

Web Architecture and Application Development Laboratory

B.Tech. 7th Semester



**Department: Computer Science and
Engineering**

**Faculty of Engineering & Technology
M. S. Ramaiah University of Applied Sciences**



Faculty	Engineering & Technology
Programme	B. Tech. in Computer Science and Engineering
Course	Web Architecture and Application Development Laboratory
Year/Semester	2015/7th Semester
Course Code	CSC404A

List of Experiments

1. Software design
2. Software design
3. Database design
4. PHP form for student registration
5. PHP form for login and dashboard
6. HTML user interface
7. HTML user interface
8. Search implementation
9. Functionality implementation
10. Mock

Consider a scenario where a student enrolls for a course in university. The student also registers in the library available at university by providing his basic details. Consider all the attributes of the student and library to develop the web application design.

Laboratory 1

Title of the Laboratory Exercise: Software Design

1. Introduction and Purpose of Experiment

Web application design.

2. Aim and Objectives

Aim

- To develop Functional and Nonfunctional Requirements, ER diagram

3. Objectives

At the end of this lab, the student will be able to

- Model the information required for the given scenario using E-R diagrams
- Develop ER diagram, class diagram, interaction sequence diagram and algorithm/flowchart

4. Experimental Procedure

Students are given a set of instructions to be executed on the computer. The instructions should be edited and executed and documented by the student in the lab manual. They are expected to answer questions posed in section 5 based on their experiment.

5. Requirement

Functional Requirement

The system keeps track of the staff with a single point authentication system comprising login Id and password.

Staff maintains the book catalog with its ISBN, Book title, price(in INR), edition, author Number and details.

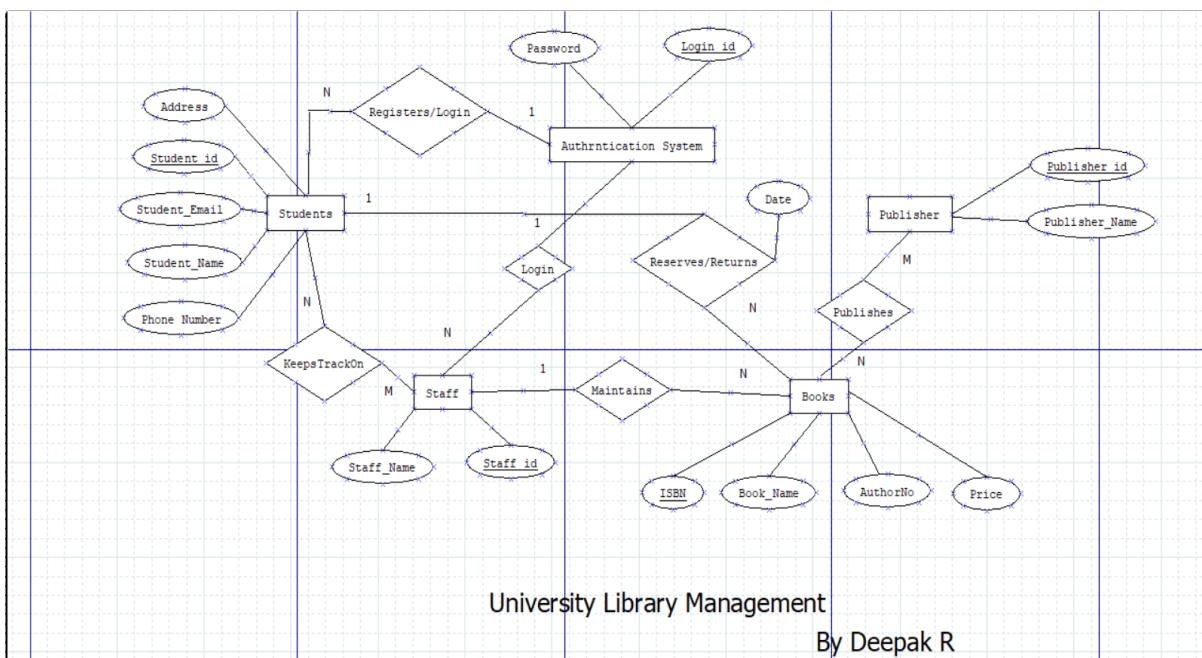
A publisher has publisher Id, Year when the book was published, and name of the book.

Student are registered with their user_id, email, name (first name, last name), Phone no , communication address. The staff keeps track of Student.

Student can return/reserve books that stamps with issue date and return date. If not returned within the prescribed time period, it may have a due date too.

Non- Functional Requirement

- a) The system must be secure
- b) The system must not collapse while handling large number of users
- c) The system must be reliable.

ER Diagram**6. Analysis and Discussions**

Entity Relational is a high-level conceptual data model diagram. ER modeling helps you to analyze data requirements systematically to produce a well-designed database. The Entity-Relation model represents real-world entities and the relationship between them. It is considered a best practice to complete ER modeling before implementing your database.

7. Conclusions

Functional and Non-Functional requirements, ER diagram, were developed in this lab.

Component	Max Marks	Marks Obtained
Viva	6	
Results	7	
Documentation	7	
Total	20	

Laboratory 2

Title of the Laboratory Exercise: Software Design 2

Introduction and Purpose of Experiment

Web Application using class diagram and sequence diagram helps developers understands the scenario from more technical approach.

1. Aim and Objectives

Aim

To Develop Class Diagram, Sequence diagram ,Algorithm/Flowchart

Objectives

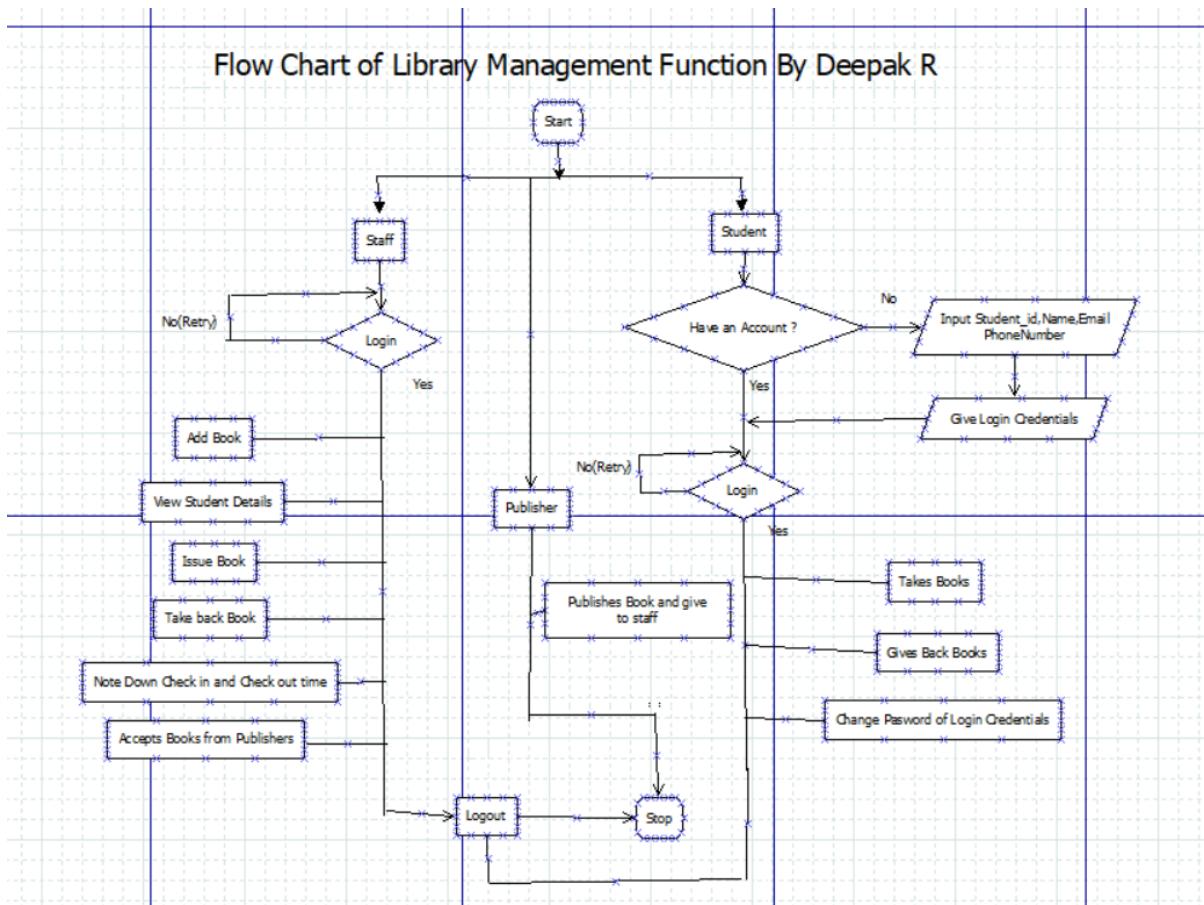
At the end of this lab, the student will be able to develop Scenario using Class and Sequence Diagram.

