

3.2.2 Execute Python Files

Before handing off your files to Tom and Seth, you will need to run, or execute, them to make sure the code is working. Tom is going to walk you through how to execute a Python file in VS Code. However, Seth thinks you should also be able to run Python files from the command line; he will be running your Python files from the command line and is only concerned about the final results. By running your files from the command line, you can make sure that their output is correct.

Knowing how to run Python files in both a text editor and from the command line will make you a more versatile programmer. Using a text editor is great for catching syntax errors while writing (or, as programmers like to say, "debugging your script"). You wouldn't want to submit a written assignment with spelling and grammatical errors that cause your writing to not make sense; this same principle applies to writing code.

When you create a script using an editor that returns the intended output, you can run that script from the command line any time by navigating to the directory where the file is located and using the appropriate commands. You already know how to navigate to different directories in the command line, so this process should feel familiar to you.

Let's get started and run your first Python script using VS Code.

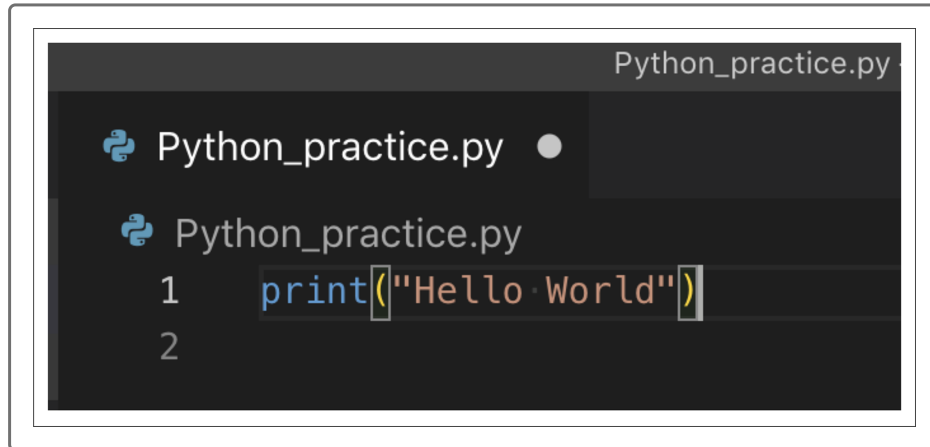
Check out the macOS instructions below, or jump to the [Windows instructions](#).

macOS

Use the following instructions to learn how to run a Python file in VS Code as well as from the command line.

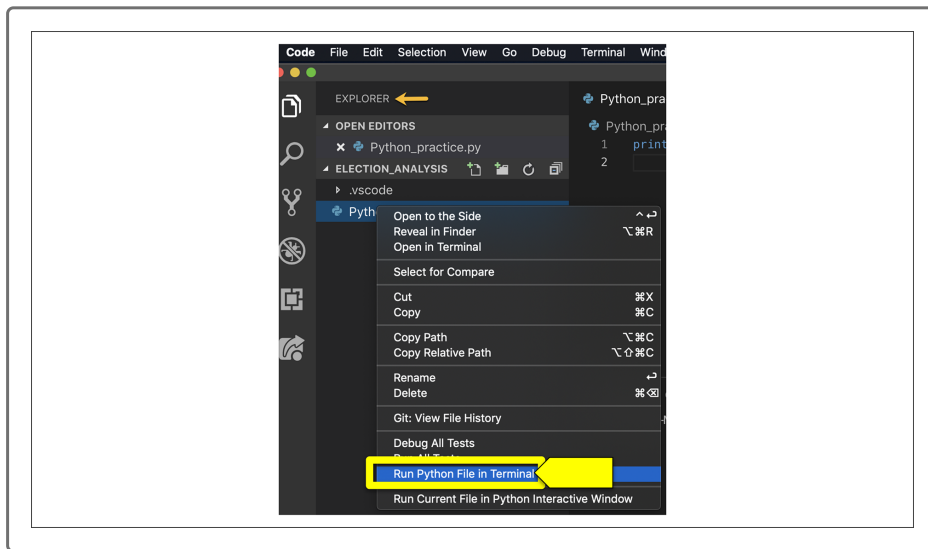
Run a Python File in VS Code

In the `Python_practice.py` file in VS Code, type `print("Hello World")`. Your Python file should look like this:

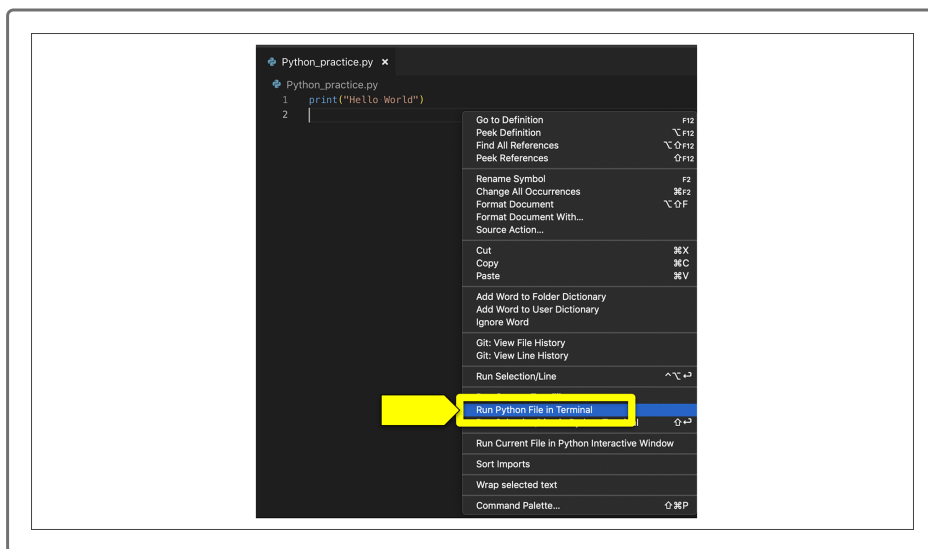


The white dot next to the filename indicates that the file has been edited but has not been saved. If we want to execute this file, we need to save it. Save the file using the keyboard shortcut Command+S or by selecting "Save" from the File menu.

To run the Python file, we can either right-click on the filename or press the CTRL key and touchpad while selecting the filename in the Explorer. Then select "Run Python File in Terminal."



You can also click anywhere in `Python_practice.py` and select "Run Python File in Terminal."



Both methods will open a window below your code. In that window, you will see output that looks similar to this:

```
Toms-MBP:Election_Analysis tom$ /Users/tom/local/bin/python/Users/tom/Desktop/Hello World
Toms-MBP:Election_Analysis tom$
```

Before moving on, let's break down this output.

- The first line indicates the directory where the Python file is located.

- `/Users/tom/local/bin/python` is the command to run Python.
- `/Users/tom/Desktop/Class/Election_Analysis/Python_practice.py` is the location of the Python file that will be executed.
- `Hello World` is the result of the Python file, `Python_practice.py`, being executed.
- Finally, the terminal prompt appears, waiting for the next command.

Run a Python File from the Command Line

To run a Python file in the Terminal app, we need to navigate to the folder that contains the file we want to run. Go to the Election_Analysis folder.

REWIND

Remember, to navigate to a folder using the command line, use the following commands:

- `pwd`: find your location
- `cd`: change the directory
- `ls`: list all the files and folders in the current directory

The terminal window should look like this:

```
Toms-MBP:Election_Analysis tom$
```

After the `$` prompt, type `python3 Python_practice.py`.

IMPORTANT

Typing `python3` ensures that you'll use Python 3.7 and not the default Python 2.7 that comes preinstalled on your Mac.

