HKBK COLLEGE OF ENGINEERING
(Affiliated to VTU, Belgaum and Approved by AICTE)
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
NBA Accredited Programme

LABORATORY MANUAL
Web Technology Laboratory with Mini Project
15CSL77

PREPARED BY

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HKBK COLLEGE OF ENGINEERING
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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Mission and Vision of the Institution

Mission

- To achieve academic excellence in science, engineering and technology through dedication to duty, innovation in teaching and faith in human values.
- To enable our students to develop into outstanding professional with high ethical standards to face the challenges of 21st century.
- To provide educational opportunities to the deprived and weaker section of the society to uplift their socio-economic status.

Vision

To empower students through wholesome education and enable the students to develop into highly qualified and trained professionals with ethics and emerge as responsible citizen with broad outlook to build a vibrant nation.

Mission and Vision of the CSE Department

Mission

- To provide excellent technical knowledge and computing skills to make the graduates globally competitive with professional ethics.
- To involve in research activities and be committed to lifelong learning to make positive contributions to the society.

Vision

To advance the intellectual capacity of the nation and the international community by imparting knowledge to graduates who are globally recognized as innovators, entrepreneur and competent professionals.

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Programme Educational Objectives

PEO-1	To provide students with a strong foundation in engineering fundamentals and in the computer science and engineering to work in the global scenario.
PEO-2	To provide sound knowledge of programming and computing techniques and good communication and interpersonal skills so that they will be capable of analyzing, designing and building innovative software systems.
PEO-3	To equip students in the chosen field of engineering and related fields to enable him to work in multidisciplinary teams.
PEO-4	To inculcate in students professional, personal and ethical attitude to relate engineering issues to broader social context and become responsible citizen.
PEO-5	To provide students with an environment for life-long learning which allow them to successfully adapt to the evolving technologies throughout their professional carrier and face the global challenges.

Programme Outcomes	
a.	**Engineering Knowledge:** Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
b.	**Problem Analysis: Identify,** formulate, research literature and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences
c.	**Design/ Development of Solutions**: Design solutions for complex engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental considerations.
d.	**Conduct investigations of complex problems** using research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions.
e.	**Modern Tool Usage**: Create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an under- standing of the limitations.
f.	**The Engineer and Society**: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.
g.	**Environment and Sustainability**: Understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
h.	**Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
i.	**Individual and Team Work**: Function effectively as an individual, and as a member or leader in diverse teams and in multi disciplinary settings.

j.	**Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.
k.	**Life-long Learning**: Recognize the need for and have the preparation and ability to engage in independent and life- long learning in the broadest context of technological change.
l.	**Project Management and Finance**: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
Programme Specific Outcomes	
m.	**Problem-Solving Skills:** An ability to investigate and solve a problem by analysis, interpretation of data, design and implementation through appropriate techniques,tools and skills.
n.	**Professional Skills**: An ability to apply algorithmic principles, computing skills and computer science theory in the modelling and design of computer-based systems.
o.	**Entrepreneurial Ability:** An ability to apply design, development principles and management skills in the construction of software product of varying complexity to become an entrepreneur

HKBK College of Engineering

Department of Computer Sciences and Engineering
Bangalore-560045
Web Technology Laboratory with Mini Project
15CSL77

Course objectives:

1. Design and develop static and dynamic web pages.
2. Familiarize with Client-Side Programming, Server-Side Programming, Active Server Pages.
3. Learn Database Connectivity to web applications.Dynamic content development will be explored through state of the art programming languages for the creation of interactive web sites.

Sl No.	Experiment
1.	Write a JavaScript to design a simple calculator to perform the following operations: sum, product, difference and quotient.
2.	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.
3.	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.
4.	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
5.	Design an XML document to store information about a student in an engineering college affiliated to VTU. The information must include USN, Name, and Name of the College, Branch, Year of Joining, and email id. Make up sample data for 3 students. Create a CSS style sheet and use it to display the document.
6.	Write a PHP program to keep track of the number of visitors visiting the web page and to display this count of visitors, with proper headings.
7.	Write a PHP program to display a digital clock which displays the current time of the server.
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 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 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 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.
10.	Write a PHP program to sort the student records which are stored in the database using selection sort.
	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 during the examination, each student must demonstrate the project individually. 3. The team must submit a brief project report (15-20 pages) that must include the following a. Introduction b. Requirement Analysis c. Software Requirement Specification d. Analysis and Design e. Implementation f. Testing

Course Outcomes:

At the end of this lab session, the student will

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

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

Algorithm

1. start
2. open <html> and <body> tags
3. Create html form with proper buttons to enter values to be calculated
4. Use 'onclick' event to execute each button click
5. close the <body> tag and <html> tag

```
<!DOCTYPE html>
<html>
<head>
<title>Calculator - JavaScript and HTML </title>
</head>
<style>
#calc-contain{
position: relative;
width: 400px;
border: 2px solid black;
border-radius: 12px;
margin: 0px auto;
padding: 20px 20px 100px 20px;
}
#agh{
position: relative;
float: right;
margin-top: 15px;
}
#agh p{
font-size: 20px;
font-weight: 900;
}
input[type=button] {
background: lightGray;
width: 20%;
font-size: 20px;
font-weight: 900;
border-radius: 7px;
margin-left: 13px;
margin-top: 10px;
}
input[type=button]:active {
```

