

Python IDE Setup

Fundamentals of Generative AI for Item Development
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Python Installation Instructions

1. Python



Python is supported on a range of operating systems. In general, Linux and macOS have Python pre-installed. For other operating systems like Windows, Python can be downloaded from the website (<https://www.python.org/downloads/>).

Python has two versions:

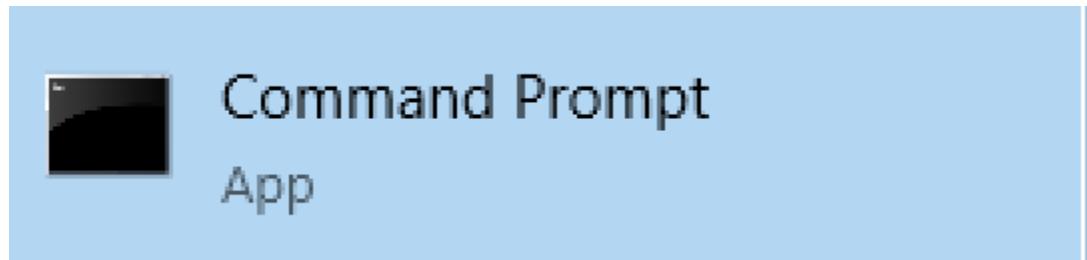
- Python 2.x
- Python 3.

Python installation

1. In this course we will use Python 3 and it can be installed directly by following these steps.
 - a. Download the latest Python 3 release from <https://www.python.org/>. Choose either the *web-based installer* or the *executable installer*.
 - b. Run the installer. Select the option to *Add Python 3.x to PATH*.



2. Install Python packages using *pip*
 - a. Open a *Command Prompt* window



- For example, enter the following command to install NumPy package: `pip`

An Introduction to Visual Studio Code

Visual Studio Code (VSC) is a FREE lightweight development tool that combines the simplicity of a source code/text editor with powerful tools like break-point debugging. VSC combines the best parts of classical text editors like *Sublime Text* (syntax highlighting/easy setup) and powerful Integrated Development Environments like *PyCharm* (step-by-step debugging and inbuilt terminal). For the purposes of our training, VSC makes it a breeze for **Windows Users** to setup Python3 and run the training examples within 1 program (instead of flipping between terminal windows and text editors).

Evolve from Jupyter Notebooks & Anaconda, use VSC today!



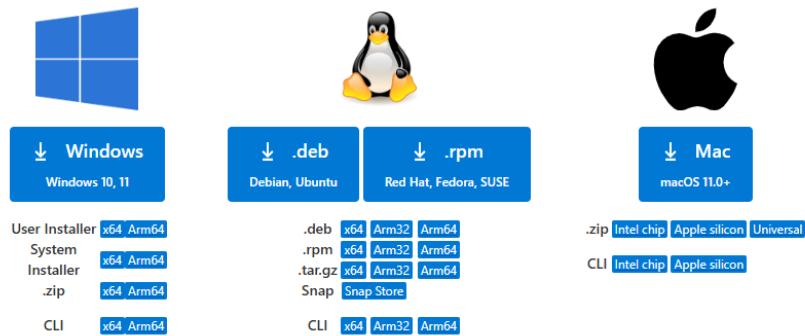
Setting up VSC

Let's get started!

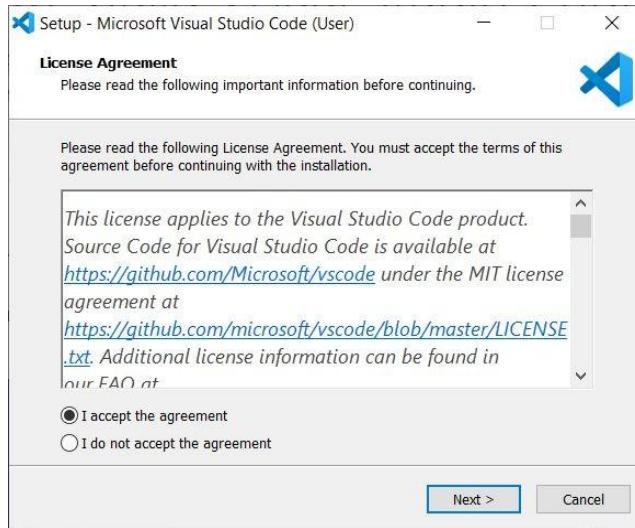
1. First, download the relevant installer from [here](#). For the purposes of this guide, I will be walking through the Windows Installation (User Installer, 64-bit version)

