



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

Prerequisites: Knowledge of object-oriented programming concepts

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:

Gender:

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.I as 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>
<head>
<script type="text/javascript">
function str_vowel()
{
var str=prompt("Enter a string\n", "");
for(var i = 0; i<str.length; i++)
{
    if (str.charAt(i) == 'a' || str.charAt(i) == 'e' || str.charAt(i) == 'i'

    || str.charAt(i) == 'o' || str.charAt(i) == 'u' || str.charAt(i) == 'A' ||

    str.charAt(i) == 'E' || str.charAt(i) == 'I' || str.charAt(i) == 'O' || str.charAt(i) == 'U')

    {
document.write("The entered string is:" +str+ "<br/>");

        document.write("The leftmost vowel is :"+str.charAt(i)+"<br/>");
var pos = i+1;
        document.write("The position of the leftmost vowel " +str.charAt(i)+ " is:" +pos+"\n");

        exit;
    }

}

document.write("The entered string is:" +str+ "<br/>");

document.write("The entered string has no vowels");

}

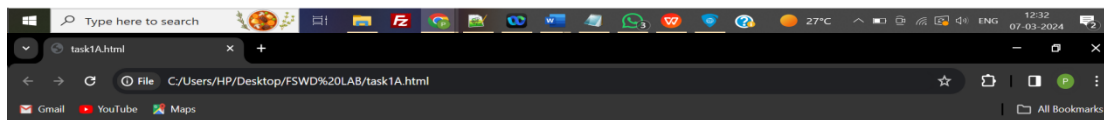
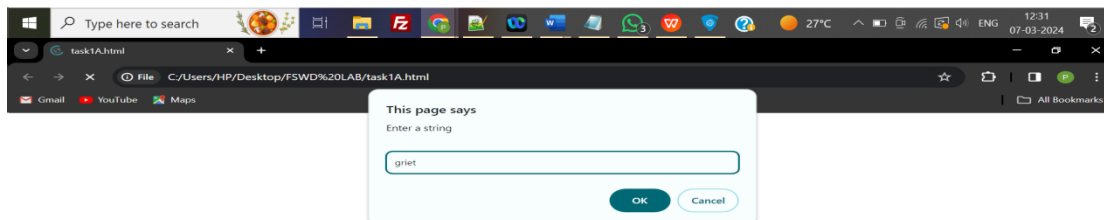
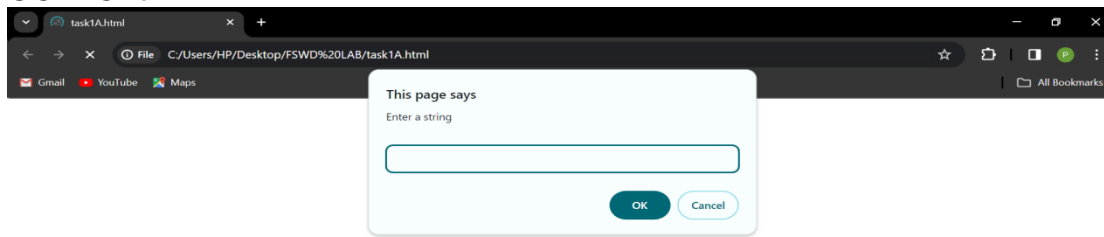
</script>

