

```
# print number 1 to 100
for i in range(1,11):
    print(i)
```

```
1
2
3
4
5
6
7
8
9
10
```

```
#print even number
for i in range(2,21,2):
    print(i)
```

```
2
4
6
8
10
12
14
16
18
20
```

```
#print odd numbers
for i in range(1,21,2):
    print(i)
```

```
1
3
5
7
9
11
13
15
17
19
```

```
#calculate factoril number
num = int(input("Enter a number: "))
factorial = 1
```

```
if num < 0:
    print("Factorial is not defined for negative numbers.")
```

```

elif num == 0 or num == 1:
    print(f"The factorial of {num} is 1.")
else:
    for i in range(1, num + 1):
        factorial *= i
    print(f"The factorial of {num} is {factorial}.")

```

Enter a number: 2

The factorial of 2 is 2.

```

#sum of number using for loop
sumnumber=0
for i in range(1,101):
    sumnumber+=i
print("Sum of number from 1 to 100:",sumnumber)

```

Sum of number from 1 to 100: 5050

```

#average number in a list
num=[10,20,30,40,50]
sumnum=sum(num)
countnum=len(num)
avg=sumnum/countnum
print("Average number in the list :",avg)

```

Average number in the list : 30.0

#draw patterns using nested loops

```

#triangle
n = 5
for i in range(1, n + 1):
    for j in range(1, i + 1):
        print("*", end=" ")
    print()

```

```

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

```

```

#diamond
n = 5
for i in range(1, n + 1):
    for j in range(n - i):
        print(" ", end="")
    for k in range(1, i + 1):
        print("*", end=" ")
    print()

```

```

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

```

```

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

```

#Square

```

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

```

```

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

```

#natural number

```

for i in range(0,11):
    print(i)

```

```

0
1
2
3
4
5
6
7
8
9
10

```

print the last number is same

```

num= [10, 20, 30, 40, 10]
result = num[0] == num[-1]
print(result)

```

True

#divisible by 5

```
num=[10,20,30,40,50,60,70,78,67,54,33]
```

```
for num in num:
    if num % 5 == 0:
        print(num)
```

10

20

30

40

50

60

70

```
num=int(input("Enter the number"))
```

```
if num % 5==0:
    print("this number is Divisible By 5",num)
else:
    print("this number is not divisible by 5",num)
```

Enter the number 23

this number is not divisible by 5 23

#vowel or consonant

```
ch = input("Enter a character: ").lower()
```

```
if ch in ('a', 'e', 'i', 'o', 'u'):
    print(f"{ch} is a vowel.")
```

```
elif ch.isalpha():
    print(f"{ch} is a consonant.")
```

```
else:
    print("it is a consonant")
```

Enter a character: e

e is a vowel.

Print even numbers

```
print("Even numbers between 10 and 55:")
```

```
for i in range(10, 56):
    if i % 2 == 0:
        print(i)
```

Print odd numbers

```
print("\nOdd numbers between 10 and 55:")
```

```
for i in range(10, 56):
    if i % 2 != 0:
        print(i)
```

Even numbers between 10 and 55:

10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50
52
54

Odd numbers between 10 and 55:

11
13
15
17
19
21
23
25
27
29
31
33
35
37
39
41
43
45
47
49
51
53
55

#calculate factorial of each element in a list

```
import math
numbers = [3, 5, 7, 4, 6]
for num in numbers:
    factorial = math.factorial(num)
    print(f"The factorial of {num} is {factorial}")
```

The factorial of 3 is 6

The factorial of 5 is 120

The factorial of 7 is 5040

The factorial of 4 is 24

The factorial of 6 is 720

#Product or Sum of Two Integers

```
num1 = int(input("Enter the first number: "))
num2 = int(input("Enter the second number: "))
product = num1 * num2
if product > 500:
    result = num1 + num2
    print(f"Product is greater than 500, so the sum is: {result}")
else:
    print(f"The product of {num1} and {num2} is: {product}")
```

Enter the first number: 12

Enter the second number: 23

The product of 12 and 23 is: 276

#greatest two number

```
num1 = int(input("Enter the first number: "))
num2 = int(input("Enter the second number: "))
if num1 > num2:
    print(f"The greater number is: {num1}")
elif num1 < num2:
    print(f"The greater number is: {num2}")
else:
    print("Both numbers are equal.")
```

Enter the first number: 25

Enter the second number: 79

The greater number is: 79

Greatest of Three Numbers

```
num1 = int(input("Enter the first number: "))
num2 = int(input("Enter the second number: "))
num3 = int(input("Enter the third number: "))
if num1 >= num2 and num1 >= num3:
    print(f"The greatest number is: {num1}")
elif num2 >= num1 and num2 >= num3:
    print(f"The greatest number is: {num2}")
```

```
else:  
    print(f"The greatest number is: {num3}")
```

```
Enter the first number: 23  
Enter the second number: 56  
Enter the third number: 90
```

```
The greatest number is: 90
```

```
# Separate positive and negative numbers
```

```
x = [23, 4, -6, 23, -9, 21, 3, -45, -8]  
positive_numbers = []  
negative_numbers = []  
for num in x:  
    if num >= 0:  
        positive_numbers.append(num)  
    else:  
        negative_numbers.append(num)  
print("Positive numbers:", positive_numbers)  
print("Negative numbers:", negative_numbers)
```

```
Positive numbers: [23, 4, 23, 21, 3]  
Negative numbers: [-6, -9, -45, -8]
```