

Assignment

Course Code	CSC402A
Course Name	Web Architecture and Application development
Programme	B.Tech
Department	Computer Science and Engineering
Faculty	Engineering and Technology

Name of the Student	Deepak R
Reg. No.	18ETCS002041
Semester/Year	6th/2021
Course Leader(s)	Mr. Kishore S. M.

Declaration Sheet

Student Name	Deepak R		
Reg. No	18ETCS002041		
Programme	B.Tech	Semester/Year	6 th /2021
Course Code	CSC402A		
Course Title	Web Architecture and Application development		
Course Date		to	
Course Leader	Mr. Kishore S. M.		
Declaration <p>The assignment submitted herewith is a result of my own investigations and that I have conformed to the guidelines against plagiarism as laid out in the Student Handbook. All sections of the text and results, which have been obtained from other sources, are fully referenced. I understand that cheating and plagiarism constitute a breach of University regulations and will be dealt with accordingly.</p>			
Signature of the Student		Date	
Submission date stamp (by Examination & Assessment Section)			
Signature of the Course Leader and date		Signature of the Reviewer and date	

Faculty of Engineering and Technology			
Ramaiah University of Applied Sciences			
Department	Computer Science and Engineering	Programme	B. Tech
Semester/Batch	07/2018		
Course Code	CSC402A	Course Title	Web Architecture and Application development
Course Leader	Mr. Kishore S. M.		



Assignment					
Register No.		18ETCS002041	Name of the Student		Deepak R
Sections		Marking Scheme	Marks		
			Max Marks	First Examiner Marks	Moderator
Part 1	1.1	Implementation of database with justification of relationships	8		
	1.2	Implementation of user registration	8		
	1.3	Implementation of Smartphone reservation for user	9		
	Part-2 Max Marks		25		

Course Marks Tabulation				
Component- CET B Assignment	First Examiner	Remarks	Second Examiner	Remarks
1				
2				
Total Marks				
<div>Signature of First Examiner</div> <div>Signature of Second Examiner</div>				

Assignment

Instructions to students:

1. The assignment consists of 2 questions.
2. Maximum marks is 25.
3. The assignment has to be neatly word processed as per the prescribed format.
4. The maximum number of pages should be restricted to 9.
5. The printed assignment must be submitted to the course leader.
6. Submission Date: **XXXXXXXX**
7. Submission after the due date is not permitted.

Preamble:

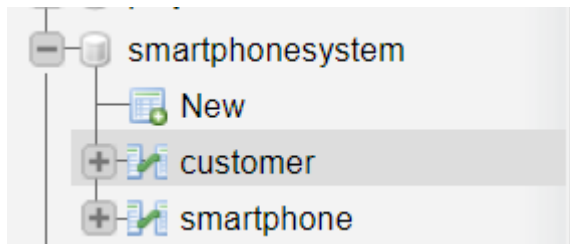
The course on web architecture and application development is aimed at preparing the students to design, develop and test web applications by applying different programming techniques. The students are taught the overview of software architecture and architectural styles. They apply different web technologies to design and develop web applications. They also analyze different software architectures, their benefits and shortcomings. This assignment assesses how well a student can analyze the scenario, design a well-defined user interface for the web application and implement the same. The first part of the assignment is aimed at assessing the student's ability to design a web application. The second part of the assignment is aimed at assessing the student's ability to implement an efficient web application.

Scenario:

(25 Marks)

In an online Smartphone shopping Web application, users can register and login to the web application. The online smartphone application maintains account details for each user (user ID, user name, phone number, shipping address and items purchased etc.). The user may select any item from the list of available items or can search for all the available smartphones. It is assumed that an item purchased is reserved and made available to the user offline.

