

Co2

1)Program to find the factorial of a number?

Ans:

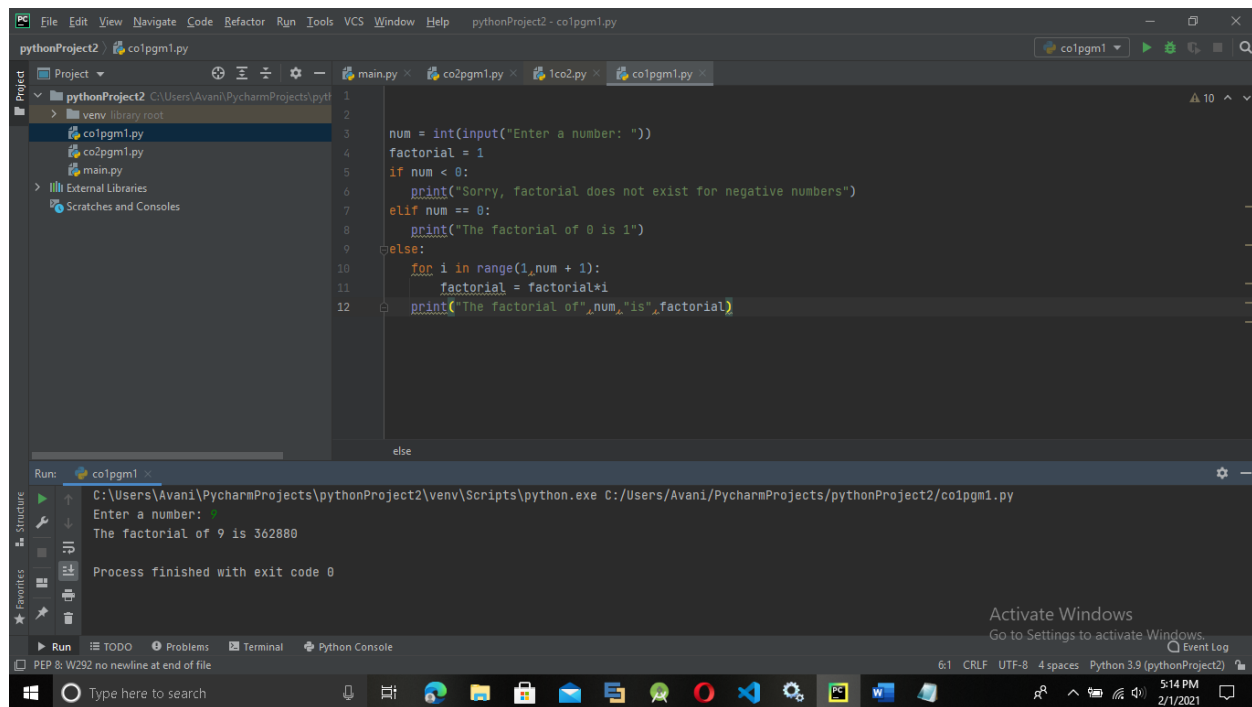
```
num = int(input("Enter a number: "))
factorial = 1
if num < 0:
    print("Sorry, factorial does not exist for negative numbers")
elif num == 0:
    print("The factorial of 0 is 1")
else:
    for i in range(1,num + 1):
        factorial = factorial*i
    print("The factorial of",num,"is",factorial)
```

Output

Enter a number: 9

The factorial of 9 is 362880

Process finished with exit code 0



2)Generate Fibonacci series of N terms?

Ans:

```
nterms = int(input("How many terms? "))
```

```
n1, n2 = 0, 1
```

```
count = 0
```

```
if nterms <= 0:
```

```
    print("Please enter a positive integer")
```

```
elif nterms == 1:
```

```
    print("Fibonacci sequence upto",nterms,":")
```

```
    print(n1)
```

```
else:
```

```
    print("Fibonacci sequence:")
```

```
    while count < nterms:
```

```
        print(n1)
```

```
        nth = n1 + n2
```

n1 = n2

n2 = nth

count += 1

OUTPUT

How many terms? 5

Fibonacci sequence:

