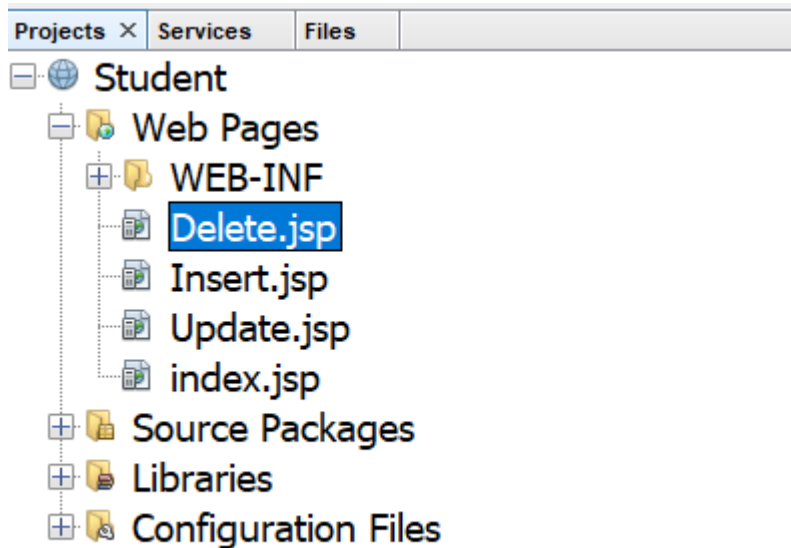


LAB 9: DATABASE & JSP

Lab Activities

Exercise 1: Creating a new Java web application

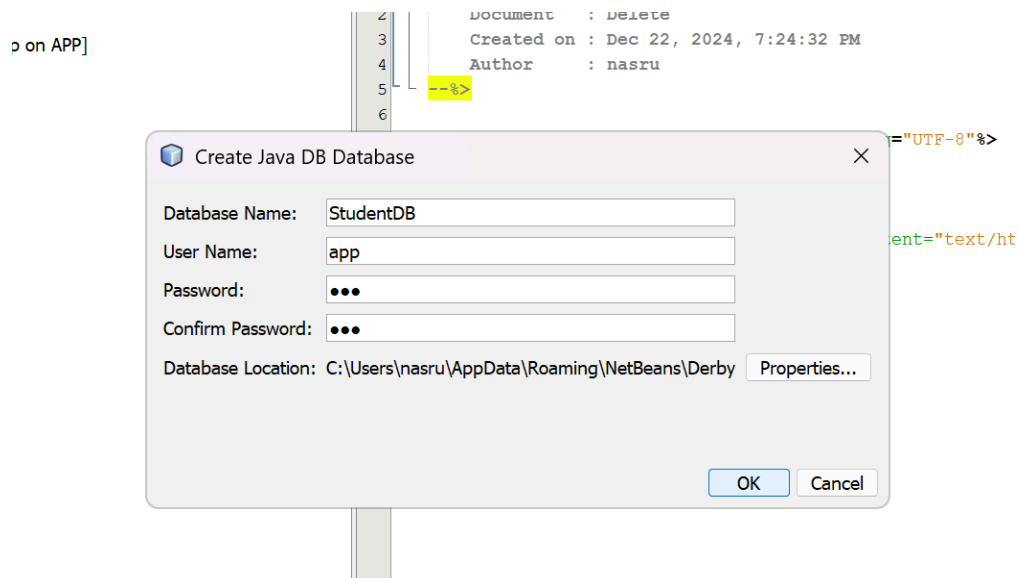
Task 1: Create a new project for Java web application