Download Visual Studio Code

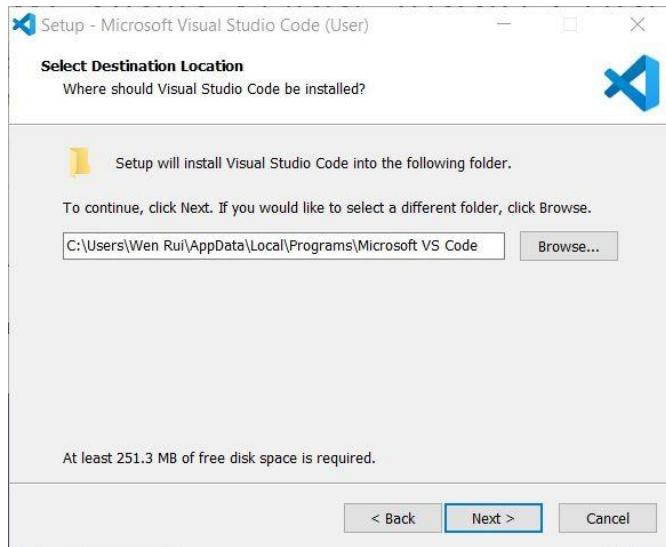
Free and built on open source. Integrated Git, debugging and extensions.



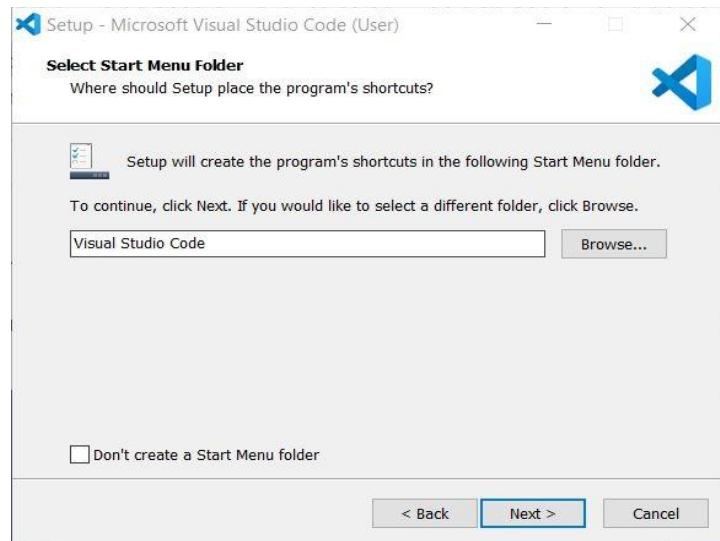
2. Accept the *License Agreement*



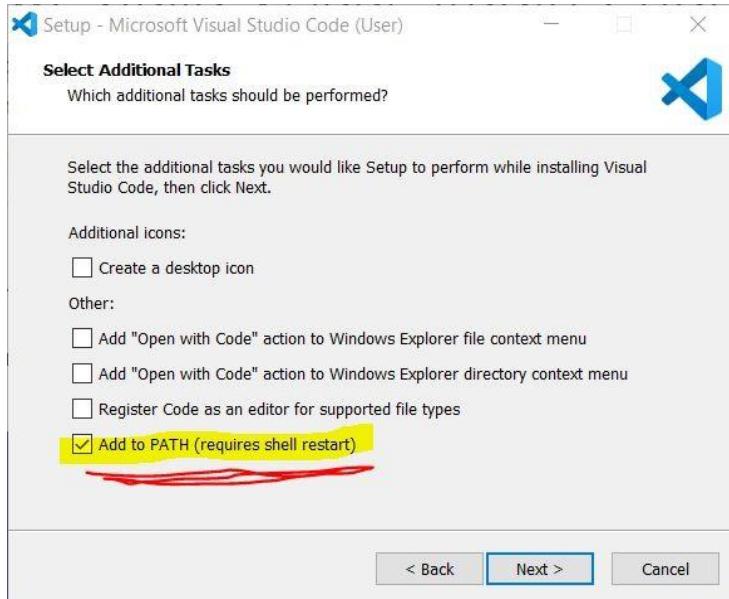
3. Set a *Destination Location* (default is fine)



