DAY – 16, 17, 18

20, 21, 22 August 2025

To install Visual Studio Code (VS Code) on Windows, you need to download the installer from the official website and run it.

Step 1: Download the VS Code Installer

- Open your preferred web browser and navigate to the official Visual Studio Code website.
- The website should automatically detect your operating system as Windows. Click the prominent "Download for Windows" button. This will download the latest stable User Installer (VSCodeUserSetup-*.exe).

Step 2: Run the Installer

- Once the download is complete, locate the downloaded .exe file (usually in your "Downloads" folder).
- Double-click the installer file to run it.

Step 3: Follow the Setup Wizard

- License Agreement: A setup window will appear. Read the license agreement, select "I accept the agreement," and click "Next."
- Select Destination Location: The installer will suggest a default installation location (e.g., C:\Users\<YourName>\AppData\Local\Programs\Microsoft VS Code). It's recommended to keep the default location unless you have a specific reason to change it. Click "Next."
- Select Start Menu Folder: Accept the default name for the Start Menu folder ("Visual Studio Code") and click "Next."
- Select Additional Tasks: This screen allows you to choose extra helpful options:
- Create a desktop icon: (Optional) Puts a shortcut on your desktop.
- Add "Open with Code" action to Windows Explorer file context menu: (Recommended) allows you to right-click a file and open it in VS Code.

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- Add "Open with Code" action to Windows Explorer directory context menu: (Recommended) Allows you to right-click a folder and open the entire directory in VS Code.
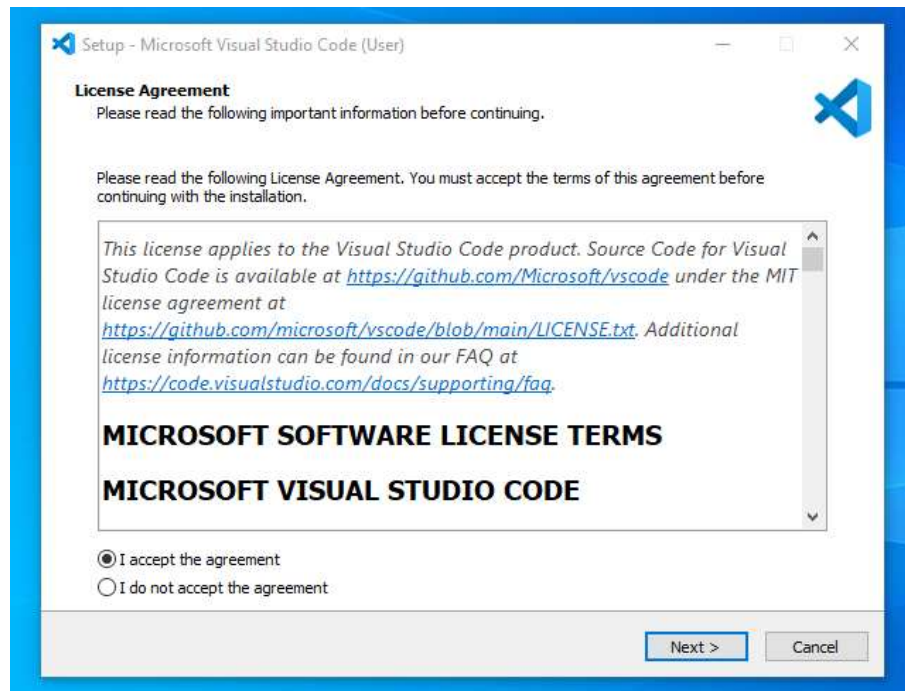
Register Code as an editor for supported file types: (Optional) Makes VS Code the default program for files it can edit.

