This document outlines the steps taken to set up a developer environment for software engineering projects. The objective is to create a workspace that is efficient, robust, and conducive to coding, debugging, version control, and collaboration.

I choose Windows 11 as my primary OS

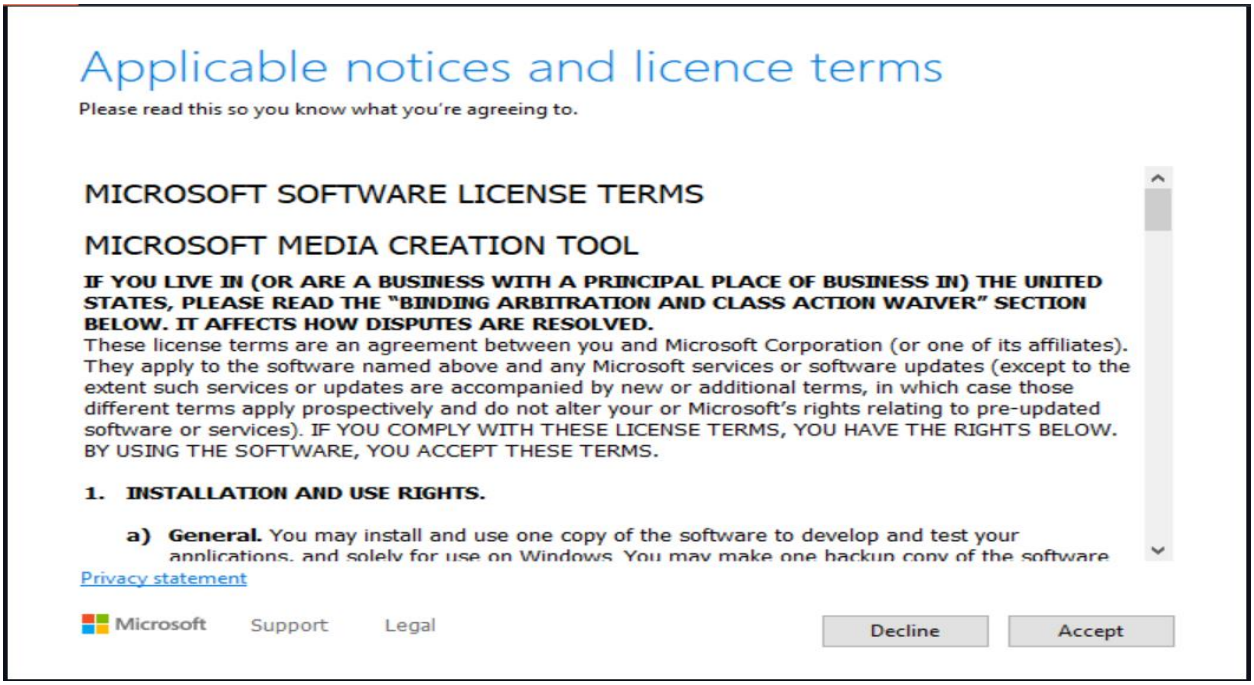
I followed the following link to download Windows 11 https://www.microsoft.com/software-download/windows11 and choose the second option for creating installation media. The following are the steps:

Step 1: Create Windows 11 Installation Media

Download the Media Creation Tool: Under the "Create Windows 11 Installation Media" section, click "Download now".

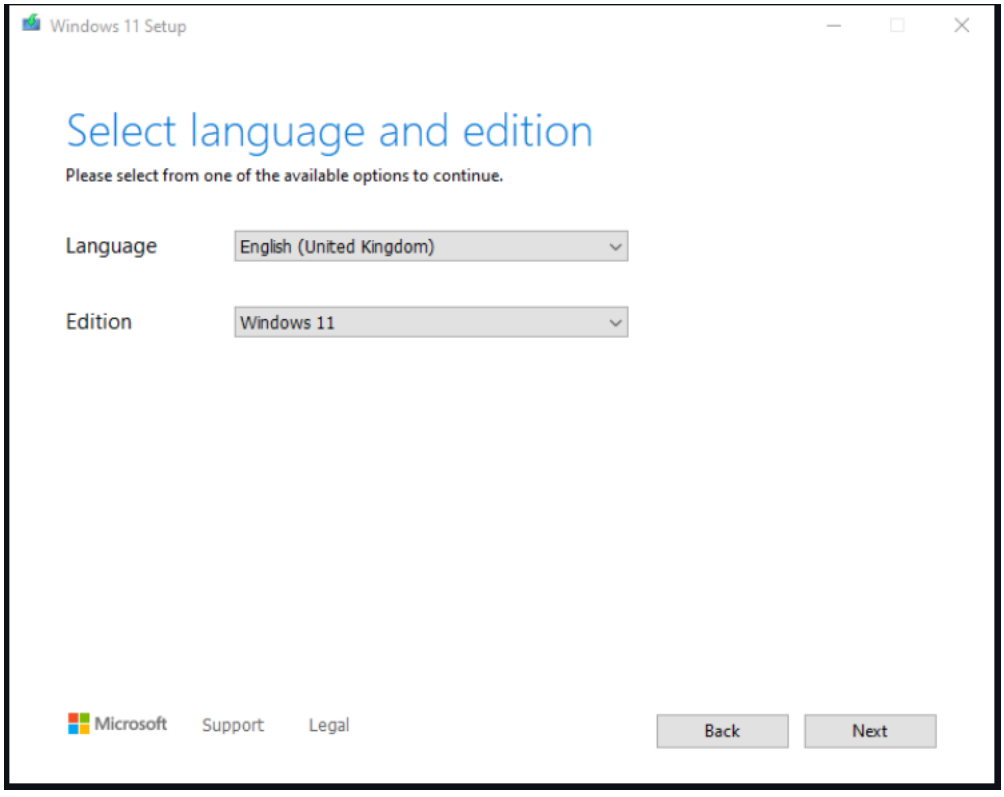
Step 2: Run the Media Creation Tool:

- Open the downloaded Media Creation Tool executable file.
- Accept the license terms.

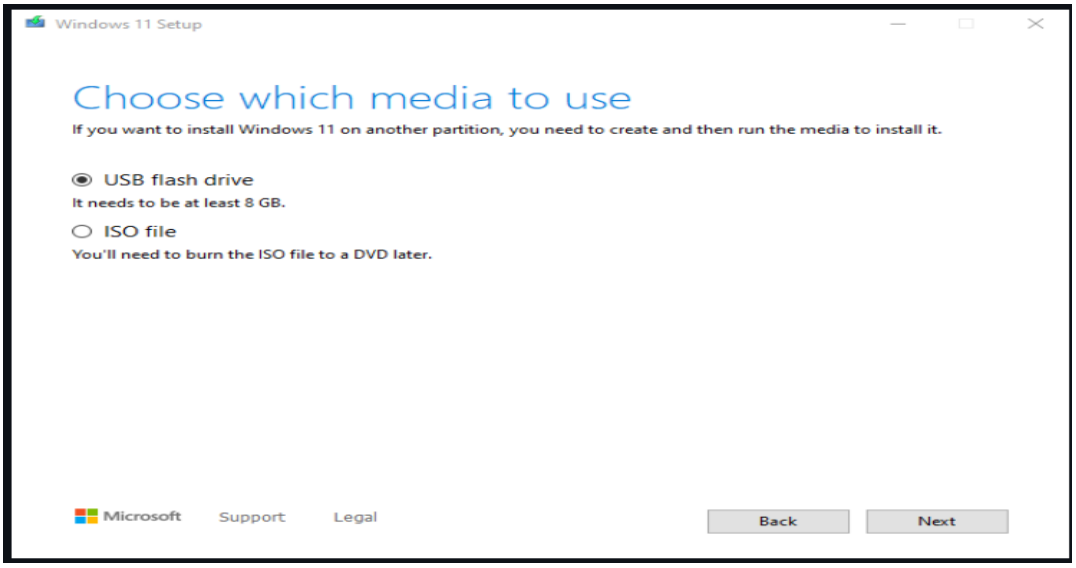


Step 3: Set Up the Media Creation Tool:

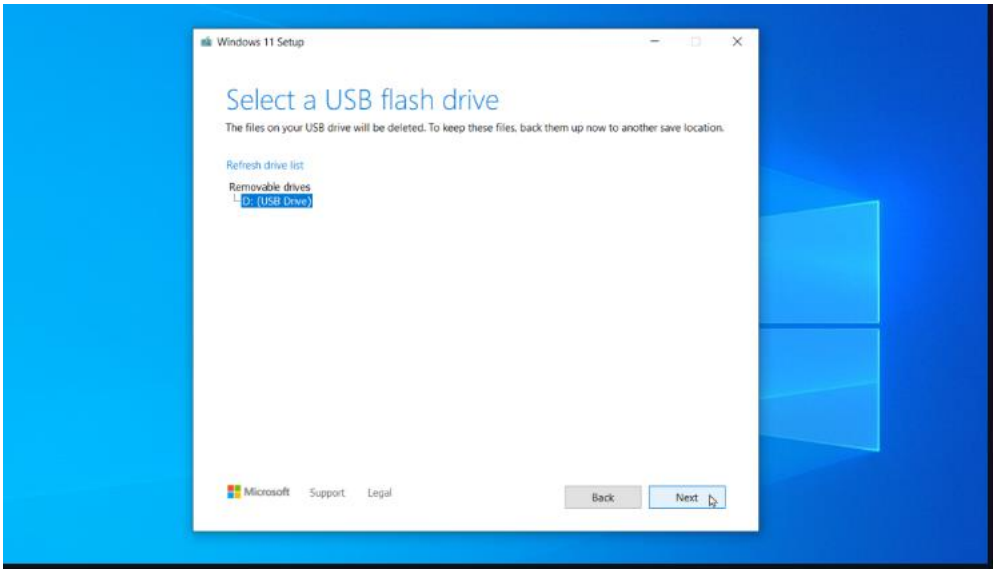
Choose the language, edition, and architecture (64-bit) and press next.



Select "USB flash drive" as the media to use. Alternatively, you can choose "ISO file" if you want to create a bootable DVD.

