COMP 110

CL10 - for loops + range()

Range



- Includes start point, does <u>not</u> include end point, and *steps* through every point in between
- Constructor: range(start, end, [step = 1])
- Examples:
 - o range(1, 5) stops at numbers 1, 2, 3, 4
 - o range(1, 6, 2) stops at numbers 1, 3, 5

range() in Memory

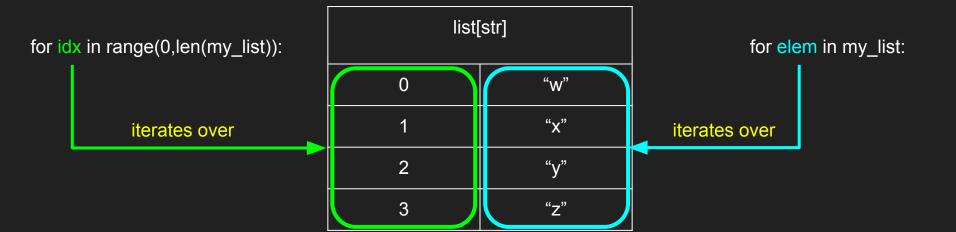
On the heap, but don't worry about it.:-)

Range in memory

Stored on heap. Always has three attributes: start, stop, step

 $a_range = range(0,100,10)$

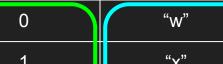




for idx in range(0,len(my_list)):

iterates over





2 "y"

"z"

for elem in my list:

iterates over

for idx in range(0,len(my_list)): print(idx)

Output:

3

for idx in range(0,len(my_list)): print(my list[idx])

Output:

3

W Χ

Z

for elem in my_list: print(elem)

Output:

W

Using range() in a for ... in ... loop.

names: list[str] = ["Alyssa", "Janet", "Vrinda"]

Print every element's index and value:

0: Alyssa

1: Janet

2: Vrinda

Challenge Question:

In your workspace, in the **lessons** folder, create the file **sum.py**

We are going to write the same function three different ways!

This function sums all the elements of the input vals: list[float] and returns the sum.

For example, w_sum([1.1, 0.9, 1.0]) should compute 1.1 + 0.9 + 1.0 and return the simplified value 3.0.

- Version A: Write a function called w_sum that uses a while loop to iterate through vals
- Version B: Write a function called f_sum that uses a for ... in ... loop.
- Version C: Write a function called f_range_sum that uses a for ... in range(0,len(xs)) loop.

More info + submission instructions on the website!