**Name: Aryan Ganesh Mithbawkar**
**Div: B  Roll No.:219403  Class: SY.BSc.IT.**

**Name:Aryan Ganesh Mithbawkar**

**Roll No.:219403**

**Class: SY BSc IT**

# Practical NO.2

**1.Write a function that takes a character (i.e. a string of length 1) and returns True if it is a vowel, False otherwise.**

vowels.py - C:\Users\aryan\Desktop\219403\vowels.py (3.9.5)

File Edit Format Run Options Window Help

```
ch=input("Enter a character:")
if(ch=='A' or ch=='a'or ch=='E' or ch=='e'or ch=='I' or ch=='i' or ch=='O' or ch=='o' or ch=='U' or ch=='u'):
    print(ch,"True")
else:
    print(ch,"False")
```

```
Python 3.9.5 (tags/v3.9.5:0a7dcbd, May  3 2021, 17:27:52) [MSC v.1928 64 bit (AM
D64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
================ RESTART: C:\Users\aryan\Desktop\219403\vowels.py ================
Enter a character:a
a True
>>>
================ RESTART: C:\Users\aryan\Desktop\219403\vowels.py ================
Enter a character:b
b False
>>>
```

**2. Define a function histogram() that takes a list of integers and prints a histogram to the screen. For example, histogram(4, 9, 7) should print the following:**

****

*********

*******

vowels.py - C:\Users\aryan\Desktop\219403\vowels.py (3.9.5)

File Edit Format Run Options Window Help

```
ch=input("Enter a character:")
if(ch=='A' or ch=='a'or ch=='E' or ch=='e'or ch=='I' or ch=='i' or ch=='O' or ch=='o' or ch=='U' or ch=='u'):
    print(ch,"True")
else:
    print(ch,"False")
```

```
============== RESTART: C:\Users\aryan\Desktop\219403\histogram.py ==============
****
**********
*******
>>>
```

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**Div: B  Roll No.:219403  Class: SY.BSc.IT.**

**3. A pangram is a sentence that contains all the letters of the English alphabet at least once, for example: The quick brown fox jumps over the lazy dog. Your task here is to write a function to check a sentence to see if it is a pangram or not.**

pangram.py - C:\Users\aryan\Desktop\219403\pangram.py (3.9.5)

File Edit Format Run Options Window Help

```
def ispan(str):
    strl=str.lower()
    alphabet="abcdefghijklmnopqrstuvwxyz"
    for char in alphabet:
        if char not in strl:
            return False
    return True
n=input("Enter a sentence:")
y=ispan(n)
if (y==True):
     print(n,":Sentence is pangram")
else:
    print(n,":Sentence is not Pangram")
```

```
=============== RESTART: C:\Users\aryan\Desktop\219403\pangram.py ==============
Enter a sentence:The quick brown fox jumps over the lazy dog
The quick brown fox jumps over the lazy dog :Sentence is pangram
>>>
=============== RESTART: C:\Users\aryan\Desktop\219403\pangram.py ==============
Enter a sentence:Hi An Aryan
Hi An Aryan :Sentence is not Pangram
>>>
```

**4. Write a python code to print the sum of natural numbers using recursive functions.**

natural sumn.py - C:\Users\aryan\Desktop\219403\natural sumn.py (3.9.5)

File Edit Format Run Options Window Help

```
def recur_sum(n):
    if n<=1:
        return n
    else:
        return n+ recur_sum(n-1)
o=int(input("Enter the range of Natural numbers:"))
if o<0:
    print("Enter a positive Number:")
else:
    print("The  sum of",o,"Natural Numbers is=",recur_sum(o))
```

```
============ RESTART: C:\Users\aryan\Desktop\219403\natural sumn.py ============
Enter the range of Natural numbers:100
The  sum of 100 Natural Numbers is= 5050
>>>
```

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**5. Write a python code to display the sum of cubes of digits of a number using function.**

cubsum.py - C:\Users\aryan\Desktop\219403\cubsum.py (3.9.5)

File Edit Format Run Options Window Help

```
def sumcub(n):
    sum=0
    while(n>0):
        r=n%10
        sum=sum+(pow(r,3))
        n=n//10
    print("sum of the cube of each digit is=",sum)

n=int(input("Enter a Number:"))
sumcub(n)
```

```
>>>
=============== RESTART: C:\Users\aryan\Desktop\219403\cubsum.py ==============
Enter a Number:1234
sum of the cube of each digit is= 100
>>>
```

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# Practical NO.3

## 1.Write a program that takes two lists and returns True if they have at least one common member

sameele.py - C:\Users\aryan\Desktop\219403\sameele.py (3.9.5)

File Edit Format Run Options Window Help

```
def comm(list1,list2):
    result=False
    for i in list1:
        for j in list2:
            if i==j:
                result=True
                print(a,b)
                return result
    return result
a=[1,23,4,5,6]
b=[12,45,4,87]
print(comm(a,b))
```

```
=============== RESTART: C:\Users\aryan\Desktop\219403\sameele.py ==============
[1, 23, 4, 5, 6] [12, 45, 4, 87]
True
>>>
```

## 2. Write a Python program to clone or copy a list.

clone.py - C:\Users\aryan\Desktop\219403\clone.py (3.9.5)

File Edit Format Run Options Window Help

```
nl=[]
n=int(input("Enter the number of element:"))
for i in range(1,n+1):
    v=int(input("Enter the elements:"))
    nl.insert(i,v)
new_list=list(nl)
print("old list:",nl)
print("new List:",new_list)


>>>
================ RESTART: C:\Users\aryan\Desktop\219403\clone.py =======
Enter the number of element:6
Enter the elements:2
Enter the elements:7
Enter the elements:8
Enter the elements:98
Enter the elements:8
Enter the elements:9
old list: [2, 7, 8, 98, 8, 9]
new List: [2, 7, 8, 98, 8, 9]
>>>
```

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**3. Write a python code to display the odd and even numbers separately from a list. (All elements in the list should be taken from user).**

evenoddlist.py - C:\Users\aryan\Desktop\219403\evenoddlist.py (3.9.5)

File Edit Format Run Options Window Help

```
a=[]
n=int(input("Enter number of elements:"))
for i in range(1,n+1):
    b=int(input("Enter element:"))
    a.insert(n,b)
even=[]
odd=[]
for j in a:
    if(j%2==0):
        even.append(j)
    else:
        odd.append(j)
print("The even list",even)
print("The odd list",odd)
```

```
============ RESTART: C:\Users\aryan\Desktop\219403\evenoddlist.py ====
Enter number of elements:6
Enter element:2
Enter element:3
Enter element:4
Enter element:6
Enter element:8
Enter element:3
The even list [2, 4, 6, 8]
The odd list [3, 3]
>>>
```

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**Div: B Roll No.:219403 Class: SY.BSc.IT.**

**4. Write a python program to accept an Integer list from user and print all the Armstrong numbers in that list.**

listarmstrong.py - C:\Users\aryan\Desktop\219403\listarmstrong.py (3.9.5)

