COMP 110

for loops + sequences

Sequences

What is a Sequence?

An Abstract Data Type that is an ordered, 0-indexed set of values.

There are many specific types of sequences with their own properties. Common, built-in sequence types in Python include:

- str: a sequence of character data
- list: a dynamically sized sequence of values of a specific type
- tuple: a fixed size sequence of values of any types
- range: a sequence of integers at intervals between a start and end

Tuples

- Tuples types are made of a specific, fixed-length sequence of any mixed type(s).
- Example:

```
3d_coordinate: tuple[float, float, float] = (1.0, 1.0, 1.0)
```

• Other example:

```
Player = tuple[str, int]
lebron : Player = ("James", 6)
mj: Player = ("Jordan", 23)
```

• This is pretty much everything you need to know about tuples for this class, I just want you to familiar with them! ©

Looping Through Sequences

- You can use a loop to iterate over every element in a sequence!
- We've done this with while loops, but there's another type of loop specifically designed for this!

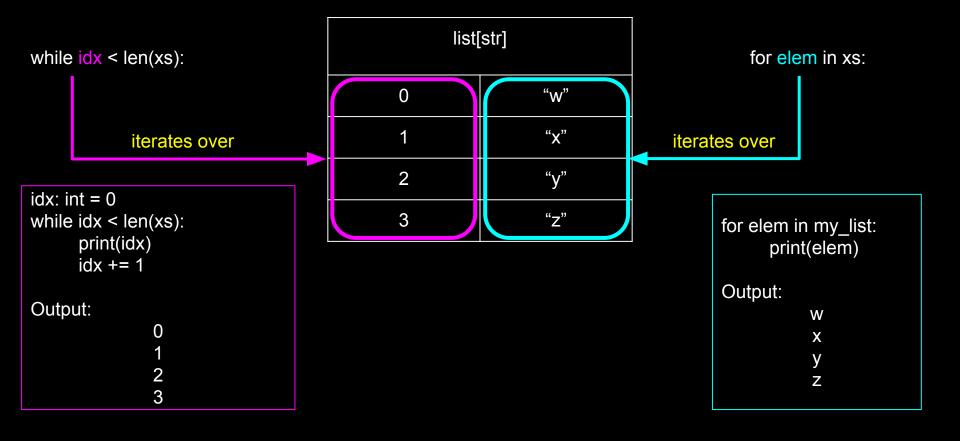
for ... in ... loops

xs: list[str] = ["w", "x", "y", "z"]

Print every element of xs

while

for ... in ...



for ... in ... loops in Memory

Writing for loops

```
pets: list[str] = ["Louie", "Bo", "Bear"]
```

Using a for ... in ... loop, write code to tell each pet they're a good boy!

Challenge: call each elem something other than "elem"

Output should be:

Good boy, Louie!

Good boy, Bo!

Good boy, Bear!

for ... in ... loops in Memory

```
1
     """Practice with for loops + functions"""
 2
 3 \times def even_words(inp_list: list[str]) -> list[str]:
         """What it does is a mystery! ;)"""
 4
 5
         even_list: list[str] = []
 6 ~
         for elem in inp_list:
 7 ~
             if len(elem) % 2 == 0:
 8
                 even_list.append(elem)
 9
         return even_list
10
    a: list[str] = ["Alyssa", "Katie", "Anusha"]
11
12
     even_words(a)
```