009 Python break, continue statement

break statement

The break statement is used to exit a for or a while loop. The purpose of this statement is to end the execution of the loop (for or while) immediately and the program control goes to the statement after the last statement of the loop. If there is an optional else statement in while or for loop it skips the optional clause also. Here is the syntax.

Syntax:

```
                    while (expression1) :
    statement_1
    statement_2
    ......
    if expression2 :
    break
for variable_name in sequence :
   statement_1
   statement_2
   if expression3 :
     break
```

Example: break in for loop

In the following example for loop breaks when the count value is 5. The print statement after the for loop displays the sum of first 5 elements of the tuple numbers.

```python
numbers = (1, 2, 3, 4, 5, 6, 7, 8, 9) # Declaring the tuple

num_sum = 0

count = 0

for x in numbers:

    num_sum = num_sum + x

    count = count + 1
```

```
    if count == 5:

        break

print("Sum of first ",count,"integers is: ", num_sum)
```

Output:

```
Sum of first   5 integers is:   15
```

Example: break in while loop

In the following example while loop breaks when the count value is 5. The print statement after the while loop displays the value of num_sum (i.e. 0+1+2+3+4).

```
num_sum = 0

count = 0

while(count<10):

    num_sum = num_sum + count

    count = count + 1

    if count== 5:

        break

print("Sum of first ",count,"integers is: ", num_sum)
```

Output:

```
Sum of first   5 integers is :   10
```

continue statement

The continue statement is used in a while or for loop to take the control to the top of the loop without executing the rest statements inside the loop. Here is a simple example.

```python
for x in range(7):

    if (x == 3 or x==6):

        continue

    print(x)
```

Output:

```
0
1
2
4
5
```

In the above example, the for loop prints all the numbers from 0 to 6 except 3 and 6 as the continue statement returns the control of the loop to the top