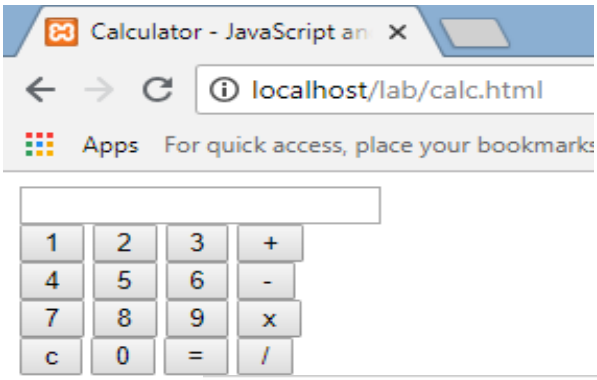
```
background-color: #3e8e41;
box-shadow: 0 5px #666;
transform: translateY(4px);
}
input[type=button]:hover {
background-color: #003300;
color: white;
}
input[type = text] {
position: relative;
display: block;
width: 90%;
margin: 5px auto;
font-size: 20px;
padding: 10px;
box-shadow: 4px 0px 12px black inset;
}
</style>
<body>
 <div id='calc-contain'>
<form name="calculator">
<input type="text" name="answer" />
<br>
<input type="button" value=" 1 " onclick="calculator.answer.value += '1'" />
<input type="button" value=" 2 " onclick="calculator.answer.value += '2'" />
<input type="button" value=" 3 " onclick="calculator.answer.value += '3'" />
<input type="button" value=" + " onclick="calculator.answer.value += '+'" />
<br/>
<input type="button" value=" 4 " onclick="calculator.answer.value += '4'" />
<input type="button" value=" 5 " onclick="calculator.answer.value += '5'" />
<input type="button" value=" 6 " onclick="calculator.answer.value += '6'" />
<input type="button" value=" - " onclick="calculator.answer.value += '-'" />
</br>
<input type="button" value=" 7 " onclick="calculator.answer.value += '7'" />
<input type="button" value=" 8 " onclick="calculator.answer.value += '8'" />
<input type="button" value=" 9 " onclick="calculator.answer.value += '9'" />
<input type="button" value=" x " onclick="calculator.answer.value += '*'" />
</br>
<input type="button" value=" c " onclick="calculator.answer.value = "" />
<input type="button" value=" 0 " onclick="calculator.answer.value += '0'" />
```

```
<input type="button" value=" = " onclick="calculator.answer.value =
eval(calculator.answer.value)" />
<input type="button" value=" / " onclick="calculator.answer.value += '/'" />
</br>
</form>
<div id="agh">
<p>Calculator
</div>
</div>
</body>
</html>
```

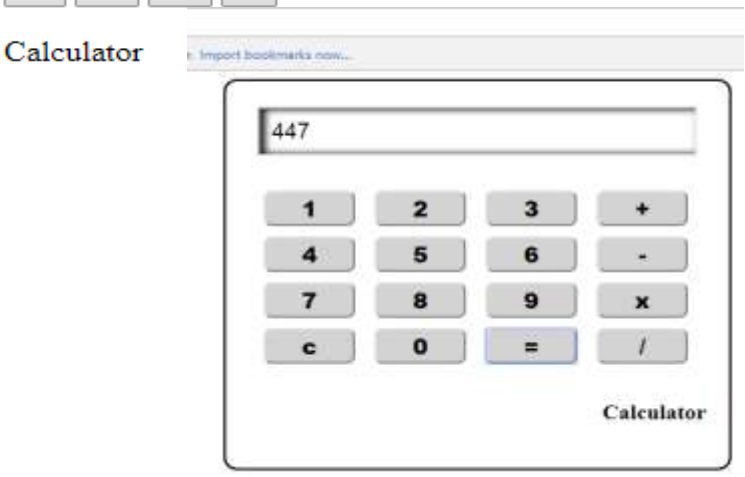
Steps to Run:

1. Open blank page in text Editor
2. Save the HTML file with file extension as .html. The file should be stored in /var/www/html folder.
3. Open the file in the browser using the URL http://localhost/filename.html

Output 1: Calculator using HTML



Output 2: Calculator using HTML and CSS code



2. 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.

