

Python

Nathan Sprague
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Goals

- Python Crash Course
 - Break the ice if you've meant to learn Python but never had the chance.
- Python Turtle Graphics
- Resources for Teaching/Learning Python

Schedule

- Introductions (5 Minutes)
- About to Python (5 Minutes)
- Python in the Terminal (15 Minutes)
- Python Programs (15 Minutes)
- Hands-On Turtle Exercises (30 Minutes)
- Resources / Discussion (20 Minutes)

Python

- History:
 - Originally released in '91 by Guido Van Rossum
 - Python 3.0 Released in 2008
 - 2.x → 3.x transition is still underway.
- Use:
 - Frequently used as a scripting/glue language
 - Currently #8 in the [TIOBE Language Index](#)

Python For Education

- Attractive Features:
 - Minimal, easy-to-read syntax
 - Extensive standard libraries (“batteries included”)
 - Dynamically Typed
 - Interpreted
 - Cross-platform
 - Stylistically Flexible – OO if you want it.
 - Free and open source

The Python Interpreter

- Let's take a look...

The Python Interpreter – Hands On

- Create a list containing three strings
 - Don't name it “list”!
- Create a list containing three numbers
- What happens when you access index -1?
- What happens when you “add” the two lists using the “+” operator?
- Try typing

```
>>> help(list)
```

Python Files/Editors

- Python files have .py extension
- Any text editor will do
- Possibilities that might be appropriate for students:
 - Idle (included in the standard Python distribution)
 - Eclipse + [PyDev](#) Plugin
 - [WingIDE](#) (non-free)
 - [DrPython](#)

Python Turtle Exercise

- w3.cs.jmu.edu/spragunr/cta/turtle.shtml
- Starter code: [faces.py](#)
- Additional resources:
 - Official Python Tutorial: <http://docs.python.org/2/tutorial/>
 - [One-Page Python Cheat Sheet](#)

Additional Resources

- Python EDU-SIG: <http://www.python.org/community/sigs/current/edu-sig/>
 - Collection of links to free textbooks, tutorials, etc.
- Think Python: <http://www.greenteapress.com/thinkpython/thinkpython.html>
 - Free introductory CS textbook based on Python
- Code Academy: <http://www.codecademy.com/tracks/python>
 - Python exercises/tutorials
- Python Tutor: <http://www.pythontutor.com/>
 - tool for visualizing Python code execution
- <http://programarcadegames.com/>
 - Textbook and exercises for writing games with pygame
- IPython: <http://ipython.org/>
 - A dramatically nicer interface to for the python interpreter

Discussion

- Questions? Comments? Thoughts?

Drawbacks of Python

- 2.x → 3.x confusion
- Dynamic typing brings its own difficulties
- Slow
- Shortage of good development environments for beginners
- “Stylistic flexibility” can be a little ugly