GR22 Regulations

II B.Tech - II Semester

Full Stack Web Development Lab (GR22A2078)

Department of Computer Science and Engineering

GOKARAJU RANGARAJU
INSTITUTE OF ENGINEERING AND TECHNOLOGY
(Autonomous)

SYLLABUS

Gokaraju Rangaraju
Institute of Engineering and Technology

Full Stack Web Development Lab

Course Code: GR22A2078 **L/T/P/C:0/0/3/1.5**

II Year II Semester

Course Objectives:

1. To understand designing of Front-End Applications.
2. To design client-side applications using HTML, JavaScript.
3. To build robust and scalable websites, backend APIs.
4. To understand end-to-end application with exciting features and test it
5. To understand database connectivity with web applications.

Course Outcomes:

1. To design a website
2. To implement client-side validation.
3. To develop the robust and scalable websites, backend APIs
4. To implement end-to-end applications.
5. To design web applications with database connectivity.

TASK 1: Develop a website by implementing JavaScript functions for the following problems:
Parameter: A string
Output: The position in the string of the left-most vowel
Parameter: A number
Output: The number with its digits in the reverse order

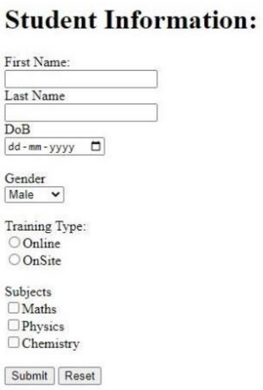
TASK 2: Write a JavaScript program to calculate the squares and cubes of the numbers from 0 to 10 and outputs HTML text that displays the resulting values in an HTML table format.

TASK 3: Write a JavaScript program to display text “TEXT-GROWING” with increasing font size in the interval of 100ms in RED COLOR, when the font size reaches 50pt it displays “TEXTSHRINKING”in BLUE color. Then the font size decreases to 5pt.

TASK 4: Write a JavaScript program to design a simple calculator to perform the following operations: sum, product, difference and quotient.

TASK 5: Write a JQuery AJAX program to request data from the server with an HTTP.

TASK 6: Create following Student Information form with submit and reset functionality using Angular JS.



Student Information:

First Name:

Last Name

DoB
dd-mm-yyyy

Gender
Male

Training Type:
○ Online
○ OnSite

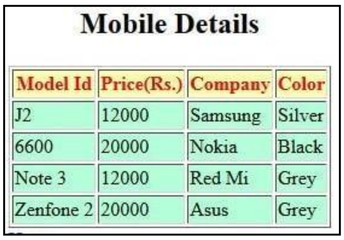
Subjects
□ Maths
□ Physics
□ Chemistry

Sample AngularJS Form.

TASK 7: Use AngularJS features to make a shopping list, where you can add or remove items as shown below.

My Shopping List
□ Milk×
□ Bread×
□ Cheese×
Add

TASK 8: Write a Servlet Program that accepts the Mobile phone details from user and displays the details on the next page. Create a table and perform insert operation as shown in the Figure 1 below.Connect using JDBC to display each record at a time on the webpage using servlet request and response.



Mobile Details

Model Id	Price(Rs.)	Company	Color
J2	12000	Samsung	Silver
6600	20000	Nokia	Black
Note 3	12000	Red Mi	Grey
Zenfone 2	20000	Asus	Grey

Figure 1: Table Details

TASK 9: Develop a JSP Program to validate a particular user login based on the username password stored in the database and display a welcome page.

TASK 10: Write PHP programs to do the following tasks:
a. Implement simple calculator operations.
b. Find the transpose of a matrix.
c. Multiplication of two matrices.
d. Addition of two matrices.

TASK 11: Write a PHP program named states.py that declares a variable states with value "Mississippi Alabama Texas Massachusetts Kansas". Write a PHP program that does the following:
a. Search for a word in variable states that ends in xas. Store this word in element 0 of a list named statesList.
b. Search for a word in states that begins with k and ends in s. Perform a case insensitive comparison.
[Note: Passing re.Ias a second parameter to method compile performs a case-insensitive comparison.] Store this word in element1 of states List.

c. Search for a word in states that begins with M and ends in s. Store this word in element 2 of the list.
d. Search for a word in states that ends in a. Store this word in element 3 of the list.

TASK 12: Write a PHP program to sort the student records which are stored in the database using selection sort.

Textbooks:

1. Modern Full-Stack Development: Using TypeScript, React, Node.js, Webpack, and Docker 1st ed. Edition by Frank Zammetti
2. Web Design with HTML, CSS, JavaScript and jQuery Set 1st Edition by Jon Duckett
3. The Full Stack Developer: Your Essential Guide to the Everyday Skills Expected of a Modern
Full Stack Web Developer 1st ed. Edition, Kindle Edition by Chris Northwood

References:

1. Quick Start Full Stack Web Development: Build Secure Asynchronous Single-Page Apps with
Flask, React, and PostgreSQL by Erik M. Ferragut (Author)
2. Full Stack Web Development For Beginners: Learn Ecommerce Web Development Using HTML5, CSS3,
3. Bootstrap, JavaScript, MySQL, and PHP by Riaz Ahmed.

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TASK 1

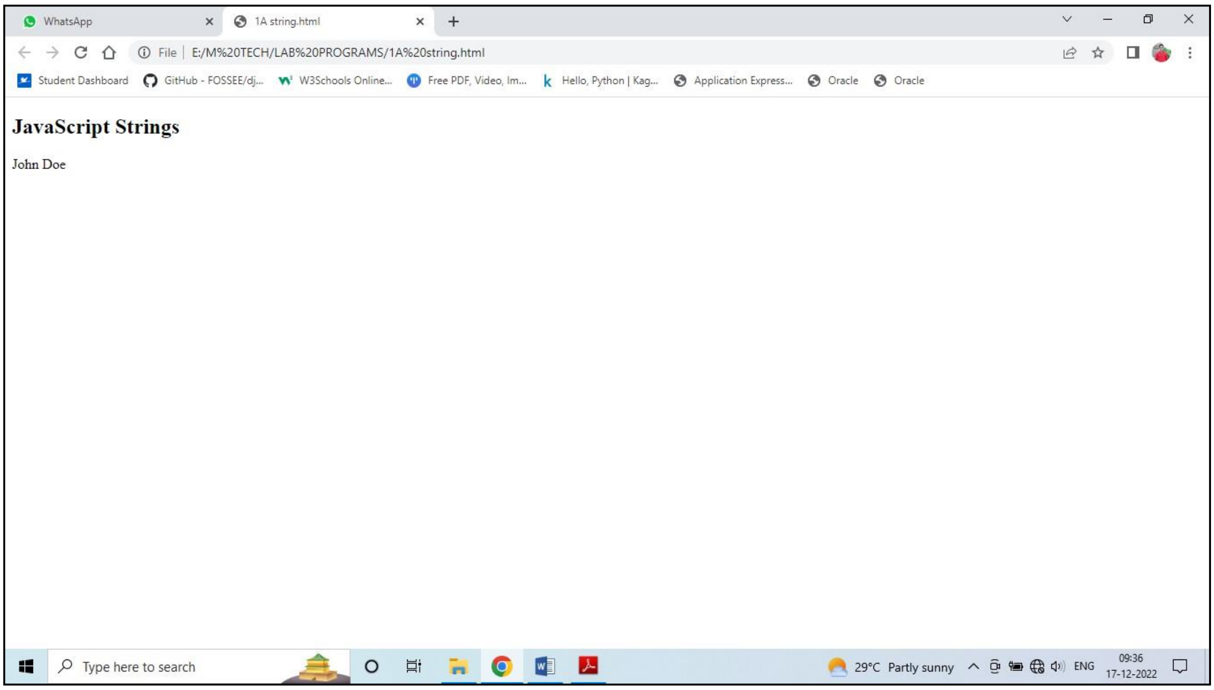
TASK 1a: Develop a website by implementing JavaScript functions for the following problems:
a: Parameter: A string

AIM: To develop a website by implementing JavaScript functions with output as the position in the string of the left-most vowel.