Algorithm

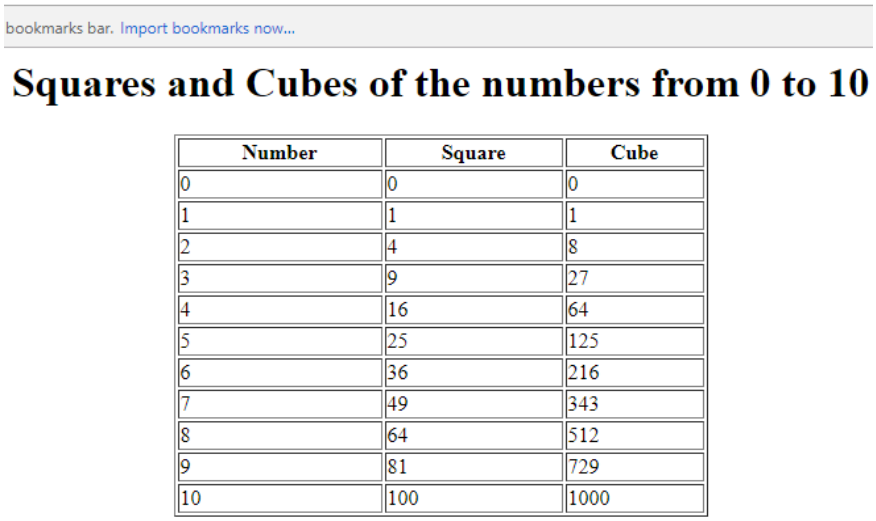
1. start
2. Open <html> and <script> tag
3. create html table
4. for n=0 to 10:
    Display:
        First column: n
        Second column: n*n
        Third column: n*n*n
5. close the <table>, <script> and <html> tag

```
<html>
<head>
<script>
document.write('<h1 align="right">Squares and Cubes of the numbers from 0 to 10</h1>');
document.write('<center><table width="30%" border="1" bgcolor="white">');
document.write( "<tr> <th>Number</th> <th>Square</th> <th>Cube</th> </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>
```

Steps to Run:

1. Open blank page in text Editor
2. Save the HTML file with file extension as .html. The file should be stored in /var/www/html folder.
3. Open the file in the browser using the URL http://localhost/filename.html

Output: 1



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

3. 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.

Explanation:

The window object allows execution of code at specified time intervals.

These time intervals are called timing events.

The two key methods to use with JavaScript are:

setInterval(function, milliseconds) Executes a function, after waiting a specified number of milliseconds, but repeats the execution of the function continuously. This function can be used as for loop. clearInterval(timerVariable)The clearInterval() method stops the executions of the function specified in the setInterval() method.

Algorithm:

1. Set two paragraph texts with id "myP1" and "myP2"
2. initialize the variables size=10, i=0
3. set myWait1 = setInterval(GrowText1, 100)
4. Define function GrowText1()

```
If size<51
   size= size+1
   document.getElementById("myP1").style.fontSize = (size+'pt')
   document.getElementById("myP2").style.visibility = "hidden";
else
   clearInterval myWait1)
   myWait1 = setInterval(ShrinkText1, 100)
   document.getElementById("myP1").style.visibility = "hidden";
   document.getElementById("myP1").style.fontSize = '1pt';
   document.getElementById("myP2").style.visibility = "visible";
```

5. Define function ShrinkText1()

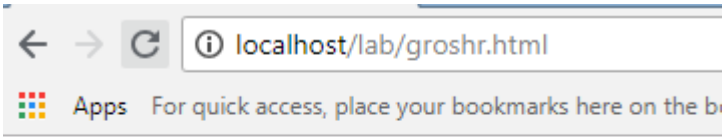
```
If (size>5)
size = size - 1
document.getElementById("myP2").style.fontSize = (size+'pt');
```

PROGRAM:

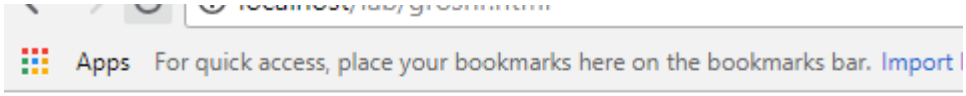
```
<!DOCTYPE html>
<html>
<body>
<p id="myP1">TEXT-GROWING.</p>
<p id="myP2">TEXT-SHRININKING</p>
</body>
<script>
//Global declerations
var size = 10;
vari =0;
var myWait1 = setInterval(GrowText1, 100);
function GrowText1()
{
if(size<51)
{
size = size + 1;
document.getElementById("myP1").style.fontSize = (size+'pt');
document.getElementById("myP1").style.color = "red";
//Hide the paragraph "text-shriniking"
document.getElementById("myP2").style.visibility = "hidden";
}
else
{
clearInterval(myWait1);
myWait1 = setInterval(ShrinkText1, 100);
//Now hide the 1st paragraph and display the second paragraph
document.getElementById("myP1").style.visibility = "hidden";
document.getElementById("myP1").style.fontSize = '1pt';
document.getElementById("myP2").style.visibility = "visible";
}
}
```

```
function ShrinkText1()
{
if(size>5)
{
size = size - 1;
document.getElementById("myP2").style.fontSize = (size+'pt');
document.getElementById("myP2").style.color = "blue";
}
else
{
clearInterval(myWait1);
}
}
</script>
</html>
```

Output



TEXT-SHRININKING



TEXT-GROWING.

