

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>

```

```
        </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>
            <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;
        }

    </style>
</head>
<body>
    <div class="container">
        <h2>Dashboard</h2>
        <h1>Welcome</h1>
        <div class="welcome-message">
            <p>Welcome to the dashboard</p>
        </div>
    </div>
</body>
</html>
```

```

        .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>

```

```
 <%= 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>

```

```
 <%= question.getId() %></td>  <%= question.getQuestion() %></td>  <%= question.getOption1() %>, <%= question.getOption2() %>, <%= question.getOption3() %>, <%= question.getOption4() %></td>  <%= question.getCorrectOption() %></td>  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("/editssqlquestion")
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("editssqlquestion.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("correct
Option")));

        // 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</prope
rty>
        <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)
);
```