**Program 1**

Program to find the factorial of a number

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

f=1

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

f=f\*i

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

**output**

enter the eleme enter the element4

factorial of 4 = 24

**program 2**

Generate Fibonacci series of N terms

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

a=0

b=1

sum=0

count=1

print("fib is:", end=" ")

while(count<n):

print(sum,end=" ")

count+=1

a=b

b=sum

sum=a+b

**output**

enter the limit5

fib is: 0 1 1 2

**program 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

**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

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

**Program 7**

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

str=(input("enter the string"))

print("input string:",str)

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

str=str='ly'

else:

str=str+'ing'

print("the result string is",str)

**output**

enter the string finish

input string: finish

the result string is finishing

**program 8**

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

a=[]

n=int(input("Enter the number 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 number of elements in list:2

Enter element 1 sana

Enter element 2python

Longest Word: python

Length of longest word :6

**Program 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

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \*

\* \*

\*

Program 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 number:"))

factors(n)

output

Enter a number:3

The factors of 3 are:

1

3

Program 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

Area of Triangle : 100.0

Area of Rectangle: 600

Area of Square : 225