File Edit Format Run Options Window Help

```
def arm(n):
    for j in tup:
        sum=0
        t=j
        while t>0:
            d=t%10
            sum+=d**3
            t //=10
        if j==sum:
            print(j,"is an Armstrong Number")
        else:
            print(j,"is not an Armstrong Number")
tup=[]
o=int(input("Enter The Numbersof elements:"))
for i in range(1,o+1):
    v=int(input("Enter The Numbers:"))
    tup.append(v)
arm(v)
```

```
============ RESTART: C:\Users\aryan\Desktop\219403\listarmstrong.py =
Enter The Numbersof elements:6
Enter The Numbers:153
Enter The Numbers:121
Enter The Numbers:370
Enter The Numbers:54
Enter The Numbers:407
Enter The Numbers:87
153 is an Armstrong Number
121 is not an Armstrong Number
370 is an Armstrong Number
54 is not an Armstrong Number
407 is an Armstrong Number
87 is not an Armstrong Number
>>>
```

**Name: Aryan Ganesh Mithbawkar**
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**5. Consider the Tuple t=(10,5,12,11,33,100,17,7,13).Write a python code to display all the prime numbers from the tuple t.**

tuple.py - C:\Users\aryan\Desktop\219403\tuple.py (3.9.5)

File Edit Format Run Options Window Help

```
def prime(n):
    p=1
    for i in range(2,n):
        if n%i==0:
            p=0
            break
    if p==1:
        return(n)
    else:
        return 0
tup=(10,5,12,11,33,100,17,7,13)
for i in tup:
    n=prime(i)
    if n!=0:
        print(n)
```

```
================ RESTART: C:\Users\aryan\Desktop\219403\tuple.py ===========
5
11
17
7
13
>>>
```

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# Practical.no. 4

**Q.1 Write a python script to create a dictionary where key will be number and the value will be factorial.**

dictfact.py - C:\Users\aryan\Desktop\219403\dictfact.py (3.9.5)

File Edit Format Run Options Window Help

```
n=int(input("Please enter the Number of key:"))
di={}
def facto(x):
    f=1
    for i in range (1,x+1):
        f=f*i

    return f
for i in range(1,n+1):
    k=int(input("Enter the keys:"))
    di[k]=facto(k)
print(di)
```

```
============== RESTART: C:\Users\aryan\Desktop\219403\dictfact.py ===
Please enter the Number of key:3
Enter the keys:2
Enter the keys:4
Enter the keys:5
{2: 2, 4: 24, 5: 120}
>>>
```

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**Q.2 Write a Python script to concatenate following dictionaries to create a new one. For Example: dic1={1:10, 2:20} dic2={3:30, 4:40} dic3={5:50,6:60} Expected Result : {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}**

concatenate.py - C:\Users\aryan\Desktop\219403\concatenate.py (3.9.5)

File Edit Format Run Options Window Help

```
dict1={1:10,2:20}
dict2={3:30,4:40}
dict3={5:50,6:60}
dict4={}
for i in(dict1,dict2,dict3):
    dict4.update(i)
print("First Dictionary",dict1)
print("Second Dictionary",dict2)
print("Third Dictionary",dict3)
print("all conbined",dict4)
```

```
============ RESTART: C:\Users\aryan\Desktop\219403\concatenate.py ========
First Dictionary {1: 10, 2: 20}
Second Dictionary {3: 30, 4: 40}
Third Dictionary {5: 50, 6: 60}
all conbined {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}
>>>
```

**Q.3 Write a python script to create a dictionary where key will be numbers and value will be its reverse of that number. For Example: dic1={123:321,89:98,236:632}**

revdict.py - C:\Users\aryan\Desktop\219403\revdict.py (3.9.5)

File Edit Format Run Options Window Help

```
def revi(x):
    re=0
    while(x>0):
        d=x%10
        re=re*10+d
        x=x//10
    return re
di={}
n=int(input("Please enter the Number of key:"))
for i in range(1,n+1):
    k=int(input("Enter the keys:"))
    di[k]=revi(k)
print(di)
```

```
=============== RESTART: C:\Users\aryan\Desktop\219403\revdict.py ==
Please enter the Number of key:3
Enter the keys:321
Enter the keys:567
Enter the keys:644
{321: 123, 567: 765, 644: 446}
>>>
```

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## Q4 Write a Python program to sum all the items in a dictionary.

dictsum.py - C:\Users\aryan\Desktop\219403\dictsum.py (3.9.5)

File Edit Format Run Options Window Help

```
def dsum(M):
    sum=0
    for i in M:
        sum=sum+M[i]
    return sum
Dict={'a':100,'b':200,'c':300,'d':400}
print(Dict)
print("sum:",dsum(Dict))
```

```
=============== RESTART: C:\Users\aryan\Desktop\219403\dictsum.py =
{'a': 100, 'b': 200, 'c': 300, 'd': 400}
sum: 1000
>>>
```

## Q5.Write a Python script to merge two Python dictionaries.

mergdict.py - C:\Users\aryan\Desktop\219403\mergdict.py (3.9.5)

File Edit Format Run Options Window Help

```
x=int(input("Enter the number of keys:"))
y=int(input("Enter the number of keys:"))
dict1={}
dict2={}
merg={}
for i in range(1,x+1):
    n=int(input("Enter the keys:"))
    dict1[n]=n*n
for i in range(1,y+1):
    n=int(input("Enter the keys:"))
    dict2[n]=n*n
print("Dictionary 1",dict1)
print("Dictionary 2",dict2)
for i in dict1:
    merg[i]=dict1[i]
for i in dict2:
    merg[i]=dict2[i]
print("Merged Dictionary:",merg)
```

```
============== RESTART: C:\Users\aryan\Desktop\219403\mergdict.py ==============
Enter the number of keys:3
Enter the number of keys:3
Enter the keys:234
Enter the keys:36
Enter the keys:643
Enter the keys:436
Enter the keys:54
Enter the keys:67
Dictionary 1 {234: 54756, 36: 1296, 643: 413449}
Dictionary 2 {436: 190096, 54: 2916, 67: 4489}
Merged Dictionary: {234: 54756, 36: 1296, 643: 413449, 436: 190096, 54: 2916, 67: 4489}
>>>
```

**Name: Aryan Ganesh Mithbawkar**
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# Practical 5

**1.Write a Python program to combine the content of two file and store it in a single list and display that list.**

listfilescon.py - C:\Users\aryan\Desktop\219403\listfilescon.py (3.9.5)

File Edit Format Run Options Window Help

```
fl=open("l.txt","w")
n=input("Enter the Text:")
fl.write(n)
f2=open("2.txt","w")
n=input("Enter the text")
f2.write(n)
fl.close()
f2.close()
ln=[]
fl=open("l.txt","r")
sl=fl.read()
for i in sl:
    ln.append(i)
f2=open("2.txt","r")
s2=f2.read()
for i in s2:
    ln.append(i)
print("the list of contents:",ln)
fl.close()
f2.close()
```

1 - Notepad

File Edit Format View Help

BSCIT

2 - Notepad

File Edit Format View Help

THANE

```
============ RESTART: C:\Users\aryan\Desktop\219403\listfilescon.py =========
Enter the Text:BSCIT
Enter the textTHANE
the list of contents: ['B', 'S', 'C', 'I', 'T', 'T', 'H', 'A', 'N', 'E']
>>>
```

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**2. Write a Python program to take a character from user and search that character in the file .If the character is present then print total count of that character in the file or else display the message "no such character".**

charsearch.py - C:\Users\aryan\Desktop\219403\charsearch.py (3.9.5)

