Python Hello World Tutorial in VS Code

Working with Python in Visual Studio Code, using the Microsoft Python extension, is simple, fun, and productive.

The extension makes VS Code an excellent Python editor and works on any operating system with a variety of Python interpreters.

It leverages all of VS Code's power to provide autocomplete and IntelliSense, linting, debugging, and unit testing, along with the ability to easily switch between Python environments, including virtual and Conda environments.

Step 0: Prerequisites

Specifically, this tutorial requires:

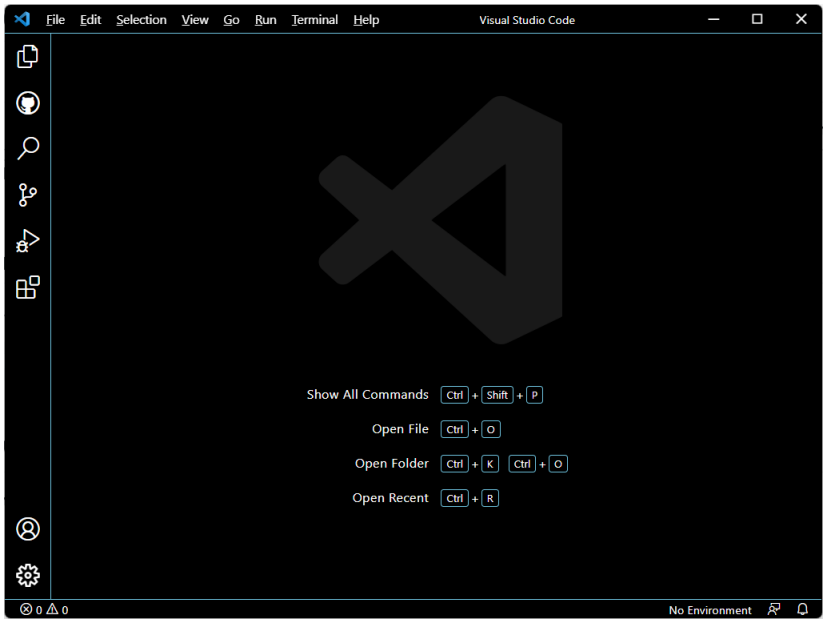
- VS Code
- VS Code Python extension
- Python

Step 1: Install Visual Studio Code and the Python Extension

1.1

If you have not already had VS Code on your computer, install it -------- link: VS Code.

After successful installation, you may see an interface like the one above.



Put the last button on the right-hand side *Extensions* **OR** you can use the shortcut key `Ctrl + Shift + X` to get the Extensions Market.

(Optional)

Search with the keyword *Chinese,* download the first extension **Chinese**.

Congratulations, now you have your own VSCode in Chinese.

1.2

Next, install the Python extension for VS Code from the Visual Studio Marketplace, using the keyword *Python*

For additional details on installing extensions, see Extension Marketplace.

The Python extension is named **Python** and it's published by Microsoft.

The extensions set varies from person to person. But I recommend some basic extensions as follows:

- **Kite**
- **Beautify**
- **Python Indent**
- **Python Indent**
- **Jupyter**
- **Prettier - Code formatter**
- (optional) latex
- (optional) Python Environment Manager

Step 2: Install a Python Interpreter

Along with the Python extension, you need to install a Python interpreter.

Install Python from python.org. You can typically use the **Download Python** button that appears first on the page to download the latest version.

> **Note**: The page provides installs of Python 3.7, Python 3.8, Python 3.9, and Python 3.10. Be aware that Python 3.7 is required in SI100.

For additional information about using Python on Windows, see Using Python on Windows at Python.org

Step 3: Verify the Python Installation

To verify that you've installed Python successfully on your machine, run one of the following commands.

Open a command prompt using a shortcut key `Ctrl + R` and typing in "cmd". And run the following command:

```
py -3 --version
```

(Python 3.7.x should be on your screen, ignore my python version plz)

Step 4: Start VS Code in a Project (Workspace) Folder

Using a command prompt or terminal, create an empty folder called "SI100" on your desktop, navigate into it, and open VS Code (`code`) in that folder (`.`) by entering the following commands:

- `cd Desktop`
- `mkdir SI100`
- `cd SI100`
- `code .`

By starting VS Code in a folder, that folder becomes your "workspace".

