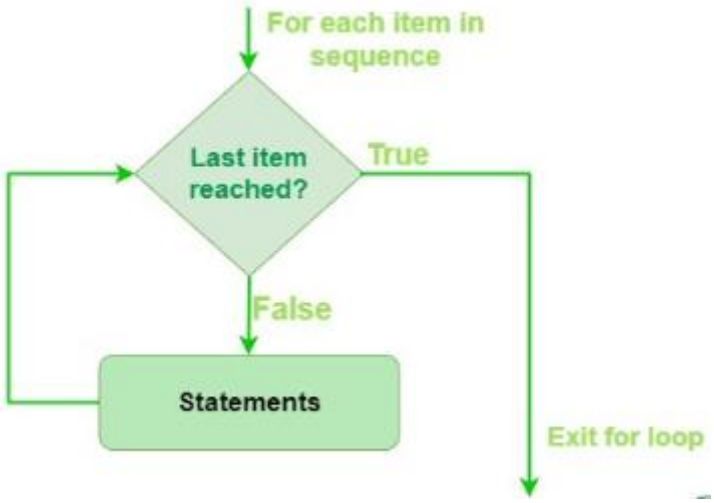
DAY 9 **[04 - JULY - 2025]**

FOR LOOP

A for loop is used for iterating over a sequence (that is either a list, a tuple, a dictionary, a set, or a string).

This is less like the for keyword in other programming languages, and works more like an iterator method as found in other object-orientated programming languages.

With the for loop we can execute a set of statements, once for each item in a list, tuple, set etc.



Python For Loop Syntax

```
for var in iterable:
# statements
pass
```

Looping Through a String

Even strings are iterable objects, they contain a sequence of characters:

The break Statement

With the break statement we can stop the loop before it has looped through all the items:

The continue Statement

With the continue statement we can stop the current iteration of the loop, and continue with the next:

The range() Function

To loop through a set of code a specified number of times, we can use the range() function,

The range() function returns a sequence of numbers, starting from 0 by default, and increments by 1 (by default), and ends at a specified number.

Else in For Loop

The else keyword in a for loop specifies a block of code to be executed when the loop is finished.

Nested Loops

A nested loop is a loop inside a loop.

The "inner loop" will be executed one time for each iteration of the "outer loop":

The pass Statement

for loops cannot be empty, but if you for some reason have a for loop with no content, put in the pass statement to avoid getting an error.

PRACTICE QUESTIONS:

```
for i in range(0,7):
  print(i) #print counting from 0 - 6
```

Output:

```
0
1
2
3
4
5
6
```

```
for i in range (0,7):
  print("i") #print i 7 times
```

Output:

```
i
i
i
i
i
i
i
```

```
for i in range (0,7):
  print("*") #print * 7 times
```

Output:

```
*
*
*
*
*
*
*
```

```
for i in range (0,7):
  print("AMAN")  # print AMAN 7 times
```

Output:

```
AMAN
AMAN
AMAN
AMAN
AMAN
AMAN
AMAN
```

```
for i in range (0,7):
  print(i*2)  # i multiply with 2
```

Output:

```
0
2
4
6
8
10
12
```

```
for i in range (0,7):
  print("i"*2) #print i  2 time
```

Output:

```
ii
ii
ii
ii
ii
ii
ii
```

```
for i in range (0,7):
  print("*"*2) #print * 2 times
```

Output;

```
**
**
**
**
**
**
**
```

```
for i in range (0,7):
  print("AMAN"*2) #print AMAN 2 times
```

Output:

```
AMANAMAN
AMANAMAN
AMANAMAN
AMANAMAN
AMANAMAN
AMANAMAN
AMANAMAN
```

```
for i in range (0,7):
  print(i*i) # i multiply with i
```

Output:

```
0
1
4
9
16
25
36
```

```
for i in range (0,7):
  print(i*5) # i multiply with 5
```

Output;

```
0
5
10
15
20
25
30
```

```
for i in range (0,7):
  print("i"*5) #print i 5 time in every times
```

Output:

```
iiiii
iiiii
iiiii
iiiii
iiiii
iiiii
iiiii
```

```
# draw the right angle triange using for loop.
for i in range(0,10):
  print("*"*i)
```

Output:

```
*
**
***
****
*****
******
*******
********
*********
```

```
# draw the left angle triangle using for loop.
for i in range(10,0,-1):
  print("*"*i)
```

Output:

```
**********
*********
********
*******
******
*****
****
***
**
*
```

```
for i in range(1,21,2):
  print("odd numbers",i)
```

Output:

```
odd numbers 1
odd numbers 3
odd numbers 5
odd numbers 7
odd numbers 9
odd numbers 11
odd numbers 13
odd numbers 15
odd numbers 17
odd numbers 19
```

```
# multiplication table for number 5
for i in range(1,11):
  print("5 *",i,"=",5*i)
```

Output:

```
5 * 1 = 5
5 * 2 = 10
5 * 3 = 15
5 * 4 = 20
5 * 5 = 25
5 * 6 = 30
5 * 7 = 35
5 * 8 = 40
5 * 9 = 45
5 * 10 = 50
```

```
# palindrome number
num=int(input("Enter a number:"))
temp=num
rev=0
while(num>0):
    dig=num%10
    rev=rev*10+dig
    num=num//10
if(temp==rev):
    print("The number is palindrome!")
else:
  print("not")
```

Output:

```
Enter a number:151
The number is palindrome!
```