Python: Beyond the Basics

Welcome

I'm your host, Aaron Maxwell.

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Our focus in this class: **Responsive, Scalable, and Maintainable Code Patterns.**

Fully participating will **magnifiy your ability** to expressively write **powerfully effective** Python code.

Broad Itinerary

Today:

- Generators for scalable, responsive code
- Understanding iterators, and Python's iterator protocol
- List & other comprehensions for rich, expressive data structures
- Python's enhanced collection types
- And... Homework!

Broad Itinerary

Tomorrow:

- Quick review of Python's object syntax (~ 15 minutes)
- Properties For Clean Design and Refactoring
- Object design patterns
- Module structure and evolution
- Code Organization
- And... More homework!

How we will proceed

Download courseware ZIP:
https://powerfulpython.com/courseware-btb.zip

Give you a break every hour (10 minutes).

Give me a thumbs up. (Let's try it now)

Ask questions anytime.

What makes perfect?

Practice, practice, practice.

- Practice syntax (typing things in)
- Practice programming (higher-level labs)

I expect you to do your part!

You **exponentially** get out of this what you put into it.

Expected Setup

What I expect you've done:

- Have Python installed.
  - Preferably Python 3 (more on that later)
  - For Python 2, must be 2.7

- Have an IDE or editor set up (e.g., Pycharm)
- You are able to run python programs
- Have labs (in courseware folder) downloaded and unzipped

Python versions

Most code I show you will run in both Python 2 and 3.

Where it's different, I'll code in Python 3, and point out the differences. (There won't be many.)

You can do the programming exercises in either 3, or 2.7.

Running the labs

Labs are the main programming exercises. You are given a failing automated test; your job is to write Python code to make it pass.

Simply run it as a Python program, any way you like. (For example, "python3 helloworld.py")

Run unmodified first, so you can see the failure report.

When done, click the thumb's up, and find someone to high-five.

Then: Move on to the extra credit.

I will usually NOT give you enough time to finish in class. But I expect you to go for it, and complete as much as you can.

Lab: helloworld.py

Let's do our first lab now: 'helloworld.py`

- In `labs/py3` for Python 3.x, or `labs/py2` for 2.7

When you finish:

- Thumbs up, so I know you're done.
- Find someone to high five.
- Proceed to `helloworld_extra.py`

Getting the most

We'll take some class time for each lab. You may not finish, but it's **critically important** that you at least start when I tell you to.

After we're done for the day, find time to finish all the main labs before tomorrow.

Optional (**only** for future master Pythonistas): Do all the extra labs as well, as soon as you can manage.