Setting Up Python and Visual Studio Code (VSCode)

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1 Introduction

This tutorial guides you through setting up Python on your machine and configuring Visual Studio Code (VSCode) as your development environment.

2 Installing Python

Step 1: Download Python

1. Visit the official Python website: https://www.python.org/downloads/
2. On the downloads page, select Python for your operating system (Windows, macOS, or Linux).
3. Click on the download button to start downloading the Python installer.

Step 2: Installing Python

1. Run the installer once it has downloaded.
2. Ensure that the box labeled `Add Python to PATH` is checked.
3. Select `Customize Installation`, if you want to configure options like documentation or pip packages.
4. Click `Install Now` to begin the installation.
5. Once the installation is complete, you can verify that Python is installed correctly by opening a command prompt or terminal and typing:

   ```
   python --version
   ```

   You should see `Python 3.x.x` as the output.

3 Setting Up Visual Studio Code (VSCode)

VSCode is a lightweight code editor that is highly extensible with a wide variety of plugins and extensions, making it an excellent choice for Python development.

Step 1: Download and Install VSCode

1. Download VSCode from the official website: https://code.visualstudio.com/Download.
2. Select the appropriate installer for your operating system.
3. Follow the installation instructions for your operating system.

Step 2: Install Python Extension

Once VSCode is installed:

1. Open VSCode.
2. On the left sidebar, click the `Extensions` icon (or press `Ctrl+Shift+X`).
3. In the search bar, type `Python`.
4. Install the official Python extension provided by Microsoft.

4 Configuring Python in VSCode

After installing Python and the Python extension in VSCode, you need to configure the environment.

Step 1: Select Python Interpreter

1. Open the command palette in VSCode by pressing `Ctrl+Shift+P`.
2. Type `Python: Select Interpreter` and select it.
3. A list of available Python versions will appear. Select `Python` from the list. If it doesn't appear, you can manually browse to the Python executable by selecting `Enter interpreter path` and navigating to the folder where Python is installed.

Step 2: Configure Python Environment

1. Open the command palette again (`Ctrl+Shift+P`).
2. Type `Python: Create New Integrated Terminal`. This opens a terminal window in VSCode that uses the Python environment.
3. Verify the Python installation by typing:

   ```
   python --version
   ```

   The output should show `Python 3.x.x`.

5 Writing and Running Your First Python Program

Now that you have Python and VSCode set up, let's create a simple Python program.

Step 1: Create a Python File

1. In VSCode, create a new folder for your project.
2. In the folder, create a new file called `hello.py`.

Step 2: Write Python Code

In `hello.py`, write the following Python code:

```
print('Hello World!')
```

Step 3: Run the Python Code

You can run the code in two ways:

Option 1: Run from the Terminal

1. Open the integrated terminal in VSCode (`Ctrl+‘`).
2. Navigate to the directory where `hello.py` is saved using the `cd` command.
3. Run the Python script by typing:

```
python hello.py
```

4. You should see the output:

```
Hello World!
```

Option 2: Run from VSCode

1. Click the `Run` button at the top right corner of VSCode.
2. Alternatively, press `F5` to run the code.
3. The output will appear in the terminal window at the bottom.