

## CSC 202, Installing Python and Related Tools

### Overview

In this class we will use several tools for developing and running Python programs. In particular, we will work with the following:

1. *Python* (<https://www.python.org/>), a general purpose programming language
2. *Jupyter Notebooks* and *Jupyter Lab* (<https://jupyter.org/>), web-based platforms for creating, explaining, and sharing code. *Jupyter Lab* is the “next generation” of Jupyter Notebooks. For us, the main advantage of *Jupyter Lab* is the availability of a console so that we do not have to create new cells to experiment with code.
3. *Spyder* (<https://www.spyder-ide.org/>), an integrated development environment (IDE) for developing and running Python code, recommended for larger programs.

### Installing Jupyter Notebook and Spyder through the Anaconda Distribution

Install the Anaconda Distribution for your system by following the directions at the following link: <https://www.anaconda.com/distribution/>

The Anaconda Distribution comes with both *Jupyter Notebook* and *Spyder*.

### Running Jupyter Notebook

Once *Jupyter Notebook* is installed, you can run Jupyter Notebook by typing the following using your machine’s **terminal** or **Anaconda Command Prompt**:

```
jupyter notebook
```

For more information, see <https://jupyter.readthedocs.io/en/latest/install.html>

### Installing and Running Jupyter Lab

Install Jupyter Lab by typing the following from your terminal or Anaconda Command prompt:

```
conda install -c conda-forge jupyterlab
```

To run Jupyter Lab, type the following at your terminal or Anaconda Prompt:

```
jupyter lab
```

## Installing Python modules

Your Python installation comes with hundreds of modules, such as the *math* module. We will use additional modules for specialized tasks, which can be installed by typing the appropriate commands at your **terminal** or **Anaconda prompt**. See the links below for installation instructions. Use the *import* statement in Python to check whether the module is successfully installed (e.g., open a Jupyter Notebook and type *import math*).

Required modules (will be updated throughout the semester):

- textblob: <https://anaconda.org/conda-forge/textblob>
- wordcloud: <https://anaconda.org/conda-forge/wordcloud>
- spacy: <https://anaconda.org/conda-forge/spacy>
  - en\_core\_web\_sm model: [https://anaconda.org/conda-forge/spacy-model-en\\_core\\_web\\_sm](https://anaconda.org/conda-forge/spacy-model-en_core_web_sm)
  - en\_core\_web\_lg model: [https://anaconda.org/conda-forge/spacy-model-en\\_core\\_web\\_lg](https://anaconda.org/conda-forge/spacy-model-en_core_web_lg)
- tweepy: <https://anaconda.org/conda-forge/tweepy>
- folium: <https://anaconda.org/conda-forge/folium>
- SpeechRecognition: <https://anaconda.org/conda-forge/speechrecognition>
- Google API Python Client: <https://anaconda.org/conda-forge/google-api-python-client>
  
- Tensorflow:

- in order to use Tensorflow, we must create a new Anaconda environment that contains the desired packages. This is accomplished by running the following from your terminal (Mac/Linux) or Anaconda prompt (Windows):

```
conda create -n tf_env tensorflow anaconda ipython jupyterlab  
scikit-learn matplotlib seaborn h5py pydot graphviz
```

- You also will need to install nb\_conda  
[https://anaconda.org/anaconda/nb\\_conda](https://anaconda.org/anaconda/nb_conda)