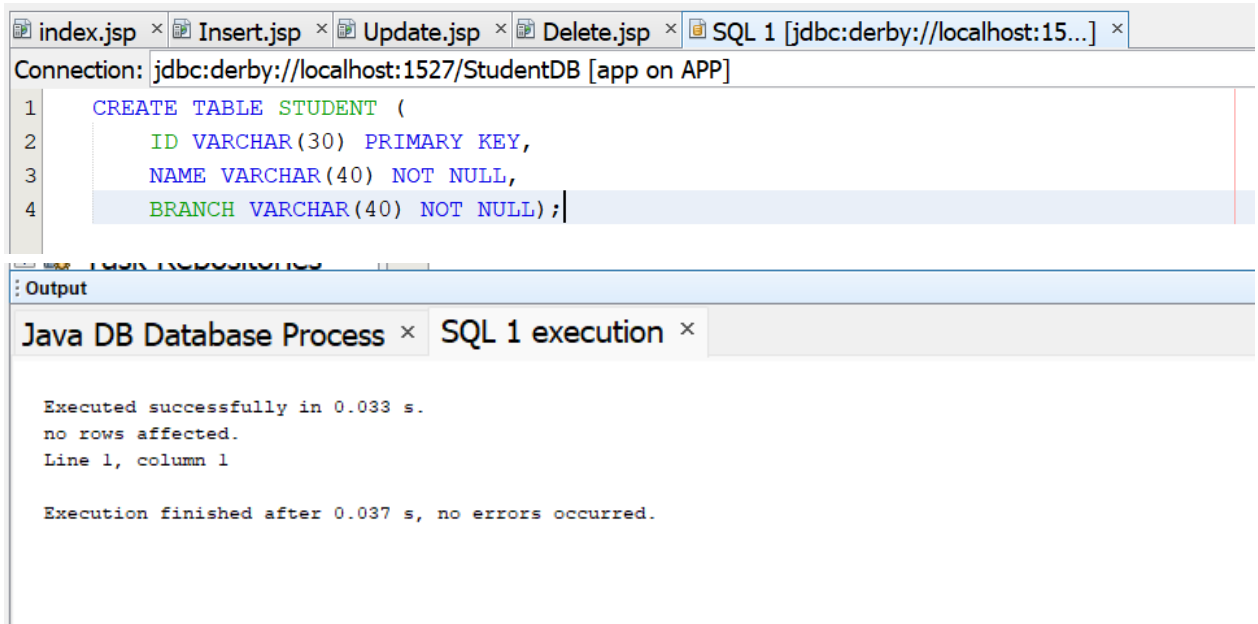
Exercise 2: Creating database and database connection

Task 1: Create a new database

- Go to services tab.
- Right click on Java DB and chose Create Database....
Fill in the database details here.



- c) Right click the StudentDB database, select connect.
- d) Create a table STUDENT in jdbc:derby://localhost:1527/StudentDB [public on PUBLIC] -> APP -> Tables -> right click -> Execute Command.
- e) Enter the following DDL (to create table):
- f) Click , to Run SQL



The screenshot shows the SQL 1 [jdbc:derby://localhost:1527/StudentDB [app on APP]] window. The connection is jdbc:derby://localhost:1527/StudentDB [app on APP]. The SQL statement is:

```
1 CREATE TABLE STUDENT (
2     ID VARCHAR(30) PRIMARY KEY,
3     NAME VARCHAR(40) NOT NULL,
4     BRANCH VARCHAR(40) NOT NULL);
```

The Output window shows the execution results:

```
Java DB Database Process x SQL 1 execution x

Executed successfully in 0.033 s.
no rows affected.
Line 1, column 1

Execution finished after 0.037 s, no errors occurred.
```

CSC 584 ENTERPRISE PROGRAMMING

Exercise 3: Creating Database Connection pool in application



The screenshot shows the web.xml file in the GlassFish IDE. The XML content is:

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <!DOCTYPE glassfish-web-app PUBLIC "-//GlassFish.org//DTD GlassFish Application Server 3.1 Ser
3 <glassfish-web-app error-url="">
4   <class-loader delegate="true"/>
5   <jsp-config>
6     <resource-ref>
7       <res-ref-name>jdbc/myDatasource</res-ref-name>
8       <jndi-name>jdbc/myDatasource</jndi-name>
9     </resource-ref>
10    <property name="keepgenerated" value="true">
11      <description>Keep a copy of the generated servlet class' java code.</description>
12    </property>
13  </jsp-config>
14 </glassfish-web-app>
```

Exercise 4: Creating Insert Page