File Edit Format Run Options Window Help

```
f=open("List.txt","r")
s=f.read()
c=input("Enter the character to be searched:")
count=0
for i in s:
    if i==c:
        count=count+1
if count==0:
    print("NO SUCH CHARACTER FOUND")
else:
    print("character", c ,"has ocurred", count ,"Times in the file")
```

List - Notepad

File Edit Format View Help

```
aryan mithbawkar
```

```
============= RESTART: C:\Users\aryan\Desktop\219403\charsearch.py ===
Enter the character to be searched:a
character a has ocurred 4 Times in the file
>>>
============= RESTART: C:\Users\aryan\Desktop\219403\charsearch.py ===
Enter the character to be searched:c
NO SUCH CHARACTER FOUND
>>>
```

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**Div: B  Roll No.:219403  Class: SY.BSc.IT.**

### 3. Write a Python program to merge the content of two file into one file.

copymultfil.py - C:\Users\aryan\Desktop\219403\copymultfil.py (3.9.5)

File Edit Format Run Options Window Help

```
fl=open("efg.txt","w")
n=input("Enter the Text:")
fl.write(n)
f2=open("lmn.txt","w")
n=input("Enter the text")
f2.write(n)
fl.close()
f2.close()
f3=open("wxy.txt","w")
fl=open("efg.txt","r")
f3.write(fl.read())
f2=open("lmn.txt","r")
f3.write(f2.read())
fl.close()
f2.close()
f3.close()
print("FILES SUCCESSFULLY COPIED IN WXY.TXT")
```

```
============= RESTART: C:\Users\aryan\Desktop\219403\copymultfil.py
Enter the Text:HI I AM ARYAN
Enter the textI AM BSCIT STUDENT
FILES SUCCESSFULLY COPIED IN WXY.TXT
>>>
```

efg - Notepad

File Edit Format View Help

HI I AM ARYAN

lmn - Notepad

File Edit Format View Help

I AM BSCIT STUDENT

wxy - Notepad

File Edit Format View Help

HI I AM ARYANI AM BSCIT STUDENT

**Name: Aryan Ganesh Mithbawkar**
**Div: B  Roll No.:219403  Class: SY.BSc.IT.**

**4. Write a python program to copy the elements of the list into a file.**

listtofile.py - C:\Users\aryan\Desktop\219403\listtofile.py (3.9.5)

File Edit Format Run Options Window Help

```
n=int(input("Enter the number of elements:"))
ln=[]
for i in range(1,n+1):
    a=input("Enter the elements:")
    ln.append(a)
print("list:",ln)
f=open("List.txt","w")
for i in ln:
    f.write(str(i))
f.close()
print("List saved in List.txt")
```

```
========== RESTART: C:\Users\aryan\Desktop\219403\listtofile.py
Enter the number of elements:4
Enter the elements:2
Enter the elements:35
Enter the elements:56
Enter the elements:67
list: ['2', '35', '56', '67']
List saved in List.txt
>>>
```

List - Notepad

File Edit Format View Help

```
2355667
```

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# Practical No.6

## 1.Implement the concept of multiple inheritance using python.

inharitance.py - C:\Users\aryan\Desktop\219403\inharitance.py (3.9.5)

File Edit Format Run Options Window Help

```
class fill():
    def getfill(self,a):
        self.a=a
class fillb():
    def getfillb(self,b):
        self.b=b
class Calculation(fill,fillb):
    def cal(self):
        add=self.a+self.b
        sub=self.a-self.b
        mul=self.a*self.b
        div=self.a/self.b
        print("Adition is:",add)
        print("subtraction is:",sub)
        print("Multiplication is:",mul)
        print("Division is:",div)
a=int(input("Enter first Number:"))
b=int(input("Enter second Number:"))
obj=Calculation()
obj.getfill(a)
obj.getfillb(b)
obj.cal()
```

```
========== RESTART: C:\Users\aryan\Desktop\219403\inharitance.py =
Enter first Number:343
Enter second Number:789
Adition is: 1132
subtraction is: -446
Multiplication is: 270627
Division is: 0.4347275031685678
>>>
```

**Name: Aryan Ganesh Mithbawkar**
**Div: B  Roll No.:219403  Class: SY.BSc.IT.**

**2.Design a class complex for adding two complex numbers and also show the use of constructors.**

complexclass.py - C:\Users\aryan\Desktop\219403\complexclass.py (3.9.5)

File Edit Format Run Options Window Help

```
class complex:
    def __init__(self,imag,real):
        self.r=real
        self.i=imag
    def add(self,obj):
        c3=complex(0,0)
        c3.real=self.r+obj.r
        c3.imag=self.i+obj.i
        return c3

r1=int(input('Enter the 1st real number :'))
i1=int(input('Enter the 1st imaginary number :'))
r2=int(input('Enter the 2nd real number :'))
i2=int(input('Enter the 2nd imaginary number :'))

c1=complex(r1,i1)

c2=complex(r2,i2)

c3=c1.add(c2) or c2.add(c1)

print(c3.real)
print(c3.imag)
```

```
========== RESTART: C:\Users\aryan\Desktop\219403\complexclass.py =========
Enter the 1st real number :321
Enter the 1st imaginary number :54
Enter the 2nd real number :785
Enter the 2nd imaginary number :3
57
1106
>>>
```

**Name: Aryan Ganesh Mithbawkar**
**Div: B  Roll No.:219403  Class: SY.BSc.IT.**

**3.Design an employee class using Python for reading and displaying the employee information, The getInfo() and displayInfo() methods will be used respectively(use constructor).**

employee.py - C:\Users\aryan\Desktop\219403\employee.py (3.9.5)

File Edit Format Run Options Window Help

```
class employee:
    def __init__(self):
        self.getInfo()
    def getInfo(self):
        self.n=input("Enter Empolyee Name:")
        self.i=int(input("Enter Employee ID:"))
        self.s=int(input("Enter Employee Salary:"))
    def displayInfo(self):
        print("Employee Name:",self.n)
        print("Employee ID:", self.i)
        print("Employee Salary:",self.s)
n=int(input("Enter the Number of Employee:"))
L=list()
for i in range(n):
    obj=employee()
    obj.displayInfo()
```

```
>>>
============== RESTART: C:\Users\aryan\Desktop\219403\employee.py =
Enter the Number of Employee:3
Enter Empolyee Name:aryan
Enter Employee ID:1
Enter Employee Salary:30000
Employee Name: aryan
Employee ID: 1
Employee Salary: 30000
Enter Empolyee Name:joe
Enter Employee ID:2
Enter Employee Salary:25000
Employee Name: joe
Employee ID: 2
Employee Salary: 25000
Enter Empolyee Name:jean
Enter Employee ID:3
Enter Employee Salary:27000
Employee Name: jean
Employee ID: 3
Employee Salary: 27000
>>>
```

**Name: Aryan Ganesh Mithbawkar**
**Div: B  Roll No.:219403  Class: SY.BSc.IT.**

**4.Design a class that store the information of student and display the same.**

studentDetails.py - C:\Users\aryan\Desktop\219403\studentDetails.py (3.9.5)

