* Loops

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

1. for loop
2. while loop.
3. nested if loop:- for inside a for loop

for loop inside while loop

while loop inside for loop

while loop inside while loop

(i) **For loop**

→ A for loop is a Control structure that allows you to repeat a block of code for a specified number of iterations (repeat)

→ It is used to iterate over a Sequence.

• **For loop with Sequence** :- A for loop with a Sequence in Python allows to iterate over each element in the Sequence and perform operations on it.

for i in
i is a variable, after i, whatever comes it gets repeated.

example
① . name = "Uarsha"
    for i in name:
        Print (i)

    V
    a
    r
    s
    h
    a

② for i in enumerate (name):
    print (i)

    (0, v)
    (1, a)
    (2, r)
    (3, s)
    (4, h)
    (5, a)

Note: In for loop with Sequence it is not necessary to mention initialization, Condition, incrementation (& decrementation it directly Stack from a particular is automatically handled by python

Note Here each data is a tuple.

→ Initialization: O (Starting point)
    Sets the starting value of the loop variable.

→ Condition: Define the end point or Condition under which loop Continues.

→ Incrementation / decrementation: update loop variable after each iteration.

• For loop with range

A for loop with range () in python is used to iterate over a sequence of numbers

Range (Initialization, Condition, Incrementation/decrementation)

Range (Start value, stop value, step size)

for i in range (1, 11, 1)

1 - Start value $i \geq 1$

11 - Stop value $i > 11$ (Compulsory value)

1 - Step size $i+1$ (each value speed iterates)

Anything inside [ ] indicates position.

example

for i in range (1, 20, 5)
    print (i)

    1
    6
    11
    16

Note

for stop value we can also write as len functions.

eg: for i in range (0, len (name), 1):
    name: Varsha.
    for i in range (0, len(name), 1):
        print (i, name [i])

        0 v
        1 a
        2 r
        3 s
        4 h
        5 a