

Python Lesson 1: Getting Started

vanderbi.it/py

Steve Baskauf

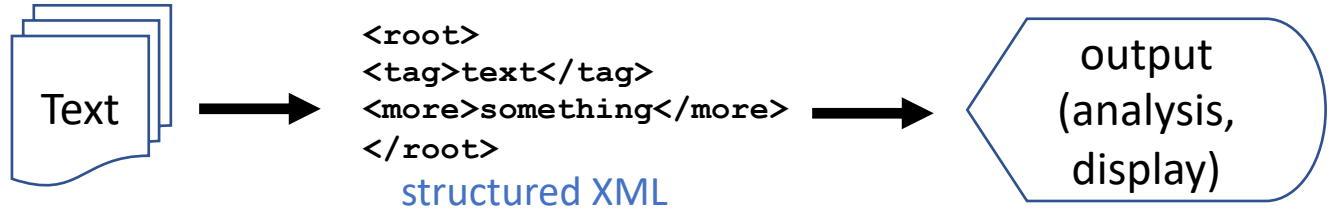


Digital Scholarship and Communications Office (DiSC)

- Unit of the Vanderbilt Libraries
- Support for data best practices (DMP tool, repositories), GIS, copyright, Linked Data (including Wikidata), tools (GitHub, ORCID, Open Science Framework, etc.), and Open Access publishing.
- Offer on-demand educational programming, consultations, web resources
- Currently offering lessons on Python, R, and GIS
- More online at: vanderbi.lt/disc
- Email: disc@vanderbilt.edu

Is Python for you?

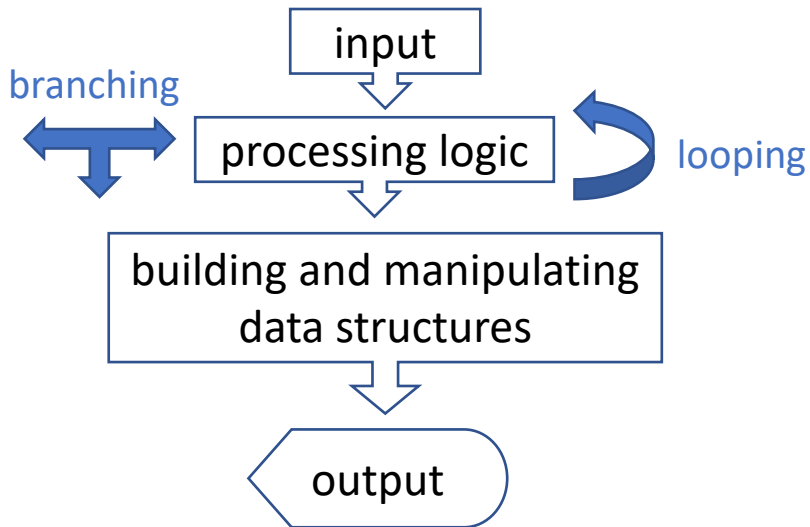
XQuery



beginner

Python

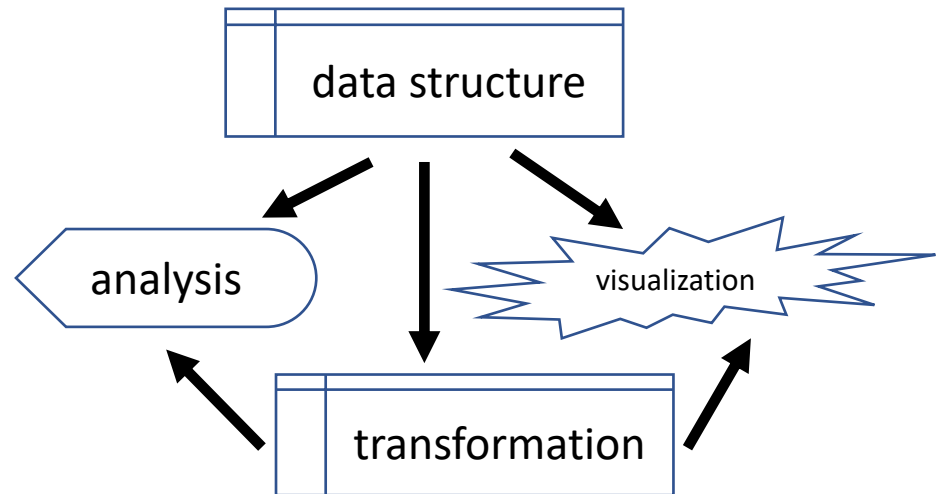
advanced



advanced

R

beginner



Uses for Python

- Software development
- Data wrangling and visualization
- Scientific computing (SciPy, Pandas)
- Web development (Flask)
- Serverless computing (AWS Lambda)
- Education
- many other things (robots)

This series will serve as a basic introduction to all of these topics

Other campus Python resources

- Software Carpentries (cosponsored by DiSC and Research IT) March 5-6
- Data Science Institute (DSI) workshops
<https://www.vanderbilt.edu/datascience/events/data-science-workshops/>
- Digital Humanities (DH) Center
<https://www.vanderbilt.edu/digitalhumanities/>
- O'Reilly for Higher Education resources
<http://www.library.vanderbilt.edu/eres?id=1676>

Python basics

- Free, open source, multiplatform
- Python 2 vs. 3

The Anaconda option

- Includes Python, R, IDEs (Spyder and RStudio), Jupyter notebooks, and the VS Code editor as options.
- Includes most common add-on packages
- Includes a package manager called Conda.
- Considerations: size, conflicts with HomeBrew, differences in virtual environments
- Link to installation page on home page.

Ways to run Python (demo)

- Using the command line interpreter ("shell"; often seen in web examples)
 - Enter `python` in Windows
 - Enter `python3` on Mac (if not Anaconda)
- Using a code editor (Visual Studio Code in this example)
 - performs syntax highlighting, autocomplete, autoindentation, etc.
 - provides access to sophisticated debugging tools
 - (VS Code is actually almost an IDE)

Ways to run Python (cont.)

- Using an Integrated Development Environment (IDE)
 - Code editor combined with shell
 - Thonny is a very simple IDE (good option for beginners)
 - Spyder is a full-featured IDE (included in Anaconda)
- Using Jupyter notebooks
 - Extremely common in Data Science
 - pros
 - literate programming
 - take notes on examples (I'm providing them prewritten)
 - cons
 - learning curve to start
 - not great for loops and functions

Good options from here:

- Install Thonny and take the minimalist approach
- Install Anaconda and get the whole enchilada
 - Use this option if Jupyter notebooks appeal to you
- Do both (it won't hurt) and switch around
 - Thonny package downloads will be independent
- During the class, you can either cut and paste examples from the website into Thonny, or run the cells in the Jupyter notebook.

After you install

- Thonny: from lesson schedule page go to "code examples"
- Jupyter notebooks: from lesson schedule page, go to "example notebook", download, load, then run.
 - Next week: at top of lesson 2 web page, there is a link to the Jupyter notebook with examples.