4. Create a *Start Menu Folder* (default is fine)

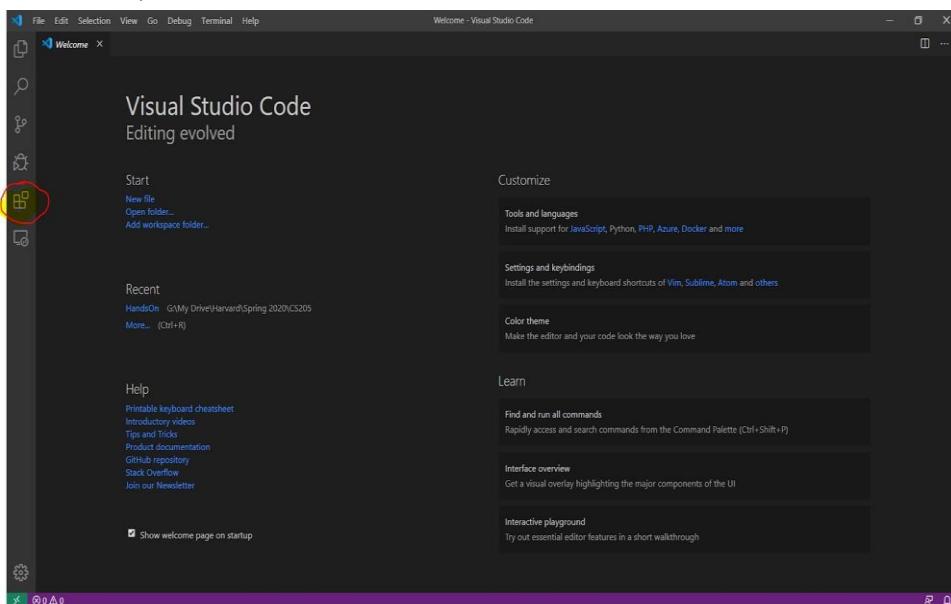


5. In the next screen, make sure that “Add to PATH” is selected

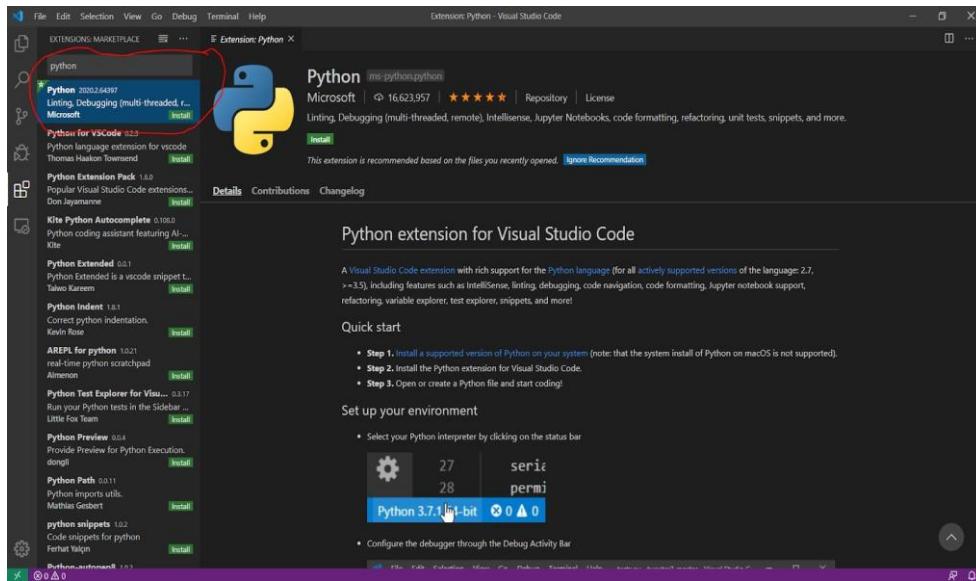