2. Experimental Procedure

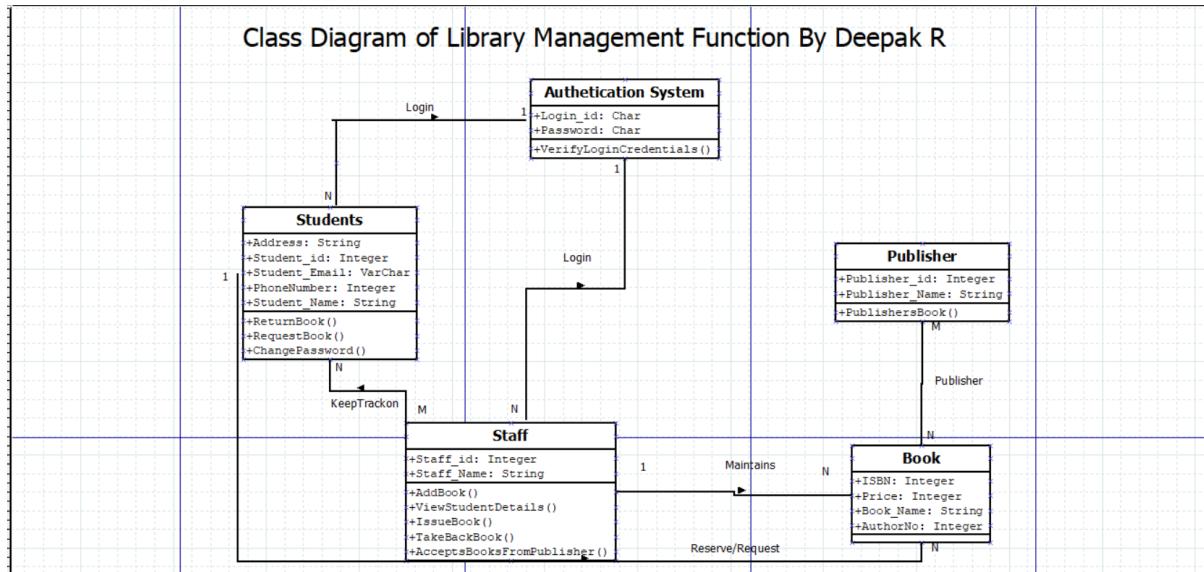
Students are given a set of instructions to be executed on the computer.

The instructions should be edited and executed and documented by the student in the lab manual. They are expected to answer questions posed in sections based on their experiment.

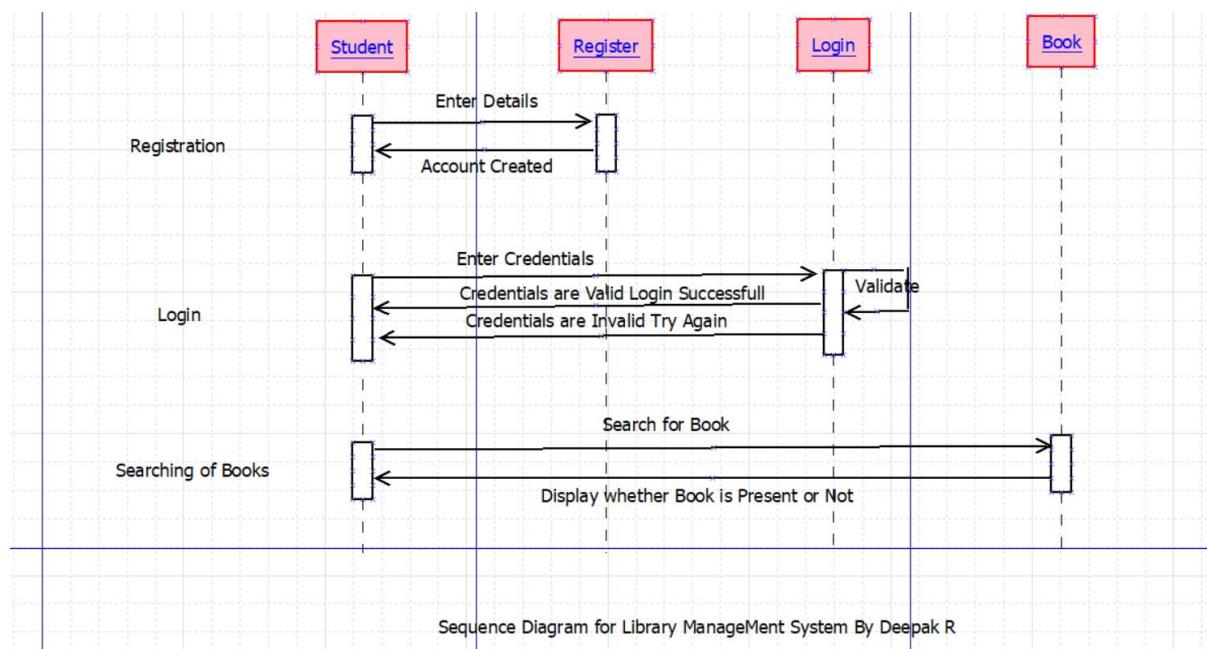
Flow Chart



Class Diagram



Sequence Diagram For Selected Functions



5. Analysis and Discussions

A sequence diagram simply depicts interaction between objects in a sequential order i.e. the order in which these interactions take place. We can also use the terms event diagrams or event scenarios to refer to a sequence diagram. Sequence diagrams describe how and in what order the objects in a system function. These diagrams are widely used by businessmen and software developers to document and understand requirements for new and existing systems.

6. Conclusions

Class diagram, interaction sequence diagram and algorithm/flowchart were developed in this lab.

Component	Max Marks	Marks Obtained
Viva	6	
Results	7	
Documentation	7	
Total	20	

Laboratory 3

Title of the Laboratory Exercise: Database Design

1. Introduction and Purpose of Experiment

Students will learn to use HTML and javascript in html platform.

2. Aim and Objectives

Aim

Objectives

At the end of this lab, the student will be able to

3. Experimental Procedure

Create a new login page where user can enter his login credentials like username and password. Compare the login credentials with the database to validate user.

Display details about the user and other details on html page.

Algorithms

Step 1: create the data base with specific name.

