

<input type=*"submit"* value=*"Register"*> <br><br> <h3><a href=*"index.jsp"*>Main</a></h3>

</form>

</div>

</body>

</html>

**userlogin.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Insert title here</title>

<style>

body {

display: *flex*;

justify-content: *center*;

align-items: *center*;

height: *100vh*;

}

h2 {

text-align: *center*;

}

form {

text-align: *center*;

}

input[type="email"],

input[type="password"] {

width: *100%*;

padding: *10px*;

margin-bottom: *10px*;

}

</style>

</head>

<body>

<div align=*"center"*>

<h1>Online Quiz Portal</h1>

<h2>User Login</h2>

<form action=*"userloginServlet"* method=*"post"*>

Email: <input type=*"email"* name=*"email"*><br>

Password: <input type=*"password"* name=*"password"*><br>

<br>

<input type=*"submit"* value=*"Login"*>

</form> <br>

<h3><a href=*"index.jsp"* class=*"button"*>Main</a></h3>

</div>

</body>

</html>

**adminlogin.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Insert title here</title>

<style>

body {

display: *flex*;

justify-content: *center*;

align-items: *center*;

height: *100vh*;

}

h1 {

text-align: *center*;

}

form {

text-align: *center*;

}

input[type="email"],

input[type="password"] {

width: *100%*;

padding: *10px*;

margin-bottom: *10px*;

}

</style>

</head>

<body>

<div align=*"center"*>

<h1>Admin Login</h1>

<form action=*"adminLoginServlet"* method=*"post"*>

Email: <input type=*"email"* name=*"email"*><br>

Password: <input type=*"password"* name=*"password"*><br>

<br>

<input type=*"submit"* value=*"Login"*>

</form> <br>

<h3><a href=*"index.jsp"* class=*"button"*>Main</a></h3>

</div>

</body>

</html>

**admindashboardpage.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"*%><%@ include file=*"header.jsp"* %>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Insert title here</title>

</head>

<body>

<h1>Welcome, Admin!</h1>

<h3><a href=*"addquestion.jsp"*>Add Questions to quiz</a></h3>

<h3><a href=*"viewuser.jsp"*>View User List </a></h3>

<br>

<br>

</body>

</html>

**userdashboardpage.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"*%>

<%@ include file=*"header.jsp"* %>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Dashboard</title>

<style>

*.container* {

max-width: *800px*;

margin: *0 auto*;

padding: *20px*;

}

h2 {

text-align: *center*;

}

h1{

text-align: *center*;

}

*.welcome-message* {

text-align: *center*;

margin-bottom: *20px*;

}

*.action-link* {

display: *block*;

margin: *0 auto 10px*;

text-align: *center*;

}

*.logout-form* {

text-align: *center*;

}

</style>

</head>

<body>

<div class=*"container"*>

<h1>Online Quiz Portal</h1>

<h2>Welcome to the User Dashboard</h2>

<p class=*"welcome-message"*>Welcome, <%= session.getAttribute("name") %>!</p>

<button class=*"action-link"* onclick="window.location.href='sqlTestServlet'">Take SQL Test</button>

</div>

</body>

</html>

**addquestion.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<%@ include file=*"header.jsp"* %>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Insert title here</title>

<style>

table {

width: *100%*;

border-collapse: *collapse*;

}

th, td {

border: *1px solid black*;

padding: *8px*;

text-align: *left*;

}

tr*:nth-child*(*even*) {

background-color: *#f2f2f2*;

}

</style>

</head>

<body>

<h1>Add Questions to Quiz</h1>

<h2>Subjects:</h2>

<table>

<thead>

<tr>

<th>Subject</th>

<th>Add Question</th>

<th>View Question</th>

</tr>

</thead>

<tbody>

<tr>

<td>SQL</td>

<td><a href=*"addquestionsql.jsp"*>Add SQL Question</a></td>

<td><a href=*"viewsqllist.jsp"*>View SQL Questions</a></td>

</tr>

</tbody>

</table>

</body>

</html>

**addquestionsql.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"*%>

<%@ include file=*"header.jsp"* %>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Insert title here</title>

