

## DAY-08

**September 11**

### **LOOPS:**

Loops in python are used to execute a block of code repeatedly until a certain condition is met.

Types of loops in python:

1. For loop
2. While loop
3. Nested loop

majorly it is only two types of loops for and while.

Nested loops can be further divided into 4 sub types:

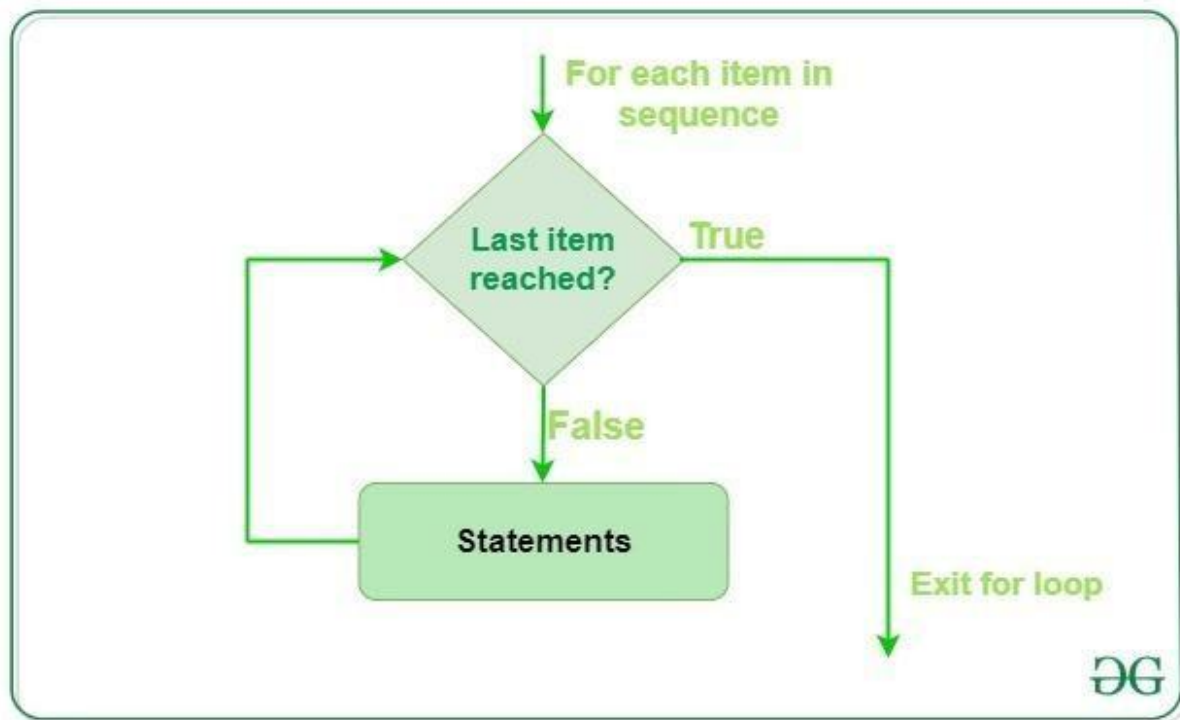
1. \* for loop inside for loop
2. \* for loop inside while loop
3. \* while loop inside for loop 4. \* while loop inside while loop

1. For loop:

In for loop we have two types

1. for loop with sequence (string, list, tuple, dict, set)
  2. for loop with range
- For loop allows you to apply the same operation to every item within loop.
  - Using For Loop avoid the need of manually managing the index.

- For loop can iterate over any iterable object, such as dictionary, list or any custom iterators.



1. for loop with sequence

To print the name in character wise

```
name = "Indu" print(name)
```

Indu

Using loop: **for i in name:** # i is

*iterative variable*    print(i)

N

a r

s

i

Numbers are not considered as sequences. All the sequence data has a position.

example:

priyanka - sequence 12345 -

not a sequence to print

position with character

enumerate is a function used to print position and character of the given variable.

output is a tuple consisting the position followed by character stored in the position.

**for i in enumerate(name):**

**print(i) (0,**

**'N')**

**(1, 'a')**

**(2, 'r')**

**(3, 's')**

**(4, 'I')**

```
fruit = ['apple','mango','grape','pineapple'] print(fruit)
```

```
['apple', 'mango', 'grape', 'pineapple']
```

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

```
apple mango
```

```
grape
```

```
pineapple
```

In any other programming language we have three stages for range:

initialization condition

increment/decrement

In python:

range(start value, stop value, step size)

step size +ve incrementation

step size -ve decrementation

*# 2.for loop with range*

```
for i in range(1,11,1):
```

```
    print(i)
```

```
1
```

2

3

4

5

6

7

8

9

10

`range(1,11,1)`

`(i=1;i<11;i+1) i =`

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

`range(1,10,1)`

`(i=1;i<10;i+1) i =`

`1,2,3,4,5,6,7,8,9 to`

`repeat a statement`

`for 20 times for i`

`in range(1,21,1):`

`print("Narsi")`

Narsi

Narsi

Narsi

Narsi

Narsi

Narsi

Narsi

Narsi

Narsi

Narsi

Narsi

Narsi

Narsi

Narsi

Narsi

Narsi

Narsi

Narsi

Narsi

Narsi

**for i in range(20):**

print(i)

0

1

2

3

4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19

In range default start  
value is 0 default step  
size is 1

If we are mentioning only one value in range then it will be considered as stop value.

we can skip both start and step values, but when u want to mention any one of them the other thing should be used compulsorily. to print position and character using range function name = "Narsi"

**for i in range(0,4,1):***#in case of not knowing the length we can pass len(name)*  
*in that place*    **print(i,name[i])**

0 N

1 a

2 r

3 s

4 i

with length function name =

"Narsi Reddy" **for i in**

**range(0,len(name),1):**

**print(i,name[i])**

0 N

1 a

2 r

3 s

4 i

5

6 R

7 e

8 d

9 d

10 y



Write a program to print even numbers from 1 to 20 **for**

**i in range(2,21,2):**

**print(i)**

2

4

6

8

10

12

14

16

18

20

Write a program to print 1 to 10 in the format

1 = odd number

2 = even number

10 = even number

**for i in range(1,11,1):**

**if(i%2 == 0):**

**print(i, "=", "Even number")**

**else:**

```
print(i, "=", "Odd number")
```

1 = Odd number

2 = Even number

3 = Odd number

4 = Even number

5 = Odd number

6 = Even number

7 = Odd number

8 = Even number

9 = Odd number

10 = Even number