- Add to PATH (requires shell restart): (Recommended) This adds VS Code to your system's environment variables, allowing you to type code . in Command Prompt or PowerShell to open the application in the current folder.
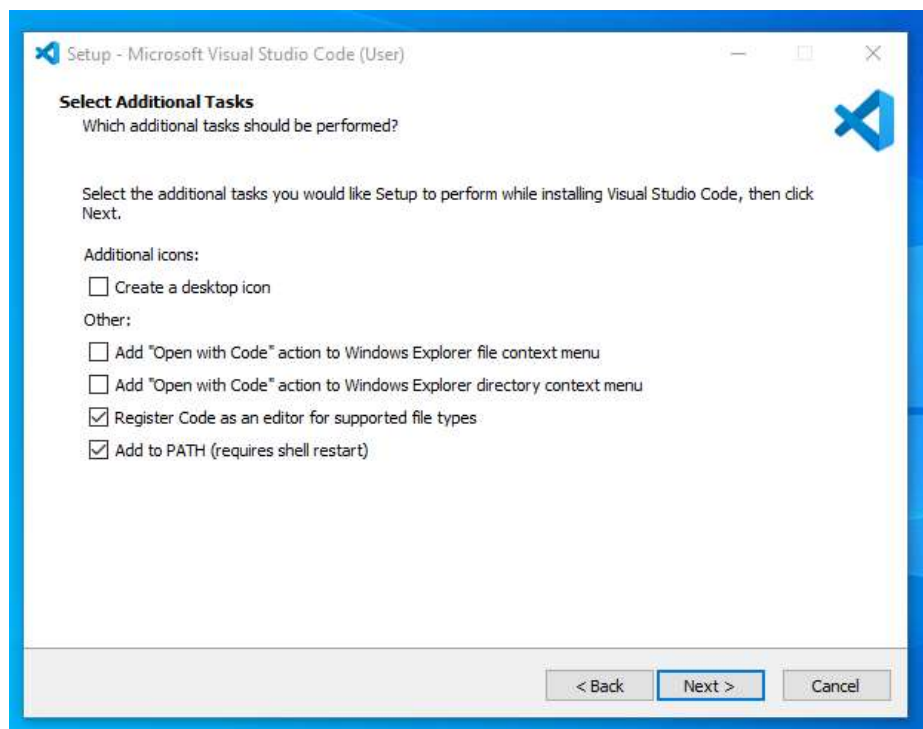- After selecting your desired options, click "Next."

Step 4: Finalize Installation

- Ready to Install: Review your selected settings. If everything looks correct, click "Install."
- The installation process will begin and usually takes only a minute or two.
- Installation Complete: Once finished, the setup wizard will display a confirmation screen. Ensure the box labeled "Launch Visual Studio Code" is checked if you want to open it immediately, then click "Finish."
- Visual Studio Code is now installed on your Windows system. You can open it from the Start Menu or using any of the shortcuts you created.

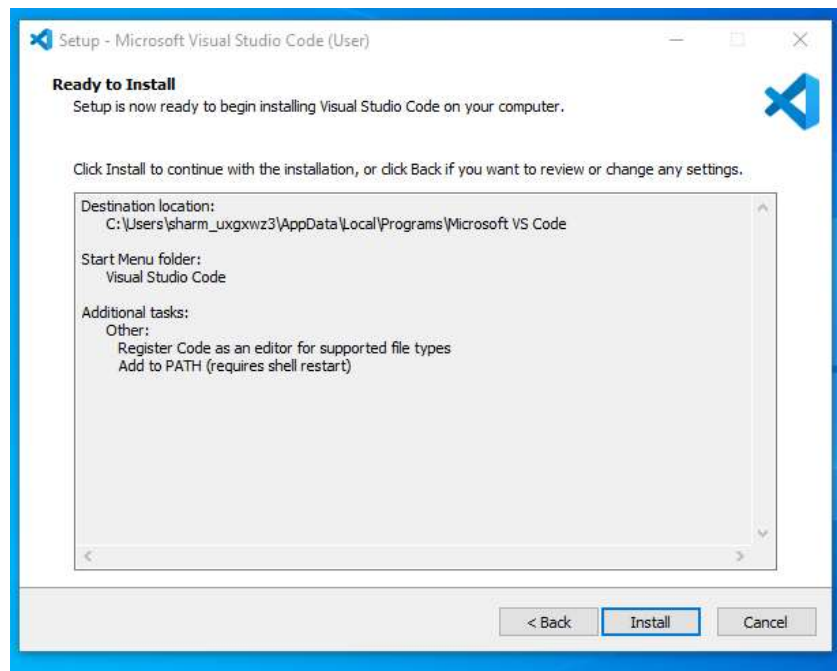**Name- Jasleen Kaur   Branch-D4 CSE (C2)   URN-2302723**

