

ES 2: Critical thinking with Python

aka, Introduction to Computing for Engineers

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Conditionals

You've seen conditionals before; let's look in more detail

```
if CONDITION:  
    # Stuff to do if True  
else:  
    # Stuff to do if False
```

Conditionals

Experiment in Codio

Conditionals summary

`==` checks if two variables are equal

`is` checks whether they are the same variable

`and`, `or`, and `not` can be used to build more complex conditions

Colons are followed by indented blocks (just like loops)

`elif` is short for "else if"

Multiple conditionals

Draw a flowchart for each of these. Do they do the same thing?

Try them if you're not sure!

```
if x > 10:  
    print("Big")  
if x > 100:  
    print("Very big")  
if x > 1000:  
    print("ENORMOUS")
```

```
if x > 10:  
    print("Big")  
elif x > 100:  
    print("Very big")  
elif x > 1000:  
    print("ENORMOUS")
```

```
if x > 10:  
    print("Big")  
elif x > 100:  
    print("Very big")  
else:  
    print("ENORMOUS")
```

Tracking program flow

Tracing the flow of the program is the key to understanding software

A couple tools to help:

Codio's debugger

PythonTutor

```
total = 0
for i in range(10):
    if i % 3 == 0:
        total = total + i
    print(total)
```

Back to plotting

Live view is working!

How "accurate" is Covid/Flu/etc testing?

That depend on what you mean by "accurate"!

Assignments

HW 2 (testing) due next Tuesday