

**B.L.D.E.A.'S
S.B. ARTS AND K.C.P SC COLLEGE
VIJAYAPUR**



M.Sc(CS) Programme

Practical Lab Manual

2020-2021 Onwards

III Semester

20MSCCSPL 3.4: Python Programming-Lab

Lab In charge : Dr. Daneshwari Mulimani

**1) Write a program to sum all the elements from n1 to n2
where n1 and n2 are positive integers**

```
num = 16
```

```
if num < 0:
```

```
    print("Enter a positive number")
```

```
else:
```

```
    sum = 0
```

```
    # use while loop to iterate until zero
```

```
    while(num > 0):
```

```
        sum += num
```

```
        num -= 1
```

```
    print("The sum is", sum)
```

b)

```
def sum_100_natural_numbers():
```

```
    sum = 0
```

```
    for i in range(1, 101):
```

```
        sum = sum + i
```

```
    return sum
```

```
print(sum_100_natural_numbers())
```

2) Input an array of n numbers and find separately the sum of positive numbers and negative numbers.

a)

```
n=int(input("Enter the number of elements to be in the list:"))
b=[]
for i in range(0,n):
    a=int(input("Element: "))
    b.append(a)
sum1=0
sum2=0
sum3=0
for j in b:
    if(j>0):
        if(j%2==0):
            sum1=sum1+j
        else:
            sum2=sum2+j
    else:
        sum3=sum3+j
print("Sum of all positive even numbers:",sum1)
print("Sum of all positive odd numbers:",sum2)
print("Sum of all negative numbers:",sum3)
```

b) Write a Python program to compute the sum of the negative and positive numbers of an array of integers and display the largest sum.

```
def test(lst):
    pos_sum = 0
    neg_sum = 0
    for n in lst:
        if n > 0:
            pos_sum += n
        elif n < 0:
            neg_sum += n
    return max(pos_sum, neg_sum, key=abs)
```

```
nums = { 0, -10, -11, -12, -13, -14, 15, 16, 17, 18, 19, 20 };
print("Original array elements:");
print(nums)
print("Largest sum - Positive/Negative numbers of the said array: ",
test(nums));
nums = { -11, -22, -44, 0, 3, 4, 5, 9 };
print("\nOriginal array elements:");
print(nums)
print("Largest sum - Positive/Negative numbers of the said array: ",
test(nums));
```

3) # program for Linear search using Python

```
def linear_Search(list1, n, key):

    # Searching list1 sequentially
    for i in range(0, n):
        if (list1[i] == key):
            return i
    return -1

list1 = [1, 3, 5, 4, 7, 9]
key = 7

n = len(list1)
res = linear_Search(list1, n, key)
if(res == -1):
    print("Element not found")
else:
    print("Element found at index: ", res)
```

4) # Python 3 program for recursive binary search.

```
def binary_search(arr, low, high, x):

    # Check base case
    if high >= low:

        mid = (high + low) // 2

        # If element is present at the middle itself
        if arr[mid] == x:
            return mid

        # If element is smaller than mid, then it can only
        # be present in left subarray
        elif arr[mid] > x:
            return binary_search(arr, low, mid - 1, x)

        # Else the element can only be present in right subarray
        else:
            return binary_search(arr, mid + 1, high, x)

    else:
        # Element is not present in the array
        return -1

# Test array
arr = [ 2, 3, 4, 10, 40 ]
x = 10

# Function call
result = binary_search(arr, 0, len(arr)-1, x)

if result != -1:
    print("Element is present at index", str(result))
else:
```

```
print("Element is not present in array")
```

5) Program to simulate STACK using python

```
class Stack:
    def __init__(self):
        self.items = []
    def is_empty(self):
        return self.items == []

    def push(self, data):
        self.items.append(data)
    def pop(self):
        return self.items.pop()
s = Stack()
while True:
    print('push <value>')
    print('pop')
    print('quit')
    do = input('What would you like to do? ').split()

    operation = do[0].strip().lower()
    #do[0] represents memory load size and checks the stack overflow
    if operation == 'push':
        s.push(int(do[1]))
    elif operation == 'pop':
        if s.is_empty():
            print('Stack is empty.')
        else:
            print('Popped value: ', s.pop())
    elif operation == 'quit':
        break
```

6) **Program to multiply two matrices using nested loops**

```
# take a 3x3 matrix
A = [[12, 7, 3],
      [4, 5, 6],
      [7, 8, 9]]
# take a 3x4 matrix
B = [[5, 8, 1, 2],
      [6, 7, 3, 0],
      [4, 5, 9, 1]]
result = [[0, 0, 0, 0],
          [0, 0, 0, 0],
          [0, 0, 0, 0]]
# iterating by row of A
for i in range(len(A)):

    # iterating by column by B
    for j in range(len(B[0])):

        # iterating by rows of B
        for k in range(len(B)):

            result[i][j] += A[i][k] * B[k][j]
for r in result:
    print(r)
```

7) Evaluation of Postfix expression

1) Algorithm :

1. Evaluate for each character in postfix expression
2. If operand encountered push into stack
3. If operator encountered pop 2 characters for stack which were already filled in stack
First = top element from stack
Second = second element from stack
4. Check for operator and push into stack after the operation
Second operator first
5. Return top element from stack

```
def eval_exp(arr):  
    stack=[ ]  
    operator=["+", "-", "*", "/", "%"]  
  
    for item in arr:  
        if item not in operator:  
            stack.append((item))  
        else:  
            first=int(stack.pop())  
            sec=int(stack.pop())  
  
            if(item=="+"):  
                stack.append(sec+first)  
  
            if(item=="-"):  
                stack.append(sec-first)  
  
            if(item=="*"):  
                stack.append(sec*first)  
  
            if(item=="/"):  
                stack.append(sec/first)
```

```
return stack[-1]
```

```
A=["2","1","+","3","*"]  
print(eval_exp(A))
```

2) Evaluation of Postfix expression

```
def postfix_evaluation(s):  
    s=s.split()  
    n=len(s)  
    stack = []  
    for i in range(n):  
        if s[i].isdigit():  
            #append function is equivalent to push  
            stack.append(int(s[i]))  
        elif s[i]=="+"  
        a=stack.pop()  
        b=stack.pop()  
        stack.append(int(a)+int(b))  
        elif s[i]=="*":  
            a=stack.pop()  
            b=stack.pop()  
            stack.append(int(a)*int(b))  
        elif s[i]=="/  
            a=stack.pop()  
            b=stack.pop()
```

```

        stack.append(int(b)/int(a))
    elif s[i]=="-":
        a=stack.pop()
        b=stack.pop()
        stack.append(int(b)-int(a))

    return stack.pop()

#space separator is required , for solving 2 or more digits .
s="10 2 8 * + 3 -"

val=postfix_evaluation(s)

print(val)

```

b)Program to show use of stack to evaluate prefix expression using python.

```

class evaluate_prefix:
    def __init__(self):
        self.items=[]
        self.size=-1
    def isEmpty(self):
        if(self.size== -1):
            return True
        else:
            return False
    def push(self,item):
        self.items.append(item)
        self.size+=1
    def pop(self):
        if self.isEmpty():
            return 0
        else:

```

```

        self.size-=1
        return self.items.pop()
def seek(self):
    if self.isEmpty():
        return False
    else:
        return self.items[self.size]
def evalute(self,expr):
    for i in reversed(expr):
        if i in '0123456789':
            self.push(i)
        else:
            op1=self.pop()
            op2=self.pop()
            result=self.cal(op1,op2,i)
            self.push(result)
    return self.pop()
def cal(self,op1,op2,i):
    if i is '*':
        return int(op1)*int(op2)
    elif i is '/':
        return int(op1)/int(op2)
    elif i is '+':
        return int(op1)+int(op2)
    elif i is '-':
        return int(op1)-int(op2)
    elif i is '^':
        return int(op1)^int(op2)
s=evaluate_prefix()
expr=input('enter the prefix expression')
value=s.evalute(expr)
print('the result of postfix expression',expr,'is',value)

```

8) Python Program to Find the roots of Quadratic Equation

import complex math module

```
import cmath
```

```
a = float(input('Enter a: '))
```

```
b = float(input('Enter b: '))
```

```
c = float(input('Enter c: '))
```

```
# calculate the discriminant
```

```
d = (b**2) - (4*a*c)
```

```
# find two solutions
```

```
sol1 = (-b-cmath.sqrt(d))/(2*a)
```

```
sol2 = (-b+cmath.sqrt(d))/(2*a)
```

```
print('The solution are {0} and {1}'.format(sol1,sol2))
```

09) Python program to insert an element into sorted list

Approach #1 : This approach is the brute force method. Since the list is already sorted, we begin with a loop and check if the list element is greater than the given element. If yes, the given element need to be inserted at this position.

```
def find_pos(L, number):
```

```
    if number < L[0]:
```

```
        reutrn 0
```

```
    for i in range(len(L)-1):
```

```
        if L[i] <= number and number<=i+1:
```

```
            position = i+1
```

```
            break:
```

```

        else:
            position = len(L)-1
        return position
def do_shift(L, position):
    L.append(None)
    i = len(L)-1
    while i>=position:
        L[i] = L[i-1]
        i = i-1
L = [12,13,15,16,17,21,24,25,50,60]
number = 58
print(L)
position = find_pos(L,number)
do_shift(L,position)
L[position] = number
print(L)

```

Approach #2 :

Note: The bisect module provides us with the insert() function with which we can insert an element to a sorted list. The insert() method takes the sorted list as its first input argument and the element to be inserted as its second input argument. After execution, the element is inserted into the list

```

# Python3 program to insert
# an element into sorted list
import bisect

def insert(list, n):

```

```
bisect.insort(list, n)
return list
# Driver function
list = [1, 2, 4]
n = 3
print(insert(list, n))
```

Approach #3 : Another way to insert an element into a sorted list is to use the built-in `sorted()` function. This function takes an iterable and returns a sorted list. We can pass the original list and the element to be inserted as arguments to the `sorted()` function, and it will return a new sorted list with the element inserted at the correct position.

```
def insert(list, n):
    # Insert the element into the list
    list.append(n)
    # Sort the list
    sorted_list = sorted(list)
    return sorted_list
list = [1, 2, 4]
n = 3
print(insert(list, n))
```

Output
[1, 2, 3, 4]

10) Python program to check if a string is palindrome or not using built in function

function to check string is palindrome or not

def isPalindrome(s):

 # Using predefined function to
 # reverse to string print(s)
 rev = ''.join(reversed(s))

 # Checking if both string are
 # equal or not
 if (s == rev):
 return True
 return False

main function
s = "malayalam"
ans = isPalindrome(s)

if (ans):
 print("Yes")
else:
 print("No")

11) # Python Program to Count Vowels and Consonants in a String

```
#define all vowels in a list
vowels = ['a', 'e', 'i', 'o', 'u']

#input a string and transform it to lower case
str = input("Enter a string: ").lower()

#define counter variable for both vowels and consonants
v_ctr = 0
c_ctr = 0

#iterate through the characters of the input string
for x in str:
    #if character is in the vowel list,
    #update the vowel counter otherwise update consonant counter
    if x in vowels:
        v_ctr += 1
    elif x != ' ':
        c_ctr += 1

#output the values of the counters
print("Vowels: ", v_ctr)
print("Consonants: ", c_ctr)
```

b)

```
str1 = input("Please Enter Your Own String : ")
vowels = 0
consonants = 0
for i in str1:
    if(i == 'a' or i == 'e' or i == 'i' or i == 'o' or i == 'u')
```

```
        or i == 'A' or i == 'E' or i == 'I' or i == 'O' or i == 'U'):
            vowels = vowels + 1
    else:
        consonants = consonants + 1
    print("Total Number of Vowels in this String = ", vowels)
    print("Total Number of Consonants in this String = ", consonants)
```

11) # Python3 program to # Check if the string is pangram

```
import string

alphabet = set(string.ascii_lowercase)

def ispangram(string):
    return set(string.lower()) >= alphabet

# Driver code
string = "The quick brown fox jumps over the lazy dog"
if(ispangram(string) == True):
    print("Yes")
else:
    print("No")
```

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M.SC(CS) PROGRAMME
LAB MANUAL

2020-2021 Onwards
Semester – II

20MSCCSPL2.4 :Web Programming Lab

Lab In charge : Prof.(Smt) R.D.Joshi

1. Develop and demonstrate a XHTML document that illustrates the use external style sheet,

ordered list, table, borders, padding, color, and the tag.

```
/*-----Basic.css-----*/  
  
body{background-color:white;}  
table{border:2px solid; padding:0px;}  
th{border:1px solid blue;padding:8px;}  
td{border:1px solid blue;padding:8px;}  
ol{font-size:100%; list-style:lower-roman;}  
span{background-color:pink; font-size:120%; font-style:italic;}  
p{font-size:90%;}  
/*end of file*/  
  
<!-------XHTML CODE----->  
  
<?XML VERSION="1.0" ENCODING="UTF-8"?>  
  
<!DOCTYPE html PUBLIC"-/W3C//DTD XHTML 1.1//EN"  
"HTTP://WWW.W3.org/TR/XHTML11/DTD/xhtml11.dtd">  
  
<html xmlns="http://www.w3.org/1999/xhtml">  
  
<head>  
  
<link rel="stylesheet" type="text/css" href="Basic.css"/>  
  
<tittle>CSS Basic</tittle>  
  
</head>  
  
<body>  
  
<h1>This header is 36 pt</h1>
```

<h2>This header is black</h2>

<p>This paragraph has a left margin of 50 pixels</p>

<table>

<tr>

<th>Name</th>

<th>Email</th>

<th>Phone number</th>

</tr>

<td>Arun inamdar</td>

<td>arun@gmail.com</td>

<td>7698452365</td>

</tr>

<tr>

<td>Sudha halli</td>

<td>sudha@gmail.com</td>

<td>8569452365</td>

</tr>

<tr>

<td>Saatwik</td>

<td>saatwik@gmail.com</td>

<td>8759641236</td>

</tr>

<tr>

<td>Sudhanva </td>

<td>sudhanva@gmail.com</td>

<td>9874563214</td>

</tr>

</table>

Dept of M.Sc(CS),S.B.Arts&K.C.P.Science college,Vijaypur.

