1.Area and perimeter program:

def acircle(r):

return 3.14\*r\*r

def pcircle(r):

return 3.14\*2\*r

def arectangle(l,b):

return l\*b

def prectangle(l,b):

return 2\*(l+b)

def atriangle(b,h):

return 0.5\*b\*h

def ptriangle(b,s1,s2):

return b+s1+s2

while(1):

print("1.Area and Perimeter of Circle\n2.Area and Perimeter of rectangle\n3.Area and Perimeter triangle\n4.exit")

choice=int(input("Enter your choice:"))

if choice==1:

radius=float(input("Enter Radius:"))

print("Area of circle :",acircle(radius))

print("Perimeter of circle:",pcircle(radius))

elif choice==2:

length=float(input("Enter length of rectangle:"))

breadth=float(input("Enter breadth of rectangle:"))

print("Area of rectangle is:",arectangle(length,breadth))

print("Perimeter of rectangle :",prectangle(length,breadth))

elif choice==3:

base=float(input("Enter base of triangle:"))

height=float(input("Enter height of triangle:"))

print("Area of triangle:",atriangle(base,height))

side1=float(input("Enter side1 of triangle:"))

side2=float(input("Enter side2 of triangle:"))

print("Perimeter of triangle is:",ptriangle(base,side1,side2))

elif choice==4:

break

else:

print("Invalid Choice")

2.Sum of n natural no:

sum1=0

i=1

n=int(input("Enter size:"))

print("Natural numbers are:")

while(i<=n):

print(i,end=" ")

sum1+=i;

i+=1;

print("\nthe sum is",sum1)

3.Quadratic Equation program:

import math

a = int(input('Enter value for a :'))

b = int(input('Enter value for b :'))

c = int(input('Enter value for c :'))

if a == 0:

print("a cannot be zero")

else:

d = b\*\*2 - 4 \* a \* c

root = math.sqrt(abs(d))

if d > 0:

print("Two Real Roots")

print((-b + root)/(2 \* a))

print((-b - root)/(2 \* a))

elif d == 0:

print("Roots are equal")

print(-b / (2\*a))

else:

print("No Real Root")

print(- b / (2\*a) , " + i", root)

print(- b / (2\*a) , " - i", root)

4.2nd largest:

nums=[ ]

print("Enter 10 elements for list:")

for i in range(10):

nums.append(int(input()))

large=nums[0]

for i in range(10):

if large<nums[i]:

large=nums[i]

secondLarge=nums[0]

for i in range(10):

if secondLarge<nums[i]:

if nums[i]!=large:

secondLarge=nums[i]

print("\nSecond Largest Number is:")

print(secondLarge)

5.Sum of series:

n = int(input("Enter the value of n: "))

sum = 1

for i in range(1,n + 1) :

fact = 1

for j in range(1, i+1) :

fact \*= j

term = 1 / fact

sum +=term

print("Sum =", sum)

6.Arithmetic operators program:

def add(num1,num2):

return num1+num2

def sub(num1,num2):

return num1-num2

def mul(num1,num2):

return num1\*num2

def div(num1,num2):

return num1/num2

while(1):

print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*")

print(" 1.Additon\n 2.Substraction\n 3.Multiplication\n 4.Division\n 5.Exit")

print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*")

choice=int(input("Enter your choice:"))

if choice==1:

a=float(input("Enter First number:"))

b=float(input("Enter second number"))

print("The Adittion of given number is : ",add(a,b))

elif choice==2:

a=float(input("Enter First number:"))

b=float(input("Enter second number"))

print("The Difference of given number is : ",sub(a,b))

elif choice==3:

a=float(input("Enter First number:"))

b=float(input("Enter second number"))

print("The Multiplication of given number is : ",mul(a,b))

elif choice==4:

a=float(input("Enter First number:"))

b=float(input("Enter second number"))

print("The Division of given number is : ",div(a,b))

elif choice==5:

break

else:

print("Invalid Choice")

**OR**

def add(a, b):

return a+b

def sub(a, b):

return a-b

def mul(a, b):

return a\*b

def div(a, b):

return a/b

print("Enter Two Numbers: ", end="")

nOne = int(input())

nTwo = int(input())

print("Enter the Operator (+,-,\*,/): ", end="")

ch = input()

if ch=='+':

print("\n" +str(nOne)+ " + " +str(nTwo)+ " = " +str(add(nOne, nTwo)))

elif ch=='-':

print("\n" +str(nOne)+ " - " +str(nTwo)+ " = " +str(sub(nOne, nTwo)))

elif ch=='\*':

print("\n" +str(nOne)+ " \* " +str(nTwo)+ " = " +str(mul(nOne, nTwo)))

elif ch=='/':

print("\n" +str(nOne)+ " / " +str(nTwo)+ " = " +str(div(nOne, nTwo)))

else:

print("\nInvalid Operator!")

7.List operation program:

lst=[ ]

n=int(input("Enter size:"))

for i in range(n):

lst.append(int(input("Enter the element:")))

print("Original list is:",lst)

while(1):

print("\n1.Insert\n2.Remove\n3.Append\n4.Length\n5.Pop\n6.Clear")

ch=int(input("Enter your choice:"))

if ch==1:

ele=int(input("Enter a number to insert into the list:"))

index=int(input("Enter index value:"))

lst.insert(index,ele)

print("After insertion:",lst)

elif ch==2:

ele=int(input("Enter a value to delete:"))

if ele in lst:

lst.remove(ele)

print("list after deletion of elements:",lst)

else:

print("element not found in the lits.")

elif ch==3:

ele=int(input("Enter a value to append:"))

lst.append(ele)

print("List after appending:",lst)

elif ch==4:

print("Length of the list is",len(lst))

elif ch==5:

ele=lst.pop()

print("The popped element is",ele)

print("List after popping:",lst)

elif ch==6:

lst.clear()

print("The list is empty!!",lst)

elif ch==7:

break

else:

print("Invalid choice..!!")

8.String operations program:

ch=0

while(1):

print("\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_")

print("MENU DRIVEN PROGRAM")

print("\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_")

print("1.Create and Concatenate the string:")

print("2.Access the substring:")

print("3.Length of the string:")

print("4.Indexing:")

print("5.Comparison of strings:")

print("6.Exit.")

ch=int(input("Enter your choice:"))

if ch==1:

str1=input("Enter first string:")

print(str1)

str2=input("Enter second string:")

print(str2)

str=str1+str2

print("The concatenated string is:",str)

elif ch==2:

start=int(input("Enter the starting index:"))

stop=int(input("Enter the ending index:"))

step=int(input("Enter the step value:"))

str3=slice(start,stop,step)

print("After slicing:",str1[str3])

elif ch==3:

print("Length of the string is:",len(str))

elif ch==4:

x=input("Enter a character in string")

if x in str:

print("The index value of the character is:",str.index(x))

else:

print("character not found!")

elif ch==5:

if str1==str2:

print("The strings are equal.")

elif str1<str2:

print("str1 is less than str2")

else:

print("str1 is greater than str2")

elif ch==6:

break

else:

print("Invalid choice..!!")