PROGRAM:

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Strings</h2>

<p id="demo"></p>

<script>
let text = "John Doe"; // String written inside quotes
document.getElementById("demo").innerHTML = text;
</script>

</body>
</html>
```

OUTPUT:



JavaScript Strings

John Doe

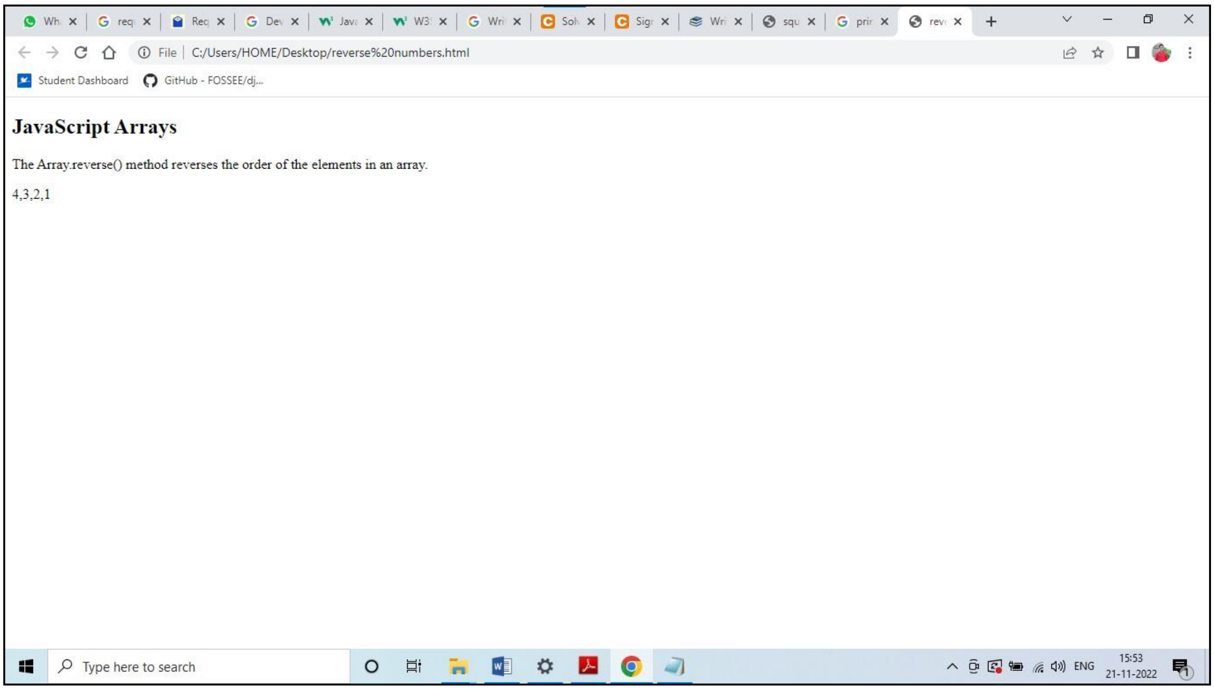
TASK 1b: Develop a website by implementing JavaScript functions for the following problems:
b: Parameter: A number

AIM: To develop a website by implementing JavaScript functions with output the number digits in the reverse order

PROGRAM:

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Arrays</h2>

<p>The Array.reverse() method reverses the order of the elements in an array.</p>

<p id="demo"></p>

<script>
const numbers = ["1","2","3","4"];
document.getElementById("demo").innerHTML = numbers.reverse();
</script>

</body>
</html>
```

OUTPUT:



JavaScript Arrays

The Array.reverse() method reverses the order of the elements in an array.

```
4,3,2,1
```

TASK 2

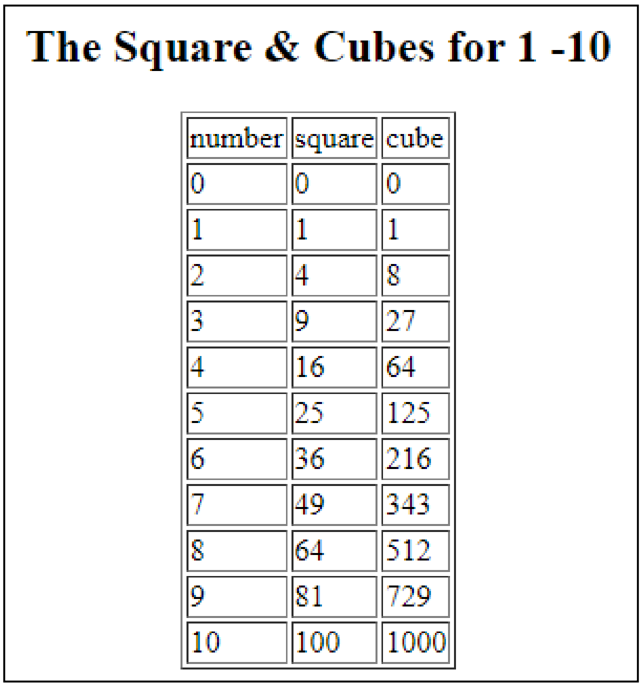
TASK 2: Write a JavaScript program to calculate the squares and cubes of the numbers from 0 to 10 and outputs HTML text that displays the resulting values in an HTML table format.

AIM: To develop a JavaScript program to calculate the squares and cubes of the numbers.

PROGRAM:

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

<h2 style="text-align:center;"> The Square & Cubes for 1 -10</h2>
<table align="center" border=1>
<tr><td>number</td><td>square</td><td>cube</td></tr>
<script type="text/javascript">
for(var n=0; n<=10; n++)
{
document.write( "<tr><td>" + n + "</td><td>" + n*n + "</td><td>" + n*n*n
+ "</td></tr>" ) ;
}