4. 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.

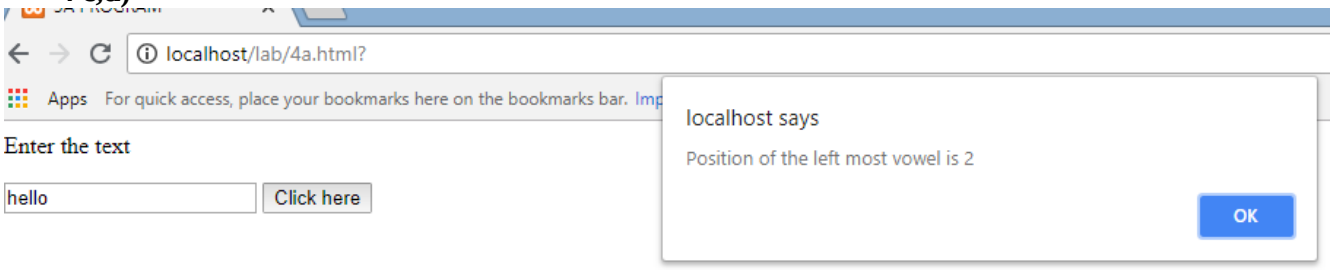
Algorithm 4a,b
1. start
2. open <html> and <SCRIPT>

3. Define a function say ‘vowel’ with an argument of inserted value ‘st’
   st.search(/[aeiouAEIOU]/)
   if position<0
     alert ("pattern not found\n")
   else
     alert("Position of the left most vowel is "+(pos+1))
4. close <script> tag
5. open <body> tag
6. create html form to enter the letter
7. Use ‘onclick’ button event to execute vowel function
8. close <body> and <html>

PROGRAM:

4a,b)
```
<html>
<head><title>3A PROGRAM</title>
<SCRIPT>
function vow(st)
{
var pos;
pos=st.search(/[aeiouAEIOU]/);
if(pos<0)
alert("pattern not found\n");
else
alert("Position of the left most vowel is "+(pos+1));
}
</SCRIPT>
</head>
<body>
<FORM><p>Enter the text</p>
<input type="text" id="voweltext"/>
<input type="button" value="Click here" onclick="vow(voweltext.value);"/>
</FORM></body>
</html>
```

Output 4 a,b
4 c,d)



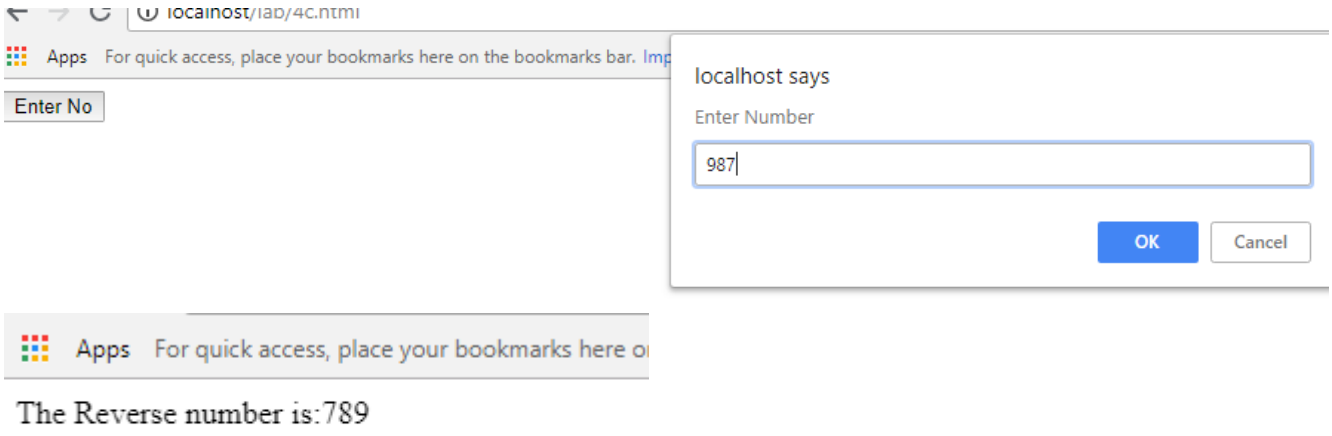
Algorithm 4c,d
1. start

2. open <html> and <SCRIPT>
3. Define a function 'reverse'
    Enter the number 'n' to be reversed
    Initialize variables temp=0,rev=0;
    while n>0
        temp=n%10;
        rev=rev*10+temp;
        n=n/10;
4. write 'rev' as output
4. close <script> tag
5. open <body> tag
6. create html form to declare button event
7. Use 'onclick' button event to execute reverse function
8. close <body> and <html>

PROGRAM:

```
<html>
<title>Reverse Number</title>
<script>
function rev()
{
var n=prompt("Enter Number"," ");
n=parseInt(n);
var temp=0,rev=0;
while(n>0)
{
temp=n%10;
rev=rev*10+temp;
n=n/10;
n=parseInt(n);
}
document.write("The Reverse number is:",rev); }
</script>
<body>
<form>
<input type="button" value="Enter No" onclick="rev()";>
</form>
</body>
</html>
```

Output 4c,d



5. Design an XML document to store information about a student in an engineering college affiliated to VTU. The information must include USN, Name, and Name of the College, Branch, Year of Joining, and email id. Make up sample data for 3 students. Create a CSS style sheet and use it to display the document.