File Edit Format Run Options Window Help

```
class student:
    name=None
    roll=None
    Class=None
    def getInfo(self,roll,name,Class):
        self.__roll=roll
        self.__name=name
        self.__Class=Class
    def displayInfo(self):
        print("Student Name:",self.__name)
        print("Student RollNo.:", self.__roll)
        print("Student Class:",self.__Class)
s=student()
n=int(input("Enter the Number of Student:"))
L=list()
for i in range(n):
    s.getInfo(
         name=input("Name:")
        ,roll=int(input("RollNo.:"))
        ,Class=input("Class:"))
    s.displayInfo()
```

```
========== RESTART: C:\Users\aryan\Desktop\219403\studentDetails.py ====
Enter the Number of Student:2
Name:Aryan
RollNo.:219403
Class:B
Student Name: Aryan
Student RollNo.: 219403
Student Class: B
Name:Yash
RollNo.:219300
Class:A
Student Name: Yash
Student RollNo.: 219300
Student Class: A
>>>
```

**Name: Aryan Ganesh Mithbawkar**
**Div: B  Roll No.:219403  Class: SY.BSc.IT.**

**5.Write a python program that defines a class employee. Define two subclass engineers and manager. Every class should have a method "print designation" that print designation of each employee.**

classengimana2.py - C:\Users\aryan\Desktop\219403\classengimana2.py (3.9.5)

File Edit Format Run Options Window Help

```
class employee():
    def __init__(self):
        self.getdata()
    def getdata(self):
        self.iD=int(input("Enter Employee id:"))
        self.n=input("Enter Employee name:")
        self.d=input("Enter Employee Designation:")
    def showdata(self):
            print("My name is ",self.n,"and My Id is",self.iD,"and My designation is ",self.d)
class engineer(employee):
    def printdesignation(self):
        self.showdata()
class manager(employee):
    def printdesignation(self):
        self.showdata()
n=int(input("number of sets of Employee:"))
L=list()
for i in range(n):
    e=engineer()
    m=manager()
    e.printdesignation()
    m.printdesignation()
```

```
========== RESTART: C:\Users\aryan\Desktop\219403\classengimana2.py =====
number of sets of Employee:2
Enter Employee id:1
Enter Employee name:aryan
Enter Employee Designation:Engineer
Enter Employee id:2
Enter Employee name:janes
Enter Employee Designation:Manager
My name is  aryan and My Id is 1 and My designation is  Engineer
My name is  janes and My Id is 2 and My designation is  Manager
Enter Employee id:3
Enter Employee name:king
Enter Employee Designation:Manager
Enter Employee id:4
Enter Employee name:bleck
Enter Employee Designation:Engineer
My name is  king and My Id is 3 and My designation is  Manager
My name is  bleck and My Id is 4 and My designation is  Engineer
>>>
```

**Name: Aryan Ganesh Mithbawkar**
**Div: B Roll No.:219403 Class: SY.BSc.IT.**

# Practical No.7

**1.Create a module "Area.py" with function Area_Circle(), Area_Traingle() And Area_Rect().Create new file use the Area_Circle(), Area_Traingle() and Area_Rect() from the Area module to calculate the areas.**

Area.py - C:\Users\aryan\Desktop\219403\Area.py (3.9.5)

File Edit Format Run Options Window Help

```
PI=3.14
def Area_circle(r):
    a=PI*r*r
    print("Area of The Cicle is :",a)
def Area_rect(l,b):
    a=l*b
    print("Area of The Rectangle :",a)
def Area_traingle(b,h):
    a=0.5*b*h
    print("Area of Traingle :",a)
```

areamodule.py - C:\Users\aryan\Desktop\219403\areamodule.py (3.9.5)

File Edit Format Run Options Window Help

```
import Area
n=int(input("Enter The Radius Of The cicle:"))
Area.Area_circle(n)
b=int(input("Enter The breadth of The Rectangle:"))
l=int(input("Enter The Length Of The Rectangle:"))
Area.Area_rect(l,b)
l=int(input("Enter The Length of The Traingle:"))
b=int(input("Enter The Base Of The Traingle:"))
Area.Area_traingle(l,b)
```

```
========== RESTART: C:\Users\aryan\Desktop\219403\areamodule.py =
Enter The Radius Of The cicle:4
Area of The Cicle is : 50.24
Enter The breadth of The Rectangle:5
Enter The Length Of The Rectangle:8
Area of The Rectangle : 40
Enter The Length of The Traingle:9
Enter The Base Of The Traingle:6
Area of Traingle : 27.0
>>>
```

**Name: Aryan Ganesh Mithbawkar**
**Div: B  Roll No.:219403  Class: SY.BSc.IT.**

## 2.Implement the concept of multilevel inheritance using python.

multilevelInher.py - C:\Users\aryan\Desktop\219403\multilevelInher.py (3.9.5)

File Edit Format Run Options Window Help

```
class employee():
    def print():
        print("My Designation is to Work hard")
class engineer(employee):
    def print(self):
        n=input("MY Designation As An Engineer is:")
        print("MY Designation As An Engineer is:",n)
class manager(engineer):
    def print(self):
        a=input("MY Designation As A Manager is:")
        print("MY Designation As An Manager is:",a)
E=employee
E.print()
e=engineer()
m=manager()
e.print()
m.print()
```

```
========== RESTART: C:\Users\aryan\Desktop\219403\multilevelInher.py ====
My Designation is to Work hard
MY Designation As An Engineer is:Head
MY Designation As An Engineer is: Head
MY Designation As A Manager is:HR
MY Designation As An Manager is: HR
>>>
```

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## 3.Implement the concept of single inheritance using python.

singleLEVELINhere.py - C:\Users\aryan\Desktop\219403\singleLEVELINhere.py (3.9.5)

File Edit Format Run Options Window Help

```
class PC():
    def print1(self):
        print("I Like My Computer")
class type(PC):
    def print2(self):
        self.n=input("MY PC Type is :")
        print("MY PC TYpe:",self.n)
class Specs(PC):
    def print3(self):
        self.a=input("MY PC Specs Are:")
        print("MY PC Specs Are:",self.a)
o=int(input("NO. of PC YOU OWN:"))
L=list()
for i in range(o):
    P=PC
    t=type()
    s=Specs()
    t.print1()
    t.print2()
    s.print3()
```

```
========== RESTART: C:\Users\aryan\Desktop\219403\singleLEVELINhere.py ===
NO. of PC YOU OWN:2
I Like My Computer
MY PC Type is :Gaming
MY PC TYpe: Gaming
MY PC Specs Are:nvidia 300
MY PC Specs Are: nvidia 300
I Like My Computer
MY PC Type is :Work
MY PC TYpe: Work
MY PC Specs Are:1TB ssd
MY PC Specs Are: 1TB ssd
>>>
```