</script>
</table>
</body>
</html>
```

OUTPUT:



The Square & Cubes for 1 -10

number	square	cube
0	0	0
1	1	1
2	4	8
3	9	27
4	16	64
5	25	125
6	36	216
7	49	343
8	64	512
9	81	729
10	100	1000

TASK 3

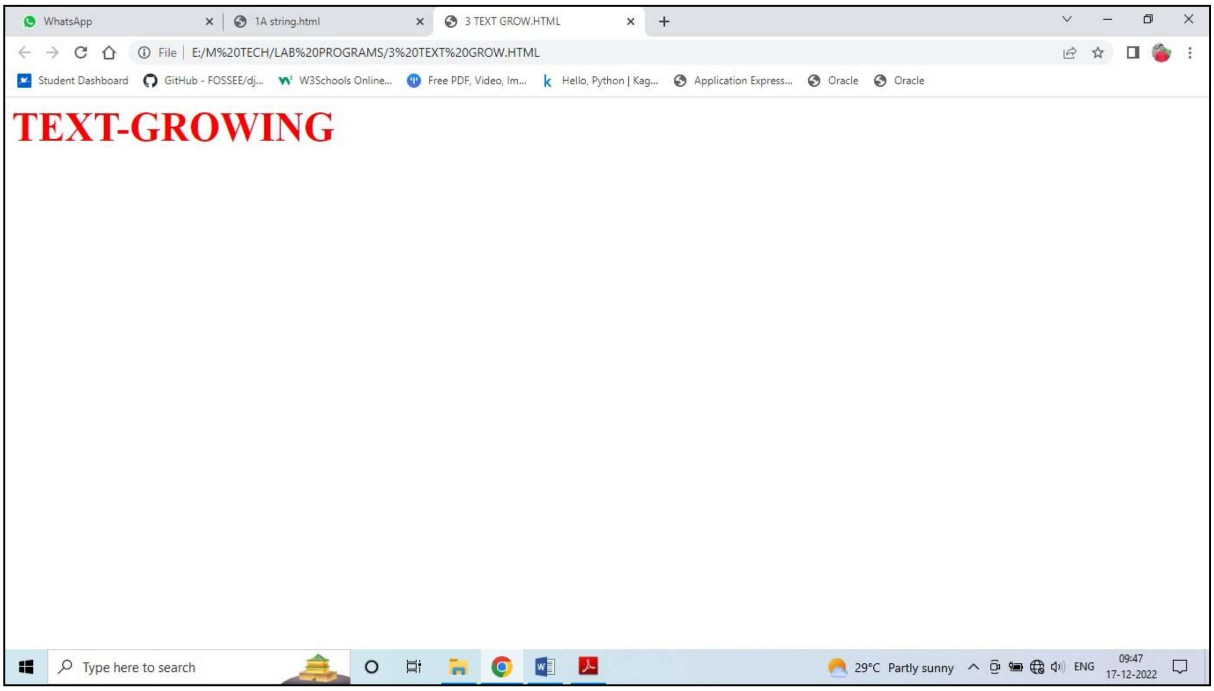
TASK 3: Write a JavaScript program to display text “TEXT-GROWING” with increasing font size in the interval of 100ms in RED COLOR, when the font size reaches 50pt it displays “TEXTSHRINKING” in BLUE color. Then the font size decreases to 5pt.

AIM: To write a JavaScript program to display text “TEXT-GROWING” with increasing with font in RED COLOR and “TEXTSHRINKING” in BLUE color

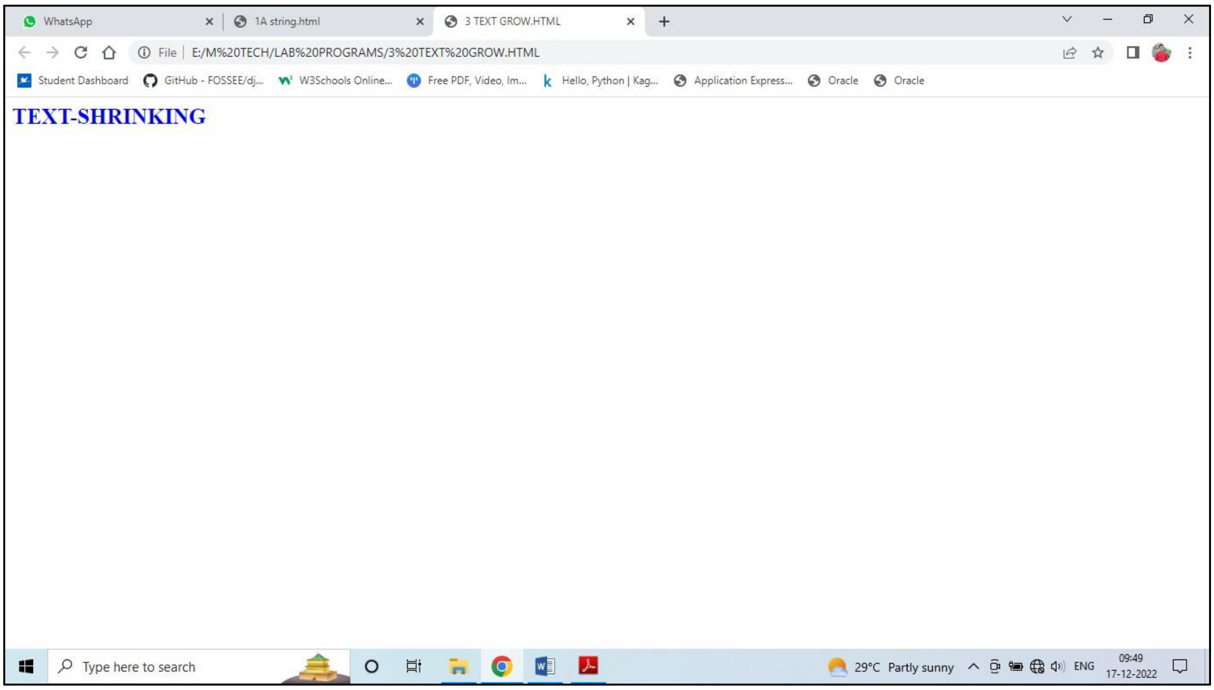
PROGRAM:

```
<!DOCTYPE html>
<html>
<body>
 <div id="h"></div>
 <script>
  var v = 0, f = 1,t="TEXT-GROWING",color;
  function a()
  {
   if(f==1)
   v+=5,color="red";
   else
    v-=5,color="blue";
   document.getElementById("h").innerHTML = "<h1 style=\"font-size: "+v+"px ; margin:
0px; color : "+color+"\"><b> "+t+"</b></h1>";
   if(v==50)
    f = 0, t="TEXT-SHRINKING";
   if(v==5)
    f = 1, t="TEXT-GROWING";
   c();
  }
  function c()
  {
   setTimeout(a,100);
  }
  c();
 </script>
</body>
</html>
```

OUTPUT:



TEXT-GROWING



TEXT-SHRINKING

TASK 4

TASK 4: Write a JavaScript program to design a simple calculator to perform the following operations: sum, product, difference and quotient.

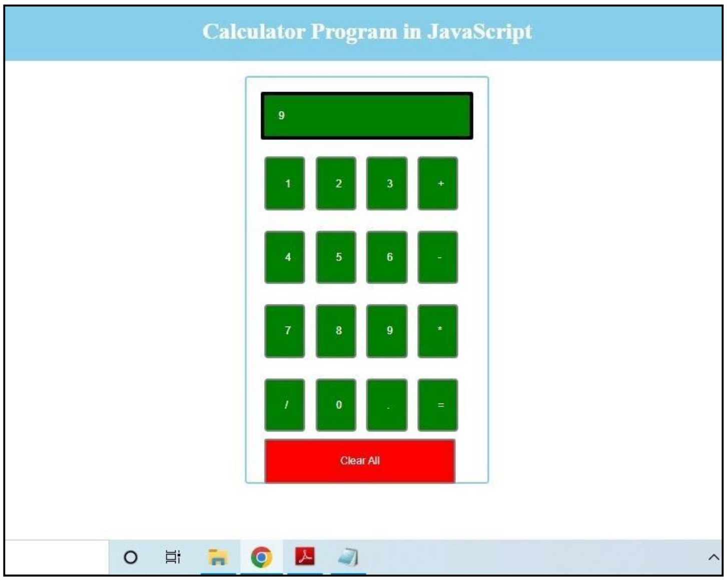
AIM: To design a simple calculator to perform sum, product, difference and quotient operations.

PROGRAM:

```
<!DOCTYPE html>

<html lang = "en">

<head>

<title> JavaScript Calculator </title>

  <style>


h1 {

    text-align: center;

    padding: 23px;

    background-color: skyblue;

    color: white;

    }


#clear{

width: 270px;

border: 3px solid gray;

    border-radius: 3px;

    padding: 20px;

    background-color: red;

}
```

```
.formstyle

{

width:  300px;

height: 530px;

margin: auto;

border: 3px solid skyblue;

border-radius: 5px;

padding: 20px;

}


input

{

width: 20px;

background-color: green;

color: white;

border: 3px solid gray;

    border-radius: 5px;

    padding: 26px;

    margin: 5px;

    font-size: 15px;

}

#calc{

width: 250px;

border: 5px solid black;

    border-radius: 3px;

    padding: 20px;

    margin: auto;
}

</style>

</head>
<body>
<h1> Calculator Program in JavaScript </h1>
<div class= "formstyle">
<form name = "form1">

   <!-- This input box shows the button pressed by the user in calculator. -->
  <input id = "calc" type ="text" name = "answer"> <br> <br>
  <!-- Display the calculator button on the screen. -->
  <!-- onclick() function display the number prsses by the user. -->
  <input type = "button" value = "1" onclick = "form1.answer.value += '1' ">
  <input type = "button" value = "2" onclick = "form1.answer.value += '2' ">
  <input type = "button" value = "3" onclick = "form1.answer.value += '3' ">
   <input type = "button" value = "+" onclick = "form1.answer.value += '+' ">
  <br> <br>

