

11-09-2025, Thursday.

Loops in Python are execute a block of code repeatedly until a certain condition is met.

(i) For loop

(ii) while loop

(iii) Nested loop

- for loop inside for loop
- for loop inside while loop
- while inside while loop
- while inside for loop

(i) for loop :- 2 types

(a) for loop with sequence - string, list, tuples, set, dict

(b) Range

(a) with sequence.

ex name = "harditha"
print(name)

o/p harditha

for i in name:
print(i)

o/p
h
a
r
d
i
t
h
a

name = Range

i = iterative variable

- It is not a constant variable
- In each iteration, the value will get updated.

NOTE: for loop defaultly work with ~~sequence~~ sequence data.

Sequence data is in continuous format & anything which is having a position.

1234 = no. don't have position

harditha = starts with 0 position
0 1 2 3 4 5 6 7

⇒ Enumerate fⁿ :- It is a kind of fⁿ that, whatever the variable we will pass, for that variable, this fⁿ will give the ~~position~~ individual position & character.

```
ex for i in enumerate(name):      o/p  (0, 'h')
      print(i)                    (1, 'a')
      (2, 'r')
      (3, 'd')
```

(# It is (o/p) in tuple format.

* Array is a sequence data

ex fruit = ['cherry', 'strawberry', 'Apple']
print(fruit) o/p ['cherry', 'strawberry', 'Apple']

⇒ for i in fruit:
 print(i)

o/p Cherry
Strawberry
Apple

\Rightarrow Initialization - start value
 Condition - stop value
 Incrementation/Decrementation - step size

⑥ for loop with range

- range (start value, stop value, step size)

ex for i in range(1, 11, 1)
 print(i)

+ve \rightarrow inc
-ve \rightarrow dec

o/p

| |
|----|
| 1 |
| 2 |
| 3 |
| 4 |
| 5 |
| 6 |
| 7 |
| 8 |
| 9 |
| 10 |

$\text{range}(1, 11, 1) \Rightarrow (p=1; p \leq 11; p+1)$ o/p 1-10
 $\text{range}(1, 10, 1) \Rightarrow (p=1; p < 10; p+1)$ o/p 1-9

\Rightarrow for i in range(5): o/p 0
 point(i) 3
 4

Default start value is 0 stop value is mandatory.
— step size is 1

⇒ name = "Sona"

name[0]

o/p 'S'

Anything written inside $[\]$ indicates positive.

To print portion & character using range fn

name="Sona"

```
for i in range(0, 3, 1):
    print(i, name[i])
```

o/p o s # it is static

```
for i in range(0, len(name), 1):
    print i, name[i]
```

| | | |
|-----|---|---|
| 0/p | 0 | S |
| | 1 | 0 |
| | 2 | n |

only for specified no. of character. / $\text{len}()$ is a dynamic - to print all the characters

⇒ Write a program to print even nos from 1 to 20

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

o/p
2
4
6
8.....

⇒
1 = odd no.
2 = Even no
3 = Odd no
.....
10 = Even no.

for loop with condition

```
for i in range(1, 11, 1):  
for i in range(1, 11, 1):  
    if (i % 2 == 0):  
        print(i, "= Even no")  
    else:  
        print(i, "= Odd no")
```