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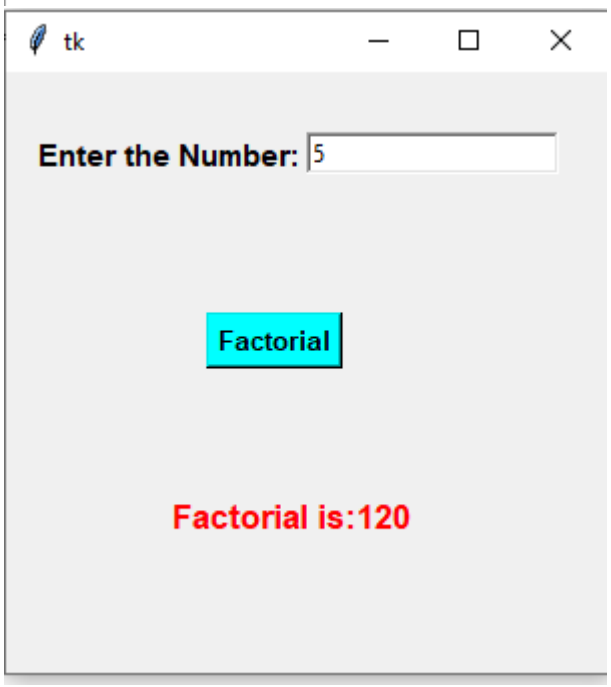
# Practical No.8

## 1. Write a Python GUI code to calculate the factorial of a number.

guifactoial.py - C:\Users\aryan\Desktop\219403\guifactoial.py (3.9.5)

File Edit Format Run Options Window Help

```
from tkinter import*
root=Tk()
Ll=Label(root,text="Enter the Number:",font=('calibari',11,'bold'))
Ll.place(x=13,y=30)
El=Entry(root,bd='2')
El.place(x=150,y=30)
def fact():
    n=int(El.get())
    f=1
    for i in range(1,n+1):
        f=f*i
    m=("Factorial is:"+str(f))
    x.config(text=m)
Bl=Button(root,text="Factorial",command=fact,font=('calibari',10,'bold'),bg='cyan')
Bl.place(x=100,y=120)
x=Label(root,fg='red',font=('calibari',13,'bold'))
x.place(x=80,y=210)
root.geometry("300x300")
root.mainloop()
```



**Name: Aryan Ganesh Mithbawkar**
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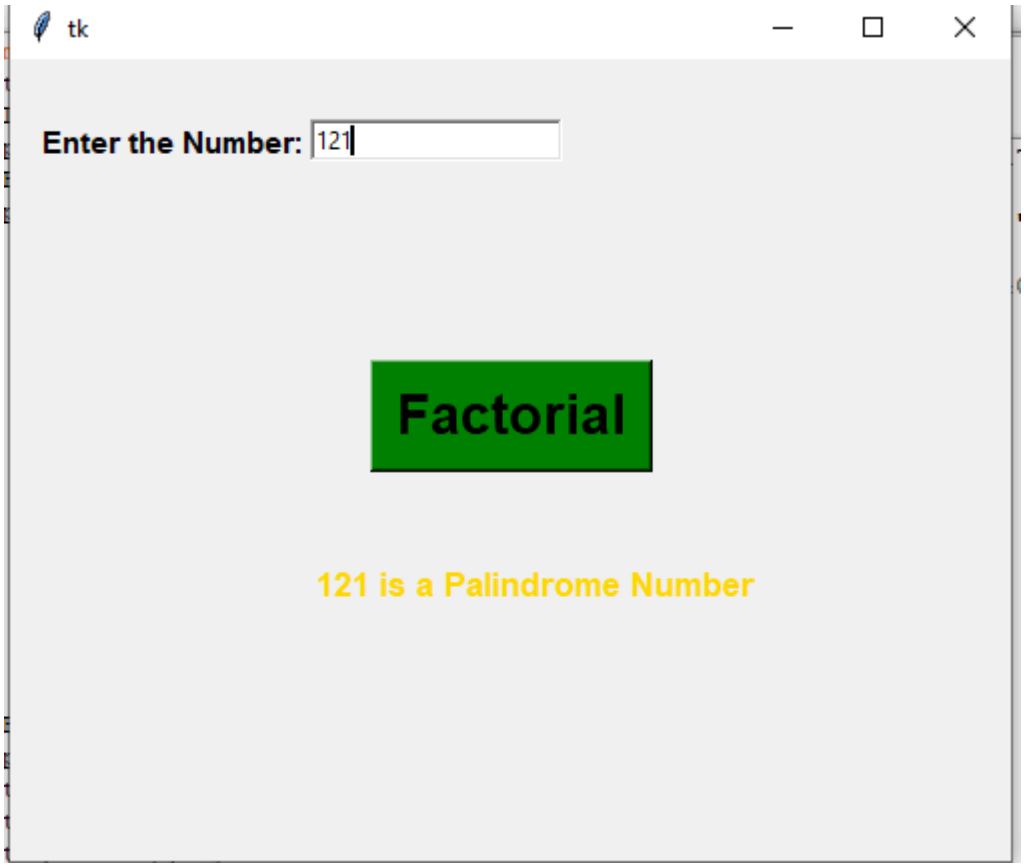
## 2. Write a Python GUI code to check whether the number is palindrome or not.

guiPalindrome.py - C:\Users\aryan\Desktop\219403\guiPalindrome.py (3.9.5)

File Edit Format Run Options Window Help

```
from tkinter import*
root=Tk()
Ll=Label(root,text="Enter the Number:",font=('calibari',11,'bold'))
Ll.place(x=13,y=30)
El=Entry(root,bd='2')
El.place(x=150,y=30)
def myFun():
    n=int(El.get())
    x=n
    rev=0
    a=0
    while(n>0):
        a=int(n%10)
        n=int(n/10)
        rev=rev*10+a
    if(x==rev):
        g=(str(x)+' is a Palindrome Number')
        rootl.config(text=g)
    else:
        h=(str(x)+' is not a Palindrome Number')
        rootl.config(text=h)
Bl=Button(root,text="Factorial",command=myFun,font=('calibari',20,'bold'),bg='green')
Bl.place(x=180,y=150)
rootl=Label(root,fg='gold',font=('calibari',13,'bold'))
rootl.place(x=150,y=250)
root.geometry("500x400")
root.mainloop()
```



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## 3. Design a simple GUI calculator in python.

guicalculator.py - C:\Users\aryan\Desktop\219403\guicalculator.py (3.9.5)

File Edit Format Run Options Window Help

```
import tkinter
top=tkinter.Tk()
L1=tkinter.Label(top,text="value 1:")
L1.pack(side=tkinter.LEFT)
L1.place(x=15,y=40)
E1=tkinter.Entry(top,bd=8)
E1.pack(side=tkinter.RIGHT)
E1.place(x=80,y=40)
L2=tkinter.Label(top,text="Value 2:")
L2.pack(side=tkinter.LEFT)
L2.place(x=15,y=120)
E2=tkinter.Entry(top,bd=8)
E2.pack(side=tkinter.RIGHT)
E2.place(x=80,y=120)
top.geometry("400x400")
from tkinter import messagebox
def add():
    c=int(E1.get())+int(E2.get())
    a=("Addition is: ",str(c))
    msg=messagebox.showinfo("Calculator",a)
B=tkinter.Button(top,text="+",command=add)
B.place(x=50,y=200)
def sub():
    c=int(E1.get())-int(E2.get())
    s=("Subtraction is: ",str(c))
    msg=messagebox.showinfo('Calculator',s)
B=tkinter.Button(top,text="-",command=sub)
B.place(x=110,y=200)
def mul():
    x=int(E1.get())*int(E2.get())
    m=("Multiplication is: ",str(x))
    msg=messagebox.showinfo('Calculator',m)
B=tkinter.Button(top,text="*",command=mul)
B.place(x=170,y=200)
def div():
    c=int(E1.get())//int(E2.get())
    d=("Division is: ",str(c))
    msg=messagebox.showinfo('Calculator',d)
B=tkinter.Button(top,text="/",command=div)
B.place(x=230,y=200)
top.mainloop()
```