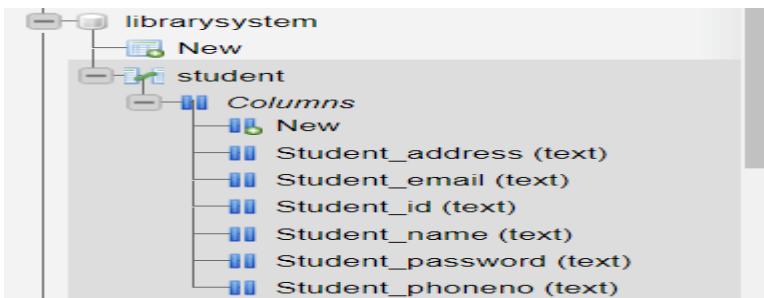
Step 2: create the multiple tables required for library management system such as student details and book details.

Step 3: while creating the student table which contains with set of attributes such as student id, first name, last name, course name course id, and password. Where attribute student id is a primary key.

Step 4: another table book details which will be maintained by admin of library management system such as book id, book name, author, ISBN, reservation. Where attribute book id is a primary key.

Step 5: in case to add table or attribute to the created table which can be added for the specific table.

Step 6: make sure the database name before creating an new table because multiple database can not be connected into a one system.

**Fig 1 Creation of Database and Respective tables with attributes**

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	Student_id	text	latin1_swedish_ci		No	None			Drop More
2	Student_email	text	latin1_swedish_ci		No	None			Drop More
3	Student_phoneno	text	latin1_swedish_ci		No	None			Drop More
4	Student_name	text	latin1_swedish_ci		No	None			Drop More
5	Student_address	text	latin1_swedish_ci		No	None			Drop More
6	Student_password	text	latin1_swedish_ci		No	None			Drop More

Fig 2 Attributes of Student table

The screenshot shows a web browser window with the URL 'http://localhost/LibrarySystem/index.php'. The page title is 'Library Registration'. It features a form with six input fields: 'Student_id', 'Student_address', 'Student_email', 'Student_phoneno', 'Student_name', and 'Student_password'. Below the inputs is a single 'Update' button.

Fig 3 When Php Code is Runned , the Registration form which got displayed in Internet Explorer

The screenshot shows a web browser window with the URL 'http://localhost/LibrarySystem/index.php'. The page title is 'Library Registration'. The form fields now contain the following values: 'Student_id' (991), 'Student_address' (Bengaluru), 'Student_email' (Deepak3@outlook.com), 'Student_phoneno' (93883), 'Student_name' (Deepak R), and 'Student_password' (deepak@1). The 'Update' button is visible at the bottom.

Fig 4 Inserting of Values in Student Registration Page



Fig 5 Display of Registration Succesful message when Insertion into SQL table is Succesful

Showing rows 0 - 0 (1 total, Query took 0.0005 seconds.)					
SELECT * FROM `student` <input type="checkbox"/> Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]					
<input type="checkbox"/> Show all Number of rows: 25 Filter rows: Search this table					
+ Options					
Student_id	Student_email	Student_phoneno	Student_name	Student_address	Student_password
991	Deepakr3@outlook.com	93883	Deepak R	Bengaluru	deepakr@1

Fig 6 Values Get Inserted into SQL table

Showing rows 0 - 4 (5 total, Query took 0.0005 seconds.)					
SELECT * FROM `student` <input type="checkbox"/> Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]					
<input type="checkbox"/> Show all Number of rows: 25 Filter rows: Search this table					
+ Options					
Student_id	Student_email	Student_phoneno	Student_name	Student_address	Student_password
991	Deepakr3@outlook.com	93883	Deepak R	Bengaluru	deepakr@1
992	Rohith@gmail.com	87879	Rohith	Mumbai	rohit@1
993	Virat@gmail.com	76979	Virat	Delhi	virat@1
994	dhoni@gmail.com	39913	Dhoni	Ranchi	dhoni@1
995	Yuvraj@gmail.com	6798	Yuvraj	Punjab	yuvraj@1

Fig 7 Further population of Values in Student Table

Conclusions

SQL stands for Structured Query Language. SQL is used to communicate with a database. According to ANSI (American National Standards Institute), it is the standard language for relational database management systems. SQL statements are used to perform tasks such as update data on a database, or retrieve data from a database. The standard SQL commands such as "Select", "Insert", "Update", "Delete", "Create", and "Drop" were used to accomplish everything that was needed to create the database and we also learnt how to implement using PHP application.

Comments**a. Limitations of Experiments**

One limitation of SQL is that relations must have a fixed set of columns. This is a frequent annoyance of software developers, and drives the demand for non-relational databases.

SQL allows user to access the data stored in a relational database (your typical RDBMS) or even flat files or hadoop or MongoDB(when using tools like Apache Drill or Hive). Even though SQL concept and syntax remains same across platforms and tools, implementation and limitations of each platform are sometimes very different. The problem increases in scale when performance tuning is concerned.

b. Limitations of Results

None

c. Learning happened

We learnt how to create tables, add data, create database, modify data, using MySQL, and also how to implement a given schema/er diagram in MySQL and we also learnt how to use PHP application.

Component	Max Marks	Marks Obtained
Viva	6	
Results	7	
Documentation	7	
Total	20	

Laboratory 4

Title of the Laboratory Exercise: PHP form for student registration

1. Introduction and Purpose of Experiment

Students will learn to use css and javascript in html platform.

2. Aim and Objectives

Aim

To use css and javascript to enhance the user interface for the previously developed user interface

Objectives

At the end of this lab, the student will be able to

Create css classes and use it in the UI

Create javascript and perform some actions on the developed html

Page

3. Experimental Procedure

Update the same web pages already created in the previous labs with css classes

and javascript to create new UI components in the html page.

4. Calculations/Computations/Algorithms

Step 1: Design the html page for registration form.

Step 2: Make the connection establishment into the database library.

Step 3: User need to enter the student details as User Name,UserId Email and Password.

Step 4: when student click on submit,Insert the student details into the table.

Step 5: shows the notification as new record created successfully.

Presentation of Results

PHP Code for Student Registration (index.php)

```
<!DOCTYPE html>
<!--
To change this license header, choose License Headers in Project Properties.
To change this template file, choose Tools | Templates
and open the template in the editor.
-->
<html>
    <head>
        <meta charset="UTF-8">
        <title>Library</title>
        <style>
.center {
    text-align: center;
}

</style>
    </head>
    <body>
        <?php

$Student_id = $Student_address = $Student_email = $Student_phoneno = $Student_name = "" ;
if($_SERVER["REQUEST_METHOD"]=="POST"){
    $Student_id = $_POST['Student_id'];
    $Student_address = $_POST['Student_address'];
    $Student_email = $_POST['Student_email'];
    $Student_phoneno = $_POST['Student_phoneno'];
    $Student_name = $_POST['Student_name'];
    $Student_password = $_POST['Student_password'];

$con = mysqli_connect("localhost","root","root","librarysystem");

$query = "INSERT INTO `Student` (Student_id, Student_address, Student_email, Student_phoneno , Student_name , Student_password) VALUES ('$Student_id', '$Student_address', '$Student_email', '$Student_phoneno' , '$Student_name' , '$Student_password')";
$result = mysqli_query($con,$query);
if($result){
    echo ("Registration Succesful");
}
else
{
    echo ("Fail");
}
}

?>
<form action="" method="post" >
    <div class="center">
        <h1>Library Registration </h1>
        <label>Student_id</label><br><input type="text" name="Student_id"><br/>
        <label>Student_address</label><br><input type="text" name="Student_address"><br/>
        <label>Student_email</label><br><input type="text" name="Student_email"><br/>
        <label>Student_phoneno</label><br><input type="text" name="Student_phoneno"><br/>
        <label>Student_name</label><br><input type="text" name="Student_name"><br/>
        <label>Student_password</label><br><input type="text" name="Student_password"><br/><br>
        <button type="submit" name="submit" value="Register" >Update</button>
    </div>
</form>
```

```
</body>
</html>
```

The screenshot shows a web browser window with the URL <http://localhost/LibrarySystem/index.php>. The page title is "Library Registration". It features a form with six input fields labeled "Student_id", "Student_address", "Student_email", "Student_phoneno", "Student_name", and "Student_password". Below the inputs is a single "Update" button.