After the Installer opens, it will ask you to accept the terms and conditions of the Visual Studio Code. Click on I accept the agreement and then click the Next button.
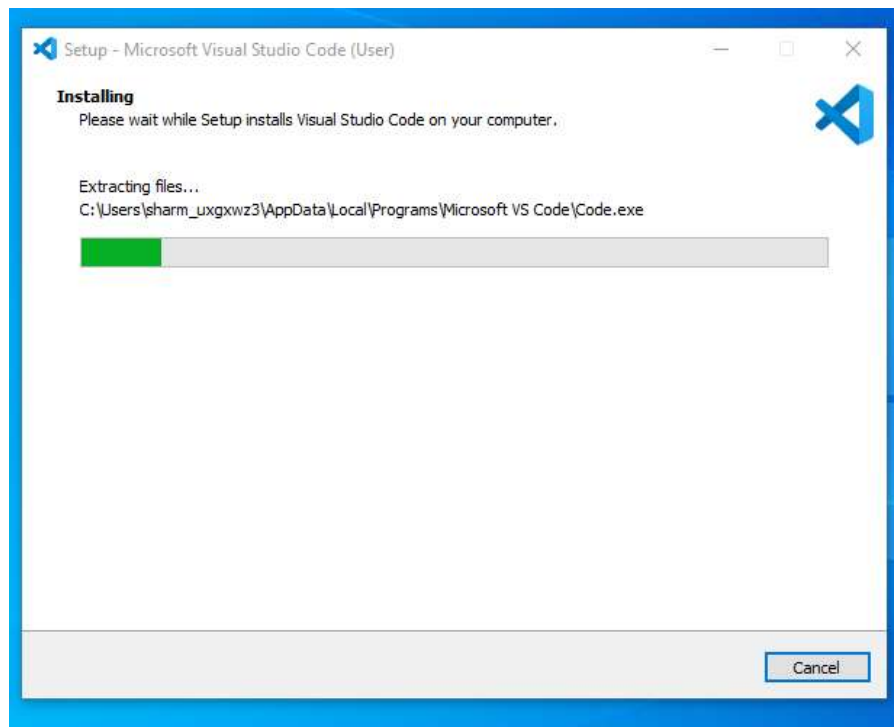

Choose the location data for running the Visual Studio Code. It will then ask you to browse the location. Then click on the Next button.

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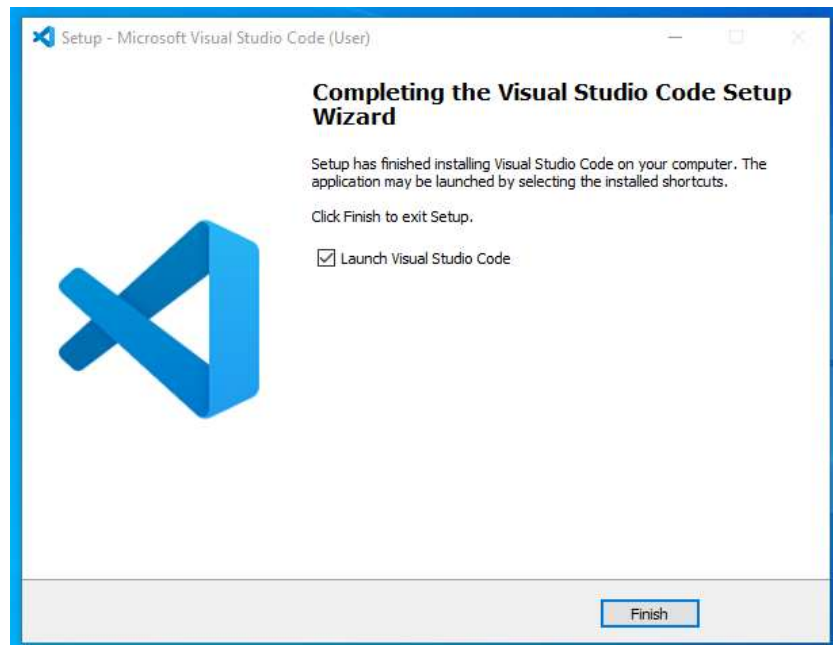
Then it will ask to begin the installation setup. Click on the Install button.

After clicking on Install, it will take about 1 minute to install the Visual Studio Code on your device.

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After the Installation setup for Visual Studio Code is finished, it will show a window like this below. Tick the "Launch Visual Studio Code" checkbox and then click Next.

After the previous step, the Visual Studio Code window opens successfully. Now you can create a new file in the Visual Studio Code window and choose a language of yours to begin your programming journey!

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Step 1: Download and Install Visual Studio Code

1. Open any web browser.
2. Search for **Visual Studio Code**.
3. Open the official website and click **Download for Windows**.
4. Run the downloaded .exe file.
5. During installation:
   - Accept the license agreement.
   - Click **Next** until installation starts.
   - ✔ Select **Add to PATH** (important).
6. Click **Install** and then **Finish**.

✔ Visual Studio Code is now installed successfully.

Step 2: Install Python

1. Go to **python.org**.
2. Download the latest version of Python.
3. Run the installer.
4. ✔ Check **Add Python to PATH**.
5. Click **Install Now**.

Verify Python Installation

Open VS Code → Open **Terminal** and type:

python --version

If the version number appears, Python is installed correctly.