<hr/>

This is an ordered list.

M.Sc Isem

M.Sc IIsem

M.Sc IIIsem

M.Sc IVsem

<p>

This is some span text.

This is some random text.

This is some more span text.

</p>

</body>

</html>

<!--End of file-->

OUTPUT:

CSS Basic

This header is 36 pt

This header is black

This paragraph has a left margin of 50 pixels

Name	Email	Phone number
Arun inamdar	arun@gmail.com	7698452365
Sudha halli	sudha@gmail.com	8569452365
Saatwik	saatwik@gmail.com	8759641236
Sudhanva	sudhanva@gmail.com	9874563214

Dept of M.Sc(CS),S.B.Arts&K.C.P.Science college,Vijaypur.

This is an ordered list.

1. M.Sc Isem
2. M.Sc IIsem
3. M.Sc IIIsem

4. M.Sc IVsem

This is some span text. This is some random text. This is some more span text.

2. Develop and demonstrate a XHTML file that includes Javascript script for obtaining n

through prompt and computing n Fibonacci numbers

<!-------xhtml code----->

<?XML VERSION="1.0" ENCODING="UTF-8"?>

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"

"HTTP://WWW.W3.org/TR/XHTML11/DTD/xhtml11.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">

<head>

<title>Fibonacci Numbers</title>

</head>

<body>

```
<h1>Calulating the Fibbonacci numbers</h1>
```

```
<script type="text/javascript">
```

```
var n,a=0,b=1,i,c
```

```
n=prompt("Enter a number"," ")
```

```
if(n<=0)alert("Invalid number")
```

```
else
```

```
{    if(n==1)
```

```
        document.write(a)
```

```
        else
```

```
        document.write(a+"<br/>" +b)
```

```
        for(i=2;i<n;i++)
```

```
{
```

```
        c=a+b
```

```
        a=b
```

```
        b=c
```

```
        document.write("<br/>" +c)
```

```
}
```

```
}
```

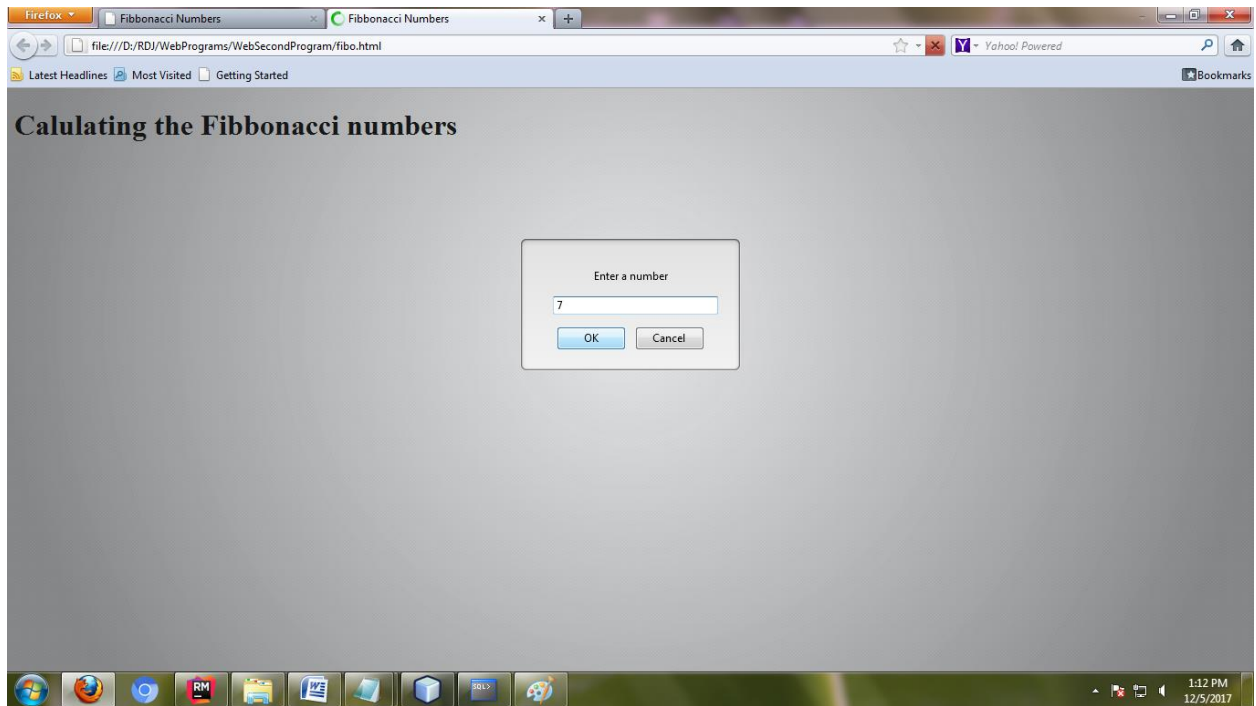
```
</script>
```

```
</body>
```

```
</html>
```

```
<!--End of file-->
```

OUTPUT



Calulating the Fibonacci numbers

0
1
1
2
3
5
8

3. Design an XML document to store information about a student.

```
< -----Info.css ----- >  
stud-info{display:block; color:blue;font-style:italic; font-size:200%;}  
student{display:block; font-size:100%;}  
stud1{display:block; color:blue;}
```

```
stud2{display:block; color:red;}
```

```
stud3{display:block; color:black;}
```

```
usn,name,noc,branch,yoj,eid{display:block;}
```

```
<----- Info.xsl-----  
----->
```

```
stud-info{display:block; color:blue;font-style:italic; font-size:200%;}
```

```
student{display:block; font-size:100%;}
```

```
stud1{display:block; color:blue;}
```

```
stud2{display:block; color:red;}
```

```
stud3{display:block; color:black;}
```

```
usn,name,noc,branch,yoj,eid{display:block;}
```

```
<-----s1.xml-----  
----->
```

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<?xml-stylesheet href="info.css" type="text/css"?>
```

```
<student>
```

```
<student-info> student information</student-info>
```

```
<stud1>
```

```
<usn> usn:1bca08cs009</usn>
```

```
<name> name:sinchu</name>
```

```
<noc> college:Vedant</noc>
```

```
<branch> branch:computer application</branch>
```

```
<yoy> year:2013</yoy>
```

```
<eid> email:sinchu@yahoo.com</eid>
```

```
</stud1>
```

```
<br/>
```

```
<stud2>
<name> name:sharadhi</name>
<noc> college:Vedant</noc>
<branch> branch:computer application</branch>
<yoy> year:2013</yoy>
<eid> email:sharadhi@yahoo.com</eid>
</stud2>
```

```
<stud3>
<usn> usn:1bca08cs010</usn>
<name> name:sam</name>
<noc> college:kcp</noc>
<branch> branch:computer application</branch>
<yoy> year:2013</yoy>
<eid> email:sam@yahoo.com</eid>
</stud3>
```

```
<br/>
```

```
</student>
```

```
<-----S2.xml-----
----->
```

```
<?xml version="1.0"?>
```

```
<?xml-stylesheet type="text/css" href="info.xsl"?>
```

```
<rcu>
```

```
<usn> 1bca08cs020</usn>
```

```
<name> ravi</name>
```

```
<noc> kcp</noc>
```

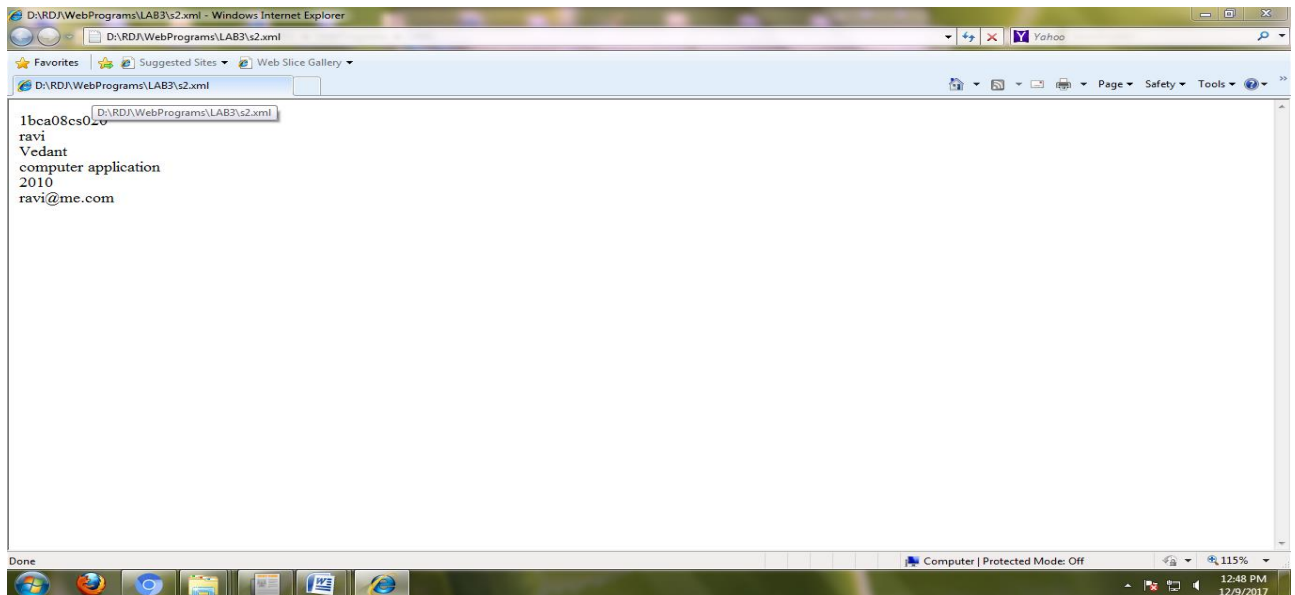
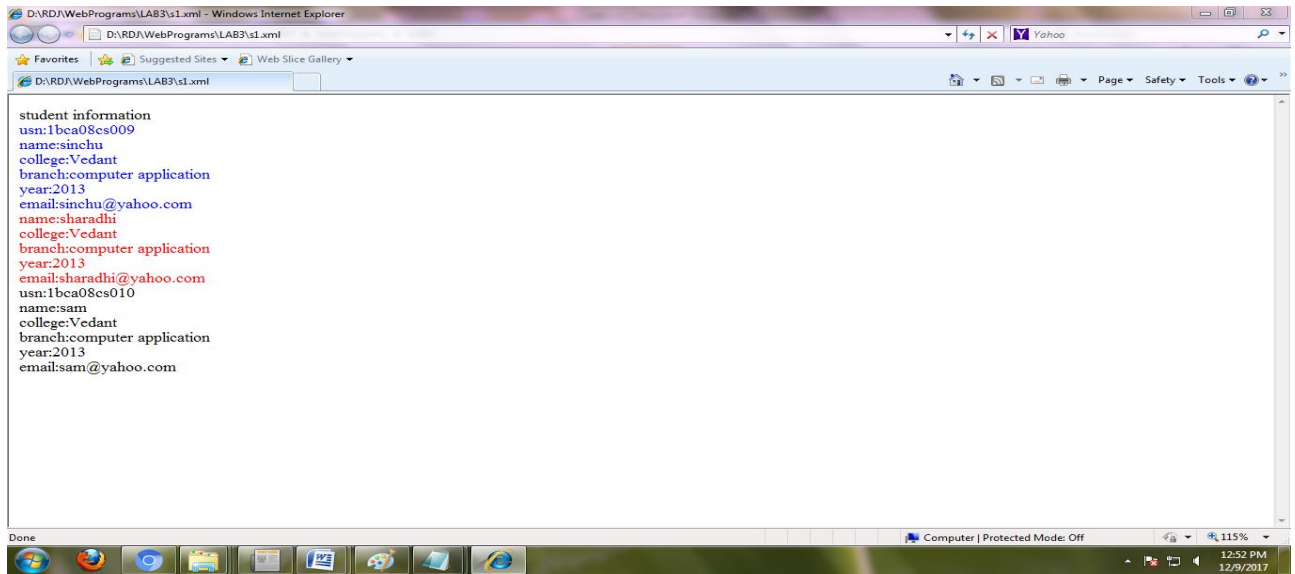
```
<branch> computer application</branch>
```

<yoy> 2010</yoy>

<eid> ravi@me.com</eid>

</rcu>

OUTPUT:



4. Write a PHP program to store current date-time in a COOKIE and display the “Last visited

on” date-time on the web page upon reopening of the same page.