```
index.jsp x Insert.jsp x Update.jsp x Delete.jsp x
Source History
1 <!--
2   Document    : insert
3   Created on  : Dec 22, 2024, 7:24:11 PM
4   Author     : nasru
5 -->
6
7 <%@page contentType="text/html" pageEncoding="UTF-8"%>
8 <%@taglib prefix="sql" uri="http://java.sun.com/jsp/jstl/sql" %>
9 <%@taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core"%>
10
11 <sql:setDataSource var="myDatasource"
12     driver="org.apache.derby.jdbc.ClientDriver"
13     url="jdbc:derby://localhost:1527/StudentDB" user="app"
14     password="app"/>
15
16 <!DOCTYPE html>
17 <html>
18 <head>
19     <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
20     <title>Add Student</title>
21 </head>
22 <body>
23     <h1 style="font-weight: bold;">Add Student Data</h1>
24     <c:set var="id" value="{param.id}" />
25     <c:set var="name" value="{param.name}" />
26     <c:set var="branch" value="{param.branch}" />
27
28     <form method="post" action="Insert.jsp">
29         <p>
30             <label for="id">ID:</label>
31             <input type="text" id="id" name="id" required>
32         </p>
33         <p>
34             <label for="name">NAME:</label>
35             <input type="text" id="name" name="name" required>
36         </p>
37         <p>
38             <label for="branch">BRANCH:</label>
39             <input type="text" id="branch" name="branch" required>
40         </p>
41         <br>
42         <input type="submit" value="Submit">
43     </form>
44
```