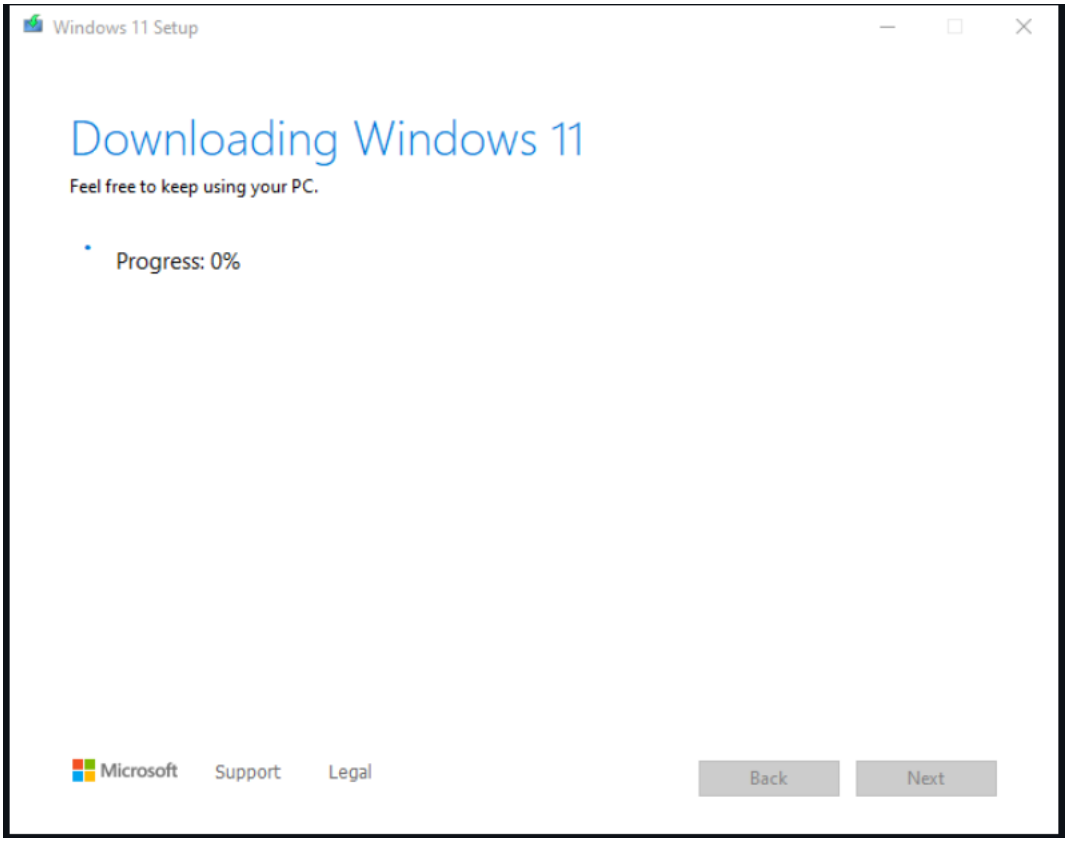


Step 4:Create the Installation Media:



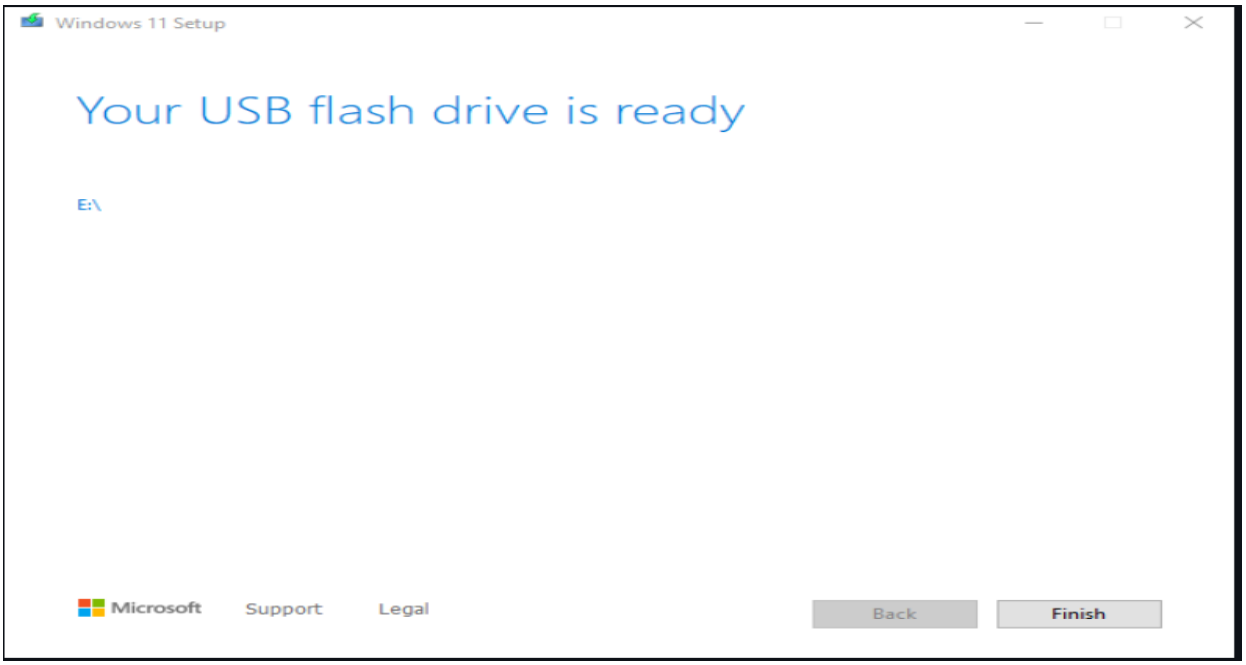
Insert a USB flash drive with at least 8 GB of storage.

Select the USB drive from the list and click "Next".



The tool will download Windows 11 and create the bootable USB drive.

After that click finish



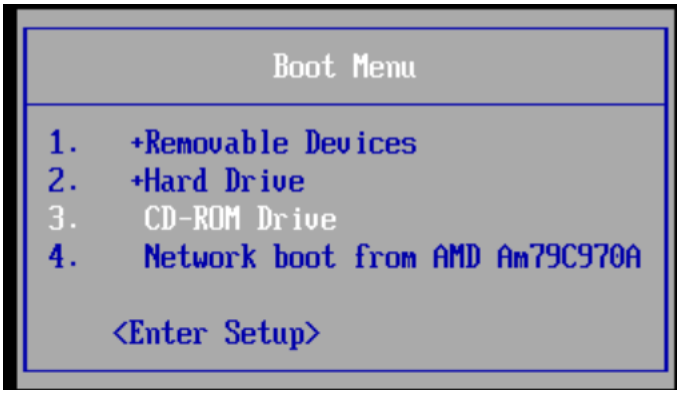
Step 2: Install Windows 11 Using the Installation Media

1. Prepare Your PC:

- Back up all important data.
- Ensure your PC meets the Windows 11 system requirements.

2.Boot from the USB Drive:

- Insert the bootable USB drive into your PC.
- Restart your PC and enter the BIOS/UEFI settings (commonly accessed by pressing a key like F2, F12, Delete, or Esc during startup).
- Change the boot order to boot from the USB drive first.



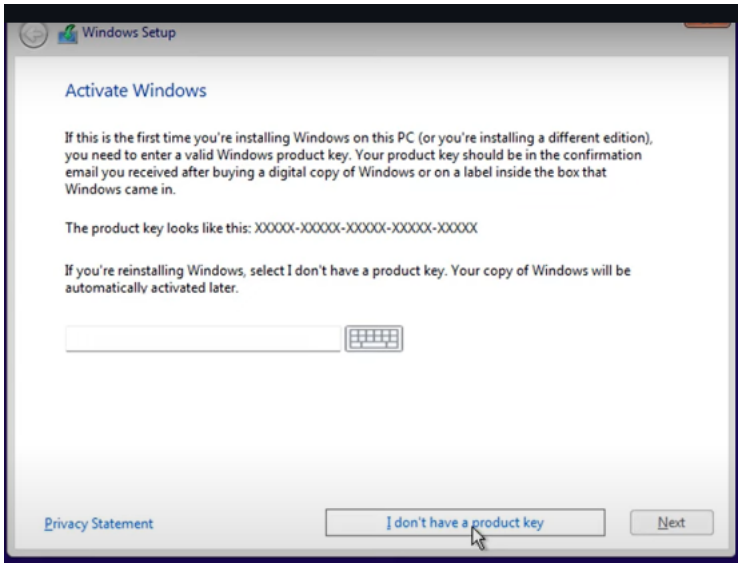
3.Start the Installation Process:

- Save the changes and exit the BIOS/UEFI settings. Your PC should now boot from the USB drive.
- The Windows Setup screen will appear. Select your language, time, and keyboard preferences, and click "Next".

- Click "Install now".

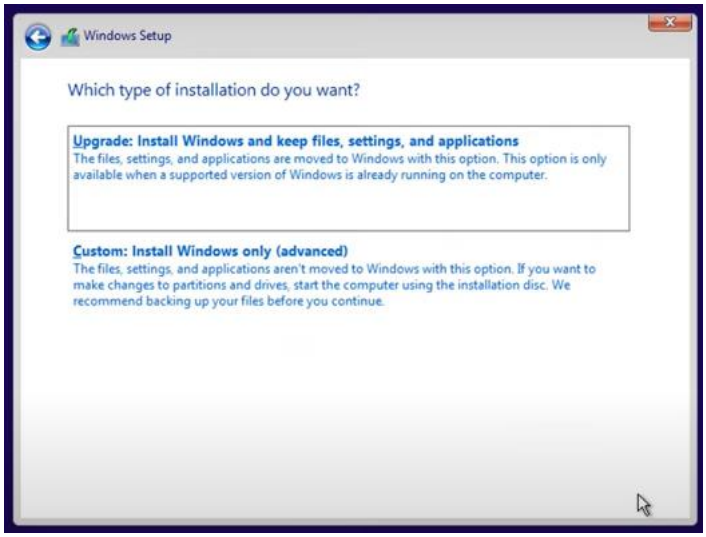
4.Enter Product Key:

- If prompted, enter your Windows 11 product key. If you are upgrading from Windows 10, you may skip this step as the activation should be automatic.



