**CO 2**

**program 1**

**Program to find the factorial of a number**

n=int(input("enter the number="))

f=1

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

f=f\*i

print("Factorial of",n,"=",f)

**Output**

enter the number5

Factorial of 5 = 120

**Program 2**

**Generate Fibonacci series of N terms**

n=int(input("Enter the number="))

x=0

y=1

s=0

count=1

print("Fibanocci=",end=" ")

while(count<=n):

print(s,end=" ")

count+=1

x=y

y=s

s=x+y

**Output**

Enter the number=5

Fibanocci= 0 1 1 2 3

**Program 3**

**Find the sum of all items in a list**

lst=[2,5,6,7,3]

t=sum(lst)

print("Sum of list=",t)

**Output**

Sum of list= 23

**Program 4**

**Generate a list of four digit numbers in a given range with all their digits even and the number is a perfect square.**

from math import sqrt as s

for i in range(1000,10000):

if(s(i)==int(s(i))and(i%2==0)):

print(i,end=" ")

**Output**

1024 1156 1296 1444 1600 1764 1936 2116 2304 2500 2704 2916 3136 3364 3600 3844 4096 4356 4624 4900 5184 5476 5776 6084 6400 6724 7056 7396 7744 8100 8464 8836 9216 9604

**program 5**

**Display the given pyramid with step number accepted from user.**

n=int(input("enter the number="))

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

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

print(i\*j,end=" ")

print()

**Output**

enter the number=3

1

2 4

3 6 9

**Program 6**

**Count the number of characters (character frequency) in a string.**

tstr=str(input("Enter the string : "))

freq = {}

for i in tstr:

if i in freq:

freq[i] += 1

else:

freq[i] = 1

print ("Count all characters : "+ str(freq))

**Output**

Enter the string : python

Count all characters : {'p': 1, 'y': 1, 't': 1, 'h': 1, 'o': 1, 'n': 1}

**Program 7**

**Add ‘ing’ at the end of a given string. If it already ends with ‘ing’, then add ‘ly’**

str=input("enter a string:")

print("inputed string is:",str)

if(str.endswith("ing")):

str=str+'ly'

else:

str=str+'ing'

print("the formated string is:",str)

**output**

enter a string:programing

inputed string is: programing

the formated string is: programingly

**program 8**

**Accept a list of words and return length of longest word.**

a=[]

n= int(input("Enter the number :"))

for i in range(0,n):

el=input("Enter element :"+ str(i+1) )

a.append(el)

max1=len(a[0])

temp=a[0]

for x in a:

if(len(x)>max1):

max1=len(i)

temp=i

print("Longest Word:",temp)

print("Length of longest word :",max1)

**Output**

Enter the number :2

Enter element 1programming

Enter element 2python

Longest Word: programming

Length of longest word : 11

**program 9**

**Construct following pattern using nested loop**

n=int(input("enter the number="))

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

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

print("\*",end=" ")

print()

for i in range(n-1,0,-1):

for j in range(i):

print("\*",end=" ")

print()

**Output**

**\***

**\* \***

**\* \* \***

**\* \* \* \***

**\* \* \***

**\* \***

**\***

**Program 10**

**Generate all factors of a number. def print\_factors(x):**

def factors(n):

print("The factors of",n,"are:")

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

if(n%i==0):

print(i)

n=int(input("Enter a number:"))

factors(n)

**Output**

Enter a number:16

The factors of 16 are:

1

2

4

8

16

**Program 11**

**Write lambda functions to find area of square, rectangle and triangle.**

import math

ta = lambda b,h:1/2\*b\*h

ra = lambda l,b:l\*b

sa = lambda a:a\*a

print("Triangle Area:",ta(10,20))

print("Rectangle Area:",ra(30,20))

print("Square Area :",sa(15))

**Output**

Triangle Area: 100.0

Rectangle Area: 600

Square Area : 225