```
<!-------XHTML file----->

<?xml VERSION="1.0" ENCODING="UTF-8"?>

<!DOCTYPE html PUBLIC "-//w3c//DTD XHTML 1.1 //EN"
"http://www.w3.org/TR/xhtml11.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">

<head>

<title>Cookies</title>

</head>

<body>

<form action="labco.php" method="post">

<p>
The last visited time was<input type="submit" name="Display Now"/>
</p>

</form>

</body>

</html>

<?php
/*-----cookies.php-----*/

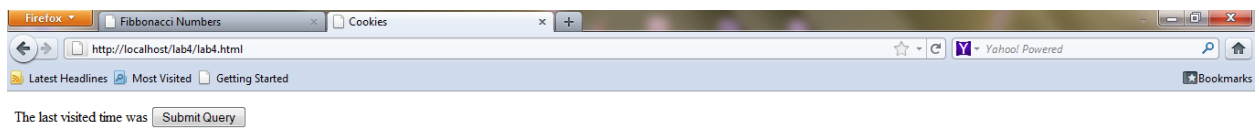
$inTwoMonths=60*60*24*60+time();

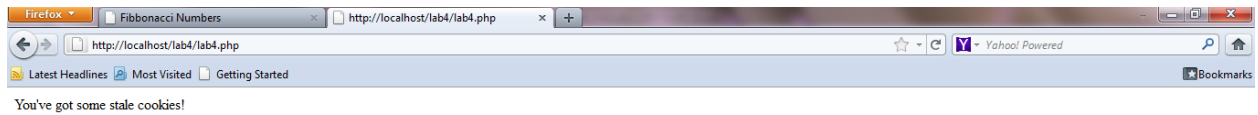
setcookie('lastVisit',date("G:i - m/d/y"),$inTwoMonths);

if(isset($_COOKIE['lastvisit']))
```

```
{  
$visit=$_COOKIE['lastVisit'];  
echo"your last visit was-".$Visit;  
}  
else  
echo"you have got some stale cookies!";  
?>
```

OUTPUT:





5. Write a PHP program to store page views count in SESSION, to increment the count on each

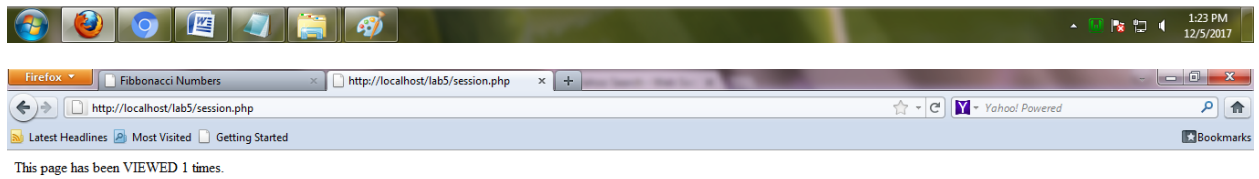
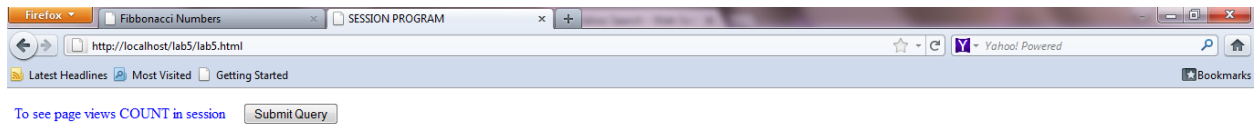
refresh, and to show the count on web page.

```
<!-----XHTML.file----->
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML.1.1//EN"
"http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head><title>SESSION PROGRAM </title></head>
<body>
<form action="session.php" method="post">
<p>
</p>
<font color="blue">To see page views COUNT in session </font>
<input type="submit" name="Click here"/>
```

```
</form>
</body>
</html>
<!--End of file-->
```

```
<?php
/*-----Sessions.php(PHP File)-----*/
session_start();
if(isset($_SESSION['views']))
$_SESSION['views']=$_SESSION['views']+1;
else
$_SESSION['views']=1;
echo"This page has been VIEWED ".$_SESSION['views']."times.";
?>
<!--End Of File-->
```

OUTPUT:



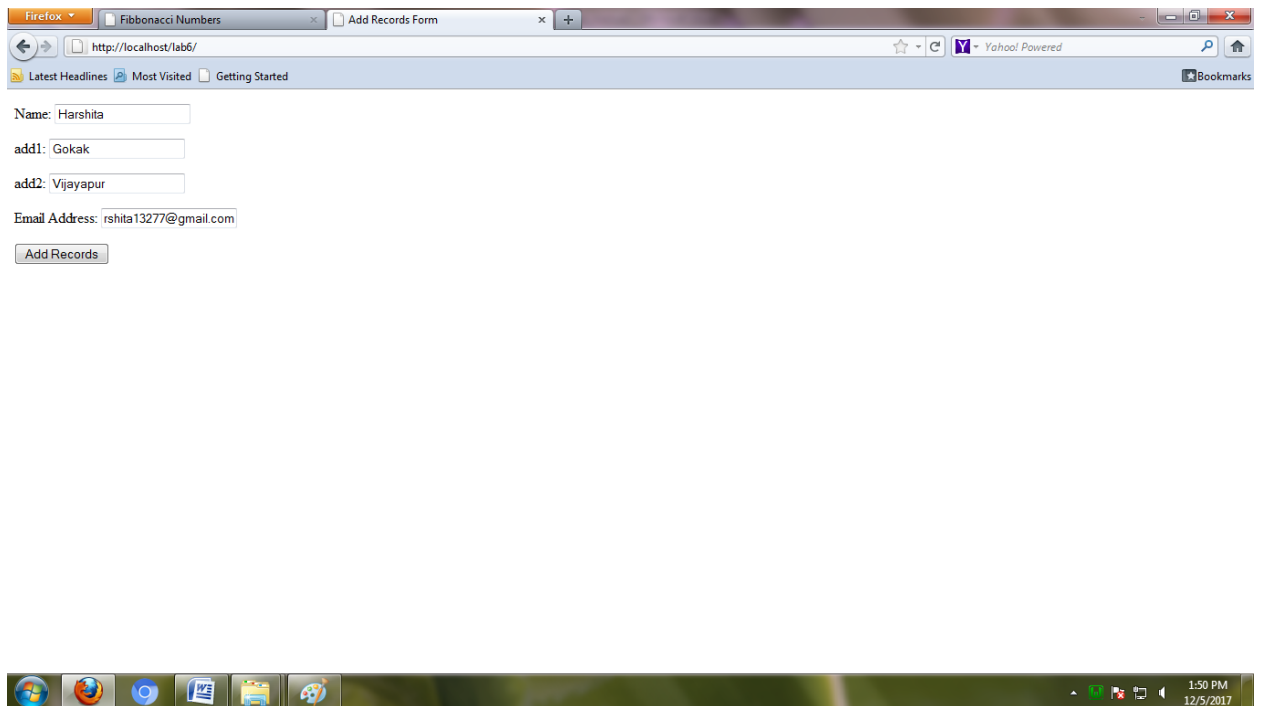
6. Create a XHTML form with Name, Address Line 1, Address Line 2, and E-mail text fields.

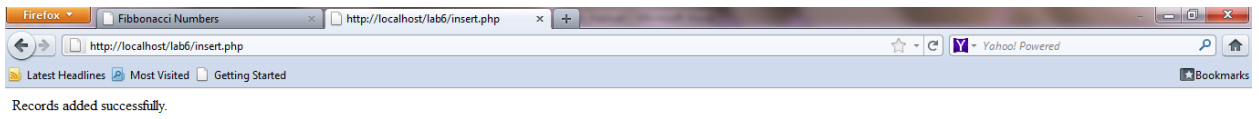
On submitting, store the values in MySQL table. Retrieve and display the data based on Name.

```
<!--XHTML CODE-->
<!DOCTYPE html><html lang="en">
<head><meta charset="UTF-8"><title>Add Records From</title></head>
<body><form action="insert.php" method="post">  <p>
<label for="firstName">Name:<label>
<input type="text" name="name" id="firstName"> </p>
<p> <label for="lastName">add1:</label>
<input type="text" name="add1" id="lastName"> </p>
<p> <label for="lastName">add2:</label>
<input type="text" name="add2" id="lastName"> </p>
<p> <label for="emailAddress">Email Address:</label>
<input type="text" name="email" id="emailAddress"> </p>
<input type="submit" value="Add Records"></form></body>
</html>
<!--End -->
<?php
$link = mysqli_connect("localhost", "root", "", "info_table");
if($link === false)
{
die("ERROR: could not connect.".mysqli_connect_error());
}
$name = mysqli_real_escape_string($link,$_REQUEST['name']);
$add1 = mysqli_real_escape_string($link,$_REQUEST['add1']);
```

```
$add2 = mysqli_real_escape_string($link,$_REQUEST['add2']);
$email = mysqli_real_escape_string($link,$_REQUEST['email']);
$sql = "INSERT INTO details (name,add1,add2,email) VALUES
('$name','$add1','$add2','email')";
if(mysqli_query($link,$sql))
{
echo"Records added successfully.";
}
else
{
echo"ERROR:could not able to execute $sql.".mysqli_error($link);
}
mysqli_close($link);
?>
```

OUTPUT:





7. Using PHP and MySQL, develop a program to accept book information viz. Accession

number, title, authors, edition and publisher from a web page and store the information in a

database and to search for a book with the title specified by the user and to display the search

results with proper headings.

```
<!------- PHP File (index.php)-----
----->
```

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"
```

"http://www.w3.org/TR/xhtml1/DTD/xhtml1.dtd">

```
<html xmlns="http://www.w3.org/1999/xhtml">
```

<head> <title>Personal Details DB</title> </head>

<body>

```
<form action="dbstore.php" method="post">
```

<p>

Add Details

ACCESSION NO: <input type="text" name="accno" />

TITLE: <input type="text"
name="title" />

AUTHOR:
 <input type="text"
name="author" />

[illegible]

PUBLISHER: <input type="text" name="pub" />

<hr/>

```
<form action="dbret.php" method="post">
```

<p>

Search Book

Title:

</form>

<!-- End of file -->

```
<!------- PHP FILE (dbstore.php)-----
----->
```

<?php

```
$con = mysql_connect("localhost","root","");
```

```
if (!$con)
```

$$\{$$

```
die('Could not connect: ' . mysql_error());
```

```

}

mysql_select_db("temp", $con);

$sql="INSERT INTO temp.test_table
VALUES('$_POST[accno]','$_POST[title]','$_POST[author]','$_POST[edn]','$_P
OST[pub]')";

if (!mysql_query($sql,$con))
{
die('Error: ' . mysql_error());
}

echo "1 Record Added";

mysql_close($con);

?>

<!-- End of File -->

```

```

<!------- PHP File (dbret.php)-----
----->

```

```

<?php

$con = mysql_connect("localhost","root","");
if (!$con)
{
    die('Could not connect: ' . mysql_error());
}

mysql_select_db("temp", $con);

//$accno = $_POST['accno'];

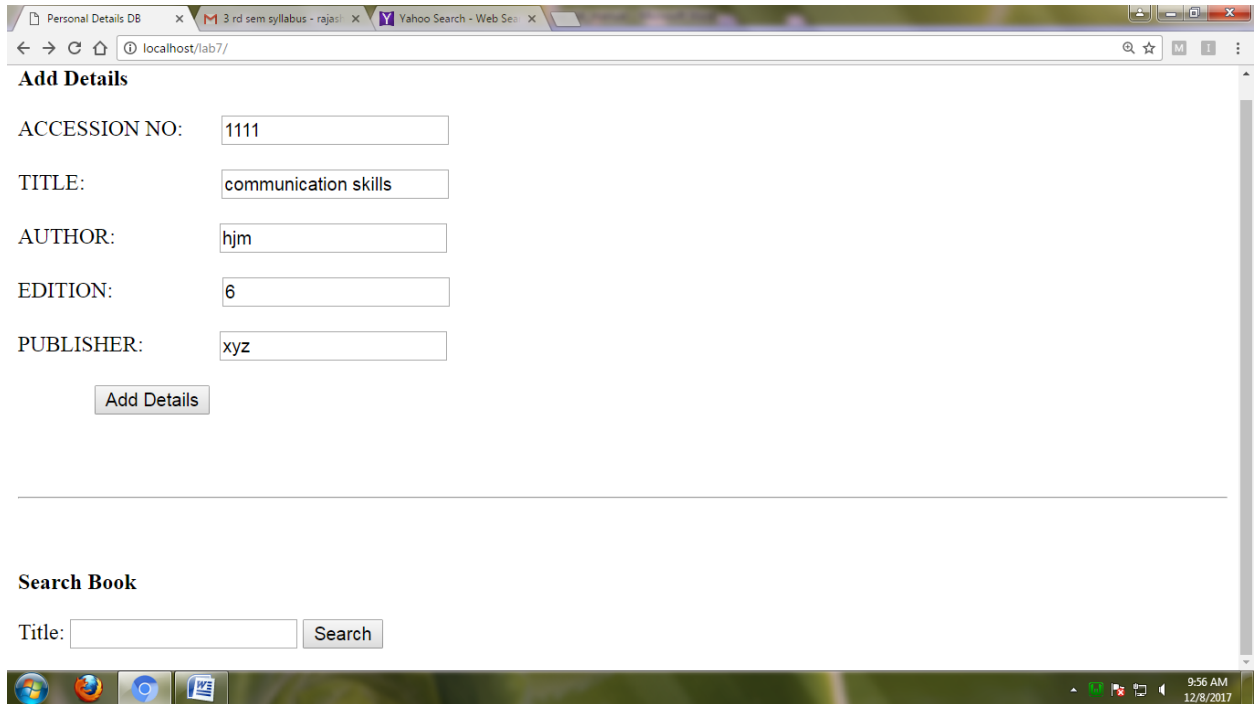
    //$purchase = $_POST['submit'];

$sql="SELECT * FROM temp.test_table WHERE Title='$_POST[title]";