0

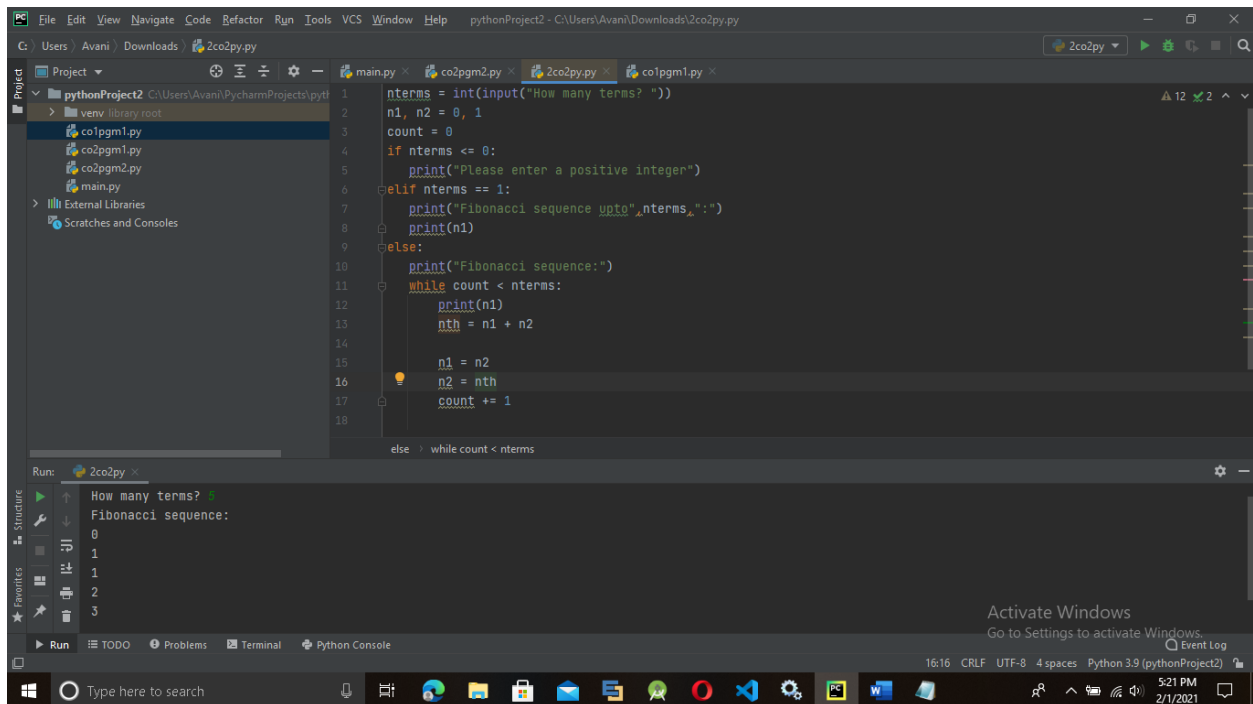
1

1

2

3

Process finished with exit code 0



```
File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject2 - C:\Users\Avani\Downloads\2co2py.py
G:\Users\Avani\Downloads\2co2py.py
Project
  pythonProject2 C:\Users\Avani\PycharmProjects\pyth
    venv library root
    co1pgm1.py
    co2pgm1.py
    co2pgm2.py
    main.py
  External Libraries
  Scratches and Consoles
Run: 2co2py
How many terms? 5
Fibonacci sequence:
0
1
1
2
3
Activate Windows
Go to Settings to activate Windows.
16:16 CRLF UTF-8 4 spaces Python 3.9 (pythonProject2)
```

3)Find the sum of all items in a list?

Ans:

```
lst = []  
num = int(input('How many numbers: '))  
for n in range(num):  
    numbers = int(input('Enter number '))  
    lst.append(numbers)  
print("Sum of elements in given list is :", sum(lst))
```

OUTPUT

How many numbers: 5

Enter number 4

Enter number 2

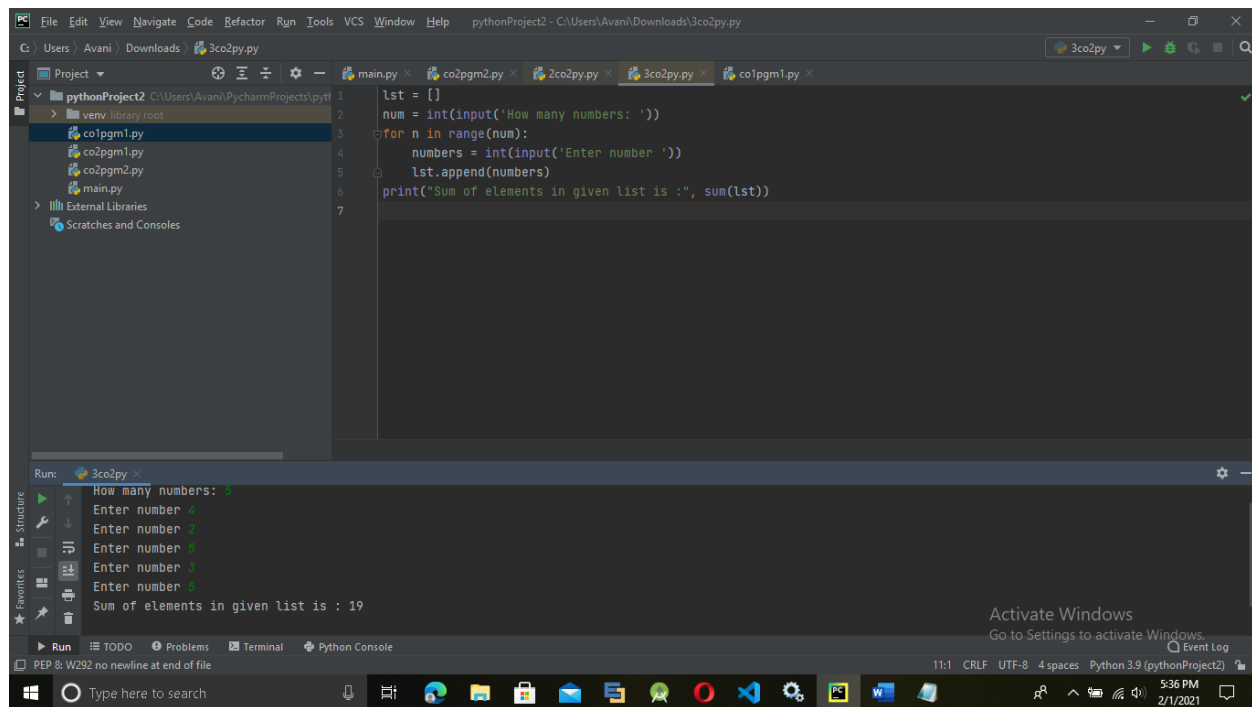
Enter number 5

Enter number 3

Enter number 5

Sum of elements in given list is : 19

Process finished with exit code 0



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

Ans:

def call():

 n = 0

 for x in range(1000,10000):

 num=str(x)

 number=int(x)

 first = int(num[0])

 second = int(num[1])

 third = int(num[2])

 fourth = int(num[3])

 if first%2==0:

 if second%2==0:

```

if third%2==0:

    if fourth%2==0:

        for i in range(2,number):

            if i*i==number:

                print(number)

```

OUTPUT

```
>>> call()
```

4624

6084

6400

8464

```

IDLE Shell 3.9.1
File Edit Shell Debug Options Window Help
Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\Avani\Downloads\4.number-even-digits-and -perfect-square.py =
>>> call()
4624
6084
6400
8464
>>>

```

Activate Windows
Go to Settings to activate Windows.

Ln: 10 Col: 4

5) Display the given pyramid with step number accepted from user?

Eg: N=4

1

2 4

3 6 9

4 8 12 16

Ans:

def pyr():

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

```
    i=1
```

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

```
        j=1
```

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

```
            temp=i*j;
```

```
            print(temp,end=" ")
```

```
        print("")
```

OUTPUT

pyr()

Enter the number : 5

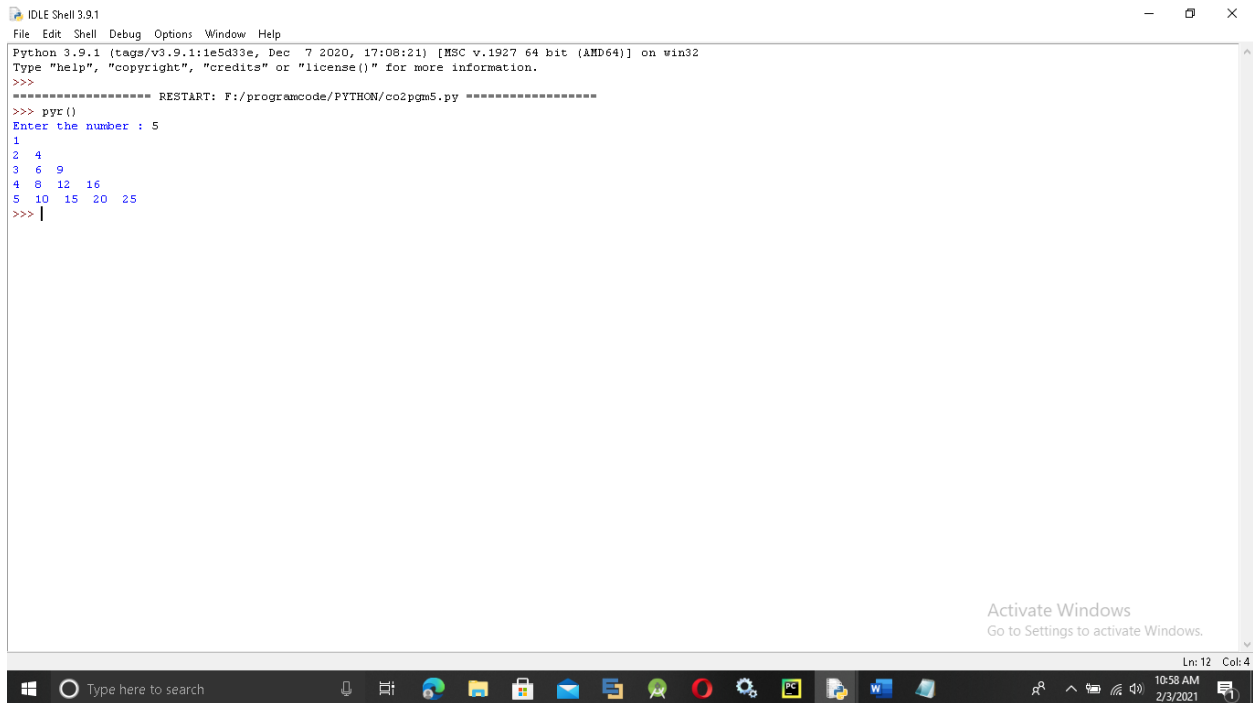
1

2 4

3 6 9

4 8 12 16

5 10 15 20 25



```
File Edit Shell Debug Options Window Help
Python 3.9.1 (tags/v3.9.1:1e5d33e, Dec 7 2020, 17:08:21) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: F:/programcode/PYTHON/co2pgm5.py =====
>>> pyr()
Enter the number : 5
1
2 4
3 6 9
4 8 12 16
5 10 15 20 25
>>>
```

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

Ans:

```
test_str = "hai avani how are you"
```

```
count = 0
```

```
for i in test_str:
```