  <input type = "button" value = "4" onclick = "form1.answer.value += '4' ">
  <input type = "button" value = "5" onclick = "form1.answer.value += '5' ">
  <input type = "button" value = "6" onclick = "form1.answer.value += '6' ">
  <input type = "button" value = "-" onclick = "form1.answer.value += '-' ">
  <br> <br>
  <input type = "button" value = "7" onclick = "form1.answer.value += '7' ">
  <input type = "button" value = "8" onclick = "form1.answer.value += '8' ">
  <input type = "button" value = "9" onclick = "form1.answer.value += '9' ">
  <input type = "button" value = "*" onclick = "form1.answer.value += '*' ">
  <br> <br>



  <input type = "button" value = "/" onclick = "form1.answer.value += '/' ">
  <input type = "button" value = "0" onclick = "form1.answer.value += '0' ">
    <input type = "button" value = "." onclick = "form1.answer.value += '.' ">
    <!-- When we click on the '=' button, the onclick() shows the sum results on the calculator
screen. -->
  <input type = "button" value = "=" onclick = "form1.answer.value =
eval(form1.answer.value) ">
  <br>
  <!-- Display the Cancel button and erase all data entered by the user. -->
  <input type = "button" value = "Clear All" onclick = "form1.answer.value = ' ' " id= "clear"
>
  <br>


</form>
</div>
</body>
</html>
```

OUTPUT:



TASK 5

TASK 5: Write a JQuery AJAX program to request data from the server with an HTTP.

AIM: To request data from the server with an HTTP using JQuery.

PROGRAM:

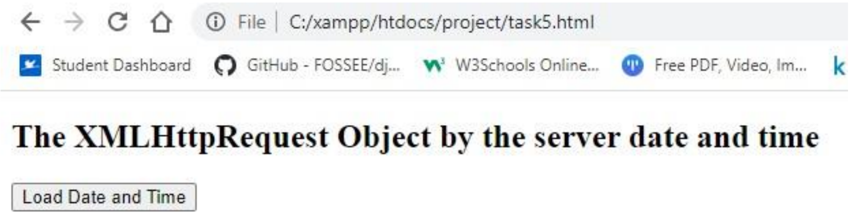
Task5.html

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<title>jQuery get() Demo</title>
<script src="https://code.jquery.com/jquery-3.5.1.min.js"></script>
<script>
$(document).ready(function(){
   $("button").click(function(){
      $.get("date-time.php", function(data){
         // Display the returned data in browser
         $("#result").html(data);
      });
   });
});
</script>
</head>
<body>
   <div id="result">

      <h2> The XMLHttpRequest Object by the server date and time</h2>

   </div>
   <button type="button">Load Date and Time</button>
</body>
</html>
```

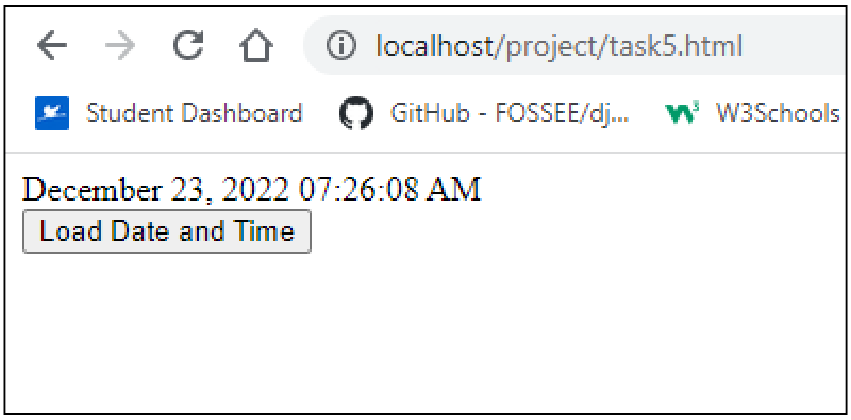
date-time.php

```
<?php
// Return current date and time from the server
echo date("F d, Y h:i:s A");
?>
```

OUTPUT:



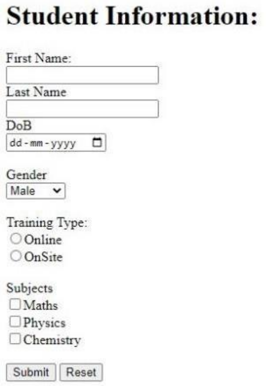
The XMLHttpRequest Object by the server date and time



December 23, 2022 07:26:08 AM

TASK 6

TASK 6: Create following Student Information form with submit and reset functionality using Angular JS..



Student Information:

First Name:

Last Name

DoB

dd-mm-yyyy

Gender

Male

Training Type:

○ Online

○ OnSite

Subjects

□ Maths

□ Physics

□ Chemistry

AIM: To Create Student Information form using Angular JS.

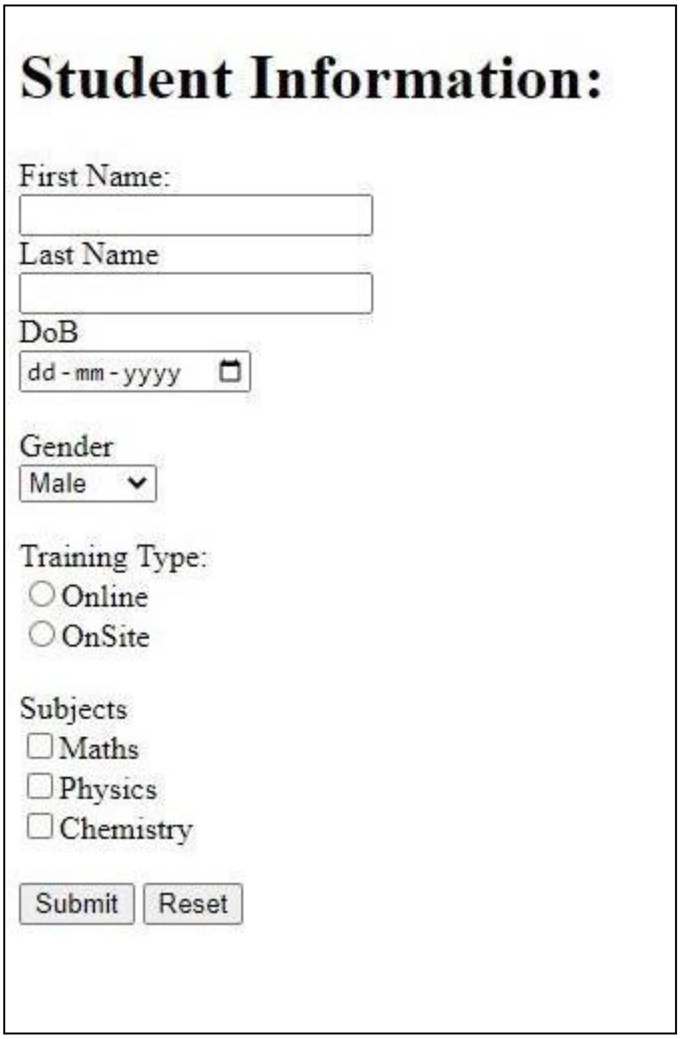
PROGRAM:

```
<!DOCTYPE html>
<html ng-app="studentApp">
<head>
    <script src="~/Scripts/angular.js"></script>
</head>
<body ng-controller="studentController">
    <h1>Student Information:</h1>
    <form ng-submit="submitStudnetForm()" >
        <label for="firstName" >First Name: </label><br />
        <input type="text" id="firstName" ng-model="student.firstName" /> <br />

        <label for="lastName">Last Name</label><br />
            <input type="text" id="lastName" ng-model="student.lastName" /> <br />
        <label for="dob" >DoB</label><br />
            <input type="date" id="dob" ng-model="student.DoB" /> <br /><br />

        <label for="gender" >Gender</label> <br />
            <select id="gender" ng-model="student.gender">
                <option value="male">Male</option>
                <option value="female">Female</option>
            </select><br /> <br />
            <span>Training Type:</span><br />
                <label><input value="online" type="radio" name="training" ng-model="student.trainingType" />Online</label><br />
                <label><input value="onsite" type="radio" name="training" ng-model="student.trainingType" />OnSite</label> <br /><br />
            <span>Subjects</span><br />
```

```
          <label><input type="checkbox" ng-model="student.maths" />Maths</label> <br
/>
          <label><input type="checkbox" ng-model="student.physics" />Physics</label>
<br />
          <label><input type="checkbox"  ng-model="student.chemistry"
/>Chemistry</label><br /><br />

    <input type="submit" value="Submit" />
    <input type="reset" ng-click="resetForm()" value="Reset" />
  </form>
  <script>
    //1. create app module
    var studentApp = angular.module('studentApp', []);

    //2. create controller
    studentApp.controller("studentController", function ($scope, $http) {

      //3. attach originalStudent model object
      $scope.originalStudent = {
        firstName: 'James',
        lastName: 'Bond',
        DoB: new Date('01/31/1980'),
        gender: 'male',
        trainingType: 'online',
        maths: false,
        physics: true,
        chemistry: true
      };

      //4. copy originalStudent to student. student will be bind to a form
      $scope.student = angular.copy($scope.originalStudent);

      //5. create submitStudentForm() function. This will be called when user submits the
form
      $scope.submitStudnetForm = function () {

        var onSuccess = function (data, status, headers, config) {
          alert('Student saved successfully.');
        };

        var onError = function (data, status, headers, config) {
          alert('Error occured.');
        }
```

```
            $http.post('/student/submitData', { student:$scope.student })
              .success(onSuccess)
              .error(onError);

        };

        //6. create resetForm() function. This will be called on Reset button click.
        $scope.resetForm = function () {
            $scope.student = angular.copy($scope.OriginalStudent);
        };
    });
    </script>
</body>
</html>
```

