

Intro to Coding with Python– Interaction

Dr. Ab Mosca (they/them)

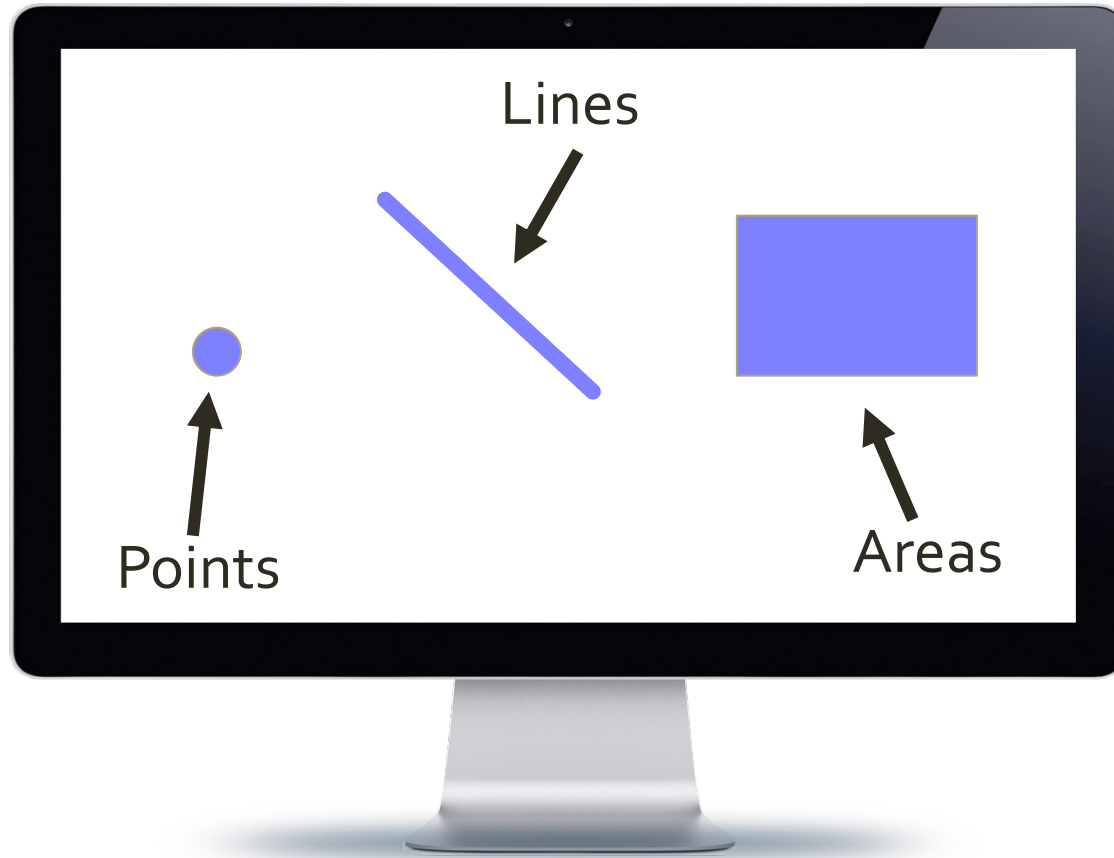
Slides based off slides courtesy of Jordan Crouser (<https://jcrouser.github.io/>)

Plan for Today

- Interaction basics
 - mouse
 - keyboard

✓ Draw stuff

“graphical primitives”



✓ Draw stuff

using the **graphics** module



✓ Make it
move



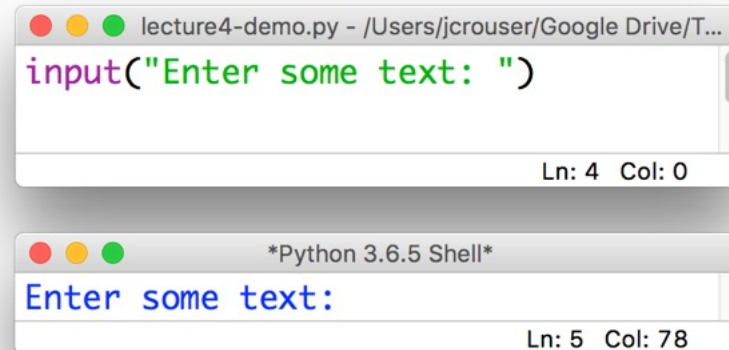
3. Get input
from the user
and react



Lecture 4: first experience with user input

The `.input()` function

- Python has a built-in `.input()` function that allows us to ask the user to type in information
- The `.input()` function takes in a value, which will be printed to the console as a prompt:



```
lecture4-demo.py - /Users/jcrouser/Google Drive/T...  
input("Enter some text: ")  
Ln: 4 Col: 0
```

```
*Python 3.6.5 Shell*  
Enter some text:  
Ln: 5 Col: 78
```

Interaction (def.)

- Ways for the user to **affect change** in what's happening in the program

Interaction (def.)