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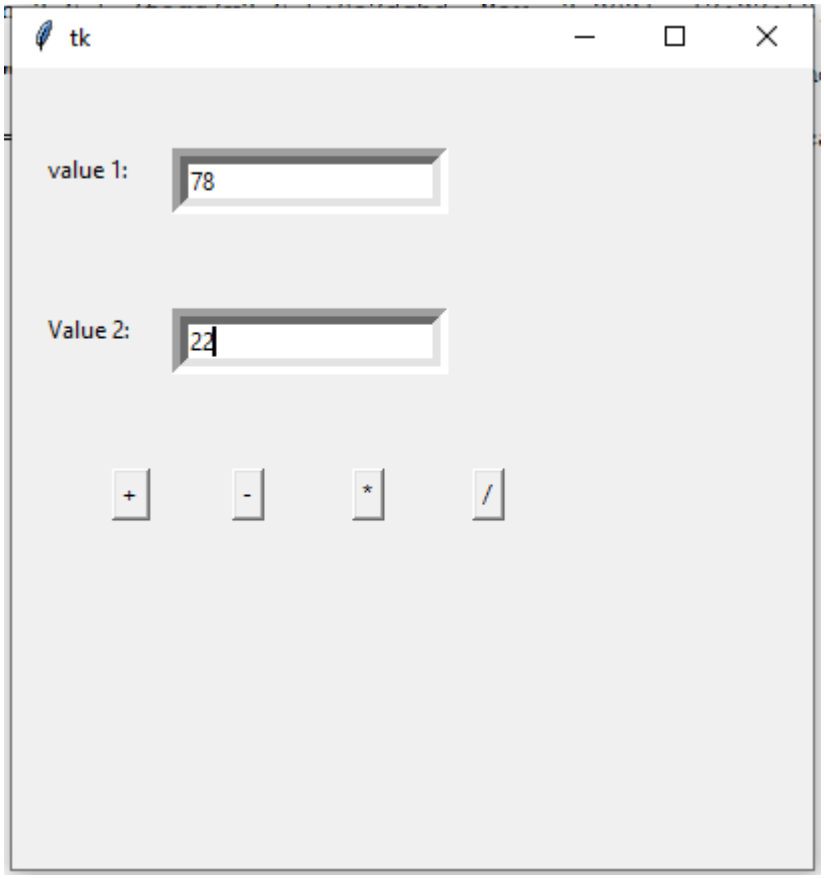
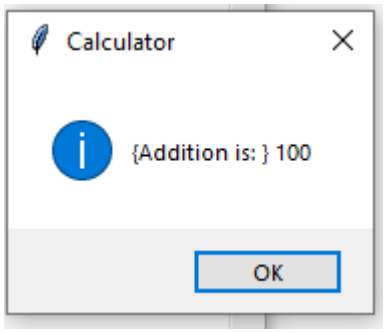
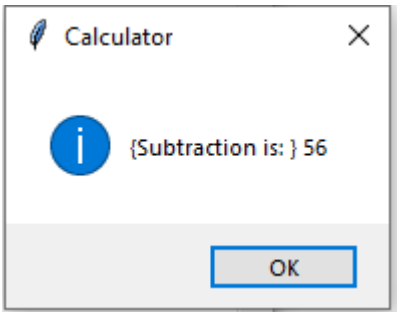
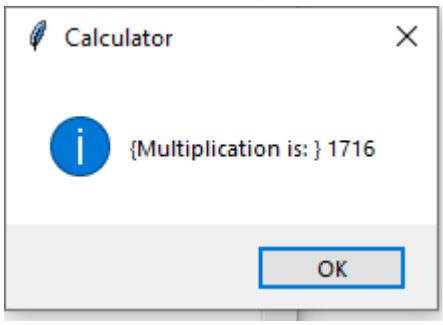
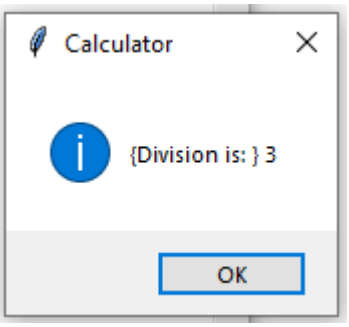
**Div: B  Roll No.:219403  Class: SY.BSc.IT.**



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# 4. Design a biodata form using Python GUI.

biodata.py - C:\Users\aryan\Desktop\219403\biodata.py (3.9.5)

File Edit Format Run Options Window Help

```
from tkinter import*
root=Tk()
root.resizable('false','false')
root.title("Biodata Form")
L9=Label(root,text="**********************************************************************************************************************",f
L9.place(x=120,y=10)
L0=Label(root,text="MULUND COLLEGE OF COMMERCE",fg="magenta",font=('calibari',22,'bold'))
L0.place(x=60,y=20)
L5=Label(root,text="S.N Road Mulund-West Mumbai",fg="blue",font=('calibari',12,'bold'))
L5.place(x=190,y=60)
L9=Label(root,text="**********************************************************************************************************************",
L9.place(x=120,y=85)
L1=Label(root,text="First Name:",font=('calibari',12,'bold'))
L1.place(x=20,y=120)
E1=Entry(root,bd=2,width=50)
E1.place(x=130,y=122)
L2=Label(root,text="Last Name:",font=('calibari',12,'bold'))
L2.place(x=20,y=160)
E2=Entry(root,bd=2,width=50)
E2.place(x=130,y=160)
L4=Label(root,text=" Gender:",font=('calibari',12,'bold'))
L4.place(x=20,y=200)
x=IntVar()
R1=Radiobutton(root,text=" Male" ,variable=x,value=1,font=('calibari',12))
R1.place(x=150,y=200)
R2=Radiobutton(root,text=" Female",variable=x,value=2,font=('calibari',12))
R2.place(x=150,y=240)
L3=Label(root,text=" Age:",font=('calibari', 12, 'bold'))
L3.place(x=40,y=280)
S =Spinbox(root,from_=0,to=100,bd=3,width=15)
S.place(x=130,y=285)
L5=Label(root,text=" Hobbies:",font=('calibari',12,'bold'))
L5.place(x=20,y=320)
a=IntVar()
b=IntVar()
c=IntVar()
d=IntVar()
c1=Checkbutton(root,text=" Singing",font=('calibari',11),variable=a, onvalue=1,offvalue=0)
c1.place(x=130,y=320)
c2=Checkbutton(root,text=" Swimming",font=('calibari',11),variable=b,onvalue=1, offvalue=0)
c2.place(x=260,y=320)
```

biodata.py - C:\Users\aryan\Desktop\219403\biodata.py (3.9.5)