OUTPUT:



Student Information:

First Name:

Last Name

DoB

dd - mm - yyyy

Gender

Male

Training Type:

○ Online

○ OnSite

Subjects

□ Maths

□ Physics

□ Chemistry

Submit Reset

TASK 7

TASK 7: Use AngularJS features to make a shopping list, where you can add or remove items as shown below.

My Shopping List

- Milk×
- Bread×
- Cheese×

Add TASK

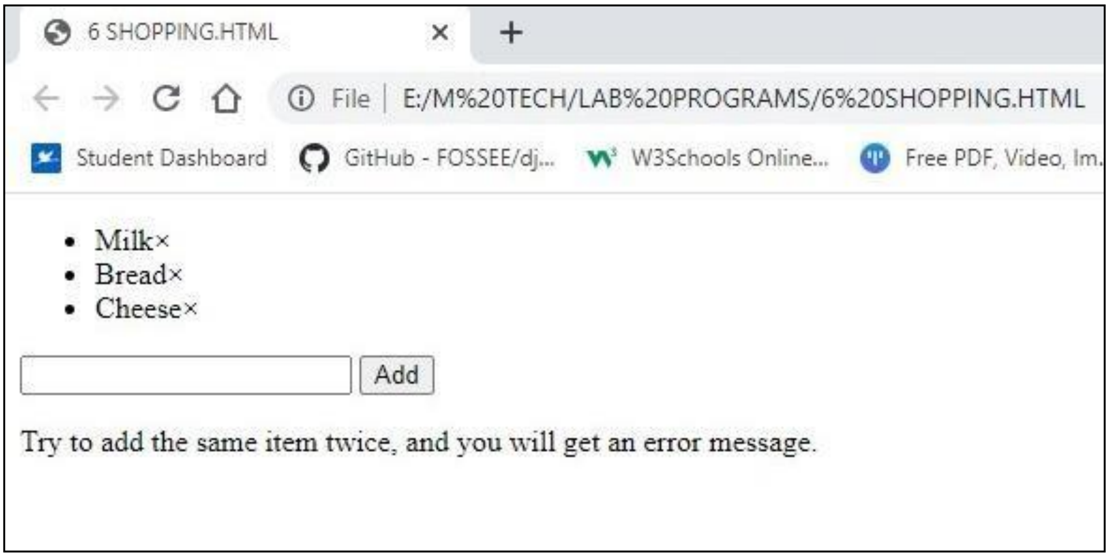
AIM: To make a shopping list using Angular JS features where you can add or remove items from cart.

PROGRAM:

```
<!DOCTYPE html>
<html>
<script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.6.9/angular.min.js"></script>
<body>
<script>
var app = angular.module("myShoppingList", []);
app.controller("myCtrl", function($scope) {
   $scope.products = ["Milk", "Bread", "Cheese"];
   $scope.addItem = function () {
      $scope.errortext = "";
      if (!$scope.addMe) {return;}
      if ($scope.products.indexOf($scope.addMe) == -1) {
         $scope.products.push($scope.addMe);
      } else {
         $scope.errortext = "The item is already in your shopping list.";
      }
   }
   $scope.removeItem = function (x) {
      $scope.errortext = "";
      $scope.products.splice(x, 1);
   }
});
</script>

<div ng-app="myShoppingList" ng-controller="myCtrl">
  <ul>
    <li ng-repeat="x in products">{{x}}<span ng-click="removeItem($index)">×</span></li>
  </ul>
  <input ng-model="addMe">
  <button ng-click="addItem()">Add</button>
  <p>{{errortext}}</p>
```

```
</div>
<p>Try to add the same item twice, and you will get an error message.</p>
</body>
</html>
```

OUTPUT:

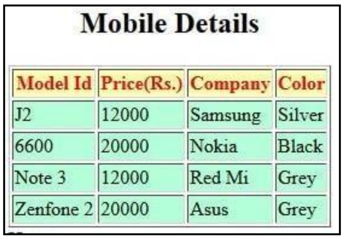


- Milk×
- Bread×
- Cheese×

Try to add the same item twice, and you will get an error message.

TASK 8

TASK 8: Write a Servlet Program that accepts the Mobile phone details from user and displays the details on the next page. Create a table and perform insert operation as shown in the Figure 1 below. Connect using JDBC to display each record at a time on the webpage using servlet request and response.



Mobile Details

Model Id	Price(Rs.)	Company	Color
J2	12000	Samsung	Silver
6600	20000	Nokia	Black
Note 3	12000	Red Mi	Grey
Zenfone 2	20000	Asus	Grey

Figure 1: Table Details

AIM: To write a Servlet Program that accepts the Mobile phone details from user and displays the details on the next page

PROGRAM:

register.html

```
<!doctype html>
    <body>
        <form action="servlet/MobileDetails" method="post">
            <fieldset style="width:25%; background-color:#b3ffff">
                <h2 align="center">Mobile Details form</h2><hr>
                <table>
                    <tr><td>Model Number</td>
                    <td><input type="text" name="model" required /></td></tr>
                    <tr><td>Mobile Price</td>
                    <td><input type="text" name="price" required /></td></tr>
                    <tr><td>Mobile Company</td>
                    <td><input type="text" name="company" required /></td></tr>
                    <tr><td>Mobile Color</td>
                    <td><input type="text" name="color" required/></td></tr>
                    <tr><td><input type="reset" value="Reset"/></td>
                    <td><input type="submit" value="Register"/></td></tr>
                </table>
            </fieldset>
        </form>
    </body>
</html>
```

