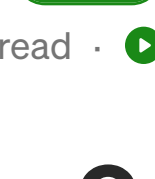




Prashant Lakhera



May 8, 2019 · 4 min read ·



# 100 Days of DevOps — Day 87-While/For Loop Python

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Welcome to Day 87 of 100 Days of DevOps, Focus for today is While/For Loop Python

With a while loop, we can make a block of code executed as long as while statement is True

```
test = 0
while ( test < 5):
    print("hello")
    test = test + 1

hello
hello
hello
hello
hello
```

Here as soon as the execution reaches the end of a while statement's block, it jumps back to the start to re-check the condition. We are initializing test=0 and as long as the value of a test is less than 5, While checking the condition and prints the hello.

When execution runs through the loop we call it iteration we say this while loop iterates 5 times.

But let's take a look at the other two cases

- If forget to initialize the value, I will receive an error

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

Output

```
Traceback (most recent call last):
  File "/Users/plakhera/Documents/python_testing/test.py", line 1, in
<module>
    while n < 5:
NameError: name 'n' is not defined
Process finished with exit code 1
```

- If I forget to increment the value, then it will become an infinite loop

```
n = 0
while n < 5:
    print(n)
```

Infinite Loop

```
>>> while True:
...     print("hello")
...
hello
hello
hello
```

Since this condition is always True this will cause the loop to be executed forever. To come out of infinite loop use Ctrl+c

**Break:** Cause statement to jump out of the loop, without re-checking the condition

```
test = 0
while (test < 10):
    print(test)
    test = test + 1
    if test == 5:
        break
```

Output

```
0
1
2
3
4
```

Continue

In the case of continue statement when the program execution reaches the continue statement, program execution immediately jump back to the start off while loop and re-check the condition, and that is the reason test==5 never executed

```
test = 0
while (test < 6):
    test = test + 1
    if test == 5:
        continue
    print("Current Value of test: " + str(test))
```

Output

```
Current Value of test: 1
Current Value of test: 2
Current Value of test: 3
Current Value of test: 4
Current Value of test: 6
```

For Loop

For loop is used when we want to iterates a specific number of times.

```
for i in range(5):
    print(i)
```

Output

```
0
1
2
3
4
```

Sum of first 100 number

```
total = 0
#Because it goes one less
for i in range(101):
    total = total + i
print(total)
```

Output

```
5050
```

OR one more favorite interview question, print all the even number between 0 to n number

```
for i in range(0,11,2):
    print(i)
```

Output

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

Let summarize

for	while
We know the number of iterations	It's unknown
Uses a counter	We can use counter but it must need to be initialized before loop and increment inside loop
We can rewrite for loop using while	May not

Let's try to solve a few more problem

In this problem, we need to count the number of vowels in a string

```
s = 'welcome to the world of python'
count = 0
for i in s:
    if (i == "a" or i == "e" or i == "i" or i == "o" or i == "u"):
        count += 1
print(count)
```

Is there is any better way to write the same code?

```
s = 'welcome to the world of python'
count = 0
vowels = ["a", "e", "i", "o", "u"]
for i in s:
    if i in vowels:
        count += 1
print(count)
```

But this code will fail if we have Vowels like AEIOU

```
s = 'welc0mE to the world of python'
```

It will return only 6 vowels

There are multiple ways to deal with this problem but the easiest way right now is the use of lower()

```
s = 'welc0mE to the world of python'
s = s.lower()
count = 0
vowels = ["a", "e", "i", "o", "u"]
for i in s:
    if i in vowels:
        count += 1
print(count)
```

Later on, when we jump to the regular expression we will see we can solve the same problem using regular expression

```
>>> import re
>>> s = 'welc0mE to the world of python'
>>> vowels = re.findall('[aeiou]',s,re.IGNORECASE)
>>> print(len(vowels))
8
```

**Python Regular Expression**  
Regular expressions can be think like a mini-language for specifying text pattern  
[medium.com](#)

There might be a situation where we might need to know how many times the gives element is repeated in a string. There are a number of ways to do that but the easiest way is to use collections module

```
>>> from collections import Counter
>>> s
'welc0mE to the world of python'
>>> a = Counter(s)
>>> print(a)
Counter({' ': 5, 'o': 4, 't': 3, 'w': 2, 'e': 2, 'l': 2, 'h': 2, 'c': 1, '0': 1, 'm': 1, 'E': 1, 'r': 1, 'd': 1, 'f': 1, 'p': 1, 'y': 1, 'n': 1})
```

Let's take one more case in which I need to find out how many times prash repeated in this string

```
s = 'hello my name is prash and the last name is prash too'
count = 0
for i in range(len(s)):
    if s[i:i+5] == "prash":
        count += 1
print(count)
2
```

Looking forward from you guys to join this journey and spend a minimum an hour every day for the next 100 days on DevOps work and post your progress using any of the below medium.

- [Twitter: @100daysofdevops OR @lakhera2015](#)
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- [Medium: https://medium.com/@devopslearning](#)
- [Slack: https://devops-myworld.slack.com/messages/CF41EFG49/](#)
- [GitHub Link:https://github.com/100daysofdevops](#)

Reference

**100 Days of DevOps — Day 0**

D-day is just one day away and finally, this is a continuation of the post(I posted a month earlier)

[medium.com](#)

**100 Days of DevOps — Day 86-Python Flow Control(if-else statement)**

Welcome to Day 86 of 100 Days of DevOps, Focus for today is Python Flow Control(if-else statement)

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