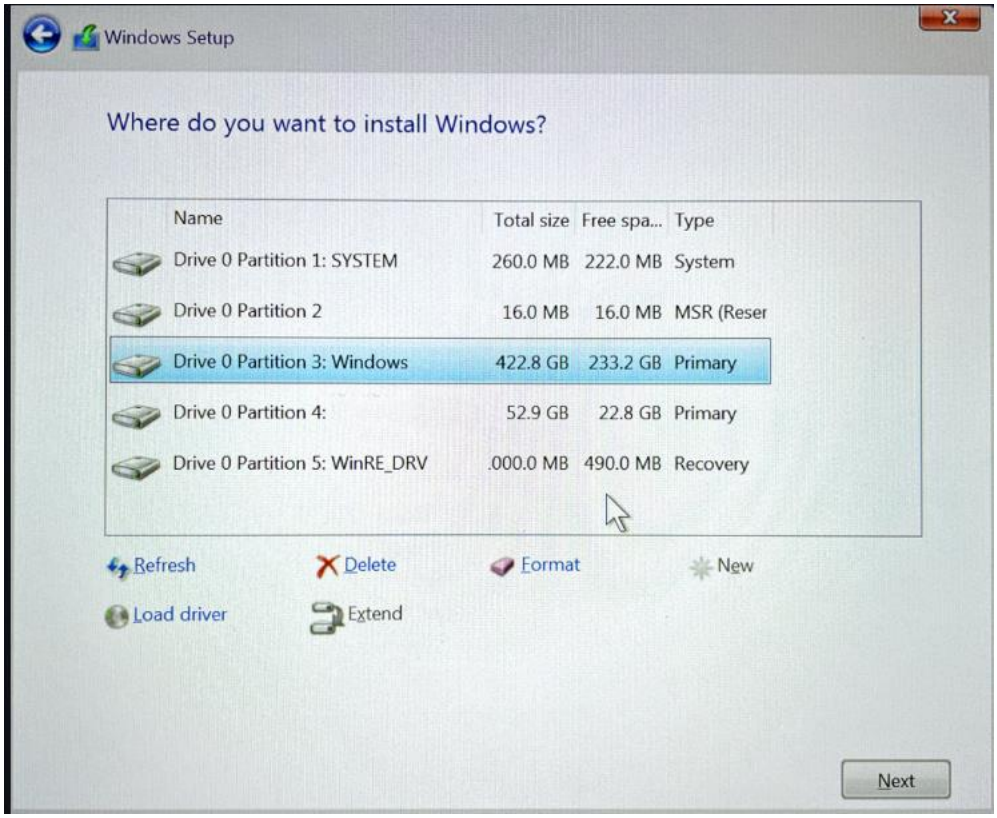
5.Select Installation Type:

- Choose "Custom: Install Windows only (advanced)" for a clean installation.



- choose windows type and click next.

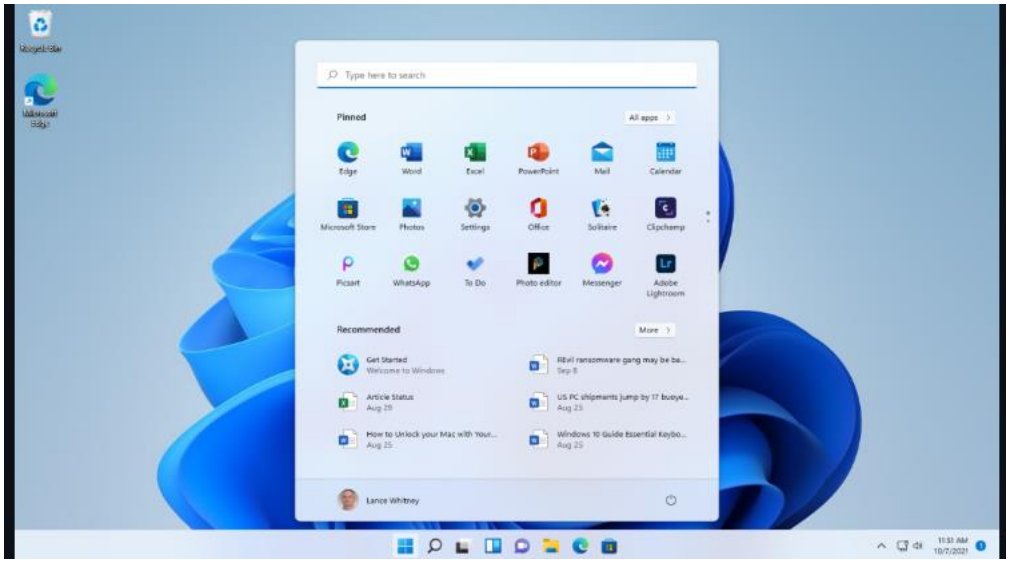
6. Partition the Drive:
    - Select the partition where you want to install Windows 11. You can delete existing partitions to create a new one, but this will erase all data on the selected partition.



    - Click "Next" to start the installation.

Step 3: Complete the Installation

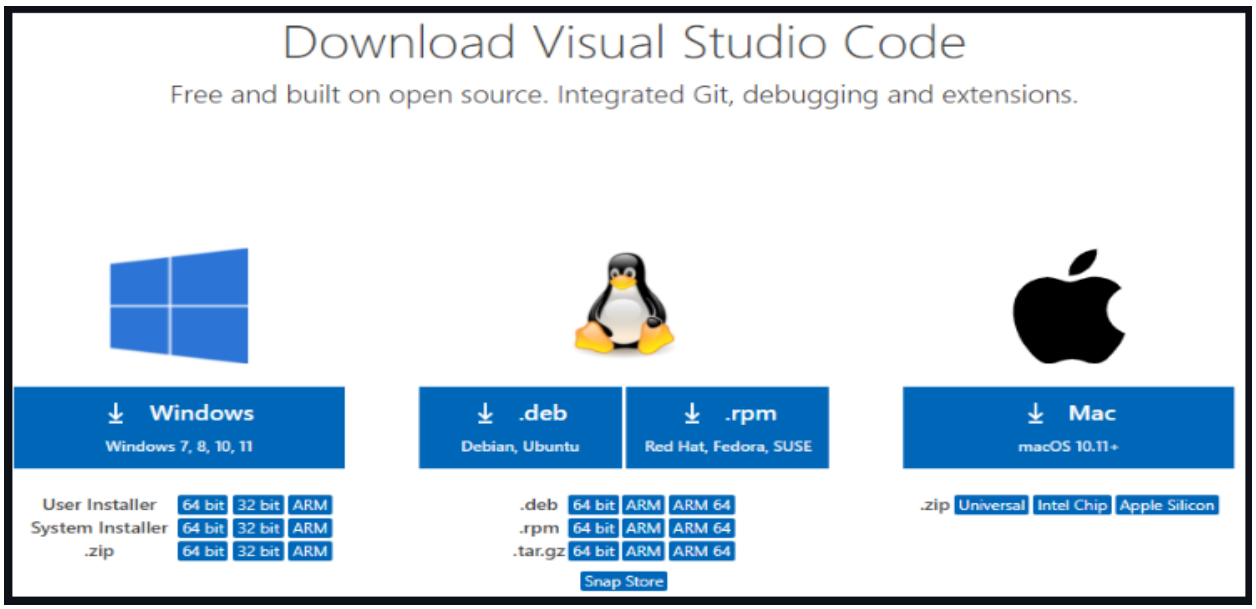
1. Follow On-Screen Instructions:
    - Windows 11 will now be installed on your PC. The process might take some time and your PC will restart several times.
2. Set Up Windows 11:
    - After installation, you will be guided through the initial setup process. Configure your preferences, sign in with your Microsoft account, and set up any additional settings.



The following are the steps I took to install an integrated development Environment (IDE) specifically visual studio code (vs code)

Download VS Code:

- Go to the Visual Studio Code download page: https://code.visualstudio.com/Download.
- Under the "Download Visual Studio Code" section, click "Download for Windows".
- This will start the download of the VS Code installer (VSCodeUserSetup-x64-1.X64-1.XX.X.exe).

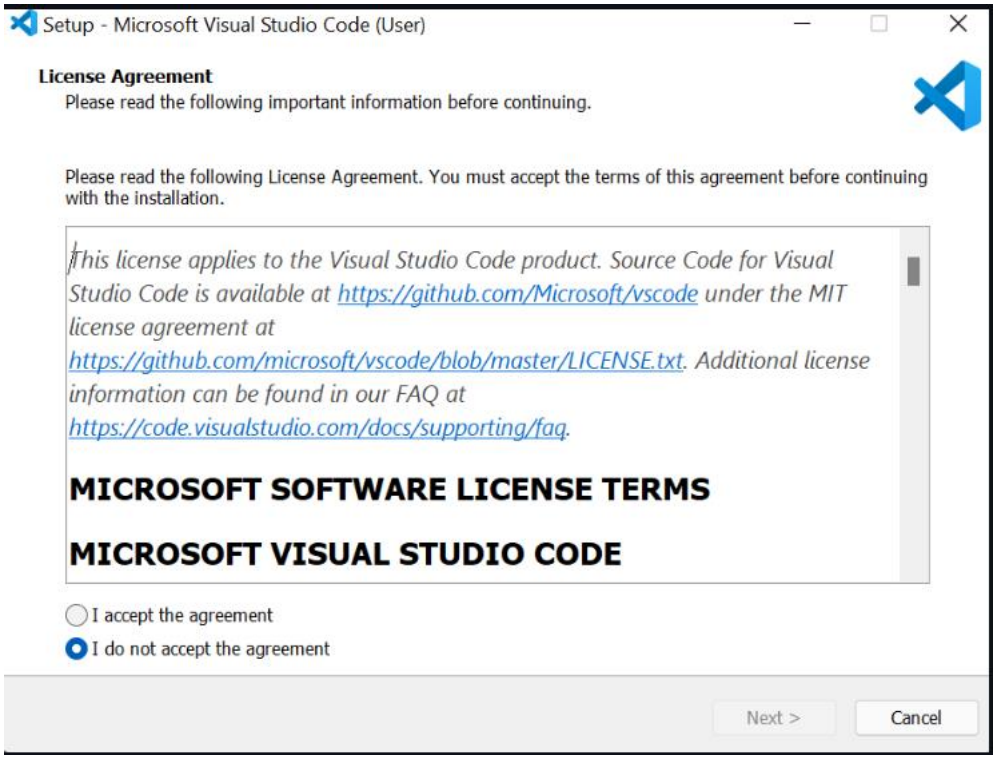


2.Run the Installer:

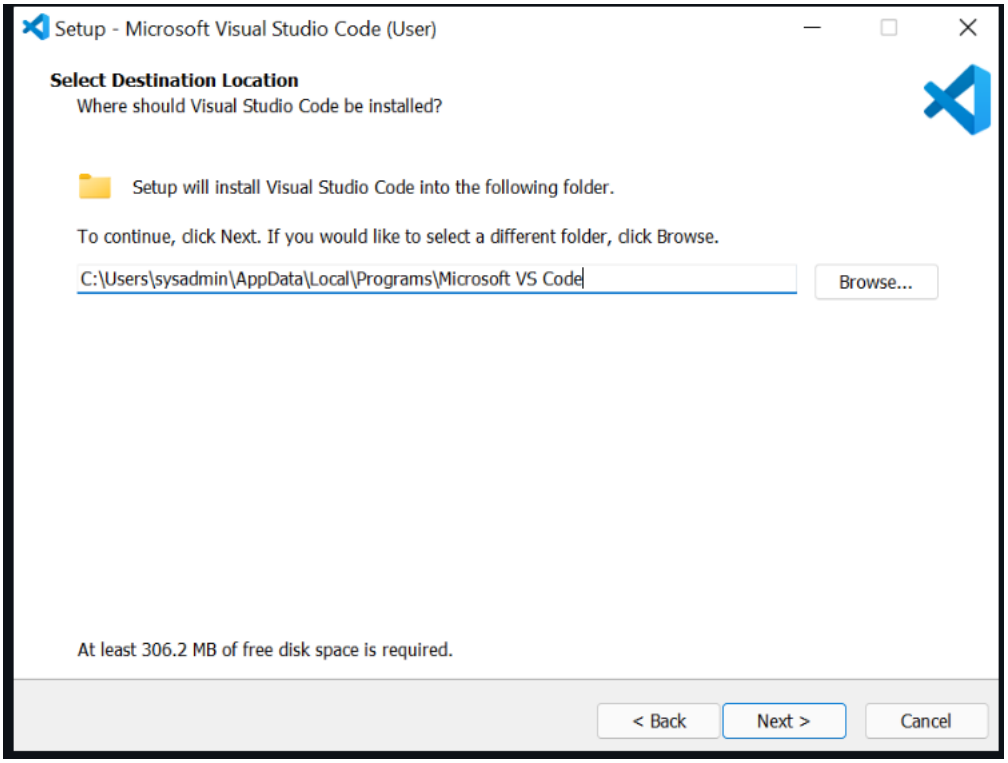
- Open the downloaded VS Code installer.
- Run the VS Code installer (VSCodeUserSetup-x64-1.X64-1.XX.X.exe).
- The installer wizard will appear.