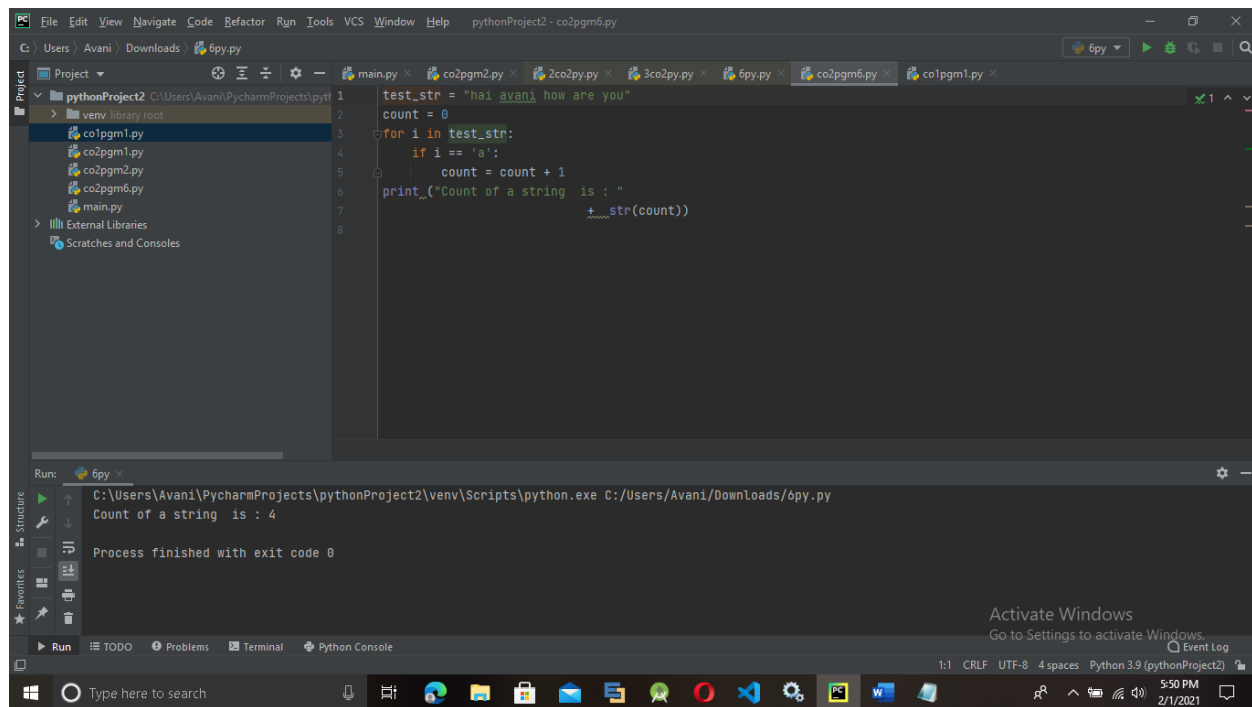
```
    if i == 'a':
```

```
        count = count + 1
```

```
print ("Count of a string is : " + str(count))
```

OUTPUT

Count of a string is:4



7) Add 'ing' at the end of a given string. If it already ends with 'ing', then add 'ly'?

Ans:

```
def add_string(str1):
```

```
    length = len(str1)
```

```
    if length > 2:
```

```
        if str1[-3:] == 'ing':
```

```
            str1 += 'ly'
```

```
        else:
```

```
            str1 += 'ing'
```

```
    return str1
```

```
print(add_string('av'))
```

```
print(add_string('ava'))
```

