

Notes about getting into Python

Several students have expressed an interest in learning to program. I recommend Python as a good starting computer language. (It's not just a beginner's language, but it is accessible to beginners.) The language itself is free and open source and available on the internet for download. I have downloaded current versions of the language and various other tools (current as of September 2007) and put them on a CD. See me (David Chandler) for a copy if you are interested. Here are some notes about how to get started.

Official Python web site

<http://python.org> (downloads, tutorials, links, etc.)

Python Tutorials

The Beginner's Guide <http://wiki.python.org/moin/BeginnersGuide/NonProgrammers> lists several beginner's tutorials. I recommend you start with the one called "One Day of IDLE Toying" http://hkn.eecs.berkeley.edu/~dyoo/python/idle_intro/index.html. It gives screen shots of each step to get you started. It doesn't take you far, but it gets you up and programming with the IDLE development environment, a programming editor.

Once you're somewhat comfortable writing, saving, and running a program in IDLE, try another tutorial, such as:

- The Non-Programmer's Tutorial for Python, available as a pdf file on the CD, or online at http://en.wikibooks.org/wiki/Non-Programmer's_Tutorial_for_Python/Contents
- and/or, A Beginner's Python Tutorial (written for players of the simulation game, "Civilization IV" which is written in Python): <http://www.sthurlow.com/python/>
- Python.org has a Comprehensive Tutorial: <http://docs.python.org/tut/tut.html>. (Warning: it is quite a bit deeper than the others.)

If you Google the phrase, "Python Tutorial" you will find others

If you want an actual bound paper "book," I recommend *Learning Python* by Mark Lutz and David Ascher (published by O'Riley), available at Amazon.com. Another, *Dive Into Python*, is available both as a printed book and online: <http://www.diveintopython.org/>. There are lots of others, of course.

Of course the ultimate resource is the official documentation: <http://docs.python.org/index.html>. This can be read online or downloaded. (A copy is available on the CD.)

The VERY BEST way to learn a programming language is to work on programming projects and learn what you need to accomplish your goals as you go along. Picking a project that is reasonable, given your level of knowledge and experience, is the key, but a project can help motivate the learning far better than just reading through documentation.

Another resource for learning Python, or any computer language, is online forums, where you can ask questions of others who know the language and can help get you “unstuck” if you run into a road block. One online forum specifically for people learning Python is <http://mail.python.org/mailman/listinfo/tutor>.

When you're ready to move beyond the IDLE development environment, try Dr Python (available on the CD). Before you run Dr Python you will need to install wxPython (also available on the CD), which provides tools for a graphical user interface (GUI), for that familiar “Windows” look and feel. You don't need to *install* Dr Python itself. Simply copy the folder to your C: drive and run the main program: drpython.pyw. Dr Python itself is built on wxPython, but once wxPython is installed you can learn to program with GUI elements yourself. Dr Python is a good transition from IDLE to more powerful development environments.

Another (more powerful) GUI-based development environment that will help you lay out GUI elements (like windows, buttons, text fields, etc.) is Boa Constructor. Don't try this until you're comfortable with all the elements of non-GUI programming and have programmed several projects with ordinary text-based input and output. This could be overwhelming if you get into it too fast, and you will be better off in the long run if you learn the basics of the language before going for the glitz.

One of the really really nice features of Python is there are hundreds of modules of programming code available for all kinds of special applications. For instance, there is a Python Imaging Library (PIL) that has many of the kinds of image processing tools available in Photoshop. You can perform very sophisticated functions by simply "calling" them from your Python program. For instance, you could write a program that imports a jpg image, crops it, rotates it and changes it to a gif or png image and saves the result to disk. All of this can be accomplished by a very short Python program that calls a sequence of functions in the PIL module and lets them do all the dirty work. Other modules let your programs interact with web sites, email, 3-D graphics, astronomical calculations, etc. without your having to do it all from scratch. An index of the modules that are available can be found at <http://docs.python.org/modindex.htm>.

I am also learning Python, but I am coming at it with experience in other programming languages. Come learn along with me.

--David Chandler