</head>

<body onload="str_vowel()">
</body>

</html>
```


OUTPUT:



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

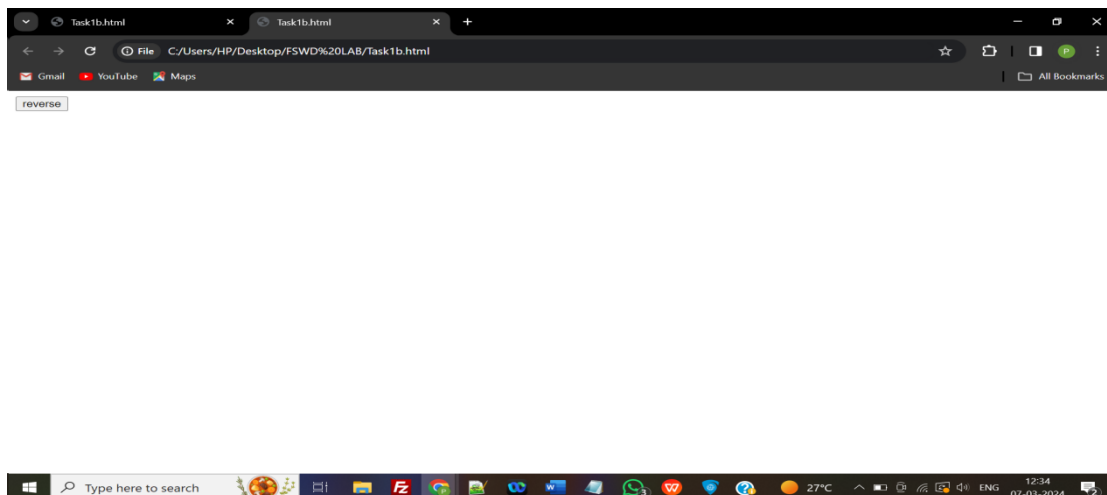
b: Parameter: A number

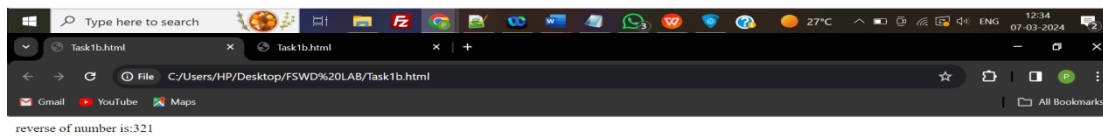
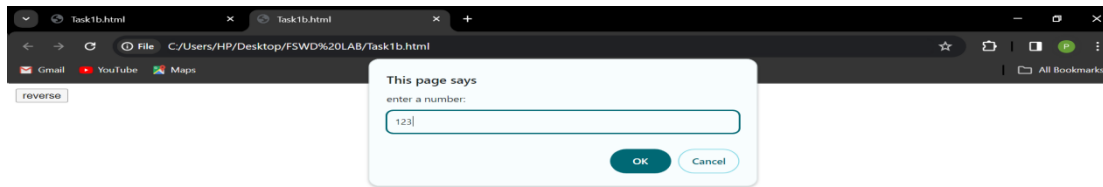
AIM: To develop a website by implementing JavaScript functions with output the number digits in the reverse order

PROGRAM:

```
<!DOCTYPE html>
<html>
  <body>
    <script>
      function reverse() {
        var r,rev=0,n;
        n = parseInt(prompt("enter a number:"));
        while (n != 0) {
          r = n % 10;
          rev = rev * 10 + r;
          n = parseInt(n / 10);
        }
        document.write("reverse of number is:"+rev);
      }
    </script>
    <form>
      <input type="button" value="reverse" onclick="reverse();" />
    </form>
  </body>
</html>
```

OUTPUT:





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

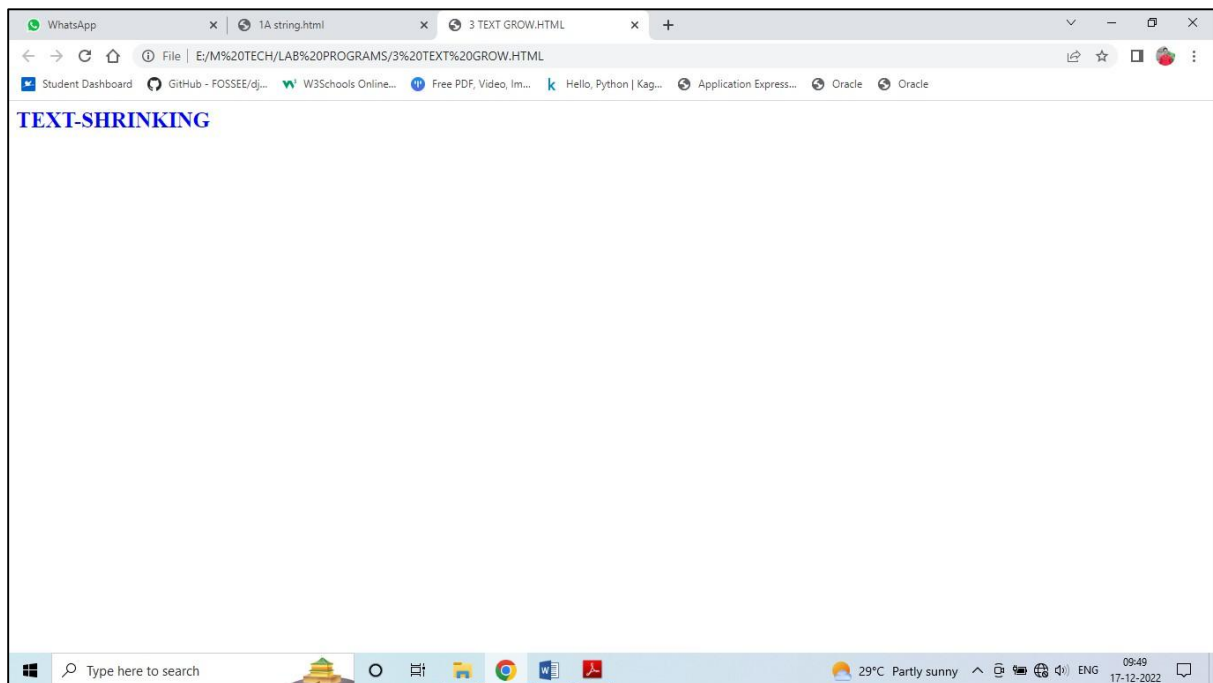
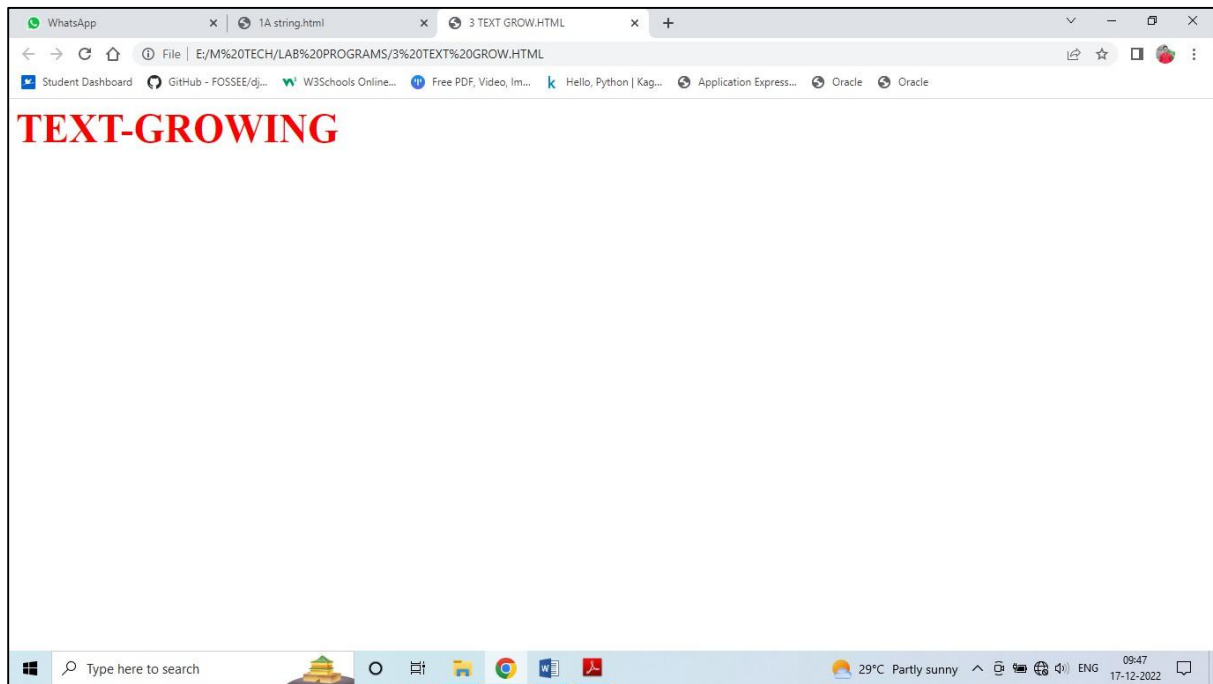
TASK 3: Write a JavaScript program to display text “TEXT-GROWING” with increasing font size in the interval of 100ms in RED COLOR, when the font size reaches 50pt it displays “TEXTSHRINKING” in BLUE color. Then the font size decreases to 5pt.

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:



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 prsres 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"
>
```