```

46 <c:if test="${(id!=null)&&(name!=null)&&(branch!=null)}">
47 <sql:update var="result" dataSource="${myDataSource}">
48 INSERT INTO STUDENT (ID, NAME, BRANCH)
49 VALUES (?, ?, ?)
50 <sql:param value="${param.id}" />
51 <sql:param value="${param.name}" />
52 <sql:param value="${param.branch}" />
53 </sql:update>
54 <p style="color: green;">Student data has been successfully added!</p>
55 </c:if>
56
57 <!-- Display Data from Database -->
58 <sql:query var="result" dataSource="${myDataSource}">
59 SELECT ID, NAME, BRANCH FROM STUDENT
60 ORDER BY ID ASC
61 </sql:query>
62 <table>
63 <!-- Column Headers -->
64 <tr>
65 <c:forEach var="columnName" items="${result.columnNames}">
66 <th><c:out value="${columnName}" /></th>
67 </c:forEach>
68 </tr>
69 <!-- Table Data -->
70 <c:forEach var="row" items="${result.rows}">
71 <tr>
72 <c:forEach var="column" items="${row}">
73 <td><c:out value="${column}" /></td>
74 </c:forEach>
75 </tr>
76 </c:forEach>
77 </table>
78 </body>
9 </html>

```

Personal

Add Student

localhost:8080/Student/Insert.jsp

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Add Student Data

ID:

NAME:

BRANCH:

Student data has been successfully added!

ID	NAME	BRANCH
BRANCH=KPPIM ID=1	NAME=NASRULLAH	
BRANCH=KPPIM ID=2	NAME=QAMARUL	
BRANCH=BS ID=3	NAME=AFRINA	
BRANCH=KPPIM ID=4	NAME=ARIS	
BRANCH=KPPIM ID=5	NAME=AMIRUL	

Exercise 5: Creating Update Page

← ↻ 🏠 ⓘ localhost:8080/Student/Update.jsp

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Update Student Data

SELECT ID:

NAME:

BRANCH:

ID	NAME	BRANCH
BRANCH=BA	ID=1	NAME=SUHANA
BRANCH=BS	ID=2	NAME=NURIN BATRISYA
BRANCH=KPPIM	ID=3	NAME=SITI NURAQILAH
BRANCH=BS	ID=4	NAME=ANIS MAISARAH

Exercise 6: Creating Delete Page

← ↻ 🏠 ⓘ localhost:8080/Student/Delete.jsp

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Delete Student Data

SELECT ID:

1

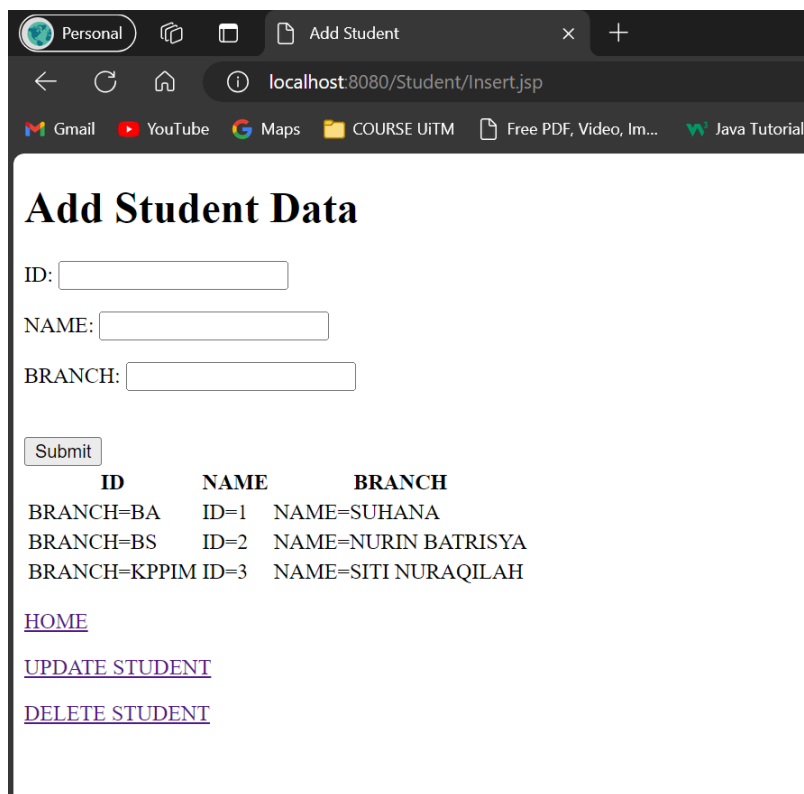
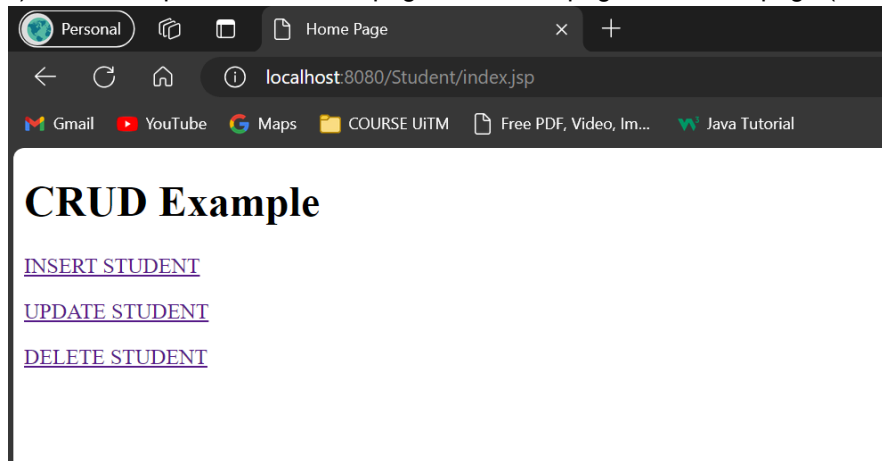
2

3

ID	NAME	BRANCH
BRANCH=BA	ID=1	NAME=SUHANA
BRANCH=BS	ID=2	NAME=NURIN BATRISYA
BRANCH=KPPIM	ID=3	NAME=SITI NURAQILAH

Exercise 7: Creating Navigation Between Each Page

a) Create simple menu in each page to link one page to another page (use hyperlink).



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Update Student

localhost:8080/Student/Update.jsp

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Update Student Data

SELECT ID: 1

NAME:

BRANCH:

ID	NAME	BRANCH
BRANCH=BA	ID=1	NAME=SUHANA
BRANCH=BS	ID=2	NAME=NURIN BATRISYA
BRANCH=KPPIM	ID=3	NAME=SITI NURAQILAH

[HOME](#)

[INSERT STUDENT](#)

[DELETE STUDENT](#)

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Delete Student

localhost:8080/Student/Delete.jsp

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Delete Student Data

SELECT ID: 1

ID	NAME	BRANCH
BRANCH=BA	ID=1	NAME=SUHANA
BRANCH=BS	ID=2	NAME=NURIN BATRISYA
BRANCH=KPPIM	ID=3	NAME=SITI NURAQILAH

[HOME](#)

[INSERT STUDENT](#)

[UPDATE STUDENT](#)