

Loops

loops will decrease the work of a user to execute same task for n number of times

- for
- while

For loop

Syntax:

for var in range(start,end,step count): # step count means increment/decrement

- statements

```
In [1]: 1 # print numbers between 0 to 10    #11,1
        2
        3 for i in range(11): # 0,1,2,3,4,5,6,7,8,9,10
        4     print(i)
```

```
0
1
2
3
4
5
6
7
8
9
10
```

```
In [2]: 1 # print all alternative numbers in the range of 1,10,
        2 # 1,3,5,7,9
        3 # range 2,12
        4 #2,4,6,8 ==> increment is 2
        5 for i in range(1,11,2): #1,3,5,7,9
        6     print(i)
```

```
1
3
5
7
9
```

```
In [3]: 1 for i in range(100,300,5):
        2     print(i,end=" ")
```

```
100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195
200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295
```

```
In [4]: 1 for i in range(100,500,5): # 125 ==>the value is 125
        2     if i == 125:
        3         print(i)
        4         print("val is 125")
        5     else:
        6         print(i,end = " " )
        7
```

100 105 110 115 120 125

val is 125

130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225
230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325
330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425
430 435 440 445 450 455 460 465 470 475 480 485 490 495

```
In [5]: 1 # print all the even no's in the given range(both are inclusive)
        2 i=int(input("enter the first num:"))
        3 j=int(input("enter second no:"))
        4 for k in range(i,j+1): # 51, 101 # 51,99
        5     if k%2 ==0:
        6         print(k,end = " ")
        7
```

enter the first num:1

enter second no:10

2 4 6 8 10

For loop in reverse order

syntax: for i in range(start,end, decrement):

- set of statements

```
In [6]: 1 # print all the numbers from 1 to 10 in reverse order
        2 for i in range(10,0,-1): # 10,9,8,.....1,0
        3     # for i in range(1,11) #1,2,3,...10,11
        4     print(i)
        5
```

10

9

8

7

6

5

4

3

2

1

```
In [7]: 1 #print all the even numbers in reverse order
2
3 i=int(input("enteer the first num:"))
4 j=int(input("enter second no:"))
5 for k in range(j,i-1,-1): # 10,9,8...0,-1
6     if k%2==0:
7         print(k)
8
```

```
enteer the first num:1
enter second no:10
10
8
6
4
2
```

```
In [8]: 1 n = input() # "8956" 8,9,5,6 #8 9 6 2
2 print(type(n))
3 n1 = int(input()) # 8956
4 print(type(n1))
5 n2 = float(input())
6 type(n2)
7
```

```
1
<class 'str'>
1
<class 'int'>
1.9
```

Out[8]: float

```
In [9]: 1 # find the factors of a given number # 10 ==>1,2,5,10==>10%1==0,10%2==0
2 # find the count of factors # 4
3
4 n = int(input())
5 for i in range(1,n+1):
6     if n%i==0:
7         print(i)
```

```
10
1
2
5
10
```

```
In [10]: 1 n = int(input()) # 5
          2 c = 0 #1
          3 for i in range(1,n+1): # 1,2,3,4,5
          4     if n%i==0: # 5%2==0
          5         c+=1 # c= c+1
          6 print(c)
          7
```

12

6

```
In [ ]: 1
```