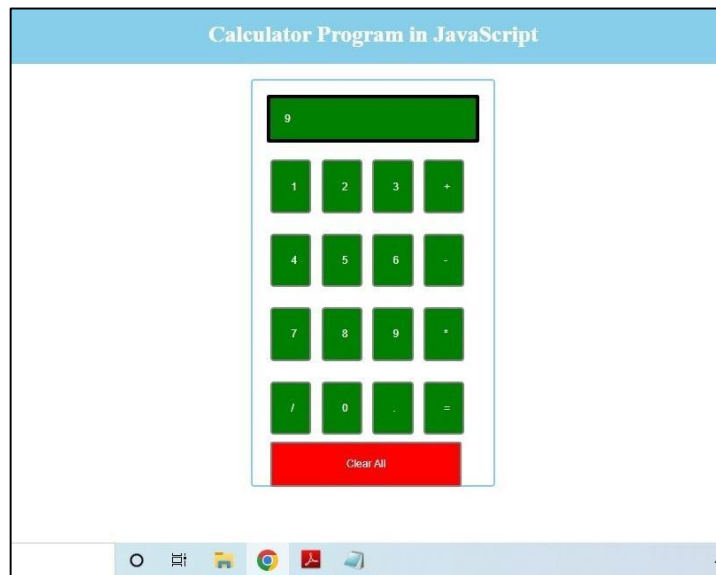
```
<br>
```

```
</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">

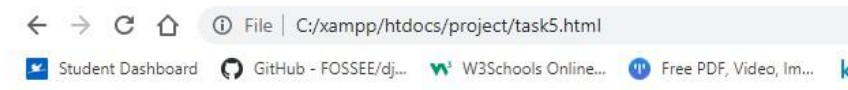
        <h2> The XMLHttpRequest Object by the server date and time</h2>

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

date-time.php

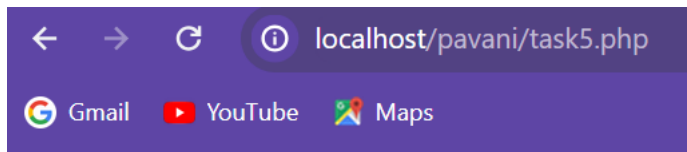
```
<?php
// Return current date and time from the server
date_default_timezone_set("Asia/Kolkata");
echo date("F d, Y h:i:s A");
?>
```

OUTPUT:



The XMLHttpRequest Object by the server date and time

Load Date and Time



April 05, 2024 11:31:11 AM

TASK 6

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

Student Information:



AIM: To Create Student Information form using Angular JS.

PROGRAM:

```
<!DOCTYPE html>
<html lang="en">
<script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.6.9/angular.min.js"></script>
<body>
<h1>student Information</h1>
<div ng-app="myApp" ng-controller="formCtrl">
  <form novalidate>
    First Name:<br>
    <input type="text" ng-model="student.firstName"><br>
    Last Name:<br>
    <input type="text" ng-model="student.lastName"><br>
    DoB:<br>
    <input type="date" id="dob" ng-model="student.DoB"><br>
    Gender:<br>
    <select id="gender" ng-model="student.gender">
      <option value="male">Male</option>
      <option value="female">Female</option>
    </select><br>
    Training Type:<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>
    Subjects:<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><br>
    <button type="button" onclick="alert('student saved successfully')>SUBMIT</button>
    <button ng-click="reset()">RESET</button>
  </form>
```

```
</div>
```

```
<script>
```

```
var app = angular.module('myApp', []);  
app.controller('formCtrl', function($scope) {  
    $scope.master = {};  
    $scope.reset = function() {  
        $scope.student = angular.copy($scope.master);  
    };  
    $scope.reset();  
});
```

```
</script>
```

```
</body>
```

```
</html>
```

OUTPUT:

The screenshot shows a web browser window with the title 'Task6.html'. The address bar shows the file path 'C:/Users/HP/Desktop/II-YEAR%20FSWD%20LAB/Task6.html'. The page content includes a form titled 'student Information' with fields for First Name (griet), Last Name (college), DoB (15-06-2023), Gender (Female), Training Type (Online), and Subjects (Maths, Physics, Chemistry). A success message 'This page says student saved successfully' is displayed in a light blue box with an 'OK' button. Below the form are 'SUBMIT' and 'RESET' buttons. The JavaScript code for the form is shown at the bottom:

```
form = {"firstName": "griet", "lastName": "college", "DoB": "2023-06-14T18:30:00.000Z", "gender": "female", "trainingType": "online", "maths": true, "physics": true}
```

student Information

First Name:

Last Name:

DoB:

Gender:

Training Type:
☒ Online
☐ OnSite

Subjects:
☒ Maths
☒ Physics
☐ Chemistry

form = {"firstName": "griet", "lastName": "college", "DoB": "2023-06-14T18:30:00.000Z", "gender": "female", "trainingType": "online", "maths": true, "physics": true}

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

- Milkx
- Breadx
- Cheesex

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

            ="x in products">{{ x }}<span ng-click="removeItem($index)">x</span></li>
    </ul>
    <input ng-model="addMe">
    <button ng-click="addItem()">Add</button>
```


