Introduction to Programming

Next steps

What should I do to continue improving my programming skills?

What should I do between now and the next class?

Many ways to keep your skills sharp

- Join a local or online meetup
- Practice by completing programming exercises and challenges
- Watch someone code as a way to learn how experienced programmers solve problems
- Join an online courses or watch video tutorials

Join a local or online meetup

Meetup.com

Meetup is a social media platform for hosting and organizing in-person and virtual activities, gatherings, and events for people and communities of similar interests, hobbies, and professions.

Meetup.com

Meetups are a great way to connect with other members of the programming community. Check out meetup.com to find near by and online groups that you're interested in.

Meetup: The Tech Academy SLC Community

https://www.meetup.com/techacademyslc/

This is a group for anyone interested in software development and web development. The Tech Academy is a code school located in Portland, OR and online at www.learncodinganywhere.com. Anyone is welcome!

Meetup: Salt Lake City Python

https://www.meetup.com/slcpython/

A Salt Lake City-based Python web developer meetup [...] We meet on the first Wednesday of each month (barring holidays, in which case we move to the 2nd Wednesday) at the INSCC building at the University of Utah.

Meetup: Python at the Point

https://www.meetup.com/pythonatthepoint/

Python at the Point meets in Lehi, halfway between Salt Lake City and Provo on the second Thursday of the month at high noon (12pm).

Meetup: Salt Lake PyLadies

https://www.meetup.com/salt-lake-pyladies/

We are the Salt Lake City chapter of an international mentorship group with a focus on helping more women become active participants and leaders in the Python open-source community.

Programming exercises and challenges

Exercism

Exercism is a free to use online tool and community that offers programming/coding challenges. You're given a program to build, and once you're done you can submit your code and others will be able to review it and give you feedback.

Exercism

Exercism offers "tracks" for different programming languages. This is a great way to learn a new language or keep your skill sharp in a language you already know. Check out the Python track.

Online courses and tutorials

⭐ YouTube: 12 Beginner Python Projects ⭐

https://www.youtube.com/watch?v=8ext9G7xspg

3 hour walkthrough of a programmer working on 12 different coding projects, like Minesweeper, a Sudoku solver, and a Tic-Tac-Toe AI.

⭐ YouTube: Learn Flask for Python ⭐

https://www.youtube.com/watch?v=Z1RJmh_OqeA

45 minute tutorial of Flask. Flask is a web framework.

⭐ YouTube: Data Structures and Algorithms in Python ⭐

https://www.youtube.com/watch?v=pkYVOmU3MgA

An introduction to data structures (eg, linked lists, stacks, queues, trees, etc.) and algorithms (eg, sorting, search, recursion, etc.) This course would be great to take for anyone interested in becoming a software engineer.

More YouTube videos

- Intermediate Python Programming Course, 6 hour course going over basic concepts such as lists, strings, dictionaries, then moving on to more advanced topics such as threading, multiprocessing, generators, and more.
- Pygame Tutorial for Beginners, 2 hour tutorial of Pygame. Pygame is a game engine written in Python. You'll built a Space Invaders game in Pygame during this tutorial.
- Learn Python by Building Five Games, 7 hour walkthrough of a programmer building games in Python using a library called Pygame. The games include Pong, Tetris, an online multiplayer game, and more.

More YouTube videos (cont.)

- Object Oriented Programming with Python, 2 hour tutorial going over Object Oriented Programming concepts and implementation in Python.
- Develop an AI to play Connect Four, 90 minute tutorial where you built a program that plays Connect 4.
- Other tutorials in freeCodeCamp.org's YouTube channel.

Khan Academy: Computers and the Internet

Computers and the Internet, introduction to low level computer topics such as binary numbers, logic gates, higher level topics such as networking, routing, web protocols, cyber security.

Khan Academy: Computer science

Computer science, course starts with an introduction to algorithms (searching, sorting, tree walking, etc.) and moves on to cryptography (encryption/decryption).

Coursera: Python for Everybody Specialization

Python for Everybody Specialization, a five course program that starts with an introduction to programming in Python and ends with building web applications that use databases. Our class covered roughly the first two courses in this program and started getting into the third one.

- Programming for Everybody
- Python Data Structures
- Using Python to Access Web Data
- Using Databases with Python
- Retrieving, Processing, and Visualizing Data with Python

⭐ Coursera: From Nand to Tetris ⭐

From Nand to Tetris, this is a two part course which starts by introducing logic gates (and, or, nand, etc.) that are used to built circuits (RAM, ROM, ALU, CPU) which come together into a fully working computer (you built a virtual computer).

⭐ Coursera: From Nand to Tetris ⭐

The second part has you implement an assembler that compiles code into machine instructions that are executed by the CPU you built in the first part of the course, then moves on to building a high level programming language and compiler.

⭐ Coursera: From Nand to Tetris ⭐

At the end of the course you would have built Tetris in your own programming language which runs in the virtual computer that you built.

I don't have much time!!

The best ones

1. ★ From Nand to Tetris ★ https://www.coursera.org/learn/build-a-computer
2. ★ 12 Beginner Python Projects ★ https://www.youtube.com/watch?v=8ext9G7xspg
3. ★ Learn Flask for Python ★ https://www.youtube.com/watch?v=Z1RJmh_OqeA
4. ★ Data Structures and Algorithms in Python ★ https://www.youtube.com/watch?v=pkYVOmU3MgA

Keep practicing!!