

# Python Lesson 1: Getting Started

[vanderbi.it/py](https://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 workshops, consultations, web resources
- Currently offering Python in GIS, R Group, XQuery Text Mining
- More online at: [vanderbi.it/disc](https://vanderbi.it/disc)
- Email: [disc@vanderbilt.edu](mailto:disc@vanderbilt.edu)

# 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

- Data Science Institute (DSI) workshops  
<https://www.vanderbilt.edu/datascience/>
- Research IT (data viz workshop)  
<https://research.vanderbilt.edu/researchadministration/about/research-it/>
- Digital Humanities (DH) Center  
<https://www.vanderbilt.edu/digitalhumanities/>
- Software Carpentries (cosponsored by DiSC, DSI, Research IT, ACCRE) October 24-25
- APIs and Web Scraping starting Nov 1

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