```

```
$result=mysql_query($sql,$con);
echo "<table border='1'>
<tr>
<th>Access No</th>
<th>Title</th>
<th>Author</th>
<th>Edition</th>
<th>Publication</th>
</tr>";
while($row = mysql_fetch_array($result))
{
echo "<tr><td>" . $row['AccessionNo'] . "</td>";
echo "<td>" . $row['Title'] . "</td>";
echo "<td>" . $row['Author'] . "</td>";
echo "<td>" . $row['Edition'] . "</td>";
echo "<td>" . $row['Publisher'] . "</td></tr>";
}
echo "</table>";
mysql_close($con);
?>
```

OUTPUT:



The screenshot shows a web browser window with the address bar displaying 'localhost/lab7/'. The browser has several tabs open: 'Personal Details DB', '3 rd sem syllabus - rajast...', and 'Yahoo Search - Web Se...'. The main content area is titled 'Add Details' and contains a form with the following fields:

- ACCESSION NO: 1111
- TITLE: communication skills
- AUTHOR: hjm
- EDITION: 6
- PUBLISHER: xyz

Below the form is a button labeled 'Add Details'. A horizontal line separates this section from the 'Search Book' section below it. The 'Search Book' section has a 'Title:' label followed by an input field and a 'Search' button. The Windows taskbar at the bottom shows the time as 9:56 AM on 12/8/2017, along with icons for the Start menu, Internet Explorer, Google Chrome, and a file explorer.

Personal Details DB x 3 rd sem syllabus - rajasi x Yahoo Search - Web Se x

localhost/lab7/

Add Details

ACCESSION NO:

TITLE:

AUTHOR:

EDITION:

PUBLISHER:

Search Book

Title:

360 TOTAL SECURITY
Cleanup can save 3.2 GB of disk space
5861 junk files detected. To free up space, click the button to remove junk files.

10:01 AM 12/8/2017

localhost/lab7/dbret.php x 3 rd sem syllabus - rajasi x Yahoo Search - Web Se x

localhost/lab7/dbret.php

| Access No | Title | Author | Edition | Publication |
|-----------|----------------------|--------|---------|-------------|
| 1111 | communication skills | hjm | 6 | xyz |
| 11 | communication skills | hjm | 6 | xyz |

360 TOTAL SECURITY
Cleanup can save 3.2 GB of disk space
5861 junk files detected. To free up space, click the button to remove junk files.

10:00 AM 12/8/2017

8. Develop a A COMPANY database browser application. The initial Web page in this

application lists all the departments in the company. By following hyperlinks, the user may

see more details of departments, employees, and projects in three separate Web pages.

Implement the browser program using four PHP scripts: (a) companyBrowse.php: This script

lists all the departments in the company in a tabular form (b) deptView.php: (c)

empView.php: (d) projectView.php:

```
<!------- PHP File (add_emp_details.php)-----  
----->
```

```
<html>
```

```
<?php
```

```
    include("connection.php");
```

```
?>
```

```
    <head>
```

```
    <title>Add_emp_details</title>
```

```
    <script>
```

```
    function validateForm()
```

```
    {
```

```
        var ename = document.forms["form"]["ename"].value;
```

```
        if (ename == "")
```

```
        {
```

```
            alert("Name must be filled out");
```

```
        return false;
    }

    var designation = document.forms["form"]["designation"].value;
    if (designation == "")
    {
        alert("Designation must be filled out");
        return false;
    }

    var experience = document.forms["form"]["experience"].value;
    if (experience == "")
    { alert("Experience must be filled out");
        return false;
    }

    var project = document.forms["form"]["project"].value;
    if (project=="")
    {
        alert("project Name must be filled out");
        return false;
    }
}

</script>

</head>

<body>

<?php
```

```

if(isset($_POST['submit']))
{
    $id="";
    $ename = $_POST['ename'];
    $designation = $_POST['designation'];
    $experience = $_POST['experience'];
    $project = $_POST['project'];

    $sql = mysql_query("INSERT INTO
empdetail(`ename`,`designation`,`experience`,`project`) VALUES
('$ename','$designation','$experience','$project')")
        or die("Could not execute the insert query.");

    ?>

<center>

<?php
        echo "Registration successfully";
        ?>
        <br>
        <br>
        <a href="add_pro_details.php">Next Page</a>
    </center>

    <?php

}

else
{
    ?>

    <center>

    <h1><u>STEP - 1 </u></h1>

```

Add Employee Details

```
<form name="form" method="post" onsubmit="return validateForm()"
action="add_emp_details.php" >
```


[illegible]

Designation

[illegible]

Experience

[illegible]

```
<input type="text" name="experience">
```


Project

[illegible]


```
<?php
```

}

```
?>

</body>

</html>

<!------- PHP File (add_pro_details.php)-----
----->

<html>

<?php
    include("connection.php");
?>

<head>

    <title>Add_pro_details</title>

    <script>

function validateForm()
{
var pname = document.forms["form"]["pname"].value;
if (pname == "")
    {
        alert("Project Name must be filled out");
        return false;
    }

    var dur = document.forms["form"]["dur"].value;
if (dur == "")
    {
        alert("Project Duration must be filled out");
```

```

        return false;
    }

    var desc = document.forms["form"]["desc"].value;
    if (desc == "")
    {
        alert("project Description must be filled out");
        return false;
    }
}
</script>

</head>

<body>

<?php
if(isset($_POST['submit']))
{
    $pname = $_POST['pname'];
    $dur = $_POST['dur'];
    $desc = $_POST['desc'];

    echo $pname;
    echo $dur;
    echo $desc;

    $sql = mysql_query("INSERT INTO `prodetail` (`pname`, `dur`, `desc`)
VALUES ('$pname', '$dur', '$desc')")
        or die("Could not execute the insert query.");
}

```

[illegible]

[illegible]

Description

```
<input type="text" name="desc">
```


<?php

$$\}$$

?>

```
<!------- PHP File (connection.php)-----  
----->
```

```
<?php
```

```
error_reporting(0);
```

```
$host = "localhost";
```

```
$user = "root";
```

```
$password = "";
```

```
$database = "lab8";
```

```
mysql_connect($host,$user,$password);
```

```
mysql_select_db($database);
?>

<!------- PHP File (companybrowse.php)-----
----->

<html>

<?php
include("connection.php");
?>

    <head>

        <title>companybrowse</title>

    </head>

    <body>

        <?php

            $sql_query="SELECT * FROM empdetail GROUP BY designation";
$result_set=mysql_query($sql_query);
echo "<table style='border: solid 1px black;'>";
echo "<tr ><th>Department Name</th></tr>";
if(mysql_num_rows($result_set)>0)
{
    while($row=mysql_fetch_row($result_set))
    {
        echo "<br>";
        echo "<tr>";

        //      echo $row[2];

        echo "<td style='width: 150px; border: 1px solid black;'> <a
href='departview.php? designation=$row[2]'$>$row[2]</a></td><br>";
```

```

        echo "</tr>";

    }

}

echo "</table>";

echo "<br>";

echo "<br>";

echo "<br>";

?>

</body>

</html>

<!------- PHP File (departview.php)-----
----->

<html>

<?php

    include("connection.php");

?>

<head>

    <title>Departview</title>

</head>

<body>

<?php
if(isset($_GET['designation']))
{
    $desg = "" . $_GET['designation'] . "";

    $sql_query="SELECT * FROM empdetail WHERE designation=$desg";

```

```

$result_set=mysql_query($sql_query);
if(mysql_num_rows($result_set)>0)
{
    $i=1;
    while($row=mysql_fetch_row($result_set))
    {
        echo "<br>";
        //echo "<a href='empview.php?ename=$row[1]'">$i.
        $row[1]</a><br>";
        echo "<td style='width: 150px; border: 1px solid black;'> <a
        href='empview.php? ename=$row[1]'">$i. $row[1]</a><br>";
        $i++;
    }
}
}
?>

</body>

</html>

<!------- PHP File (empview.php)-----
----->

<html>

<?php
    include("connection.php");
?>

<head>

    <title>EmpView</title>

```

```
</head>

<body>

<?php
if(isset($_GET['ename']))
{
    $ename ="".$_GET['ename']."";

    $sql_query="SELECT * FROM empdetail WHERE ename=$ename";

    $result_set=mysql_query($sql_query);

    echo "<table style='border: solid 1px black;'>";
echo "<tr ><th>Id</th><th>Employee Name</th><th>Designation</th>
</th><th>Experience</th></tr>";

    if(mysql_num_rows($result_set)>0)
    {
        $i=1;
        while($row=mysql_fetch_row($result_set))
        {
            echo "<br>";

            echo "<td style='width: 150px; border: 1px solid
black;'>".$row[0].</td><td style='width: 150px; border: 1px solid
black;'>".$row[1].</td> <td style='width: 150px; border: 1px solid
black;'>".$row[2].</td> <td style='width: 150px; border: 1px solid
black;'>".$row[3];

            $i++;

            echo "</td>";

        }
    }
}
```

```

        echo "</tr>";
        echo "</table>";
    }

    echo "</br>";
    echo "</br>";
    echo "<a href='projectview.php'>Project View</a>";

?>

</body>

</html>

<!------- PHP File (projectview.php)-----
----->

<html>

<?php
    include("connection.php");

?>

<head>

    <title>Projectview</title>

</head>

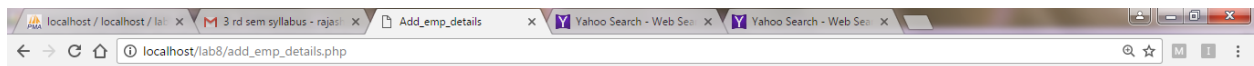
<body>

    <?php
        $sql_query="SELECT * FROM prodetail";
        $result_set=mysql_query($sql_query);
        echo "<table style='border: solid 1px black;'>";
        echo "<tr ><th>Id</th><th>Project Name</th><th>Duration</th>
        </th><th>Description</th></tr>";

```

```
if(mysql_num_rows($result_set)>0)
{
    $i=1;
    while($row=mysql_fetch_row($result_set))
    {
        echo "<br>";
        echo "<tr>";
        echo "<td style='width: 150px; border: 1px solid
black;'>".$row[0].</td><td style='width: 150px; border: 1px solid
black;'>".$row[1].</td>
        <td style='width: 150px; border: 1px solid black;'>".$row[2].</td>
        <td style='width: 150px; border: 1px solid black;'>".$row[3];
        $i++;
        echo "</td>";
        echo "</tr>";
    }
}
echo "</tr>";
echo "</table>";
?>
</body>
</html>
```

OUTPUT



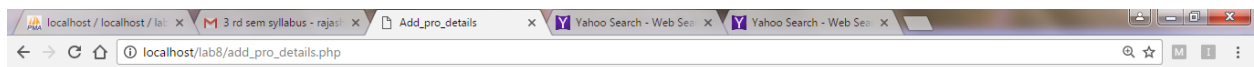
Add Employee Details

Employee Name

Designation

Experience

Project



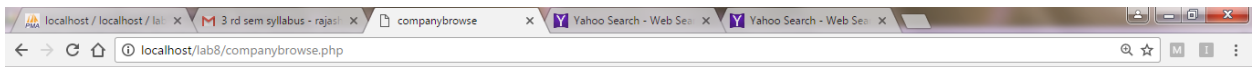
Add Project Details

Project Name

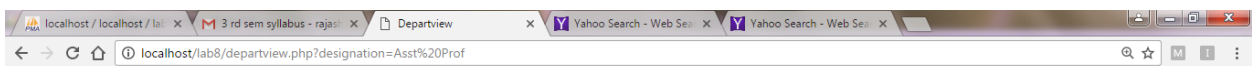
Duration

Description





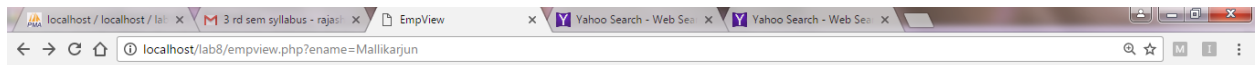
Department Name
Asst Prof
hod
Prof
Professor
se
Software Engg



Departview

- [1. Mallikarjun](#)
- [2. santosh](#)
- [3. pavan](#)

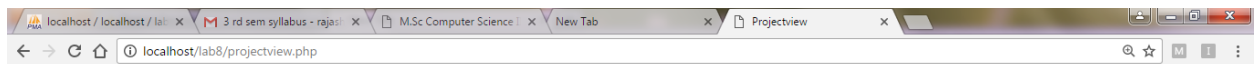




EmpView

Id	Employee Name	Designation	Experience
2	Mallikarjun	Asst Prof	2

[Project View](#)



projectview

Id	Project Name	Duration	Description
1	Employee Management System	4	This system EMS (EMPLOYEE MANAGEMENT SYSTEM) will do the management of personal details of employee'
2	This system EMS (EMPLOYEE MANAGEMENT SYSTEM) will do the management of personal details of employee'	4	Hospital Management System was done as a part of our curriculum for Third year Engineering 1st semes
8	BUG TRACKING	2	Finding the bugs and removing them



9. Implement the problem of finding employee names given their social security number as a

Web application. Design two Web pages: 1. The first Web page would contain a HTML form

that contains a select list of social security numbers of employees and a submit button. 2.