3.Installation Prompt:

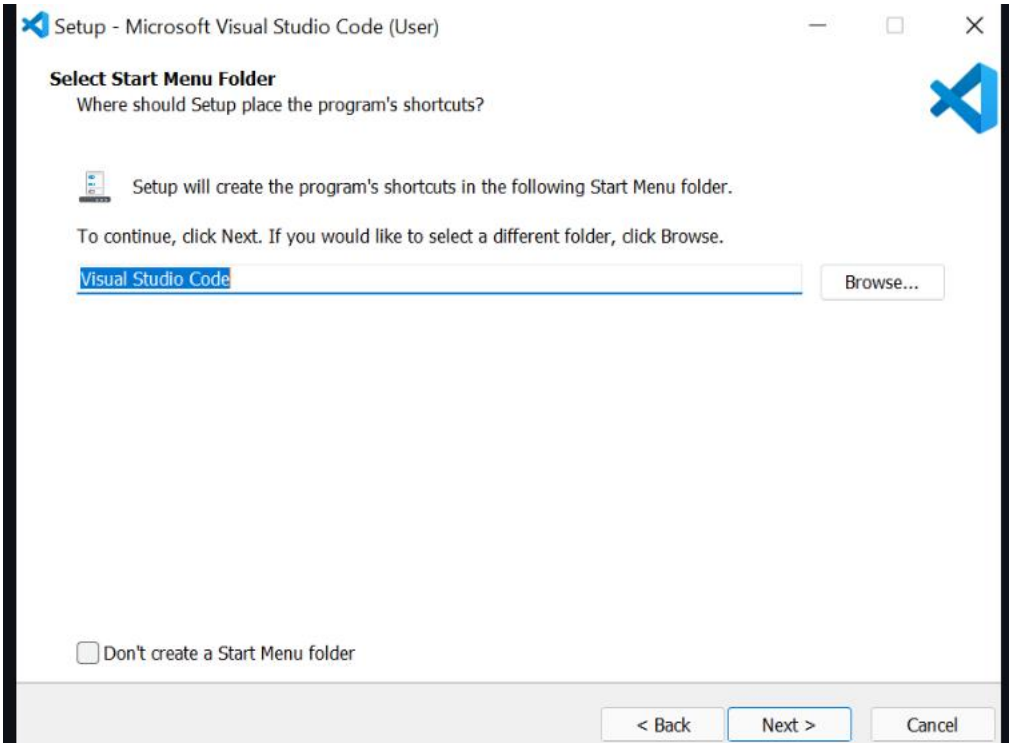
- Accept the license agreement and click next.



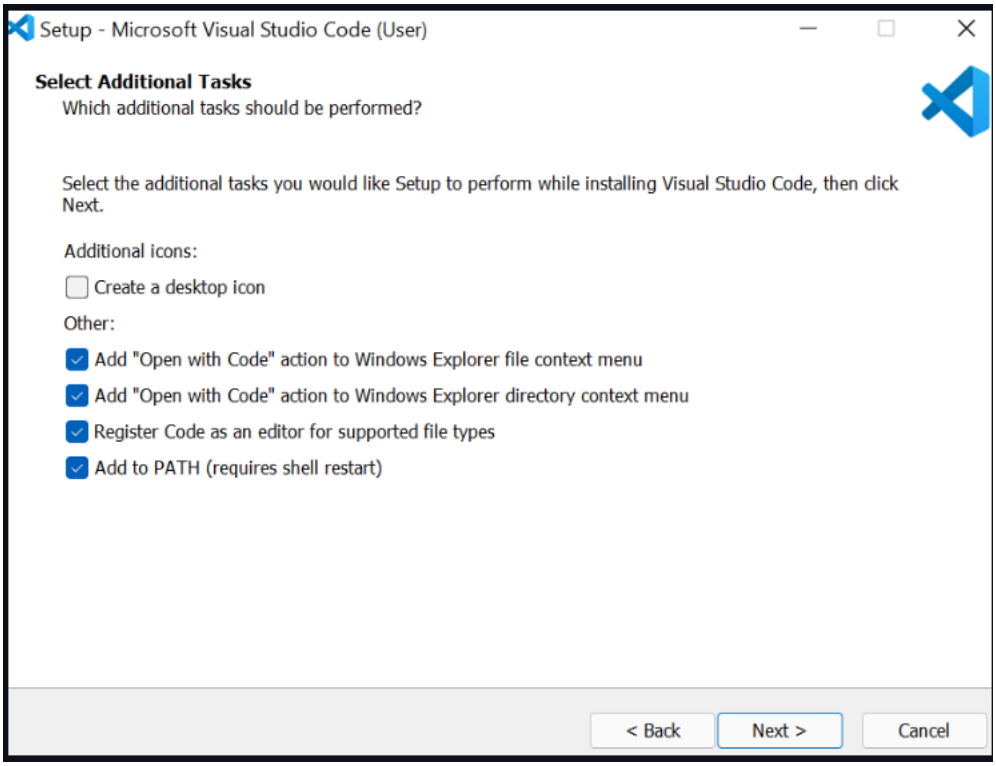
- Choose the location where you want the VS Code installation to be kept. Accept the default location and click next.



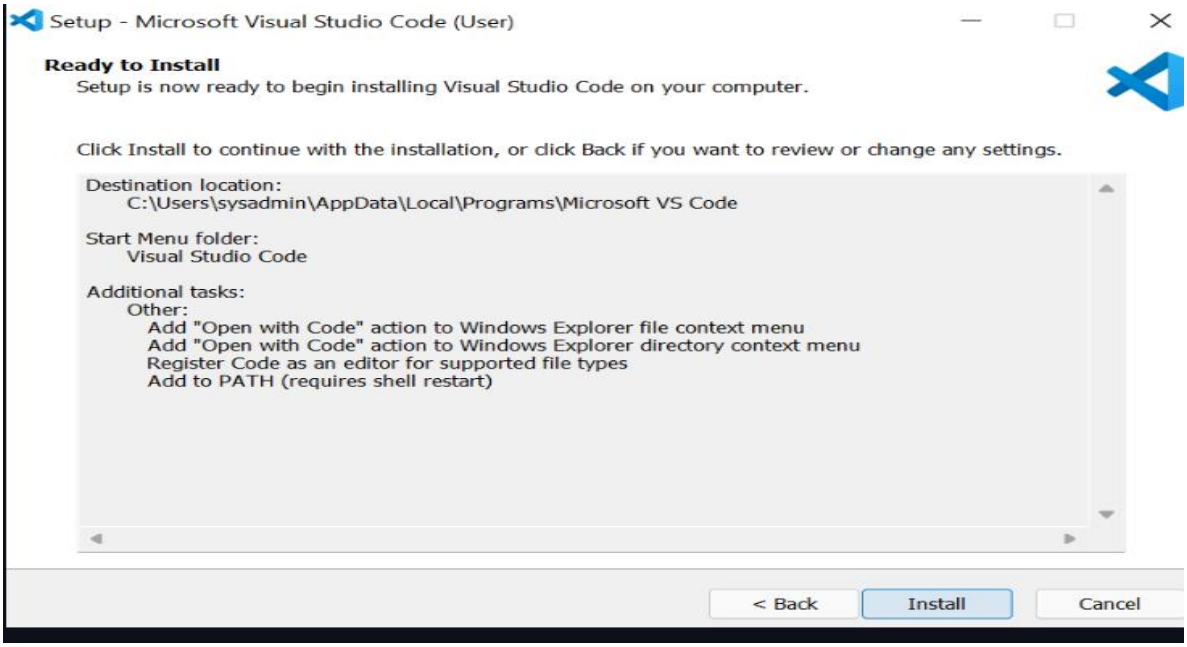
Accept the default Start Menu Folder and click Next.



- Select additional tasks (optional but recommended):
- Click on Create a Desktop icon.
- Click on Add to path (important to use the command line).
- Click register code as an Editor for supported files.
- Adding “Open with Code” action to the Windows Explorer context menu.
- Adding “Open with Code” to the directory context menu.
- Click next.