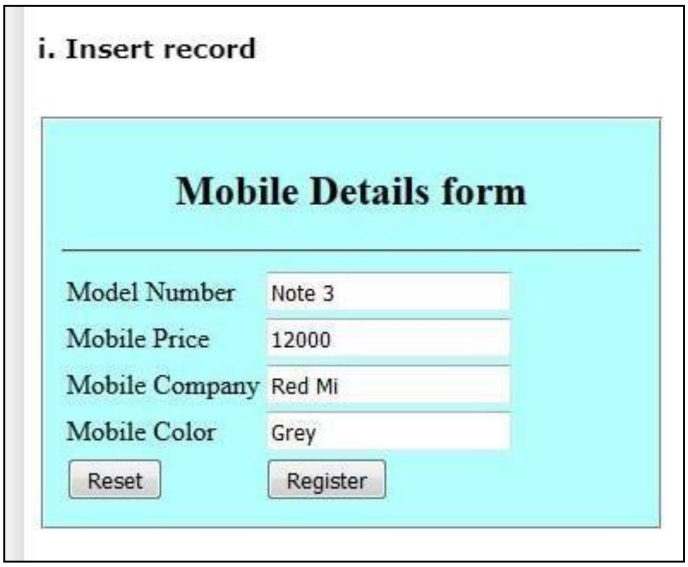
Mobiledetails.java

```
import java.io.*;
import java.sql.*;
import javax.servlet.ServletException;
import javax.servlet.http.*;

public class MobileDetails extends HttpServlet
{
    public void doPost(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException
    {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        String model = request.getParameter("model");
        int price = Integer.parseInt(request.getParameter("price"));
        String company = request.getParameter("company");
        String color = request.getParameter("color");

        try
        {
            //load the driver
            Class.forName("oracle.jdbc.driver.OracleDriver");
            //create connection object
            Connection con=DriverManager.getConnection(
"jdbc:oracle:thin:@localhost:1521:xe","local","test");
            //create the prepared statement object
            PreparedStatement ps=con.prepareStatement("insert into MobileDetails
values(?,?,?,?)");

            ps.setString(1,model);
            ps.setInt(2,price);
            ps.setString(3,company);
            ps.setString(4, color);

            int i = ps.executeUpdate();
            if(i>0)
            out.print("<font color='green' size='4'>Record inserted successfully...</font>");

            //create the statement object
            Statement stmt = con.createStatement();
            String sql;
            sql = "SELECT * FROM MobileDetails";
            ResultSet rs = stmt.executeQuery(sql);
            out.println("<table border=1 >");
            out.println("<caption><h2>Mobile Details</h2></caption>");

            out.println("<tr style='background-color:#ffffb3; color:red'>");
            out.println("<th>Model Id</th>");
            out.println("<th>Price(Rs.)</th>");
            out.println("<th>Company</th>");
            out.println("<th>Color</th>");
            out.println("</tr>");
            // Extract data from result set
            while(rs.next())
            {
                //Retrieve by column name
                String mModel = rs.getString("model");
                int mPrice = rs.getInt("price");
                String mCompany = rs.getString("company");
                String mColor = rs.getString("color");

                //Display values
                out.println("<tr style='background-color:#b3ffd9;'>");
                out.println("<td>" + mModel + "</td>");
                out.println("<td>" + mPrice + "</td>");
                out.println("<td>" + mCompany + "</td>");
                out.println("<td>" + mColor + "</td>");
                out.println("</tr>");
            }
            out.println("</table>");
            out.println("<a href='register.html'>Home</a>");

            // Clean-up environment
            rs.close();
            stmt.close();
            con.close();
        }
        catch (Exception ex)
        {
            ex.printStackTrace();
        }
        out.close();
    }
}
```

web.xml

```
<web-app>
    <servlet>
        <servlet-name>MobileDetails</servlet-name>
        <servlet-class>MobileDetails</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>MobileDetails</servlet-name>
        <url-pattern>/servlet/MobileDetails</url-pattern>
    </servlet-mapping>
    <welcome-file-list>
        <welcome-file>register.html</welcome-file>
    </welcome-file-list>
</web-app>
```

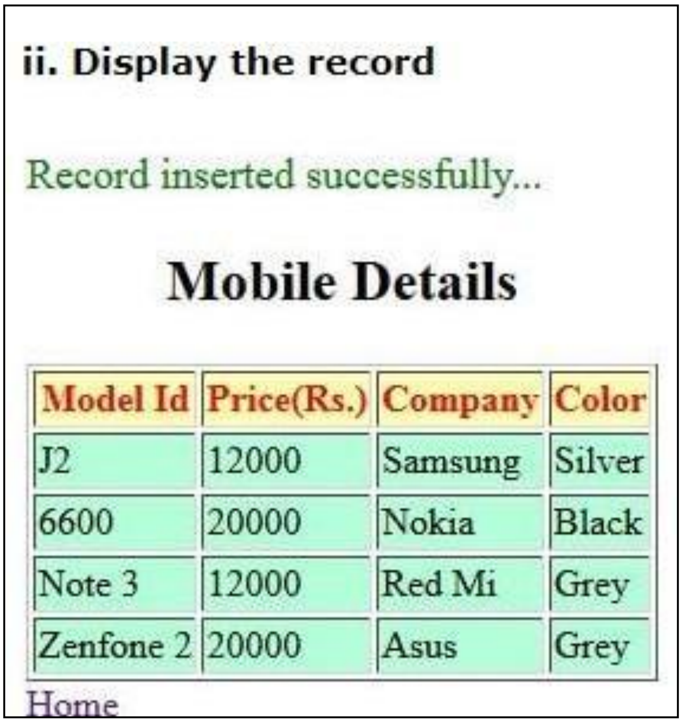
OUTPUT:



i. Insert record

Mobile Details form

Model Number	Note 3
Mobile Price	12000
Mobile Company	Red Mi
Mobile Color	Grey



ii. Display the record

Record inserted successfully...

Mobile Details

Model Id	Price(Rs.)	Company	Color
J2	12000	Samsung	Silver
6600	20000	Nokia	Black
Note 3	12000	Red Mi	Grey
Zenfone 2	20000	Asus	Grey

TASK 9

TASK 9: Develop a JSP Program to validate a particular user login based on the username password stored in the database and display a welcome page.

AIM: To develop a JSP Program to validate a particular user login based on the username password

PROGRAM:

(In NetBeans)

login.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
   <head>
      <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
      <title>LOGIN PAGE</title>
   </head>
   <body>
      <form action="forward.jsp" method="post">
         <h1>Enter your Credentials !</h1>
         <h3>Username: <input type="text" name = "uname"/></h3>
         <h3>Password: <input type="password" name = "pwd"/></h3>
         <input type ="submit" value="SUBMIT">
         <input type ="reset"/>
      </form>
   </body>
</html>
```

forward.jsp

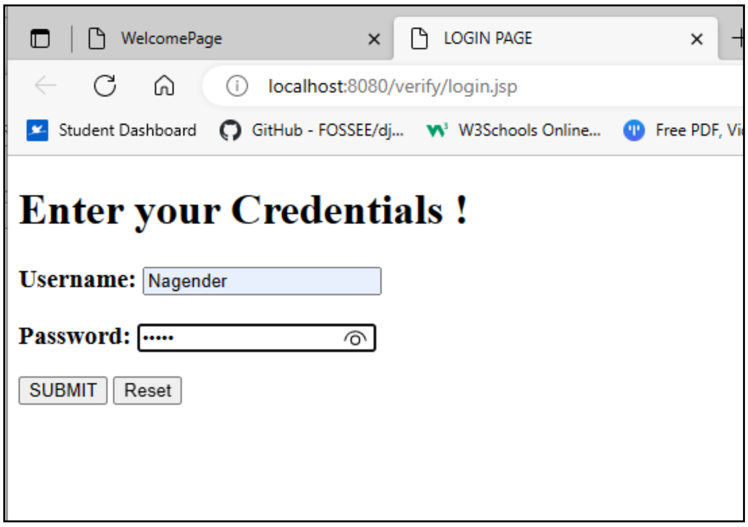
```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page import="java.io.File"%>
<%if(request.getParameter("uname").equals("Nagender")&&request.getParameter("pwd").equals("griet"))
{%>
<jsp:forward page="welcomePage.jsp"/>
<%} else {%>
<h3>Invalid Username or Password</h3>
<%@include file="login.jsp"%>
<%}%>
```

welcomePage.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
```

```
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>WelcomePage</title>
    </head>
    <body>
        <h1>Welcome Mr./Ms.<%=request.getParameter("uname")%></h1>

    </body>
</html>
```