Upon choosing a social security number and submitting the form in the first Web page

produces the second Web page that lists the name of the employee.

```
<!------- PHP File (index.php)----->
```

```
<?php
```

```
include("connection.php");
```

```
?>
```

```
<html>
```

```
<head>
```

```
    <title>INSERT</title>
```

```
    <script>
```

```
function validateForm()
```

```
{
```

```
    var ssn = document.forms["form"]["ssn"].value;
```

```
    if (ssn == "")
```

```
    {
```

```
        alert("Ssn must be filled out");
```

```
        return false;
```

```
    }
```

```
        var name = document.forms["form"]["name"].value;
    if (name == "")
    {
        alert("name must be filled out");
        return false;
    }

    var dept = document.forms["form"]["dept"].value;
    if (dept == "")
    {
        alert("dept Description must be filled out");
        return false;
    }

    var desg = document.forms["form"]["desg"].value;
    if (desg == "")
    {
        alert("desg Description must be filled out");
        return false;
    }

}

</script>

</head>

<body>
```

```

<?php
if(isset($_POST['submit']))
{
    $ssn = $_POST['ssn'];
    $name = $_POST['name'];
    $dept = $_POST['dept'];
    $desg = $_POST['desg'];

    $sql = mysql_query("INSERT INTO test(ssn,name,dept,desg)
VALUES ('$ssn','$name','$dept','$desg')")
        or die("Could not execute the insert query.");

    ?>

    <center>
    <?php
    echo "Registration successfully";
    ?>
    <br>
    <br>
    <a href="search.php">Search Now</a>
    </center>
    <?php

}
else
{
    ?>

```

```
<form name="form" method="post" onsubmit="return validateForm()"
action="index.php" >
```


SSN

[illegible]

```
<input type="text" name="ssn">
```


Name

[illegible]

```
<input type="text" name="name">
```


Dept

[illegible]

```
<input type="text" name="dept">
```


Design


```
</form>
```

```
<br><br>
```

```
<a href="search.php">Search Now</a>
```

```
</center>
```

```
<?php
```

```
}
```

```
?>
```

```
</body>
```

```
</html>
```

```
<!------- PHP File (connection.php)----->
```

```
<?php
```

```
error_reporting(0);
```

```
$host = "localhost";
```

```
$user = "root";
```

```
$password = "";
```

```
$database = "kcp";
```

```
mysql_connect($host,$user,$password);
```

```
mysql_select_db($database);
```

```
?>
```

```
<!------- PHP File (search.php)----->
```

```
<?php
```

```
include("connection.php");
```

```
?>
```

```
<center>
```

```

<table border="1" align="center" >
  <tr> <th >Search Information Table.</th> </tr>
<tr> </tr>
<tr>
  <form name ="search.php" onsubmit="return validateForm()" method="post">
    Select The SSN
    <select name="ssn" title="MY CATEGORY" class="form-control" id='in'
required>
      <option value='-- Select --'>-- Select --</option>
      <?php
        $sql = mysql_query("SELECT *From test");
        $row = mysql_num_rows($sql);
        while ($row = mysql_fetch_array($sql))
        {
          echo "<option value='". $row['ssn'] .'.">" . $row['ssn']
."</option>" ;
        }
      ?>
    </select>

    <br><h4> <input type="submit" name="submit"
value="SEARCH"/><br/></h4>
  </form>
<tr>
  <th >SI.NO</th>
  <th >SSN</th>
  <th >EMP NAME</th>

```

```

        </tr>

<?php
if(isset($_POST['submit']))
{
    $ssn = $_POST['ssn'];
    if($ssn=="-- Select --")
    {
        echo "<script>alert('Please select SSN');</script>";
        return;
    }
    $sql_query="SELECT * FROM test where ssn='$ssn'";
    $result_set = mysql_query($sql_query);
    if(mysql_num_rows($result_set)>0)
    {
        while($row=mysql_fetch_row($result_set))
        {
            ?>

<tr >
<td><?php echo $row[0]; ?></td>
<td><?php echo $row[1]; ?></td>
<td><?php echo $row[2]; ?></td>
</tr>

<?php
}
}

```

```
else
{
    ?>

<tr>
<th><a href=""> No Data Found ...!</a></th>
</tr>

<?php
}
}
?>

</table>

<br><br>

<a href="index.php">Insert Data </a>

</center>
```

OUTPUT

localhost / localhost / lab9 / x3 rd sem syllabus - rajash xINSERT xYahoo Search - Web Se xYahoo Search - Web Se x

localhost/lab9/

INSERT

SSN

Name

Dept

Design

Submit

[Search Now](#)

11:10 PM12/6/2017

localhost / localhost / lab9 / search.php xYahoo Search - Web Se xYahoo Search - Web Se x

localhost/lab9/search.php

Select The SSN

-- Select --

SEARCH

Search Information Table.		
SL.NO	SSN	EMP NAME
2	SSN2	Kiran Birada

[Insert Data](#)

1:11 PM12/6/2017

10. Mini Project: Illustrate online address/contact book application using PHP and MySQL. The application should perform the following functions: (1) ADD a new contact. (2) DELETE one or more contacts. (3) SEARCH contacts by substring match on name. (4) LIST all contacts.

```
<!------- PHP File (contact.php)----->
```

```
<html>
```

```
<?php
```

```
include("connection.php");
```

```
?>
```

```
<head>
```

```
<script>
```

```
function validateForm()
```

```
{
```

```
    var cname = document.forms["form"]["cname"].value;
```

```
    if (cname == "")
```

```
    {
```

```
        alert("Name must be filled out");
```

```
        return false;
```

```
    }
```

```
    var desg = document.forms["form"]["desg"].value;
```

```
    if (desg == "")
```

```
    {
```

```
        alert("Desg must be filled out");
```

```
        return false;
    }
    var add = document.forms["form"]["add"].value;
    if (add == "")
    {
        alert("Add must be filled out");
        return false;
    }
    var mob = document.forms["form"]["mob"].value;
    if (mob.length != 10)
    {
        alert("Mob must be filled out");
        return false;
    }
}
</script>
```

```
<title>Add Contact Details</title>
</head>
<body>
<center>
    <?php
    if(isset($_POST['submit']))
    {
        $id="";
```

[illegible]


```
<title>Delete Contact</title>

</head>

<body>

<center>

<h4>Delete Contact</h4>

<table>

  <?php
$sql_query="SELECT * FROM cantactlist";
$result_set=mysql_query($sql_query);
if(mysql_num_rows($result_set)>0)
{
    while($row=mysql_fetch_row($result_set))
    {
        echo "<td style='width: 100px; border: 1px solid black;'>
$row[1]</td>";
        echo "<td style='width: 150px; border: 1px solid black;'>
$row[2]</td>";
        echo "<td style='width: 150px; border: 1px solid black;'> <a href=
'del.php? del=$row[0] ' > Delete </a></td>";
        echo "</tr>";
    }
}
?>

</table>

<a href='search.php'>Search</a>

</center>
```

```
</body>
</html>
<!----- PHP File (search.php) ----->
<html>
<?php
    include("connection.php");
?>
<head>
<title>Search Contact</title>
</head>
<body>
<center>

<h4>Search Contact</h4>
<form name="sc.php" method="post">
Contact Name      &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&~
<input type="text" name="cname">
<br><h5> <input type="submit" name="submit" value="Submit" /><br/></h5>

</form>

<table border="1" align="center">
<tr> <th>Name </th>

<th>Designation </th>

<th>Address </th>

<th>Mobile No </th>

</tr>
```

```

<?php
    $cname = $_POST['cname'];
    if($cname=="")
    {
        return;
    }

    $sql_query="SELECT * FROM cantactlist where cname LIKE
'%"$cname%";

    $result_set=mysql_query($sql_query);
    if(mysql_num_rows($result_set)>0)
    {
        while($row=mysql_fetch_row($result_set))
        {
?>
<tr> </tr>
<tr> <td><?php echo $row[1]; ?></td>
<td><?php echo $row[2]; ?></td>
<td><?php echo $row[3]; ?></td>
<td><?php echo $row[4]; ?></td> </tr>
<?php
}
}
else
{
?>
<tr>

```

```
<th colspan="19"><a href=""> No Data Found ...!</a></th>
```

```
</tr>
```

```
<?php
```

```
}
```

```
?>
```

```
<th colspan="19"><a href="val.php"> Validation </a></th>
```

```
</center>
```

```
</body>
```

```
</html>
```

```
<!----- PHP File (listcontact.php)----->
```

```
<html>
```

```
<?php
```

```
    include("connection.php");
```

```
?>
```

```
<head>
```

```
<title> Contact List</title>
```

```
</head>
```

```
<body>
```

```
<center>
```

```
    <h4>Contact List</h4>
```

```
    <table>
```

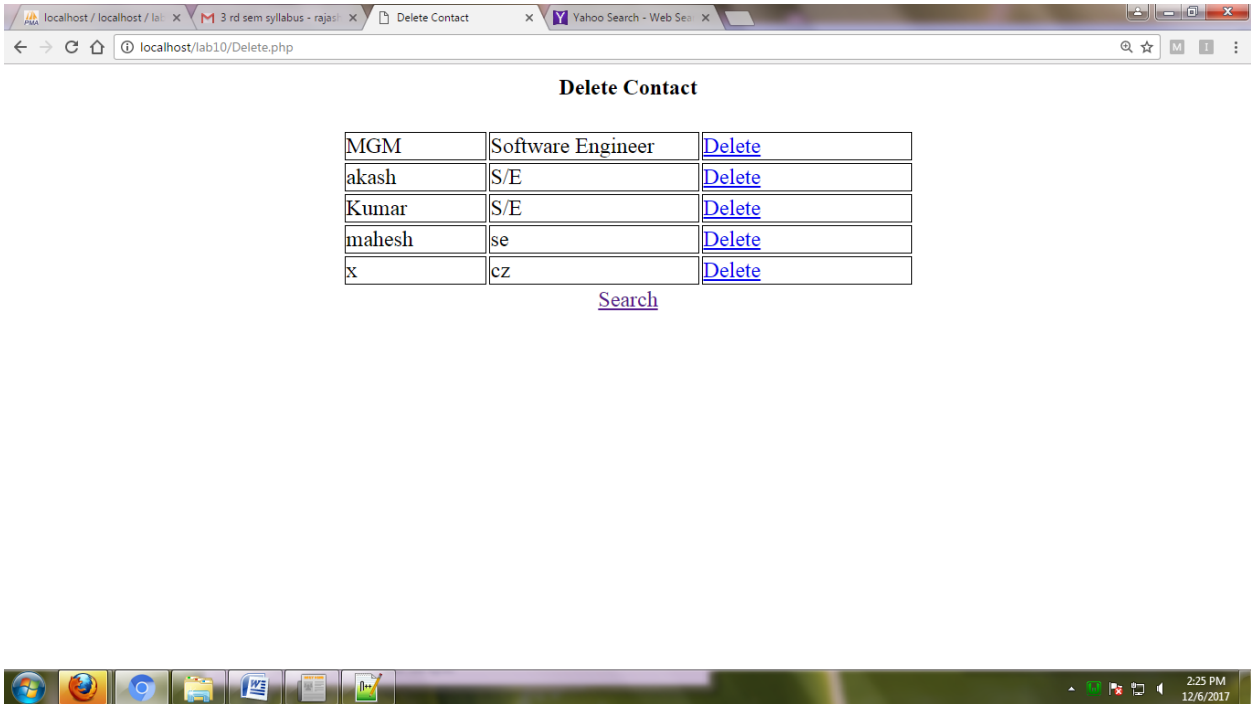
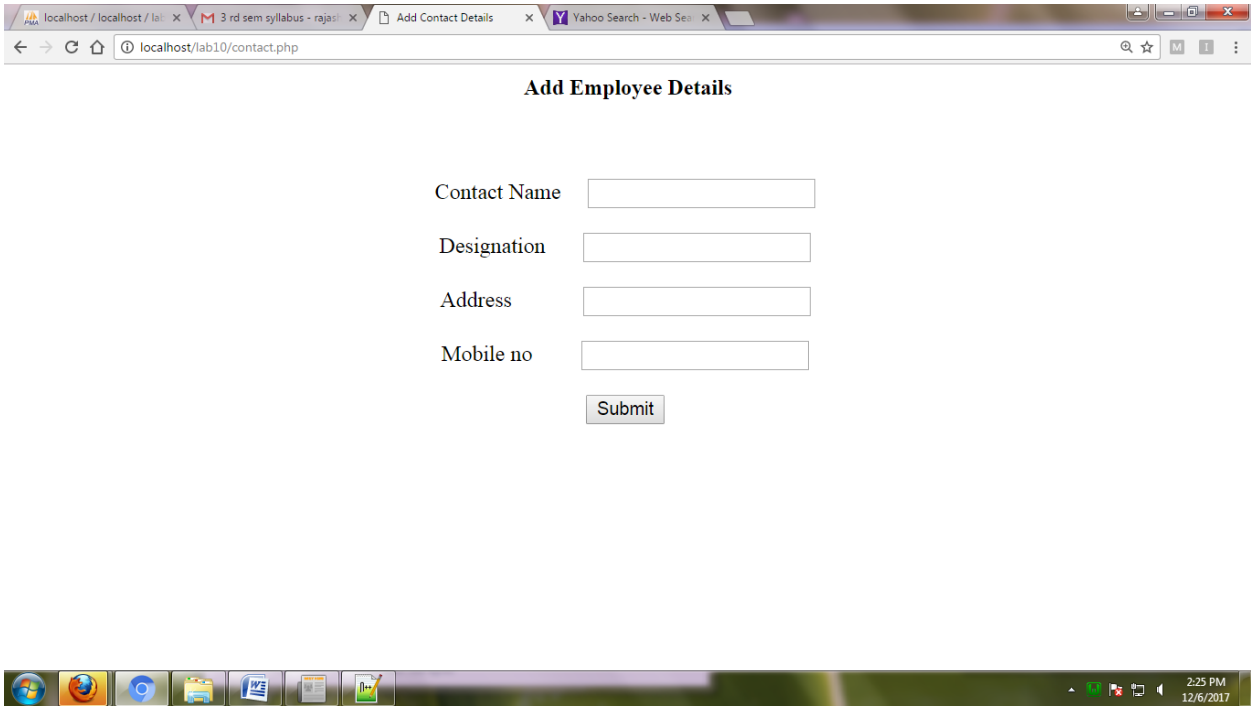
```
<?php
```