File Edit Format Run Options Window Help

```
L5.place(x=20,y=320)
a=IntVar()
b=IntVar()
c=IntVar()
d=IntVar()
c1=Checkbutton(root,text=" Singing",font=('calibari',11),variable=a, onvalue=1,offvalue=0)
c1.place(x=130,y=320)
c2=Checkbutton(root,text=" Swimming",font=('calibari',11),variable=b,onvalue=1, offvalue=0)
c2.place(x=260,y=320)
c3=Checkbutton(root,text=" Dancing",font=('calibari',11),variable=c,onvalue=1,offvalue=0)
c3.place(x=130,y=360)
c4=Checkbutton(root,text=" Reading",font=('calibari',11),variable=d,onvalue=1,offvalue=0)
c4.place(x=260,y=360)
L7=Label(root,text=" Address:",font=('calibari',12,'bold'))
L7.place(x=20,y=400)
t1=Text(root,height=3,width=37)
t1.insert(INSERT,"")
t1.insert(END,"")
t1.place(x=130,y=410)
L6=Label(root,text="Select your Favourite Programming Subject:",font=('calibari',14,'bold'))
L6.place(x=20,y=480)
a=IntVar()
b=IntVar()
c=IntVar()
d=IntVar()
c1=Checkbutton(root,text=" C",font=('calibari',11),variable=a,onvalue=1,offvalue=0)
c1.place(x=130,y=520)
c2=Checkbutton(root,text=" C++",font=('calibari',11),variable=b,onvalue=1,offvalue=0)
c2.place(x=260,y=520)
c3=Checkbutton(root,text=" Python",font=('calibari',11),variable=c,onvalue=1,offvalue=0)
c3.place(x=130,y=550)
c4=Checkbutton(root,text=" Web Programming",font=('calibari',11),variable=d,onvalue=1,offvalue=0)
c4.place(x=260,y=550)
from tkinter import messagebox
def myfun():
    msg=messagebox.showinfo(" process" , " Thank you! " )
B1=Button(root,text=" Submit",command=myfun,font=('calibari',12,'bold'),bg='cyan',relief=RIDGE)
B1.place(x=300,y=600)
root.geometry("700x700")
root.mainloop()
```

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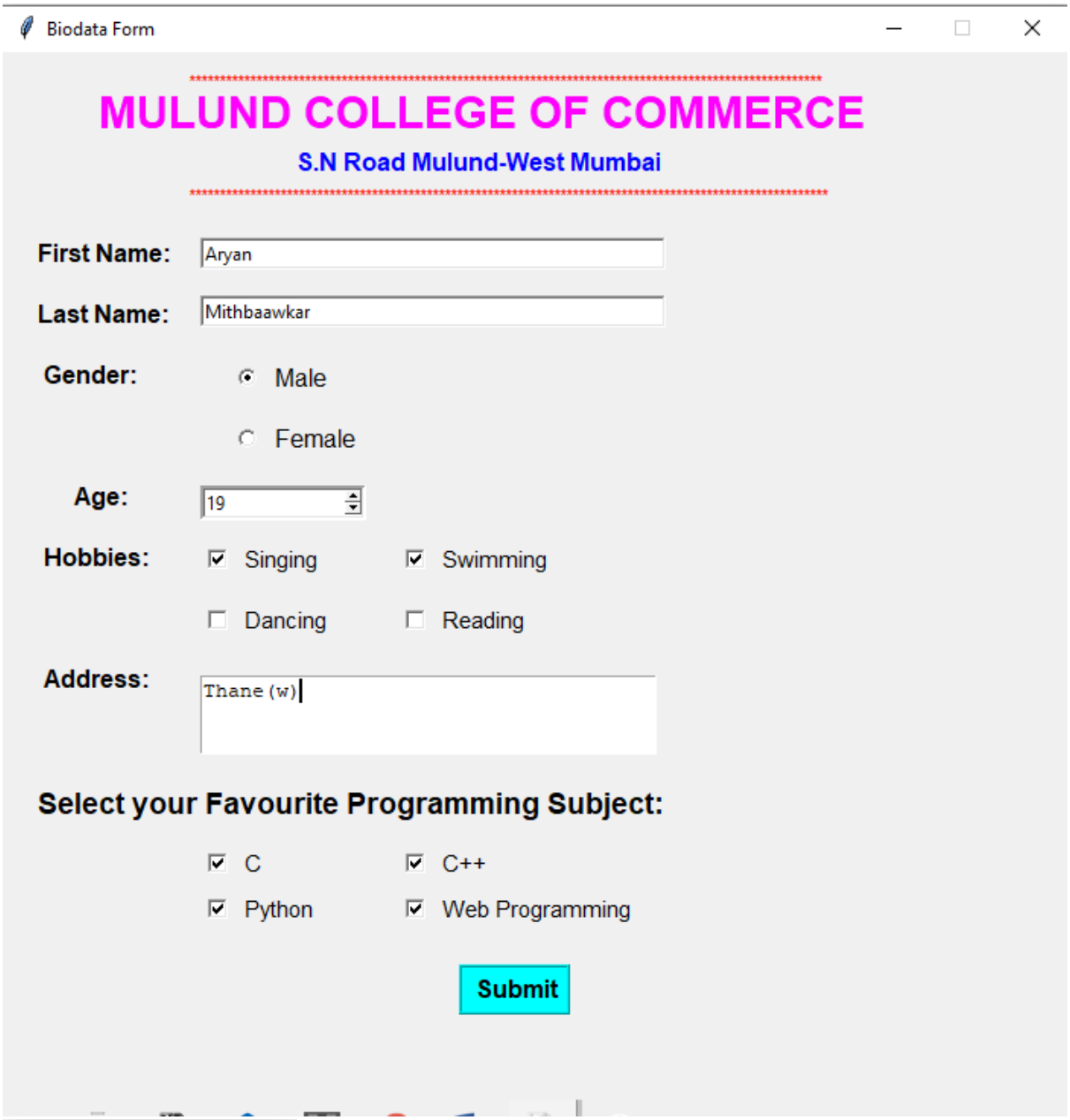


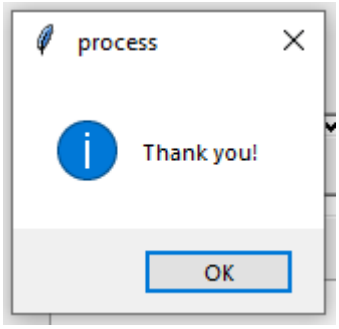

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**Div: B Roll No.:219403 Class: SY.BSc.IT.**

## 5. Design an advanced calculator using Python GUI.

guiadvancedcal2.py - C:\Users\aryan\Desktop\219403\guiadvancedcal2.py (3.9.5)

File Edit Format Run Options Window Help

```
from tkinter import *
top = Tk()
top.resizable("false","false")
top.configure(bg='gold')
top.title("Calculator")
n1=0;
n2=0;
i=0
opr=""
E1= Entry(top,bd=4,font=('calibari',23,'bold'),bg='#CAFF70')
E1.pack(side=RIGHT)
E1.place(x=20,y=80)
top.geometry("390x390")
from tkinter import messagebox
def add():
    global n1
    global opr
    n1=int(E1.get())
    opr="+"
    E1.delete(0,END)
B1=Button(top,text=" + ",relief=RIDGE,bd=2,command=add,padx=20,
          bg='#00ffff',font=('calibari',15,'bold'))
B1.place(x=20,y=160)
def sub():
    global n1
    global opr
    n1=int(E1.get())
    opr="-"
    E1.delete(0,END)
B2=Button(top,text=" - ",relief=RIDGE,
          bd=2,command=sub,padx=22,bg='#00ffff',font=('calibari',15,'bold'))
B2.place(x=110,y=160)
def mul():
    global n1
    global opr
    n1=int(E1.get())
    opr="*"
    E1.delete(0,END)
B3=Button(top,text=" * ",relief=RIDGE,
          bd=2,command=mul,padx=22,bg='#00ffff',font=('calibari',15,'bold'))
B3.place(x=200,y=160)
```