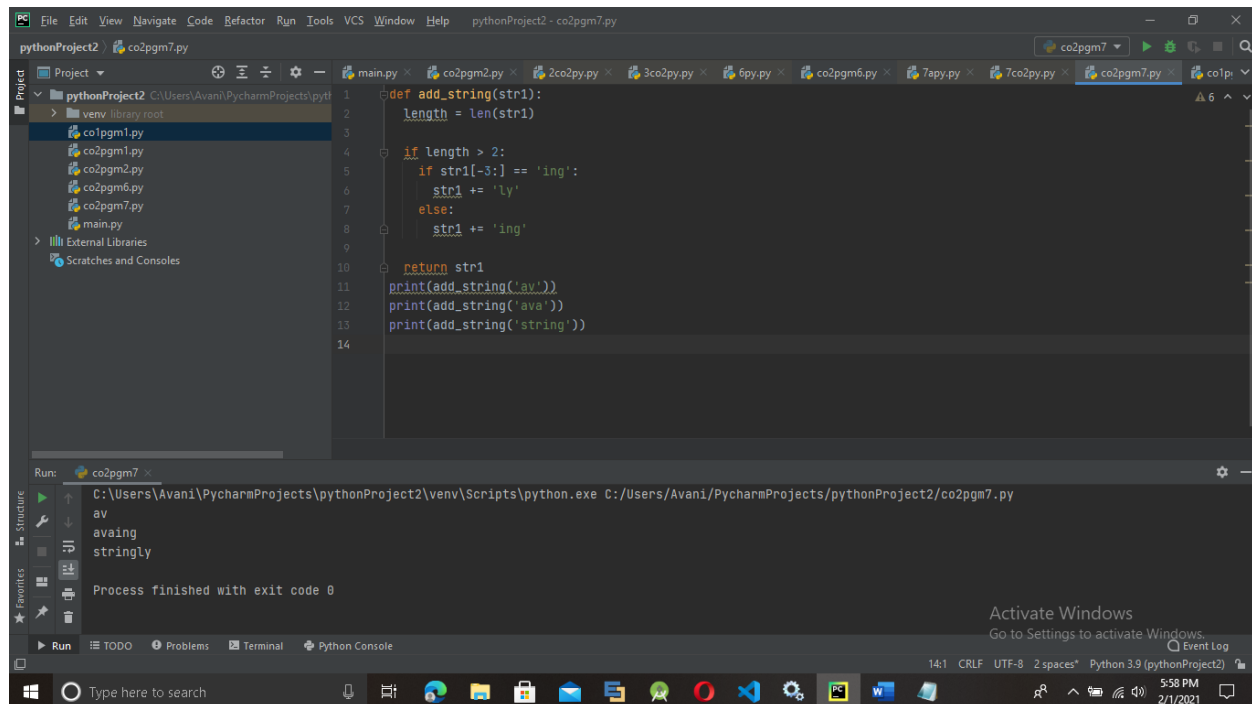
```
print(add_string('string'))
```

OUTPUT

av

avaing

stringly



The screenshot shows the PyCharm IDE interface. The main editor window displays a Python script named `co2pgm7.py`. The script defines a function `add_string(str1)` that appends 'ing' to the end of a string if its length is greater than 2. The function is called with the inputs 'av', 'ava', and 'string'. The output window at the bottom shows the results of these calls: 'av', 'avaing', and 'stringly'. The process finished with exit code 0.

```
def add_string(str1):
    length = len(str1)
    if length > 2:
        if str1[-3:] == 'ing':
            str1 += 'ly'
        else:
            str1 += 'ing'
    return str1
print(add_string('av'))
print(add_string('ava'))
print(add_string('string'))
```

Run: co2pgm7

C:\Users\Avani\PycharmProjects\pythonProject2\venv\Scripts\python.exe C:/Users/Avani/PycharmProjects/pythonProject2/co2pgm7.py

av
avaing
stringly

Process finished with exit code 0

8)Accept a list of words and return length of longest word?

Ans:

```
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("The word with the longest length is:")
print(temp)
```

OUTPUT

Enter the number of elements in list:4

Enter element1:apple

Enter element2:avani p a

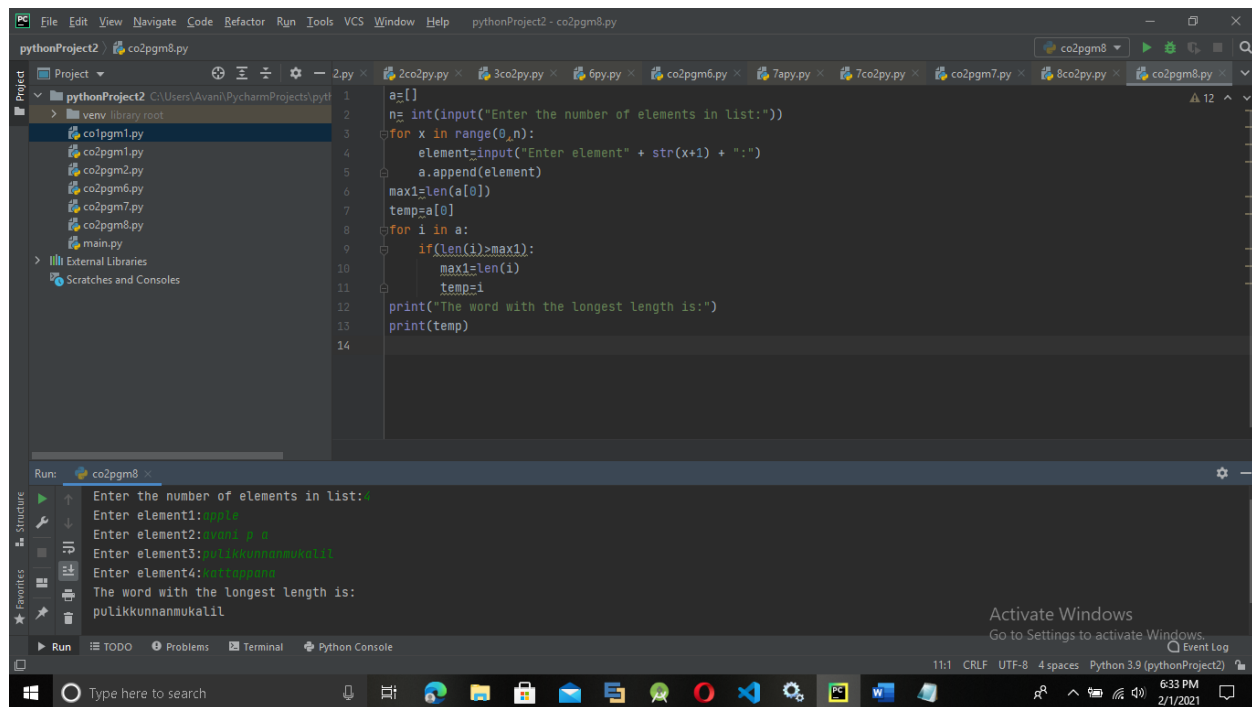
Enter element3:pulikkunnanmukalil

Enter element4:kattappana

The word with the longest length is:

pulikkunnanmukalil

Process finished with exit code 0



9)Construct following pattern using nested loop?

```

*
**
***
****
*****
*****
****
***
**
*

