Web Technology and Its Applications (22ISE36)

<u>MANUAL / GUIDELINES</u>

**Department of ISE,
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b. Find the transpose of a matrix.

c. Multiplication of two matrices.

d. Addition of two matrices.

10. Write a PHP program named states.py that declares variable states with value

"Global Academy of Technology".   28

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Web Technology and Its Applications (Integrated)

Course Code	22ISE36	CIE Marks	50
Hours/Week (L: T: P)	2:0:2	SEE Marks	50
No. of Credits	3	Examination Hours	3

	Program List
1	Develop and demonstrate a HTML document that illustrates a) Headings tags(H1,H2,H3,H4,H5,H6) b) Font Details (Font Size,Style, Type, Color) c) Unordered List(UL) d) Ordered List(OL) and Definition list (DL)
2	Develop and demonstrate a HTML document that illustrates a) Image as a background b) Hyperlink using an image c) Hyperlink to another web page
3	Write HTML code using Forms, Tables and Java Script to design a simple calculator to perform the following operations: sum, product, difference and quotient.
4	Write a JavaScript that calculates 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.
5	Write a JavaScript code that displays text "TEXT-GROWING" with increasing font size in the interval of 100ms in RED COLOR, when the font size reaches 50pt it displays "TEXT-SHRINKING" in BLUE color. Then the font size decreases to 5pt.
6	Develop and demonstrate a HTML5 file that includes JavaScript script that uses functions for the following problems: a. Parameter: A string b. Output: The position in the string of the left-most vowel c. Parameter: A number d. Output: The number with its digits in the reverse order

7	Write a PHP program
	    a) to display a digital clock which displays the current time of the server.
	    b) to keep track of the number of visitors visiting the web page and to display this count of visitors, with proper headings.

8	Write the PHP programs to do the following: a. Implement simple calculator operations. b. Find the transpose of a matrix. c. Multiplication of two matrices. d. Addition of two matrices.
9	Write a PHP program named states.py that declares variable states with value "Global Academy of Technology". write a PHP program that does the following: a. Search for a word in variable states that ends in emy. Store this word in element 0 of a list named statesList. b. Search for a word in states that begins with G and ends in l. Perform a caseinsensitive 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 T and ends in y. Store this word in element 2

	of the list.
	d. Search for a word in states that ends in f. Store this word in element 3 of the list.
10	Demonstrate JQuery program using CSS.

Study Experiment / Project:

Develop a web application project using the languages and concepts learnt in the theory and Exercises listed in part A with a good look and feel effects. You can use any web technologies and frameworks and databases.

Note:

1. In the examination each student picks one question from part A.
2. A team of two or three students must develop the mini project. However duringthe examination, each student must demonstrate the project individually.
3. The team must submit a brief project report (15-20 pages) that must include thefollowing:
   a) Introduction
   b) Requirement Analysis
   c) Software Requirement Specification
   d) Analysis and Design
   e) Implementation
   f) Testing

Course outcomes: The students should be able to:

- Design and develop dynamic web pages with good aesthetic sense of designingand latest technical know-how's.
- Have a good understanding of Web Application Terminologies, Internet Toolsother web services.
- Learn how to link and publish web sites

Conduction of Practical Examination:

1. All laboratory experiments from part A are to be included for practicalexamination.
2. Mini project has to be evaluated for 30 Marks.
3. Report should be prepared in a standard format prescribed for project work.
4. Students are allowed to pick one experiment from the lot.
5. Strictly follow the instructions as printed on the cover page of answer script.
6. Marks distribution:

a) Part A: Procedure + Conduction + Viva:10 + 35 +5 =50 Marks

b) Part B: Demonstration + Report + Viva voce = 15+10+05 = 30 Marks. Change of experiment is allowed only once and marks allotted to the procedure part to be made zero.

