

# LOOPS IN PYTHON

## while loop

```
In [1]: i = 1 # initializing  
  
while i<=5: # condition  
    print('data science :',i)  
    i +=1 # increment
```

```
data science : 1  
data science : 2  
data science : 3  
data science : 4  
data science : 5
```

```
In [2]: i = 5  
  
while i>=1:  
    print('data science :',i)  
    i -=1 # decrement
```

```
data science : 5  
data science : 4  
data science : 3  
data science : 2  
data science : 1
```

## nested while loop

```
In [3]: i = 1  
while i<=5:  
    print('data science')  
    j = 1  
    while j<=4:  
        print('technology')
```

```
j +=1  
i +=1  
print()
```

```
data science  
technology  
technology  
technology  
technology
```

```
In [4]: i = 1  
  
while i<=5:  
    print('data science',end=' ')  
    j = 1  
    while j<=3:
```

```
    print('technology',end = ' ')
    j +=1
i +=1
print()
```

```
data science technology technology technology
```

```
In [5]: i = 1
```

```
while i<=2:
    j=0
    while j<=2:
        print(i*j,end = ' ')
        j +=1
    i +=1
print()
```

```
0 1 2
0 2 4
```

```
In [6]: i = 1
```

```
while i<=4:
    j=0
    while j<=3:
        print(i*j,end = ' ')
        j +=1
    i +=1
print()
```

```
0 1 2 3
0 2 4 6
0 3 6 9
0 4 8 12
```

## for loop

```
In [7]: name = 'nit'

for i in name:
    print(i)
```

```
n
i
t
```

```
In [8]: name1 = [1,3.5,'hello']

for i in name1:
    print(i)
```

```
1
3.5
hello
```

```
In [9]: for i in range(5):
    print(i)
```

```
0
1
2
3
4
```

```
In [10]: for i in range(10,51,5):
    print(i)
```

```
10
15
20
25
30
35
40
45
50
```

**print the value which is divisible by 5**

```
In [11]: for i in range(1,31):
    if i % 3 ==0:
        print(i)
```

```
3
6
9
12
15
18
21
24
27
30
```

## print a multiple table of 3

```
In [12]: for i in range(1,31):
    if i % 3 ==0:
        print(i)
```

```
3
6
9
12
15
18
21
24
27
30
```

## BREAK , CONTINUE ,PASS

```
In [13]: for i in range(1,11):
    print(i)
```

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

```
In [14]: for i in range(1,11):  
    if i == 4:  
        break      # break the Loop  
    print(i)
```

```
1  
2  
3
```

```
In [15]: for i in range(1,11):  
    if i == 5:  
        continue    # skips the given position  
    print(i)
```

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

```
In [16]: for i in range(1,11): pass  
  
# it pass the bugs or errors
```

## chocolate machine problem

```
In [17]: x = int(input('How many chocolates you want :?'))
i = 1
while i<=x:
    print('choclet',i)
    i +=1
```

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

```
In [18]: ava = 5 # machine have only 5 chocolets

x =int(input('How many chocolets you want :?'))
i = 1
while i<=x:
    if i>ava:
        break
    print('chocolet')
    i +=1
print('Buy for now out of stock')
```

```
chocolet
chocolet
chocolet
chocolet
chocolet
Buy for now out of stock
```

```
In [19]: ava = 5 # machine have only 5 chocolets

x =int(input('How many chocolets you want :?'))
i = 1
while i<=x:
    if i>ava:
        print('out of stock')
        break
    print('chocolet')
    i +=1
print('Buy for now')
```

```
chocolet  
chocolet  
chocolet  
chocolet  
chocolet  
out of stock  
Buy for now
```

```
In [20]: for i in range(1,51):  
    if i %3 ==0 or i %5 ==0:  
        continue  
    print(i)
```

```
1  
2  
4  
7  
8  
11  
13  
14  
16  
17  
19  
22  
23  
26  
28  
29  
31  
32  
34  
37  
38  
41  
43  
44  
46  
47  
49
```

```
In [21]: nums = [10,21,33,54,45,30,60]

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

```
10
45
30
60
```

```
In [22]: nums = [10,21,33,54,45,30,60]

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

```
10
```