Algorithm:

1. Write an XML document consisting information about 3 students with head tag as students, and other information as sub tags .
2. Add link to css file in processing instruction XML-style sheet of XML document
3. Run the XML file

PROGRAM:

```
<!DOCTYPE student_information [
<!ELEMENT student_information (ad+)>
<!ELEMENT ad (usn,name,college,branch,year,email)>
<!ELEMENT usn (#PCDATA)>
<!ELEMENT name (#PCDATA)>
<!ELEMENT college (#PCDATA)>
<!ELEMENT branch (#PCDATA)>
<!ELEMENT year (#PCDATA)>
<!ELEMENT email (#PCDATA)>
]>
<?xml-stylesheet type="text/css" href="5.css"?>
<student_information>
<h1>First Student Information</h1>
<ad><label>USN:</label><usn>1HK16CS001</usn></ad>
<ad><label>NAME:</label><name>ABC</name></ad>
<ad><label>COLLEGE:</label><college>HKBK</college></ad>
<ad><label>BRANCH:</label><branch>CSE</branch></ad>
<ad><label>YEAR:</label><year>2001</year></ad>
<ad><label>EMAIL:</label><email>abc@gmail.com</email></ad>
<h1>Second Student Information</h1>
<ad><label>USN:</label><usn>1HK16CS002</usn></ad>
<ad><label>NAME:</label><name>DEF</name></ad>
<ad><label>COLLEGE:</label><college>HKBK</college></ad>
<ad><label>BRANCH:</label><branch>CSE</branch></ad>
```

```
        <ad><label>YEAR:</label><year>2001</year></ad>
        <ad><label>EMAIL:</label><email>def@gmail.com</email></ad>
        <h1>Third Student Information</h1>
        <ad><label>USN:</label><usn>1HK16CS003</usn></ad>
        <ad><label>NAME:</label><name>GHI</name></ad>
        <ad><label>COLLEGE:</label><college>HKBK</college></ad>
        <ad><label>BRANCH:</label><branch>CSE</branch></ad>
        <ad><label>YEAR:</label><year>2001</year></ad>
        <ad><label>EMAIL:</label><email>ghi@gmail.com</email></ad>
</student_information>
```

5.css

```
ad{display:block;}
label{font-weight:bold;color:blue;}
usn{font-size:14pt;color:red;}
name{font-size:14pt;color:red;}
college{font-size:14pt;color:red;}
branch{font-size:14pt;color:red;}
year{font-size:14pt;color:red;}
email{font-size:14pt;color:red;}
```

Steps to Run:

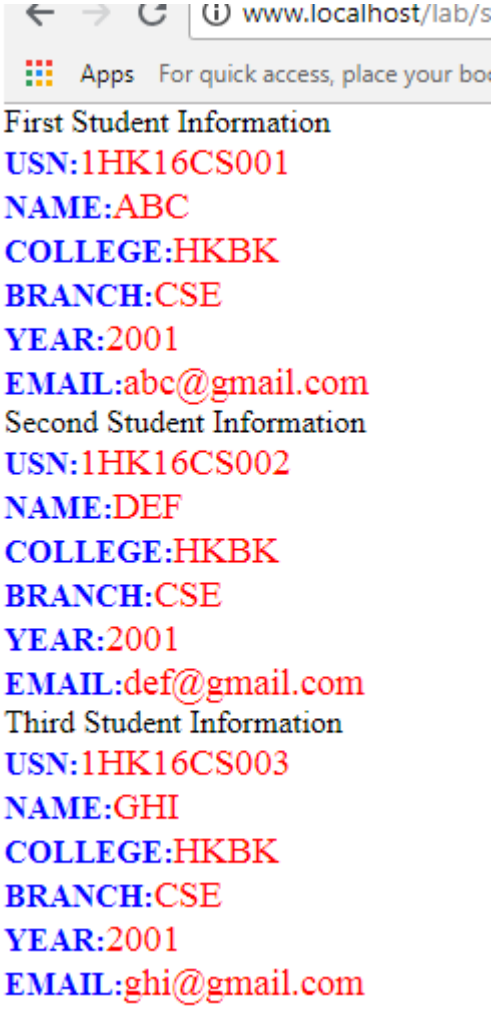
1. . Open blank page in text Editor

2. Save the HTML file with file extension as .xml. The file should be stored in /var/www/html folder.

3. Save the CSS file with file extension as .css and select file type as all types or all files.

4. Open the file in the browser using the URL http://localhost/filename.html

Output



6. Write a PHP program to keep track of the number of visitors visiting the web page and to display this count of visitors, with proper headings.