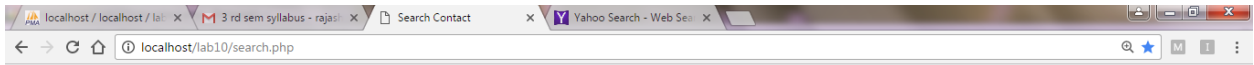
```
    $sql_query="SELECT * FROM cantactlist";
```

```
    $result_set=mysql_query($sql_query);
```

```
        if(mysql_num_rows($result_set)>0)
        {
            while($row=mysql_fetch_row($result_set))
            {
                echo "<td style='width: 100px; border: 1px solid black;'">
$row[1]</td>";
                echo "<td style='width: 150px; border: 1px solid black;'">
$row[2]</td>";
                echo "<td style='width: 150px; border: 1px solid black;'">
$row[3]</td>";
                echo "<td style='width: 150px; border: 1px solid black;'">
$row[4]</td>";
                echo "</tr>";
            }
        }
    ?>
</table>
</center>
</body>
</html>
```

OUTPUT





Search Contact

Contact Name

Name	Designation	Address	Mobile No
MGM	Software Engineer	BLDEA Ladies Hostel	9900225325

[List Contact](#)



11. Illustrate JDBC connectivity to update customer information.

< -----Customer.java----- >

```
package customer;
```

```
import java.sql.*;
```

```
public class Customer {
```

```
    public          static          void          main(String[]          args)          throws  
    SQLException, ClassNotFoundException {
```

```
        Class.forName("oracle.jdbc.driver.OracleDriver");
```

```
        Connection
```

```
con=DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:XE","system","tiger");
```

```
        Statement st=con.createStatement();
```

```
            st.execute("create table cust5(CID varchar(20),cname varchar(20))");
```

```
            st.execute("insert into cust5 values('cs151405','raj')");
```

```
            st.executeUpdate("update          cust5          set          CID='cs161405'          where  
CID='cs151405'");
```

```
            ResultSet rs=st.executeQuery("select * from cust5");
```

```
            while(rs.next())
```

```
            { System.out.println("CID:"+rs.getString(1));
```

```
            System.out.println("Name:"+rs.getString(2));
```

```
            }
```

```
        }
```

```
}
```

OUTPUT:

CID:cs161405

Name:raj

BUILD SUCCESSFUL (total time: 0 seconds)

12. Illustrate Simple servlet that generates plain text.

```
< -----serve.java ----- >

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

/**

 *

 * @author DELL

 */

@WebServlet(urlPatterns = {"/serve"})

public class serve extends HttpServlet {

    /**

     * Processes requests for both HTTP <code>GET</code> and

     <code>POST</code>

     * methods.

     *

     * @param request servlet request

     * @param response servlet response

     * @throws ServletException if a servlet-specific error occurs

     * @throws IOException if an I/O error occurs
```

```

    */

    protected void processRequest(HttpServletRequest request,
    HttpServletResponse response)

        throws ServletException, IOException {

    response.setContentType("text/html;charset=UTF-8");

    try (PrintWriter out = response.getWriter()) {

        /* TODO output your page here. You may use following sample code. */

        out.println("<!DOCTYPE html>");

        out.println("<html>");

        out.println("<head>");

        out.println("<title>Servlet serve</title>");

        out.println("</head>");

        out.println("<body>");

        out.println("<h1>Servlet serve at " + request.getContextPath() +
"</h1>");

        out.println("</body>");

        out.println("</html>");

    }

}

```

// <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the left to edit the code.">

```
/**
```

```
 * Handles the HTTP <code>GET</code> method.
```

*

* @param request servlet request

* @param response servlet response

* @throws ServletException if a servlet-specific error occurs

* @throws IOException if an I/O error occurs

*/

@Override

protected void doGet(HttpServletRequest request, HttpServletResponse
response)

throws ServletException, IOException {

processRequest(request, response);

}

/**

* Handles the HTTP <code>POST</code> method.

*

* @param request servlet request

* @param response servlet response

* @throws ServletException if a servlet-specific error occurs

* @throws IOException if an I/O error occurs

*/

@Override

protected void doPost(HttpServletRequest request, HttpServletResponse
response)

throws ServletException, IOException {

```

        processRequest(request, response);
    }

    /**
     * Returns a short description of the servlet.
     *
     * @return a String containing servlet description
     */
    @Override
    public String getServletInfo() {
        return "Short description";
    } // </editor-fold>
}

< -----index.html ----->

<html>
<head>
<title> Simple servlet program</title>
<meta charset="UTF-8">
<meta name="view port" content="width=device-width,initial-scale=1.0">
</head>
    <body>
        <div><i>Hello welcome to simple servlet program</i.</div>
    </body>
</html>

```

run-deploy:

Browsing: <http://localhost:8084/serve>

run-display-browser:

run:

BUILD SUCCESSFUL (total time: 2 seconds)

Hello welcome to simple servlet program

13. JSP program for basic arithmetic operations

```
< -----Arithmetic.jsp -----  
----- >
```

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
```

```
<%@page import="java.util.*;" %>
```

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
```

```
"http://www.w3.org/TR/html4/loose.dtd">
```

```
<!-- save as a Arithmetic.jsp program
```

```
    contain different arithmetic operation-->
```

```
<html>
```

```
<head>
```

```
<meta http-equiv="Content-Type"
```

```
        content="text/html; charset=UTF-8">
<title>R4R Tech Soft</title>
</head>
<body>
<h1 style="color: green; font-style: inherit">
        Hello R4R Tech Soft! Arithmetic Operation</h1>
<!--javascript is used for checked the validation-->
<script>
function check(){
if(document.Arithmetic.firstDigit.value==null|
        |document.Arithmetic.firstDigit.value=="")
{
alert("Please Enter the value of X:");
return false;
}else
if(document.Arithmetic.secondDigit.value==null||
        document.Arithmetic.secondDigit.value=="")
{
alert("Please Enter the value of Y:");
return false;
}
else{document.Arithmetic.submit();}
}
```

</script>

<form action="#" name="Arithmetic">

Enter the first digit: X

Enter the second digit: Y

<0%

```
if (request.getParameter("submit") != null) {
```

```
//Take the value of x & y and  Type Conversion
```

```
String s = (String) request.getParameter("firstDigit");
```

```
int x = Integer.parseInt(s);
```

```
String s1 = (String) request.getParameter("secondDigit");
```

```
int y = Integer.parseInt(s1);
```

```
//Arithmetic operation
```

```
int Sum = x + y;
```

$$\{$$

```
out.println("<BR> Additon of X and Y = " + Sum);
```

```
int Subtraction = x - y;
```

```
out.println("<BR> Substraction of X and Y = "+ Substraction);

float Division = x / y;

out.println(" <BR>Division of X and Y = "+ Division);

int Mulitplication = x * y;

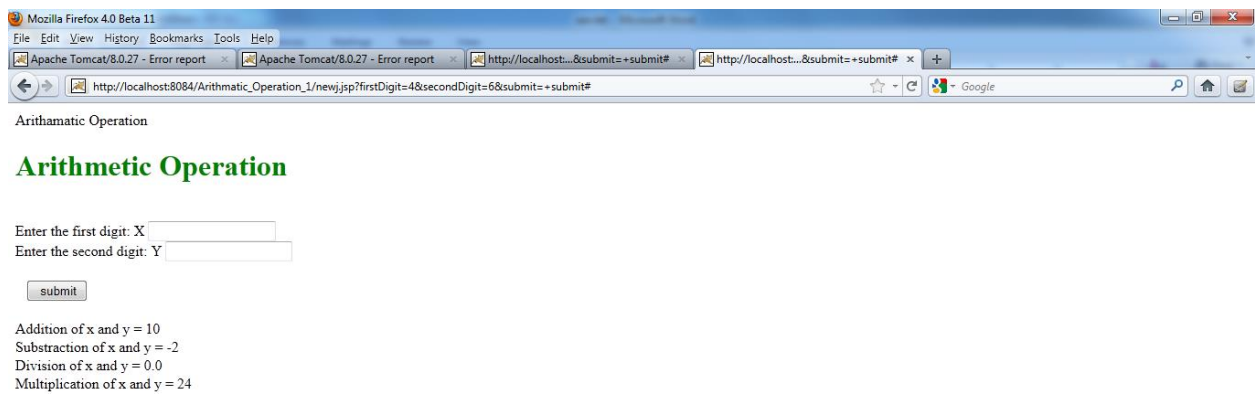
out.println("<BR> Mulitplication of X and Y = "+ Mulitplication);

out.print("<br/>");

}

out.print("<BR>");
```

OUTPUT



14. Creating a Java program that connects to a database using JDBC Write a java program to

insert the Data of new employee.

```
< -----Employees.java-----  
----->
```

```
package employees;
```

```
import java.sql.*;
```

```
public class Employees {
```

```
    public static void main(String[] args) throws  
SQLException, ClassNotFoundException {
```

```
        Class.forName("oracle.jdbc.driver.OracleDriver");
```

```
        Connection con=  
DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:XE","system",  
"tiger");
```

```
        Statement st=con.createStatement();
```

```
        st.execute("create table employe2(eid varchar(20),ename  
varchar(20),edesignation varchar(20),address varchar(20))");
```

```
        st.execute("insert into employe2 values('cs161401','joy','tester','hubli')");
```

```
        ResultSet rs=st.executeQuery("select * from employe2");
```

```
        while(rs.next())
```

```
        {
```

```
            System.out.println("EID:"+rs.getString(1));
```

```
            System.out.println("NAME:"+rs.getString(2));
```

```
            System.out.println("DESIGNATION:"+rs.getString(3));
```

```
            System.out.println("ADD:"+rs.getString(4));
```

} }

Output:

run:

EID: cs161401

NAME:joy

DESIGNATION:tester

ADD:hubli

BUILD SUCCESSFUL (total time: 0 seconds)

15. Write a Ruby program to create a user defined function and illustrate to call the function.

< -----lab15.rb----- >

```
def rectarea(l,b)
  area = (l*b)
  perimeter = 2*(l+b)
  return area, perimeter
end
Area,Perimeter = rectarea(5,4)
puts Area, Perimeter
puts rectarea(5,4)
```

< ----->

OUTPUT:

```
C:\Ruby24\bin\ruby.exe -e
$stdout.sync=true;$stderr.sync=true;load($0=ARGV.shift)
C:/Users/hp/RubymineProjects/Ragh/Lab17
```

20

18

20

18

Process finished with exit code 0

B.L.D.E.A'S
S.B.ARTS AND K.C.P SCIENCE COLLEGE
VIJAYAPUR



M.SC(CS) PROGRAMME
LAB MANUAL

2020-2021 Onwards

Semester – II

20MSCCSPL 2.3: Programming using JAVA Lab

Lab In charge : Prof. PavankumarMahindrakar

PROGRAM 1: PRIME NUMBERS

```
import java.util.Scanner;

public class prime

{

public static void main(String args[])

{

int num=0;

boolean flag=false;

Scanner in=new Scanner (System.in);

System.out.println("enter an integer");

num=in.nextInt();

for(int i=2;i<=num-1;++i)

{

if(num%i==0)

{

flag=true;

break;

}

}

if(!flag)

System.out.println(num +"is a prime num");

else

System.out.println(num +"is not a prime num");

}

}
```

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ javac prime.java
```

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ java prime
```

```
enter an integer
```

```
12
```

```
12is not a prime num
```

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ java prime
```

```
enter an integer
```

```
3
```

```
3is a prime num
```

#####

PROGRAM 2:GCD AND LCM

```
import java.util.Scanner;
```

```
public class gcd_lcm
```

```
{
```

```
static int gcd(int x,int y)
```

```
{
```

```
int r=0,a,b;
```

```
a=(x>y) ? x:y;
```

```
b=(x<y) ? x:y;
```

```
r=b;
```

```
while(a%b!=0)
```

```
{
```

```
r=a%b;
```

```
a=b;
```

```
b=r;
```

```

    }return r;

