Iterations / Loops in Python

If we write statement in sequence then it gets executed one after the another.
In general, statements are executed sequentially: The first statement in a function is executed first, followed by the second, and so on.

There may be a situation when we want to execute one or set of statements multiple times then we can use concept of loops.

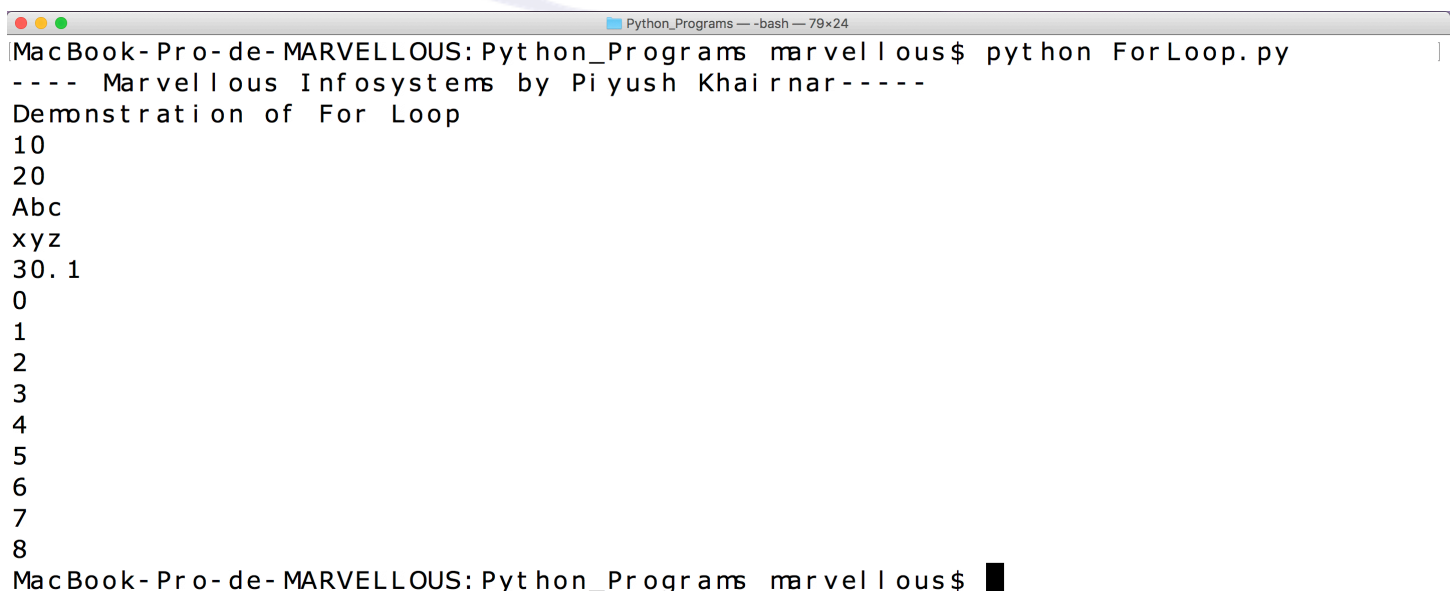In python there are 2 types of loops as
• for loop
• while loop

for loop :
The for loop that is used to iterate over elements of a sequence, it is often used when you have a piece of code which you want to repeat "n" number of time.
Generally if number of iterations are already known then we can use for loop.

Consider below application which demonstrates use of for loop

```python
print("---- Marvellous Infosystems by Piyush Khairnar-----")

print("Demonstration of For Loop")

x = [10,20,"Abc","xyz",30.1]

for i in x:
    print(i);

for i in range(0,9):
    print(i);
```
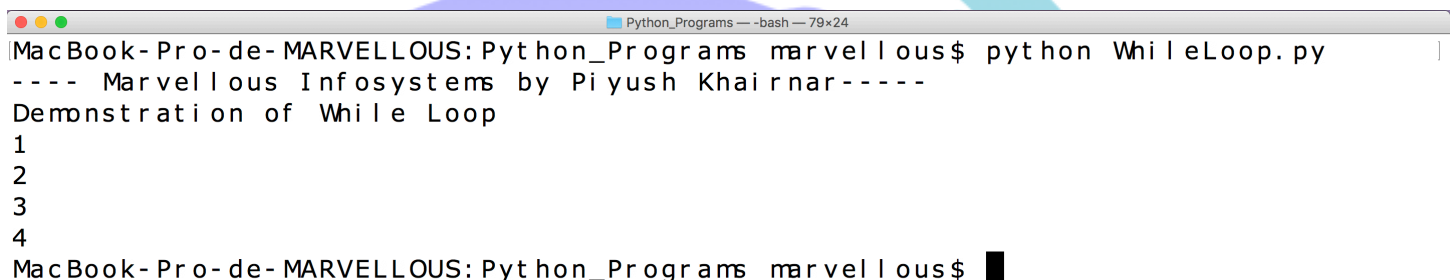
Output of above application

```
Python_Programs — -bash — 79×24
MacBook-Pro-de-MARVELLOUS:Python_Programs marvellous$ python ForLoop.py
---- Marvellous Infosystems by Piyush Khairnar-----
Demonstration of For Loop
10
20
Abc
xyz
30.1
0
1
2
3
4
5
6
7
8
MacBook-Pro-de-MARVELLOUS:Python_Programs marvellous$
```

while loop :

while loop is used to execute the set of statements till the condition is true.

Consider below application which demonstrates use of while loop

```
print("---- Marvellous Infosystems by Piyush Khairnar-----")

print("Demonstration of While Loop ")

i = 1;

while(i<5):
    print(i)
    i = i + 1
```

Output of above application

```
● ● ●                          Python_Programs — -bash — 79×24
MacBook-Pro-de-MARVELLOUS:Python_Programs marvellous$ python WhileLoop.py
---- Marvellous Infosystems by Piyush Khairnar-----
Demonstration of While Loop
1
2
3
4
MacBook-Pro-de-MARVELLOUS:Python_Programs marvellous$ ▉
```

We can use break or continue keyword to control loops

break :

break keyword is use to stop the execution of loop irrespective of the condition.

continue:

by using the continue keyword we can stop execution of current iteration and continue with the next iteration.

Consider below application which demonstrates use of break & continue keyword

```
print("---- Marvellous Infosystems by Piyush Khairnar-----")

print("Demonstration of break & continue")

print("Demonstration of break")
for i in range(0,9):
    if(i == 3):
        break
    print(i);

print("Demonstration of continue")
for i in range(0,9):
```

```
if(i == 3):
    continue
print(i);
```

Output of above application

```
MacBook-Pro-de-MARVELLOUS:Python_Programs marvellous$ python BreakContinue.py
---- Marvellous Infosystems by Piyush Khairnar-----
Demonstration of break & continue
Demonstration of break
0
1
2
Demonstration of continue
0
1
2
4
5
6
7
8
MacBook-Pro-de-MARVELLOUS:Python_Programs marvellous$ █
```