Solution for 1.1 Implementation of database with justification of relationships



#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 Customer_id	text	latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	2 Customer_email	text	latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	3 Customer_phno	text	latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	4 Customer_name	text	latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	5 Customer_address	text	latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	6 Customer_password	text	latin1_swedish_ci		No	None			Change Drop More

Figure 1: Schema of the Customer details table

The Customer table is created with attributes Customer_id which is of datatype text , Customer_email which is of datatype text, Customer_Password is an another attribute with the datatype text, Customer_phno with datatype text, Customer_name with datatype text, Customer_address with datatype text .

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 SmartPhone_id	text	latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	2 name	text	latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	3 Company	text	latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	4 Reservation_Status	text	latin1_swedish_ci		No	None			Change Drop More

Figure 2: Schema of the Smartphone table

The smartphone table is created with attributes Smartphone_Id which is of datatype text, Name which is of datatype text, Company which is of datatype text , Reservation_Status which is of datatype text The default value of Reservation is set to "NO".

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

SELECT * FROM `customer`

☐ Profiling [\[Edit inline \]](#) [\[Edit \]](#) [\[Explain SQL \]](#) [\[Create PHP code \]](#) [\[Refresh \]](#)

☐ Show all | Number of rows: 25 | Filter rows:

+ Options

Customer_id	Customer_email	Customer_phno	Customer_name	Customer_address	Customer_password
901	virat@gmail.com	9887722110	Virat	Delhi	virat@1
902	yuvraj@gmail.com	9110022122	Yuvraj	Pune	yuvraj@1
903	deepakr@gmail.com	9777215510	Deepak R	Bengaluru	deepakr@1
904	dhoni@gmail.com	9776273670	Dhoni	Ranchi	dhoni@1
905	shreekanth@gmail.com	9227727280	Shreekanth	Kochi	shreekanth@1

Fig 3 Customer entity Database when populated with values represents the details of the Customer details table.

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

SELECT * FROM `smartphone`

☐ Profiling [\[Edit inline \]](#) [\[Edit \]](#) [\[Explain SQL \]](#) [\[Create PHP code \]](#) [\[Refresh \]](#)

☐ Show all | Number of rows: 25 | Filter rows:

+ Options

SmartPhone_id	name	Company	Reservation_Status
990004	K3	Realme	No
990005	A6	Micromax	No
990001	J7	Samsung	No
990002	I10	Apple	No
990003	k6 Power	Lenovo	No

Fig 3 Smartphone entity Database when populated with values represents the details of the Smartphone details table.

Created database before designing the HTML page. Which happens first because from web page when user request for some text book to check the status of reservation which wants to execute the sql queries and to store in on particular variable which will be displayed to the user. In case if data base which created is not valid or table name is not valid which cannot get any of information. In same case if data base is not created at all which cannot validate any of information to the Customer.

1.2 Solution for Implementation of user registration Code

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> Smartphone Online Booking System</title>
    <style>
.center {
  text-align: center;
}
</style>
  </head>
  <body>
    <?php

    $Customer_id = $Customer_address = $Customer_email = $Customer_phno = $Customer_name = "";
    if($_SERVER["REQUEST_METHOD"]=="POST"){
        $Customer_id = $_POST['Customer_id'];
        $Customer_address = $_POST['Customer_address'];
        $Customer_email = $_POST['Customer_email'];
        $Customer_phno = $_POST['Customer_phno'];
        $Customer_name = $_POST['Customer_name'];
        $Customer_password = $_POST['Customer_password'];
        $con = mysqli_connect("localhost","root","root","smartPhonesystem");
        $query = "INSERT INTO `Customer` (Customer_id, Customer_address, Customer_email,
Customer_phno , Customer_name , Customer_password) VALUES ('$Customer_id', '$Customer_address',
'$Customer_email', '$Customer_phno', '$Customer_name', '$Customer_password')";
        $result = mysqli_query($con,$query);
        if($result){
            echo ("Registration Succesful");
        }
        else
        {
            echo ("Fail");
        }
    }