1. **Develop and demonstrate a HTML document that illustrates a) Headings tags(H1,H2,H3,H4,H5,H6) b) Font Details (Font Size,Style, Type, Color) c) Unordered List(UL) d) Ordered List(OL) and Definition list (DL)**

a) Headings tags(H1,H2,H3,H4,H5,H6)

```
<!DOCTYPE html>
<html>
<body>
        <h1>Heading 1</h1>
        <h2>Heading 2</h2>
        <h3>Heading 3</h3>
        <h4>Heading 4</h4>
        <h5>Heading 5</h5>
        <h6>Heading 6</h6>
</body>
</html>
```


b) Font Details (Font Size, Style, Type, Color)

```
<!DOCTYPE html>
<html>
<body>
    <h1 style="font-size:300%;">This is a heading</h1>
    <p style="font-size:160%;">This is a paragraph.</p>
    <h1 style="font-family:verdana;">This is a heading</h1>
    <p style="font-family:courier;">This is a paragraph.</p>
```

```
<p style="color:blue;">I am blue</p>

<p style="color:red;">I am red</p>

<p style="font-size:50px;">I am big</p>
</body>
</html>
```

BIG FONT(300)

FONT(160)

verdana

courier.

I am blue

I am red

c) Unordered List(UL) d) Ordered List(OL) and Definition list (DL)

```
<!DOCTYPE html>
<html>
<body>
        <h2>An unordered HTML list</h2>
        <ul>
          <li>Coffee</li>
          <li>Tea</li>
          <li>Milk</li>
        </ul>
                <h2>An ordered HTML list</h2>
                <ol>
                  <li>Coffee</li>
                  <li>Tea</li>
```

```
            <li>Milk</li>
        </ol>
            <DL>
            <LH>List Header</LH>
            <DT>Term 1<dd>This is the definition of the first term.
            <DT>Term 2<dd>This is the definition of the second term.
            </DL>
</body>
</html>
```

An unordered HTML list

- Coffee
- Tea
- Milk

An ordered HTML list

1. Coffee
2. Tea
3. Milk

Definition list

Term 1
    This is the definition of the first term.
Term 2
    This is the definition of the second term.

2.   **Develop and demonstrate a HTML document that illustrates a) Image as a background**

         b) Hyperlink using an image c) Hyperlink to another web page

a) Image as a background

```
<!DOCTYPE html>
<html>
<body>
<h2>Background Image</h2>
<p>A background image for a p element:</p>
<p style="background-image: url('img_girl.jpg');">
        You can specify background images<br>
        for any visible HTML element.<br>
        In this example, the background image<br>
        is specified for a p element.<br>
        By default, the background-image<br>
        will repeat itself in the direction(s)<br>
        where it is smaller than the element<br>
        where it is specified. (Try resizing the<br>
        browser window to see how the<br>background image behaves.
</p>
</body>
</html>
```


Background Image

You can specify background images
for any visible HTML element.
In this example, the background image
is specified for a div element.
By default, the background-image
will repeat itself in the direction(s)
where it is smaller than the element
where it is specified. (Try resizing the
browser window to see how the
background image behaves.

b) Hyperlink using an image

```html
<!DOCTYPE html>
<html>
<body>
<h2>Image as a Link</h2>
<p>The image below is a link. Try to click on it.</p>
<a href="default.asp"><img src="smiley.gif" alt="HTML tutorial"
    style="width:42px;height:42px;"></a>
</body>
</html>
```


c) Hyperlink to another web page

```html
<!DOCTYPE html>
<html>
<body>
<h1>HTML Links</h1>
<p><a href="https://gat.ac.in/">Global Academy of Technology</a></p>
</body>
</html>
```

3. **Write HTML code using Forms, Tables and Java Script to design a simple calculator to perform the following operations: sum, product, difference and quotient.**

```html
<!DOCTYPE HTML>
<html>
<head>
    <style>
        table, td, th
        {
            border: 1px solid black;
            width: 33%;
            text-align: center;
            background-color: DarkGray;
            border-collapse:collapse;
        }
        table { margin: auto; }
        input { text-align:right; }
    </style>
    <script type="text/javascript">
    function calc(clicked_id)
    {
        var val1 = parseFloat(document.getElementById("value1").value);
        var val2 = parseFloat(document.getElementById("value2").value);
        if(isNaN(val1)||isNaN(val2))
            alert("ENTER VALID NUMBER");
        else if(clicked_id=="add")
            document.getElementById("answer").value=val1+val2;
        else if(clicked_id=="sub")
            document.getElementById("answer").value=val1-val2;
        else if(clicked_id=="mul")
            document.getElementById("answer").value=val1*val2;
```

```
            else if(clicked_id=="div")
                    document.getElementById("answer").value=val1/val2;
        }
        function cls()
        {
                value1.value="0";
                value2.value="0";
                answer.value="";
        }
    </script>
</head>
<body>
<table>
        <tr><th colspan="4"> SIMPLE CALCULATOR </th></tr>
        <tr><td>value1</td><td><input type="text" id="value1" value="0"/></td>
        <td>value2</td><td><input type="text" id="value2" value="0"/> </td></tr>
        <tr><td><input type="button" value="Addition" id = "add"
        onclick="calc(this.id)"/></td>
        <td><input type="button" value="Subtraction" id = "sub"
        onclick="calc(this.id)"/></td>
        <td><input type="button" value="Multiplication" id = "mul"
        onclick="calc(this.id)"/></td>
        <td><input type="button" value="Division" id ="div"
        onclick="calc(this.id)"/></td></tr>
        <tr><td>Answer:</td><td> <input type="text" id="answer" value=""
        disabled/></td>
        <td colspan="2"><input type="button" value="CLEAR ALL" onclick="cls()"/></td>
        </tr>
</table>
</body>
</html>
```