</head>

<body>

<h1>Add SQL Questions</h1>

<form action=*"addsqlquestion"* method=*"post"*>

<label>Question:</label>

<input type=*"text"* name=*"question"*>

<br>

<br>

<label>Option 1:</label>

<input type=*"text"* name=*"option1"*>

<br>

<br>

<label>Option 2:</label>

<input type=*"text"* name=*"option2"*>

<br>

<br>

<label>Option 3:</label>

<input type=*"text"* name=*"option3"*>

<br>

<br>

<label>Option 4:</label>

<input type=*"text"* name=*"option4"*>

<br>

<br>

<label>Correct Option:</label>

<input type=*"text"* name=*"correctOption"*>

<br>

<br>

<input type=*"submit"* value=*"Add Question"*>

</form>

</body>

</html>

**editsqlquestion.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"*%><%@ include file=*"header.jsp"* %>

<%@ page import=*"com.questions.SQLQuestion"* %>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Insert title here</title>

</head>

<body>

<h1>Edit SQL Question</h1>

<form action=*"editsqlquestion"* method=*"post"*>

<input type=*"hidden"* name=*"id"* value=*"*<%= ((SQLQuestion) request.getAttribute("question")).getId() %>*"*>

<label>Question:</label>

<input type=*"text"* name=*"question"* value=*"*<%= ((SQLQuestion) request.getAttribute("question")).getQuestion() %>*"*>

<br>

<label>Option 1:</label>

<input type=*"text"* name=*"option1"* value=*"*<%= ((SQLQuestion) request.getAttribute("question")).getOption1() %>*"*>

<br>

<label>Option 2:</label>

<input type=*"text"* name=*"option2"* value=*"*<%= ((SQLQuestion) request.getAttribute("question")).getOption2() %>*"*>

<br>

<label>Option 3:</label>

<input type=*"text"* name=*"option3"* value=*"*<%= ((SQLQuestion) request.getAttribute("question")).getOption3() %>*"*>

<br>

<label>Option 4:</label>

<input type=*"text"* name=*"option4"* value=*"*<%= ((SQLQuestion) request.getAttribute("question")).getOption4() %>*"*>

<br>

<label>Correct Option:</label>

<input type=*"number"* name=*"correctOption"* value=*"*<%= ((SQLQuestion) request.getAttribute("question")).getCorrectOption() %>*"*>

<br>

<input type=*"submit"* value=*"Update"*>

</form>

<a href=*"viewsqllist.jsp"*>Back to List</a>

</body>

</html>

**edituser.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"*%><%@ include file=*"header.jsp"* %><%@ include file=*"header.jsp"* %>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Insert title here</title>

</head>

<body>

<h1>Edit User</h1>

<form action=*"updateuser"* method=*"post"*>

<input type=*"hidden"* name=*"userId"* value=*"*${user.id}*"*>

<label>Name: </label>

<input type=*"text"* name=*"name"* value=*"*${user.name}*"*>

<br>

<label>Email: </label>

<input type=*"email"* name=*"email"* value=*"*${user.email}*"*>

<br>

<input type=*"submit"* value=*"Update"*>

</form>

</body>

</html>

**error.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Insert title here</title>

</head>

<body>

<h1>Something error happen!</h1>

</body>

</html>

**header.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Insert title here</title>

</head>

<body>

<a href=*"logoutServlet"*>Logout</a>

<hr>

</body>

</html>

**loggedout.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Logged Out</title>

</head>

<body>

<h1>Logged Out</h1>

<b>Your session has terminated.</b><br>

<a href=*"index.jsp"*>Login again</a>

</body>

</html>

**sqlTest.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"* %>

<%@ page import=*"com.questions.SQLQuestion"* %><%@ include file=*"header.jsp"* %>

<%@ page import=*"com.questions.SQLQuestionDAO"* %>

<%@ page import=*"java.util.List"* %>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>SQL Test</title>

