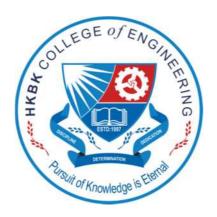
HKBK COLLEGE OF ENGINEERING

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



LABORATORY MANUAL Web Technology Laboratory with Mini Project 15CSL77

PREPARED BY

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HKBK COLLEGE OF ENGINEERING

(Affiliated to VTU, Belgaum and Approved by AICTE) **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.



HKBK COLLEGE OF ENGINEERING

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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	O-2 To provide sound knowledge of programming and computing technique 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.				

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.
- **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	Experiments		
No.			
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 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.
- **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

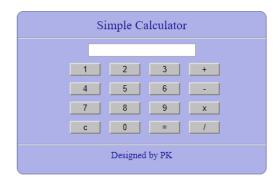
- Design and develop dynamic web pages with good aesthetic sense of designing and latest technical know-how's.
- Have a good understanding of Web Application Terminologies, Internet Tools other web services.
- Learn how to link and publish web sites

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

```
<html>
<head>
<style>
.maincl{
       width:400px;
       height:250px;
       background-color:#ADB1E7;
       border: 1px solid #669;
       padding-top:10px;
       margin: 0px auto;
       border-radius:10px;
#heading{
       font-size:20px;
       text-align:center;
       color:#17099B;
#heading1{
       font-size:15px;
       text-align:center;
       color:#17099B;
input[type=button] {
background:#C0C0C0;
width:50px;
border-radius: 2px;
margin-left: 10px;
margin-top: 10px;
</style>
</head>
<body>
<div class="maintl">
<div id="heading">Simple Calculator</div>
<hr>>
<center>
<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/>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 += '-'" />
<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 =</pre>
eval(calculator.answer.value)" />
<input type="button" value=" / " onclick="calculator.answer.value += '/'" />
</br>
</form>
</center>
<hr>
<div id="heading1">Designed by PK</div>
</div>
</body>
</html>
```

OUTPUT



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.

```
<html>
<head>
</head>
<body>
<h2 align="center">Squares and Cubes of the numbers from 0 to 10</h2>
<script>
document.write('<center>');
document.write( " Number Square Cube  ");
for(var n=0; n<=10; n++)
{
    document.write( "<tr> " + n + " " + n*n + " " + n*n*n + "  ");
}
document.write( " " + n*n*n + " " + n*n*n + " 
     " + n*n*n + " " + n*n*n + " 
     " </rd>
</rd>
</rd>
</rd>
```

</html>

OUTPUT

Squares and Cubes of the numbers from 0 to 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

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.

```
<!DOCTYPE html>
<html>
<body>
</body>
<script>
var textsize = 5;
var myWait = setInterval(GrowText, 100);
function GrowText()
if(textsize<51)
textsize = textsize + 1;
document.getElementById("myP1").innerHTML = "Growing Text"
document.getElementById("myP1").style.fontSize = (textsize+'pt');
document.getElementById("myP1").style.color = "red";
}
else
clearInterval(myWait);
myWait = setInterval(ShrinkText, 100);
function ShrinkText()
if(textsize>5)
```

```
{
textsize = textsize - 1;
document.getElementById("myP1").innerHTML = "Shrinking Text"
document.getElementById("myP1").style.fontSize = (textsize+'pt');
document.getElementById("myP1").style.color = "blue";
}
else
{
clearInterval(myWait);
}
}
</script>
</html>
```