Output:

Test Cases :

Test No.	Input Parameters	Expected Output	Obtained Output	Remarks
1.	value1=50.56 value2=24.39	Addition =74.95 Subtraction =26.17 Multiplication=1233.1584 Division=2.072980729807298	Addition =74.95 Subtraction =26.17 Multiplication=1233.1584 Division=2.072980729807298	PASS
2.	value1= 0 value2= 45	Addition =45 Subtraction =-45 Multiplication=0 Division=0	Addition =45 Subtraction =-45 Multiplication=0 Division=0	PASS
3.	value1= 45 value2= 0	Addition =45 Subtraction =45 Multiplication=0 Division=Infinity	Addition =45 Subtraction =45 Multiplication=0 Division=Infinity	PASS
4.	value1 = abc value2 = 23	ENTER VALID NUMBER	ENTER VALID NUMBER	PASS
5	value1 = 50 value2 =xyz	ENTER VALID NUMBER	ENTER VALID NUMBER	PASS

4. **Write a JavaScript that calculates 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.**

```html
<!DOCTYPE HTML>
<html>
    <head>
    <style>
            table,tr, td
            {
                    border: solid black;
                    width: 33%;
                    text-align: center;
                    border-collapse: collapse;
                    background-color:lightblue;
            }
            table { margin: auto; }
    </style>
    <script>
            document.write( "<table><tr><thcolspan='3'> NUMBERS FROM 0 TO 10 WITH
            THEIR SQUARES AND CUBES </th></tr>" );
            document.write( "<tr><td>Number</td><td>Square</td><td>Cube</td></tr>" );
            for(var n=0; n<=10; n++)
            {
                    document.write( "<tr><td>" + n + "</td><td>" + n*n + "</td><td>" + n*n*n
                    + "</td></tr>" ) ;
            }
            document.write( "</table>" ) ;
    </script>
    </head>
</html>
```

Output:

NUMBERS FROM 0 TO 10 WITH THEIR SQUARES AND CUBES		
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

5.   **Write a JavaScript code that displays text "TEXT-GROWING" with increasing font size in the interval of 100ms in RED COLOR, when the font size reaches 50pt it displays "TEXT-SHRINKING" in BLUE color. Then the font size decreases to 5pt.**

```
<!DOCTYPE HTML>
<html>
<head>
      <style>
            p {
                  position: absolute;
                  top: 50%;
                  left: 50%;
                  transform: translate(-50%, -50%);
            }
      </style>
</head>
<body>
      <p id="demo"></p>
      <script>
            var var1 = setInterval(inTimer, 1000);
            var fs = 5;
            var ids = document.getElementById("demo");
            function inTimer() {
                  ids.innerHTML = 'TEXT GROWING';
                  ids.setAttribute('style', "font-size: " + fs + "px; color: red");
                  fs += 5;
                  if(fs >= 50 ){
                        clearInterval(var1);
                        var2 = setInterval(deTimer, 1000);
                  }
            }
```

```
            function deTimer() {
                    fs -= 5;
                    ids.innerHTML = 'TEXT SHRINKING';
                    ids.setAttribute('style', "font-size: " + fs + "px; color: blue");
                    if(fs === 5 ){
                            clearInterval(var2);
                    }
            }
        </script>
</body>
</html>
```