</head>

<body>

<h1 >Online Quiz Portal</h1>

<h3>SQL Test</h3>

<form action=*"submitAnswerServlet"* method=*"post"*>

<%

List<SQLQuestion> questionList = SQLQuestionDAO.getAllSQLQuestions();

if (questionList != null) {

for (SQLQuestion question : questionList) { %>

<h3><%= question.getQuestion() %></h3>

<input type=*"hidden"* name=*"questionId"* value=*"*<%= question.getId() %>*"*>

<input type=*"radio"* name=*"answer*<%= question.getId() %>*"* value=*"1"*> <%= question.getOption1() %><br>

<input type=*"radio"* name=*"answer*<%= question.getId() %>*"* value=*"2"*> <%= question.getOption2() %><br>

<input type=*"radio"* name=*"answer*<%= question.getId() %>*"* value=*"3"*> <%= question.getOption3() %><br>

<input type=*"radio"* name=*"answer*<%= question.getId() %>*"* value=*"4"*> <%= question.getOption4() %><br>

<hr>

<% } } %>

<input type=*"submit"* value=*"Submit"*>

</form>

<br>

<br>

<form action=*"userdashboard.jsp"* method=*"get"*>

<input type=*"submit"* value=*"Back to Dashboard"*>

</form>

</body>

</html>

**sqlTestResult.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"* %>

<!DOCTYPE html><%@ include file=*"header.jsp"* %>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>SQL Test Result</title>

</head>

<body>

<h1>SQL Test Result</h1>

<p>Your score: <%= request.getAttribute("score") %></p>

<a href=*"userdashboard.jsp"*>Back to Dashboard</a>

</body>

</html>

**userquizdetails.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"*%><%@ include file=*"header.jsp"* %>

<%@ page import=*"com.user.User"* %>

<%@ page import=*"com.user.UserDAO"* %>

<%@ page import=*"java.util.List"* %>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Insert title here</title>

</head>

<body>

<h1>Admin Dashboard</h1>

<table>

<tr>

<th>User ID</th>

<th>Name</th>

<th>Email</th>

<th>Score</th>

</tr>

<%

UserDAO userDAO = new UserDAO();

List<User> userList = userDAO.getAllUsers();

if (userList != null) {

for (User user : userList) { %>

<tr>

<td><%= user.getId() %></td>

<td><%= user.getName() %></td>

<td><%= user.getEmail() %></td>

<td><%= request.getAttribute("score") %></td>

</tr>

<% } } %>

</table>

</body>

</html>

**viewsqllist.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"* %>

<%@ page import=*"com.questions.SQLQuestion"* %><%@ include file=*"header.jsp"* %>

<%@ page import=*"com.questions.SQLQuestionDAO"* %>

<%@ page import=*"java.util.List"* %>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>View SQL Questions</title>

<style>

table {

width: *100%*;

border-collapse: *collapse*;

}

th, td {

border: *1px solid black*;

padding: *8px*;

text-align: *left*;

}

tr*:nth-child*(*even*) {

background-color: *#f2f2f2*;

}

</style>

</head>

<body>

<h1>View SQL Questions</h1>

<table>

<thead>

<tr>

<th>ID</th>

<th>Question</th>

<th>Options</th>

<th>Correct Option</th>

<th>Action</th>

</tr>

</thead>

<tbody>

<%

SQLQuestionDAO sqlQuestionDAO = new SQLQuestionDAO();

List<SQLQuestion> questionList = sqlQuestionDAO.getAllSQLQuestions();

for (SQLQuestion question : questionList) { %>

<tr>

<td><%= question.getId() %></td>

<td><%= question.getQuestion() %></td>

<td><%= question.getOption1() %>, <%= question.getOption2() %>, <%= question.getOption3() %>, <%= question.getOption4() %></td>

<td><%= question.getCorrectOption() %></td>

<td>

<a href=*"editsqlquestion?id=*<%= question.getId() %>*"*>Edit</a>

<a href=*"deletesqlquestion?id=*<%= question.getId() %>*"*>Delete</a>

</td>

</tr>

<% } %>

</tbody>

</table>

<br> <br>

<a href=*"admindashboardpage.jsp"*>Go Back Admin Dashboard</a>

</body>

</html>

**viewuser.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"*%>

<%@ page import=*"com.user.User"*%>

<%@ page import=*"com.user.UserDAO"*%>

<%@ page import=*"java.util.List"*%><%@ include file=*"header.jsp"* %>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>User List</title>