VS Code stores settings that are specific to that workspace in `.vscode/settings.json`, which are separate from user settings that are stored globally.

Alternately, you can run VS Code through the operating system UI, then use **File > Open Folder** to open the project folder. (which means to **打开文件夹**)

The path to your workspace is decided by yourself, but managing your different workspace decently is a good habit.

Step 5: Select a Python Interpreter

Python is an interpreted language, and in order to run Python code and get Python IntelliSense, you must tell VS Code which interpreter to use.

From within VS Code, select a Python 3 interpreter by opening the **Command Palette** (`Ctrl+Shift+P`), start typing the **Python: Select Interpreter (Python：选择解释器)** command to search, then select the command.

You can also use the **Select Python Environment** option on the Status Bar if available (it may already show a selected interpreter, too):

Step 6: Create a Python Hello World Source Code File

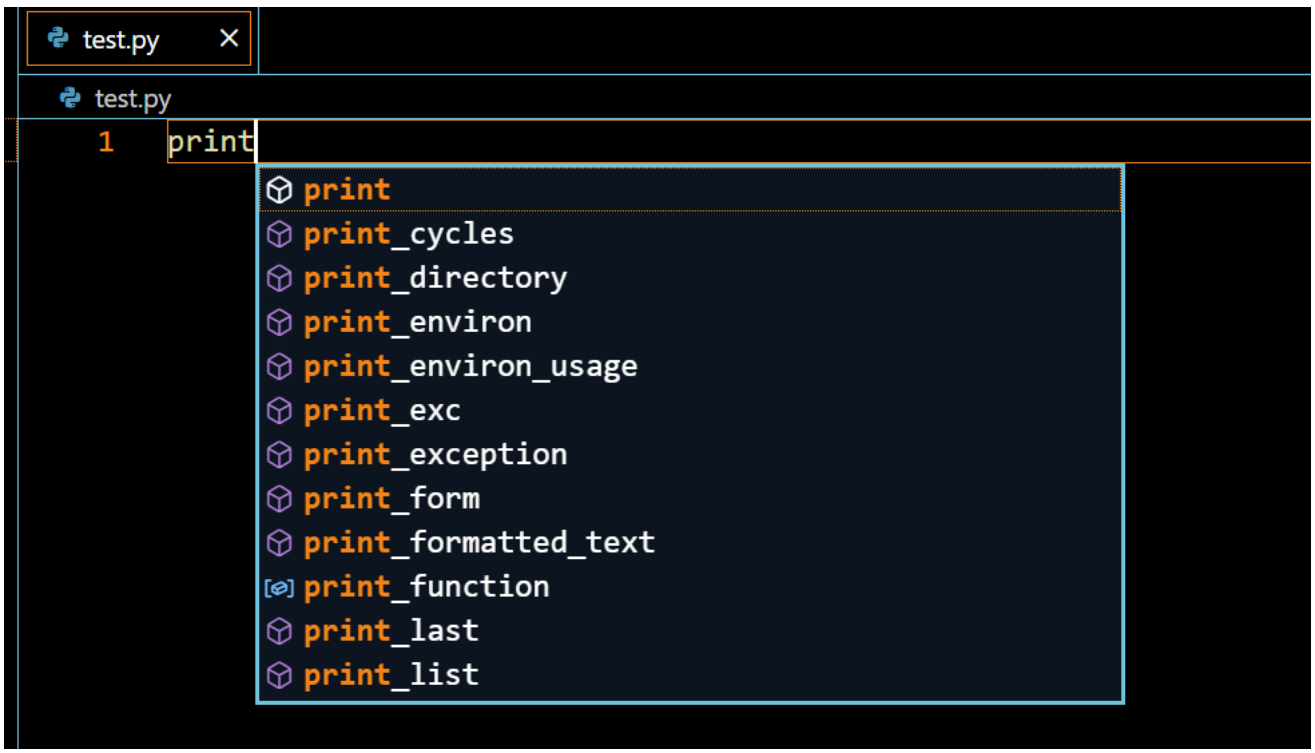
From the File Explorer toolbar, select the **New File** button on the SI100 folder:

Name the file `test.py`, and it automatically opens in the editor:

Type in those codes.

```
print("Hello world")
```

When you start typing `print`, notice how IntelliSense presents auto-completion options. It provides completions for methods available on object types.