```

Ans:

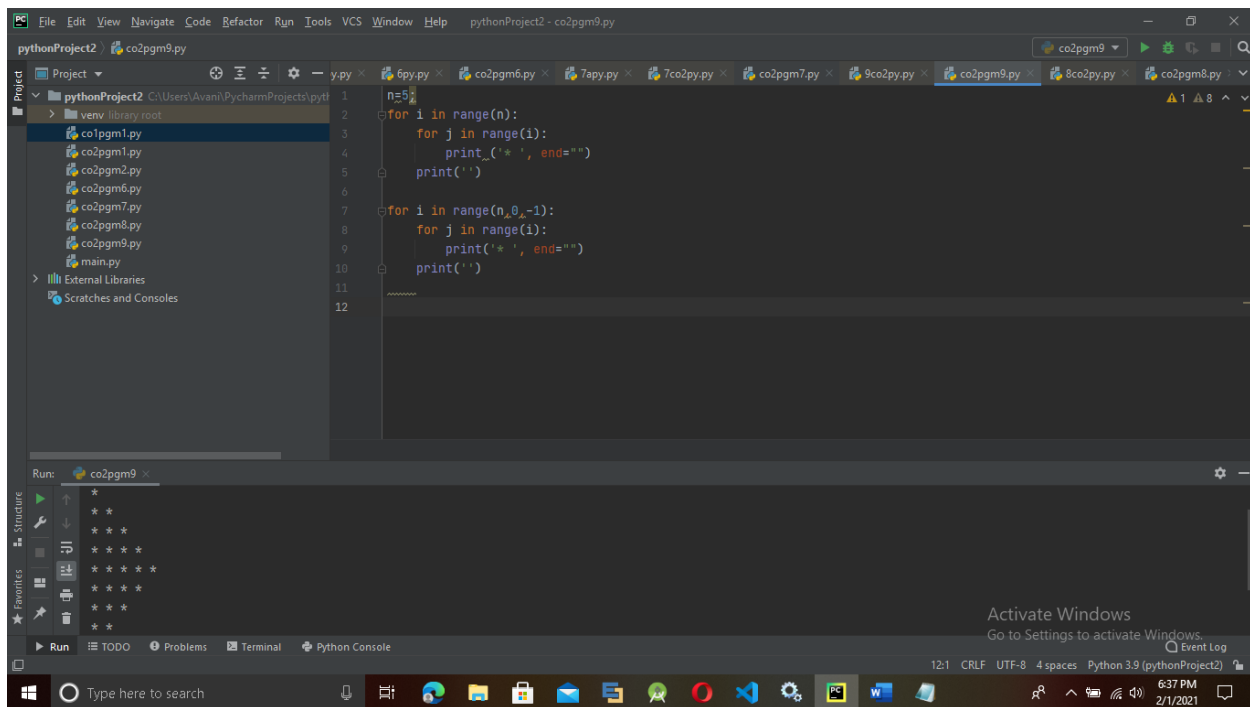
```
n=5;
for i in range(n):
    for j in range(i):
        print('*', end='')
    print("")
```

```
for i in range(n,0,-1):
    for j in range(i):
        print('*', end='')
    print("")
```

OUTPUT

```
*
* *
* * *
* * * *
* * * * *
* * * * *
* * * *
* * *
* *
*
```

Process finished with exit code 0



10)Generate all factors of numbers of a number?

Ans:

```
def print_factors(x):
```

```
    print("The factors of",x,"are:")
```

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

```
        if x % i == 0:
```

```
            print(i)
```

```
num = 200
```