}

static int lcm(int x,int y)

{

int a;

a=(x>y) ? x:y;

while(true)

{

if(a%x==0 && a%y==0)

return a;

++a;

}

}

public static void main(String args[])

{

Scanner input=new Scanner(System.in);

System.out.println("enter the two no.s");

int x=input.nextInt();

int y=input.nextInt();

System.out.println("the gcd of two no.s is" + gcd(x,y));

System.out.println("the lcm of two no.s is" + lcm(x,y));

}

}

```

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ javac gcd_lcm.java
```

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ java gcd_lcm
```

```
enter the two no.s
```

```
12
```

```
144
```

```
the gcd of two no.s is12
```

```
the lcm of two no.s is144
```

```
#####
```

PROGRAM 3: FACTORIAL

```
import java.util.Scanner;
```

```
public class factorial
```

```
{
```

```
static int fact(int x)
```

```
{
```

```
int r=1,count;
```

```
for(count=1;count<=x;count++)
```

```
r=r*count;
```

```
return r;
```

```
}
```

```
public static void main(String args[])
```

```
{
```

```
Scanner input=new Scanner(System.in);
```

```
int a,b,c;
```

```
System.out.println("enter the 2 no.s");
```

```
int n=input.nextInt();
```

```
int k=input.nextInt();
```

```
if(n<0 || k<0)
```

```

System.out.println("number should be non-negative");else
{

a=fact(n);
b=fact(k);
c=fact(n-k);
System.out.println("result of c(n,k) is=" +a/(b*c));
}
input.close();
}
}

```

student@kcp-HP-Compaq-Elite-8300-MT:~\$ javac factorial.java

student@kcp-HP-Compaq-Elite-8300-MT:~\$ java factorial

enter the 2 no.s

2

2

result of c(n.k) is=1

student@kcp-HP-Compaq-Elite-8300-MT:~\$ java factorial

enter the 2 no.s

1

32

result of c(n.k) is=0

#####

PROGRAM 4:QUEUE IMPLEMENTATION

```
import java.util.*;
```

```
class arrayQueue

{
protected int Queue[] ;

protected int front, rear, size, len;

public arrayQueue(int n)

{
size = n;

len = 0;

Queue = new int[size];

front = -1;

rear = -1;

}

public boolean isEmpty()

{

return front == -1;

}

public boolean isFull()

{

return front==0 && rear == size -1 ;

}

public void insert(int i)

{

if (rear == -1)

{

front = 0;

rear = 0;
```

```
Queue[rear] = i;}

else if (rear + 1 >= size)

System.out.println("Overflow Exception");


else if ( rear + 1 < size)

Queue[++rear] = i;

len++ ;

}

public int remove()

{

if (isEmpty())

{

System.out.println("Underflow Exception");

return 9999;

}

else

{

len-- ;

int ele = Queue[front];

if ( front == rear)

{

front = -1;

rear = -1;

}

else

front++;
```

```

return ele;

}

}

public void display()
{
System.out.print("\nQueue = ");

if (len == 0)
{
System.out.print("Empty\n");

return ;
}

for (int i = front; i <= rear; i++)

System.out.print(Queue[i]+" ");

System.out.println();
}
}

/* Class QueueImplement */

public class queue
{

public static void main(String[] args) throws Exception
{

Scanner scan = new Scanner(System.in);

System.out.println("Array Queue Test\n");

System.out.println("Enter Size of Integer Queue ");

int n = scan.nextInt();

/* creating object of class arrayQueue */

```

```
arrayQueue q = new arrayQueue(n);/* Perform Queue Operations */

char ch;

do{

System.out.println("\nQueue Operations");


System.out.println("1. insert");

System.out.println("2. remove");

System.out.println("3. check empty");

System.out.println("4. check full");

int choice = scan.nextInt();

switch (choice)

{

case 1 :

System.out.println("Enter integer element to insert");

q.insert( scan.nextInt() );

break;

case 2 : int stat = q.remove();

if (stat!=9999)

System.out.println("Removed Element = "+stat);

break;

case 3 : System.out.println("Empty status = "+q.isEmpty());

break;

case 4 :System.out.println("Full status = "+q.isFull());

break;

default : System.out.println("Wrong Entry \n ");

break;
```

```
}  
q.display();  
}while(true);  
}  
}
```

OUTPUT:

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ javac queue.java
```

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ java queue
```

Array Queue Test

Enter Size of Integer Queue

2

Queue Operations

1. insert
2. remove
3. check empty
4. check full

1

Enter integer element to insert

10

Queue = 10

Queue Operations

1. insert
2. remove
3. check empty
4. check full

1

Enter integer element to insert20

Queue = 10 20

Queue Operations

1. insert

2. remove

3. check empty

4. check full

3

Empty status = false

Queue = 10 20

Queue Operations

1. insert

2. remove

3. check empty

4. check full

4

Full status = true

Queue = 10 20

Queue Operations

1. insert

2. remove

3. check empty

4. check full

2

Removed Element = 10

Queue = 20

Queue Operations

1. insert
2. remove
3. check empty
4. check full

#####

PROGRAM 5: COUNT NUM OF CHARACTERS

```
import java.util.*;

import java.io.*;

public class count

{

public static void main(String args[])

{

int space=0;

int chars=0;

int words=args.length-1;

if(words>0)

space=words;

while(words>=0)

chars+=args[words--].length();

System.out.println("no.s of char:"+chars+space);

System.out.println("no.s of words:"+args.length);

}

}

*****
```

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ java count hi hello
```

```
no.s of char:8
```

```
no.s of words:2
```

```
#####
```

PROGRAM 6: OVERLOAD

```
import java.util.Scanner;
```

```
class Box
```

```
{
```

```
double width,height,depth;
```

```
Box(double w,double h, double d)
```

```
{
```

```
width=w;
```

```
height=h;
```

```
depth=d;
```

```
}
```

```
Box()
```

```
{
```

```
width=height=depth=0;
```

```
}
```

```
Box(double len)
```

```
{
```

```
width=height=depth=len;
```

```
}
```

```
double volume()
```

```
{
```

```
return width*height*depth;

}

}

public class overload
{
    public static void main(String args[])
    {
        Box mybox1=new Box();

        Box mycube=new Box(7);

        Scanner input=new Scanner(System.in);

        System.out.println("enter the three numbers:");

        int x=input.nextInt();

        int y=input.nextInt();

        int z=input.nextInt();

        Box mybox2=new Box(x,y,z);

        double vol;

        vol=mybox1.volume();

        System.out.println("volume of mybox1 is" +vol);

        vol=mybox2.volume();

        System.out.println("volume of mybox2 is" +vol);

        vol=mycube.volume();

        System.out.println("volume of mycube is" +vol);

    }

}
```

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ java overload
```

enter the three numbers:

23

4

volume of mybox1 is0.0

volume of mybox2 is24.0

volume of mycube is343.0

#####

PROGRAM 7: OVERRIDE

```
class parent
```

```
{
```

```
void show()
```

```
{
```

```
System.out.println("parent's show()");
```

```
}
```

```
}
```

```
class child extends parent
```

```
{
```

```
@Override
```

```
void show()
```

```
{
```

```
System.out.println("child's show()");
```

```
}
```

```
}
```

```
public class override
```

```
{
```

```

public static void main(String args[])
{
    parent obj1=new parent();

    obj1.show();

    parent obj2=new child();

    obj2.show();

}
}

```

student@kcp-HP-Compaq-Elite-8300-MT:~\$ javac override.java

student@kcp-HP-Compaq-Elite-8300-MT:~\$ java override

parent's show()

child's show()

#####

PROGRAM 8: PACKAGE

//*****PACKAGE FILE*****//

```
import java.util.Scanner;
```

```
import PackageDemo.*;
```

```
public class Package
```

```
{
```

```
    public static void main(String args[])
```

```
    {
```

```
        int num=0;
```

```
        while(true)
```

```
        {
```

```
            System.out.println("enter 1 for demonstration and 2 for quit");
```

```

Scanner in=new Scanner(System.in);num=in.nextInt();

switch(num)

{

case 1: box b1=new box();

box b2=new box(10);

box b3=new box(2,4,6);

System.out.println("default volume" +b1.volume());

System.out.println("volume of cube" +b2.volume());


System.out.println("volume of box" +b3.volume());

break;

case 2:

default:System.exit(0);

}

}

}

}

//*****BOX FILE*****//

package PackageDemo;

import java.util.Scanner;

public class box

{

double width,height,depth;

public box(double w,double h,double d)

{

width=w;

```

```
height=h;

depth=d;

}

public box()

{

width=height=depth=0;

}

public box(double len)

{

width=height=depth=len;

}

public double volume()

{

return width*height*depth;

}

}
```

student@kcp-HP-Compaq-Elite-8300-MT:~\$ javac Package.java

student@kcp-HP-Compaq-Elite-8300-MT:~\$ java Package

enter 1 for demonstration and 2 for quit

1

default volume0.0

volume of cube1000.0

volume of box48.0

enter 1 for demonstration and 2 for quit

#####

PROGRAM 9:INTERFACES(GFG.java)

```
import java.io.*;

interface Vehicle {

void changeGear(int a);

void speedUp(int a);

void applyBrakes(int a);

}

class Bicycle implements Vehicle{

int speed;


int gear;

@Override

public void changeGear(int newGear){

gear = newGear;

}

@Override

public void speedUp(int increment){

speed = speed + increment;

}

@Override

public void applyBrakes(int decrement){

speed = speed - decrement;

}

public void printStates() {

System.out.println("speed: " + speed

+ " gear: " + gear);
```

```
}  
  
}  
  
class Bike implements Vehicle {  
  
    int speed;  
  
    int gear;  
  
    @Override  
  
    public void changeGear(int newGear){  
  
        gear = newGear;  
  
    }  
  
    @Override  
  
    public void speedUp(int increment){  
  
        speed = speed + increment;  
  
    }  
  
    @Override  
  
    public void applyBrakes(int decrement){  
  
        speed = speed - decrement;  
  
    }  
  
    public void printStates() {  
  
        System.out.println("speed: " + speed  
        + " gear: " + gear);  
  
    }  
  
}  
  
class GFG {  
  
    public static void main (String[] args) {  
  
        Bicycle bicycle = new Bicycle();  
  
        bicycle.changeGear(2);  
  
    }  
  
}
```

```

bicycle.speedUp(3);bicycle.applyBrakes(1);

System.out.println("Bicycle present state :");

bicycle.printStates();

Bike bike = new Bike();

bike.changeGear(1);

bike.speedUp(4);

bike.applyBrakes(3);

System.out.println("Bike present state :");

bike.printStates();

}

}

```

OUTPUT:

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ javac GFG.java
```

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ java GFG
```

Bicycle present state :

speed: 2 gear: 2

Bike present state :

speed: 1 gear: 1

#####

PROGRAM 10: MultipleCatchBlocks

```

import java.util.*;

public class MultipleCatchBlocks

{

public static void main(String args[])

```

```
{
Scanner scanner=new Scanner(System.in);
System.out.println("enter the divisor to didvide 100:");
int divisor=scanner.nextInt();

try
{
int[] array=new int[10];
int result=100/divisor;
array[10]=result;
}
catch(ArithmeticException e)
{
System.out.println("Arithmetic exception has occured");
}
catch(ArrayIndexOutOfBoundsException e)
{
System.out.println("array index out of bounds exception has occured");
}
catch(Exception e)
{
System.out.println("common exception has occured");
}
}
}

*****
```

OUTPUT:

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ java MultipleCatchBlocks
```

```
enter the divisor to didvide 100:
```

```
0
```

```
Arithmetic exception has ocured
```

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ java MultipleCatchBlocks
```

```
enter the divisor to didvide 100:
```

```
12array index out of bounds exception has ocured
```

```
#####
```

PROGRAM 11:SET TEXT

```
class MyException extends Exception
```

```
{
```

```
}
```

```
// A Class that uses above MyException
```

```
public class setText
```

```
{
```

```
// Driver Program
```

```
public static void main(String args[])
```

```
{
```

```
try
```

```
{
```

```
// Throw an object of user defined exception
```

```
throw new MyException();
```

```
}
```

```
catch (MyException ex)
```

```
{
```

```
System.out.println("Caught");

System.out.println(ex.getMessage());

}

}

}

*****
```

OUTPUT:

```
student@kcp-OptiPlex-3010:~$ javac setText.java
```

```
student@kcp-OptiPlex-3010:~$ java setText
```

Caught

null

#####

PROGRAM 12: MULTITHREAD

```
class Morning extends Thread

{

public void run()

{

while(true)

{

try

{

// Displaying the thread that is running

System.out.println ("Good Morning ");

Thread.sleep(1000);

}

catch (Exception e)
```

```
{  
  
    // Throwing an exception  
  
    System.out.println ("Exception is caught");  
  
}  
  
}  
  
}  
  
}  
  
class Hello extends Thread  
  
{  
  
  
  
  
    public void run()  
  
    {  
  
        while (true){  
  
            try  
  
            {  
  
                // Displaying the thread that is running  
  
                System.out.println ("Hello ");  
  
                Thread.sleep(5000);  
  
