



AL NAFI,
A company with a focus on education,
wellbeing and renewable energy.

Python Alpha 400a

Loops **for** and **while**

Dua of the day to recite after Takbeer in Salah

اللَّهُمَّ بَاعِدْ بَيْنِي وَبَيْنَ خَطَايَايَ كَمَا
بَاعَدْتَ بَيْنَ الْمَشْرِقِ وَالْمَغْرِبِ،
اللَّهُمَّ نَقِّنِي مِنْ خَطَايَايَ كَمَا يُنْقَى الثَّوْبُ
الْأَبْيَضُ مِنَ الدَّنَسِ، اللَّهُمَّ اغْسِلْنِي مِنْ
خَطَايَايَ بِالثَّلْجِ وَالْمَاءِ وَالْبَرَدِ

O Allah , separate me from my sins as You
have separated the East from the West. O
Allah, cleanse me of my transgressions as
the white garment is cleansed of stains . O
Allah , wash away my sins with ice and water
and frost.

Al-Bukhari 1/181, Muslim 1/419

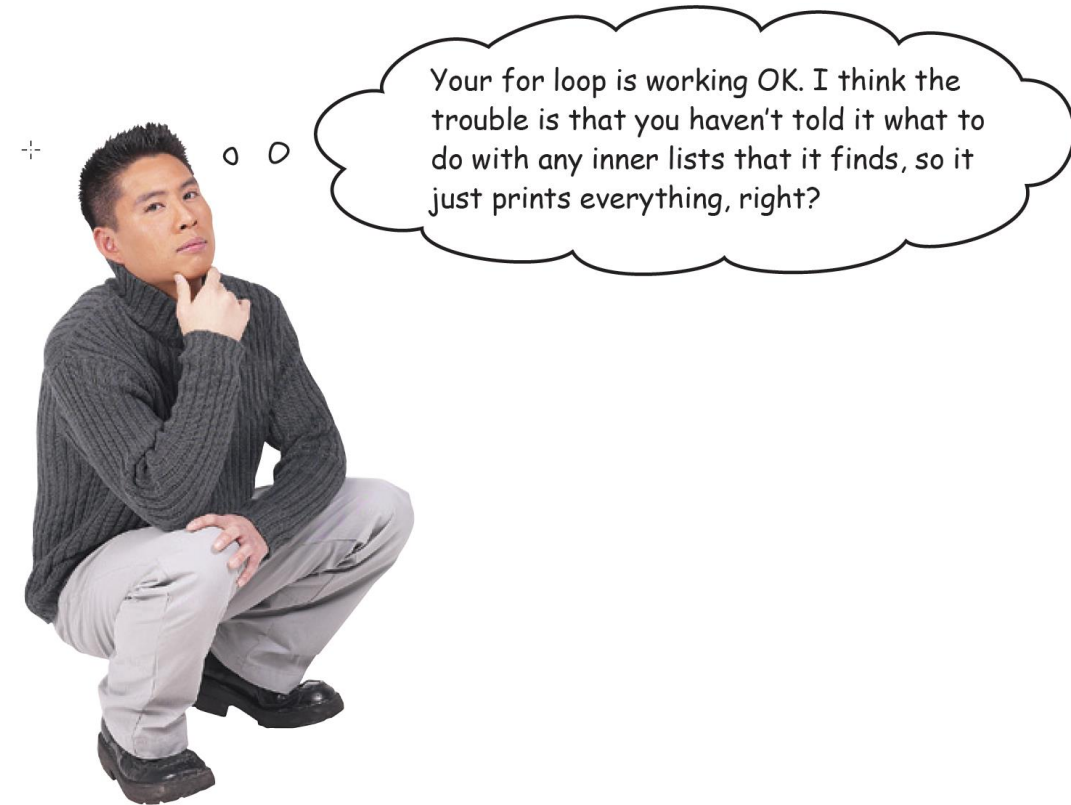
Study, Rinse and Repeat

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- Please take time for clearing up your mind and reflect on how things are proceeding in your studies.

Loops

Every programming language has a looping construct. In Python we have two types.

- The **for** loop and
- The **while** loop



Your for loop is working OK. I think the trouble is that you haven't told it what to do with any inner lists that it finds, so it just prints everything, right?

Famous loop of all 😊

In real world we will see that **for** is by far the most popular.

Loops are used when we want to do something many times. Usually you will find that you need to do some operation or a set of operations on a piece of data over and over.

This is where loops come in. They make it really easy to apply this sort of logic to your data.

In machine learning, deep learning and AI loops are widely used. Along with Offensive hacking tools and scripts for both network, application and wireless hacking. More on that in due time 😊

The **for** loop

As mentioned above, you use a loop when you want to iterate over something **n** number of times.

Let's use Python's builtin range function. The range function will create a list that is n in length.

For examples

`range(10)`

Or

`range(5,10)`

Or

`list(range(1,10,2))`

For examples continued.....

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

Or

```
for number in [0,1,2,3,4]:  
    print(number)
```


For examples continued.....

```
a_dict = {"one":1, "two":2, "three":3}
```

```
for key in a_dict:
```

```
    print(key)
```

For sorting

```
a_dict = {1:"one", 2:"two", 3:"three"}  
keys = a_dict.keys()  
sorted(keys)  
for key in keys:  
    print(key)
```

A more complex for example

```
for number in range(10):
```

```
    if number % 2 == 0:
```

```
        print(number)
```

The **while** loop

The while loop is also used to repeat sections of code, but instead of looping **n** number of times, it will only loop until a specific condition is met.



The **while** loop example

```
i = 0
```

```
while i < 10:
```

```
    print(i)
```

جزاك الله

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