Output:

TEXT-GROWING

TEXT SHRINKING

6.   **Develop and demonstrate a HTML5 file that includes JavaScript script that uses functions for the following problems:**

a) **Parameter: A string**

b) **Output: The position in the string of the left-most vowel**

c) **Parameter: A number**

d) **Output: The number with its digits in the reverse order**

**program4.html**

```html
<!DOCTYPE HTML>

<html>

  <body>

      <script type="text/javascript">

      var str = prompt("Enter the Input","");

      if(!(isNaN(str)))

      {

              var num,rev=0,remainder;

              num = parseInt(str);


              while(num!=0) {

                      remainder =  num%10;

                      num = parseInt(num/10);

                      rev = rev * 10 + remainder;

              }

              alert("Reverse of "+str+" is "+rev);

      }

      else

      {

              str = str.toUpperCase();

              for(var i = 0; i < str.length; i++) {

                      var chr = str.charAt(i);

                      if(chr == 'A' || chr == 'E' || chr == 'I' || chr == 'O' || chr == 'U')break;

              }
```

```
                if( i < str.length )

                        alert("The position of the left most vowel is "+(i+1));

                else

                        alert("No vowel found in the entered string");

        }

            </script>

    </body>

</html>
```

Output :
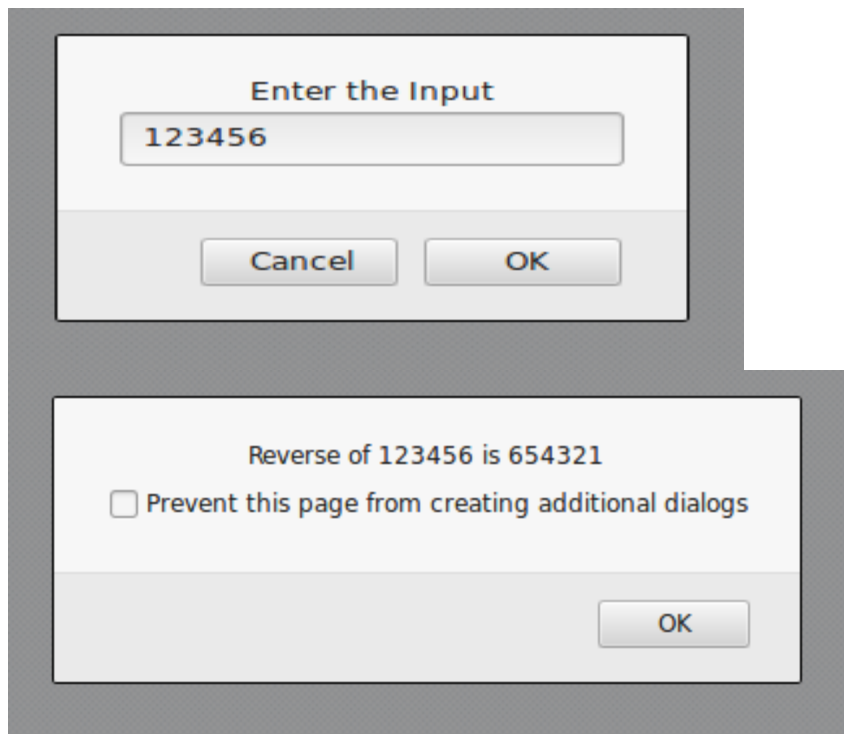
Enter the Input

channasandra

Cancel   OK

The position of the left most vowel is 3

☐ Prevent this page from creating additional dialogs

OK

Test Cases :

Test No.	Input Parameters	Expected Output	Obtained Output	Remarks
1.	123	Reverse of 123 is 321	Reverse of 123 is 321	PASS
1.	CHANNASANDRA	The position of the left most vowel is 3	The position of the left most vowel is 3	PASS
2.	SKY	No vowel found in the entered string	No vowel found in the entered string	PASS
3.	MNKTO	The position of the left most vowel is 5	The position of the left most vowel is 5	PASS

7. Write a PHP program
  a) to display a digital clock which displays the current time of the server.
  b) to keep track of the number of visitors visiting the web page and to display this count of visitors, with proper headings.