Step 3: Install Python Extension in VS Code

1. Open VS Code.
2. Click the **Extensions** icon on the left sidebar.
3. Search for **Python**.
4. Install the **Python extension by Microsoft**.

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Step 4: Create and Open Project Folder

1. Create a new folder (e.g., Chatbot_Project).
2. Open VS Code.
3. Click **File → Open Folder**.
4. Select your project folder.

Step 5: Create Virtual Environment (Recommended)

Open terminal in VS Code and run:

python -m venv venv

Activate it:

venv\Scripts\activate

If (venv) appears in the terminal, the environment is active.

Step 6: Update pip

python -m pip install --upgrade pip

Step 7: Install Required Libraries

Run the following commands one by one in the VS Code terminal:

Flask (Backend Framework)

pip install flask

TensorFlow (Machine Learning)

pip install tensorflow

Keras (Neural Networks)

pip install keras

NLTK (Text Processing)

pip install nltk

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NumPy (Mathematical Operations)

pip install numpy

Pandas (Dataset Handling)

pip install pandas

Scikit-learn (Machine Learning Algorithms)

pip install scikit-learn

Speech Recognition (Voice to Text)

pip install SpeechRecognition

PyAudio (Audio Input)

pip install pyaudio

Text to Speech

pip install pyttsx3

Note: Counter does not require installation because it is a built-in Python module.

Step 8: Verify Installed Libraries

To check all installed libraries:

pip list

If all libraries are listed, installation is successful.

Step 9: Run the Project in VS Code

1. Create a Python file named app.py.
2. To run the file:

python app.py

For Flask applications, open the browser and visit:

http://127.0.0.1:5000

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Step 10: Common Errors and Solutions

☐ **Python command not found**

✔ Python PATH is missing → Reinstall Python and check **Add to PATH**

☐ **ModuleNotFoundError**

✔ Library not installed → Install using pip install module_name

☐ **Flask not running**

✔ Ensure the following code exists in app.py:

```
if __name__ == "__main__":
    app.run(debug=True)
```

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Basic Requirements (Must Be Installed First)

Before installing LangChain and Hugging Face, make sure:

- Python is installed
- Visual Studio Code (VS Code) is installed
- Python extension is installed in VS Code
- Terminal is opened inside VS Code
- Virtual environment is activated (recommended)

Activate virtual environment:

venv\Scripts\activate

2. Update pip

Updating pip avoids installation errors.

python -m pip install --upgrade pip

3. Installing LangChain

Step 1: Install LangChain Core Package

pip install langchain

LangChain is a framework used to build applications powered by Large Language Models (LLMs). It helps in prompt handling, chaining model calls, and managing conversations.

Step 2: Install Additional LangChain Modules (Recommended)

pip install langchain-community
pip install langchain-core
pip install langchain-text-splitters

These packages provide:

- Community integrations
- Core utilities
- Text splitting for large documents

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Step 3: Verify LangChain Installation

pip show langchain

If package details appear, LangChain is installed successfully.

4. Installing Hugging Face Generative AI Libraries

Step 1: Install Transformers (Main Library)

pip install transformers

This library allows access to pre-trained models like GPT, BERT, T5, etc.

Step 2: Install PyTorch (Backend Engine)

pip install torch

PyTorch is required to run Hugging Face models.

If you face issues, use:

pip install torch --index-url https://download.pytorch.org/whl/cpu

Step 3: Install Datasets Library

pip install datasets

Used for loading and managing datasets.

Step 4: Install Hugging Face Hub

pip install huggingface_hub

This helps in downloading and managing models from Hugging Face.

Step 5: Install Accelerate (Optional)

pip install accelerate

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Improves model performance and execution speed.

5. LangChain and Hugging Face Integration

To connect Hugging Face models with LangChain:

pip install langchain-huggingface

This allows LangChain to use Hugging Face models for text generation and chatbots.

6. Testing the Installation

Test Hugging Face Text Generation

from transformers import pipeline

```
generator = pipeline("text-generation", model="gpt2")
print(generator("Artificial Intelligence will transform agriculture by"))
```

If text is generated, Hugging Face is working correctly.

Test LangChain Import

from langchain.llms import HuggingFacePipeline

If no error occurs, LangChain is working.

7. Common Errors and Solutions

Error: ModuleNotFoundError

Solution: Install the missing library using pip.

Error: Torch installation fails

Solution: Install CPU version of PyTorch.

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Slow model response

Reason: Running on CPU. This is normal.

8. Requirements.txt (For Project)

You can add the following to your requirements.txt file:

langchain
langchain-community
langchain-core
langchain-text-splitters
transformers
torch
datasets
huggingface_hub
accelerate
langchain-huggingface

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