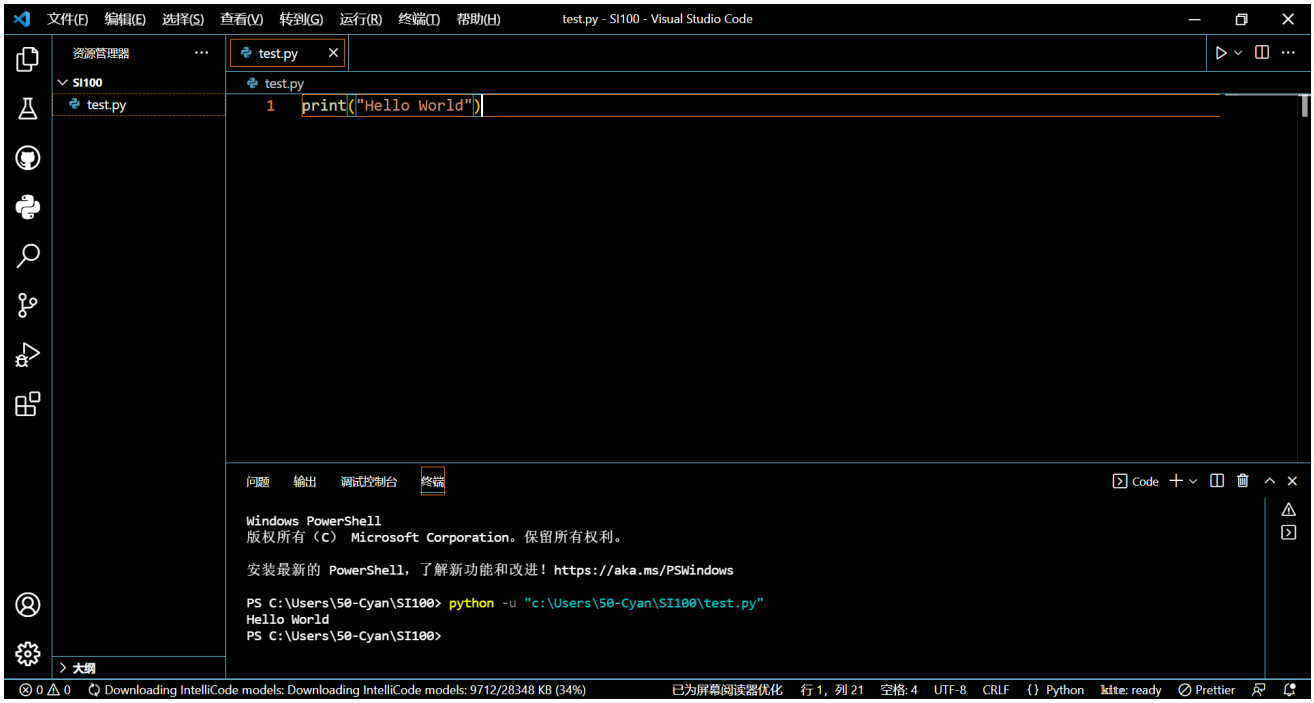


By using the `.py` file extension, you tell VS Code to interpret this file as a Python program, so that it evaluates the contents with the Python extension and the selected interpreter.

> **Note**: the File Explorer toolbar also allows you to create folders within your workspace to better organize your code. You can use the **New folder** button to quickly create a folder.

Step 7: Run Your First Python File

It's simple to run `test.py` with Python. Just click the **Run Python File in Terminal** play button on the top-right side of the editor.



Step 8: Install and Use Packages

Let's now run an example that's a little more interesting.

In Python, packages are how you obtain any number of useful code libraries.

For this example, you use the `matplotlib` and `NumPy` packages to create a graphical plot as is commonly done with data science, which is in the syllabus.

This part may be updated in a few weeks.

About

Author: Kyran Fang

Typesetting: Kyran Fang, teafrogsf

Date: 02/17/2022