Python Installation and Setup Guide on Windows

🔗 Reference Links

- **GitHub Learning Repository** (Optional):
  https://github.com/karthickag04/learn_python
- **Official Python Website**:
  https://www.python.org/

📥 Step 1: Download Python

1. Open your browser and search for:
   `python`
2. Click the official Python website link:
   https://www.python.org/
3. Navigate to the **Downloads** section and download the **latest Python version for Windows**
   (e.g., Python 3.13.3)

□💻 Step 2: Install Python

1. Go to your **Downloads** folder.
2. Find the downloaded file (e.g., `python-3.13.3.exe`) and **double-click** it or **Right-click → Run as administrator**.
3. In the installer:
   - ✓ Click on **"Customize installation"**
   - ✓ Select **all checkboxes**
   - ✓ Ensure **"Add Python to environment variables"** is checked
   - ✓ Check **"Install Python for all users"**
4. Click **Next** and then click **Install** to complete the setup.

□ Step 3: Verify Installation

1. Open Command Prompt

- Press `Windows Key`, search for **cmd**, and open **Command Prompt**

2. Run Python

Type the following and press Enter:

```
python
```

Expected output:

```
C:\Users\DELL>python
Python 3.13.3 (tags/v3.13.3:6280bb5, Apr  8 2025, 14:47:33) [MSC v.1943 64
bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

3. Try a Simple Python Command

Type:

```
>>> 1 + 2
```

Expected result:

```
3
```

4. Exit Python Shell

Type:

```
>>> exit()
```

This will return you to the normal command prompt:

```
C:\Users\DELL>
```

You can always re-enter the Python shell by typing `python` again.

❌ If Python Is Not Recognized in CMD

You may see:

```
'python' is not recognized as an internal or external command...
```

✅ Step 1: Locate Python Installation

Check for Python installation in any of these paths:

- `C:\Program Files\Python3x`
- `C:\Users\<YourUsername>\AppData\Local\Programs\Python\Python3x`
- `C:\Users\<YourUsername>\AppData\Roaming\Python\Python3x`

Note down:

- **Python executable path** (e.g., `C:\Users\DELL\AppData\Local\Programs\Python\Python3x`)
- **Scripts path** (e.g., `C:\Users\DELL\AppData\Local\Programs\Python\Python3x\Scripts`)

✅ Step 2: Add Paths to Environment Variables

1. Press `Windows Key` → search **Environment Variables**
2. Click **"Edit the system environment variables"**
3. In the System Properties window, click **"Environment Variables"**
4. Under **System variables**, select `Path` → click **Edit**
5. Click **New** and paste:
    - Python path
      `C:\Users\DELL\AppData\Local\Programs\Python\Python3x`
    - Scripts path
      `C:\Users\DELL\AppData\Local\Programs\Python\Python3x\Scripts`
6. Click **OK** to close all windows

🔁 Step 3: Reopen CMD and Test Again

- Close the existing Command Prompt and open a **new one**
- Type:

```
python
```

Then test again with:

```
>>> 5 * 10
50
```

If you see results, Python is now installed and recognized system-wide.

✅ Summary

- Download from: https://www.python.org/
- Use **Custom Installation** with all options enabled
- Ensure **Environment Variables** are set
- Use CMD to verify Python with basic math
- Troubleshoot with environment path if Python is not recognized

🛠 PyCharm & Visual Studio Code Installation Guide (Windows)

🚀 Part 1: Install PyCharm Community Edition

🔗 Download Link

☞ https://www.jetbrains.com/pycharm/download/

🖥 Installation Steps

1. Visit the above link and click on the **“Download”** button under **Community Edition** (Free and open-source).
2. Once the `.exe` file is downloaded (e.g., `pycharm-community-2024.1.exe`), go to your **Downloads** folder and double-click the installer.
3. In the setup wizard:
   - Click **Next**
   - Choose installation path (default is fine)
   - Click **Next**
4. In the next screen:
   - ✅ Check **“Add Launchers dir to the PATH”**
   - ✅ Check **“Add ‘Open Folder as Project’” (optional)**
   - ✅ Check **Create Desktop Shortcut**
5. Click **Next** and then **Install**
6. After installation, click **Finish** (you may also check **"Run PyCharm Community Edition"**).

🧪 First Launch

1. On first launch, choose **“Do not import settings”**
2. Wait for PyCharm to initialize
3. You’re now ready to create a new Python project or open an existing one.

💻 Part 2: Install Visual Studio Code (VS Code)

🔗 Download Link

👉 https://code.visualstudio.com/

✅ Installation Steps

1. Visit the above link and click **“Download for Windows”**
2. Open the downloaded installer (e.g., `VSCodeUserSetup-x64-1.89.0.exe`)
3. Go through the setup wizard:
    - Click **Next**
    - Accept the agreement and click **Next**
    - Choose installation location (default is fine), then click **Next**
4. **IMPORTANT:** On the “Select Additional Tasks” screen:
    - ✅ Check **“Add to PATH”**
    - ✅ Check **“Add ‘Open with Code’ action to Windows Explorer file context menu”**
    - ✅ Check **“Register Code as an editor for supported file types”**
5. Click **Next**, then **Install**
6. Once installation is done, click **Finish** and launch VS Code

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🔌 First Launch – Install Python Extension for VSCODE

1. Open **VS Code**
2. Click the **Extensions icon** (square icon on left bar)
3. Search for **"Python"** by Microsoft
4. Click **Install**

VS Code is now ready for Python development.

🐍 Getting Started with Python in Visual Studio Code (VS Code)

✅ Step 1: Open VS Code

Launch **Visual Studio Code** from your system.

📂 Step 2: Open a Folder

You can open a folder in **any one** of the following ways:

- From the **Welcome Page**, click on **"Open Folder..."**
- From the **Explorer icon** 📁 on the **left sidebar**, click **"Open Folder"**
- From the **menu bar**, click **File → Open Folder...**

📁 Step 3: Create and Select a New Folder

1. In the **Open Folder dialog box**, navigate to any of the following locations:
   - **Desktop**
   - **Documents**
   - **Local Disks D:, E:, or F:**
     ❌ *Do NOT choose Local Disk C:*
2. Click **"New Folder"** 📁, and name it something meaningful like:
   - `PythonPrograms`
3. To rename: Right-click on the folder → **Rename** → type the new name → hit **Enter**.
4. After naming, **select the folder** and click **"OK"**.

📄 Step 4: Create a New Python File

1. In the **Explorer** 📁 (left sidebar), **expand your folder**.
2. Right-click inside the folder → **New File** 📄.
3. Name your file with a `.py` extension, for example:
   - `py_program_01.py`
4. You can:
   - **Rename** the file: Right-click → Rename
   - **Delete** the file: Right-click → Delete

✏️ Step 5: Write and Save Python Code

1. Double-click the file `py_program_01.py` to open it.
2. Type the following Python code:

```
print("Welcome to Python")
print(2 + 2)
```

3. To **save** the file:

- Press **Ctrl + S**
  or
- Click **File → Save**

💻 Step 6: Run the Program from Terminal

1. Open terminal using any of these options:
   - **Menu:** Terminal → **New Terminal**
   - **Shortcut:** `Ctrl + J` or `Ctrl + ~` (tilde)
2. Make sure the **terminal path** is set to your folder, e.g.:

   ```
   C:\Users\YourName\Desktop\PythonPrograms>
   D:\PythonPrograms>
   ```

3. Run your program using:

   ```
   python py_program_01.py
   ```

   or

   ```
   py py_program_01.py
   ```

✅ You should see output like:

```
Welcome to Python
4
```

□ Step 7: Optional - Install Python Extension for Easier Execution

1. Click the **Extensions icon** □ from the **left sidebar**.
2. Search for **Python** (by Microsoft) and click **Install**.
3. Once installed:
   - Right-click your Python file
   - Click **"Run Python File in Terminal"**

You will see the output in the terminal just like before.

🧠 Working with Jupyter Notebooks and Python in VS Code & Google Colab

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💻 Step 1: Open Folder in VS Code

1. Launch **Visual Studio Code (VS Code)**.
2. Open your working folder:
   - Menu: `File → Open Folder...`
   - Select a folder like:
     `C:\Users\YourName\Documents\PythonTraining`
     or
     `D:\PythonTraining\Day1`
3. VS Code Explorer will now list your folder contents on the left.

🧩 Step 2: Install Jupyter Extension in VS Code

1. Click the **Extensions** icon (🧩) from the left sidebar or press `Ctrl + Shift + X`.
2. Search for: **Jupyter** (by Microsoft).
3. Click **Install**.

You may also want to install:

- **Python** (by Microsoft)
- **Pylance** for better IntelliSense

🔗 Official Jupyter extension link:
https://marketplace.visualstudio.com/items?itemName=ms-toolsai.jupyter

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📝 Step 3: Create and Run a `.py` File in VS Code

1. In Explorer (left sidebar), right-click your folder → **New File** → Name it `example.py`.
2. Type this code:

```
print("Hello from .py file!")
a = 10 + 5
print("Result:", a)
```

3. Save the file (`Ctrl + S`).
4. Open the terminal:
   - Menu: `Terminal → New Terminal`
   - OR shortcut: `Ctrl + J`
5. Make sure terminal path is set to your folder:

```
C:\Users\YourName\Documents\PythonTraining>
```

6. Run the Python file:

```
python example.py
```

or

```
py example.py
```

✅ Output:

```
Hello from .py file!
Result: 15
```

📓 Step 4: Create and Run a `.ipynb` Notebook in VS Code

1. In the Explorer, click **New File** → name it `example.ipynb`.
2. Click inside a code cell and type:

```
print("Hello from Notebook!")
```

3. Click ▶ Run Cell (triangle icon) or press `Shift + Enter`.
4. You can add more cells:

```
a = 20
b = 30
a + b
```

✅ Output:

```
50
```

📌 **Note:** VS Code will automatically detect and activate your Python interpreter.

☁️ Step 5: Work with Google Colab (Cloud Notebook)

Google Colab is a free online Jupyter notebook environment provided by Google.

1. Go to:
   🔗 https://colab.research.google.com
2. Choose:
   - **New Notebook** to start fresh, or
   - **File → Open notebook → Google Drive** to access saved notebooks
3. In the code cell, type:

```
print("Hello from Colab")
```

4. Run using the ▶ button or `Ctrl + Enter`.

🔗 Step 6: Mount Google Drive in Colab

To save/load files from your Google Drive:

1. Add the below code to a new cell:

```
from google.colab import drive
drive.mount('/content/drive')
```

2. Run the cell. You'll be asked to give permission.
3. Once mounted, you can access files from your drive like:

```
/content/drive/MyDrive/YourFolderName/yourfile.csv
```