6. Press *Install*

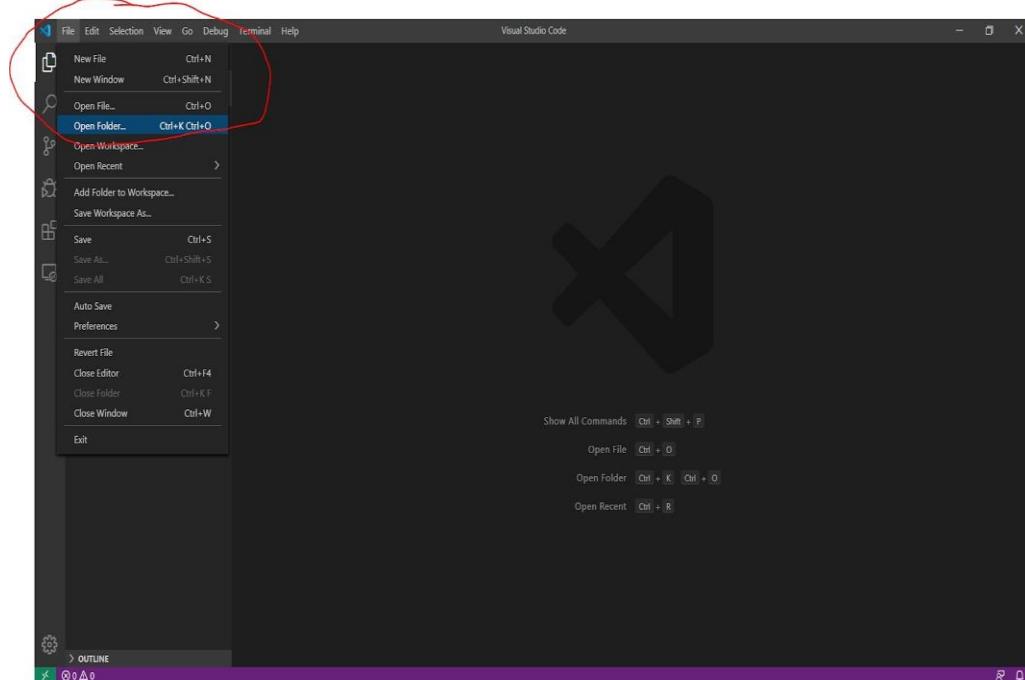
7. Launch *Visual Studio Code* and go to **Extensions** (icon highlighted below, shortcut is **Ctrl + Shift + X**)