Fig 3 When Php Code is Runned , the Registration form which got displayed in Internet Explorer

Analysis and Discussions

Html layout is used in the designing of the web page. Following are the different html layout elements where, `<header>` which is used to Defines a header for a document or a section, the second elements `<nav>` which is used to Defines a container for navigation links. `<article>` which is used to Defines an independent self-contained article. `<footer>` footer is used to Defines a footer for a document or a section element.The design of each of the layout elements are implemented inside the `<style>` tag.

7. Conclusions

Web page is designed to user can register to the Library database. Web page is designed using html and css. Sql queries are executed to insert student details into student details table. Database is created in xampp server. The HTML `<form>` tag is used for creating a form for user input. A form can contain text fields, checkboxes, radio-buttons and more. Forms are used to pass user-data to a specified URL. The HTML `<div>` tag is used for defining a section of your document. With the div tag, you can group large sections of HTML elements together and format them with CSS. The difference between the div tag and the span tag is that the div tag is used with block level elements whilst the span tag is used with inline elements.

8. Comments

a. Limitations of Experiments

The limitation of experiment is without registering into the system, the student can not able to access any of book details information from the library management system.

b. Limitations of Results

The limitation of results of register is validated only for the valid state i.e if

user is not register an tried to login into page of invalid situation is not tested. As well as the password mismatch is also not validated and not tested.

c. Learning happened

In this laboratory learned to create register form using html language. To insert the value of student_details from web page to the database. Learning a php code to implement the simple scenario such as form creation.

d. Recommendations

When user call the register button which can also be navigate to the login page to continue with the process.

Component	Max Marks	Marks Obtained
Viva	6	
Results	7	
Documentation	7	
Total	20	

Laboratory 5

Title of the Laboratory Exercise: PHP form for Login

1. Introduction and Purpose of Experiment

Students will learn to use css and javascript in html platform.

2. Aim and Objectives

Aim

To use css and javascript to enhance the user interface for the previously developed user interface

Objectives

At the end of this lab, the student will be able to

Create css classes and use it in the UI

Create javascript and perform some actions on the developed html Page

3. Experimental Procedure

Update the same web pages already created in the previous labs with css classes and javascript to create new UI components in the html page.

4. Calculations/Computations/Algorithms

Step 1: Create three php files login.php and dashboard.php files.

Step 2: login.php file holds both the html content and php where html code have to design of the web page with user name and password.

Step 3: php code have the sql query and takes the user input using the post method and matches the inputs and navigate to next page.

Step 4: dashboard.php file have the session part and it echo print that login is successful.

Step 5: dashboard.php file have structure of Dashboard page for searching and reserving book.

PHP Code for Login (login.php)

```
<!DOCTYPE html>
<!--
To change this license header, choose License Headers in Project Properties.
To change this template file, choose Tools | Templates
and open the template in the editor.
-->
<html>
    <head>
        <meta charset="UTF-8">
        <style>
            .center {
                text-align: center;
            }
        </style>
    </head>
    <body>
        <?php
            // put your code here
            if (isset($_POST['Student_name'])) {
                $Student_name = $_POST['Student_name'];

                $Student_password = $_POST['Student_password'];

                $con = mysqli_connect("localhost", "root", "root", "librarysystem");

                if (mysqli_connect_errno())
                {
                    echo "Failed to connect to MySQL: " . mysqli_connect_error();
                }

                $query = "SELECT * FROM Student WHERE Student_name='$Student_name' and
Student_password='$Student_password'";
                $result = mysqli_query($con,$query);
                if($result)
                {
                    if(mysqli_num_rows($result)>0)
                    {
                        session_start();
                        $_SESSION['Student_name'] = $Student_name;
                        header("Location: home.php");
                    }
                    else{
                        echo("Invalid credenatials");
                    }
                }
                else{
                    echo("Invalid credenatials");
                }
            }
        <?>
        <form role="form" id="templatemo-preferences-form" name="registration" action="" method="post">
            <div class="center">
                <h1>Login </h1>
                <label>NAME</label><br/>

                <input type="text" id="lastName" placeholder="enter name" name="Student_name" required><br/>
                <label>PASSWORD</label><br/>

                <input type="text" id="lastName4" placeholder="enter password" name="Student_password" required><br/>
                <br/>
                <button type="submit" name="submit" value="Register" >Login</button>
            </div>
        </form>
        <?php } ?>
    </body>
```

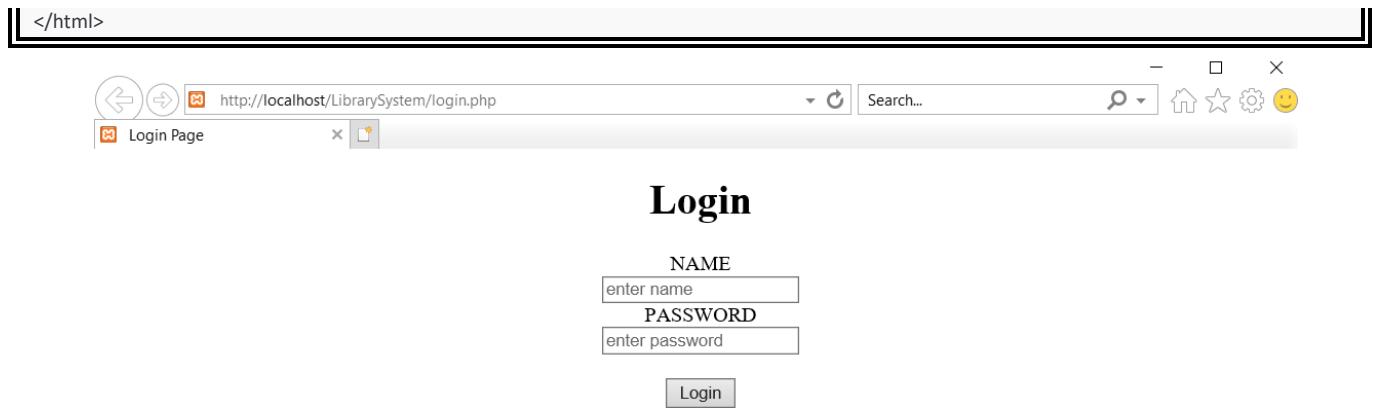


Fig 1 When Php Code is Runned , the Login form which got displayed in Internet Explorer