a. to display a digital clock which displays the current time of the server.

```html
<!DOCTYPE HTML>
<html>
<head>
        <meta http-equiv="refresh" content="1"/>
        <style>
                p {
                        color:white;
                        font-
                        size:90px;
                        position:absol
                        ute; top:50%;
                        left:50%;
                        transform: translate(-50%, -50%);
                }
                body{background-color:black;}
        </style>
        <p><?php echo date(" h: i : s A");?></p>
</head>
```

 Output:

b. to keep track of the number of visitors visiting the web page and to display this count of visitors, with proper headings

```php
<?php
        print "<h3> REFRESH PAGE </h3>";
        $name="counter.txt";
        $file = fopen($name,"r");
```

```
$hits= fscanf($file,"%d");
fclose($file);


$hits[0]++;
$file = fopen($name,"w");
fprintf($file,"%d",$hits[0]);
fclose($file);


print "Total number of views: ".$hits[0];
?>
```
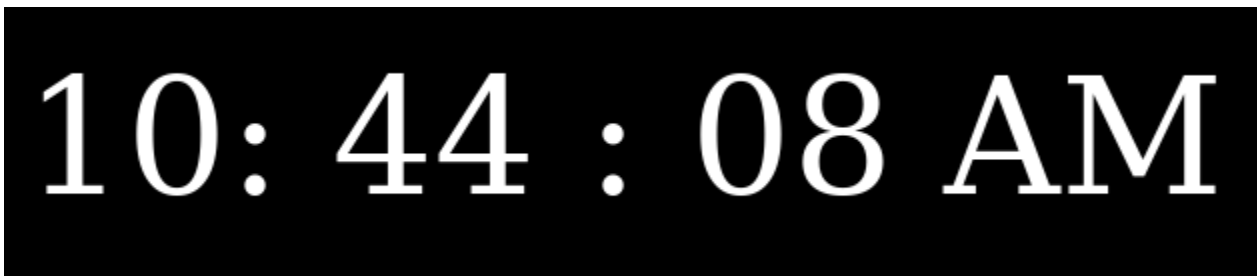
Output:

REFRESH PAGE

Total number of views: 10

7 b Write a PHP program to display a digital clock which displays the current timeof the server.

```
<!DOCTYPE HTML>
<html>
<head>
        <meta http-equiv="refresh" content="1"/>
        <style>
            p {
                    color:white;
                    font-size:90px;
                    position: absolute;
                    top: 50%;
                    left: 50%;
                    transform: translate(-50%, -50%);
            }
            body{background-color:black;}
        </style>
        <p> <?php echo date(" h: i: s A");?> </p>
</head>
```

Output:

8.   Write the PHP programs to do the following:

      a) Implement simple calculator operations.

      b) Find the transpose of a matrix.

      c) Multiplication of two matrices.

      d) Addition of two matrices.

a. Implement simple calculator operations.

```html
<html>
<head>
    <style>
        table, td, th
        {
                border: 1px solid black;
                width: 35%;
                text-align: center;
                background-color: DarkGray;
        }
        table { margin: auto; }
        input,p { text-align:right; }
    </style>
</head>
<body>
    <form method="post">
    <table>
        <caption><h2> SIMPLE CALCULATOR </h2></caption>>
        <tr><td>First Number:</td><td><input type="text" name="num1" /></td>
        <td      rowspan="2"><input      type="submit"      name="submit"
        value="calculate"></td></tr>
        <tr><td>Second           Number:</td><td><input            type="text"
        name="num2"/></td></tr>
    </form>

    <?php
```

```php
if(isset($_POST['submit'])) // it checks if the input submit is filled
{
        $num1 = $_POST['num1'];
        $num2 = $_POST['num2'];
        if(is_numeric($num1) andis_numeric($num1) )
        {
        echo "<tr><td> Addition :</td><td><p>".($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 type='text/javascript' > alert(' ENTER VALID
        NUMBER');</script>";
        }


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

Output:

Test Cases:

Test No.	Input Parameters	Expected Output	Obtained Output	Remarks
1.	value1=50.56 value2=24.39	Addition =74.95 Subtraction =26.17 Multiplication=1233.1584 Division=2.072980729807298	Addition =74.95 Subtraction =26.17 Multiplication=1233.1584 Division=2.072980729807298	PASS
2.	value1= 0 value2= 45	Addition =45 Subtraction =-45 Multiplication=0 Division=0	Addition =45 Subtraction =-45 Multiplication=0 Division=0	PASS
3.	value1= 45 value2= 0	Addition =45 Subtraction =45 Multiplication=0 Division=Infinity	Addition =45 Subtraction =45 Multiplication=0 Division=Infinity	PASS
4.	value1 = abc value2 = 23	ENTER VALID NUMBER	ENTER VALID NUMBER	PASS
5	value1 = 50 value2 =xyz	ENTER VALID NUMBER	ENTER VALID NUMBER	PASS

b . Find the transpose of a matrix.

c. Multiplication of two matrices.

d. Addition of two matrices.