<p>{{errortext}}</p>

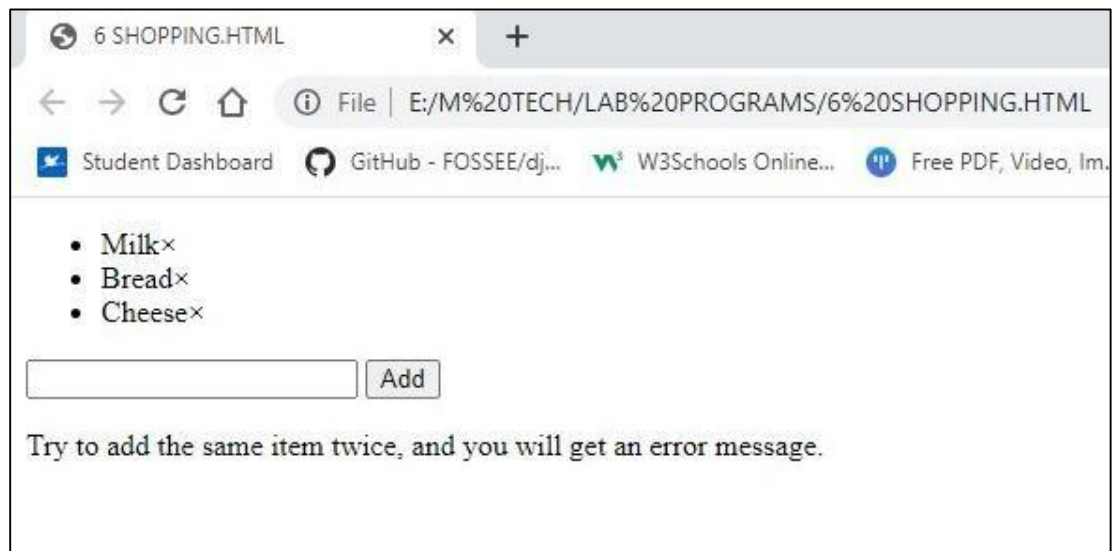
</div>

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

</body>

</html>

OUTPUT:



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.

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="/mobile/MobileDetails" method="post">
<fieldset style="width:25%; background-color:blue">
<h2 align="center">Mobile Details form</h2><hr>
<table>
<tr><td>Model Number</td>
<td><input type="text" name="ModelId" 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();
System.out.println(request.getParameter("ModelId"));
String model = request.getParameter("ModelId");
int price = Integer.parseInt(request.getParameter("Price"));
String company = request.getParameter("Company");
String color = request.getParameter("Color");
try
{
//load the driver
Class.forName("com.mysql.jdbc.Driver");
//create connection object
Connection con=DriverManager.getConnection(
"jdbc:mysql://localhost:3306/mobile","root","");
//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("ModelId");
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	<input type="text" value="Note 3"/>
Mobile Price	<input type="text" value="12000"/>
Mobile Company	<input type="text" value="Red Mi"/>
Mobile Color	<input type="text" value="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

[Home](#)

