

# Loops

- break and continue

-> break breaks out of the loop altogether.

-> continue breaks out of the current iteration and moves to next iteration : ie: it is used for skipping an iteration of the list

```
1 #print no more than 7
2
3 for i in range(0,10):    #this loop should print from 0 to 9
4     if i == 8:
5         break            #the break statement exits the loop once the value 8 is reached
6     print(i)
7
8 0
9 1
10 2
11 3
12 4
13 5
14 6
15 7
16
17
18 #ignore all odd numbers, print only even
19 for i in range(0,10):
20     if i % 2 != 0:
21         continue
22     print(i)
23 0
24 2
25 4
26 6
27 8
```

- Nested Loops

if outer loop runs x times and inner loop runs y times, then the entire loop will run for x\*y times

```
1 for i in range(1,4):
2     for x in ('abc'):
3         print(i,x)
4
5 (1, 'a')
6 (1, 'b')
7 (1, 'c')
8 (2, 'a')
9 (2, 'b')
10 (2, 'c')
11 (3, 'a')
12 (3, 'b')
13 (3, 'c')
```

- for loops run a specific number of times.

while loops run till a condition is True or False. In a while loop we do not know how many times loop will run before running it.

```
1 x = 0
2 while x <= 10:
3     print(x)
4     x += 1          # if we do not increment x the loop will run forever
5
6 0
7 1
8 2
9 3
10 4
11 5
12 6
13 7
14 8
15 9
16 10
```

- break and continue can be used in both while loops and for loops