<style>

table {

width: *100%*;

border: *1px solid black*;

}

th, td {

border: *1px solid black*;

padding: *8px*;

text-align: *left*;

}

tr*:nth-child*(*even*) {

background-color: *#f2f2f2*;

}

tr*:hover* {

background-color: *#e6e6e6*;

}

</style>

</head>

<body>

<h1>User List</h1>

<table>

<thead>

<tr>

<th>ID</th>

<th>Name</th>

<th>Email</th>

<th>Date of Birth</th>

<th>Action</th>

</tr>

</thead>

<tbody>

<%

UserDAO userDAO = new UserDAO();

List<User> userList = userDAO.getAllUsers();

for (User user : userList) { %>

<tr>

<td><%= user.getId() %></td>

<td><%= user.getName() %></td>

<td><%= user.getEmail() %></td>

<td><%= user.getDob() %></td>

<td>

<a href=*"edituser?userId=*<%= user.getId() %>*"*>Edit</a>

<a href=*"deleteuser?userId=*<%= user.getId() %>*"*>Delete</a>

</td>

</tr>

<% } %>

</tbody>

</table>

<br> <br>

<a href=*"admindashboardpage.jsp"*>Go Back to Admin Dashboard</a>

</body>

</html>

**Java Code**

**Package Name : com.question**

**AddSQLQuestionServlet.java**

package com.questions;

import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import org.hibernate.Session;

import org.hibernate.Transaction;

import com.user.HibernateUtil;

@WebServlet("/addsqlquestion")

public class AddSQLQuestionServlet extends HttpServlet {

private static final long serialVersionUID = 1L;

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

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

String option1 = request.getParameter("option1");

String option2 = request.getParameter("option2");

String option3 = request.getParameter("option3");

String option4 = request.getParameter("option4");

int correctOption = Integer.parseInt(request.getParameter("correctOption"));

// Create a new SQLQuestion object and set the values

SQLQuestion sqlQuestion = new SQLQuestion();

sqlQuestion.setQuestion(question);

sqlQuestion.setOption1(option1);

sqlQuestion.setOption2(option2);

sqlQuestion.setOption3(option3);

sqlQuestion.setOption4(option4);

sqlQuestion.setCorrectOption(correctOption);

// Save the SQLQuestion object to the database using Hibernate

Session session = HibernateUtil.getSessionFactory().openSession();

Transaction transaction = session.beginTransaction();

session.save(sqlQuestion);

try {

transaction.commit();

} catch (Exception e) {

if (transaction != null) {

transaction.rollback();

}

e.printStackTrace();

} finally {

session.close();

}

response.sendRedirect("addquestion.jsp");

}

}

**DeleteSQLQuestionServlet.java**

package com.questions;

import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/deletesqlquestion")

public class DeleteSQLQuestionServlet extends HttpServlet {

private static final long serialVersionUID = 1L;

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

// Retrieve the question ID from the request parameter

Long questionId = Long.parseLong(request.getParameter("id"));

// Delete the SQL question from the database

SQLQuestionDAO.deleteSQLQuestion(questionId);

// Redirect back to the view page

response.sendRedirect(request.getContextPath() + "/viewsqllist");

}

}

**EditSQLQuestionServlet.java**

package com.questions;

import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/editsqlquestion")

public class EditSQLQuestionServlet extends HttpServlet {

private static final long serialVersionUID = 1L;

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

// Retrieve the question ID from the request parameter

Long questionId = Long.parseLong(request.getParameter("id"));

// Retrieve the SQL question from the database

SQLQuestion sqlQuestion = SQLQuestionDAO.getSQLQuestionById(questionId);

// Forward the question object to the JSP page for editing

request.setAttribute("question", sqlQuestion);

request.getRequestDispatcher("editsqlquestion.jsp").forward(request, response);

}

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// Retrieve the question ID from the request parameter

Long questionId = Long.parseLong(request.getParameter("id"));

// Retrieve the SQL question from the database

SQLQuestion sqlQuestion = SQLQuestionDAO.getSQLQuestionById(questionId);

