**Exercise 7:**

Redo the previous task using JSP by converting the static web pages into dynamic web pages. Create a database with user information and books information. The books catalogue should be dynamically loaded from the database.

**Aim**

Create a database with user information and books information. The books catalogue should be dynamically loaded from the database.

**Algorithm**

**DataBase Steps:**

1.Install MySQL.

2.Copy **mysql-connector-java-8.0.24** from MySQL /Connector and Paste in Tomcat Lib Folder.

3. Set a new Classpath in the Environment Variable as C:\Program Files\Apache Software Foundation\Tomcat 9.0\lib\mysql-connector-java-8.0.24.jar

4. To run MYSQL as a windows service

type run or press windows+R

type services.msc

There a service can be started,restarted and paused or stopped – start the service.

5.Run cmd as System Administrator. Change the directory to “ C:\Program Files\MySQL\MySQL Server 8.0\bin”

6. Type the command to login to MySQL C:\Program Files\MySQL\MySQL Server 8.0\bin> mysql.exe -uroot –p where root is the username given during installation.

Enter password: \*\*\*\*\*(tiger)

The screen shows the message as follows:

*Welcome to the MySQL monitor. Commands end with ; or \g.*

*Your MySQL connection id is 9*

*Server version: 8.0.24 MySQL Community Server – GPL*

7.The command prompt is changed as **mysql>** where the SQL commands can be typed.

Steps to create a database- LIBRARY and tables Student\_Info and Book\_Info

1.To create Database LIBRARY

**mysql>**CREATE DATABASE LIBRARY;

2.To create tables inside database

**mysql>**USE LIBRARY;

3.To create table Student\_Info

**mysql>**CREATE TABLE Student\_Info(

-> RegNo BIGINT NOT NULL,

-> Name VARCHAR(30) NOT NULL,

-> Dept VARCHAR(20) NOT NULL,

-> Year VARCHAR(5) NOT NULL,

-> Section VARCHAR(1) NOT NULL,

-> Batch INT NOT NULL,

-> PRIMARY KEY(RegNo));

4. To see the template of Student\_Info table

**mysql>**describe Student\_Info;

The template of Student\_Info table will be displayed as:

+---------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+-------------+------+-----+---------+-------+

| RegNo | bigint | NO | PRI | NULL | |

| Name | varchar(30) | NO | | NULL | |

| Dept | varchar(20) | NO | | NULL | |

| Year | varchar(5) | NO | | NULL | |

| Section | varchar(1) | NO | | NULL | |

| Batch | int | NO | | NULL | |

+---------+-------------+------+-----+---------+-------+

6 rows in set (0.19 sec)

5. To insert values into table of Student\_Info table

**mysql>**INSERT INTO Student\_Info VALUES(4011,'A.Asha','CSE','III','A',2018);

Insert as many records as needed using the above command.

6. **To view the inserted records**

**mysql>**SELECT \* FROM Student\_Info;

+-------+-----------------+------+------+---------+-------+

| RegNo | Name | Dept | Year | Section | Batch |

+-------+-----------------+------+------+---------+-------+

| 4010 | B.Arthi | CSE | III | A | 2018 |

| 4011 | A.Asha | CSE | III | A | 2018 |

| 4047 | A.Michael Raj | CSE | III | A | 2018 |

| 4078 | B.Sambath Kumar | CSE | III | B | 2018 |

| 4079 | A.Sanjay Kumar | CSE | III | B | 2018 |

+-------+-----------------+------+------+---------+-------+

5 rows in set (0.00 sec)

7. **mysql>**CREATE another TABLE Book\_Info

CREATE TABLE Book\_Info(

-> ISBN BIGINT NOT NULL,

-> Title VARCHAR(50) NOT NULL,

-> Author VARCHAR(30) NOT NULL,

-> Country VARCHAR(20) NOT NULL,

-> Cover VARCHAR(20) NOT NULL,

-> Price INT NOT NULL,

-> PRIMARY KEY(ISBN));

Query OK, 0 rows affected (1.51 sec)