Algorithm:

1. Create a php file with .php extension.
2. In the body tag of the program, write the php code.
3. The code should start session using session_start().
4. Check if session has initialized count value if no then initialize the count value to 0,if yes then go to step 5.
5. Increment the count value by 1.
6. Display the count on web page on every refresh.

PROGRAM:

6.php

```
<?php
$file = 'count.txt';
$count = strval(file_get_contents($file));
file_put_contents($file, $count + 1);
echo("You are visitor number:".$count);
?>
```

Createcount.php

```
<?php
$f=fopen("count.txt","w");
fwrite($f,"1");
?>
```

Steps to run PHP File in XAMPP:

1. . Open blank page in text Editor

2. Save the HTML file with file extension as .xml. The file should be stored in /var/www/html folder.

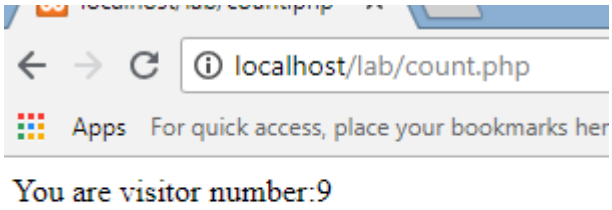
3. Make sure your PHP files are saved as such ,they should have the .php file extension .

4. Create file name count with the extension .txt (count.txt) and initialize to 1

5. Open up any web browser on your desktop and enter "localhost" into the address box

6. http://localhost/usrpgm/counter1.php

Output



7.Write a PHP program to display a digital clock which displays the current time of the server.

ALGORITHM-7

1. Write php program with .php extension.
2. Use the built in localtime function to get the server time, and store in scalar variables $s, $m, $h.
3. To display the digital clock in 12 hour format check if $h>12 yes then $h->$h-12, if no go to step 4
4. Use the sprint function to format the time and store in scalar variable $t.
5. Update the server time using the Meta tag.
6. Display the current time of the server.

The JavaScript function (client side) renders the time stamp of the local system.

Whereas php (server side program) renders the time stamp from the server.

PROGRAM:

```
<html><head>
<script type="text/javascript">
function startTime()
{
var d= new Date();
var h= d.getHours();
var m= d.getMinutes();
var s= d.getSeconds();
document.getElementById("txt").innerHTML= h+" : "+m+" : "+s;
setTimeout('startTime()', 1000);
}
</script>
</head>
<body onload="startTime()">
<h1> The time from the local system is:
<span id= "txt"></span>
</h1>
<h1>
<?php echo "The time from the server is " . date("h:i:sa");?>
</h1>
</body>
</html>
```

Steps to run PHP File:

1. . Ope n blank page in text Editor

2. Save the HTML file with file extension as .php. The file should be stored in /var/www/html folder.

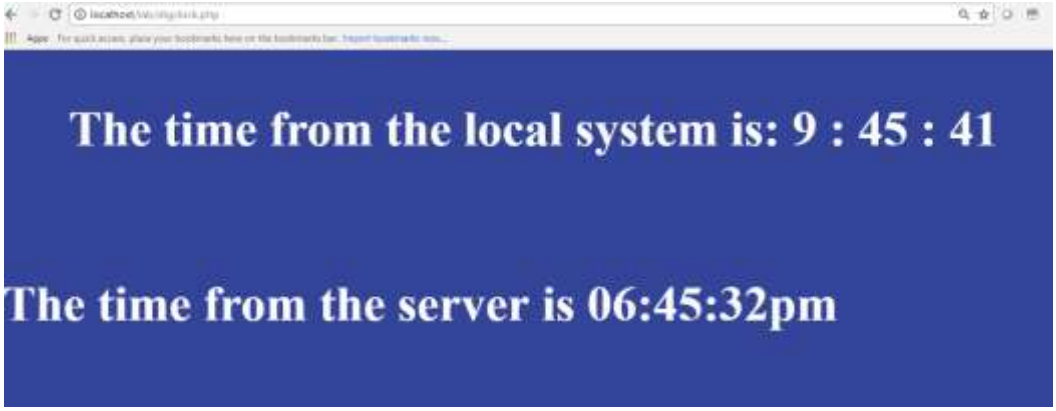
3. Make sure your PHP files are saved as such ,they should have the .php file extension .

4. Open up any web browser on your desktop and enter “localhost” into the address box

5. http://localhost/usrpgm/digitalclock.php

Output: digclock.html

Output: digclock.php



8. Write the PHP Programs to do the following

a) Implement simple calculator operations.

