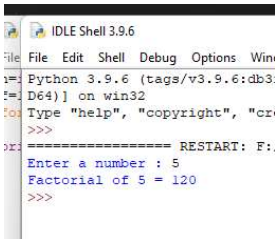
CO 2 PROGRAMS

:Program 1

Program to find the factorial of a number

```
n=int(input('Enter a number : '))
f=1
for i in range(1,n+1):
    f=f*i
print ('Factorial of',n, '=',f)
```

OUTPUT:

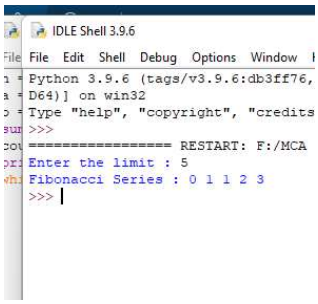


:Program 2

Generate 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:

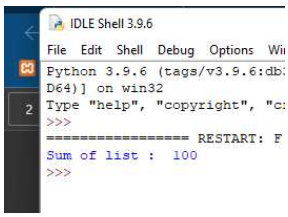


:Program 3

Find the sum of all items in a list

```
list1 = [10, 15, 20, 25, 30]
total = sum(list1)
print("Sum of list : ",total)
```

OUTPUT:

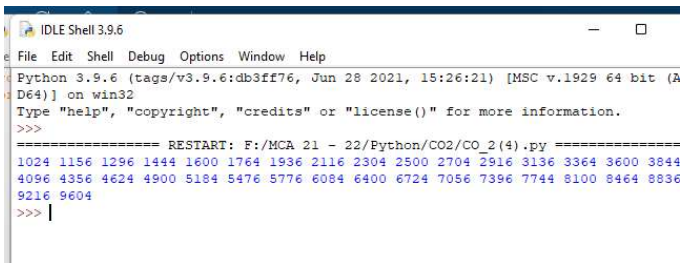


:Program 4

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:

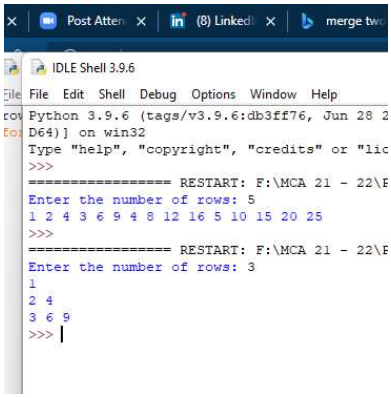


:Program 5

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:



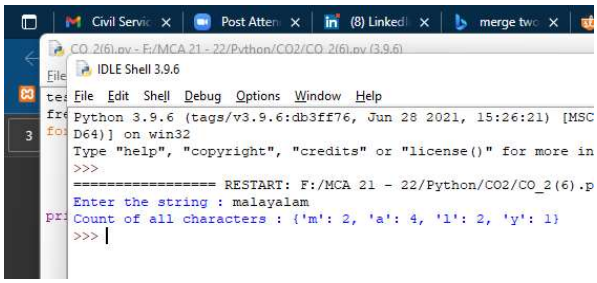
:Program 6

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:

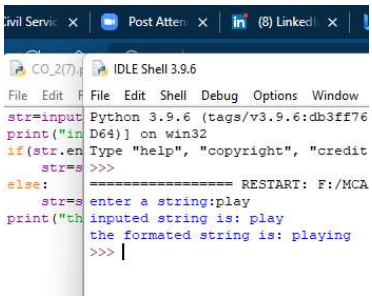


:Program 7

Add‘ing’attheendofagivenstring.Ifitalreadyendswith‘ing’,thenadd‘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:

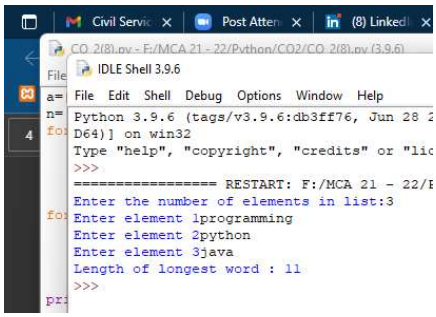


:Program 8

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:

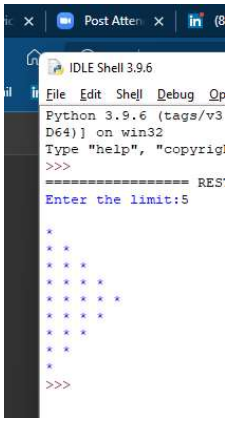


:Program 9

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:

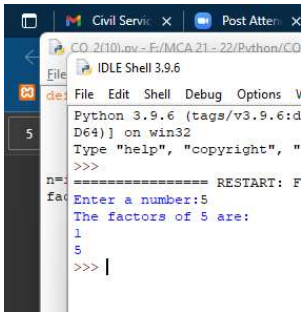


:Program 10

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:



: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: