Dev_Setup

Setup Development Environment

#Objective:

This assignment aims to familiarize you with the tools and configurations necessary to set up an efficient developer environment for software engineering projects. Completing this assignment will give you the skills required to set up a robust and productive workspace conducive to coding, debugging, version control, and collaboration.

#Tasks:

1. **Select Your Operating System (OS):**

Choose an operating system that best suits your preferences and project requirements. Download and Install Windows 11. https://www.microsoft.com/software-download/windows11

There are various methods one can use to install windows 11, they include:

1. Direct upgrade from windows 10 using Windows Update
2. Using the windows 11 Installation Assistance.
3. Creating installation media using a USB Drive.
4. Using an ISO File for installation or upgrade.
5. Network Boot (PKE Boot) installation.

A. Direct Upgrade from Windows 10 using windows upgrade.

- Check System Requirements: you can use PC Health Check tool provided by Microsoft to verify compatibility.
- Backup your Data.
- Open Windows Update:
    - Go to Settings > Update & Security > Windows Update.
- Check for Updates:
    - Click on Check for updates. If your PC is eligible for Windows 11, you will see the option to download and install Windows 11.
- Install the Update:
    - Follow the on-screen instructions to download and install Windows 11. The installation process will take some time and your PC will restart multiple times.

B. Creating installation media using a USB Drive.

- Download the Media Creation Tool:
    - Go to Windows 11 download page and click on Download now under Create Windows 11 Installation Media.
- Run the Media Creation Tool:
    - Once the download is complete, run the Media Creation Tool and follow the prompts to create a bootable USB drive or ISO file.

- Create a bootable USB drive:
    - If you choose to create a bootable USB drive, insert a blank USB drive with at least 8GB of free space and follow the prompts to create the bootable drive.
- Install Windows 11:
    - Insert the bootable USB drive into your PC and restart your computer. Follow the prompts to install Windows 11.

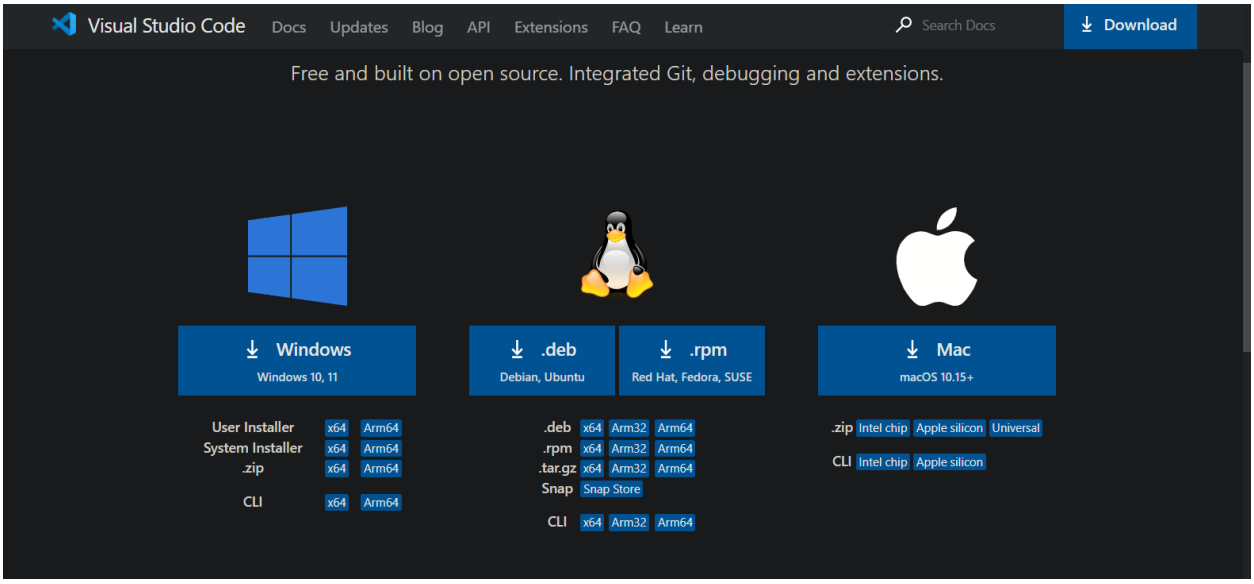
2. **Install a Text Editor or Integrated Development Environment (IDE):**

- Select and install a text editor or IDE suitable for your programming languages and workflow. Download and Install Visual Studio Code. https://code.visualstudio.com/Download
- **Visual Studio Code** is the most popular code editor and the IDEs provided by Microsoft for writing different programs and languages. It allows the users to develop new code bases for their applications and allow them to successfully optimize them.

How to download and install Visual Studio Code:

Step 1: Download Visual Studio Code

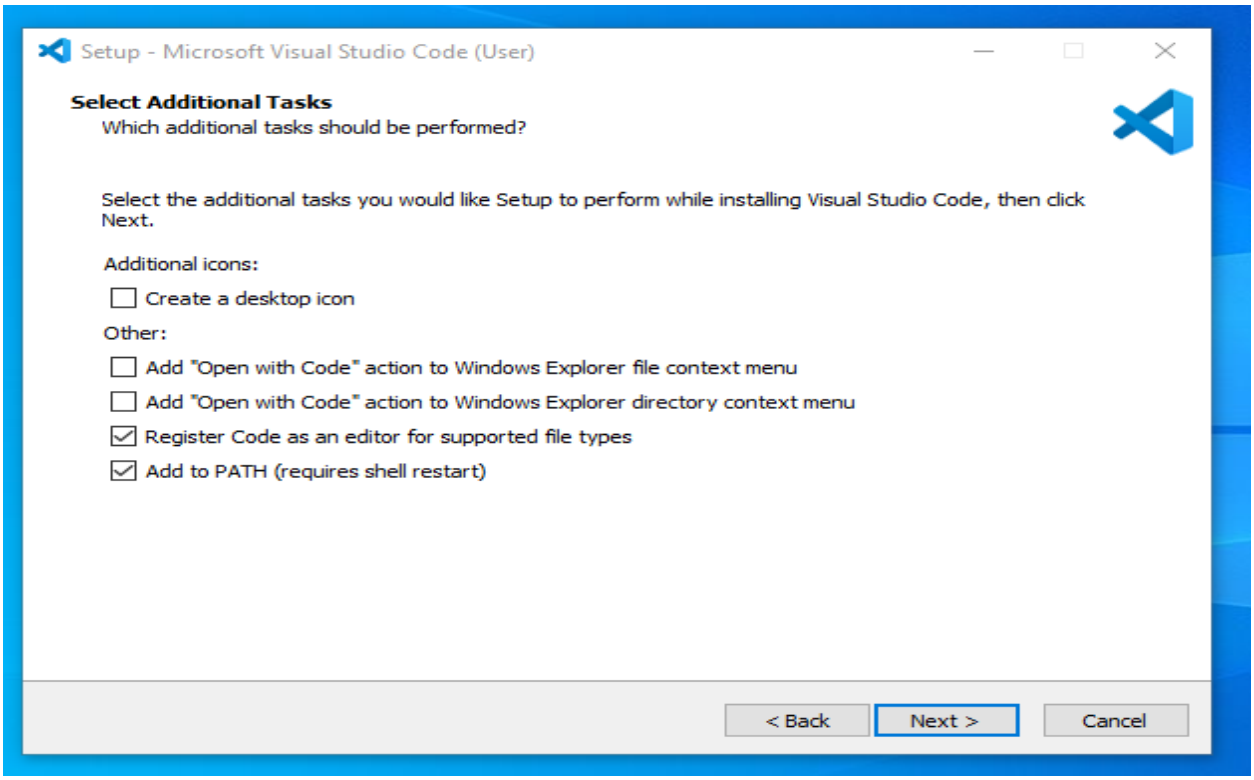
- Visit the Official Website: Open your web browser and go to https://code.visualstudio.com/Download, and choose your Operating system.



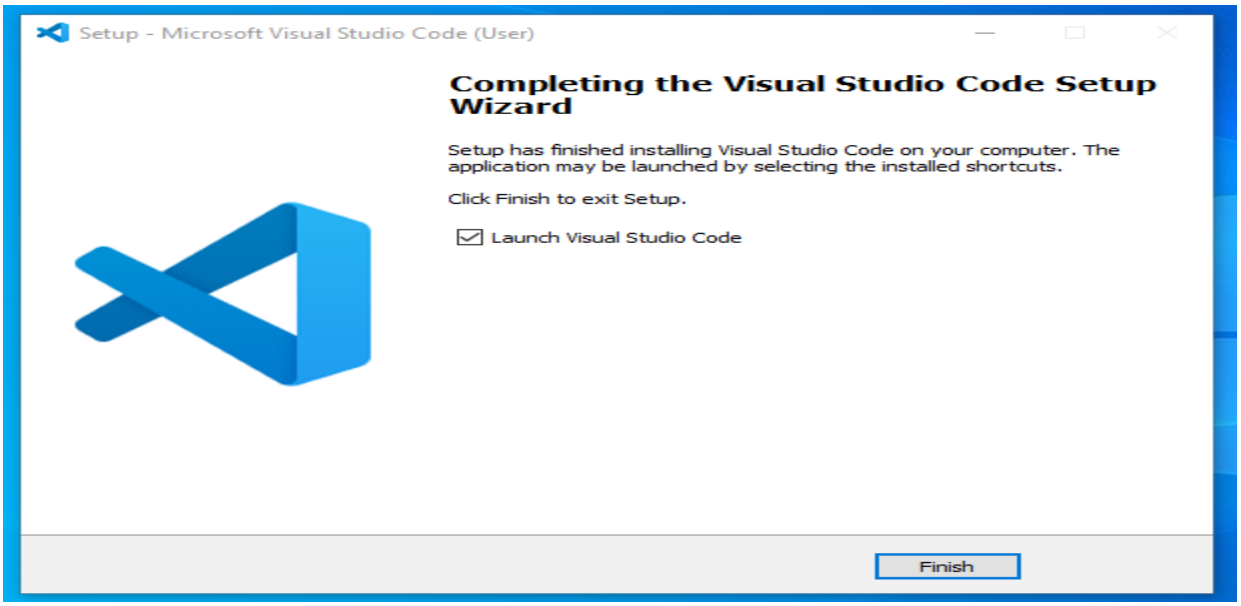
Step 2: Install Visual Studio Code

For Windows:

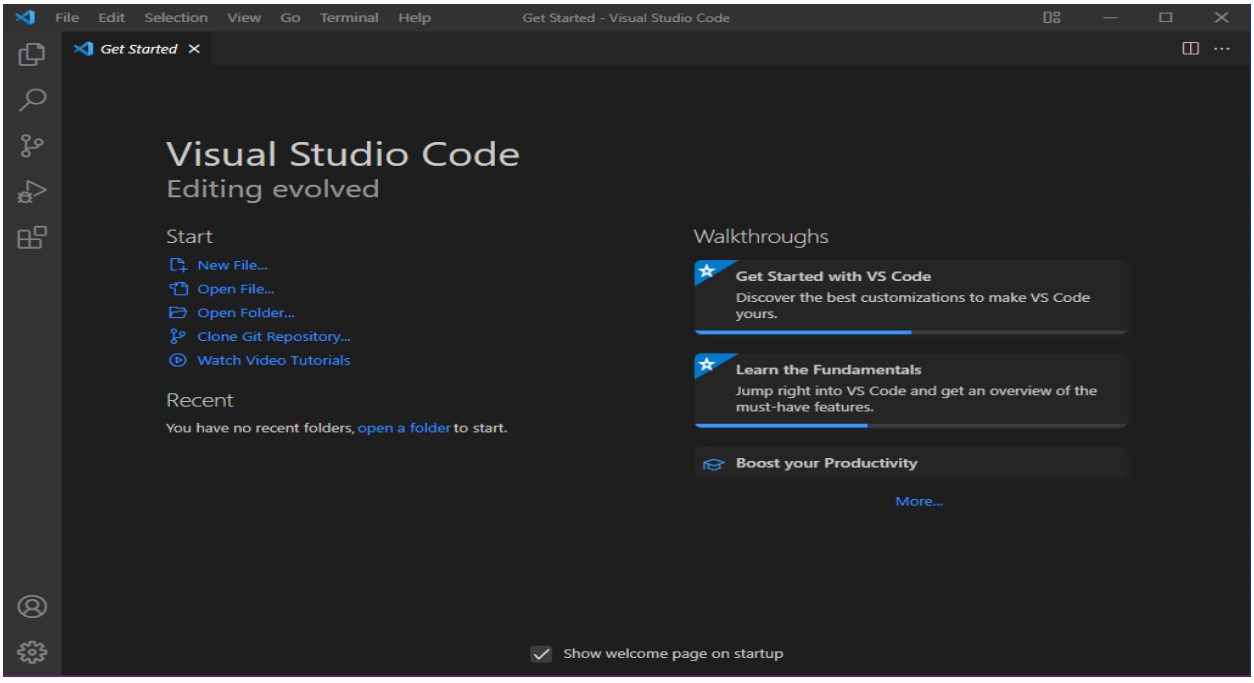
- Run the Installer,once the download is complete, locate the installer file (VSCodeSetup-x.y.z.exe) in your Downloads folder and double-click it to run the installer.
- Choose the location data for running the Visual Studio Code.



Step 3: 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 finish.



Step 4: Now you can create a new file in the Visual Studio Code window and choose a language of yours.

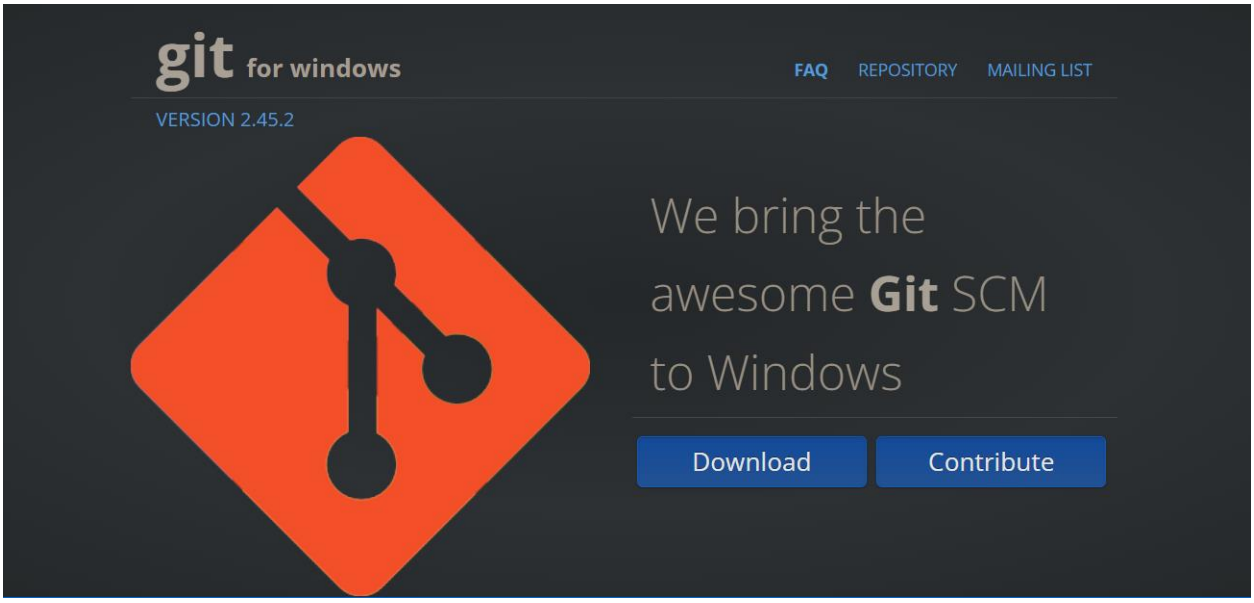


3**. Set Up Version Control System:**

Install Git and configure it on your local machine. Create a GitHub account for hosting your repositories. Initialize a Git repository for your project and make your first commit. https://github.com

Installing and Configuring Git on Your Local Machine

Step 1: Download and Install Git



Download the Installer:

- Visit the Git for Windows download page and click on the download link to get the latest version.
- Locate the downloaded installer in your Downloads folder and double-click it to run.

Follow the Setup Wizard:

- Select Components: Choose the components you want to install, add the PATH Environment to Git from the command line.
- Choose the default terminal emulator: Use the default "Git Bash".

4**. Install Necessary Programming Languages and Runtimes:**

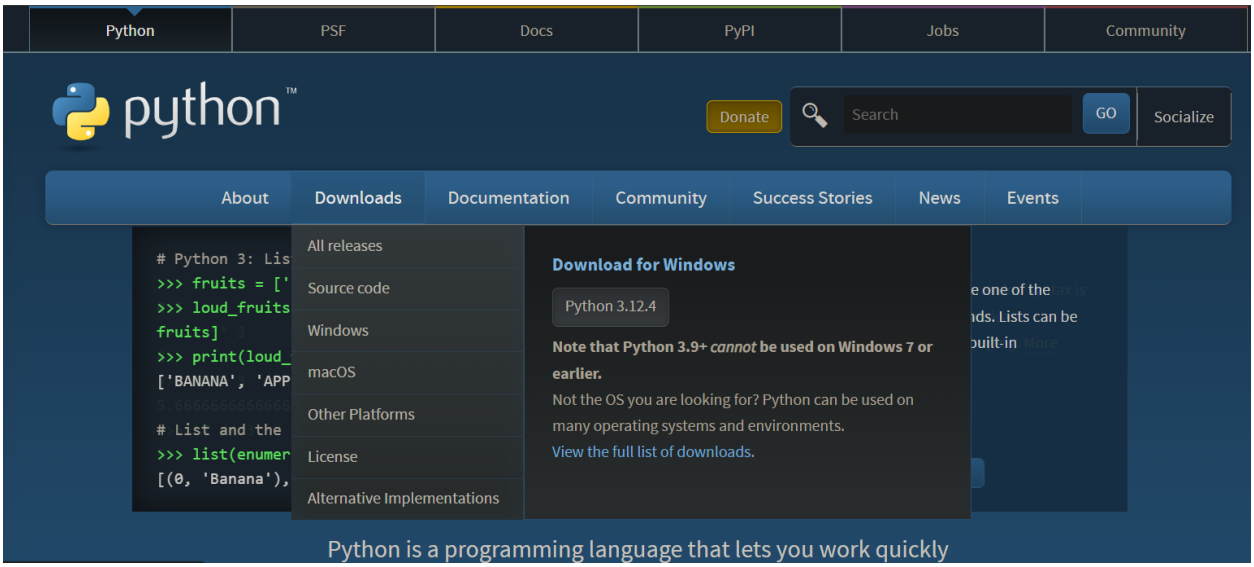
Install Python from http://wwww.python.org programming language required for your project and install their respective compilers, interpreters, or runtimes. Ensure you have the necessary tools to build and execute your code.

- Python is a high-level, interpreted programming language known for its readability and versatility. It was created by Guido van Rossum and first released in 1991. Python is widely used in various fields such as web development, data analysis, artificial intelligence, scientific computing, and more.

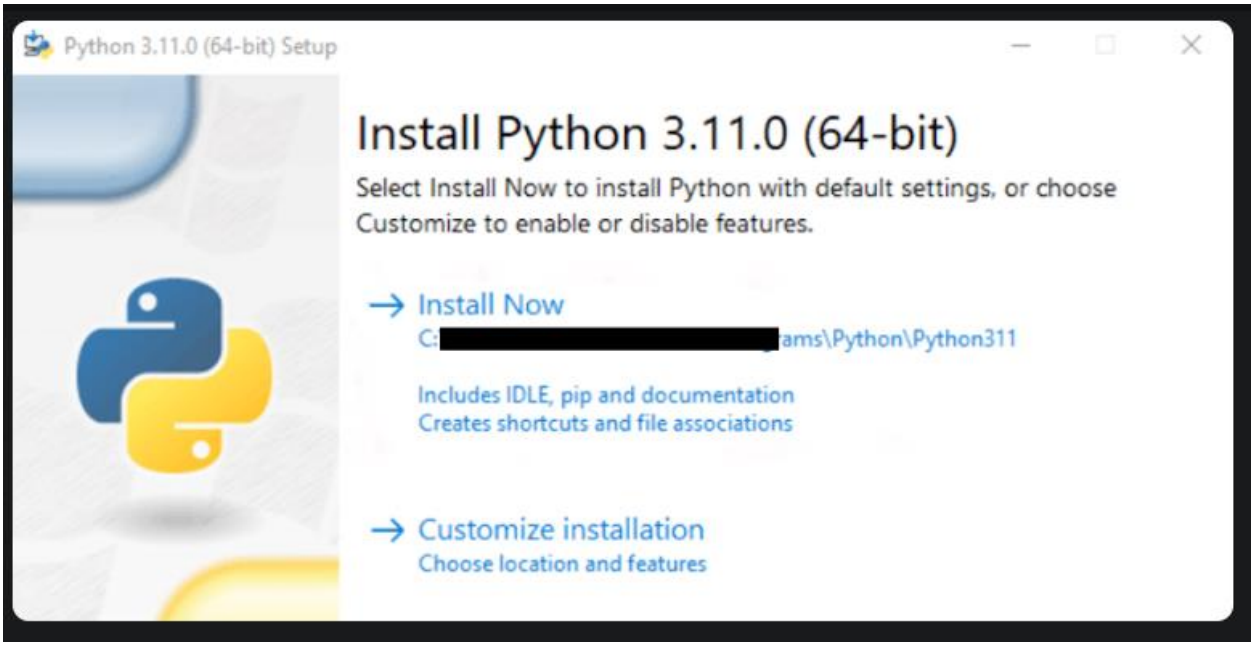
Python installation

For Windows:

- Go to the official Python download page http://www.python.org, and select the “Download Python” button.



- Run the installer and follow the installation prompts to install Python.
- After selecting your desired installation settings, click Install to begin the installation process. The installer will copy the necessary files to your computer and set up Python.



- Once installed, you can verify that Python is installed by opening a command prompt or terminal window and typing python --version. This should display the version of Python that you just installed

5. **Install Package Managers:**

If applicable, install package managers like pip (Python).

- Package managers are essential tools that help manage libraries and dependencies in your Python projects.

Installing package managers (pip):

- Verify if pip is installed :
    - Open Command Prompt and run (pip - - version), if installed you will see the version details.
- Ensure Python is Installed, if not visit http://www.python.org to install.
- If pip isn't installed, on the terminal run (winget install pip) or (python get-pip.py).
- Verify the installation using (pip --version).
- Once installed you can use it to install other packages like (numpy) – pip install numpy.

6. **Configure a Database (MySQL):**

Download and install MySQL database. https://dev.mysql.com/downloads/windows/installer/5.7.html

- A database is an organized collection of structured information or data, typically stored electronically in a computer system, which is managed by a database management system (DBMS).
- MySQL is an open-source relational database management system (RDBMS) that uses structured query language (SQL) to manage and manipulate data.

MySQL setup:

- Download MySQL
  Visit the Official MySQL Website: https://dev.mysql.com/downloads/installer/

- Locate the downloaded installer file and double-click it to start the installation.
- Follow the Installation Wizard.
- Set up a MySQL Server configuration, including the root password and user authentication settings.
- Finish the installation and optionally choose to start MySQL Workbench and MySQL Shell.

8. **Explore Extensions and Plugins:**

Explore available extensions, plugins, and add-ons for your chosen text editor or IDE to enhance functionality, such as syntax highlighting, linting, code formatting, and version control integration.

Python Extension:

- Provides rich support for Python, including IntelliSense, debugging, code formatting, and more.

Prettier - Code formatter:

- An opinionated code formatter that supports multiple languages, including Python.

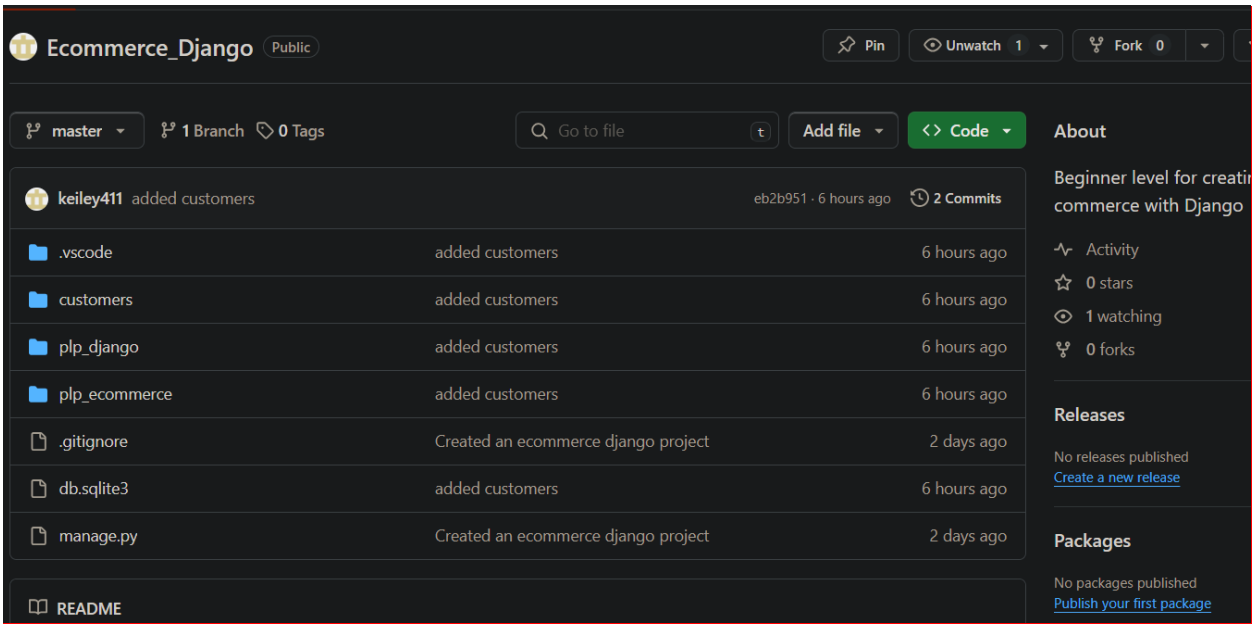
GitLens:

- Enhances the built-in Git capabilities, providing features like blame annotations, code lens, and repository insights.

9. **Document Your Setup:**

Create a comprehensive document outlining the steps you've taken to set up your developer environment. Include any configurations, customizations, or troubleshooting steps encountered during the process.

- A GitHub repository containing a sample project initialized with Git and any necessary configuration files (e.g., .gitignore).



- A reflection on the challenges faced during setup and strategies employed to overcome them.

Challenges faced:

- Setting up Dart and Flutter – reviewed the recorded session and was able to set up.
- Understanding how to use Dart and Flutter.