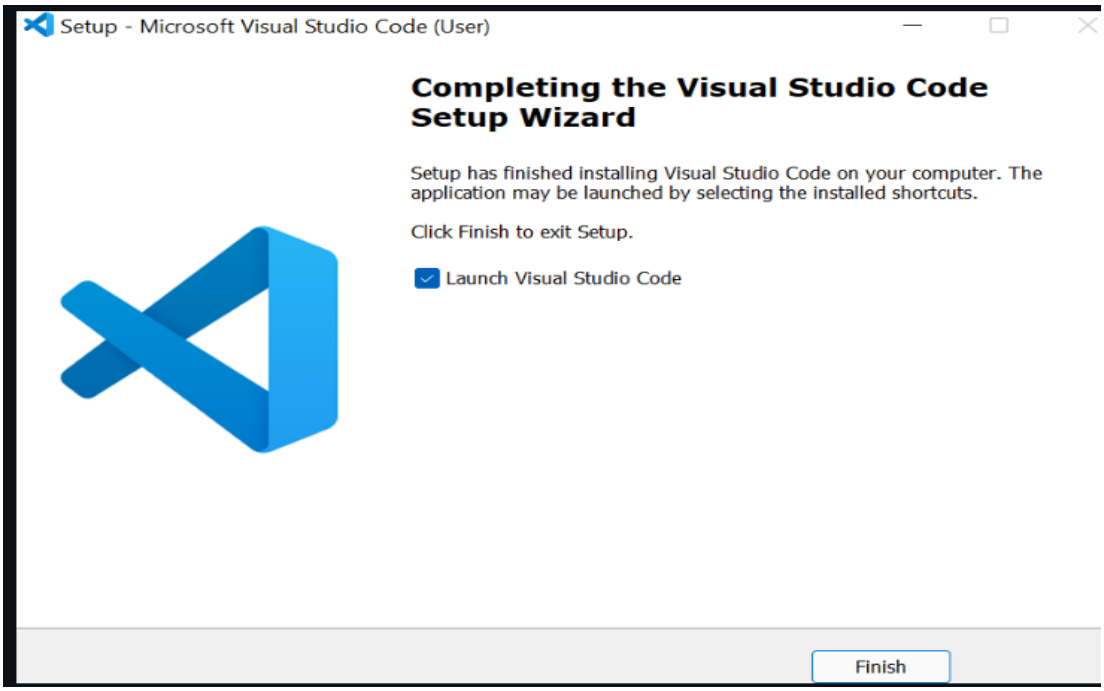


- The installation will begin. Click on the install button.
- After clicking install, it should take about one minute to install VS Code on your device.



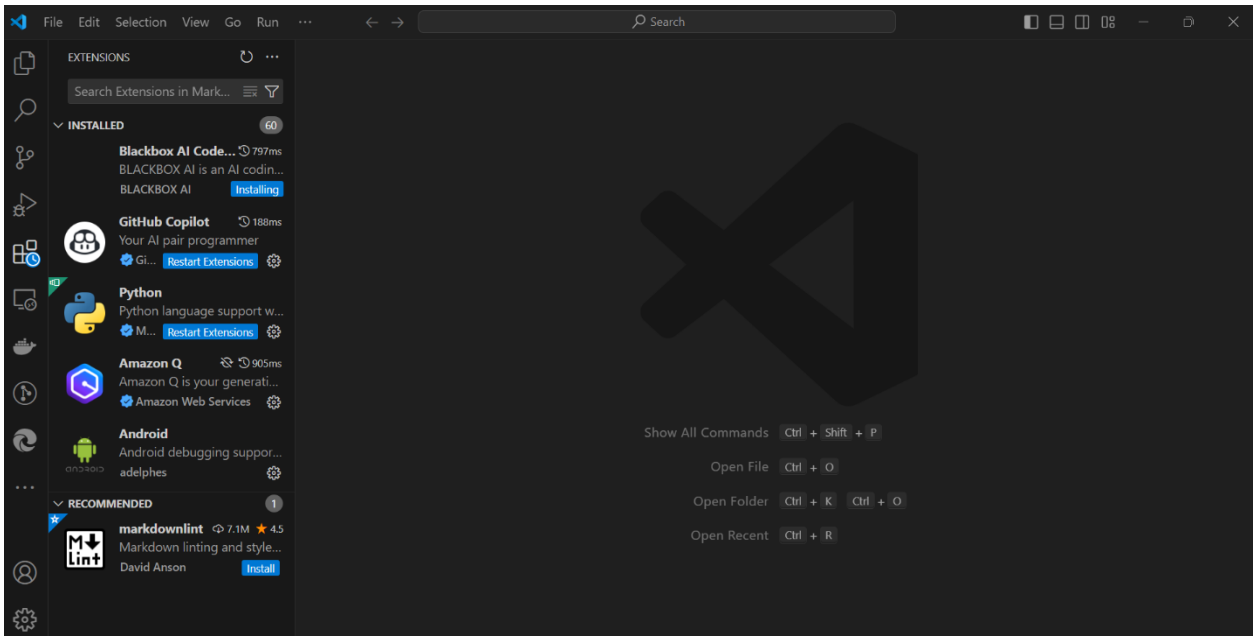
4.Finish Installation:

- After installation, a setup window will appear. Tick on Launch VS Code and click Finish.



I explored extensions and plugins available in vs code which include :

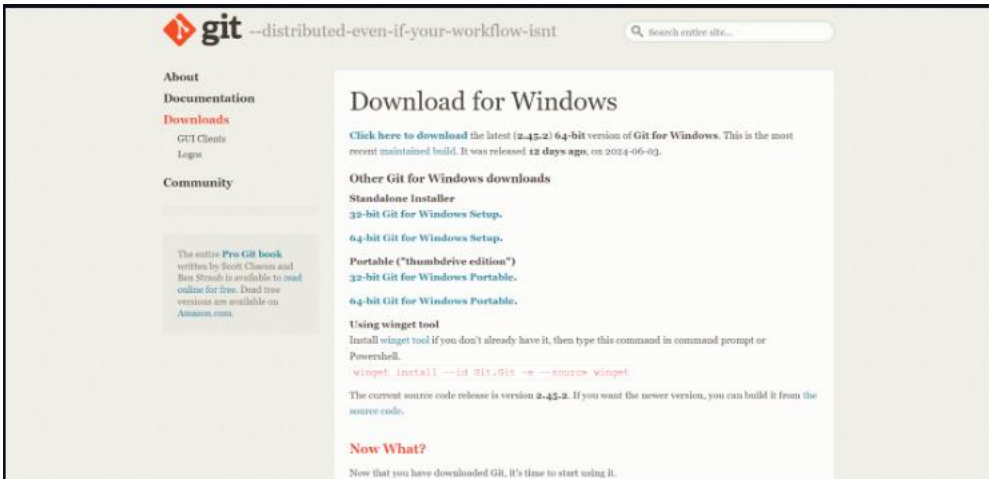
- Live Server: Launches a local server with live reload for static and dynamic pages.
- Live Server: Launches a local server with live reload for static and dynamic pages.
- Python: Provides IntelliSense, linting, and debugging for Python files.
- Pylance: Enhances Python language support.
- HTML CSS Support: Enhances HTML/CSS development with class name completion and live previews.
- CSS Peek: Navigate to CSS definitions from HTML files.



The following are the steps I took to set up version control system .

Step 1: Download and Install Git

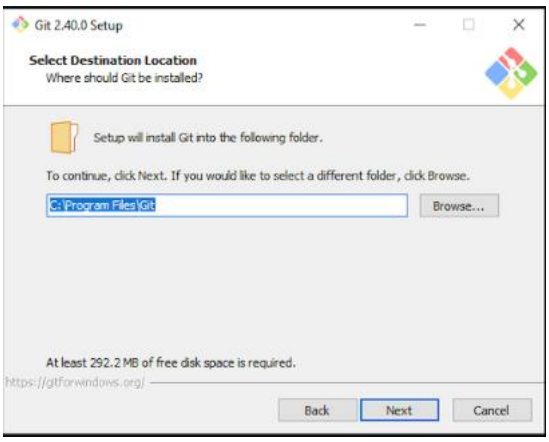
1. Download Git for Windows:
    - Go to the Git download page: https://git-scm.com/downloads and download the latest version for your operating system.



2.Run the Installer:

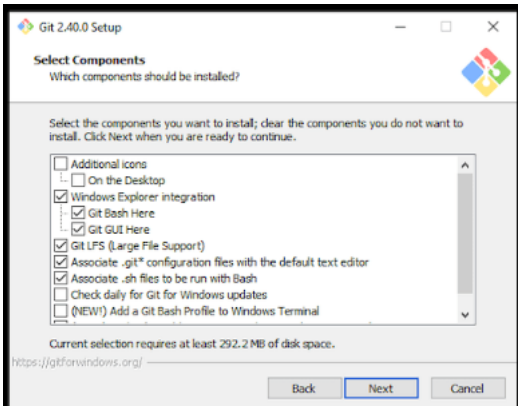
- Open the downloaded Git installer.
- Run the Git installer (Git-2.38.0-64-bit.exe).
- The installer wizard will appear.
- Accept the license agreement and click next.

- choose the location where you want the Git installation to be kept. Accept the default location and click next.



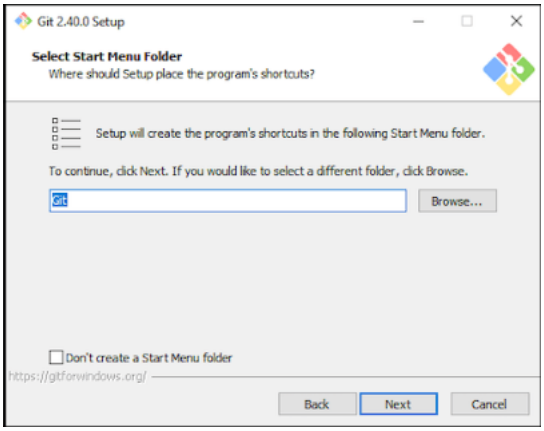
3.Follow the Installation Wizard:

- Choose the default options or customize the installation according to your preferences. Some key settings to note:
    - Adjusting your PATH environment.
    - Choosing the HTTPS transport backend.
    - Configuring the line-ending conversions.
    - Choosing the default Git editor.



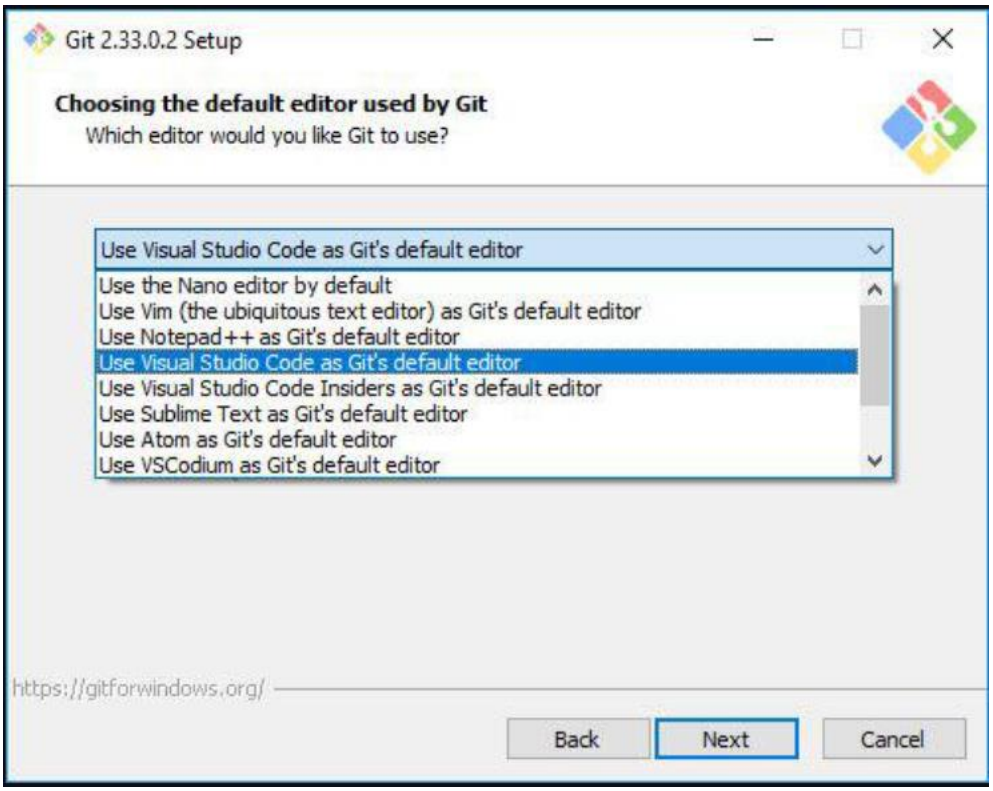
4.Start folder:

- You'll be prompted to create a start folder. Leave it as is and click Next.

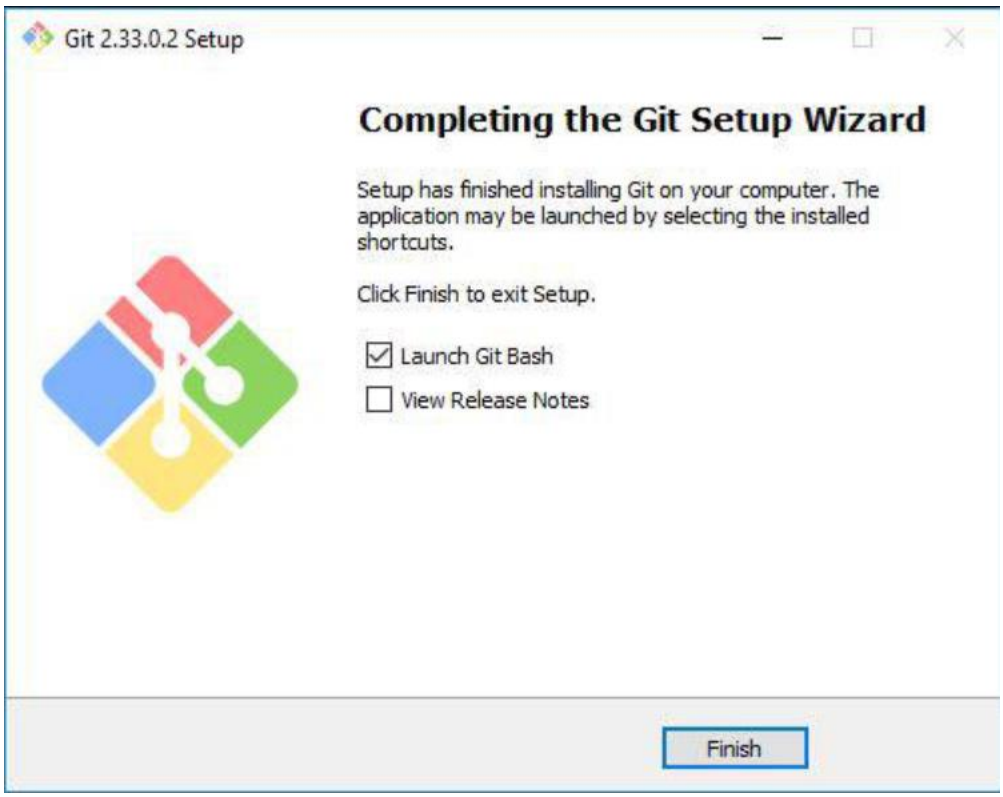


5.Text editor:

- Choose a text editor to use with Git. Click on the drop-down menu to pick the text editor you like to use like Vim, Notepad++, etc, and click Next.



6.In the next steps choose all default options and click finish



7.Verify the Installation:

- Open Command Prompt or Git Bash and run git –version

```
user@DESKTOP-KB752VH MINGW64 ~
$ git --version
git version 2.43.0.windows.1

user@DESKTOP-KB752VH MINGW64 ~
$
```

Step 2: Configuring Git

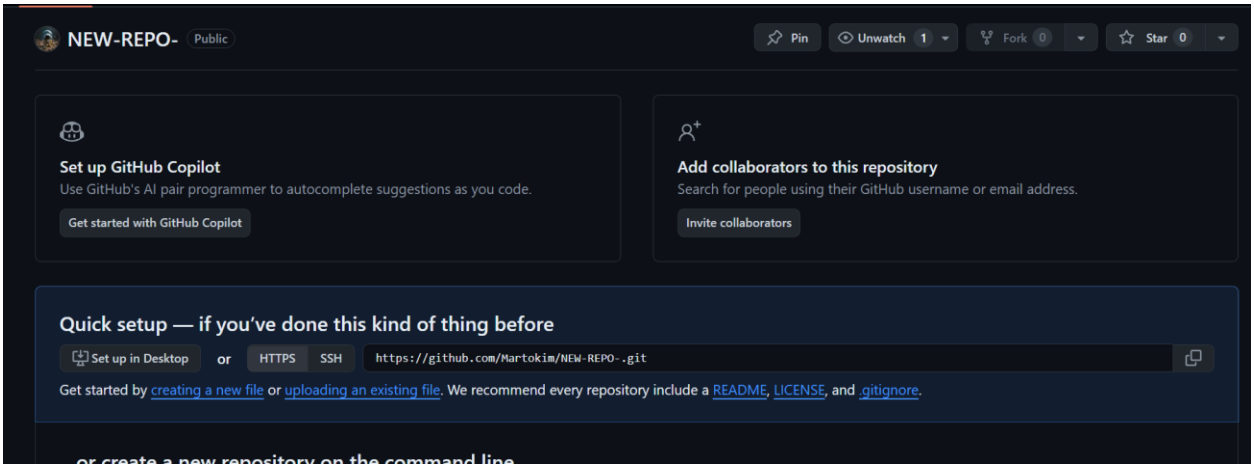
- Open a terminal or command prompt (Git Bash).
- Set your username and email: [git config --global user. name "Your Name"] [git config --global user.email "your.email@example.com"]

Step 3: Create a GitHub Account

- Sign up for a GitHub account at GitHub. https://github.com
- Enter your information:
    - Unique username
    - Email address
    - Password
    - Confirm password
    - Create GitHub account
- Click on the link to verify your email address.

step 4: Initialize a Git repository

1. Create a new repository on GitHub:
    - Go to your GitHub profile page and click on your profile picture.
    - Go to your profile.
    - Click on your repositories.
    - Click on “Create new repository”.
    - Fill in the details:
        - Repository name
        - Repository description
        - Select “Public”
        - Select “Initialize this repository with a README”(optional)
        - Add .gitignore (optional)
        - Click on “Create repository”.
        - Choose a license (optional)
2. Click "Create repository"

