

Day 15 Object-Oriented Programming

Nov. 5, 2020



Administrative

- **Homework 4** is due Fri Nov 13
- **Projects** Complete the [project survey](#) by Friday! Only 18 responses so far.
- **Midterm** is being graded. Done by early next week.
- **No final exam**

Pre-Class

Questions/Issues

- I'm confused about classes and instances and what the differences are
- When are we creating/using attributes versus methods?
- Why/when do we need to use Object-Oriented Programming?

We will be doing some more OOP on Tuesday and we will start using it in models after that.

In [15]:

```
class Point(object):  
    def __init__(self, x=0, y=0, z=0):  
        self.x_coord = x ## setting the attribute x_coord  
        self.y_coord = y ## setting the attribute y_coord  
        self.z_coord = z
```

In [16]:

```
my_point = Point(2,3) ## creating an instance of Point called 'my_point'  
#print(my_point.x_coord)  
#print(my_point.y_coord)  
my_point.z_coord = 1  
print(my_point.z_coord)  
  
new_point = Point()  
new_point.z_coord
```

1

Out[16]: 0

In [17]:

```
class Point(object):
    def __init__(self,x=0,y=0):
        self.x_coord = x
        self.y_coord = y
    def translate(self,x=0,y=0):
        self.x_coord += x
        self.y_coord += y
    def print_point(self):
        print("{:d},{:d}".format(self.x_coord, self.y_coord))
```

In [21]:

```
my_point = Point()
my_point.print_point()
my_point.translate(-1,2)
my_point.print_point()
my_point.translate(1,-2)
my_point.print_point()
```

```
(0,0)
(-1,2)
(0,0)
```

Questions, Comments, Concerns?