ALGORITHM:

1. Read two values and store in txt1,txt2 variables
2. If(op==+) res= txt1+txt2
3. If(op==-) res= txt1+txt2
4. If(op==*) res= txt1+txt2
5. If(op==/) res= txt1+txt2
6. Output txt1, txt2 and res

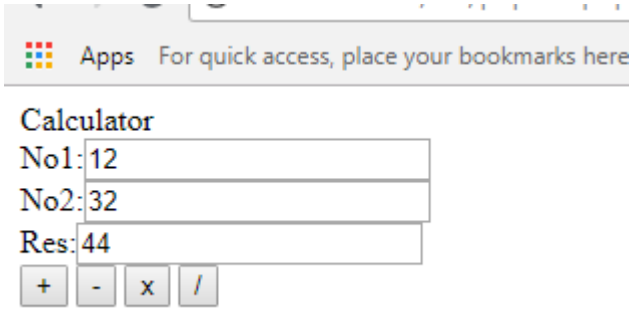
PROGRAM:

POST back to the same page, hence form action="" (is kept empty)

```
<?php
if (isset($_POST['sub']))
{
$txt1=$_POST['n1'];
$txt2=$_POST['n2'];
$oprnd=$_POST['sub'];
if($oprnd=="+")
$res=$txt1+$txt2;
else if($oprnd=="-")
$res=$txt1-$txt2;
else if($oprnd=="x")
$res=$txt1*$txt2;
else if($oprnd=="/")
$res=$txt1/$txt2;
}
?>
<html>
<form method="post" action="">
Calculator
</br>
No1:<input name="n1" value="<?php echo $txt1; ?>" >
```

```
</br>
No2:<input name="n2" value="<?php echo $txt2; ?>">
</br>
Res:<input name="res" value="<?php echo $res; ?>">
</br>
<input type="submit" name="sub" value="+">
<input type="submit" name="sub" value="-">
<input type="submit" name="sub" value="x">
<input type="submit" name="sub" value="/">
</form>
</html>
```

Output:



b) Transpose of a matrix & c) Addition of matrix and multiplication of two matrices.

Algorithm:

1. Assign number of rows with number of column
2. Swap (i, j)th element with (j, i)th
3. Store the new elements as element of transposed matrix
4. Print the elements of transpose matrix
5. Add elements of the corresponding position of A and B using c(i,j)=a(i,j)+b(i,j) and print matrix C
6. For multiplication c(i,j)=c(i,j)+a(i,k)*b(k,j)
7. Stop

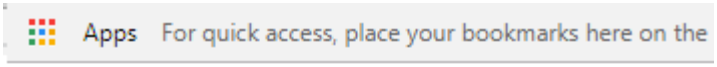
PROGRAM:

```
<?php
header('Content-Type: text/plain'); //without this header "\t and \n" wont work
// transpose matrix
$matrix1 = array(
array(1, 2),
array(4, 5),
//array(7, 8)
);
$matrix2 = array(
array(1, 2),
array(4, 5),
//array(7, 8)
);
echo "\n\n\n";
echo "The order of the matrix A is:".count($matrix1)."x".count($matrix1[0]);
echo "\n";
```

```
echo "The order of the matrix B is:".count($matrix2)."x".count($matrix2[0]);
echo "\n";
//$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
$rowCount= count($matrix1); //Provides the rowcount of matrix
$colCount = count($matrix1[0]); //Provides the column count of matrix
echo "The input matrix A is:\n";
for($r = 0; $r < $rowCount; $r++)
{ for($c=0; $c < $colCount; $c++)
{
echo $matrix1[$r][$c]." \t";
}
echo "\n";
}
echo "The input matrix B is:\n";
for($r = 0; $r < $rowCount; $r++)
{ for($c=0; $c < $colCount; $c++)
{
echo $matrix2[$r][$c]." \t";
}
echo "\n";
}
//$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
//The transpose of the matrix
echo "\nThe output Transpose of matrix A is:\n";
for($r = 0; $r < $colCount; $r++)
{ for($c=0; $c < $rowCount; $c++)
{
echo $matrix1[$c][$r]." \t";
}
echo "\n";
}
//$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
$rowCount= count($matrix1); //Provides the rowcount of matrix
$colCount = count($matrix1[0]); //Provides the column count of matrix
$rowCount2 = count($matrix2);
$colCount2 = count($matrix2[0]);
//The sum of the matrix
echo "\nThe sum of matrix is:\n";
for($r = 0; $r < $rowCount; $r++)
{ for($c=0; $c < $colCount; $c++)
{
$val= $matrix1[$r][$c] + $matrix2[$r][$c];
echo $val."\t";
}
echo "\n";
}
//$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
$rowCount= count($matrix1); //Provides the rowcount of matrix
$colCount = count($matrix1[0]); //Provides the column count of matrix
$rowCount2 = count($matrix2);
$colCount2 = count($matrix2[0]);
//The Multiplication of the matrix
```

```
echo "\nThe Multiplication of matrix is:\n";
//A*B C*D
//B is not equal to C
if($colCount == $rowCount2)
{
for($r = 0; $r < $rowCount; $r++)
{ for($c=0; $c < $colCount; $c++)
{
$val= $matrix1[$r][$c] * $matrix2[$r][$c];
echo $val."\t";
}
echo "\n";
}
}
Else
{
echo "The matrix multiplication is not possible.";
}
?>
```