OUTPUT:

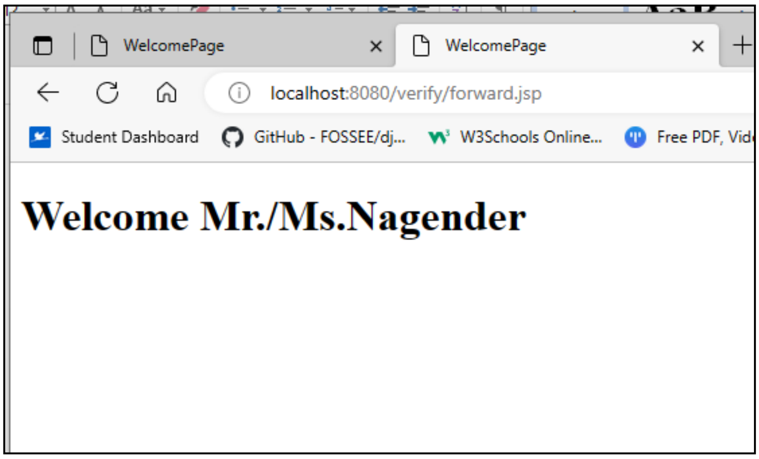


localhost:8080/verify/login.jsp

Enter your Credentials !

Username: Nagender

Password: •••••



localhost:8080/verify/forward.jsp

Welcome Mr./Ms.Nagender

TASK 10

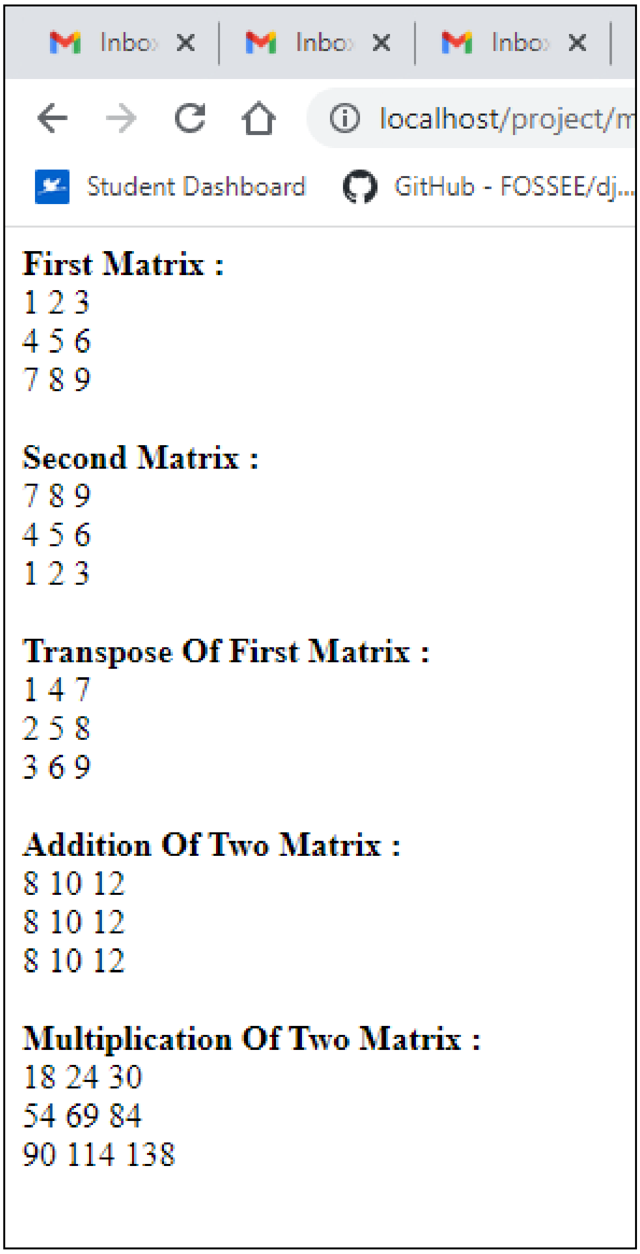
TASK 10: Write PHP programs to do the following tasks:
a. Implement simple calculator operations.
b. Find the transpose of a matrix.
c. Multiplication of two matrices.
d. Addition of two matrices.

AIM: To write PHP program to find transpose, multiplication and addition of two matrices .

PROGRAM:

```
<!DOCTYPE html>
<html>
<body>
 <?php
  function pr($a){
   foreach ($a as $b) {
   foreach ($b as $c) {
   echo $c ." ";
    }echo "<br>";
   }echo "<br>";
  }
  $a = [[1,2,3],[4,5,6],[7,8,9]];
  $b = [[7,8,9],[4,5,6],[1,2,3]];
  echo "<b>First Matrix : </b><br>" ; pr($a);
  echo "<b>Second Matrix : </b><br>"; pr($b);
  for ($i=0; $i < 3; $i++)
   for ($j=0; $j < 3; $j++)
    $c[$i][$j] = $a[$j][$i];
  echo "<b>Transpose Of First Matrix : </b><br>"; pr($c);
  for ($i=0; $i < 3; $i++)
   for ($j=0; $j < 3; $j++)
    $c[$i][$j] = $a[$i][$j] + $b[$i][$j];
  echo "<b>Addition Of Two Matrix : </b><br>"; pr($c);
  for ($i=0; $i < 3; $i++)
   for ($j=0; $j < 3; $j++){
    $c[$i][$j] = 0;
    for ($k=0; $k < 3; $k++)
     $c[$i][$j] += $a[$i][$k] * $b[$k][$j];
   }
  echo "<b>Multiplication Of Two Matrix : </b><br>"; pr($c);
  ?>
</body>
</html>
```

OUTPUT:



```
First Matrix :
1 2 3
4 5 6
7 8 9

Second Matrix :
7 8 9
4 5 6
1 2 3

Transpose Of First Matrix :
1 4 7
2 5 8
3 6 9

Addition Of Two Matrix :
8 10 12
8 10 12
8 10 12

Multiplication Of Two Matrix :
18 24 30
54 69 84
90 114 138
```