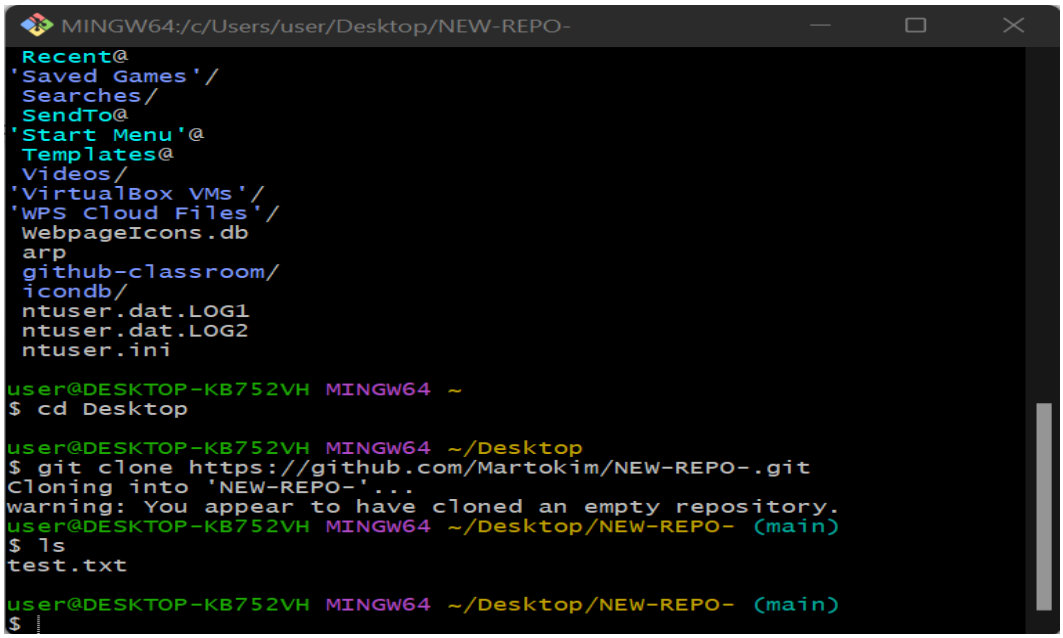


step 5: Cloning Git Repository

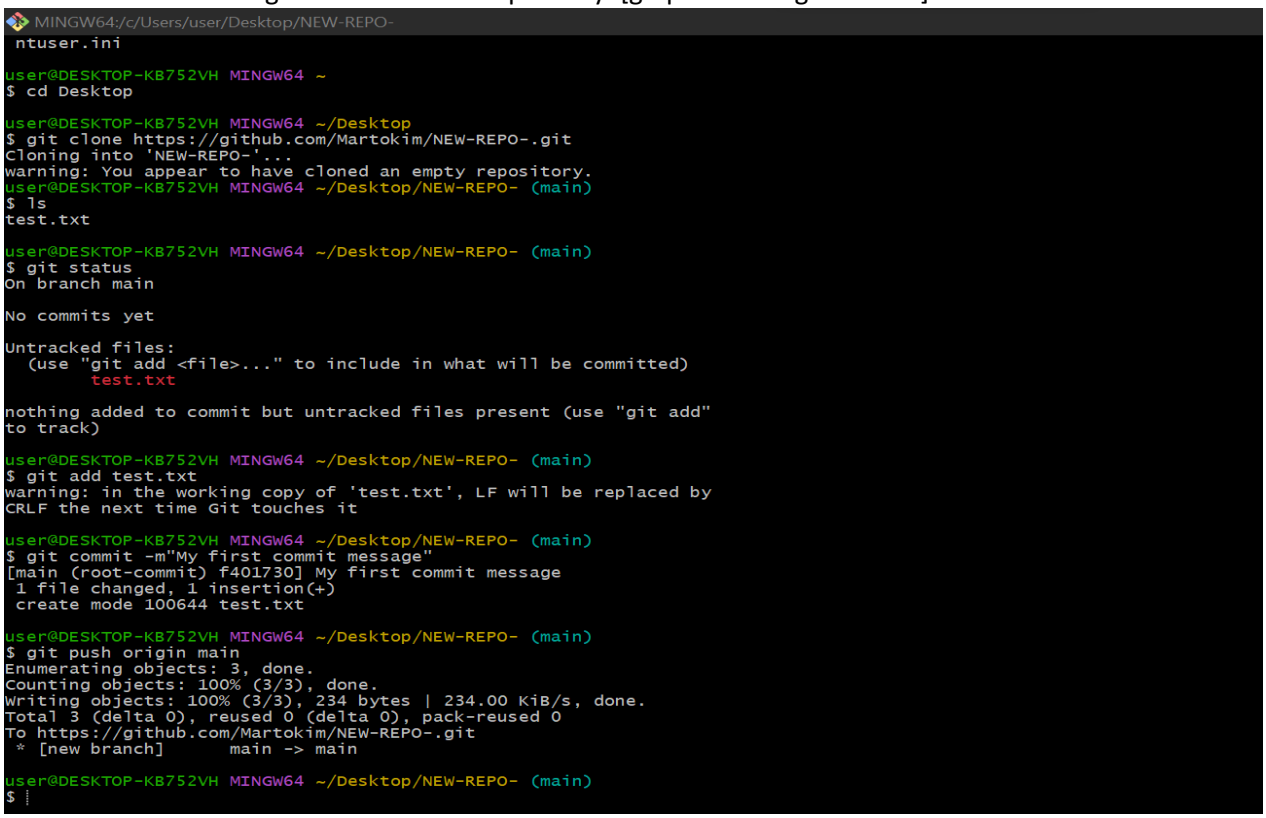
- Copy the repository URL from the GitHub page.
- Open Git Bash or Command Prompt.
- Run git clone repository URL
- navigate to the cloned repository and run git status to check if the repository is cloned successfully.
- verify the cloning with the ls command

Step 6: Commit and Push Changes

- Create a new file: [touch example.txt]
- Add content to the file: [nano example.txt]
- Save and exit the editor (for nano, press Ctrl+X, then Y, and Enter).



- Check the status of your repository: [git status]
- Add the new file to the staging area: [git add example.txt]
- Commit the changes: [git commit -m "Add example.txt"]
- Push the changes to the remote repository: [git push -u origin master]



The following are the steps I took to install python on my Local computer

step1: Download python installer

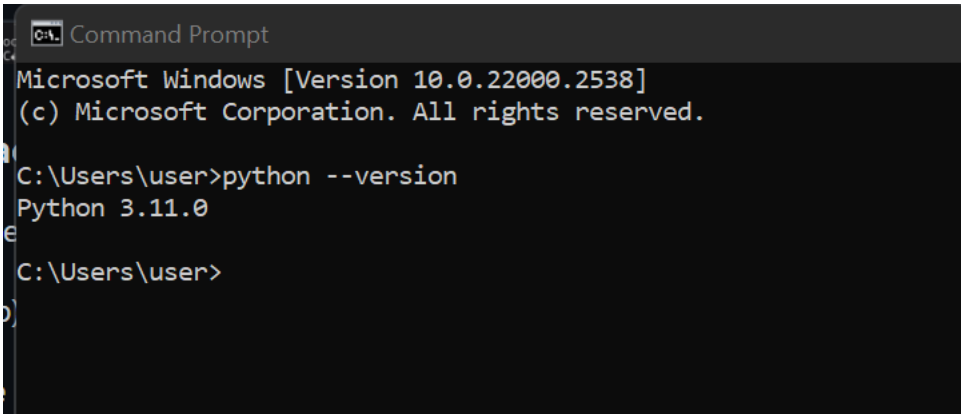
- Go to https://www.python.org/downloads/
- Download the latest version of Python for Windows.
- Select the installer that corresponds to the version of Python you want to install.

step2: Run the installer

- Open the downloaded installer file.
- Run the installer.
- Check the box that says "Add Python to PATH".
- Click "Install Now".

step3: Verify Installation

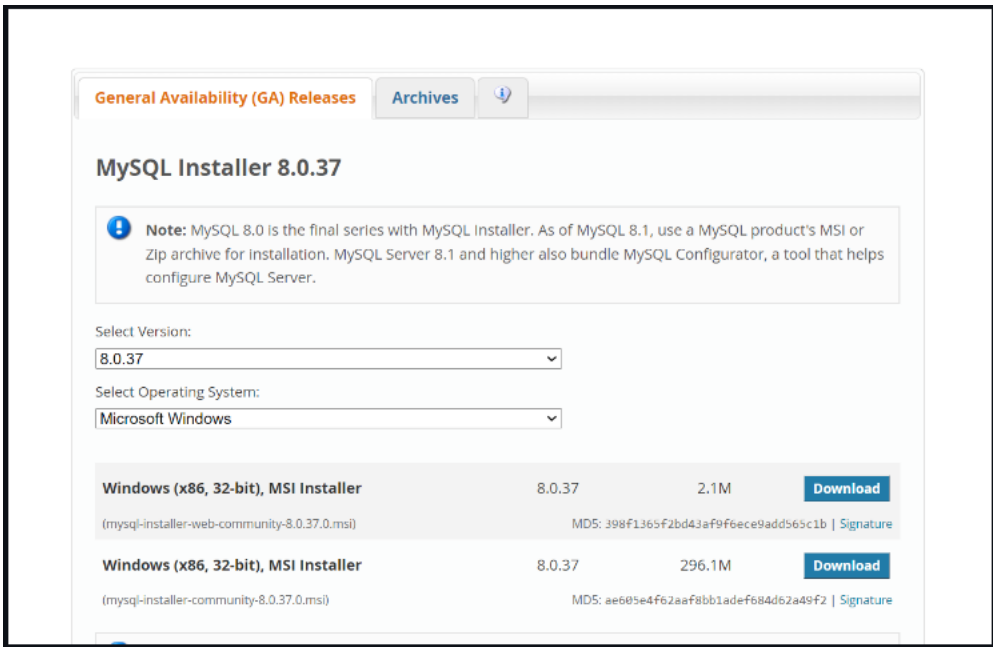
- Open Command Prompt or Git Bash.
- Run python --version
- Verify the installation by checking the version number.



The following are the steps I took to configure a database (MySQL)

Step 1 :Download MySQL

- Go to the MySQL Community Downloads page.https://dev.mysql.com/downloads/installer/
- Download the latest version of MySQL for Windows.
- Select the installer that corresponds to the version of MySQL you want to install.

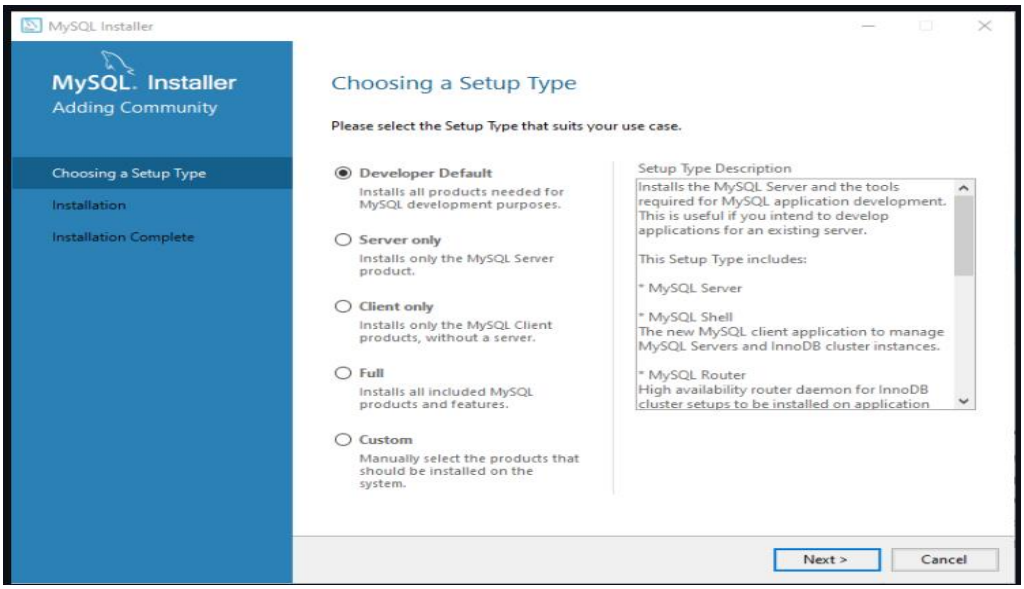


2.Run the Installer:

- Open the downloaded .msi file.

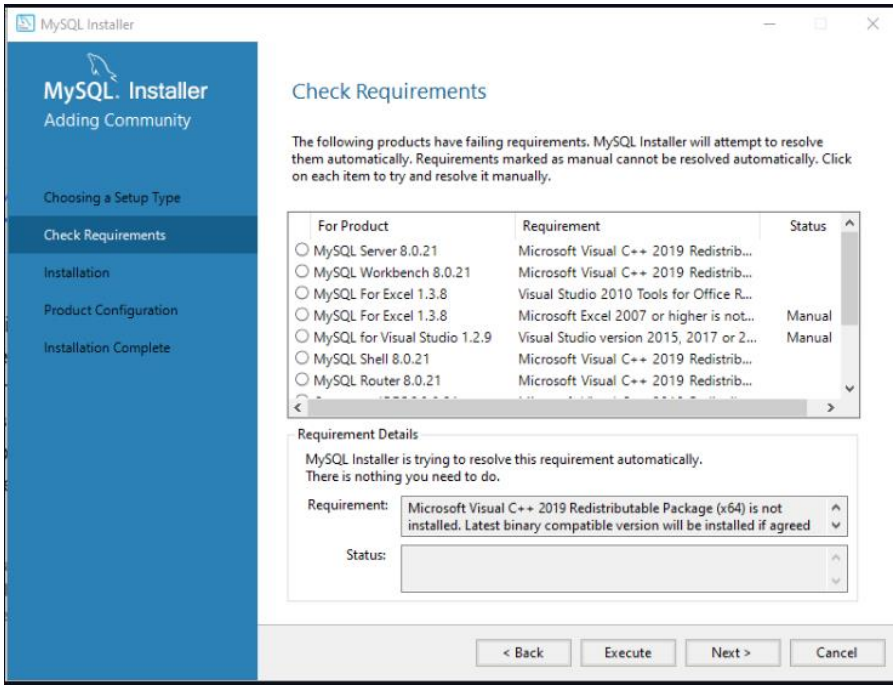
3.Choose Setup Type:

- Choose a setup type (Developer Default, Server only, etc.) and click Next.