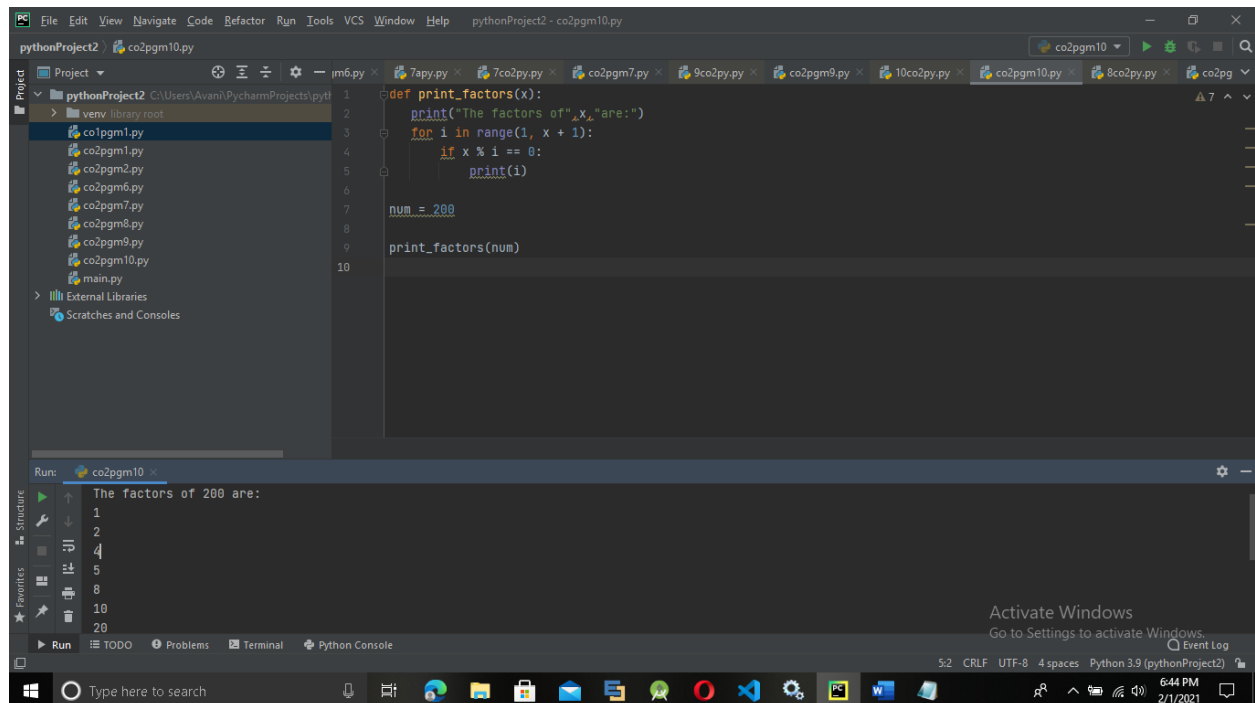
```
print_factors(num)
```

OUTPUT

The factors of 200 are:

1
2
4
5
8
10
20
25
40
50
100
200

Process finished with exit code 0



```
File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject2 - co2pgm10.py
pythonProject2 co2pgm10.py
Project
  pythonProject2 C:\Users\Avani\PycharmProjects\pyth
    > venv library root
    co1pgm1.py
    co2pgm1.py
    co2pgm2.py
    co2pgm6.py
    co2pgm7.py
    co2pgm8.py
    co2pgm9.py
    co2pgm10.py
    main.py
  > External Libraries
  Scratches and Consoles
Run: co2pgm10
  The factors of 200 are:
  1
  2
  4
  5
  8
  10
  20
  25
  40
  50
  100
  200
  Run TODO Problems Terminal Python Console
  Activate Windows
  Go to Settings to activate Windows.
  5:2 CRLF UTF-8 4 spaces Python 3.9 (pythonProject2)
  Type here to search 6:44 PM 2/1/2021
```

11)Write lambda functions to find area of square, rectangle and triangle?

Ans:

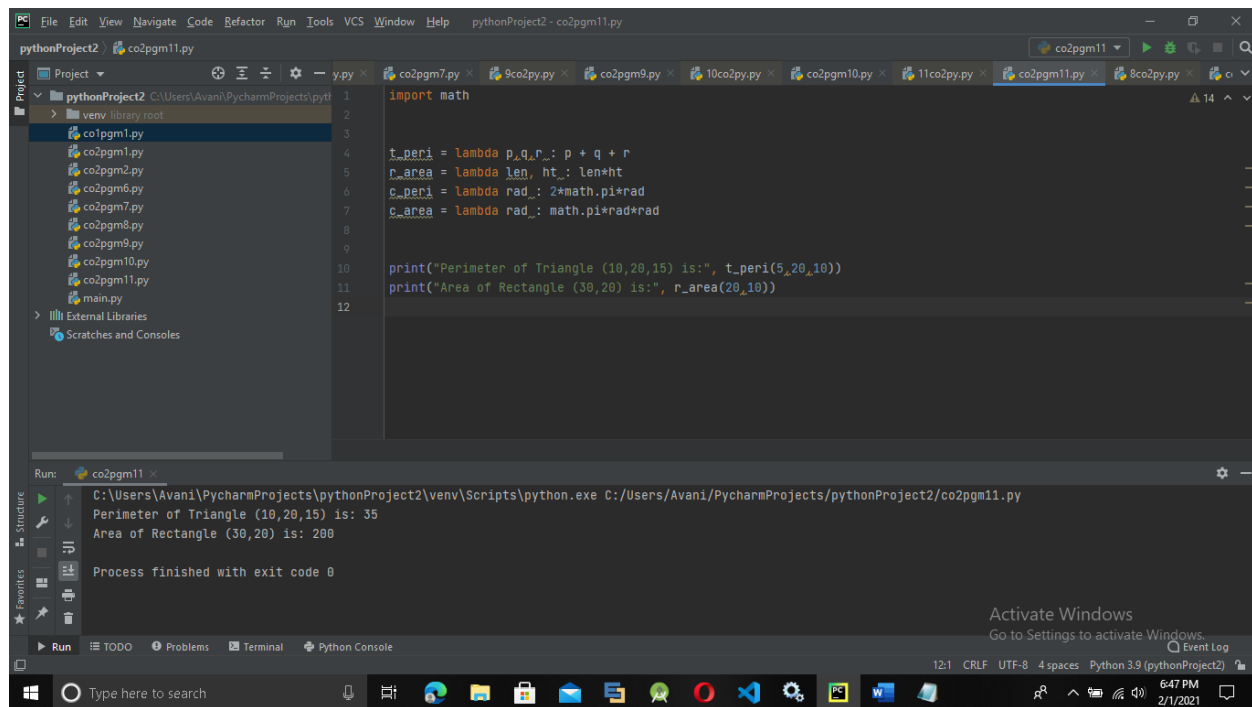
```
import math  
  
t_peri = lambda p,q,r : p + q + r  
  
r_area = lambda len, ht : len*ht  
  
c_peri = lambda rad : 2*math.pi*rad  
  
c_area = lambda rad : math.pi*rad*rad  
  
print("Perimeter of Triangle (10,20,15) is:", t_peri(5,20,10))  
print("Area of Rectangle (30,20) is:", r_area(20,10))
```

OUTPUT

Perimeter of Triangle (10,20,15) is: 35

Area of Rectangle (30,20) is: 200

Process finished with exit code 0



Co1

20) From a list of integers, create a list removing even numbers?

