**INTERNATIONAL UNIVERSITY**

VIETNAM NATIONAL UNIVERSITY HCMC

**School of Computer Science & Engineer**

**Report Lab 5**

Course: WEB APPLICATION DEVELOPMENT

Lab Instructor: Assoc. Prof.Nguyen Van Sinh

Lecturer. Tran Khai Minh

Group: ITIT22IU01

Name: Chau Thanh Phat

ID: ITITIU21135

**Lab 5: Database (MySQL), JSP**

**My project demonstration:** Attached video in zip file or click this [link](https://www.youtube.com/watch?v=pqGAzyq97MU)

**I.Overview:**

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1. **Project Structure:**

The project is divided into 3 parts: JSP folder, DataAccessPackage and DataProcessingPackage.

* JSP folder: All the JSP file is stored in this folder. The “index.jsp” will be shown up when the project is executed.
* DataAccessPackage: This folder stores an important java class which makes connection between jsp and database.
* DataProcessingPackage: This folder stores particular java classes for executing SQL syntax. It will contain all the necessary SQL commands which are appropriate for each functions.

1. **Necessary Library:**

* Mysql-connector-j-8.4.0
* JDK 21
* Glashfish Server

1. **Tools and Implemented Platforms:**

* MySQL 8.4.0
* NetBeans IDE 18
* GlassFish Server 7.0.3

**II. Connection between Database and JSP:**

* MySQL are successfully connected. This is the implemented database which includes 4 attributes (course, student, studentcourse and users).

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* Connection between DBMS and JSP are executed in DataAccessPackage. The class of ConnectionManager.java includes all necessary connection syntax.  
  Class.forName("com.mysql.jdbc.Driver");  
  String connectionURL = "jdbc:mysql://localhost:3306/weblab5?autoReconnect=true&useSSL=false";  
  Connection connection = DriverManager.getConnection(connectionURL, "root", "\*\*\*");  
  Statement stmt = connection.createStatement();  
  String mysql = sql;  
  result = stmt.executeQuery(mysql);
* All the SQL codes are hold in DataProcessingPackage; therefore, users need to execute connection statements through this packet. For example:  
  ResultSet students = DataProcessingPackage.StudentManager.Select();  
  while(students.next()){  
  if(students.getString("StudentID").equals(sid)){  
  session.setAttribute("user",sid);  
  response.sendRedirect("StudentsDetails.jsp");}}

**III. Implementation:**

***Index.jsp:***

* This is the first page of the web. Users are asked to provide their wanted student id. This will lead them to Student Details page which provides all related content with the student. Users also are able to access management page of Student and Course.

A close-up of a registration form

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Provided code:

<html>

<head>

<title>Course Registration</title>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

</head>

<body>

<h1>Course Registration</h1>

<%

if(request.getParameter("search")==null){

%>

<form method="post" action="index.jsp">

<table>

<tr>

<td>Student ID:</td>

<td><input type="text" name="sid"></td>

<td><input type="submit" value="search" name="search"></td>

</tr>

</table>

</form>

<%

} else {

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

if(sid.equals("")){

out.println("Input wanted student ID. <a href=\"index.jsp\"><-BACK</a>");

} else {

try{

ResultSet students = DataProcessingPackage.StudentManager.Select();

while(students.next()){

if(students.getString("StudentID").equals(sid)){

session.setAttribute("user",sid);

response.sendRedirect("StudentsDetails.jsp");

}

}

} catch(SQLException ex){

ex.printStackTrace();

}

}

}

%>

<h3>Manager:</h3>

<ul>

<li><a href="StudentManager.jsp">Student Manager</a></li>

<li><a href="CourseManager.jsp">Course Manager</a></li>

</ul>

</body>

</html>

***Student Details:***

* This page will be executed when the input of student id is provided in the first page. Users are able to observe all the relevant contents of student such as id, full name, and course information. They are also able to manage the courses of student by removing or adding courses.

A screenshot of a computer

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Provided code of StudentDetails.jsp

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

<title>Student's Details</title>

</head>

<body>

<h1>Student's Details</h1>

<%

String id=(String)session.getAttribute("user");

out.print("<p>Student ID: "+id+"</p>");

String sname="";

ResultSet students = DataProcessingPackage.StudentManager.Select(id);

while(students.next()){

sname = students.getString("StudentName");

}

out.print("<p>Student Name:" + sname+"</p>");

%>

<hr>

<h2>Select Course</h2>

<%

if(request.getParameter("add")==null){

%>

<form action="StudentsDetails.jsp" method="post">

<table>

<tr>

<td>Course:</td>

<td>

<select name="cid">

<%

ResultSet courses = DataProcessingPackage.CourseManager.Select();

while(courses.next()){

%>

<option value="<%=courses.getString("CourseID")%>"><%=courses.getString("CourseName")%></option>

<%}%>

</select>

</td>

<td>

<input type="submit" name="add" value="add">

</td>

</tr>

</table>

</form>

<%

} else {

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

DataProcessingPackage.RegistrationManager.Insert(id,cid);

response.sendRedirect("StudentsDetails.jsp");

}

%>

<h2>Register Course:</h2>

<table border="solid">

<tr>

<td>Course ID</td>

<td>Course Name</td>

<td>Action</td>

</tr>

<%

ResultSet cregist = DataProcessingPackage.RegistrationManager.SelectThree(id);

while(cregist.next()){

%>

<tr>

<td>

<%=cregist.getString("courseid")%>

</td>

<td>

<%=cregist.getString("coursename")%>

</td>

<td>

<a href="DeleteCourse.jsp?studentid=<%=id%>&courseid=<%=cregist.getString("courseid")%>">Remove</a>

</td>

</tr>

<%}%>

</table>

<hr>

<a href="index.jsp">Homepage</a>

</body>

</html>

***Student Manager:***

* This page includes all the student’s information. It also provides a management system (add, remove and update) for users.