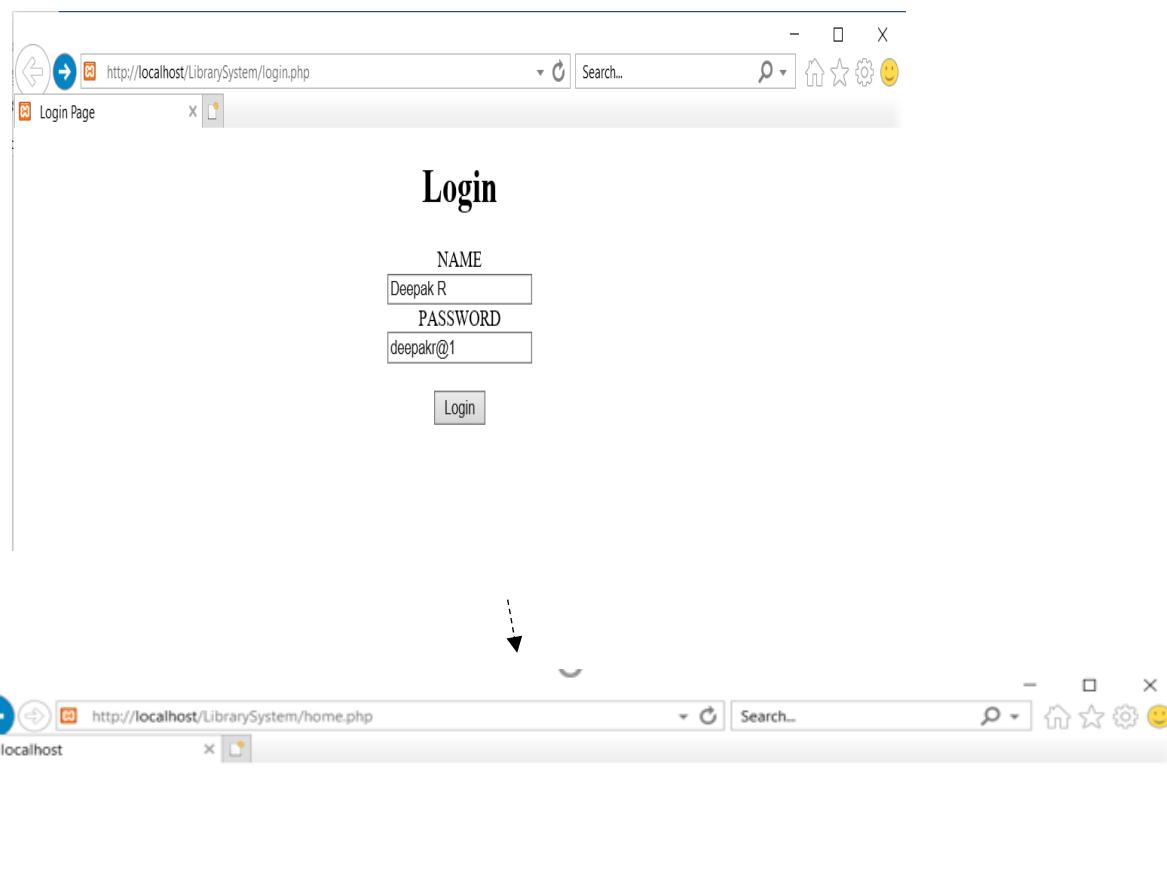


Fig 2 When Correct Login Credential given it opens next page i.e Home.php(Which is yet to be built)

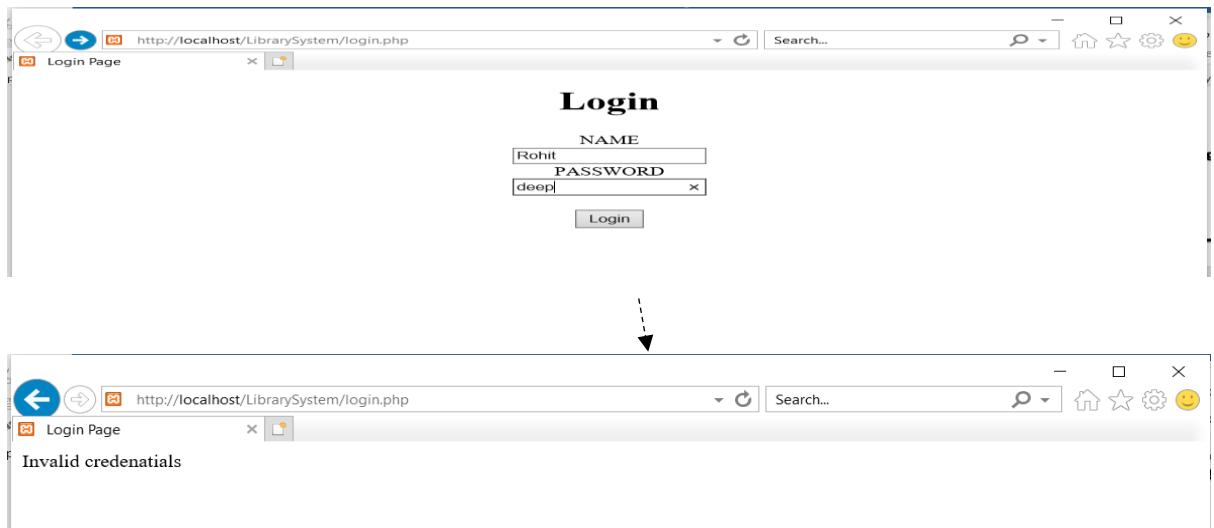


Fig 3 When Wrong Login Credential given it Displays Invalid Credentials message

Analysis and Discussions

Almost every mobile, desktop, and web application requires that users are authenticated before accessing services. When creating the login page, some developers focus more on the design and visual elements but forget implementing security measures. A login system should avoid security breaches such as SQL injections or session hijacking. This can be achieved by using prepared statements, proper input validation, session management, password hashing, and other security practices when creating a login page. So we have Designed login page using PHP application.

Comments

a. Limitations of Experiments

It is not suitable for giant content-based web applications.

b. Limitations of Results

None

c. Learning happened

We learnt how to create login with PHP application.

d. Recommendations

None

Component	Max Marks	Marks Obtained
Viva	6	
Results	7	
Documentation	7	
Total	20	

Laboratory 6

Title of the Laboratory Exercise: HTML user interface for Registration

1. Introduction and Purpose of Experiment

Students will learn to use css and javascript in html platform.

2. Aim and Objectives

Aim

To use css and javascript to enhance the user interface for the previously developed user interface

Objectives

At the end of this lab, the student will be able to

Create css classes and use it in the UI

Create javascript and perform some actions on the developed html Page

3. Experimental Procedure

Update the same web pages already created in the previous labs with css classes and javascript to create new UI components in the html page.

4. Presentation of Results

The screenshot shows a web browser window with the URL <http://localhost/LibrarySystem/index.php>. The title bar says "Library". The main content is titled "Library Registration". It contains several text input fields:

- Student_id: 991
- Student_address: Bengaluru
- Student_email: DeepakR3@outlook.com
- Student_phoneno: 93883
- Student_name: Deepak R
- Student_password: deepakR@1

Below the inputs is a "Submit" button.

Figure 1 UI of registration page with inputs

The figure represents the details entered by the user for registration. The user name, userid password, email id are entered in the text fields. After entering the user details, submit button is clicked. When the user clicks the submit button, the corresponding SQL query for the submit button is executed to insert the details entered by the user to the corresponding table in the database.

The screenshot shows a MySQL query results page. At the top, a green bar displays the message: "Showing rows 0 - 4 (5 total, Query took 0.0005 seconds.)". Below this is the SQL query: "SELECT * FROM `student`". There are links for Profiling, Edit inline, Explain SQL, Create PHP code, and Refresh. A toolbar below the query includes "Show all", "Number of rows: 25", and a search bar. The main area displays a table with the following data:

+ Options	Student_id	Student_email	Student_phoneno	Student_name	Student_address	Student_password
	991	Deepakr3@outlook.com	93883	Deepak R	Bengaluru	deepakr@1
	992	Rohith@gmail.com	87879	Rohith	Mumbai	rohith@1
	993	Virat@gmail.com	76979	Virat	Delhi	virat@1
	994	dhoni@gmail.com	39913	Dhoni	Ranchi	dhoni@1
	995	Yuvraj@gmail.com	6798	Yuvraj	Punjab	yuvraj@1

Figure 2 Userdetails in Database after registration

The above figure represents the successful registration results of the user. When the submit button is clicked, the details entered by the user does not exist in the database and the password entered in the both the text fields, that is password and confirm password field are same and the all the required text fields are filled, the new record created successfully message is displayed and the details are get updated in the database.

