1) Print 1st 10 natural numbers using while loop.

```
=> i = 1
   while i<=11:
       Print(i)
       i = i+1
```

---

2) Print the following Pattern:

```
1 1 1 1
 1 1 1
  1 1
   1
```

```
=> k = 4
   for i in range(k):
       for j in range(i+1):
           Print(" ", end = " ")
       for j in range(i, k):
           Print("1", end = " ")
       Print()
```

---

3) Calculate the sum of all no. from 1 to a given no.

```
=> a = 0
   for i in range(1,11):
       a = i+a
       print(a)
```

---

4) Write a program to print multiplication table of a given no.

```
=> for i in range(1,11):
       Print("12 x", i, "=", 12*i)
```

---

5) Display numbers from a list using loop.

```
=> L = [1,2,3,4,5]
   for i in L:
       print(i)
```

---

6) Count the total number of digits in a number.

```
=> number = "123456789"
   Print(len(number))
```

---

7) Print the following pattern: Diamond Shape.

```
=>          for i in range(0,4):
                for j in range(i,4):
                    Print(" ", end = " ")
```

```
        for j in range(i+1):
            print("1", end=" ")
        for j in range(i):
            print("2", end=" ")
        print()
for k in range(3):
    for j in range(k+2):
        print(" ", end=" ")
    for j in range(k,3):
        print("3", end=" ")
    for j in range(k+1,3):
        print("4", end=" ")
    print()
```

8) Print list in reverse order using loop

```
lis = [1,2,3,True,"list"]
for i in reversed(lis):
    print(i)
```

9) Display numbers from -10 to -1 using for loop.

```
for i in range(-10,0):
    print(i)
```

10) Use else block to display a message "Done" after succesful execution of for loop.

```
for i in range(5):
    if i==3:
        print("Done")
    else:
        print("Not Done")
```

11) Write a program to display all prime numbers within a range.

```
def is_prime(num)
    if num<=1:
        return False
```

```
for i in range ( 2, int(num ** 0.5)+1):
        if num % i == 0
            return False
    return True
A = int ( input ( "enter the start range :"))
B = int ( input ("enter the end range! "))
Print ( " prime numbers " )
for number in range (A, B+1):
    if is_Prime (number);
        Print (number)
```

12] Display Fibonacci Series up to 10 terms.

```
a = 10
b, c = 0, 1
Print ( " fibonacci Series :")
for i in range ( a):
    Print ( b, end = " ")
    b, c = c, b+c
```

13) Find the factorial of a given number.

```
a = int ( input ("enter a number:") )
factorial = 1
for i in range (1, a+1):
    factorial * = i
Print (" Factorial of this number is", factorial )
```

14) Reverse a given integer number.

```
n = int ( input (" enter a number "))
a = int ( str(n) [ : : -1])
print ( "The number in reverse order is ", a)
```

15) Use a loop to display elements from a given list present at odd index positions

```
lis = [1, 2, 3, 4.5, True, "list"]
for i in range ( 1, len ( lis), 2) ;
    print ( list [i])
```

16) Calculate the cube of all numbers from 1 to given number.

```
a = 15
for i in range (1, a) ;
    Print (i, "=", i**3)
```

17) Find the Sum of the Series upto n terms

```
n = int ( input (" Enter the number of terms :"))
Series = n * (n+1) // 2
print (" Sum of the Series :", series)
```

19) Print the following pattern :

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

```
a = 5
for i in range (1, a+1):
    for j in range (1, i+1):
        Print (j, end = " ")
    Print (" ")
```