// Update the SQL question with the form data

sqlQuestion.setQuestion(request.getParameter("question"));

sqlQuestion.setOption1(request.getParameter("option1"));

sqlQuestion.setOption2(request.getParameter("option2"));

sqlQuestion.setOption3(request.getParameter("option3"));

sqlQuestion.setOption4(request.getParameter("option4"));

sqlQuestion.setCorrectOption(Integer.parseInt(request.getParameter("correctOption")));

// Update the SQL question in the database

SQLQuestionDAO.updateSQLQuestion(sqlQuestion);

// Redirect to the SQL question list page

response.sendRedirect("viewsqllist.jsp");

}

}

**SQLQuestion.java**

package com.questions;

import java.util.List;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue;

import javax.persistence.GenerationType;

import javax.persistence.Id;

import javax.persistence.Table;

import javax.persistence.criteria.CriteriaBuilder;

import javax.persistence.criteria.CriteriaQuery;

import javax.persistence.criteria.Root;

import javax.transaction.HeuristicMixedException;

import javax.transaction.HeuristicRollbackException;

import javax.transaction.RollbackException;

import javax.transaction.SystemException;

import javax.transaction.Transaction;

import org.hibernate.Session;

import com.user.HibernateUtil;

@Entity

@Table(name = "sql\_question")

public class SQLQuestion {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY)

private Long id;

private String question;

private String option1;

private String option2;

private String option3;

private String option4;

private int correctOption;

public Long getId() {

return id;

}

public void setId(Long id) {

this.id = id;

}

public String getQuestion() {

return question;

}

public void setQuestion(String question) {

this.question = question;

}

public String getOption1() {

return option1;

}

public void setOption1(String option1) {

this.option1 = option1;

}

public String getOption2() {

return option2;

}

public void setOption2(String option2) {

this.option2 = option2;

}

public String getOption3() {

return option3;

}

public void setOption3(String option3) {

this.option3 = option3;

}

public String getOption4() {

return option4;

}

public void setOption4(String option4) {

this.option4 = option4;

}

public int getCorrectOption() {

return correctOption;

}

public void setCorrectOption(int correctOption) {

this.correctOption = correctOption;

}

public String formatOptions() {

return option1 + ", " + option2 + ", " + option3 + ", " + option4;

}

}

**SQLQuestionDAO.java**

package com.questions;

import java.util.List;

import javax.persistence.criteria.CriteriaBuilder;

import javax.persistence.criteria.CriteriaQuery;

import javax.persistence.criteria.Root;

import org.hibernate.Session;

import org.hibernate.Transaction;

import com.user.HibernateUtil;

public class SQLQuestionDAO {

public static List<SQLQuestion> getAllSQLQuestions() {

try (Session session = HibernateUtil.getSessionFactory().openSession()) {

CriteriaBuilder builder = session.getCriteriaBuilder();

CriteriaQuery<SQLQuestion> query = builder.createQuery(SQLQuestion.class);

Root<SQLQuestion> root = query.from(SQLQuestion.class);

query.select(root);

return session.createQuery(query).getResultList();

}

}

public static String formatOptions(SQLQuestion question) {

String options = question.getOption1() + ", " + question.getOption2() + ", " + question.getOption3() + ", "

+ question.getOption4();

return options;

}

public static SQLQuestion getSQLQuestionById(Long questionId) {

try (Session session = HibernateUtil.getSessionFactory().openSession()) {

return session.get(SQLQuestion.class, questionId);

}

// Implement other methods for CRUD operations

// ...

}

public static void deleteSQLQuestion(Long questionId) {

try (Session session = HibernateUtil.getSessionFactory().openSession()) {

Transaction transaction = session.beginTransaction();

SQLQuestion question = session.get(SQLQuestion.class, questionId);

if (question != null) {

session.delete(question);

}

transaction.commit();

}

}

public static void updateSQLQuestion(SQLQuestion sqlQuestion) {

try (Session session = HibernateUtil.getSessionFactory().openSession()) {

Transaction transaction = session.beginTransaction();

session.update(sqlQuestion);

transaction.commit();

