Complete the Pause and Practice: Lists and Conditionals

◯ Mark as done

Due Saturday by 11:59pm **Points** None

First, review the following:

Lists

This week's exercise hits on a topic critical for all types and styles of programming: **lists**. Lists are basically an ordered way of grouping things (called **elements**) - the cool thing about lists in Python is that you can have a list that contains objects of multiple types. Your list can mix between strings, integers, objects, other lists, what have you.

The way to construct an empty list is just to do

```
x = []
```

And your variable x now holds an empty list. To add things to this list, just "append" them to the list. Like so:

```
x = []
x.append(3)
```

Your list x now looks like [3].

In Python, lists are also **iterables**, which means you can loop through them with a **for loop** in a convenient way. (If you come from other languages like C++ or Java you are most likely used to using a counter to loop through indices of a list - in Python you can actually loop through the elements.) I will let the code speak for itself:

```
my_list = [1, 3, "Michele", [5, 6, 7]]
for element in my_list:
  print(element)
```

Will yield the result:

```
1
3
```

"Michele"

[5, 6, 7]

There are many other properties of lists, but for the basic exercise all you should need is this for loop property. Future weeks will address other properties of lists.

Conditionals

The nice thing about conditionals is that they follow logical operations. They can also be used to test equality. Let's do a small example. Let's say I want to make a piece of code that converts from a numerical grade (1-100) to a letter grade (A, B, C, D, F). The code would look like this:

```
grade = input("Enter your grade: ")
if grade >= 90:
  print("A")
elif grade >= 80:
  print("B")
elif grade >= 70:
  print("C")
elif grade >= 65:
  print("D")
else:
  print("F")
```

What happens if grade is 50? All the conditions are false, so "F" gets printed on the screen. But what if grade is 95? Then all the conditions are true and everything gets printed, right? Nope! What happens is the program goes line by line. The first condition (grade >= 90) is satisfied, so the program enters into the code inside the ifstatement, executing print("A"). Once code inside a conditional has been executed, the rest of the conditions are skipped and none of the other conditionals are checked.

Next, watch the Pause and Practice videos:

- **Loops and if then else statements (https://scrimba.com/c/cKKmBah3)**
- **Lists in Python (https://scrimba.com/c/c6WwvPTy)**
- **Splits and Joins (https://scrimba.com/c/caZaWDcL)**

- (https://scrimba.com/c/caZaWDcL) Tuples in Python (https://scrimba.com/c/ckRWQ8uV)

Read the following:

- If and Loops

◯ Mark as done