**8.** To insert values into table of Book\_Info table

**mysql>**INSERT INTO Book\_Info VALUES(111,'War and Peace','Leo Tolstoy','Russia','Hard-Cover',2276);

9. **To view the inserted records**

**mysql>**SELECT \* FROM Book\_Info;

**Steps in JSP**

1. Create the files index.jsp, header.html,footer.jsp,controller.jsp,Student.jsp and Catalogue.jsp.
2. Header.html contains common coding for heading of a web page. footer.jsp includes the coding for retrieving system time.
3. In all the index.jsp, controller.jsp,Student.jsp and Catalogue.jsp include header.html at the beginning and footer.jsp at the end of the webpage. These two files inclusion provides a common template for all the web pages.
4. Design the index.jsp as a form which gets the option to retrieves the student or Book catalogue information stored in a database which when submitted takes the user to controller.jsp.
5. Controller.jsp is designed in such a way that depending upon the student or Book catalogue option control is forwarded to student.jsp or catalogue.jsp
6. In Student.jsp webpage is connected to database and the information of students is retrieved from the Student\_ info table and presented in a tabular format.
7. In Catalogue.jsp webpage is connected to database and the information of Books is retrieved from the Book\_ info table and presented in a tabular format.
8. Create a folder named **JSP\_MySql\_DB3** in "**C:\Program Files\Apache Software Foundation\Tomcat 9.0\webapps**" folder and place the above said files in the folder **JSP\_MySql\_DB3** .
9. Run Tomcat Server 🡪"**C:\Program Files\Apache Software Foundation\Tomcat 9.0\bin\Tomcat9w.exe**"
10. Open chrome browser and open communication to the tomcat server by typing <http://localhost:8080/> in the URL.
11. Run the JSP file by typing <http://localhost:8080/> **JSP\_MySql\_DB3** / in the URL.
12. To run the JSP index file by typing <http://localhost:8080/> in the URL of the browser.

**index.jsp**

**<html>**

**<head>**

**<title>Include</title>**

**</head>**

**<body bgcolor=Coral>**

**<%@ include file="header.html" %>**

**<form action="controller.jsp">**

**<table border="0" style="font-family:verdana;font-size:10pt;">**

**<tr>**

**<td>Student Information:</td>**

**<td><input type="radio" name="Info" value="S" checked/></td>**

**</tr>**

**<tr>**

**<td>Book Information:</td>**

**<td><input type="radio" name="Info" value="B" /></td>**

**</tr>**

**<tr>**

**<td></td>**

**<td></td>**

**</tr>**

**<tr>**

**<td></td>**

**<td></td>**

**</tr>**

**<tr>**

**<td></td>**

**<td></td>**

**</tr>**

**</table>**

**<input type="submit" value="Get\_Info"/>**

**</form>**

**<jsp:include page="footer.jsp"/>**

**</body>**

**</html>**

**controller.jsp**

**<%**

**String type = request.getParameter("Info");**

**if(type.equals("S")) {**

**%>**

**<jsp:forward page="/Student.jsp"/>**

**<%**

**} else {**

**%>**

**<jsp:forward page="/Catalogue.jsp"/>**

**<%**

**}**

**%>**

**Student.jsp**

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"

"http://www.w3.org/TR/html4/loose.dtd">

<%@ page import="java.sql.\*" %>

<%@ page import="java.io.\*" %>

<html>

<head>

<title>Connection with mysql database</title>

<style>

table,th,

td {

border: 1px solid black;

border-collapse: collapse;

}

</style>

</head>

<body>

<%@ include file="header.html" %>

<h1>STUDENT INFORMATION </h1>

<%

try{

Class.forName("com.mysql.jdbc.Driver");

Connection con=DriverManager.getConnection("jdbc:mysql://localhost:3306/LIBRARY","root","tiger");

//here employee is database name, root is username and password

Statement stmt=con.createStatement();

ResultSet rs=stmt.executeQuery("select \* from Student\_Info");

%>

<form ACTION="Controller.jsp">

<table>

<tr> <th><%out.println("RegNo");%></th>

<th><%out.println("Name");%></th>

<th><%out.println("Dept");%></th>

<th><%out.println("Year");%></th>

<th><%out.println("Section");%></th>

<th><%out.println("Batch");%></th>

<tr>

<%while(rs.next()){ %>

<tr>

<td><%out.println(rs.getInt(1));%></td>

<td><%out.println(rs.getString(2));%></td>

<td><%out.println(rs.getString(3));%></td>

<td><%out.println(rs.getString(4));%></td>

<td><%out.println(rs.getString(5));%></td>

<td><%out.println(rs.getInt(6));%></td>

</tr>

<% }

}catch(Exception e){ out.println(e); }

%>

</table>

<br/>

<input type=button value="Back" onClick="history.back()">

</form>

<jsp:include page="footer.jsp"/>

</body>

</html>

**Catalogue.jsp**

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"

"http://www.w3.org/TR/html4/loose.dtd">

<%@ page import="java.sql.\*" %>

<%@ page import="java.io.\*" %>

<html>

<head>

<title>Connection with mysql database</title>

<style>

table,th,

td {

border: 1px solid black;

border-collapse: collapse;

}

</style>

</head>

<body>

<%@ include file="header.html" %>

<h1>Book Catalogue </h1>

<%

try{

Class.forName("com.mysql.jdbc.Driver");

Connection con=DriverManager.getConnection("jdbc:mysql://localhost:3306/LIBRARY","root","tiger");

//here employee is database name, root is username and password

Statement stmt=con.createStatement();

ResultSet rs=stmt.executeQuery("select \* from Book\_Info");