OUTPUT

Growing Text

Shrinking Text

- 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

```
<html>
<head>
<script>
function vowel(st)
var pos;
pos=st.search(/[aeiouAEIOU]/);
if(pos<0)
alert("pattern not found\n");
alert("Position of the left most vowel is "+(pos+1));
</script>
<script>
function rev(n)
var temp=0,rev=0;
while(n>0)
temp=n%10;
rev=rev*10+temp;
n=n/10;
n=parseInt(n);
```

```
alert("The Reverse number is:"+rev);
</script>
</head>
<body>
<FORM>Enter the text:
<input type="text" id="voweltext"/>
<input type="button" value="Click here" onclick="vowel(voweltext.value);"/> <br/><br/>
Enter the number:
<input type="text" id="number"/>
<input type="button" value="Click here" onclick="rev(number.value);"/>
</FORM></body>
</html>
OUTPUT
Enter the text : Apple
                                           Click here
Enter the number:
                                               Click here
   This page says
   Position of the left most vowel is 1
                                                            OK
Enter the text :
                                           Click here
```

Enter the number : 12345 Click here

This page says
The Reverse number is:54321

OK

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.

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/css" href="5.css"?>
<student_information>
<head1>Student Information</head1>
<head2>First Student Information</head2>
<ad><label>USN:</label><usn>1HK16CS001</usn></ad>
<ad><label>NAME:</label><name>Arun Kumar</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>arun@gmail.com</email></ad>
<head2>Second Student Information</head2>
<ad><label>USN:</label><usn>1HK16CS002</usn></ad>
<ad><label>NAME:</label><name>Bhopal Singh</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>bhopal@gmail.com</email></ad>
<head2>Third Student Information</head2>
<ad><label>USN:</label><usn>1HK16CS003</usn></ad>
<ad><label>NAME:</label><name>Mohan Kumar</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>mohan@gmail.com</email></ad>
</student information>
CSS File (5.CSS)
head1{font-size:16pt;color:blue;}
head2{display:block;font-size:16pt;color:green;text-decoration:underline}
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;}
```

OUTPUT

```
Student Information
First Student Information
USN:1HK16CS001
NAME: Arun Kumar
COLLEGE:HKBK
BRANCH:CSE
YEAR:2001
EMAIL:arun@gmail.com
Second Student Information
USN:1HK16CS002
NAME:Bhopal Singh
COLLEGE:HKBK
BRANCH:CSE
YEAR:2001
EMAIL:bhopal@gmail.com
Third Student Information
USN:1HK16CS003
NAME:Mohan Kumar
COLLEGE:HKBK
BRANCH:CSE
YEAR:2001
EMAIL:mohan@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.

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

OUTPUT

```
The visitor number is: 5
```

Refresh this page to increment counter

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

```
</head>
<body>
<h2>
<php>
</php
echo " Current time of the server is" . date("h:i:sa");
header("refresh: 1");
?>
</h2>
</body>
</html>
```

OUTPUT

Current time of the server is 03:51:51pm

- 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.

