

INTERNATIONAL UNIVERSITY

VIETNAM NATIONAL UNIVERSITY HCMC

School of Computer Science & Engineer

Report Lab 5

Course: WEB APPLICATION DEVELOPMENT

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Lab 5: Database (MySQL), JSP

My project demonstration: Attached video in zip file or click this [link](#)

I.Overview:

1. Project Structure:

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

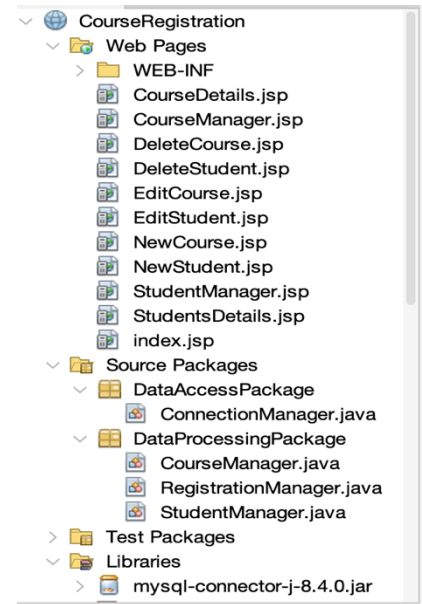
- JSP folder: All the JSP file is stored in this folder. The "index.jsp" will be shown up when the project is executed.
- DataAccessPackage: This folder stores an important java class which makes connection between jsp and database.
- DataProcessingPackage: This folder stores particular java classes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

2. Necessary Library:

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

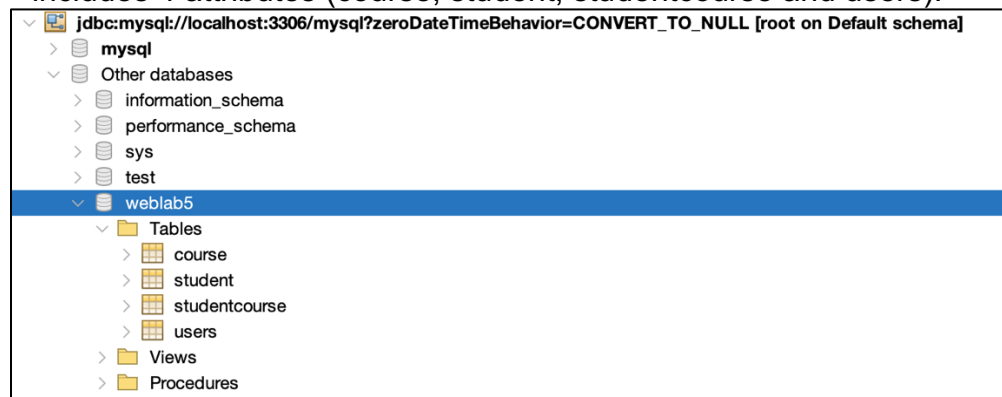
3. Tools and Implemented Platforms:

- 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).



- 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&u
seSSL=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.

Course Registration

Student ID:

Manager:

- [Student Manager](#)
- [Course Manager](#)

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.

Student's Details

Student ID: 5

Student Name: Thien Thu

Select Course

Course: 

Register Course:

Course ID	Course Name	Action
3	IE3	Remove
6	Physics 3	Remove

[Homepage](#)

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>");
    %>
  </body>
</html>
```

```

%>
<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.get
String("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.

Student List		
Student ID	Student Name	Action
1	Anh Thu	Delete Edit
2	Nguyen Van ABC	Delete Edit
3	Khanh Trang	Delete Edit
4	Thao Nhi	Delete Edit
5	Thien Thu	Delete Edit
6	Astrid	Delete Edit
8	Trung	Delete Edit
9	Hoai Bao	Delete Edit
10	Ashe	Delete Edit
11	Katherine	Delete Edit
12	Hinata	Delete Edit
18	John	Delete Edit
New Student		
homepage		

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

Course List		
Course ID	Course Name	Action
2	IE2	Delete Edit
3	IE3	Delete Edit
4	Physics 1	Delete Edit
5	Physics 2	Delete Edit
6	Physics 3	Delete Edit
7	TMC	Delete Edit
8	Discrete Mathematics	Delete Edit
9	Listening AE1	Delete Edit
10	Writing AE1	Delete Edit
11	Speaking AE2	Delete Edit
12	Chemistry for Engineers	Delete Edit
13	Calculus 1	Delete Edit
14	Calculus 2	Delete Edit
15	C/C++ Programming	Delete Edit
16	Digital Logic Design	Delete Edit
17	System & Network Administration	Delete Edit
18	Algorithms & Data Structures	Delete Edit
19	Principles of Database Management	Delete Edit
20	Probability, Statistic & Random Process	Delete Edit
22	Physics 4	Delete Edit
New Course		
homepage		

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.

Course's Details		
CourseID:10		
CourseName:Writing AE1		
Student ID	Student Name	Action
1	Anh Thu	Remove
6	Astrid	Remove
Homepage.		

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>
                    <%

```

```
                </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>
```