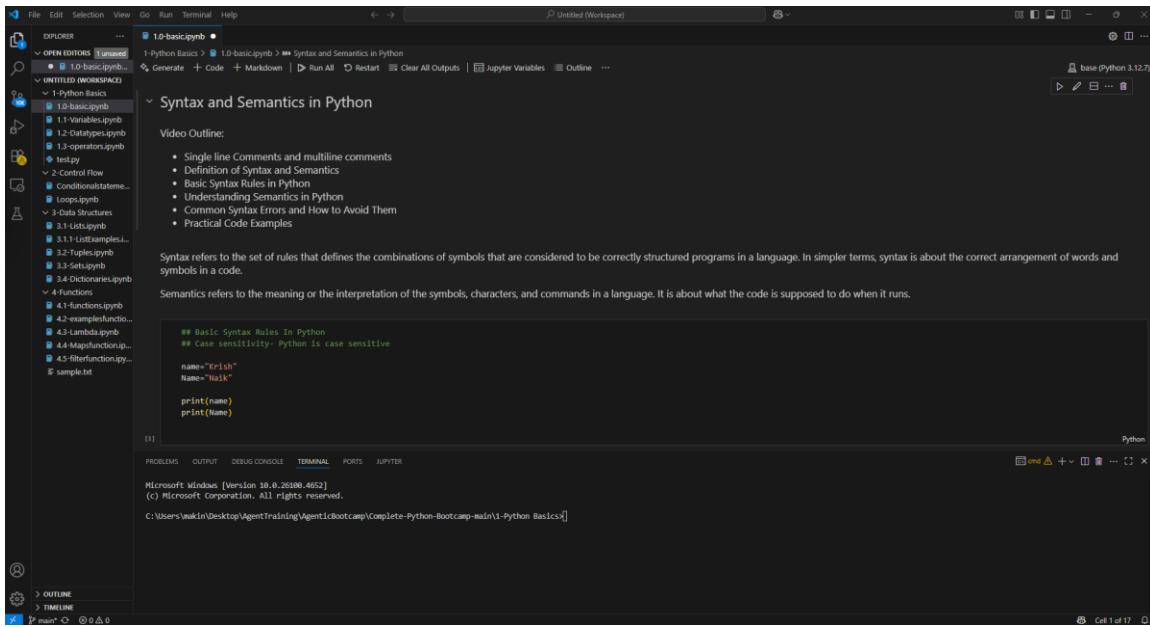
8. Search for **Python** in the search box and install the first result



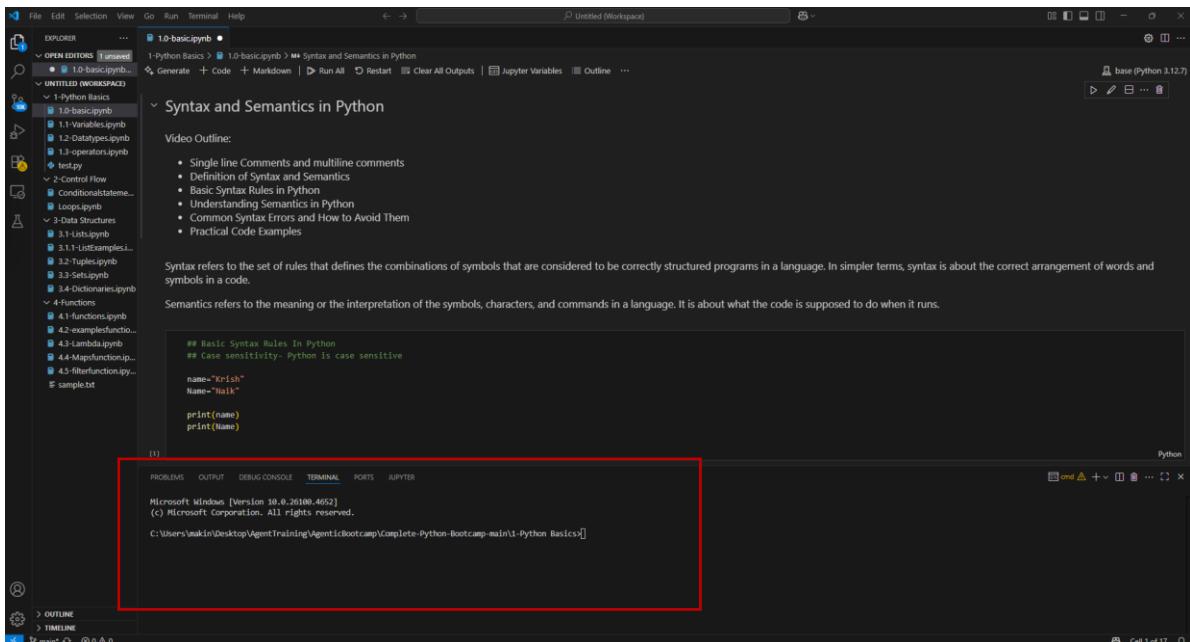
9. And that's it, hopefully Python is installed! To test it out, let us store our [BasicPythonCode](#) in a folder and open this folder at **File > Open Folder**.



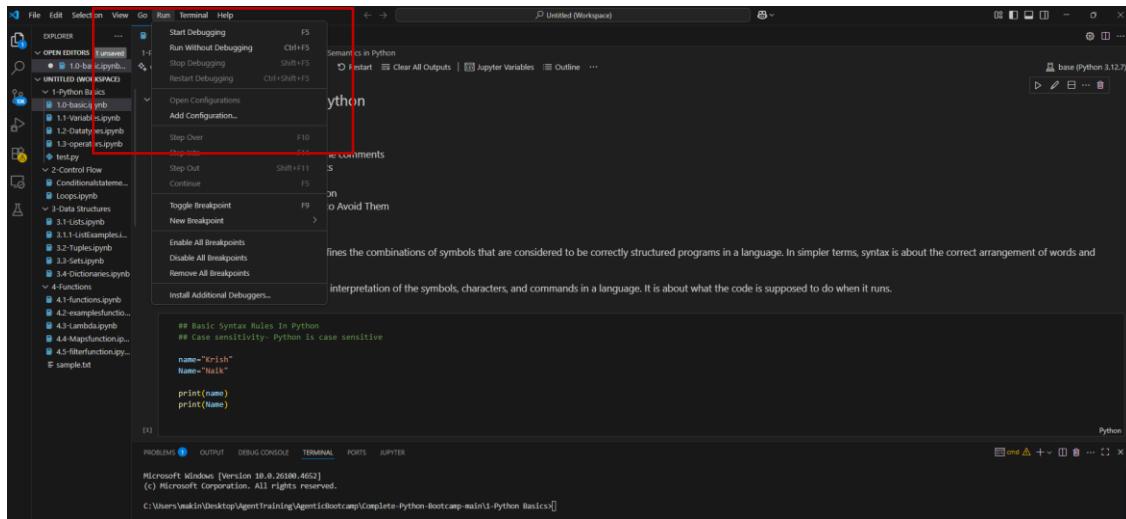
10. Open **1.0-basic.ipynb** and you should see it pop up in the editor. Make sure that the **Python 3.12.7 interpreter** is selected in the top right corner of your screen.



11. There's a lot happening on this screen which makes VSC powerful. On the bottom of the screen there is a terminal window that is pointing to the directory where the folder is located. You can run your familiar terminal commands here. Other windows here include an *Output* window and a *Debug Console*.



12. Moreover, we can run our code from within VSC (which makes it great). To check if everything is working, run the code with **Debug > Start Debugging (Shortcut F5)**. If everything works, you should see the output in the terminal below!



13. Other extensions that you should install from the extension tab are;

- GitHub Copilot
- Jupyter

14. And that's it! You now have a great tool for running Python files in this class.

Mac:

Steps to install VSCode

1. Go to this link (<https://code.visualstudio.com/docs/setup/mac>) and download Visual Studio Code for Mac.

a. Follow the instructions on this webpage under the section Installation.

At this point you should successfully have VSCode on your Mac

Using Google Colab

Step 1: Sign in to Google Account

You'll need a Google account to use Colab.

- Go to <https://colab.research.google.com>
- Sign in with your Gmail account (or create one if you don't have it).

Step 2: Open a New Notebook

Once you're signed in:

1. Click “File → New notebook”, or
2. From the Colab landing page, click “New Notebook” in the bottom-right corner.

This opens a notebook (like Jupyter) in your browser.

For the fine-tuning session, click 'Upload', then paste the '4.0 Fine Tuning.ipynb' file.

Step 3: Choose Runtime (Environment)

By default, Colab runs on CPU.

To change that:

1. Click “Runtime” → “Change runtime type.”
2. Choose Hardware accelerator:
 - o None → CPU
 - o GPU → NVIDIA T4/A100 GPU
 - o TPU → Tensor Processing Unit (for TensorFlow users)
3. Click Save.

Conclusion

VSC is great as it abstracts away a lot of the installation pains for Windows Users. Moreover, it allows you to live within this program for the purposes of this training.

If you have any installation questions, feel free to ping me at hsmakinde@uncg.edu