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("CSE")&&request.getParameter("pwd").eq
uals("griet"))
{ %>
<jsp:forward page="welcomePage.jsp"/>
<% } else { %>
<h3>Invalid Username or Password</h3>
<% @include file="login.jsp"%>
<% } %>
```

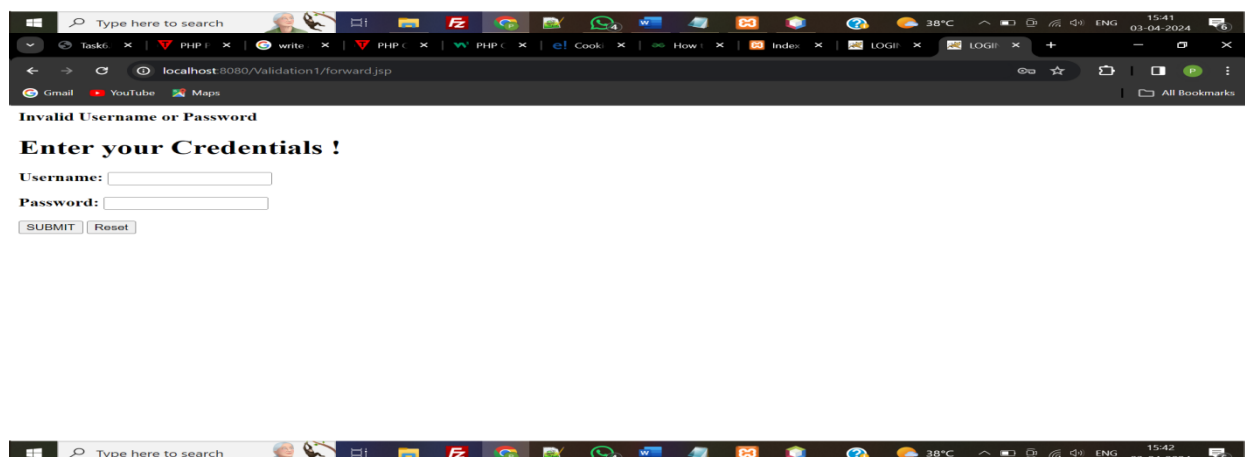
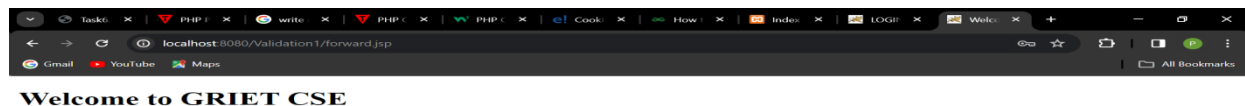
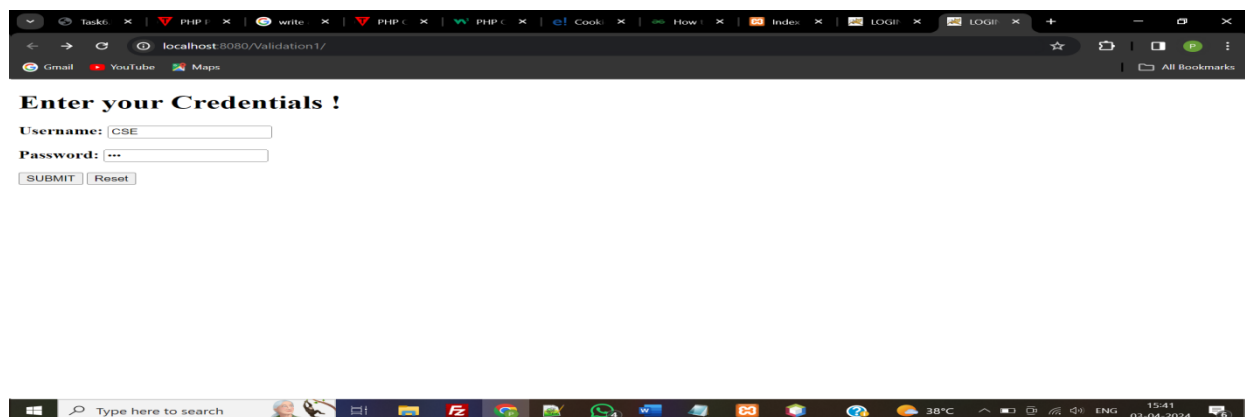
welcomePage.jsp

```
<% @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 to<%=request.getParameter("uname")%></h1>

  </body>
</html>
```

OUTPUT:



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.
 - a.) Develop a PHP program to Implement simple calculator operations.

Program:

```
<html>
<head>
<style>
    table, td, th
    {
        border: 1px solid black;
        width: 35%;
        text-align: center;
        background-color: lightgreen;
    }
    table {margin:auto;}
    input,p {text-align:right;color:blue;}
</style>
</head>

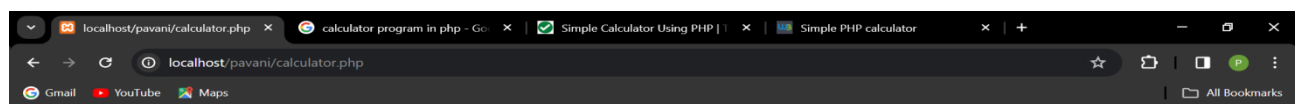
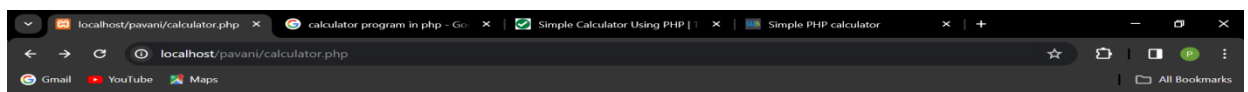
<body>
<form method="post" action="calculator.php">
    <table>
    <caption><h2> SIMPLE CALCULATOR </h2></caption>
    <tr>
        <td>First Number:</td><td><input type="text" name="num1" /></td>
        <td rowspan="2"><button type="submit" name="submit"
            value="calculate">Calculate</td></tr>
    <tr>
        <td>Second Number:</td><td><input type="text" name="num2"/></td>
    </tr>
    </form>