A screenshot of a student list

Description automatically generated

Provided code of StudentManager.jsp

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

<title>Student Manager</title>

</head>

<body>

<h1>Student List</h1>

<%

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

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

String title = "You must input data";

if (request.getParameter("Add") != null) //Check if submit button is pressed

{

if (studentID.equals("") && studentName.equals(""))

{

out.print("<font color = \"red\">" + title + "</font>");

} else

{

DataProcessingPackage.StudentManager.Insert(studentID, studentName);

}

}

if (request.getParameter("delete") != null)

{

DataProcessingPackage.StudentManager.Delete(studentID);

}

ResultSet rs = DataProcessingPackage.StudentManager.Select();

%>

<table border="solid">

<tr>

<td>Student ID</td>

<td>Student Name</td>

<td>Action</td>

</tr>

<%

while(rs.next()){

%>

<tr>

<td>

<%out.println(rs.getString("StudentID"));%>

</td>

<td>

<%out.println(rs.getString("StudentName"));%>

</td>

<td>

<a href="StudentManager.jsp?delete&studentID=<%=rs.getString("studentID")%>">Delete</a>

<a href="EditStudent.jsp?studentID=<%=rs.getString("studentID")%>">Edit</a>

</td>

</tr>

<%}%>

</table>

<p><a href="NewStudent.jsp">New Student</a></p>

<hr>

<p><a href="index.jsp">homepage</a></p>

</body>

</html>

***Course Manager:***

* This page includes all the courses’ information. It also provides a management system (add, remove and update) for users.

A screenshot of a computer

Description automatically generated

Provided code of CourseManager.jsp

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

<title>Course Manager</title>

</head>

<body>

<h1>Course List</h1>

<%

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

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

String title = "You must input data";

if (request.getParameter("Add") != null) //Check if submit button is pressed

{

if (courseID.equals("") && courseName.equals(""))

{

out.print("<font color = \"red\">" + title + "</font>");

} else

{

DataProcessingPackage.CourseManager.Insert(courseID, courseName);

}

}

if (request.getParameter("delete") != null)

{

DataProcessingPackage.CourseManager.Delete(courseID);

}

ResultSet rs = DataProcessingPackage.CourseManager.Select();

%>

<table border="solid">

<tr>

<td>Course ID</td>

<td>Course Name</td>

<td>Action</td>

</tr>

<%

while(rs.next()){

%>

<tr>

<td>

<%out.println(rs.getString("CourseID"));%>

</td>

<td>

<a href="CourseDetails.jsp?courseID=<%=rs.getString("courseID")%>"><%out.println(rs.getString("CourseName"));%></a>

</td>

<td>

<a href="CourseManager.jsp?delete&courseID=<%=rs.getString("courseID")%>">Delete</a>

<a href="EditCourse.jsp?courseID=<%=rs.getString("courseID")%>">Edit</a>

</td>

</tr>

<%}%>

</table>

<p><a href="NewCourse.jsp">New Course</a></p>

<hr>

<p><a href="index.jsp">homepage</a></p>

</body>

</html>

***Course Details:***

* This page will be executed when users click on the href link of the course on Course Manager page. Users are able to observe all the relevant contents of course such as id, name, and student information. They are also able to manage the courses of student by removing student.

A screenshot of a computer

Description automatically generated

Provided code of CourseDetails.jsp

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

<title>Course's Details</title>

</head>

<body>

<h1>Course's Details</h1>

<%

String id="", name="";

ResultSet rs = DataProcessingPackage.CourseManager.Select(request.getParameter("courseID"));

if (rs.next()){

id = rs.getString("CourseID");

out.print("<p>CourseID:" + id+"</p>");

name = rs.getString("CourseName");

out.print("<p>CourseName:" + name+"</p>");

}

%>

<hr>

<%

ResultSet rs2 = DataProcessingPackage.RegistrationManager.SelectTwo(id);

%>

<table border="solid">

<tr>

<td>Student ID</td>

<td>Student Name</td>

<td>Action<td>

</tr>

<%

while(rs2.next()){

%>

<tr>

<td>

<%

out.println(rs2.getString("StudentID"));

%>

</td>

<td>

<%

out.println(rs2.getString("StudentName"));

%>

</td>

<td>

<a href="DeleteStudent.jsp?courseid=<%=id%>&studentid=<%=rs2.getString("StudentID")%>">

Remove

</a>

</td>

</tr>

<%}%>

</table>

<hr>

<p><a href="index.jsp">Homepage.</a></p>

</body>

</html>