Output:




```
The order of the matrix A is:2x2
The order of the matrix B is:2x2
The input matrix A is:
1       2
4       5
The input matrix B is:
1       2
4       5

The output Transpose of matrix A is:
1       4
2       5

The sum of matrix is:
2       4
8       10

The Multiplication of matrix is:
1       4
16      25
```

9. Write a PHP program named states.py that declares a variable states with the 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 s second parameter to method compile performs a case-insensitive comparison.]Store this word in element 1 of statesList.

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

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

Algorithm:

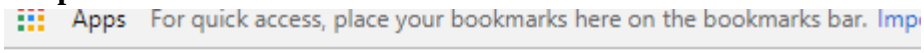
1. Match the state with regular expression '/xas$/', if present store the word in element[0] of a list.
2. Match the state with regular expression '/^k.*s$/i', if present store the word in element[1] of a list.
3. Match the state with regular expression '/^M.*s$/i', if present store the word in element[2] of a list.
4. Match the state with regular expression '/*a$/', if present store the word in element[3] of a list.

PROGRAM:

```
<?php
header('Content-Type: text/plain');
$allTheStates = "Mississippi Alabama Texas Massachusetts Kansas tuxas";
$statesArray = [];
$states1 = explode(' ',$allTheStates);
$i = 0;
//states that ends in xas
foreach($states1 as $state) {
if(preg_match( '/xas$/', ($state)))
{ $statesArray[$i] = ($state);
$i = $i + 1;
print "\nThe States that ends in xas:" . $state;
}
}
//states that begins with k and ends in s
foreach($states1 as $state)
{
if(preg_match('/^k.*s$/i', ($state)))
{ $statesArray[$i] = ($state);
$i = $i + 1;
echo "\nThe states that begins with k ans ends in s:" . $state;
}
}
//states that begins with M and ends in s
foreach($states1 as $state) {
if(preg_match('/^M.*s$/', ($state)))
{ $statesArray[$i] = ($state);
$i = $i + 1;
```

```
echo "\nThe states that begins with M and ends in s:" . $state;
}
}
//states that ends in a
foreach($states1 as $state) {
if(preg_match('/a$/', ($state)))
{ $statesArray[$i] = ($state);
$i = $i + 1;
echo "\nThe states that ends in a:" . $state;
}
}
//}
foreach( $statesArray as $element => $value ){
print( "\n" . $value." is the element ". $element);
}
?>
```

Output:




```
The States that ends in xas:Texas
The States that ends in xas:tuxas
The states that begins with k ans ends in s:Kansas
The states that begins with M and ends in s:Massachusetts
The states that ends in a:Alabama
Texas is the element 0
tuxas is the element 1
Kansas is the element 2
Massachusetts is the element 3
Alabama is the element 4
```

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

PROGRAM:

Sectionsort.php

```
<html>
<body>
<style>
table, td, th
{
border: 1px solid black;
width: 33%;
text-align: center;
border-collapse:collapse;
background-color:lightblue;
}
table { margin: auto; }
</style>
<?php
$servername = "172.16.0.5";
$username = "cs000";
```

```
$password = "cs000";
$dbname = "cs000";
$a=[];
// Create connection
// Opens a new connection to the MySQL server
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection and return an error description from the last connection error, if any
if ($conn->connect_error) {
   die("Connection failed: " . $conn->connect_error);
}
$sql = "SELECT * FROM student";
// performs a query against the database
$result = $conn->query($sql);
echo "<br>";
echo "<center> BEFORE SORTING </center>";
echo "<table border='2'>";
echo "<tr>";
echo "<th>USN</th><th>NAME</th><th>Address</th></tr>";
if ($result->num_rows> 0)
{
// output data of each row and fetches a result row as an associative array
for($i=0;$i<4;$i++)
{
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);
$b=$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 ($result->num_rows> 0)// output data of each row
{
while($row = $result->fetch_assoc()) {
for($i=0;$i<$n;$i++) {
if($row["USN"]== $a[$i]) {
```

```
$c[$i]=$row["NAME"];
$d[$i]=$row["Address"];
}
} } }
echo "<br>";
echo "<center> AFTER SORTING <center>";
echo "<table border='2'>";
echo "<tr>";
echo "<th>USN</th><th>NAME</th><th>Address</th></tr>";
for($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
15cs002	Mahesh	NO.19,Bangalore
15cs001	Arjun	chennai
15cs021	mahesh	bnagalore
15cs010	john	hebbal

AFTER SORTING

USN	NAME	Address
15cs001	Arjun	chennai
15cs002	Mahesh	NO.19,Bangalore
15cs010	john	hebbal
15cs021	mahesh	bnagalore