```php
<?php
    $a = array(array(1,2,3),array(4,5,6),array(7,8,9));
    $b = array(array(7,8,9),array(4,5,6),array(1,2,3));

    $m=count($a);
    $n=count($a[2]);
    $p=count($b);
    $q=count($b[2]);

    echo "the  first matrix    :"."<br/>";
    for ($row = 0; $row < $m; $row++) {
            for ($col = 0; $col < $n; $col++)
                echo " ".$a[$row][$col];
            echo "<br/>";
    }


    echo "the  second matrix    :"."<br/>";
    for ($row = 0; $row < $p; $row++) {
            for ($col = 0; $col < $q; $col++)
                    echo " ".$b[$row][$col];
            echo "<br/>";
    }


    echo "the transpose for the first matrix is:"."<br/>";
    for ($row = 0; $row < $m; $row++) {
            for ($col = 0; $col < $n; $col++)
                    echo " ".$a[$col][$row];
            echo "<br/>";
    }
```

```php
if(($m===$p) and ($n===$q)) {
        echo "the addition of matrices is:"."<br/>";
        for ($row = 0; $row < 3; $row++) {
                for ($col = 0; $col < 3; $col++)
                        echo " ".$a[$row][$col]+$b[$row][$col]." ";
                echo "<br/>";
        }
}


if($n===$p){
        echo " The multiplication of matrices: <br/>";
        $result=array();
        for ($i=0; $i < $m; $i++) {
                for($j=0; $j < $q; $j++){
                        $result[$i][$j] = 0;
                        for($k=0; $k < $n; $k++)
                                $result[$i][$j] += $a[$i][$k] * $b[$k][$j];
                }
        }
        for ($row = 0; $row < $m; $row++) {
                for ($col = 0; $col < $q; $col++)
                        echo " ".$result[$row][$col];
                echo "<br/>";
        }
}
?>
```

Output:

the first matrix:

1 2 3

4 5 6

7 8 9

the second matrix:

7 8 9

4 5 6

1 2 3

the transpose of the first matrix:

1 4 7

2 5 8

3 6 9

the addition of matrices is:

8 10 12

8 10 12

8 10 12

the multiplication of matrices:

18 24 30

54 69 84

90 114 138

9. **Write a PHP program named states.py that declares variable states with value "Global Academy of Technology". write a PHP program thatdoes 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.**

```php
<?php
    $states = " Global Academy of Technology ";
    $statesArray = [];
    $states1 = explode(' ',$states);
    echo "Original Array :<br>";
    foreach ( $states1 as $i => $value )
        print("STATES[$i]=$value<br>");
    foreach($states1 as $state) {
        if(preg_match( '/xas$/', ($state)))
        $statesArray[0] = ($state);
    }
    foreach($states1 as $state) {
        if(preg_match('/^k.*s$/i', ($state)))
        $statesArray[1] = ($state);
    }
```

```php
        foreach($states1 as $state) {
                if(preg_match('/^M.*s$/', ($state)))
                $statesArray[2] = ($state);
        }
        foreach($states1 as $state){
                if(preg_match('/a$/', ($state)))
                $statesArray[3] = ($state);
        }
        echo "<br><br>Resultant Array :<br>";
        foreach ( $statesArray as $array => $value )
                print("STATES[$array]=$value<br>");
?>
```

10.   **Demonstrate JQuery program using CSS**

```
<!DOCTYPE html>
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.7.1/jquery.min.js"></script>
</head>
<body>

<p id="demo">Change the style of an HTML element.</p>

<script>
$(document).ready(function() {
  $("#demo").css("font-size","35px");
});
</script>

</body>
    </html>
```

WELCOME TO GAT