5.Analysis and Discussions

For the development of any webpage is it necessary that there is a model which is HTML, controller is PHP and the view is CSS. These together creates a webpage. The HTML page and CSS were used to create the interface which is available for the user to view. The PHP is used to create the backend for the functionality of the application. For the given library management scenario, the database was created and the respective page was designed for the user to enter the data in the HTML page and the PHP could process the data and establish connection to the database and store the data in the database. For proper client server architecture the HTML and CSS code is to be made public in the domain, and the server or php code needs to be placed in a different location such that the client is unable to access that code. The HTML page needs to be user-friendly so that the user can easily understand the purpose of the webpage and the data that the user needs to provide.

6.Conclusions

Based on the scenario the database and the required tables with the required fields were created to be able to store the data for the website. The HTML page with the required fields and the required CSS code has been created and the PHP code for the data to be accepted and store the data in the database has been successfully implemented. The working of the registration page has been successful as the data has been successfully retrieved from the HTML page and the data has been stored in the database. The designed UI is also able to throw errors when the connection of database fails or type of the input is incorrect or the sql commands are executed wrong.

Comments**a.Limitations of Experiments:**

The establish of connection to the database using PHP and knowing the procedural methods. The working of the form in the HTML page and the necessary CSS for the proper display of the website.

b.Limitations of Results:

There needs to be a return message from the server after the data has been either successfully inserted or failed, so that the user can get to know that the registration has been completed.

c.Learning happened:

Learnt about the HTML codes and the connection between HTML, CSS and PHP and how these three together can be implemented for the proper function of the application.

d.Recommendations:

None

Component	Max Marks	Marks Obtained
Viva	6	
Results	7	
Documentation	7	
Total	20	

Laboratory 7

Title of the Laboratory Exercise: HTML user interface for Login

1. Introduction and Purpose of Experiment

Students will learn to use css and javascript in html platform.

2. Aim and Objectives

Aim

To use css and javascript to enhance the user interface for the previously developed user interface

Objectives

At the end of this lab, the student will be able to

- Create css classes and use it in the UI
- Create javascript and perform some actions on the developed html Page

3. Experimental Procedure

Update the same web pages already created in the previous labs with css classes and javascript to create new UI components in the html page.

4.Presentation of Results

PHP Code for home.php

```
<!DOCTYPE html>
<!--
To change this license header, choose License Headers in Project Properties.
To change this template file, choose Tools | Templates
and open the template in the editor.
-->
<html>
  <head>
    <meta charset="UTF-8">
    <title>Library</title>
    <style>
.center {
  text-align: center;
}

</style>
  </head>
  <body>
    <h1>Welcome to Library</h1>
    <?php
    session_start();
    $Student_name = $_SESSION['Student_name'];
    echo "Hi,".$Student_name."<br>";
    echo " List of Books in library";
    $con = mysqli_connect("localhost","root","root","librarysystem");

    if (mysqli_connect_errno())
    {
      echo "Failed to connect to MySQL: " . mysqli_connect_error();
    }

    $sql="select * from books ";
    $result=mysqli_query($con,$sql);

    echo "<table style='width:50%' border='1'>
      <tr>
        <th>book_id</th>
        <th>name</th>
        <th>author</th>
      </tr>";
    if(mysqli_num_rows($result)>0){
      while($row=mysqli_fetch_assoc($result)){
        echo "<tr>";
        echo "<td><center>".$row["bookid"]."</center></td>";
        echo "<td><center>".$row["name"]."</center></td>";
        echo "<td><center>".$row["author"]."</center></td>";
        echo "</tr>";
      }
    }
    else{
      echo "error";
    }

  ?>
  </body>
</html>
```

Showing rows 0 - 4 (5 total, Query took 0.0003 seconds.)

```
SELECT * FROM `books`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

bookid	name	author
1	Indian Geography	Ramesh Chandra
2	Malegalali madhumagalu	Kuvempu
3	Karvalo	Poorna Chandra Tejaswi
4	Mukajjiya kanasugalu	Shivarama karanth
5	The 3 Mistakes of My Life	Chetan Bhagat

Fig 1 Insertion of Books in SQL table

http://localhost/LibrarySystem/login.php

Login Page

Login

NAME
Deepak R

PASSWORD
deepakr@1

Fig 2 Enter Correct Login Credential in Login Page

Welcome to Library

Hi,Deepak R

List of Books in library

book_id	name	author
1	Indian Geography	Ramesh Chandra
2	Malegalali madhumagalu	Kuvempu
3	Karvalo	Poorna Chandra Tejaswi
4	Mukajjiya kanasugalu	Shivarama karanth
5	The 3 Mistakes of My Life	Chetan Bhagat

Fig 3 List of Books Available gets Displayed.

5.Analysis and Discussions

After the registration page, the login page is created as the registration needs to be validated. The login page is designed using HTML, CSS and PHP. The HTML and CSS forms the front end for the login page and the PHP forms the back end for the application. The data is being sent by the client side using the HTML form and the PHP code received the form data and checks if the data is present in the database. If the certain details is present then the user is successfully redirected to the dashboard, else an error message is displayed. Using the UI, the interaction of the user with the system are analysed. The UI designed to handle

the exceptions and throw the errors when the connection fails.

6.Conclusions

The HTML page creation is most important as it needs to be user friendly so that the user can easily understand and use the webpage. The required textfields required for validation is provided. The two cases for correct credentials and incorrect credentials has been checked, and both the cases has resulted the Name: Chinmaya Gayathri Registration Number:16ETCS002401 expected result. Therefore, the login page has been created successfully. The designed UI is also able to throw errors when the connection of database fails or type of the input is incorrect or the sql commands are executed wrong.

7.Comments

a. Limitations of Experiments

The establishment of connection to the database using PHP and knowing the procedural methods. The working of the form in the HTML page and the necessary CSS for the proper display of the website.

b. Limitations of Results

There needs to be a return message from the server after the data has been either successfully inserted or failed, so that the user can get to know that the registration has been completed.

c. Learning happened

Learnt about the HTML codes and the connection between HTML, CSS and PHP and how these three together can be implemented for the proper function of the application.

d. Recommendations

None

Component	Max Marks	Marks Obtained
Viva	6	
Results	7	
Documentation	7	
Total	20	

Laboratory 8

Title of the Laboratory Exercise: Search Implementation

1. Introduction and Purpose of Experiment

Students learn to create dashboard using html, to design the web page and search the required book.

2. Aim and Objectives

Aim

create the dashboard as per scenario requirements. Implement them using html and dash board should allow for different functionalities. Main idea about the dash board is to search for something and to retrieve the information from the database.

Objectives

At the end of this lab, the student will be able to

- Access the required information from the database.
- Display the retrieved information in html page using sql queries.

3. Experimental Procedure

First step of procedure is to develop the HTML page then establish the database connection. After the connection established access the information from the database retrieve back to the user page.

4. Calculations/Computations/Algorithms

Step1: design the dash board to the LMS and also the search of books

Step2: before the student details table is used to login and register now the book details table is used to search for the information books.

Step3: dash board can be created using html code itself and also by clicking the category can be move to the navigate page.

Step 4: create the table format in the html code to get information from the database to view the searched book details.

PHP Code for home page with added Search fuctionality(home.php)

