

Welcome to Week 4

Tutorial 11 / Tutorial 6

Strings

What is a string?

A String is a sequence of characters.

Think of it as a **word or phrase**

In Python, string literals are declared
with **double or single quotes**

```
1 myString = 'CSCA20'  
2 myString2 = "CSCA20"
```

To the interpreter, **both strings are equal**

String Operations

Which of these will run?

- 1 **print("4" + "0")**
- 2 **print("4" + 0)**
- 3 **print("hello" * 2)**
- 4 **print("hello" * "2")**
- 5 **print("hello" + 2)**
- 6 **print("CSCA" + "20")**
- 7 **print("CSCA" + 20)**
- 8 **print("CSCA" + str(20))**

String Operations

Which of these will run?

- | | |
|---|--------------------------------------|
| 1 | <code>print("4" + "0")</code> |
| 2 | <code>print("4" + 0)</code> |
| 3 | <code>print("hello" * 2)</code> |
| 4 | <code>print("hello" * "2")</code> |
| 5 | <code>print("hello" + 2)</code> |
| 6 | <code>print("CSCA" + "20")</code> |
| 7 | <code>print("CSCA" + 20)</code> |
| 8 | <code>print("CSCA" + str(20))</code> |

String Operations

Concatenation

“First” + “Second” → “FirstSecond”

String Indexing

myString = “Hello World”

myString[4] → “o”

myString[4:-1] → “orld”

String Operations

String Slicing

myString = “CSCA20 is lots of fun”

myString[:4] → “CSCA”

myString[4:] → “20 is lots of fun”

myString[4:6] → “20”

myString[18:-1] → “fun”

myString[18:-100] → “fun”

String Slicing

String Slicing

myString[a : b]

Included

Not Included

Quiz Time

myString = “COMPUTERS”

What is myString[:4]?

- A) “COMPU”
- B) “COM”
-  C) “COMP”
- D) “UTERS”

Quiz Time

`myString = "COMPUTERS"`

What is `myString[-1]`?



- A) "S"
- B) "COMPUTERS"
- C) "C"
- D) None of the above

Quiz Time

`myString = "COMPUTERS"`

What is `myString[:300]`?

- A) "CO"
-  B) "COMPUTERS"
- C) "S"
- D) None of the above

Quiz Time

`myString = "COMPUTERS"`

What is `myString[12]`?

- A) "S"
- B) "COMPUTERS"
- C) "C"
-  D) None of the above

Quiz Time

`myString = "COMPUTERS"`

What is `myString[5:]`?

- A) "COMPU"
-  B) "TERS"
- C) "ERS"
- D) "T"

Quiz Time

`myString = "COMPUTERS"`

What is `myString[6:6]`?

- A) “TE”
- B) “E”
-  C) “”
- D) None of the above

Quiz Time

`myString = "COMPUTERS"`

What is `myString[6:7]`?

- A) “TE”
-  B) “E”
- C) “”
- D) None of the above

Quiz Time

`myString = "COMPUTERS"`

What is `len(myString)`?

- A) 8
-  B) 9
- C) "COMPUTERS"
- D) None of the above

Quiz Time

myString = "COMPUTERS"

What is **len(myString[6:6])**?

- A) 9
- B) 1
-  C) 0
- D) 2

Quiz Time

`myString = "COMPUTERS"`

What is `len(myString[5:])`?

- A) 5
-  B) 4
- C) 3
- D) 0

For Loops

```
for _____ in _____:  
    Perform some operation
```

An element

A collection



A for loop iterates over the collection one element at a time, performing the operation you defined in the loop body.

For Loops

```
1 for num in range(4):  
2     print(num)
```



```
0  
1  
2  
3
```

```
1 for num in range(len("hi")):  
2     print(num)
```



```
0  
1
```

```
1 result = 1  
2 for num in range(3):  
3     result +=(num)  
4     print("num: " + str(num))  
5     print("result: " + str(result))
```



```
num: 0  
Result: 1  
Num: 1  
Result: 2  
Num: 2  
Result: 4
```

While Loops

while —:
Perform some operation

Loop Condition

A while loop repeatedly performs the operation you defined in the loop body so long as the loop condition holds.

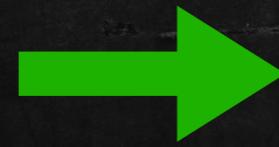
While Loops

```
1 num = 0  
2 while num < 4:  
3     print(num)  
4     num += 1
```



```
0  
1  
2  
3
```

```
1 result = 1;  
2 num = 0  
3 while num < 3:  
4     result +=(num)  
5     print("num: " + str(num))  
6     print("result: " + str(result))  
7     num += 1
```



```
num: 0  
Result: 1  
Num: 1  
Result: 2  
Num: 2  
Result: 4
```

Weekly Challenge

Complete the challenge to get a **prize!**

Using **only 3 lines of code:**

- Print every multiple of 3 between 0 and 100 inclusively.
- Print “Booyah!” at the end.

Using only 3 lines of code:

- Print every number between 0 and 100 inclusively.
- Print “Booyah!” at the end.

```
1 for number in range(101, 3):  
2     print(number)  
3 print("Booyah!")
```