

Environment Setup

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Problems?

Python

We will be using the most recent Python version (3.8) in this course. ^[1] In particular, any version of Python 2.x (e.g. Python 2.7) is *not* acceptable. Python 2 is currently not supported by its creators. There are also significant differences in the Python syntax in Python 2.x which are incompatible with the lectures and assignments.

Windows

Install Python from the official Python site (<https://www.python.org/ftp/python/3.8.6/python-3.8.6-amd64.exe>). (This is a direct link to the 64-bit executable installer.)

When you run the downloaded installer, **click the checkbox that mentions adding Python to the PATH**. This is a very important step that, if missed, can cause bugs that are very tricky to find the root cause for.



If you have installed Python already, but are running into issues with the correct Python not being found by the terminal in VSCode, you can uninstall and reinstall Python with the installer to be able to fix this option. Make sure to tick the checkbox!

macOS

Install Python from the official Python site (<https://www.python.org/downloads/>).



Most versions of MacOS come with a very old version of Python (2.7) pre-installed as `/usr/bin/python`. This is not something you can use for this course, and if you try to, you will have to redo your assignments after installing the correct Python version. So don't skip this step!

Linux

Search how to install and update to Python 3.8 for your distribution. Make sure that `pip` is installed as well. If it is not, install `pip` with `get-pip.py` (<https://pip.pypa.io/en/stable/installing/#installing-with-get-pip-py>), or install `pip` using your distribution's package manager.

Note that you can also run Linux under Windows by using the [Windows Subsystem for Linux](https://docs.microsoft.com/en-us/windows/wsl/install-win10) (<https://docs.microsoft.com/en-us/windows/wsl/install-win10>). This is not the easiest way to set up Python on Windows but you may want to use Linux for other purposes.

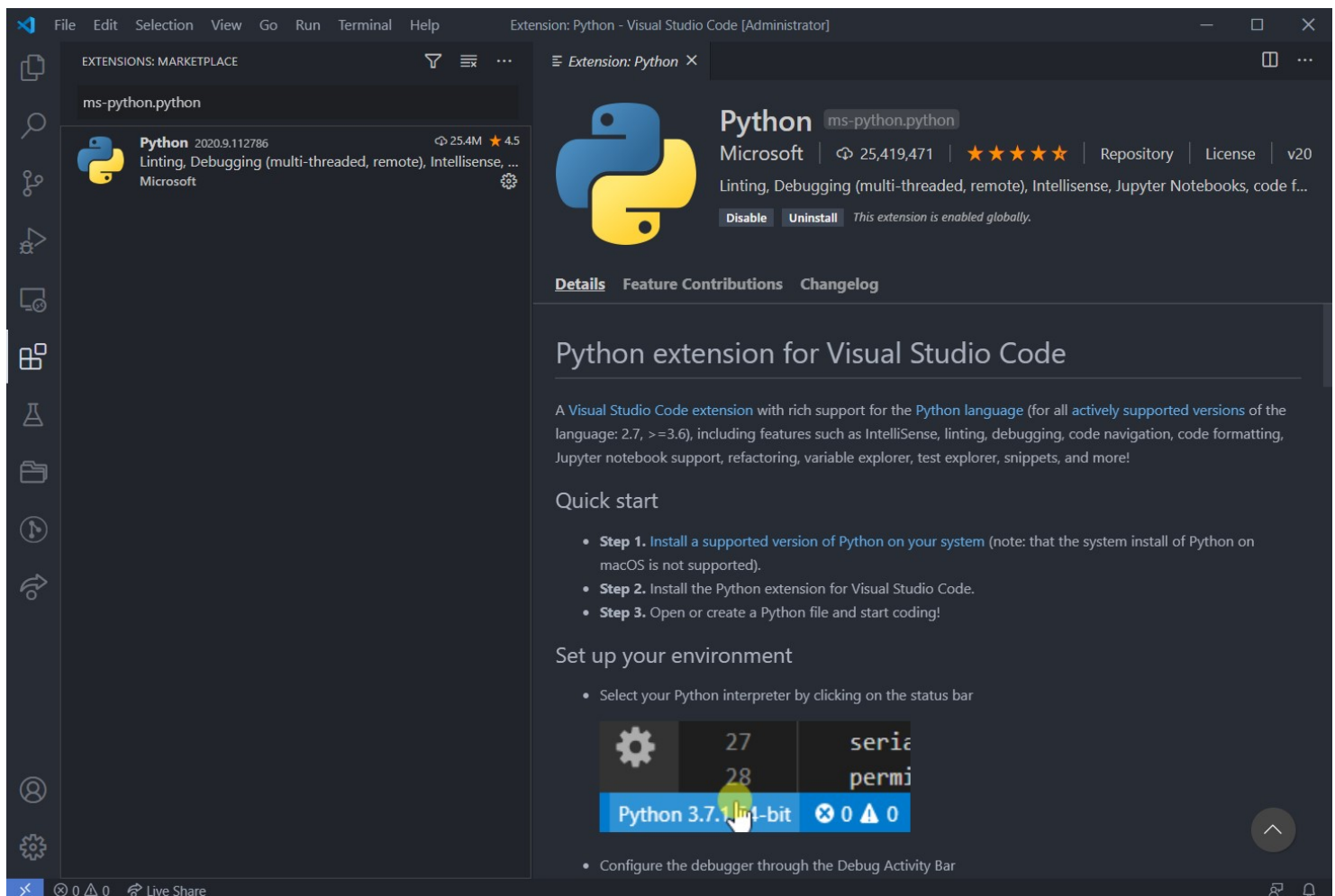
Visual Studio Code

In this course, we will use Visual Studio Code (VSCode) as our editor. VSCode is a lightweight editor with extensions that eases development for many languages. It is also the editor currently used in CS 3 and CS 24.



Screenshots in this document are of my personal setup. I have VSCode configured for my personal usage, so these screenshots will likely look different from what your VSCode looks like, but the core content should be the same.

Download VSCode here: <https://code.visualstudio.com/download>, then follow the instructions to install it. Once it finishes, open the extensions view (`Ctrl/Cmd+Shift+X`), and install the `ms-python.python` extension.



VSCode extension policy

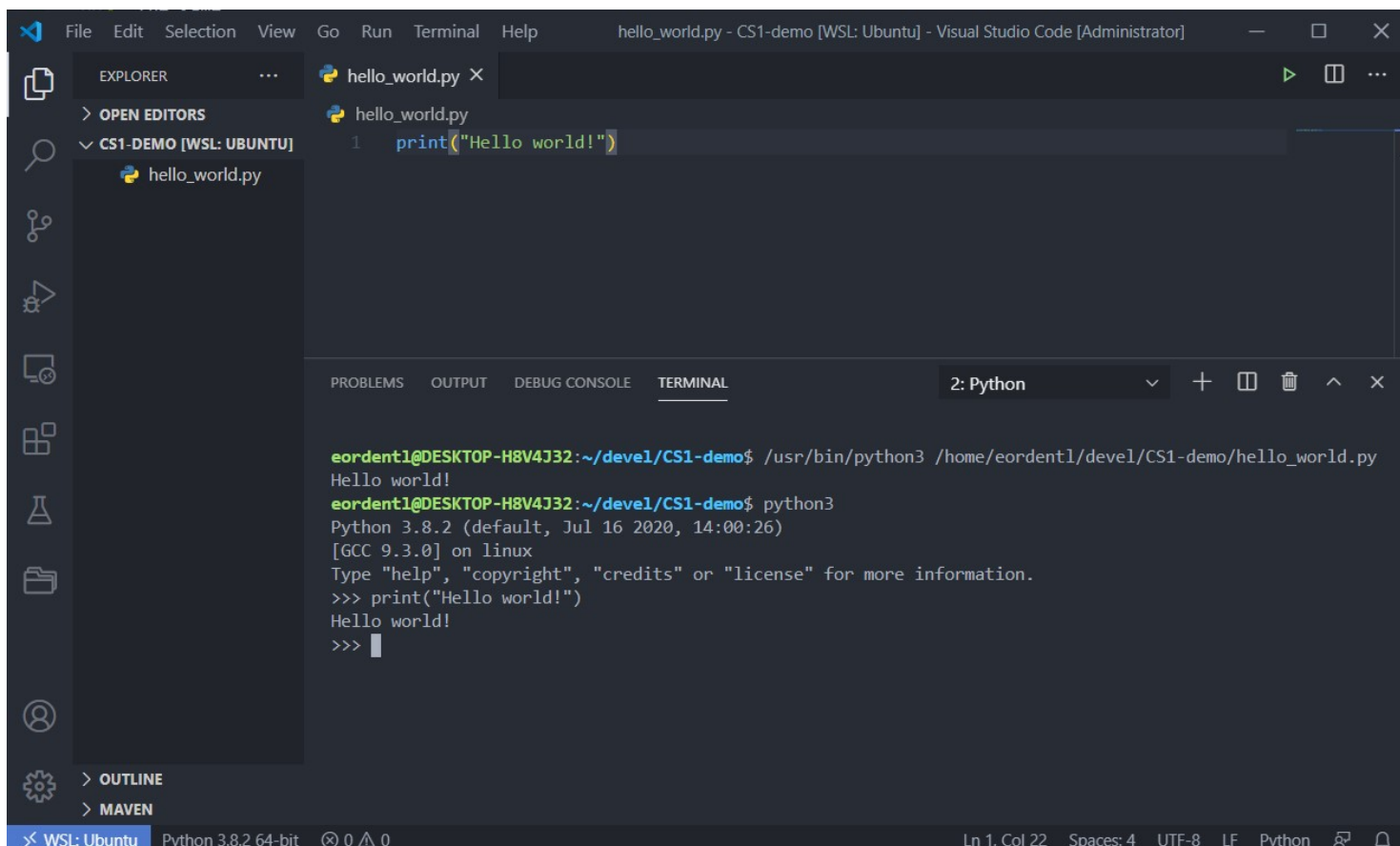
We recognize that VSCode is a powerful editor, with many plugins that make writing code easier. However, *you are responsible for any code that you submit*. This means that if you choose to use additional extensions or features beyond those that are officially supported, you are responsible for ensuring that your submitted code meets our criteria.

Running Python...

This section is an accompaniment to [Reading 1](#)

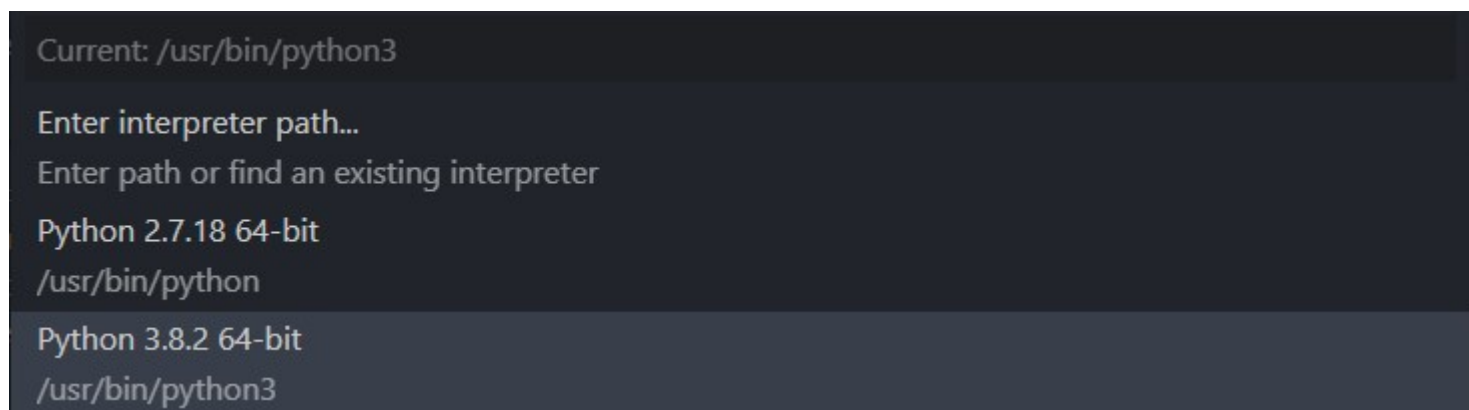
(https://caltech.instructure.com/courses/908/file_contents/course%20files/Course%20readings/reading1.html).

From the editor



When you have a Python file open in your editor, you can click the green triangle in the upper right corner to "run" the file. This will use VSCode's selected Python interpreter (visible in the lower-left corner) to run the current source file.

You can set the selected interpreter by opening the "Command Palette" with **Ctrl/Cmd+Shift+P**. Then, type in "Python: Select Interpreter", and press **Enter**. This will display a list of available Python interpreters. Make sure that some version of "Python 3.8" is selected. If you don't see Python 3.8 in the list, make sure that you have installed Python 3.8.



From the terminal

If your terminal is not visible, you can display it by going to the [View](#) menu, then clicking on [Terminal](#). You can start a Python 3 interpreter by typing `python` or `python3`. To make sure that your Python is of the right version, type `python --version` or `python3 --version`. Make sure that you have Python ≥ 3.8 . To run a program, you can type `python my_prog.py` or `python3 my_prog.py`.

Problems?

If you have problems with setting up your environment, please reach out to the course staff for assistance.

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1. We will refer to language features introduced in extremely recent versions of Python. Any 3.8.x will work, but 3.7 will be missing some things that we'll talk about.