



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

Python Alpha 101 b

Strings

Dua of the day to recite after Takbeer in Salah

اللَّهُمَّ بَاعِدْ بَيْنِي وَ بَيْنَ 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

- Please subscribe to our [YouTube Channel](#) to be on top of your studies.
- Please logon to our website <https://alnafi.com/login/>
- Use your username and password to logon
- Please keep an eye on zone@alnafi.com emails
- Please review the videos of 30 minutes daily
- Please review the notes daily.
- Please take time for clearing up your mind and reflect on how things are proceeding in your studies.

String Slicing

String Slicing is used a lot in real life. Within Machine Learning, Deep Learning, Data Wrangling, AI, website, Games you name it!!

```
my_string = "My Country Pakistan"  
my_string[0:0]
```

We can even use

```
my_string = "My Country Pakistan"  
my_string[0:-3]
```

Slicing down to a single character

```
my_string = "My Country Pakistan"  
print(my_string[0])
```

String Slicing has real usage

As mentioned string slicing is used in ML, DL, AI, DS and big data for parsing fixed width records etc along with other use cases.

Especially text file processing

Now we are increasing our understanding and moving slowly towards ML, DL, AI and other emerging fields using Python 😊

String Formatting AKA substitution

String formatting (AKA substitution) is the topic of substituting values into a base string. Most of the time, you will be inserting strings within strings;

However you will also find yourself inserting integers and floats into strings quite often as well. There are two different ways to accomplish this task. We'll start with the old way of doing things and then move on to the new.

The old way of string substitution step 1

```
my_string = "I like %s" % "Python"
```

```
my_string
```


The old way of string substitution step 2

```
var = "cookies"
```

```
newString = "I like %s" % var
```

```
newString
```

Note:

The **%s** is the important piece in the code as it tells Python that we may be inserting text soon. If we follow the string with a percent sign and another string or variable, then Python will attempt to insert it into the string. We can insert multiple strings by putting multiple instances of **%s** inside our string. You'll see that in the last example. Just note that when you insert more than one string, you have to enclose the strings that you're going to insert with parentheses.

The old way of string substitution step 3

```
var = "cookies"  
another_string = "I like %s and %s" % ("Python", var)  
another_string
```

Note:

The **%s** is the important piece in the code as it tells Python that we may be inserting text soon. If we follow the string with a percent sign and another string or variable, then Python will attempt to insert it into the string. We can insert multiple strings by putting multiple instances of **%s** inside our string. You'll see that in the last example. Just note that when you insert more than one string, you have to enclose the strings that you're going to insert with parentheses.

Examples with integers

```
my_string = "%i + %i = %i" % (1,2,3)
```

```
my_string
```

Examples with float

```
float_string = "%f" % (1.23)
```

```
float_string
```

Or another float example

```
float_string2 = "%.2f" % (1.23)
```

```
float_string2
```

Templates and the New String Formatting Methodology

Another way of formatting

```
print("%(lang)s is fun!" % {"lang":"Python"})
```

This probably looks pretty weird, but basically we just changed our %s into %(lang)s, which is basically the %s with a variable inside it. The second part is actually called a Python dictionary that we will be studying in the next class.

Basically it's a **key:value** pair, so when Python sees the key "lang" in the string AND in the key of the dictionary that is passed in, it replaces that key with its value.

More Examples with text

```
print("%(value)s %(value)s %(value)s !" % {"value":"Sharfoo"})
```

More examples with number

```
print("%(x)i + %(y)i = %(z)i" % {"x":1, "y":2, "z":3})
```

Another example

```
"Python is as simple as {0}, {1}, {2}".format("a", "b", "c")
```


Another example

```
xy = {"x":0, "y":10}
```

```
print("Graph a point at where x={x} and y={y}".format(**xy))
```

Python Official Documentation

<https://docs.python.org/3/>

String Formatting <https://docs.python.org/3/library/string.html#string-formatting>

More on String Formatting
<https://docs.python.org/3/library/string.html#formatexamples>

جزاك الله

To ask questions, please logon to the portal <https://alnafi.com/login/> and use your username and password. From within the portal you can ask questions. We will only answer questions if they are coming through the portal and not on email.

For any other queries please reach out on info@alnafi.com