CL09 - 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!* ☺

Range

…we will talk about Friday!

Looping Through Sequences

- You can use a loop to iterate over every element in a sequence!

for … in … loops

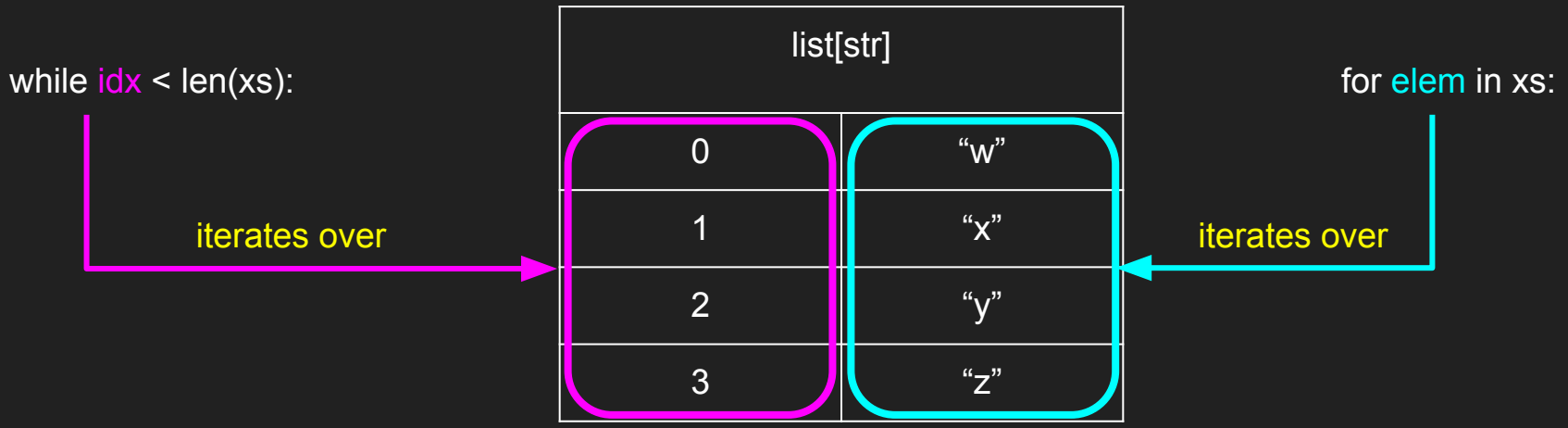
xs: list[str] = [“w”, “x”, “y”, “z”]

Print every element of xs

while

for … in …

xs: list[str] = [“w”, “x”, “y”, “z”]



for … in … loops in Memory

```
1  """Practice of for Loops"""
2
3  my_list: list[int] = [1, 2, 3]
4  new_list: list[int] = []
5  for elem in my_list:
6      new_list.append(elem)
7  print(new_list)
```

for … in … loops in Memory

```
1   """Practice with for loops + functions"""
2
3   def even_words(inp_list: list[str])  -> list[str]:
4       """What it does is a mystery! ;)"""
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
11  a: list[str] = ["Alyssa", "Katie", "Anusha"]
12  even_words(a)
```

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!