1. **From a list of integers ,create a list removing an even numbers**

```
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]
```

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

```
def factorial(n):

return 1 if (n==1 or n==0) else n * factorial(n - 1);
num = 5;
print("Factorial of",num,"is",
factorial(num))
```

output

```
Factorial of 5 is 120
```

3.Generate Fibonacci series of N terms

```
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? 10
Fibonacci sequence:
0
1
1
2
3
5
8
13
21
```

4.Find the sum of all items in a list

```
    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  5
Enter number  10
Enter number  15
Enter number  25
Enter number  30
Sum of elements in given list is : 85
```

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

```
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)
```

```
>>> call()
4624
6084
6400
8464
```

6.Display the given pyramid with step number accepted from user. Eg: N=4

1

2 4

3 6 9

4 8 12 16

```
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("")
```

```
>>> pyr()
Enter the number  : 4
1
2  4
3  6  9
4  8  12  16
```

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

```
def char_frequency(str1):
  dict = {}
  for n in str1:
    keys = dict.keys()
    if n in keys:
```

```
            dict[n] += 1
        else:
            dict[n] = 1
    return dict
print(char_frequency('google.com'))
```

output

```
{'g': 2, 'o': 3, 'l': 1, 'e': 1, '.': 1, 'c': 1, 'm': 1}
```

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

```
def add_string(str1):
  length = len(str1)

  if length > 2:
    if str1[-3:] == 'ing':
      str1 += 'ly'
    else:
      str1 += 'ing'

  return str1
print(add_string('ab'))
print(add_string('abc'))
print(add_string('string'))
```

output

```
ab
abcing
stringly
```

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

```
def find_longest_word(words_list):
    word_len = []
    for n in words_list:
        word_len.append((len(n),  n))
    word_len.sort()
```

```
    return word_len[-1][0], word_len[-1][1]
result = find_longest_word(["PHP",  "mysql",  "pythons"])
print("\nLongest  word: ",result[1])
print("Length  of the longest word: ",result[0])
```

output

```
Longest word:  pythons
Length of the longest word:  7
```

10. Construct following pattern using nested loop

```
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

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

11. Generate all factors of a number

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

```
    for i in range(1, x + 1):
        if x % i == 0:
            print(i)

num = 320

print_factors(num)
```

output

```
The factors of 320 are:
1
2
4
5
8
10
16
20
32
40
64
80
160
320
```

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

```
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(10,20,15))
print("Area  of Rectangle (30,20) is:", r_area(30,20))
```

output

```
Perimeter  of Triangle (10,20,15) is: 45
Area of Rectangle (30,20) is: 600
```