Announcements

- HW is due Tuesday (not Monday)

- Next Friday — in class review

- Following Monday is midterm 1 up through Ch. 52
Objects

We've seen many objects.

Each is a "container" for some kind of data, and comes paired with a set of operations, called methods.

Examples:
- lists: sort, reverse, [], [[]], ...
- strings: [ ], in, index, ...
- mylist. sort()
Writing a class

Today we'll start our first class.

We have ints and floats, but in 2-dimensional geometry a point is a pair of numbers: \((x, y)\)

Methods

- constructor
- norm
- \(p_1 + p_2 \quad (x_1 + x_2, y_1 + y_2)\)
- scale
Point class: Syntax

class Point:

    # constructor
    def __init__(self):
        # code for constructor
        # (builds a point)

    # other functions
    def setX(self, value):
Self:

What is the input parameter self?
Think of how we'll use this:

\[
p_1 = \text{Point}(1) \quad \text{calling constructor}
\]

\[
p_2 = \text{Point}(2)
\]

\[
p_1 \text{. setX}(3)
\]

\[
p_1 \text{. setY}(2)
\]

\[
p_2 \text{. setX}(4)
\]

\[
p_3 = \text{Point}(0)
\]

\[
p_3 = p_1 + p_2
\]
Basic point class

Let's code a basic point class.

Methods:
- Constructor
- get X, set X
- get Y, set Y

Once we get these working, we'll extend to add, scale, etc.