- Ways for the user to **affect change** in what's happening in the program
- Low level: **between human and interface**
 - the set of operations available
 - happens between the human and the physical computer

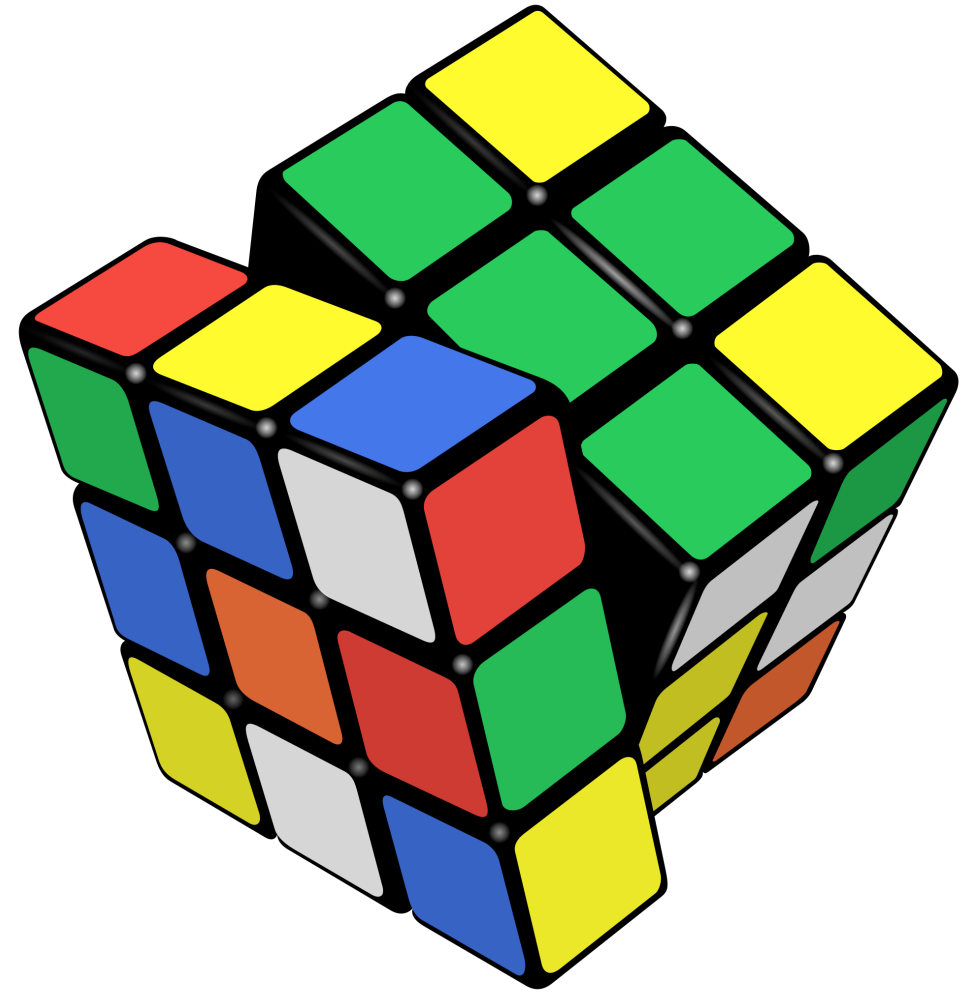
Interaction (def.)

- Ways for the user to **affect change** in what's happening in the program
- Low level: **between human and interface**
 - the set of operations available
 - happens between the human and the physical computer
- High level: between **human and problem space**
 - a cognitive act *enabled* by the interface
 - happens between the human and the digital objects

Example: Rubik's Cube

What **low-level**
interactions can you
have?

What **high-level**
interactions can you
have?



Low-level vs.
high-level
interactions



Interaction with **graphics** objects

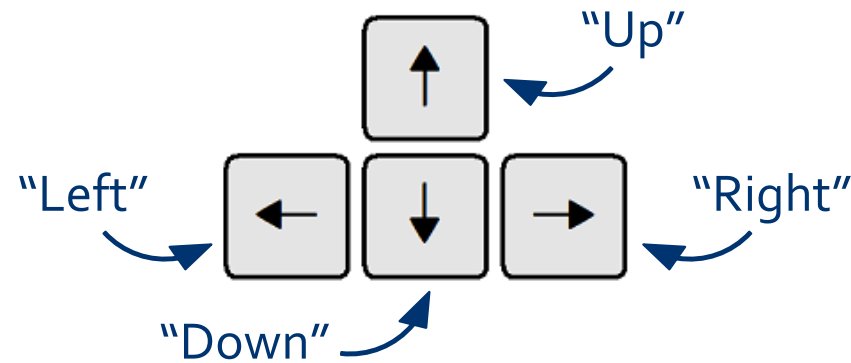
- The **GraphWin** object has methods to detect interactions
- Mouse:
 - **.getMouse()** : stop the program and wait for user to **click**
 - **.checkMouse()** : continuously check if the user has **clicked**
 - both return a **Point** object
- Keyboard:
 - **.getKey()** : stop the program and wait for user to **type**
 - **.checkKey()** : continuously check if the user has **typed**
 - both return a **string**

Our first
interactive
graphics
program

DEMO
TIME

Notes about keyboard interaction

- The strings returned by the `.getKey()` / `.checkKey()` methods are called **keycodes**
- Some keys don't have an obvious letter attached to them, but their keycodes are still pretty intuitive, e.g.



- See also: "space", "Escape", "minus", "underscore", "equal", "plus", "BackSpace", "Return", etc.

Back to the Fish Tank

- Use the starter code on repl, and implement the following...

Challenge 1: fish position



Challenge 2:
press 'q' to quit



Challenge 3: fish frenzy