```
<!DOCTYPE html>
<!--
To change this license header, choose License Headers in Project Properties.
To change this template file, choose Tools | Templates
and open the template in the editor.
-->
<html>
  <head>
    <meta charset="UTF-8">
    <title>Library</title>
    <style>
.center {
  text-align: center;
}
</style>
  </head>
  <body>
    <h1>Welcome to Library</h1>
    <?php
    //Searching
    if (isset($_POST['keyword'])) {
      $name = $_POST['keyword'];
      $con = mysqli_connect("localhost", "root", "root", "librarysystem");
      if (mysqli_connect_errno())
        {
          echo "Failed to connect to MySQL: " . mysqli_connect_error();
        }
        $sql="select * from books where name LIKE '%$name%'";
      $result=mysqli_query($con,$sql);
      echo "<table style='width:50%' border='1'>
        <tr>
          <th>book_id</th>
          <th>name</th>
          <th>author</th>
        </tr>";
      if(mysqli_num_rows($result)>0){
        while($row=mysqli_fetch_assoc($result)){
          echo "<tr>";
          echo "<td><center>".$row["bookid"]."</center></td>";
          echo "<td><center>".$row["name"]."</center></td>";
          echo "<td><center>".$row["author"]."</center></td>";
          echo "</tr>";
        }
      }
      else{
        echo "Book not found";
      }
    }
    session_start();
    $Student_name = $_SESSION['Student_name'];
    echo "Hi,".$Student_name."<br>";

    echo " List of Books in library";
    $con = mysqli_connect("localhost", "root", "root", "librarysystem");
    if (mysqli_connect_errno())
      {
        echo "Failed to connect to MySQL: " . mysqli_connect_error();
      }

      $sql="select * from books ";
      $result=mysqli_query($con,$sql);
      echo "<table style='width:50%' border='1'>
        <tr>
          <th>book_id</th>
          <th>name</th>
          <th>author</th>
        </tr>";
      if(mysqli_num_rows($result)>0){
```

```

while($row=mysqli_fetch_assoc($result)){
    echo "<tr>";
    echo "<td><center>".$row["bookid"]."</center></td>";
    echo "<td><center>".$row["name"]."</center></td>";
    echo "<td><center>".$row["author"]."</center></td>";
    echo "</tr>";
}
else{
    echo "error";
}
?>
<form role="form" id="templatemo-preferences-form" name="registration" action="" method="post">
    <div class="center">
        <input type="text" id="lastName4" placeholder="Search" name="keyword" required><br/>
        <br/>
        <button type="submit" name="submit" value="Register" >Search</button>
    </div>
</form>
</body>
</html>

```

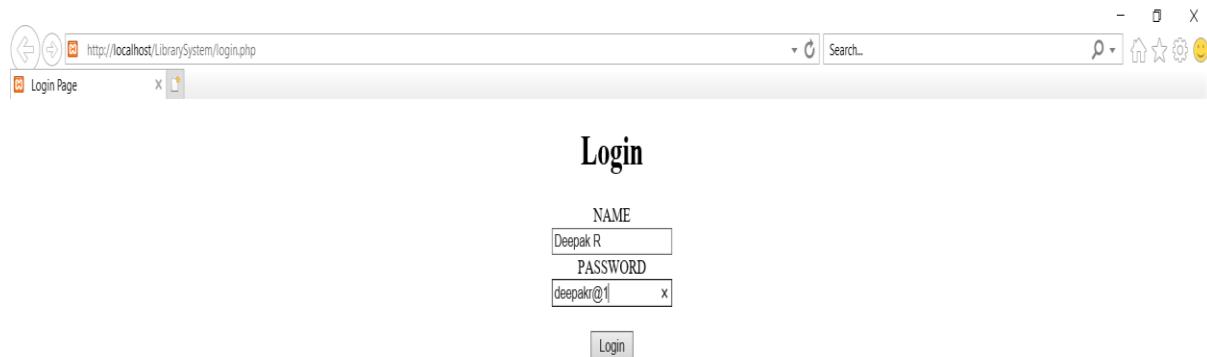


Fig 1 Enter Correct Login Credential in Login Page

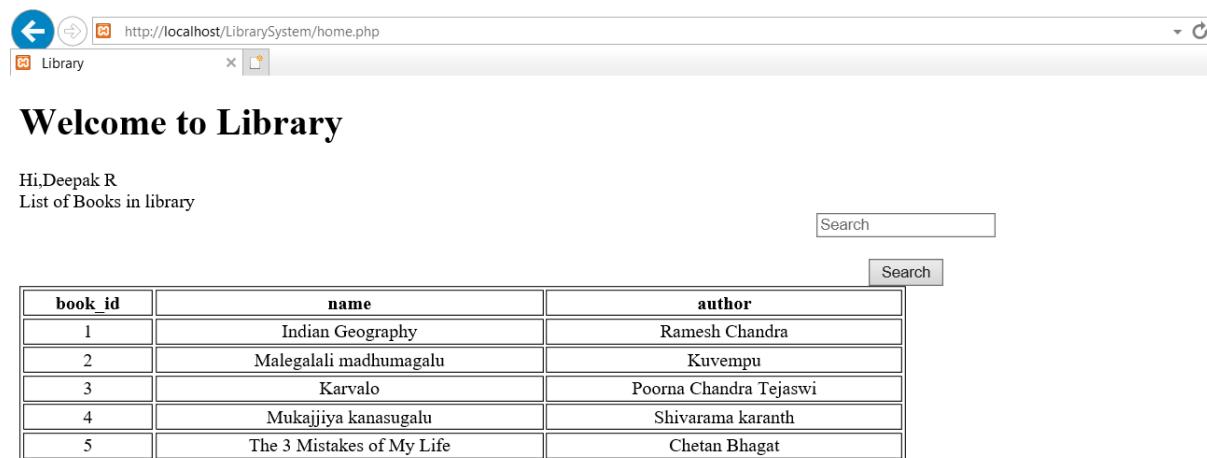


Fig 2 Home page will get displayed with added Search functionality

book_id	name	author
1	Indian Geography	Ramesh Chandra

book_id	name	author
1	Indian Geography	Ramesh Chandra
2	Malegalali madhumagalu	Kuvempu
3	Karvalo	Poorna Chandra Tejaswi
4	Mukajjiya kanasugalu	Shivarama karanth
5	The 3 Mistakes of My Life	Chetan Bhagat

Fig 3 if we type keyword of book in search the book get displayed

book_id	name	author
3	Karvalo	Poorna Chandra Tejaswi

book_id	name	author
1	Indian Geography	Ramesh Chandra
2	Malegalali madhumagalu	Kuvempu
3	Karvalo	Poorna Chandra Tejaswi
4	Mukajjiya kanasugalu	Shivarama karanth
5	The 3 Mistakes of My Life	Chetan Bhagat

Fig 4 if we type keyword of book in search the book get displayed

6. Analysis and Discussions

To access the book details through the book name and then query to access information it happen only if the search key is equal to one of the result of sql query otherwise which prints the empty table because the searched book is not available.

7. Conclusions

The experiment is executed according to the given scenario successfully. The dash board is designed with some of category and also with the search operation of books.

8. Comments**a. Limitations of Experiments**

The search operation does access the information such as student who reserved the particular book.

b. Limitations of Results

The dashboard was created with the orderlist but the testing can not be taken care i.e when a student performs an action on logout what happens is not shown or not direct to perform some action.

c. Learning happened

In this laboratory learning happened to perform search of text books and to create table to access the information back to the web page. The student can access all book details present in the database.

d. Recommendations

None

Component	Max Marks	Marks Obtained
Viva	6	
Results	7	
Documentation	7	
Total	20	

Laboratory 9

Title of the Laboratory Exercise: Reservation of Book Implementation

1. Introduction and Purpose of Experiment

Students learn to create dashboard using html, to design the web page and search the required book.

2. Aim and Objectives

Aim

create the dashboard as per scenario requirements. Implement them using html and dash board should allow for different functionalities. Main idea about the dash board is to search for something and to retrieve the information from the database.

Objectives

At the end of this lab, the student will be able to

- Create the dashboard
- To design the dashboard HTML is used.
- Connect to the database
- Access the required information from the database.
- Display the retrieved information in html page using sql queries.

3. Experimental Procedure

First step of procedure is to develop the HTML page then establish the database connection. After the connection established access the information from the database retrieve back to the user page.

4. Calculations/Computations/Algorithms

Step 1: To get user input to reserve books deign the search box with html code.

Step 2: write the code snippet for database connection establishment.

Step 3: the connection established successfully displays the html page.

Step 3: the student can reserve books only which is available to make reservation.

Step 4: when an user click on reserve button executes the sql query to update attribute of reservation set yes.

5. Presentation of Results

Source Code home.php

