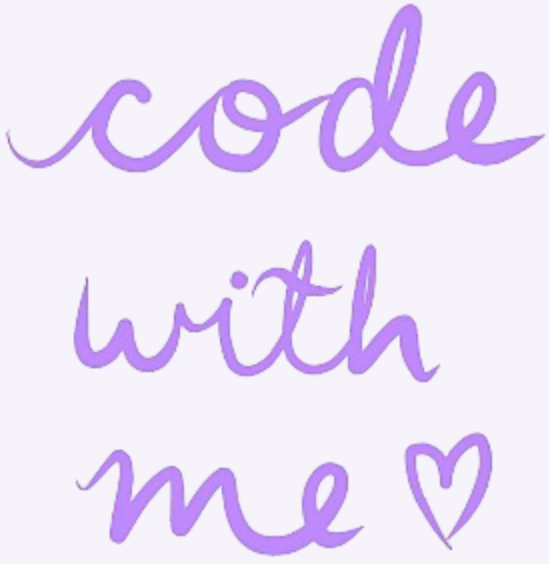
Code with Me Meeting #11



For Loops

LOOPS:

- Now we're going to learn the last topic of this course: loops!
- Loops are exactly what they sound like: you state a specific condition for which you want Python to keep looping through until it has been met.
- The first loop we're going to do is the For Loop.

FOR LOOP:

- Using a For Loop, you can loop through a string or a list
- A list is a set of objects stored together. Something like this:
  - `fruits = ["Apple", "Banana", "Cherry"]`
  - `[0, 1.23, -100]`
  - There can be as many objects as you want, they are separated using commas.
  - You can also have `int`s and `float`s in a list.
  - Although lists can get a lot more complicated, that's all you need to know right now, so that we can use them in loops.

SYNTAX:

- ```
  for value in sequence:
      Body of loop
  ```
- Example -
- ```
  for x in fruits:
      print(x)
  ```
- The sequence can be a string, list, or range.
- In the body, you could say `print(value)` which would print every item on the list or every character in the string
- You can also put a counter.

RANGE:

- You can specify a range of numbers that you want to loop through.
- For example, `for i in range(2, 11):` will loop through the numbers 2 to 11 (11 not included) and execute your statement/command each time.

EXAMPLES OF FOR LOOPS:

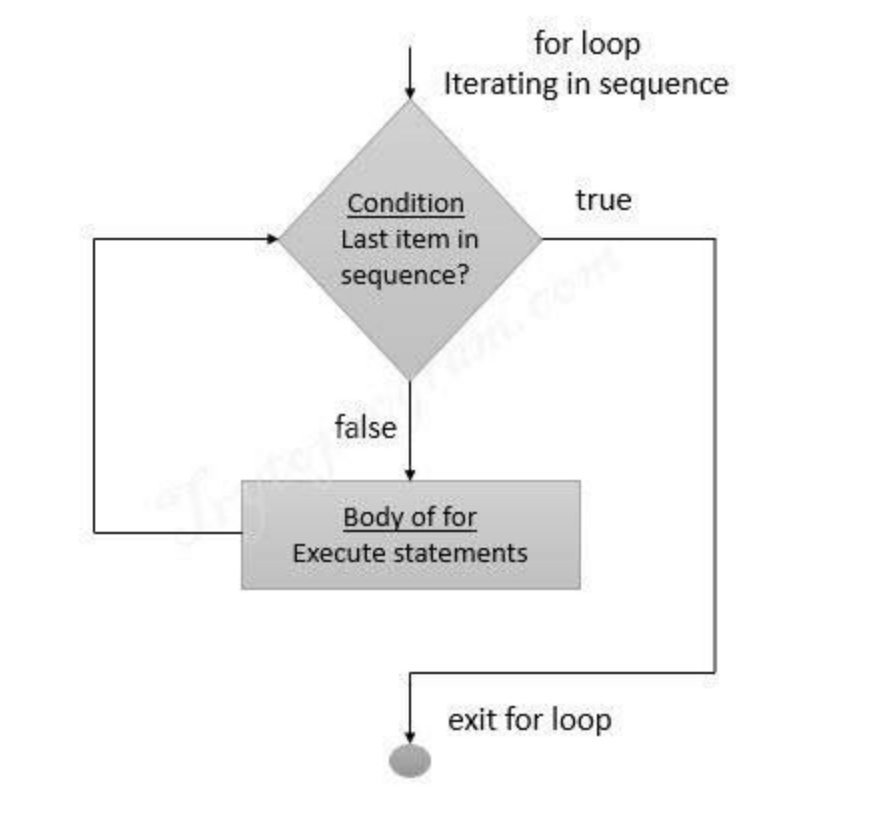
- Examples looping through a string
- Examples looping through a list
- Examples using range (for i in range(1,10))

NESTED LOOPS AND COUNTERS:

- You can put anything inside the loop. You can put if statements and even counters.

```
character_count = 0
for i in “Hello”:
    character_count = character_count + 1
    print(character_count)
```

- This would set the value of `character_count` to `1` more than whatever it was until it has looped over every character in `“Hello”`
- This would give 5.
    - Remember that you would have to set `character_count` to 0 outside the loop.
- It’s important to get indentation right, especially since we have big statements inside of loops.
    - Otherwise, our program may not do what we want it to, or give us an error.
- When you use a statement inside a loop or even a loop inside a loop, it is called nesting.



ACTIVITY:

- Write a for loop to count the number of even numbers between 1 and 100.
- Write a for loop to find the sum of all numbers between 1 and 20