

CSC 314, Software Installation

Overview

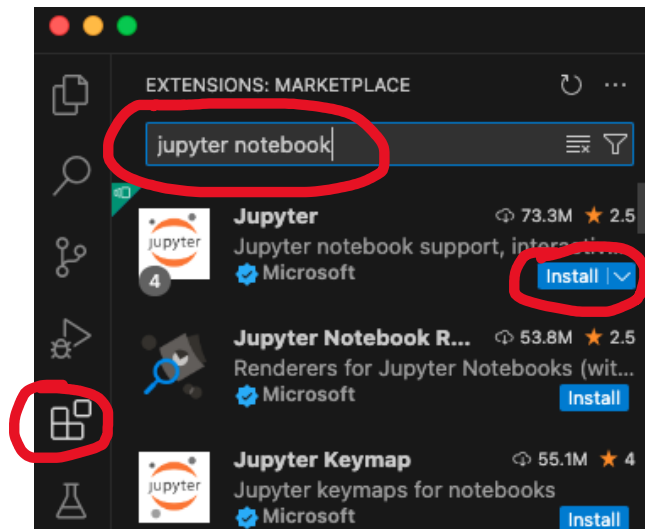
In this class we will use Python and Biopython to write bioinformatics programs. In particular, we will work with the following, which are installed following the instructions in the next section.

1. *Python* (<https://www.python.org/>), a general purpose programming language
2. *Jupyter Notebooks* (<https://jupyter.org/>), a web-based platform for creating, explaining, and sharing code.
3. *Biopython* (<https://biopython.org/>), a set of tools for biological computation in Python.

These can be installed following the instructions below.

Installing Python, Visual Studio Code, and the Python Extension

1. Follow the instructions at the following link to install Python, Visual Studio Code, and the Python Extension. Note that in this class, any version of Python 3 can be used. You do not need to reinstall Python if you already have it on your system.
<https://learn.microsoft.com/en-us/training/modules/python-install-vscode/>
2. Open Visual Studio Code and install the Jupyter Notebook extension from within Visual Studio Code. Extensions can be installed by clicking the Extension icon in the panel on the left. Search for “jupyter notebook”, and click Install (see red ovals) to install this extension.



Installing Biopython

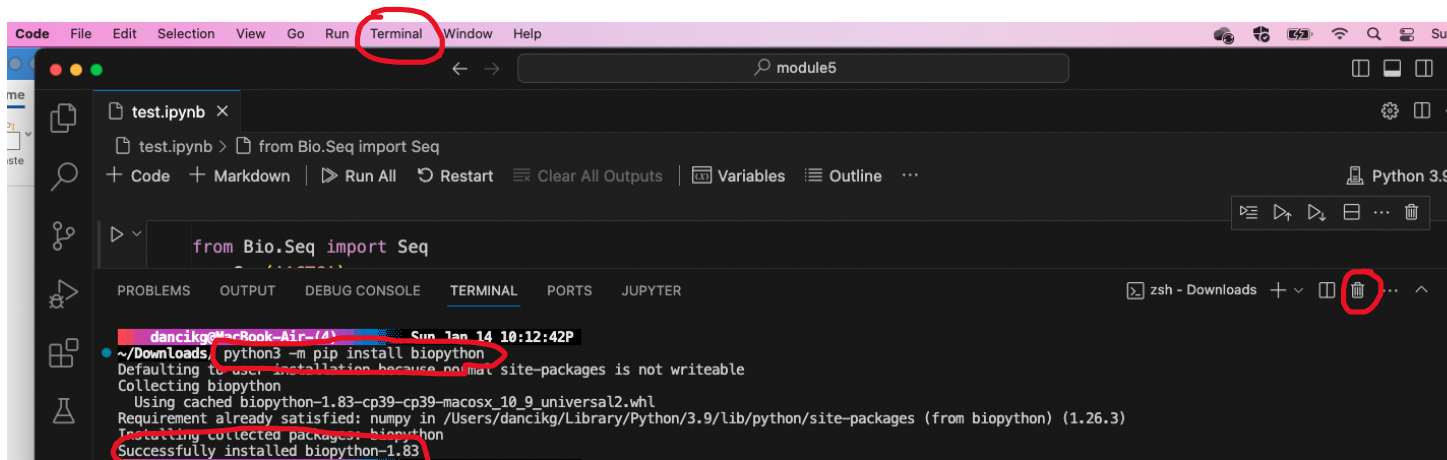
Later in the semester, we will be using *Biopython* for working with biological data.

From within Visual Studio Code, select Terminal → New Terminal, which will open a terminal panel at the bottom of your Visual Studio Code window.

Type the following into the terminal and press Enter:

```
python3 -m pip install biopython
```

If you get any error messages at this stage, let me know. If installed successfully, you should see a message similar to the one below. Once installed, you can click on the trash icon to close the terminal.



In order to test whether BioPython has been installed successfully, you can create a code cell in your Notebook containing the statements below. If you can run the cell without any errors, then BioPython has been installed successfully.

```
from Bio.Seq import Seq
s = Seq('ATGA')
s
```