}

}

}

**SQLTestServlet.java**

package com.questions;

import java.io.IOException;

import java.util.List;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/sqlTestServlet")

public class SQLTestServlet extends HttpServlet {

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

List<SQLQuestion> sqlQuestions = SQLQuestionDAO.getAllSQLQuestions();

request.setAttribute("sqlQuestions", sqlQuestions);

request.getRequestDispatcher("sqlTest.jsp").forward(request, response);

}

}

**SubmitAnswerServlet.java**

package com.questions;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import java.io.IOException;

import java.util.HashMap;

import java.util.List;

import java.util.Map;

@WebServlet("/submitAnswerServlet")

public class SubmitAnswerServlet extends HttpServlet {

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

Map<Long, Integer> userAnswers = new HashMap<>();

// Get the submitted answers from the request parameters

List<SQLQuestion> questionList = SQLQuestionDAO.getAllSQLQuestions();

for (SQLQuestion question : questionList) {

Long questionId = question.getId();

int selectedOption = Integer.parseInt(request.getParameter("answer" + questionId));

userAnswers.put(questionId, selectedOption);

}

// Calculate the score

int score = calculateScore(userAnswers, questionList);

// Set the score as a request attribute and forward to a result page

request.setAttribute("score", score);

request.getRequestDispatcher("/sqlTestResult.jsp").forward(request, response);

}

private int calculateScore(Map<Long, Integer> userAnswers, List<SQLQuestion> questionList) {

int score = 0;

for (SQLQuestion question : questionList) {

Long questionId = question.getId();

int selectedOption = userAnswers.getOrDefault(questionId, -1);

int correctOption = question.getCorrectOption();

if (selectedOption == correctOption) {

score++; // Increment score for each correct answer

}

}

return score;

}

}

**ViewSQLQuestionServlet.java**

package com.questions;

import java.io.IOException;

import java.util.List;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/viewsqllist")

public class ViewSQLQuestionServlet extends HttpServlet {

private static final long serialVersionUID = 1L;

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

// Retrieve the list of SQL questions from the database

List<SQLQuestion> questionList = SQLQuestionDAO.getAllSQLQuestions();

// Forward the list to the JSP page for rendering

request.setAttribute("questionList", questionList);

request.getRequestDispatcher("viewsqllist.jsp").forward(request, response);

}

}

**Package Name : com.user**

**Admin.java**

package com.user;

import javax.persistence.\*;

@Entity

@Table(name = "admin")

public class Admin {

@Id

@GeneratedValue(strategy = GenerationType.*IDENTITY*)

@Column(name = "id")

private int id;

@Column(name = "email")

private String email;

@Column(name = "password")

private String password;

public int getId() {

return id;

}

public void setId(int id) {

this.id = id;

}

public String getEmail() {

return email;

}

public void setEmail(String email) {

this.email = email;

}

public String getPassword() {

return password;

}

public void setPassword(String password) {

this.password = password;

}

}

**AdminDAO.java**

package com.user;

import org.hibernate.Session;

import org.hibernate.SessionFactory;

import org.hibernate.query.Query;

public class AdminDAO {

private SessionFactory sessionFactory;

public AdminDAO() {

sessionFactory = HibernateUtil.getSessionFactory();

}

public Admin validateAdmin(String email, String password) {

try (Session session = sessionFactory.openSession()) {

Query<Admin> query = session.createQuery("FROM Admin WHERE email = :email AND password = :password", Admin.class);

query.setParameter("email", email);

query.setParameter("password", password);

return query.uniqueResult();

} catch (Exception e) {

e.printStackTrace();

}

return null;

}

}

**AdminLoginServlet.java**

package com.user;

import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/adminLoginServlet")

public class AdminLoginServlet extends HttpServlet {

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

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

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

AdminDAO adminDAO = new AdminDAO();

Admin admin = adminDAO.validateAdmin(email, password);

if (admin != null) {

request.getSession().setAttribute("adminAuthenticated", true);

response.sendRedirect("admindashboardpage.jsp");

} else {

// Invalid admin credentials, display an error message or redirect to login page

response.sendRedirect("adminlogin.jsp?error=invalidAdminCredentials");

