Recap

- Git vs Guthub

- GHE

- Data types

- Python iterations: for loops and while loops

- If, if..else, if..elif..elif…else

- try/except

- Python functions

Classes

‣ **Object-oriented programming paradigm (OOP)**

- **Building reusable blocks of code (object)**

‣ **Block of code that combines information and behaviour that can be performed on data to solve a problem**

Terminology

‣ **Behaviour:** actions that are defined within a class. They are made up of methods

‣ **Methods:** functions defined within a class

‣ **Information (Attributes):** variables that are part of the class

‣ **Object:** an instance of a class. You can have as many objects as you want for one class.

Class Structure

```python
import numpy as np


class Robot:
    def __init__(self):
        self.x = 0
        self.y = 0

    def move_up(self, increase):
        self.y = self.y + increase

    def move_down(self, decrease):
        self.y = self.y - decrease

    def move_right(self, increase):
        self.x = self.x + increase

    def move_left(self, decrease):
        self.x = self.x - decrease

    def calc_distance(self):
        # From Pythagora's Theorem
        distance = ( np.abs(self.x)**2 + np.abs(self.y)**2 )**0.5
        return distance
```

Attributes

Methods

Objects

```
myRobot = Robot()
```

```
myRobot
```

```
<__main__.Robot at 0x11131c080>
```

```
myRobot.move_up(2)
myRobot.move_right(3)
myRobot.move_left(2)
myRobot.move_down(6)
myRobot.calc_distance()
```

```
4.123105625617661
```

Making multiple objects from one class

```python
myRobots = []

for i in range(0,4):
    myrobot = Robot()
    myRobots.append(myRobot)
```

```python
myRobots
```

```
[<__main__.Robot at 0x11131c080>,
 <__main__.Robot at 0x11131c080>,
 <__main__.Robot at 0x11131c080>,
 <__main__.Robot at 0x11131c080>]
```

Example: Sephora

	INSIDER	VIB	ROUGE
Spend per calendar year	FREE	$350	$1000
Birthday gift	●	●	●
Rewards Bazaar	●	●	●
Access to the Beauty Insider Community	●	●	●
Free Beauty Classes	●	●	●
Monthly gifts		●	●
Free Custom Makeovers		1X	●
Flash 2-day shipping on all orders*	$10/yr	$10/yr	FREE
Private hotline			●
Invitations to exclusive events			●