8a. (Implement simple calculator operations.)

```
$res=$txt1*$txt2:
       else
       $res=$txt1/$txt2;
?>
<form method="post" action="">
Simple PHP Calculator
<br/>br /><br/>
Enter first number:<input name="n1" value="<?php echo $txt1; ?>">
<br /> <br />
Enter Second number:<input name="n2" value="<?php echo $txt2; ?>">
<br /> <br />
Result is :<input name="res" value="<?php echo $res; ?>">
<br /> <br />
<input type="submit" name="submit" value="+">
<input type="submit" name="submit" value="-">
<input type="submit" name="submit" value="x">
<input type="submit" name="submit" value="/">
</form>
</html>
OUTPUT (8a)
Simple PHP Calculator
Enter first number: 2
Enter Second number: 2
Result is: 4
 + - x /
8a,b&c
<?php
header('Content-Type: text/plain');
function transpose(&$A, &$C)
  N = 2;
  for (\$i = 0; \$i < \$N; \$i++)
    for (\$j = 0; \$j < \$N; \$j++)
       C[i][j] = A[j][i];
function addition(&$A, &$B, &$D)
  N = 2;
  for (\$i = 0; \$i < \$N; \$i++)
```

```
for (\$j = 0; \$j < \$N; \$j++)
       D[i][j] = A[i][j] + B[i][j];
}
function multiplication(&$A, &$B, &$E)
  N = 2;
for (\$i = 0; \$i < \$N; \$i++)
  for (\$j = 0; \$j < \$N; \$j++)
     $E[$i][$j]=0;
     for($k=0;$k<$N;$k++)
       $E[$i][$j]=$E[$i][$j]+($A[$i][$k]*$B[$k][$j]);
  }
A = array(array(1, 1),
       array(2, 2));
B = array(array(1, 1),
       array(2, 2));
N = 2;
transpose($A, $C);
addition($A, $B, $D);
multiplication($A, $B, $E);
echo "Matrix A is \n";
for (\$i = 0; \$i < \$N; \$i++)
  for (\$j = 0; \$j < \$N; \$j++)
  echo $A[$i][$j];
  echo " ";
  echo "\n";
echo "Matrix B is \n";
for (\$i = 0; \$i < \$N; \$i++)
  for (\$j = 0; \$j < \$N; \$j++)
  echo $B[$i][$j];
  echo " ";
  echo "\n";
echo "Transpose of a matrix A is \n";
```

```
for (\$i = 0; \$i < \$N; \$i++)
  for (\$j = 0; \$j < \$N; \$j++)
  echo $C[$i][$j];
  echo " ";
  echo "\n";
echo "Addition of matrix A and B is \n";
for (\$i = 0; \$i < \$N; \$i++)
  for (\$j = 0; \$j < \$N; \$j++)
  echo $D[$i][$j];
  echo " ";
  echo "\n";
echo "Multiplication of matrix A and B is \n";
for (\$i = 0; \$i < \$N; \$i++)
  for (\$j = 0; \$j < \$N; \$j++)
  echo $E[$i][$j];
  echo " ";
  echo "\n";
?>
OUTPUT (8a,b&c)
Matrix A is
1 1
2 2
Matrix B is
1 1
Transpose of a matrix A is
1 2
Addition of matrix A and B is
Multiplication of matrix A and B is
66
```

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 a second parameter to method compile performs a caseinsensitive 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
  $states = array("Mississippi", "Alabama", "Texas", "Massachusetts", "Kansas");
  statesList = [];
  foreach($states as $state) {
     if(preg_match( '/xas$/', ($state)))
        statesList[0] = (state);
  foreach($states as $state) {
     if(preg match('/^K.*s$/', ($state)))
        \text{statesList[1]} = (\text{state});
  foreach($states as $state) {
     if(preg match('/^M.*s$/', ($state)))
        \text{statesList}[2] = (\text{state});
  foreach($states as $state) {
     if(preg_match('/a$/', ($state)))
        statesList[3] = (state);
  foreach ( $statesList as $element => $value ){
  print_r( $value." is the element ". $element."<br/>');
?>
```

OUTPUT

Texas is the element 0 Kansas is the element 1 Massachusetts is the element 2 Alabama is the element 3

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

<html>

```
<body>
<style>
table, td, th
border: 1px solid black;
width: 33%;
text-align: center;
background-color:lightgrey;
}
</style>
<?php
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "weblab";
$a=[];
$conn = mysqli_connect($servername, $username, $password, $dbname);
$sql = "SELECT * FROM student";
$result = $conn->query($sql);
echo "BEFORE SORTING";
echo "";
echo "";
echo "USN NAME Address ";
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= 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]=$row["addr"];
echo "<br/>tr>";
echo "AFTER SORTING";
echo "";
echo "";
echo "USN NAME Address ";
for($i=0;$i<$n;$i++) {
echo "";
echo "". $a[$i]."";
echo "". $c[$i]."";
echo "". $d[$i]."";
}
echo "";
$conn->close();
?>
```

OUTPUT

BEFORE SORTING

USN	NAME	Address
1008	Apple	Blore
1003	Orange	Mlore
1002	Mango	Vlore

AFTER SORTING

USN	NAME	Address
1002	Mango	Vlore
1003	Orange	Mlore
1008	Apple	Blore