}

}

}

**DeleteUserServlet.java**

package com.user;

import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/deleteuser")

public class DeleteUserServlet extends HttpServlet {

/\*\*

\*

\*/

private static final long serialVersionUID = 1L;

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

Long userId = Long.parseLong(request.getParameter("userId"));

UserDAO userDAO = new UserDAO();

userDAO.deleteUser(userId);

response.sendRedirect("viewuser.jsp");

}

}

**EditUserServlet.java**

package com.user;

import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/edituser")

public class EditUserServlet extends HttpServlet {

/\*\*

\*

\*/

private static final long serialVersionUID = 1L;

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

Long userId = Long.parseLong(request.getParameter("userId"));

UserDAO userDAO = new UserDAO();

User user = userDAO.getUserById(userId); // to to userdao class call the method

request.setAttribute("user", user);

request.getRequestDispatcher("edituser.jsp").forward(request, response);

}

}

**HibernateUtil.java**

package com.user;

import org.hibernate.SessionFactory;

import org.hibernate.cfg.Configuration;

public class HibernateUtil {

private static final SessionFactory sessionFactory = buildSessionFactory();

private static SessionFactory buildSessionFactory() {

try {

// Create the SessionFactory from hibernate.cfg.xml

Configuration configuration = new Configuration();

configuration.configure("hibernate.cfg.xml");

return configuration.buildSessionFactory();

} catch (Throwable ex) {

// Handle any initial SessionFactory creation errors

System.err.println("Initial SessionFactory creation failed: " + ex);

throw new ExceptionInInitializerError(ex);

}

}

public static SessionFactory getSessionFactory() {

return sessionFactory;

}

public static void shutdown() {

// Close caches and connection pools

getSessionFactory().close();

}

}

**LogoutServlet.java**

package com.user;

import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import javax.servlet.http.HttpSession;

@WebServlet("/logoutServlet")

public class LogoutServlet extends HttpServlet {

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

HttpSession session = request.getSession();

session.invalidate();

response.sendRedirect("loggedout.jsp");

}

}

**RegisterServlet.java**

package com.user;

import java.io.IOException;

import java.sql.Date;

import java.text.ParseException;

import java.text.SimpleDateFormat;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/registerServlet")

public class RegisterServlet extends HttpServlet {

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

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

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

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

SimpleDateFormat dateFormat = new SimpleDateFormat("yyyy-MM-dd");

Date dob = null;

try {

dob = new Date(dateFormat.parse(request.getParameter("dob")).getTime());

} catch (ParseException e) {

e.printStackTrace();

}

User user = new User();

user.setName(name);

user.setEmail(email);

user.setPassword(password);

user.setDob(dob);

UserDAO userDAO = new UserDAO();

userDAO.registerUser(user);

response.sendRedirect("userdashboard.jsp");

}

}

**UpdateUserServlet.java**

package com.user;

import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/updateuser")

public class UpdateUserServlet extends HttpServlet {

/\*\*

\*

\*/

private static final long serialVersionUID = 1L;

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

String userIdParam = request.getParameter("userId");

if (userIdParam != null && !userIdParam.isEmpty()) {

try {

Long userId = Long.parseLong(userIdParam);

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

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

UserDAO userDAO = new UserDAO();

User user = userDAO.getUserById(userId);

if (user != null) {

user.setName(name);

user.setEmail(email);

userDAO.updateUser(user);

response.sendRedirect("viewuser.jsp");

return;

}

} catch (NumberFormatException e) {

// Handle parsing error

}

}

// Handle invalid userId or other errors

response.sendRedirect("error.jsp");

}

}

**User.java**

package com.user;

import java.sql.Date;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue;

import javax.persistence.GenerationType;

import javax.persistence.Id;

import javax.persistence.Table;

@Entity

@Table(name = "users")

public class User {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY)

private Long id;

private String name;

private String email;

private String password;

private Date dob;

public Long getId() {

return id;

}

public void setId(Long id) {

this.id = id;

}

public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public String getEmail() {

return email;

}

public void setEmail(String email) {

this.email = email;

}

public String getPassword() {

return password;

}

public void setPassword(String password) {

this.password = password;

}

public Date getDob() {

return dob;