    ?>
    <form action="" method="post" >
      <div class="center">
        <h1>Smartphone Online Booking System </h1>
        <label>Customer_id</label></br><input type="text" name="Customer_id"><br/>
        <label>Customer_address</label></br><input type="text" name="Customer_address"><br/>
        <label>Customer_email</label></br><input type="text" name="Customer_email"><br/>
        <label>Customer_phno</label></br><input type="text" name="Customer_phno"><br/>
        <label>Customer_name</label></br><input type="text" name="Customer_name"><br/>
        <label>Customer_password</label></br><input type="text" name="Customer_password"><br/><br/>
        <button type="submit" name="submit" value="Register" >Update</button>
      </div>
    </form>

  </body>
</html>

```

The server name, user name, password and the database name are assigned to respective variables. The connection between the database and the PHP application is created by passing the server name, user name, password and database name to the mysqli. The established connection is verified. If the connection is not established between the database and the PHP application, Connection failed message is displayed. The user details that is username, password, userid and the email id entered by the user in the text fields are passed to the php script using the \$_POST method and the details are stored in the corresponding variables. When the details entered in the password and confirm password fields are same, the INSERT SQL query is executed and the all the details entered by the user are inserted into the users table and the results are stored in the result variable. If the connection between the database and the PHP application still exists, the New record created successfully message is displayed else the password did not match message is displayed. The figure is the user registration form of the Library Management system web application. It contains four text fields, for the Customer name, password, Customer_id and another for the email id. It also contains one button, submit. The page also contains a link for the dashboard page of the Smartphone Online Booking system.

Figure 4.2: UI design for registration page

The figure is the user registration form of the Smartphone Online Booking system web application. It contains four text fields, for the Customer name, password, Customer_id and another for the email id. It also contains one button, submit. The page also contains a link for the dashboard page of the Smartphone online booking system.

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

SELECT * FROM `customer`

☐ Profiling [\[Edit inline \]](#) [\[Edit \]](#) [\[Explain SQL \]](#) [\[Create PHP code \]](#) [\[Refresh \]](#)

☐ Show all | Number of rows: 25 | Filter rows:

Customer_id	Customer_email	Customer_phno	Customer_name	Customer_address	Customer_password
901	virat@gmail.com	9887722110	Virat	Delhi	virat@1
902	yuvraj@gmail.com	9110022122	Yuvraj	Pune	yuvraj@1
903	deepakr@gmail.com	9777215510	Deepak R	Bengaluru	deepakr@1
904	dhoni@gmail.com	9776273670	Dhoni	Ranchi	dhoni@1
905	shreekanth@gmail.com	9227727280	Shreekanth	Kochi	shreekanth@1

1.3 Solution for Implementation of Smartphone reservation for user

Code for 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>
    <title>Login Page</title>
  </head>
  <body>
    <?php
      // put your code here
      if (isset($_POST['Customer_name'])) {
        $Customer_name = $_POST['Customer_name'];

        $Customer_password = $_POST['Customer_password'];

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

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

        $query = "SELECT * FROM customer WHERE Customer_name='$Customer_name' and
Customer_password='$Customer_password'";
        $result = mysqli_query($con,$query);
        if($result)
        {
          if(mysqli_num_rows($result)>0)
          {
            session_start();
            $_SESSION['Customer_name'] = $Customer_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="Customer_name" required> <br/>
          <label>PASSWORD</label><br/>

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

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 Online Smartphone Booking System</h1>
<?php
//Searching
if (isset($_POST['keyword'])) {
$name = $_POST['keyword'];
$con = mysqli_connect("localhost","root","root","smartPhonesystem");
if (mysqli_connect_errno())
{
echo "Failed to connect to MySQL: " . mysqli_connect_error();
}

$sql="select * from smartphone where name LIKE '%$name%' ";
$result=mysqli_query($con,$sql);
echo "<table style='width:50%' border='1'>
<tr>
<th>SmartPhone_id</th>
<th>name</th>
<th>Company</th>
<th>Reservation_Status</th>
</tr>";
if(mysqli_num_rows($result)>0){
while($row=mysqli_fetch_assoc($result)){
echo "<tr>";
echo "<td><center>".$row["SmartPhone_id"]."</center></td>";
echo "<td><center>".$row["name"]."</center></td>";
echo "<td><center>".$row["Company"]."</center></td>";
echo "<td><center>".$row["Reservation_Status"]."</center></td>";
echo "</tr>";
}
}
else{
echo "Mobile not found";
}
}
session_start();
$Student_name = $_SESSION['Customer_name'];
echo "Hi, ". $Customer_name."<br>";

echo " List of Smartphones Available now";
$con = mysqli_connect("localhost","root","root","smartPhonesystem");
if (mysqli_connect_errno())
{
echo "Failed to connect to MySQL: " . mysqli_connect_error();
}

$sql="select * from smartphone ";
$result=mysqli_query($con,$sql);
echo "<table style='width:50%' border='1'>
<tr>
<th>SmartPhone_id</th>
<th>name</th>
```

```
<th>Company</th>
<th>Reservation_Status</th>
</tr>;

if(mysqli_num_rows($result)>0){
    while($row=mysqli_fetch_assoc($result)){
        echo "<tr>";
        echo "<td><center>".$row["SmartPhone_id"]."</center></td>";
        echo "<td><center>".$row["name"]."</center></td>";
        echo "<td><center>".$row["Company"]."</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 Smartphone 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();
    }
    $sql = "UPDATE smartphone SET Reservation_Status = 'Yes' WHERE Smartphone_id = '$Smartphone_id'";
    $result = mysqli_query($con, $sql);
    if($result == 1){
        echo "Reserved Success";
    }
    else{
        echo "fail";
    }
}
?>
</div>
</body>
</html>
```