<?php
if(isset($_POST['submit'])) // it checks if the input submit is filled
{
    $num1 = $_POST['num1'];
    $num2 = $_POST['num2'];
    if(is_numeric($num1) and is_numeric($num2) )
    {
        echo "<tr><td> Addition :</td><td><p>".($num1+$num2)."</p></td>";
```

```

echo "<tr><td> Subtraction :</td><td><p> ".$num1-$num2."</p></td>";
echo "<tr><td> Multiplication :</td><td><p> ".$num1*$num2."</p></td>";
echo "<tr><td>Division :</td><td><p> ".$num1/$num2."</p></td>";
echo "</table>";
}
else
{
echo"<script> alert(' ENTER VALID NUMBER');</script>";
}
}
?>
</body>
</html>

```



First Number:	12	Calculate
Second Number:	2	
Addition :	14	
Subtraction :	10	
Multiplication :	24	
Division :	6	

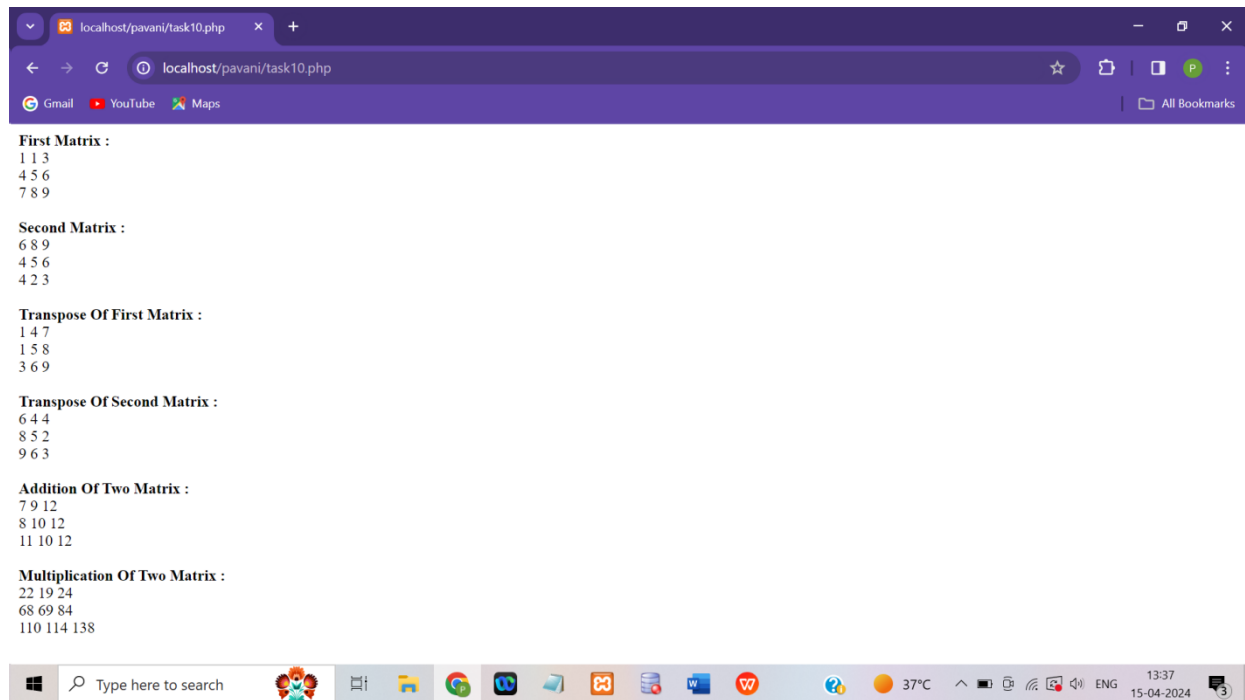


AIM: To write PHP program to find transpose, multiplication and addition of two matrices.

PROGRAM:

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



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.I as 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.