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guiadvancedcal2.py - C:\Users\aryan\Desktop\219403\guiadvancedcal2.py (3.9.5)

File Edit Format Run Options Window Help

```
B3=Button(top,text=" * ",relief=RIDGE,
          bd=2,command=mul,padx=22,bg='#00ffff',font=('calibari',15,'bold'))
B3.place(x=200,y=160)
def div():
    global n1
    global opr
    n1=int(E1.get())
    opr="/"
    E1.delete(0,END)
B4=Button(top,text=" / ",relief=RIDGE,bd=2,command=div,padx=23,
          bg='#00ffff',font=('calibari',15,'bold'))
B4.place(x=290,y=160)
def one(t):
    global i
    E1.insert(i,t)
    i=i+1
def clear():
    E1.delete(0,END)
def equal():
    n2=int(E1.get())
    if opr=="+":
        n=n1+n2
    if opr=="-":
        n=n1-n2
    if opr=="*":
        n=n1*n2
    if opr=="/":
        n=n1/n2
    E1.delete(0,END)
    E1.insert(0,str(n))
B5=Button(top,text=" 1 ",relief=RIDGE,bd=2,command=lambda t='1':one(t),
          padx=22,fg='gold',bg='black',font=('calibari',15,'bold'))
B5.place(x=20,y=215)
B6=Button(top,text=" 2 ",relief=RIDGE,bd=2,command=lambda t='2':one(t),
          padx=22,fg='gold',bg='black',font=('calibari',15,'bold'))
B6.place(x=110,y=215)
B7=Button(top,text=" 3 ",relief=RIDGE,bd=2,padx=22,command=lambda t='3':one(t),
          fg='gold',bg='black',font=('calibari',15,'bold'))
B7.place(x=200,y=215)
B8=Button(top,text=" 4 ",relief=RIDGE,bd=2,padx=22,command=lambda t='4':one(t),
          fg='gold',bg='black',font=('calibari',15,'bold'))
```

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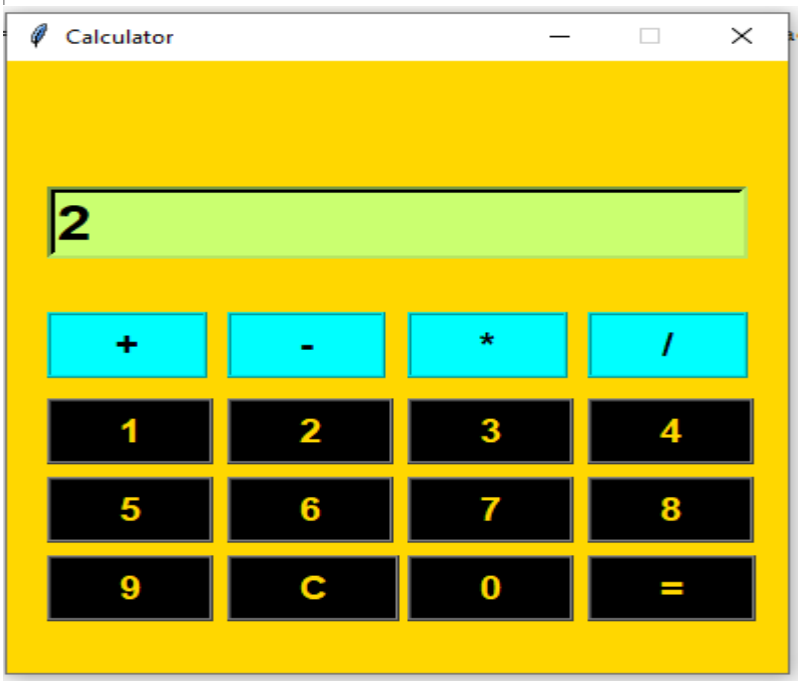
guiadvancedcal2.py - C:\Users\aryan\Desktop\219403\guiadvancedcal2.py (3.9.5)

File Edit Format Run Options Window Help

```
    E1.delete(0,END)
    E1.insert(0,str(n))
B5=Button(top,text=" 1 ",relief=RIDGE,bd=2,command=lambda t='1':one(t),
          padx=22,fg='gold',bg='black',font=('calibari',15,'bold'))
B5.place(x=20,y=215)
B6=Button(top,text=" 2 ",relief=RIDGE,bd=2,command=lambda t='2':one(t),
          padx=22,fg='gold',bg='black',font=('calibari',15,'bold'))
B6.place(x=110,y=215)
B7=Button(top,text=" 3 ",relief=RIDGE,bd=2,padx=22,command=lambda t='3':one(t),
          fg='gold',bg='black',font=('calibari',15,'bold'))
B7.place(x=200,y=215)
B8=Button(top,text=" 4 ",relief=RIDGE,bd=2,padx=22,command=lambda t='4':one(t),
          fg='gold',bg='black',font=('calibari',15,'bold'))
B8.place(x=290,y=215)
B9=Button(top,text=" 5 ",relief=RIDGE,bd=2,padx=22,command=lambda t='5':one(t),
          fg='gold',bg='black',font=('calibari',15,'bold'))
B9.place(x=20,y=265)
B10=Button(top,text=" 6 ",relief=RIDGE,bd=2,padx=22,command=lambda t='6':one(t),
           fg='gold',bg='black',font=('calibari',15,'bold'))
B10.place(x=110,y=265)
B11=Button(top,text=" 7 ",relief=RIDGE,bd=2,padx=22,command=lambda t='7':one(t),
           fg='gold',bg='black',font=('calibari',15,'bold'))
B11.place(x=200,y=265)
B12=Button(top,text=" 8 ",relief=RIDGE,bd=2,command=lambda t='8':one(t),
           padx=22,fg='gold',bg='black',font=('calibari',15,'bold'))
B12.place(x=290,y=265)
B13=Button(top,text=" 9 ",relief=RIDGE,bd=2,command=lambda t='9':one(t),
           padx=22,fg='gold',bg='black',font=('calibari',15,'bold'))
B13.place(x=20,y=315)
B14=Button(top,text=" C ",relief=RIDGE,bd=2,command=clear,
           padx=22,fg='gold',bg='black',font=('calibari',15,'bold'))
B14.place(x=110,y=315)
B15=Button(top,text=" 0 ",relief=RIDGE,bd=2,command=lambda t='0':one(t),
           padx=22,fg='gold',bg='black',font=('calibari',15,'bold'))
B15.place(x=200,y=315)
B16=Button(top,text=" = ",relief=RIDGE,bd=2,command=equal,
           padx=22,fg='gold',bg='black',font=('calibari',15,'bold'))
B16.place(x=290,y=315)

top.mainloop()
```



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