http://localhost/SmartphoneSystem/login.php

Login Page

Login

NAME
enter name

PASSWORD
enter password

Login

Figure 5.2: UI design for Login page

The figure represents the login credentials entered by the user. The username and password are entered in the text fields. After entering the login details, submit button is clicked. When the user clicks the submit button, the corresponding SQL query for the submit button is executed to verify the login details entered by the user matches with the user details stored in the database

http://localhost/SmartphoneSystem/login.php

Login Page

Login

NAME
Deepak R

PASSWORD
deepakr@1

Login

We are supposed to enter Correct Credentials otherwise it will fail to login

http://localhost/SmartphoneSystem/home.php

Library

Welcome to Online Smartphone Booking System

Hi, Deepak R
List of Smartphones Available now

Search

Search

Enter Smartphone Id

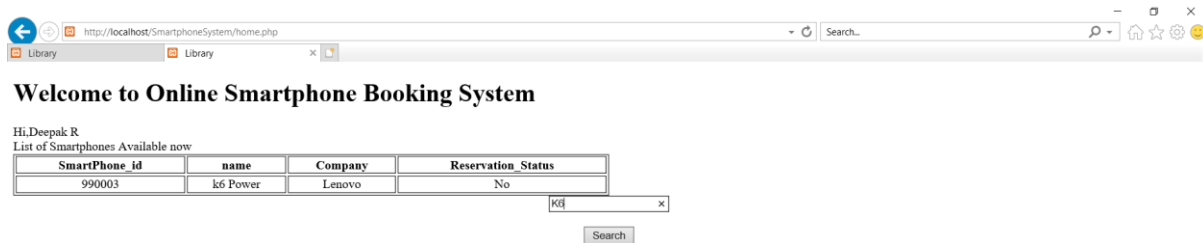
Reserve

SmartPhone id	name	Company	Reservation Status
990004	K3	Realme	No
990005	A6	Micromax	No
990001	J7	Samsung	No
990002	110	Apple	No
990003	k6 Power	Lenovo	No

Figure 5.3: UI design for Dashboard page

In figure, the user enters the item type as Mobile in the text field defined to enter the item type. After entering the item type, Search button is clicked. When the user clicks the Search button, the corresponding SQL query for the Search button is executed and the details of all the items with Mobile type Mobile is displayed. In

Registration page Username is also displayed where use session variable to display the user name.