```
<!DOCTYPE html>
<!--
To change this license header, choose License Headers in Project Properties.
To change this template file, choose Tools | Templates
and open the template in the editor.
-->
<html>
    <head>
        <meta charset="UTF-8">
        <title>Library</title>
        <style>
            .center {
                text-align: center;
            }
        </style>
    </head>
    <body>
        <h1>Welcome to Library</h1>
        <?php
        //Searching
        if (isset($_POST['keyword'])) {
            $name = $_POST['keyword'];
            $con = mysqli_connect("localhost", "root", "root", "librarysystem");
            if (mysqli_connect_errno())
            {
                echo "Failed to connect to MySQL: " . mysqli_connect_error();
            }
            $sql="select * from books where name LIKE '%$name%'";
            $result=mysqli_query($con,$sql);
            echo "<table style='width:50%' border='1'>
                    <tr>
                        <th>bookid</th>
                        <th>name</th>
                        <th>author</th>
                    </tr>";
            if(mysqli_num_rows($result)>0){
                while($row=mysqli_fetch_assoc($result)){
                    echo "<tr>";
                    echo "<td><center>".$row["bookid"]."</center></td>";
                    echo "<td><center>".$row["name"]."</center></td>";
                    echo "<td><center>".$row["author"]."</center></td>";
                    echo "<td><center>".$row["Reservation_Status"]."</center></td>";
                    echo "</tr>";
                }
            }
            else{
                echo "Book not found";
            }
        }
        session_start();
        $Student_name = $_SESSION['Student_name'];
        echo "Hi,".$Student_name."<br>";

        echo " List of Books in library";
        $con = mysqli_connect("localhost", "root", "root", "librarysystem");
        if (mysqli_connect_errno())
        {
            echo "Failed to connect to MySQL: " . mysqli_connect_error();
        }

        $sql="select * from books ";
        $result=mysqli_query($con,$sql);
```

```

echo "<table style='width:50%' border='1'>
<tr>
<th>bookid</th>
<th>name</th>
<th>author</th>
<th>Reservation_Status</th>
</tr>";
if(mysqli_num_rows($result)>0){
    while($row=mysqli_fetch_assoc($result)){
        echo "<tr>";
        echo "<td><center>".$row["bookid"]."</center></td>";
        echo "<td><center>".$row["name"]."</center></td>";
        echo "<td><center>".$row["author"]."</center></td>";
        echo "<td><center>".$row["Reservation_Status"]."</center></td>";
        echo "</tr>";
    }
}
else{
    echo "error";
}
?>
<form role="form" id="templatemo-preferences-form" name="registration" action="" method="post">
<div class="center">
<input type="text" id="lastName4" placeholder="Search" name="keyword" required><br/>
<br/>
<button type="submit" name="submit" value="Register" >Search</button>
</div>
</form>
<div>
<form role="form" id="templatemo-preferences-form" name="registration" action="" method="post">
<div class="center">
<input type="text" id="lastName4" placeholder="Enter Book Id" name="keyword" required><br/>
<br/>
<button type="reserve">Reserve</button>
</div>
</form>
<?php
if(isset($_POST['keyword'])){
    $Bookid = $_POST['keyword'];
    $con = mysqli_connect("localhost", "root", "root", "librarysystem");
    if (mysqli_connect_errno()) {
        echo "Failed to connect to MySQL: " . mysqli_connect_error();
    }
    $sql = "UPDATE books SET Reservation_Status = 'Yes' WHERE bookid = '$Bookid'";
    $result = mysqli_query($con, $sql);
    if($result == 1){
        echo "Reserved Success";
    }
    else{
        echo "fail";
    }
}
?>
</div>
</body>
</html>

```

When the connection between the database and the PHP application is successfully established, the UPDATE SQL query is executed. When the user enters the item name to reserve, the reservation of the item name entered by the user is set to "Yes" and the Item is RESERVED successfully message is displayed. If the item name entered by the user is not found in the database, the error message is displayed.

Welcome to Library

Hi,Deepak R
List of Books in library

book_id	name	author	Reservation_Status
1	Indian Geography	Ramesh Chandra	Yes
2	Malegalali madhumagalu	Kuvempu	NO
3	Karvalo	Poorna Chandra Tejaswi	Yes
4	Mukajjiya kanasugalu	Shivarama karanth	NO
5	The 3 Mistakes of My Life	Chetan Bhagat	Yes

Fig 1 Display of home page with reserve and search button

+ Options

bookid	name	author	Reservation_Status
1	Indian Geography	Ramesh Chandra	Yes
3	Karvalo	Poorna Chandra Tejaswi	Yes
5	The 3 Mistakes of My Life	Chetan Bhagat	Yes
2	Malegalali madhumagalu	Kuvempu	NO
4	Mukajjiya kanasugalu	Shivarama karanth	NO

Fig 2 if we reserve any books, it gets updated in database

Welcome to Library

Hi,Deepak R
List of Books in library

bookid	name	author	Reservation_Status
1	Indian Geography	Ramesh Chandra	Yes
2	Malegalali madhumagalu	Kuvempu	NO
3	Karvalo	Poorna Chandra Tejaswi	Yes
4	Mukajjiya kanasugalu	Shivarama karanth	NO
5	The 3 Mistakes of My Life	Chetan Bhagat	Yes

Fig 3 If we want to Reserve Mukajjiya kanasugalu books we type bookid 4 in Reserve box and press reserve.

Welcome to Library

Hi,Deepak R
List of Books in library

bookid	name	author	Reservation Status
4	Mukajjiya kanasugalu	Shivarama karanth	Yes

Search

bookid	name	author	Reservation Status
1	Indian Geography	Ramesh Chandra	Yes
2	Malegalali madhumagalu	Kuvempu	NO
3	Karvalo	Poorna Chandra Tejaswi	Yes
4	Mukajjiya kanasugalu	Shivarama karanth	Yes
5	The 3 Mistakes of My Life	Chetan Bhagat	Yes

Search

Enter Book Id

Reserve

Fig 4 To Cross check whether book is reserved or not we search . when searched it shows yes that means it is reserved.

6.Analysis and Discussions

In this laboratory establishing connection between the database and html to access data information. Implemented the code to display the data from the database “library” in table format and designing the html page every button in nivbar has link to other pages where home is link to home page,search has link to dashboard page, login has link to login page, new user had link to registration page and contact has link to contact page. With also simple search box to access the details of books.

7.Conclusions

Reservation of books with the book id is executed successfully. The importance of reservation is updating one attribute status of value from “no” to “yes” by access the user input of book id. The post input of user and row of each book id is matched if it is equal then displays details of book.

8.Comments

a. Limitations of Experiments

After the reservation of books, student cannot request for the reserved book through the system like pre-request. And also the reserved book details will not be displayed and cannot able to access those book details information.

b. Limitations of Results

No

c. Learning happened

Learning happen to create an html page to reserve the books with one text input and one reserve button and reservation function calls only when the button is clicked. Before executing the sql statement make sure that the database connection established without any connection failure error.

d. Recommendations

None

Component	Max Marks	Marks Obtained
Viva	6	
Results	7	
Documentation	7	
Total	20	