%>

<table>

<tr> <th><%out.println("Title");%></th>

<th><%out.println("Author");%></th>

<th><%out.println("Country");%></th>

<th><%out.println("Cover");%></th>

<th><%out.println("Cost");%></th>

<tr>

<%while(rs.next()){ %>

<tr>

<td><%out.println(rs.getString(2));%></td>

<td width="32%"><%out.println(rs.getString(3));%></td>

<td><%out.println(rs.getString(4));%></td>

<td width="30%"><%out.println(rs.getString(5));%></td>

<td><%out.println(rs.getInt(6));%></td>

</tr>

<% }

}catch(Exception e){ out.println(e); }

%>

</table>

<form>

<input type=button value="Back" onClick="history.back()">

</form>

<jsp:include page="footer.jsp"/>

</body>

</html>

**header.html**

<html>

<body bgcolor=Coral>

<h3 align="center">BIT CAMPUS</h3>

<h3 align="center">UNIVERSITY COLLEGE OF ENGINEERING</h3>

<h3 align="center">TRICHIRAPPALLI 620024</h3>

<h3 align="center">LIBRARY</h3>

<br>

</body>

</html>

**footer.jsp**

<html>

<body>

<br><br><br><br>

<br><br><br><br>

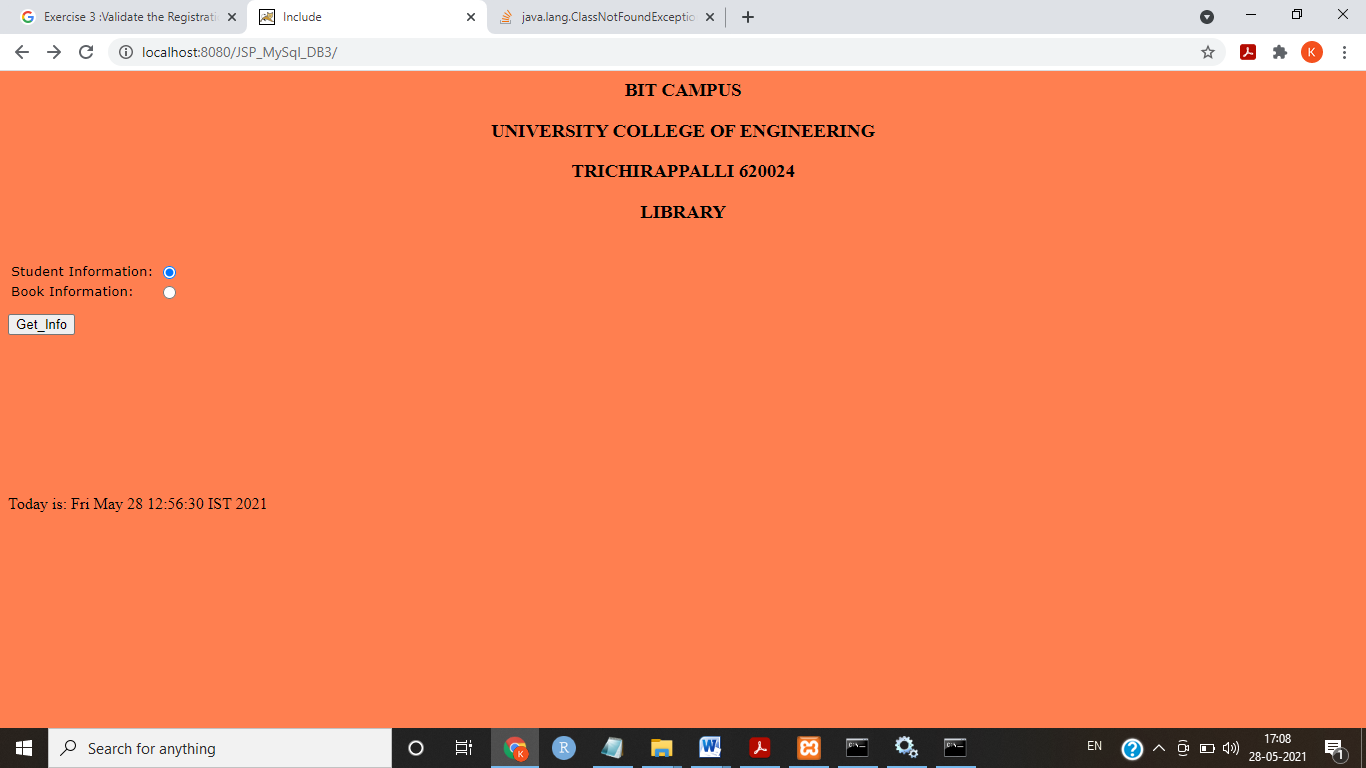
<%@ page import="java.util.Date" %>

Today is: <%= new java.util.Date() %>

</body>

</html>

Output:



**Result:**

Thus the JSP is connected with the database and the students and book information is retrieved and got displayed in the web page.