For Loops and Tuples

Lesson Outcomes:

1. Know what a tuple is
2. Access elements in a tuple by index
3. Slice a tuple
4. Know what a for loop is
5. Know how to iterate through a list using a for loop
6. Know how to iterate through a tuple using a for loop
7. Know how to use for loops to work with lists and strings

What is a tuple?

```
# tupleForm = 1st, 2nd, 3rd, etc
# tupleForm = (1st, 2nd, 3rd, etc)

tuple1 = (5.6, "California", True, 1)

tuple2 = 7, "Star Trek", 9.92, False

empTup = ()  # empty tuple
```

Accessing by Index and Slicing for Tuples

```
# assign a tuple to tupEx
tupEx = (1, 2, 3, 4, 5)

# accessing by index
print(tupEx[1])  # prints 2
print(tupEx[3])  # prints 4

# tuple slicing
first3 = tupEx[:3]  # prints (1, 2, 3)
mid3 = tupEx[1:4]  # prints (2, 3, 4)
last3 = tupEx[2:]  # prints (3, 4, 5)
```

What is a for loop?

```
list1 = [1, 2, 3]

tuple1 = (4, 5, 6)

# iterate through list
for elements in list1:
    print(elements)

# iterate through tuple
for items in tuple1:
    print(items)
```

Using for loops to work with lists and strings

```
# list
listy = [4, 3, 2, 1, 0]
empty = []

# tuple
tup = ("Let ", "It ", "Be")
song = ""

# after this for loop, empty = [16, 12, 8, 4, 0]
for nums in listy:
  empty.append(nums * 4)

# after this for loop, song = "Let It Be"
for words in tup:
  song += words

print(empty)  # prints [16, 12, 8, 4, 0]
print(song)  # prints Let It Be
```

Recap

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What’s next?