VISVESVARAYA TECHNOLOGICAL UNIVERSITY JNANA SANGAMA, BELGAVI-590018, KARNATAKA



WEB TECHNOLOGY LABORATORY WITH MINI PROJECT- 15CSL77

MANUAL / GUIDELINES



Department of ISE & CSE RNS Institute of Technology

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WEB TECHNOLOGY LABORATORY WITH MINI PROJECT

[As per Choice Based Credit System (CBCS) scheme] (Effective from the academic year 2016 -2017)

SEMESTER - VII

Subject Code	15CSL77	IA Marks	20
Number of Lecture Hours/Week	01I + 02P	Exam Marks	80
Total Number of Lecture Hours	40	Exam Hours	03

- **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 10and 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 3students. 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 pageand 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 theserver.

- **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 element0 of a list named states List.
 - **b)** Search for a word in states that begins with k and ends in s. Perform a case-insensitive comparison. [Note: Passing re.Ias a second parameter to method compile performs a case-insensitive comparison.] Store this word in element1 of states List.
 - c) Search for a word in states that begins with M and ends in s. Store this word in element 2 of the list.
 - **d)** Search for a word in states that ends in a. Store this word in element 3 of the list.
- **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: The students should be able to:

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

program1.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>
 SIMPLE CALCULATOR 
     value1<input type="text" id="value1" value="0"/>
     value2
     tr>input type="button" value="Addition" id = "add"
     onclick="calc(this.id)"/>
     <input type="button" value="Subtraction" id = "sub"
     onclick="calc(this.id)"/>
     <input type="button" value="Multiplication" id = "mul"
     onclick="calc(this.id)"/>
     <input type="button" value="Division" id ="div"
     onclick="calc(this.id)"/>
     Answer:<input type="text" id="answer" value=""
     disabled/>
     <input type="button" value="CLEAR ALL" onclick="cls()"/>
     </body>
</html>
```

SIMPLE CALCULATOR				
value1		value2		
Addition	Subtraction	Multiplication	Division	
Answer:		CLEAR ALL		

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

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.

program2.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( "<thcolspan='3'> NUMBERS FROM 0 TO 10 WITH
           THEIR SQUARES AND CUBES ");
           document.write( "NumberSquareCube" );
           for(var n=0; n<=10; n++)
                document.write( "" + n + "" + n*n + "" + n*n*n
                 + "" );
           document.write( "" );
     </script>
     </head>
</html>
```

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	

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.

program3.html

```
<!DOCTYPE HTML>
<html>
<head>
       <style>
             p {
                     position: absolute;
                     top: 50%;
                     left: 50%;
                     transform: translate(-50%, -50%);
              }
       </style>
</head>
<body>
       <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);
                     }
              }
```

TEXT-GROWING

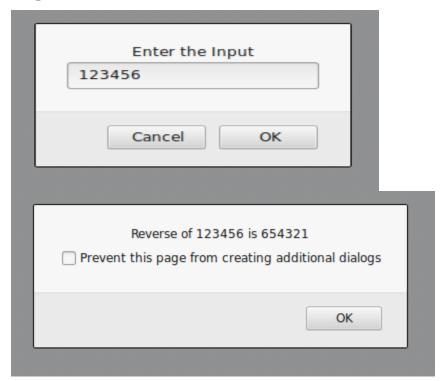
TEXT SHRINKING

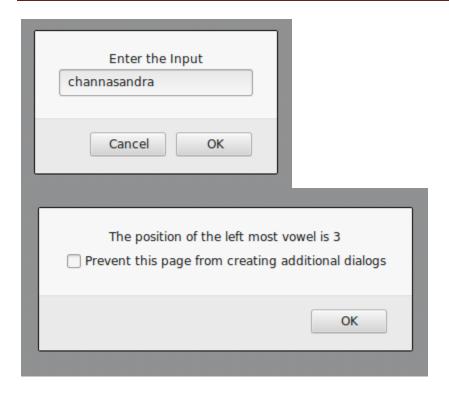
Output:

- 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

```
program4.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 < \text{str.length}; i++) {
                       var chr = str.charAt(i);
                       if(chr == 'A' || chr == 'E' || chr == 'I' || chr == 'O' || chr == 'U')break;
```





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

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.

program5.xml

```
<?xml-stylesheet type="text/css" href="5.css" ?>
<!DOCTYPE HTML>
<html>
      <head>
           <h1> STUDENTS DESCRIPTION </h1>
      </head>
      <students>
           <student>
                 <USN>USN
                                   : 1RN07CS001</USN>
                 <name>NAME
                                   : SANTHOSH</name>
                 <college>COLLEGE: RNSIT</college>
                 <branch>BRANCH : Computer Science and Engineering/branch>
                 <vear>YEAR
                                   : 2007</year>
                 <e-mail>E-Mail
                                   : santosh@gmail.com</e-mail>
            </student>
            <student>
                 <USN>USN
                                   : 1RN07IS001</USN>
                 <name>NAME
                                   : MANORANJAN</name>
                 <college>COLLEGE : RNSIT</college>
                 <branch>BRANCH : Information Science and Engineering/branch>
                                   : 2007</year>
                 <year>YEAR
                 <e-mail>E-Mail
                                   : manoranjan@gmail.com</e-mail>
           </student>
            <student>
                 <USN>USN
                                   : 1RN07EC001</USN>
                 <name>NAME
                                   : CHETHAN</name>
                 <college>COLLEGE: RNSIT</college>
```

```
<branch>BRANCH : Electronics and Communication Engineering
              </branch>
              <year>YEAR
                                   : 2007</year>
              <e-mail>E-Mail
                                   : chethan@gmail.com</e-mail>
              </student>
       </students>
</html>
program5.css
student{
       display:block; margin-top:10px; color:Navy;
}
USN{
       display:block; margin-left:10px;font-size:14pt; color:Red;
}
name{
       display:block; margin-left:20px;font-size:14pt; color:Blue;
college{
       display:block; margin-left:20px;font-size:12pt; color:Maroon;
}
branch{
       display:block; margin-left:20px;font-size:12pt; color:Purple;
}
year{
       display:block; margin-left:20px;font-size:14pt; color:Green;
}
e-mail{
       display:block; margin-left:20px;font-size:12pt; color:Blue;
}
```

