



Day 3 – Python, VS Code, Jupyter & Environment Setup

==> Why Environment Setup is Important

Before writing AI, ML, or GenAI code, we must first **prepare our system**.

👉 Just like:

- Before cooking → we prepare the kitchen
- Before driving → we check the vehicle

Similarly:

Before AI coding → we setup Python + tools correctly

--> Wrong setup = errors, confusion, wasted time

--> Proper setup = smooth learning & professional workflow

==> What We Are Setting Up Today

In this video, we will setup:

- 1 Python (Programming Language)
- 2 VS Code (Code Editor)
- 3 Jupyter Notebook (Interactive coding)
- 4 Package Manager (pip / conda)
- 5 Folder Structure for AI Projects

==> Python Installation

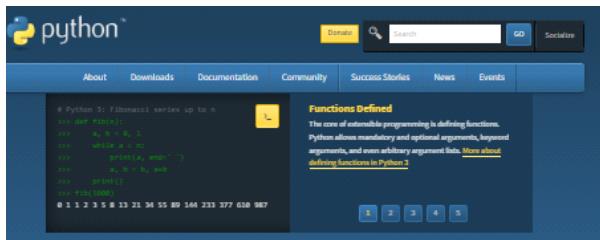
-- > What is Python?

Python is the **core language** for:

- Data Science
- Machine Learning
- Deep Learning
- Generative AI

==> Download Python

1. Open browser
2. Go to [👉 https://www.python.org](https://www.python.org)
3. Click **Download Python 3.x (latest)**



==> Important Installation Settings

During installation:

- Check “Add Python to PATH”
- Click Install Now

 *This is VERY IMPORTANT — without PATH, Python won’t work in terminal.*



==> Verify Python Installation

Open Command Prompt / Terminal and type:

python --version

Output should be like:

Python 3.11.x

```
CH\ Command Prompt - python
Microsoft Windows [Version 10.0.19045.6466]
(c) Microsoft Corporation. All rights reserved.

C:\Users\sahur>python
Python 3.10.0 (tags/v3.10.0:b494f59, Oct 4 2021, 19:00:18) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

=> VS Code Installation & Setup

--> What is VS Code?

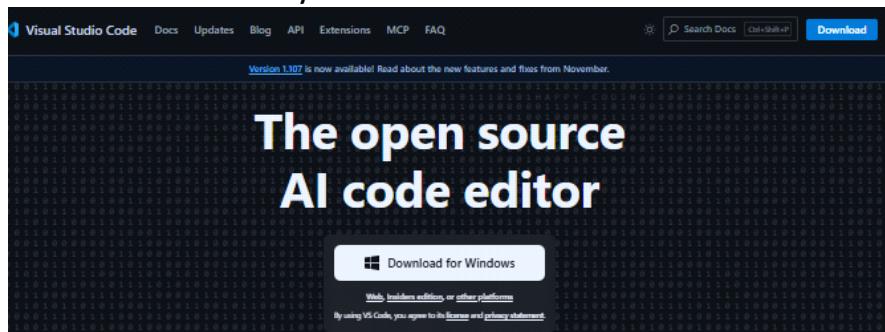
VS Code is a **lightweight, powerful code editor** used by professionals.

Used for:

- Writing Python scripts
- AI projects
- Debugging
- GitHub integration

=> Step : Install VS Code

1. Go to <https://code.visualstudio.com>
2. Download for your OS
3. Install normally



=> Step : Install Required Extensions

Open VS Code → Extensions tab → Install:

- Python (Microsoft)
- Jupyter

These enable:

- Code suggestions
- Running Python files
- Jupyter notebooks inside VS Code

=> Run Python in VS Code

Create file: test.py

```
print("VS Code setup successful")
```

Click Run ▶

==> What is Jupyter Notebook?

--> Definition

Jupyter Notebook is an **interactive environment** where:

- Code
- Output
- Notes
are in one place.

--> Perfect for **Data Science & AI learning**.

==> Why AI Engineers Use Jupyter

- Step-by-step execution
- Visual outputs
- Easy experimentation
- Great for teaching & demos

==> Install Jupyter Notebook

The screenshot shows a search results page with 'anaconda' typed into the search bar. Below the search bar is a navigation menu with tabs: AI Mode, All, Shopping, Images, Videos, Short videos, News, More, and Tools. The 'All' tab is selected. Under the search results, there is a card for 'Anaconda Software' with a green circular logo, the text 'Anaconda Software', and a thumbnail image of two people. Below the card, it says 'See results about' and '1997 · Horror/Action · 1h 29m'. To the left of the card, there is a link to 'anaconda.com' with a blue circular icon and the URL 'https://www.anaconda.com > download'.

[Download Anaconda Distribution](#)

Download Anaconda's open-source Distribution today. Discover the easiest way to perform Python/R data science and machine learning on a single machine.

 [Anaconda.org](https://anaconda.org) <https://anaconda.org> :

[Anaconda.org](#)

A community-led collection of recipes, build infrastructure, and distributions for the conda package manager.  Anaconda. The packages on this ... [Read more](#)

Jupyter Example

x = 10

y = 20

x + y

Output:

30

==> Anaconda

🔗 What is Anaconda?

Anaconda is a **bundle** that includes:

- Python
- Jupyter
- Data Science libraries

In this course:

- We will use **Python + pip**
- Anaconda is optional

==> Virtual Environment (venv)

🔗 What is Virtual Environment?

A virtual environment isolates project libraries.

Create venv:

```
python -m venv ai_env
```

Activate:

```
ai_env\Scripts\activate # Windows
```

🔗 Prevents dependency conflicts.

==> Why These Tools Matter for AI Engineer

Tool	Why Needed
Python	Core language
pip	Install AI libraries
VS Code	Professional coding
Jupyter	Data exploration
Folder structure	Real-world workflow
Virtual env	Project isolation

