

Java Full Stack Lab Manual - JDBC Experiment

Aim

To connect to a MySQL database from a JSP file, retrieve data from a table, and display it dynamically on the web page.

Technologies Used

JSP, MySQL Database, Apache Tomcat, JDBC

Directory Structure

```
JSPDatabaseApp/  
|  
+- db.jsp  
+- WEB-INF/  
    +- web.xml
```

Database Setup

```
CREATE DATABASE college;  
  
USE college;  
  
CREATE TABLE students (  
    id INT PRIMARY KEY,  
    name VARCHAR(50),  
    branch VARCHAR(50)  
);  
  
INSERT INTO students VALUES (1, 'Madhu', 'CSE');  
INSERT INTO students VALUES (2, 'Sravani', 'ECE');  
INSERT INTO students VALUES (3, 'Raj', 'MECH');
```

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db.jsp

```
<%@ page import="java.sql.*" %>
<html>
<head><title>Student Records</title></head>
<body>
<h2>Student Details from Database</h2>
<table border="1">
<tr>
    <th>ID</th>
    <th>Name</th>
    <th>Branch</th>
</tr>
<%
    try {
        Class.forName("com.mysql.cj.jdbc.Driver");
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/college",
"root", "your_password");
        Statement stmt = con.createStatement();
        ResultSet rs = stmt.executeQuery("SELECT * FROM students");

        while(rs.next()) {
%>
<tr>
    <td><%= rs.getInt("id") %></td>
    <td><%= rs.getString("name") %></td>
    <td><%= rs.getString("branch") %></td>
</tr>
<%
        }
        con.close();
    } catch(Exception e) {
        out.println("Database Error: " + e.getMessage());
    }
%>
</table>
</body>
</html>
```

web.xml (Optional)

```
<web-app xmlns="http://xmlns.jcp.org/xml/ns/javaee"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_3_1.xsd"
    version="3.1">

    <welcome-file-list>
```

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```
<welcome-file>db.jsp</welcome-file>  
</welcome-file-list>  
  
</web-app>
```

How to Run

1. Create `college` database and `students` table in MySQL.
2. Place `db.jsp` inside `JSPDatabaseApp` folder and deploy it in Tomcat's `webapps` directory.
3. Start Tomcat and visit: <http://localhost:8080/JSPDatabaseApp/db.jsp>

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Expected Output

Student Details from Database

```
+-----+-----+-----+
| ID | Name   | Branch |
+-----+-----+-----+
| 1  | Madhu  | CSE    |
| 2  | Sravani| ECE    |
| 3  | Raj    | MECH   |
+-----+-----+-----+
```

Result

Successfully accessed and displayed database records in a JSP page using JDBC.