STUDENTS DESCRIPTION

USN: 1RN07CS001 NAME: SANTHOSH

COLLEGE: RNSIT

BRANCH: Computer Science and Engineering

YEAR: 2007

E-Mail: santosh@gmail.com

USN: 1RN07IS001

NAME: MANORANJAN

COLLEGE: RNSIT

BRANCH: Information Science and Engineering

YEAR: 2007

E-Mail: manoranjan@gmail.com

USN: 1RN07EC001 NAME: CHETHAN COLLEGE: RNSIT

BRANCH: Electronics and Communication Engineering

YEAR: 2007

E-Mail: chethan@gmail.com

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.

program6.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. Write a PHP program to display a digital clock which displays the current time of the server.

program7.php

```
<!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>
        < ?php echo date(" h: i : s A"); ?> 
</head>
```

Output:

10: 44: 08 AM

- 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.

program8a.php

```
<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">
      <caption><h2> SIMPLE CALCULATOR </h2></caption>>
            First Number:<input type="text" name="num1" />
                     rowspan="2"><input
                                              type="submit"
                                                                 name="submit"
            value="calculate">
            Second
                                    Number:<input
                                                                    type="text"
            name="num2"/>
      </form>
      <?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 "Addition :".($num1+$num2)."";
         echo "Subtraction : ".($num1-$num2)."";
         echo "Multiplication :".($num1*$num2)."";
         echo "Division : ".($num1/$num2)."";
         echo "";
         }
         else
         echo"<script type='text/javascript' > alert('ENTER VALID
         NUMBER');</script>";
         }
    ?>
</body>
</html>
```

SIMPLE CALCULATOR

First Number:	50	calculate
Second Number:	25	Calculate
Addition :	75	
Subtraction :	25	
Multiplication :	1250	
Division :	2	

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

Program8b.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 (\text{$row = 0; $row < $m; $row++}) 
               for (\$col = 0; \$col < \$n; \$col++)
                    echo " ".$a[$row][$col];
               echo "<br/>";
       }
       echo "the second matrix :"."<br/>";
       for (\text{$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 (\text{$row = 0; $row < $m; $row++}) 
               for (\$col = 0; \$col < \$n; \$col++)
                       echo " ".$a[$col][$row];
               echo "<br/>";
       }
```

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

the first matrix: 123 456 789 the second matrix: 789 456 123 the transpose of the first matrix: 147 258 369 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 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 states List.
 - 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.

program9.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><br/>Resultant Array :<br/>foreach ($statesArray as $array => $value)
        print("STATES[$array]=$value<br/>br>");
?>
Output:
Original Array :
```

Original Array:
STATES[0]=Mississippi
STATES[1]=Alabama
STATES[2]=Texas
STATES[3]=Massachusetts
STATES[4]=Kansas

Resultant Array: STATES[0]=Texas STATES[1]=Kansas STATES[2]=Massachusetts STATES[3]=Alabama 10. Write a PHP program to sort the student records which are stored in the database using selection sort.

Goto Mysql and then type

```
create database weblab;
use weblab;
create table student(usnvarchar(10),name varchar(20),address varchar(20));
program10.php
<!DOCTYPE html>
<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 = "localhost";
                     $username = "root";
                     $password = "root";
                     $dbname = "weblab";
                     a=[];
              // Create connection
                     // Opens a new connection to the MySQL server
                     $conn = mysqli_connect($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/>tr>";
echo "<center> BEFORE SORTING </center>";
echo "";
echo "";
echo "USNNAMEAddress";
if ($result->num_rows> 0)
{
      // output data of each row and fetches a result row as an
      associative array
      while($row = $result->fetch_assoc()){
            echo "";
            echo "". $row["usn"]."";
            echo "". $row["name"]."";
            echo "". $row["addr"]."";
            array_push($a,$row["usn"]);
      }
}
else
      echo "Table is Empty";
echo "";
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= $i;
      }
      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]=$row["addr"];
                   }
            }
      }
}
echo "<br>";
echo "<center> AFTER SORTING <center>";
echo "";
echo "";
echo "USNNAMEAddress";
for($i=0;$i<$n;$i++) {
      echo "";
      echo "". $a[$i]."";
      echo "". $c[$i]."";
```

```
echo "". $d[$i]."";
}
echo "";
$conn->close();
?>
</body>
</html>
```

BEFORE SORTING

USN	NAME	Address
1rn14	chandan	bengaluru
1rn07	arun	mysore
1rn01	abhi	tumkur
1rn38	Manoranjan	Mandya

AFTER SORTING

USN	NAME	Address
1rn01	abhi	tumkur
1rn07	arun	mysore
1rn14	chandan	bengaluru
1rn38	Manoranjan	Mandya