            }  
  
            catch (Exception e)  
  
            {  
  
                // Throwing an exception  
  
                System.out.println ("Exception is caught");  
  
            }  
  
        }  
  
    }  
  
}
```

```
}

class Text extends Thread

{

public void run()

{

while (true){

try

{

// Displaying the thread that is running

System.out.println ("Text ");Thread.sleep(10000);

}

catch (Exception e)

{

// Throwing an exception

System.out.println ("Exception is caught");

}

}

}

}

// Main Class

public class Multithread

{

public static void main(String[] args)

{

Morning obj1 = new Morning();

Hello obj2=new Hello();
```

```
Text obj3=new Text();
```

```
obj1.start();
```

```
obj2.start();
```

```
obj3.start();
```

```
}
```

```
}
```

```
*****
```

OUTPUT:

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ javac Multithread.java
```

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ java Multithread
```

Good Morning

Text

Hello

Good Morning

Good Morning

Good Morning

Good Morning

Hello

Good Morning

Good Morning

Good Morning

Good Morning

Good Morning

Text

Hello

Good Morning

Good Morning

Good Morning

Good Morning

Good Morning

Hello

Good Morning

Good Morning

Good MorningGood Morning

Good Morning

Text

Hello

Good Morning

Good Morning

Good Morning

Good Morning

Good Morning

#####

PROGRAM 13:THREAD JOIN CONCEPT

```
public class Tjoin {  
  
    public static void main(String[] args) {  
  
        Thread t1 = new Thread(new MyRunnable(), "t1");  
  
        Thread t2 = new Thread(new MyRunnable(), "t2");  
  
        Thread t3 = new Thread(new MyRunnable(), "t3");  
  
        t1.start();  
  
        //start second thread after waiting for 2 seconds or if it's dead
```

```
try {  
    t1.join(2000);  
} catch (InterruptedException e) {  
    e.printStackTrace();  
}  
t2.start();  
  
//start third thread only when first thread is dead  
try {  
    t1.join();  
} catch (InterruptedException e) {  
    e.printStackTrace();  
}  
t3.start();  
  
//let all threads finish execution before finishing main thread  
try {  
    t1.join();  
    t2.join();  
    t3.join();  
} catch (InterruptedException e) {  
    e.printStackTrace();  
}  
  
System.out.println("All threads are dead, exiting main thread");  
  
}  
  
class MyRunnable implements Runnable{
```

```

@Override

public void run() {

    System.out.println("Thread started:::"+Thread.currentThread().getName());

    try {

        Thread.sleep(4000);

    } catch (InterruptedException e) {

        e.printStackTrace();

    }

    System.out.println("Thread ended:::"+Thread.currentThread().getName());

}

}

```

OUTPUT:

```
student@kcp-OptiPlex-3010:~$ javac Tjoin.java
```

```
student@kcp-OptiPlex-3010:~$ java Tjoin
```

```
Thread started:::t1
```

```
Thread started:::t2
```

```
Thread ended:::t1
```

```
Thread started:::t3
```

```
Thread ended:::t2
```

```
Thread ended:::t3
```

```
All threads are dead, exiting main thread
```

```
#####
```

PROGRAM 14: MOUSE EVENTS

```

import java.awt.*;

import java.awt.event.*;

import javax.swing.*;

```

```
class mouse extends Frame implements MouseListener {

static JLabel label1, label2, label3;

mouse(){ }

public static void main(String[] args)

{

JFrame f = new JFrame("MouseListener");

f.setSize(600, 100);

f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

JPanel p = new JPanel();

p.setLayout(new FlowLayout());

label1 = new JLabel("no event ");


label2 = new JLabel("no event ");

label3 = new JLabel("no event ");

mouse m = new mouse();

f.addMouseListener(m);

p.add(label1);

p.add(label2);

p.add(label3);

f.add(p);

f.show();

}

public void mousePressed(MouseEvent e)

{

label1.setText("mouse pressed at point:"+ e.getX() + " " + e.getY());

}
```

```

public void mouseReleased(MouseEvent e)
{
    label1.setText("mouse released at point:"+ e.getX() + " " + e.getY());
}

public void mouseExited(MouseEvent e)
{
    label2.setText("mouse exited through point:"+ e.getX() + " " + e.getY());
}

public void mouseEntered(MouseEvent e)
{
    label2.setText("mouse entered at point:"+ e.getX() + " " + e.getY());
}

public void mouseClicked(MouseEvent e)
{
    label3.setText("mouse clicked at point:"+ e.getX() + " "+ e.getY() + "mouse
    clicked :"+ e.getClickCount());
}
}

```

output:

student@kcp-OptiPlex-3010:~\$ javac mouse.java -Xlint

student@kcp-OptiPlex-3010:~\$ java mouse

#####

PROGRAM 15: CALCULATOR

```
import java.awt.BorderLayout;

import java.awt.Container;

import java.awt.GridLayout;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.awt.event.WindowAdapter;

import java.awt.event.WindowEvent;

import javax.swing.JButton;

import javax.swing.JFrame;

import javax.swing.JPanel;

import javax.swing.JTextField;public class Calculator extends JPanel implements ActionListener {

private JTextField display = new JTextField("0");

private String buttonText = "789/456*123-0.=+";


private double result = 0;

private String operator = "=";

private boolean calculating = true;

public Calculator() {

setLayout(new BorderLayout());

display.setEditable(false);

add(display, "North");

JPanel p = new JPanel();

p.setLayout(new GridLayout(4, 4));

for (int i = 0; i < buttonText.length(); i++) {

JButton b = new JButton(buttonText.substring(i, i + 1));

p.add(b);
```

```
b.addActionListener(this);

}

add(p, "Center");

}

public void actionPerformed(ActionEvent evt) {

String cmd = evt.getActionCommand();

if ('0' <= cmd.charAt(0) && cmd.charAt(0) <= '9' || cmd.equals(".")) {

if (calculating)

display.setText(cmd);

else

display.setText(display.getText() + cmd);

calculating = false;

} else {

if (calculating) {

if (cmd.equals("-")) {

display.setText(cmd);

calculating = false;

} else

operator = cmd;

} else {

double x = Double.parseDouble(display.getText());

calculate(x);

operator = cmd;

calculating = true;

}

}

}
```

```
}

private void calculate(double n) {

if (operator.equals("+"))

result += n;

else if (operator.equals("-"))

result -= n;

else if (operator.equals("*"))

result *= n;

else if (operator.equals("/"))

result /= n;

else if (operator.equals("="))result = n;

display.setText("" + result);

}

public static void main(String[] args) {

JFrame frame = new JFrame();

frame.setTitle("Calculator");

frame.setSize(200, 200);

frame.addWindowListener(new WindowAdapter() {

public void windowClosing(WindowEvent e) {

System.exit(0);

}

});

Container contentPane = frame.getContentPane();

contentPane.add(new Calculator());

frame.show();
```

```
}
```

```
}
```

OUTPUT:

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ javac Calculator.java -xlint
```

```
javac: invalid flag: -xlint
```

```
Usage: javac <options> <source files>
```

```
use -help for a list of possible options
```

```
student@kcp-HP-Compaq-Elite-8300-MT:~$ java Calculator
```

B.L.D.E.A'S
S.B.ARTS AND K.C.P SCIENCE COLLEGE
VIJAYAPUR



M.SC(CS) PROGRAMME

LAB MANUAL

2020-2021 Onwards

Semester – IV

**20MSCCSPL4.3 : Digital Image Processing-Lab using
MATLAB / Python**

Lab In charge : Prof. PavankumarMahindrakar

Prog1. Image Sampling .[# NOTE: DOWNLOAD 256X256 IMAGES OF PEPPER AND LENA FROM INTERNET AND PROCEED]

```
import cv2
```

```
import numpy as np
```

```
img = cv2.imread("sean.jpg")
```

```
#We will be factoring down images using the already scaled.
```

```
lwr1 = cv2.pyrDown(img)
```

```
lwr2 = cv2.pyrDown(lwr1)
```

```
lwr3 = cv2.pyrDown(lwr2)
```

```
lwr4 = cv2.pyrDown(lwr3)
```

```
# We will be Increasing the resolution of already scaled down image that is lwr4.
```

```
hir1 = cv2.pyrUp(lwr3)
```

```
cv2.imshow("Original image", img)
```

```
cv2.imshow("First Scaled Down Image", lwr1)
```

```
cv2.imshow("Second Scaled Down Image", lwr2)
```

```
cv2.imshow("Third Scaled Down Image", lwr3)
```

```
cv2.imshow("Fourth Scaled Down Image", lwr4)
```

```
cv2.imshow("First Scaled Up Image", hir1)
```

```
cv2.waitKey(0)
```

```
cv2.destroyAllWindows()
```

Prog2. Image Quantization.

```
# import opencv
import cv2

# Load the input image
image = cv2.imread('C:\\Documents\\full_path\\tomatoes.jpg')
cv2.imshow('Original', image)
cv2.waitKey(0)

# Use the cvtColor() function to grayscale the image
gray_image = cv2.cvtColor(image, cv2.COLOR_BGR2GRAY)
cv2.imshow('Grayscale', gray_image)
cv2.waitKey(0)

# Window shown waits for any key pressing event
cv2.destroyAllWindows()


# Importing Image module from PIL package
from PIL import Image
import PIL

# creating a image object (main image)
im1 = Image.open(r"C:\Users\System-Pc\Desktop\flower1.jpg")

# quantize a image
im1 = im1.quantize(256)

# to show specified image
im1.show()
```

Prog3. Histogram Equalization [#NOTE: USE BOAT AND F16 IMAGES for DEMO]

```
# importing required libraries of opencv
import cv2

# importing library for plotting
from matplotlib import pyplot as plt

# reads an input image
img = cv2.imread('ex.jpg',0)

# find frequency of pixels in range 0-255
histr = cv2.calcHist([img],[0],None,[256],[0,256])
equ = cv2.equalizeHist(img)

# stacking images side-by-side
res = np.hstack((histr, equ))

# show image input vs output
cv2.imshow('\image\ ', res)

# show the plotting graph of an image
plt.plot(equ)
plt.plot(histr)
plt.show()
```

Prog4.Histogram Specification.[#NOTE: COMPUTE HISTOGRAM ON "SF", "BOAT", "F_16"and "PEPPERS" IMAGE. SPECIFY "SF" HISTOGRAM AS REFERENCE TO "BOAT" AND "PEPPERS" AS REFERENCE TO "F_16"]

```
# import packages

import matplotlib.pyplot as plt

from skimage import exposure

from skimage.exposure import match_histograms

import cv2


img1 = cv2.imread("img.jpeg");    print('No of Channel is: ' + str(img1.ndim))
img2 = cv2.imread("2Fw13.jpeg");  print('No of Channel is: ' + str(img2.ndim))
image = img1;    reference = img2

matched = match_histograms(image, reference ,    multichannel=True)

fig, (ax1, ax2, ax3) = plt.subplots(nrows=1, ncols=3, figsize=(8, 3), sharex=True,
sharey=True)

for aa in (ax1, ax2, ax3):    aa.set_axis_off()

ax1.imshow(image);    ax1.set_title('Source');    ax2.imshow(reference)
ax2.set_title('Reference');    ax3.imshow(matched);    ax3.set_title('Matched')

plt.tight_layout();    plt.show()

fig, axes = plt.subplots(nrows=3, ncols=3, figsize=(8, 8))

for i, img in enumerate((image, reference, matched)):

    for c, c_color in enumerate(('red', 'green', 'blue')):

        img_hist, bins = exposure.histogram(img[..., c],    source_range='dtype')

        axes[c, i].plot(bins, img_hist / img_hist.max())

        img_cdf, bins = exposure.cumulative_distribution(img[..., c])

        axes[c, i].plot(bins, img_cdf);    axes[c, 0].set_ylabel(c_color)

axes[0, 0].set_title('Source'); axes[0, 1].set_title('Reference');    axes[0,
2].set_title('Matched')

plt.tight_layout();    plt.show()
```

Prog 5. Spatial Filtering(Correlation)

```
import cv2

import numpy as np

from matplotlib import pyplot as plt

img = cv2.imread('messi5.jpg',0)

img2 = img.copy()

template = cv2.imread('template.jpg',0)

w, h = template.shape[::-1]

methods = ['cv2.TM_CCOEFF', 'cv2.TM_CCOEFF_NORMED', 'cv2.TM_CCORR',
           'cv2.TM_CCORR_NORMED', 'cv2.TM_SQDIFF', 'cv2.TM_SQDIFF_NORMED']

for meth in methods:
    img = img2.copy()
    method = eval(meth)

    res = cv2.matchTemplate(img,template,method)

    min_val, max_val, min_loc, max_loc = cv2.minMaxLoc(res)

    if method in [cv2.TM_SQDIFF, cv2.TM_SQDIFF_NORMED]:
        top_left = min_loc
    else:
        top_left = max_loc

    bottom_right = (top_left[0] + w, top_left[1] + h)

    cv2.rectangle(img,top_left, bottom_right, 255, 2)

    plt.subplot(121),plt.imshow(res,cmap = 'gray')
    plt.title('Matching Result'), plt.xticks([], plt.yticks([]))

    plt.subplot(122),plt.imshow(img,cmap = 'gray')
    plt.title('Detected Point'), plt.xticks([], plt.yticks([]))

    plt.suptitle(meth)

plt.show()
```