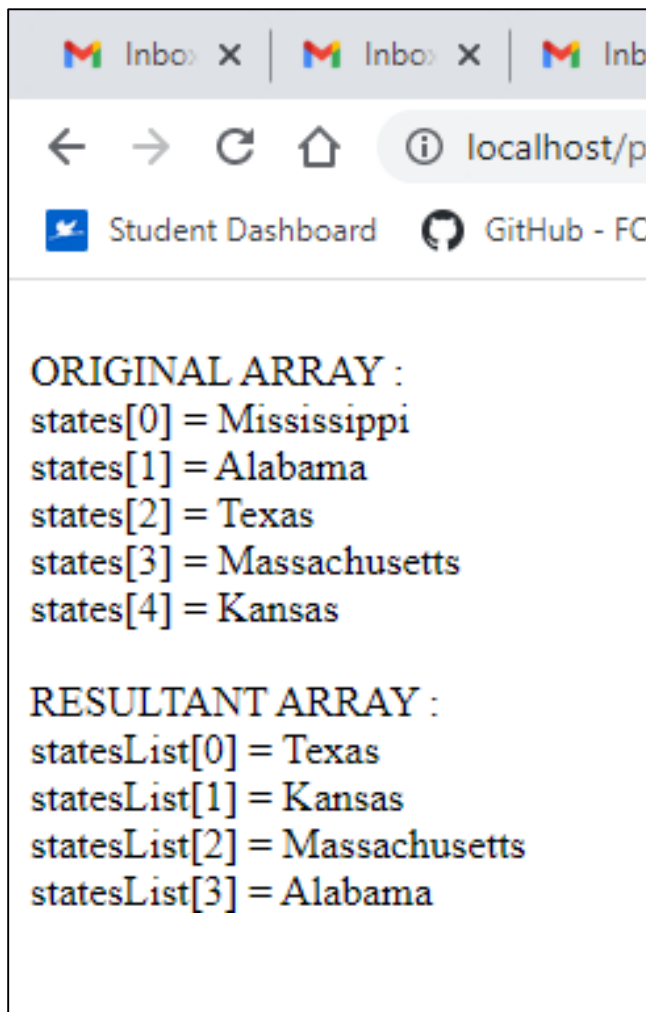
d. Search for a word in states that ends in a. Store this word in element 3 of the list.

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

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>";

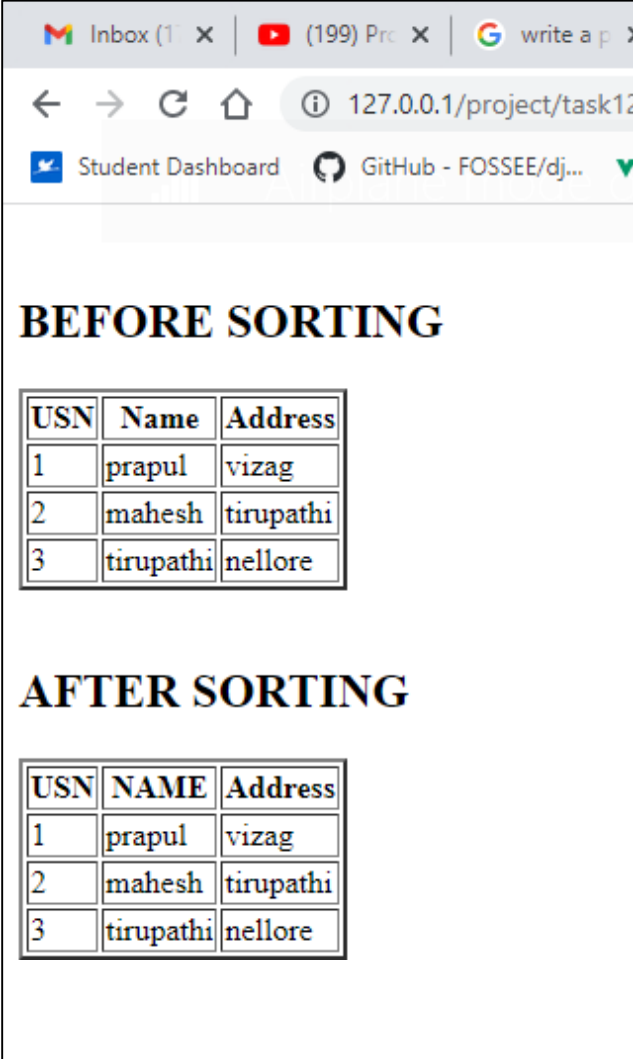
$n = count($a);
for ($i = 0; $i < ($n - 1); $i++) {
    $pos = $i;
```

```

        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:



The screenshot shows a web browser window with the address bar displaying '127.0.0.1/project/task12'. The browser tabs include 'Inbox (1)', '(199) Pro', and 'write a p'. The page content is divided into two sections: 'BEFORE SORTING' and 'AFTER SORTING'. Each section contains a table with three columns: USN, Name, and Address. The data in both tables is identical, showing three entries: USN 1 (prapul, vizag), USN 2 (mahesh, tirupathi), and USN 3 (tirupathi, nellore).

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