**CO2 Programs**

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

n=int(input('enter a no:'))

f=1

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

f=f\*i

print('factorial of',n,'=',f)

**Output**

enter a no:5

factorial of 5 = 120

**2. Generate a Fibonacci series of N terms.**

n=int(input("enter the limit:"))

a=0

b=1

sum=0

count=1

print("fibonacci series:",end="")

while(count<=n):

print(sum,end="")

count+=1

a=b

b=sum

sum=a+b

**Output**

enter the limit:5

fibonacci series:01123

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

list1=[10,15,20,25,30]

total=sum(list1)

print("sum of list:",total)

**Output**

Sum of list:100

**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

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

rows = int(input("Enter the number of rows: "))

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

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

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

print()

**Output**

Enter the number of rows: 4

1

2 4

3 6 9

4 8 12 16

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

test\_str=str(input("enter the string:"))

freq={}

for i in test\_str:

if i in freq:

freq[i]+=1

else:

freq[i]=1

print("count of all characters:"+ str(freq))

**Output**

enter the string:malayalam

count of all characters:{'m': 2, 'a': 4, 'l': 2, 'y': 1}

**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 formatted string is:",str)

**Output**

enter a string:play

inputed string is: play

the formatted string is: playing

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

a=[]

n=int(input("enter the no of elements in list:"))

for x in range(0,n):

element=input("enter element"+str(x+1))

a.append(element)

max1=len(a[0])

temp=a[0]

for i in a:

if(len(i)>max1):

max1=len(i)

temp=i

print("longest word:",temp)

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

**Output**

enter the no of elements in list:2

enter element1python

enter element2programming

longest word: programming

length of longest word: 11

**9. Construct following pattern using nested loop.**

n=int(input("enter the limit:"))

for i in range(n):

for j in range(i):

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

print('')

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

for j in range(i):

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

print('')

**Output**

enter the limit:4

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

def factors(x):

print("the factors of",x,"are:")

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

if x%i==0:

print(i)

n=int(input("enter a no:"))

factors(n)

**Output**

enter a no:15

the factors of 15 are:

1

3

5

15

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

import math

t\_area = lambda b,h : 1/2\*b\*h

r\_area = lambda l,b : l\*b

s\_area = lambda a : a\*a

print("Area of Triangle :", t\_area(10,20))

print("Area of Rectangle:", r\_area(30,20))

print("Area of Square :", s\_area(15))

**Output:**

print(“Area of Triangle:”,t\_area(10,20))

print(“Area of Rectangle:”,r\_area(30,20))

print(“Area of Square:”,s\_area(15))