Welcome to Online Smartphone Booking System

Hi,Deepak R
List of Smartphones Available now

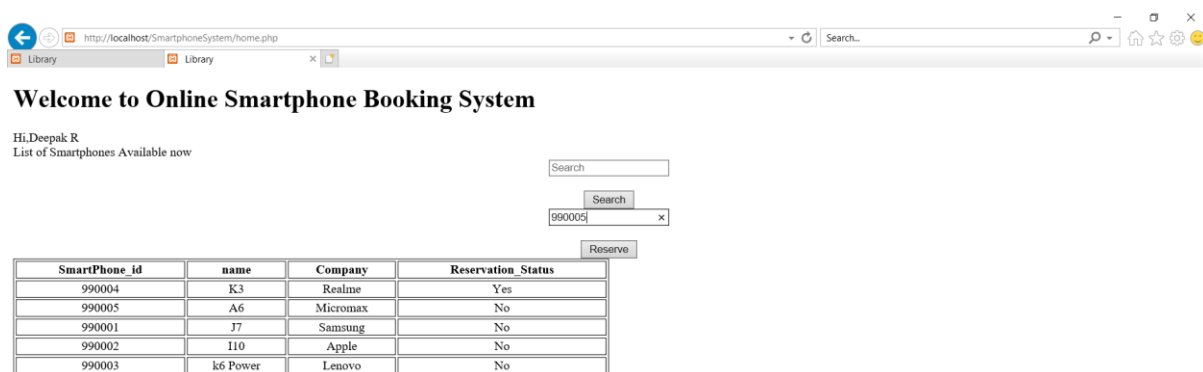
SmartPhone_id	name	Company	Reservation Status
990003	k6 Power	Lenovo	No

Search bar: K6

Search button

Figure UI for searching the items

In figure, the user enters the item type as Mobile in the text field defined to enter the item type. After entering the item type, Search button is clicked. When the user clicks the Search button, the corresponding SQL query for the Search button is executed and the details of all the items with book type book is displayed. In Registration page Username is also displayed where use session variable to display the user name.



Welcome to Online Smartphone Booking System

Hi,Deepak R
List of Smartphones Available now

Search bar: 990005

Search button

Reserve button

SmartPhone_id	name	Company	Reservation Status
990004	K3	Realme	Yes
990005	A6	Micromax	No
990001	J7	Samsung	No
990002	I10	Apple	No
990003	k6 Power	Lenovo	No

In figure, the user enters the Smartphone_id as 990005 in the text field defined to enter the Mobile name. After entering the Smartphone_id, Reserve button is clicked. When the user clicks the Reserve button, the corresponding SQL query for the Reserve button is executed and the reservation successful message is displayed. The books table database also gets updated and the Smartphone_id is set to YES.

The screenshot shows a web browser window with the URL `http://localhost/SmartphoneSystem/home.php`. The page title is "Welcome to Online Smartphone Booking System". Below the title, it says "Hi, Deepak R" and "List of Smartphones Available now". There is a table with the following data:

SmartPhone_id	name	Company	Reservation_Status
990005	A6	Micromax	Yes

Below the table, there is a search bar with a "Search" button. Below the search bar, there is a text input field labeled "Enter Smartphone Id" and a "Search" button. Below the text input field, there is a "Reserve" button. Below the "Reserve" button, it says "Reserved Success". Below "Reserved Success", there is a table with the following data:

SmartPhone_id	name	Company	Reservation_Status
990004	K3	Realme	Yes
990005	A6	Micromax	Yes
990001	J7	Samsung	No
990002	I10	Apple	No
990003	k6 Power	Lenovo	No

In figure, once the item is reserved, if any other user logs in and enters the Smartphone name in the text field and clicks the Search button, the corresponding SQL query for the Search button is executed and the details of all the Smartphone with Smartphone type is displayed because once reservation is completed other user cannot Buy that Smartphone with Reservation_status Yes.

Bibliography

1.Class Notes and Web Architecture lab.