Nested Loops

- We know that how for loops works

- For example

        for i in range(0,5):

                print (i)

Output : 0

                1

                2

                3

                4

- Loop inside loop is said as nested loop

            for i in range(0,5) :

                    for j in range(0,5) :

                        print (i , j)

  - The outer loop can contain any amount of inner loop

- In each iteration of the outer loop inner loop execute all its iteration. For each iteration of an outer loop the inner loop re-start and completes its execution before the outer loop can continue to its next iteration.

Working of nested loop

```
for i in range(0,5):
    for j in range(0,5):
        print(i,j, end=' ')
    print('')

0 0 0 1 0 2 0 3 0 4
1 0 1 1 1 2 1 3 1 4
2 0 2 1 2 2 2 3 2 4
3 0 3 1 3 2 3 3 3 4
4 0 4 1 4 2 4 3 4 4
```

- In this program, the outer `for` loop is iterate numbers from 0 to 5. The `range()` return 5 numbers. So total number of iteration of the outer loop is 5.

- In the first iteration of the nested loop, the number is 0. In the next, it 1…. and so on till 4.

- Next, For each iteration of the outer loop, the inner loop will execute five times. The inner loop will also execute five times because we are printing numbers from 0 - 5

- Total 25 times