

Strings

Slicing, modify, concatenate, format

Slicing

You can return a range of characters by using the slice syntax.

Specify the start index and the end index, separated by a colon, to return a part of the string.

Example

Get the characters from position 2 to position 5 (not included):

```
b = "Hello, World!"  
print(b[2:5])
```

Slice From the Start

By leaving out the start index, the range will start at the first character:

Example

Get the characters from the start to position 5 (not included):

```
b = "Hello, World!"  
print(b[:5])
```

Slice To the End

By leaving out the *end* index, the range will go to the end:

Example

Get the characters from position 2, and all the way to the end:

```
b = "Hello, World!"  
print(b[2:])
```

Negative Indexing

Use negative indexes to start the slice from the end of the string:

Example

Get the characters:

From: "o" in "World!" (position -5)

To, but not included: "d" in "World!" (position -2):

```
b = "Hello, World!"  
print(b[-5:-2])
```

Python has a set of built-in methods that you can use on strings.

Upper Case

Example

The `upper()` method returns the string in upper case:

```
a = "Hello, World!"  
print(a.upper())
```

Lower Case

Example

The `lower()` method returns the string in lower case:

```
a = "Hello, World!"  
print(a.lower())
```

Remove Whitespace

Whitespace is the space before and/or after the actual text, and very often you want to remove this space.

Example

The `strip()` method removes any whitespace from the beginning or the end:

```
a = " Hello, World! "  
print(a.strip()) # returns "Hello, World!"
```


Replace String

Example

The `replace()` method replaces a string with another string:

```
a = "Hello, World!"  
print(a.replace("H", "J"))
```

Split String

The `split()` method returns a list where the text between the specified separator becomes the list items.

Example

The `split()` method splits the string into substrings if it finds instances of the separator:

```
a = "Hello, World!"  
print(a.split(", ")) # returns ['Hello', ' World!']
```

String Concatenation

To concatenate, or combine, two strings you can use the + operator.

Example

Merge variable `a` with variable `b` into variable `c` :

```
a = "Hello"  
b = "World"  
c = a + b
```

Example

To add a space between them, add a `" "` :

```
a = "Hello"  
b = "World"  
c = a + " " + b  
print(c)
```

String Format

As we learned in the Python Variables chapter, we cannot combine strings and numbers like this:

Example

```
age = 36
txt = "My name is John, I am " + age
print(txt)
```

But we can combine strings and numbers by using the `format()` method!

The `format()` method takes the passed arguments, formats them, and places them in the string where the placeholders `{}` are:

Example

Use the `format()` method to insert numbers into strings:

```
age = 36
txt = "My name is John, and I am {}"
print(txt.format(age))
```

The `format()` method takes unlimited number of arguments, and are placed into the respective placeholders:

Example

```
quantity = 3
itemno = 567
price = 49.95
myorder = "I want {} pieces of item {} for {} dollars."
print(myorder.format(quantity, itemno, price))
```

You can use index numbers `{0}` to be sure the arguments are placed in the correct placeholders:

Example

```
quantity = 3
itemno = 567
price = 49.95
myorder = "I want to pay {2} dollars for {0} pieces of item {1}."
print(myorder.format(quantity, itemno, price))
```