TASK 11

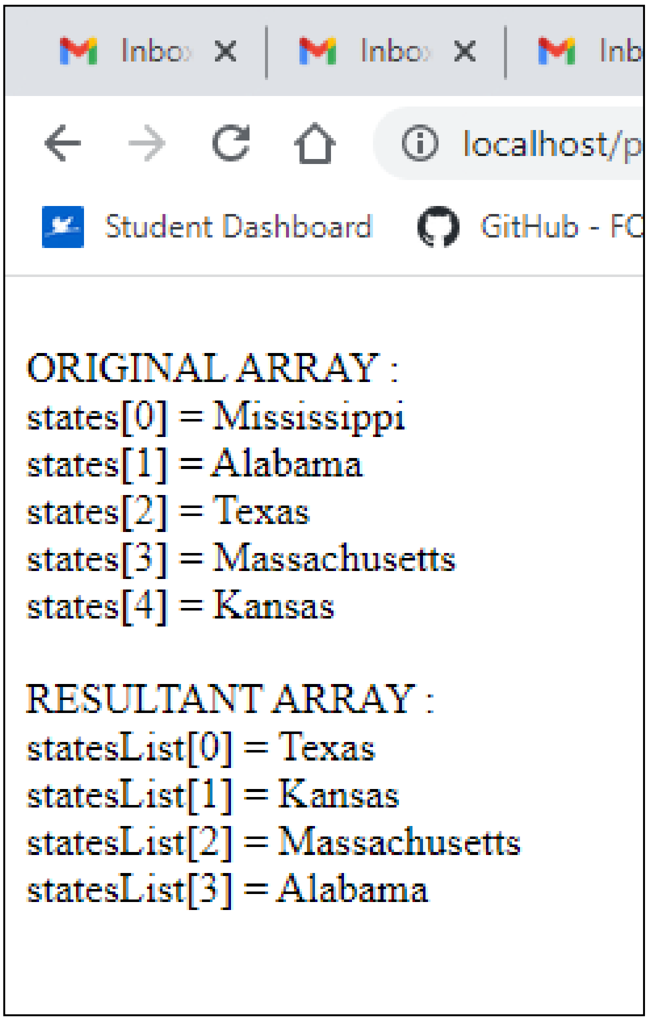
TASK 11: Write a PHP program named states.py that declares a variable states with value "Mississippi Alabama Texas Massachusetts Kansas". Write a PHP program that does the following:
a. Search for a word in variable states that ends in xas. Store this word in element 0 of a list named statesList.
b. Search for a word in states that begins with k and ends in s. Perform a case insensitive comparison.
[Note: Passing re.Ias a second parameter to method compile performs a case-insensitive comparison.] Store this word in element1 of statesList.
c. Search for a word in states that begins with M and ends in s. Store this word in element 2 of the list.
d. Search for a word in states that ends in a. Store this word in element 3 of the list.

AIM: To write PHP program to find and store the names of states in elements with variable and perform a case insensitive comparision .

PROGRAM:

```
<html>
<body>
 <?php
  $states = "Mississippi Alabama Texas Massachusetts Kansas";
  $b = explode(' ',$states);
  echo "<br>ORIGINAL ARRAY :<br>";
  foreach ( $b as $i => $value )
  echo "states[$i] = $value<br>";
  foreach ($b as $c)
  {
   $n = strlen($c);
   if($c[$n-1]=='s' && $c[$n-2]=='a' && $c[$n-3]=='x') $d[0] = $c;
   if($c[0]=='K' && $c[$n-1]=='s') $d[1] = $c;
   if($c[0]=='M' && $c[$n-1]=='s') $d[2] = $c;
   if($c[$n-1]=='a') $d[3] = $c;
  }
  echo "<br>RESULTANT ARRAY :<br>";
  for ($i=0; $i < count($d); $i++)
   echo "statesList[$i] = $d[$i]<br>";
 ?>
</body>
</html>
```

OUTPUT:



```
ORIGINAL ARRAY :
states[0] = Mississippi
states[1] = Alabama
states[2] = Texas
states[3] = Massachusetts
states[4] = Kansas

RESULTANT ARRAY :
statesList[0] = Texas
statesList[1] = Kansas
statesList[2] = Massachusetts
statesList[3] = Alabama
```

TASK 12

TASK 12: Write a PHP program to sort the student records which are stored in the database using selection sort.

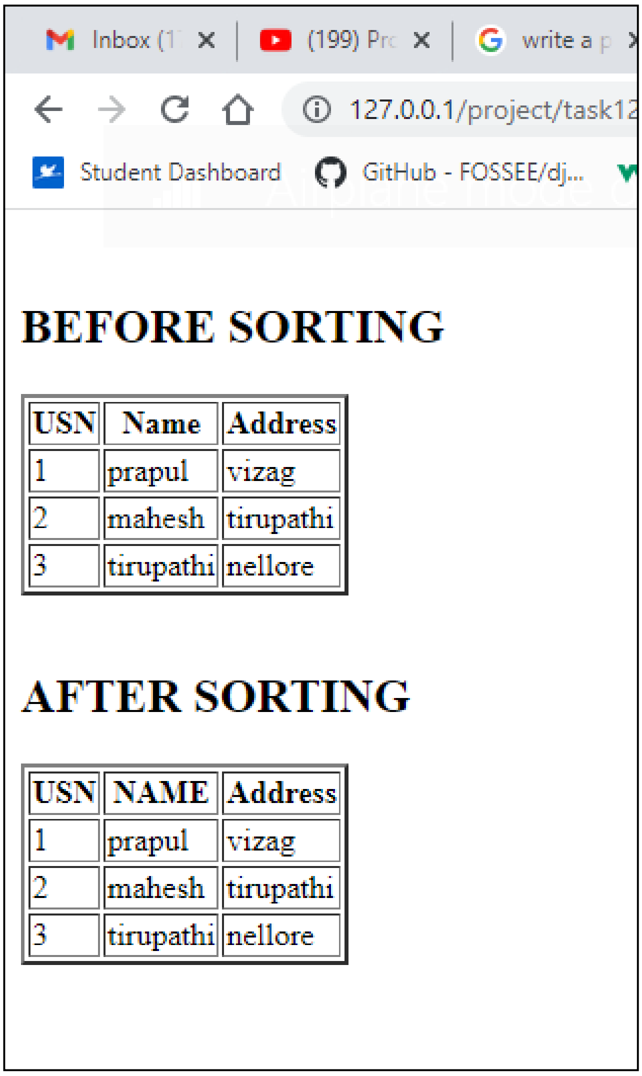
AIM: To write PHP program to sort student records in the database using selection sort.

PROGRAM:

```
<!DOCTYPE html>
<html>
<head>

</head>
<body>

<?php
$domain = "localhost";
$username = "root";
$password = "";
$dbname = "student";
$a = [];

$conn = mysqli_connect($domain, $username, $password, $dbname);

if ($conn->connect_error)
   die("Connection failed: " . $conn->connect_error);
$sql = "SELECT * FROM studentinfo";

$result = $conn->query($sql);
echo "<br>";
echo "<h2>BEFORE SORTING</h2>";
echo "<table border='2'>";
echo "<tr>";
echo "<th>USN</th><th>Name</th><th>Address</th></tr>";
if ($result->num_rows > 0) {
   while ($row = $result->fetch_assoc()) {
      echo "<tr>";
      echo "<td>" . $row["usn"] . "</td>";
      echo "<td>" . $row["name"] . "</td>";
      echo "<td>" . $row["address"] . "</td></tr>";
      array_push($a, $row["usn"]);
   }
} else
   echo "Table is Empty";
echo "</table>";

$n = count($a);
for ($i = 0; $i < ($n - 1); $i++) {
   $pos = $i;
```

```
    for ($j = $i + 1; $j < $n; $j++) {
        if ($a[$pos] > $a[$j])
            $pos = $j;
    }
    if ($pos != $i) {
        $temp = $a[$i];
        $a[$i] = $a[$pos];
        $a[$pos] = $temp;
    }
}
$c = [];
$d = [];
$result = $conn->query($sql);
if ($result->num_rows > 0) {
    while ($row = $result->fetch_assoc()) {
        for ($i = 0; $i < $n; $i++) {
            if ($row["usn"] == $a[$i]) {
                $c[$i] = $row["name"];
                $d[$i] = $row["address"];
            }
        }
    }
}
echo "<br>";
echo "<h2>AFTER SORTING</h2>";
echo "<table border='2'>";
echo "<tr>";
echo "<th>USN</th><th>NAME</th><th>Address</th></tr>";
for ($i = 0; $i < $n; $i++) {
    echo "<tr>";
    echo "<td>" . $a[$i] . "</td>";
    echo "<td>" . $c[$i] . "</td>";
    echo "<td>" . $d[$i] . "</td></tr>";
}
echo "</table>";
$conn->close();
?>
</body>
</html>
```

OUTPUT:



BEFORE SORTING

USN	Name	Address
1	prapul	vizag
2	mahesh	tirupathi
3	tirupathi	nellore

AFTER SORTING

USN	NAME	Address
1	prapul	vizag
2	mahesh	tirupathi
3	tirupathi	nellore