Ans:

```
list=[11,22,33,44,55,66]
```

```
print("original list")
```

```
print (list)
```

```
for i in list:
```

```
    if(i%2==0):
```

```
        list.remove(i)
```

```
    print("list after removing an even numbers:")
```

```
    print(list)
```

OUTPUT

original list

[11, 22, 33, 44, 55, 66]

list after removing an even numbers:

[11, 33, 44, 55, 66]

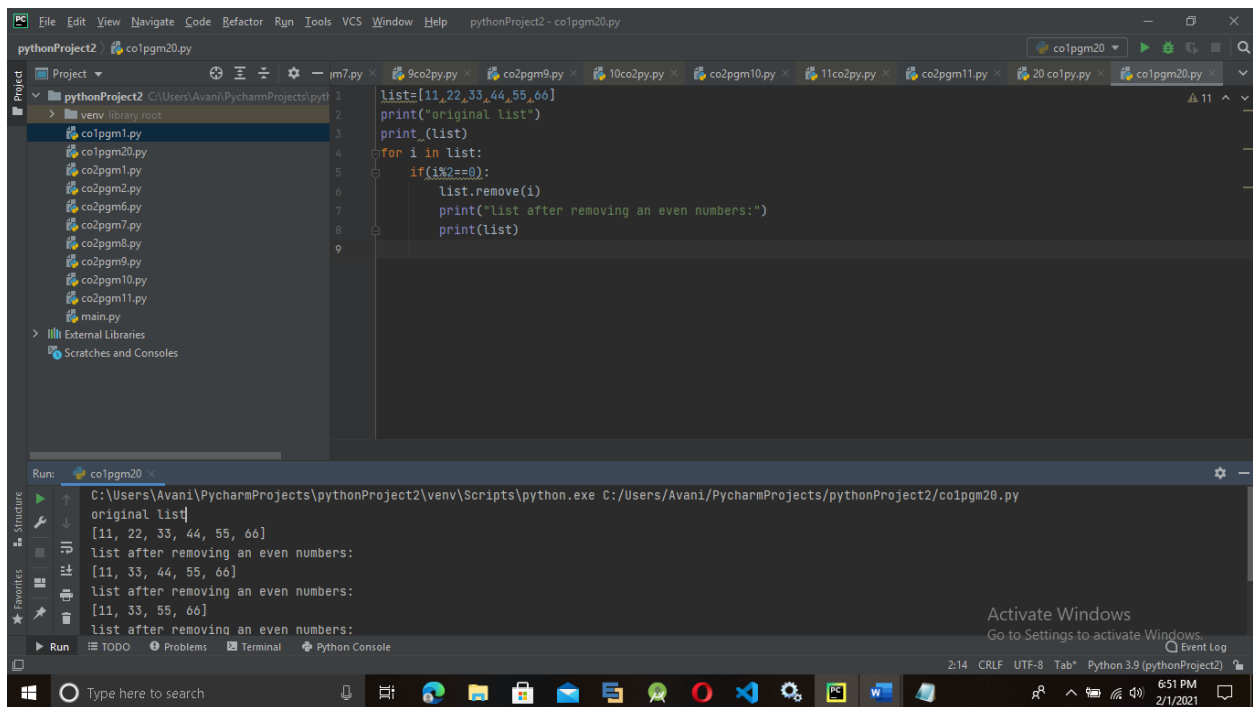
list after removing an even numbers:

[11, 33, 55, 66]

list after removing an even numbers:

[11, 33, 55]

Process finished with exit code 0



The screenshot displays the PyCharm IDE interface. The main editor window shows a Python script named `co1pgm20.py` with the following code:

```
1 list=[11,22,33,44,55,66]
2 print("original list")
3 print(list)
4 for i in list:
5     if(i%2==0):
6         list.remove(i)
7         print("list after removing an even numbers:")
8         print(list)
9
```

The left sidebar shows the project structure with files `co1pgm1.py` through `co1pgm11.py` and `main.py`. The bottom panel shows the Run console output:

```
Run: co1pgm20
C:\Users\Avani\PycharmProjects\pythonProject2\venv\Scripts\python.exe C:/Users/Avani/PycharmProjects/pythonProject2/co1pgm20.py
original list
[11, 22, 33, 44, 55, 66]
list after removing an even numbers:
[11, 33, 44, 55, 66]
list after removing an even numbers:
[11, 33, 55, 66]
list after removing an even numbers:
[11, 33, 55]
```

The status bar at the bottom indicates the file encoding is UTF-8, the tab is Python 3.9, and the time is 6:51 PM on 2/1/2021.