After pressing Enter, the terminal window should look like this:

```
Toms-MBP:Election_Analysis tom$ python3 Python_practice.py
Hello World
Toms-MBP:Election_Analysis tom$
```

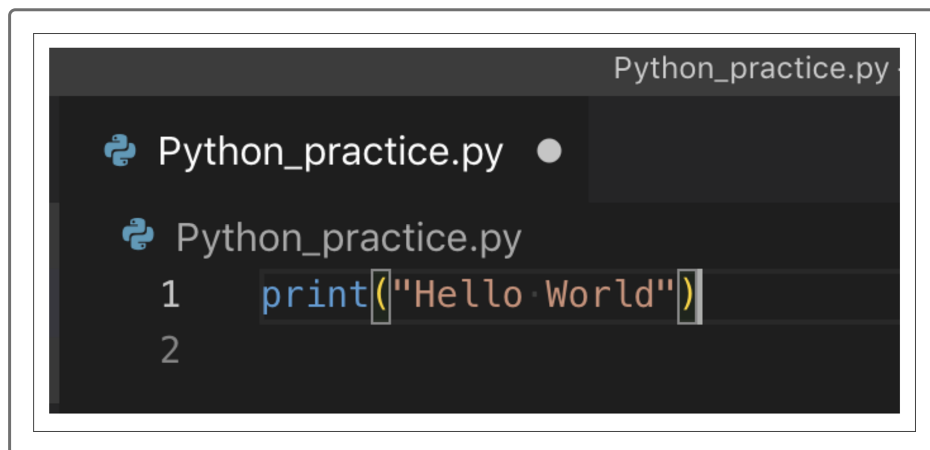
Your output should be `Hello World`.

Windows

Use the following instructions to learn how to run a Python file in VS Code as well as in the Python Command Prompt.

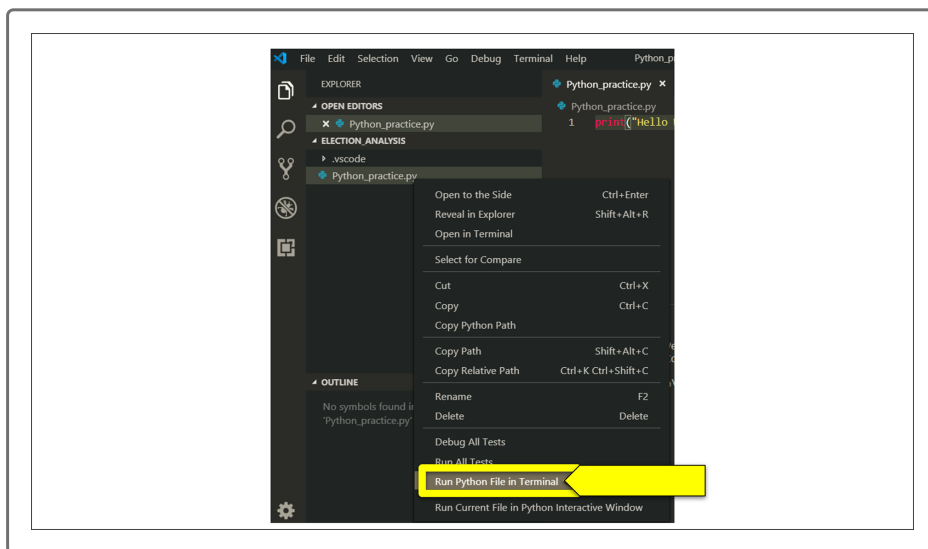
Run a Python File in VS Code

In `Python_practice.py` in VS Code, type `print("Hello World")`. Your Python file should look like this:

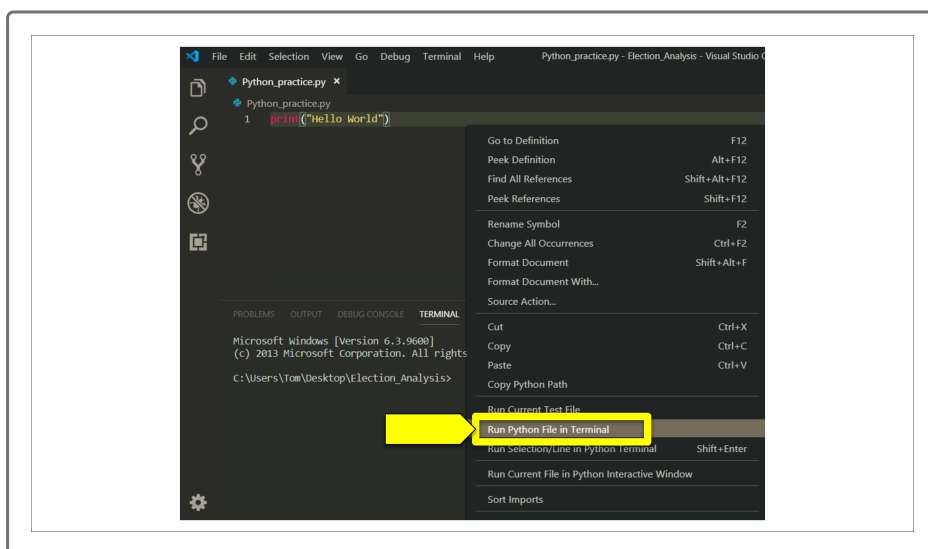


The white dot next to the filename indicates that the file has been edited but has not been saved. If we want to execute this file, we need to save it. Save the file using the keyboard shortcut CTRL+S or you by selecting "Save" from the File menu.

To run the Python file, we can click on the filename in the Explorer and select "Run Python File in Terminal."



We can also click anywhere in `Python_practice.py` and select "Run Python File in Terminal."



Both methods will open a window below the code. In this window, you will see output that looks similar to this:

```
C:\Users\tom\Desktop\Election_Analysis>C:/Users/Tom/Python36/python.exe c:/U
Hello World

C:\Users\tom\Desktop\Election_Analysis>
```

Let's break down this output:

- The first line indicates the directory where your Python file is located.

- `C:/Users/tom/Python36/python.exe` is the command to run Python.
- `c:/Users/tom/Desktop/Election_Analysis/Python_practice.py` is the location of the Python file that will be executed.
- `Hello World` is the result of the Python file being executed.
- Finally, the terminal prompt appears, waiting for the next command.

Run a Python File in the Python Command Prompt

To run a Python file in the Command Prompt, we first need to navigate to the folder that contains the file we want to run. Launch the Command Prompt. The terminal window should look like this:

```
C:\Users\tom>
```

Navigate to the Election_Analysis folder in the Command Prompt.

REWIND

Remember, to navigate to a folder using the command line you can use the following commands.

- `pwd`: find your location
- `cd`: change the directory
- `ls`: list all the files and folders in the current directory

The Command Prompt window should look similar to this:

```
C:\Users\tom\Desktop\Election_Analysis>
```

After the `>` prompt, type `python Python_practice.py`. Press Enter. Now the terminal window should look like the following:

```
C:\Users\tom\Desktop\Election_Analysis>python Python_practice.py
Hello World

C:\Users\tom\Desktop\Election_Analysis>
```

The output should be `Hello World`.

Run a Python File in Git Bash

To run a Python file in Git Bash, we first need to navigate to the folder that contains the file we want to run. Launch Git Bash. The Git Bash window should look like this:

```
tom@TOMD249 MINGW64 ~
$
```

Now navigate to the Election_Analysis folder in the Command Prompt.

The Git Bash window should look like this:

```
/c/Users/tom/

tom@TOMD249 MINGW64 ~/Desktop/Election_Analysis
$
```

After the `$` prompt, type `python Python_practice.py`. Press Enter. The terminal window should look similar to the following:

```
/c/Users/tom/

tom@TOMD249 MINGW64 ~/Desktop/Election_Analysis
$ python Python_practice.py
Hello World

tom@TOMD249 MINGW64 ~/Desktop/Election_Analysis
$
```

The output should be `Hello World`.