}

public void setDob(Date dob) {

this.dob = dob;

}

}

**UserDAO.java**

package com.user;

import java.util.List;

import org.hibernate.Session;

import org.hibernate.Transaction;

import org.hibernate.query.Query;

public class UserDAO {

public void registerUser(User user) {

Session session = HibernateUtil.getSessionFactory().openSession();

Transaction transaction = session.beginTransaction();

session.save(user);

transaction.commit();

session.close();

}

public User validateUser(String email, String password) {

Session session = HibernateUtil.getSessionFactory().openSession();

Query<User> query = session.createQuery("FROM User WHERE email = :email AND password = :password", User.class);

query.setParameter("email", email);

query.setParameter("password", password);

User user = query.uniqueResult();

session.close();

return user;

}

// -------------------------------- show the list of user -------------------

public List<User> getAllUsers() {

Session session = HibernateUtil.getSessionFactory().openSession();

Query<User> query = session.createQuery("FROM User", User.class);

List<User> userList = query.list();

session.close();

return userList;

}

// -------------------------------- show the list of user -------------------

public User getUserById(Long userId) {

Session session = HibernateUtil.getSessionFactory().openSession();

User user = session.get(User.class, userId);

session.close();

return user;

}

// -------------------------------- Update the list of user -------------------

public void updateUser(User user) {

Session session = HibernateUtil.getSessionFactory().openSession();

Transaction transaction = session.beginTransaction();

session.update(user);

transaction.commit();

session.close();

}

// -------------------------------- Delete the list of user -------------------

public void deleteUser(Long userId) {

Session session = HibernateUtil.getSessionFactory().openSession();

Transaction transaction = session.beginTransaction();

User user = session.get(User.class, userId);

if (user != null) {

session.delete(user);

}

transaction.commit();

session.close();

}

}

**UserLoginServlet.java**

package com.user;

import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import javax.servlet.http.HttpSession;

@WebServlet("/userloginServlet")

public class UserLoginServlet extends HttpServlet {

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

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

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

UserDAO userDAO = new UserDAO();

User user = userDAO.validateUser(email, password);

if (user != null) {

HttpSession session = request.getSession();

session.setAttribute("name", user.getName());

response.sendRedirect("userdashboard.jsp");

} else {

request.setAttribute("error", "Invalid email or password");

request.getRequestDispatcher("userlogin.jsp").forward(request, response);

}

}

}

**hibernate.cfg.xml**

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<!DOCTYPE hibernate-configuration PUBLIC

"-//Hibernate/Hibernate Configuration DTD 3.0//EN"

"http://www.hibernate.org/dtd/hibernate-configuration-3.0.dtd">

<hibernate-configuration>

<session-factory>

<property name=*"hibernate.connection.driver\_class"*>com.mysql.jdbc.Driver</property>

<property name=*"hibernate.connection.password"*>root</property>

<property name=*"hibernate.connection.url"*>jdbc:mysql://localhost:3306/Register</property>

<property name=*"hibernate.connection.username"*>root</property>

<property name=*"hibernate.dialect"*>org.hibernate.dialect.MySQLDialect</property>

<mapping class=*"com.user.User"*/>

<mapping class=*"com.user.Admin"*/>

<mapping class=*"com.questions.SQLQuestion"* />

</session-factory>

</hibernate-configuration>

**MYSQL Query**

create database Register;

USE register;

CREATE TABLE users (

id INT AUTO\_INCREMENT PRIMARY KEY,

name VARCHAR(255),

email VARCHAR(255),

password VARCHAR(255),

dob DATE

);

select \*from users;

CREATE TABLE admin (

id INT AUTO\_INCREMENT PRIMARY KEY,

email VARCHAR(255) NOT NULL,

password VARCHAR(255) NOT NULL

);

INSERT INTO admin (email, password)

VALUES ('admin@gmail.com', 'admin');

CREATE TABLE sql\_question (

id INT PRIMARY KEY AUTO\_INCREMENT,

question VARCHAR(255),

option1 VARCHAR(255),

option2 VARCHAR(255),

option3 VARCHAR(255),

option4 VARCHAR(255),

correctOption VARCHAR(255)

);