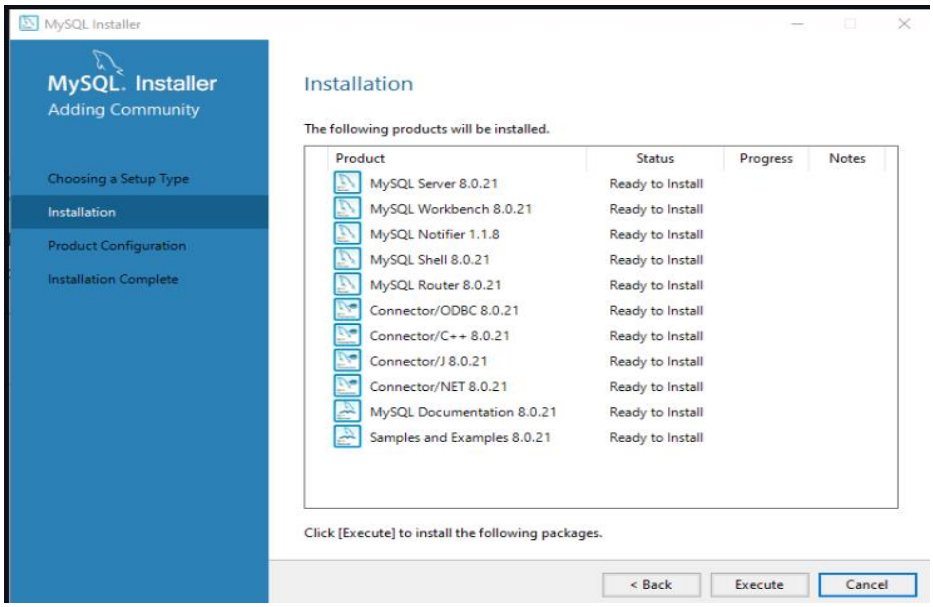
4.Check for Requirements:

- The installer will check for and install the necessary dependencies.



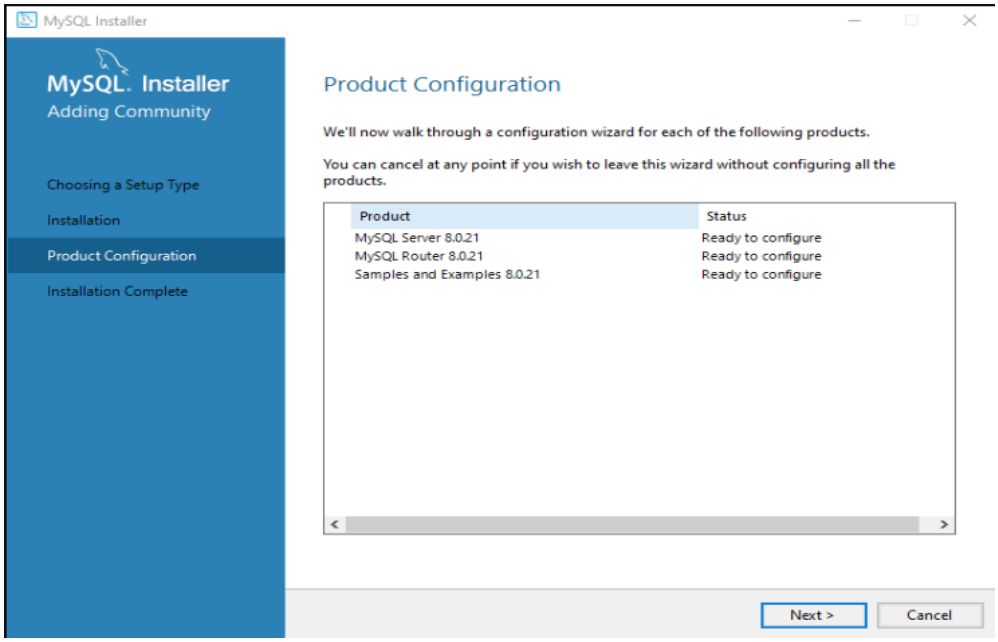
5.Installation:

- Click Execute to install the selected MySQL products.



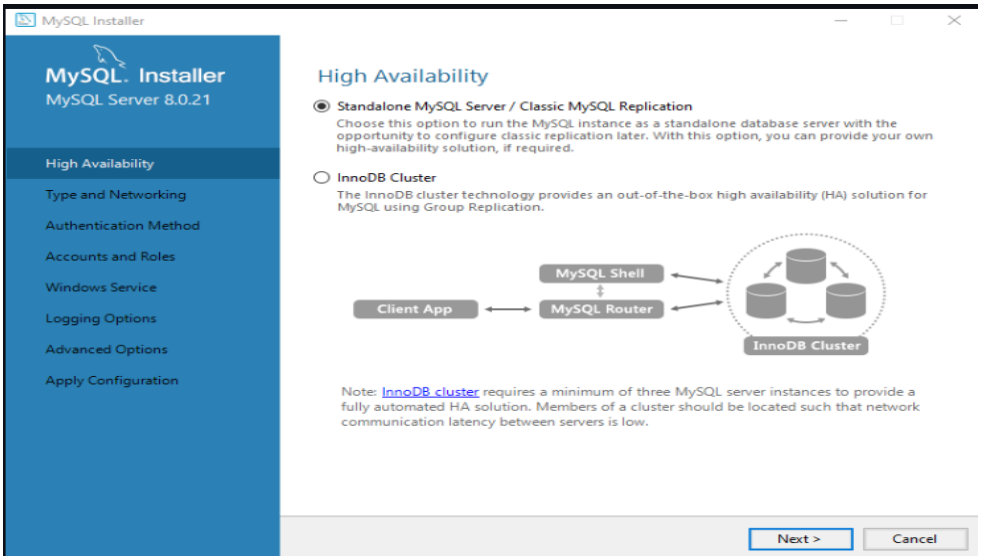
6.Configuration:

- Next, you need to configure the MySQL server, click "Next":



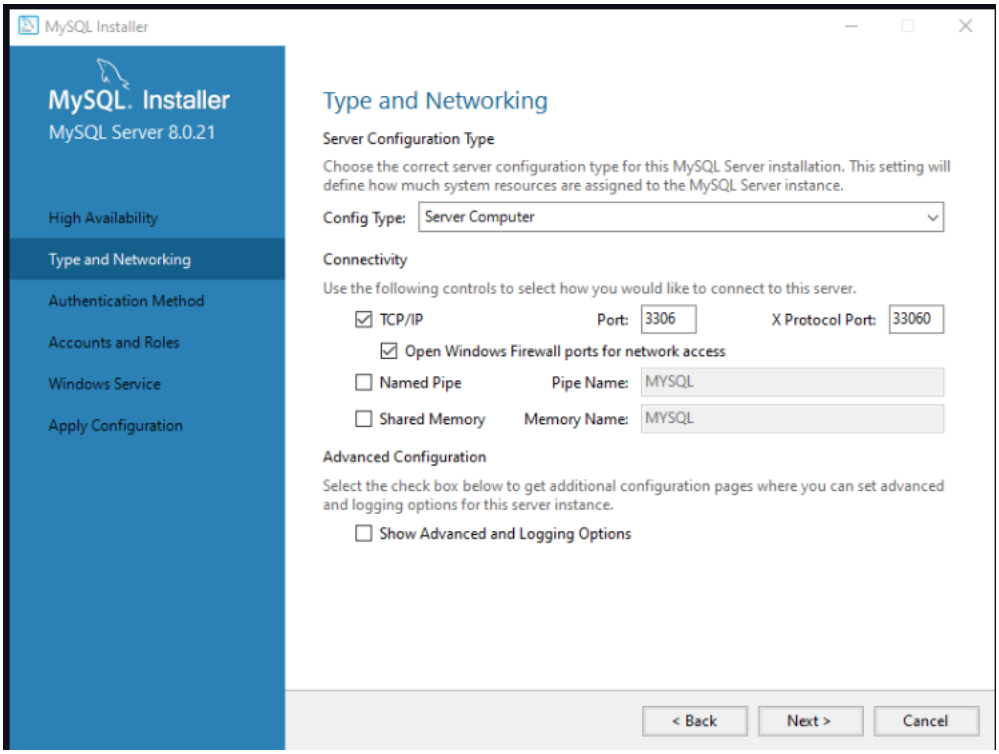
7.Standalone MySQL Server

- Select the "Standalone MySQL Server / Classic MySQL Replication" item and click "Next":



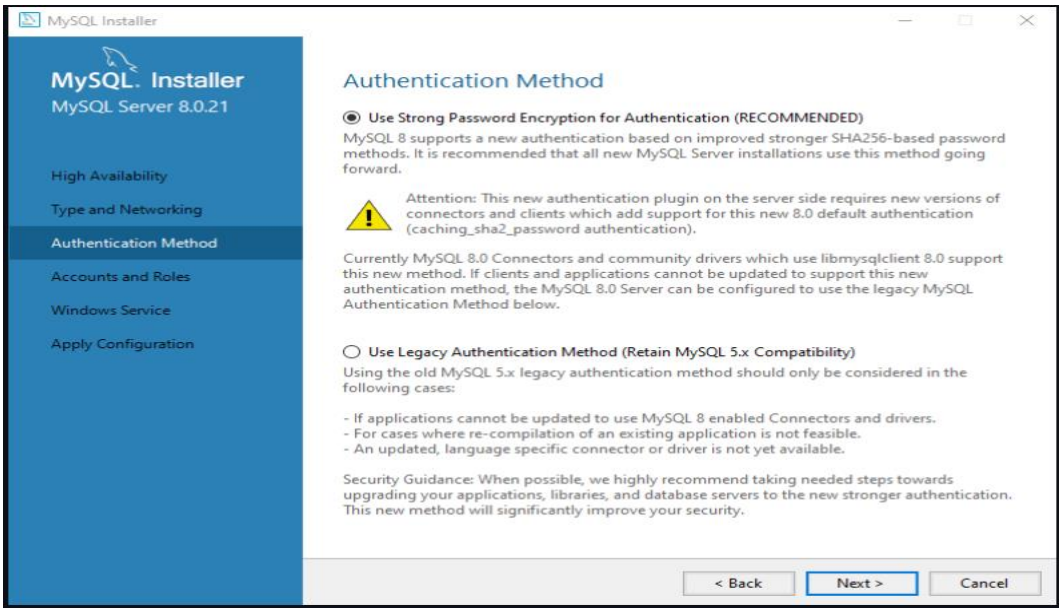
8.Type and Networking

- Next, in the "Config Type" parameter, select "Server Computer" and click "Next":



9.Password and authentication :

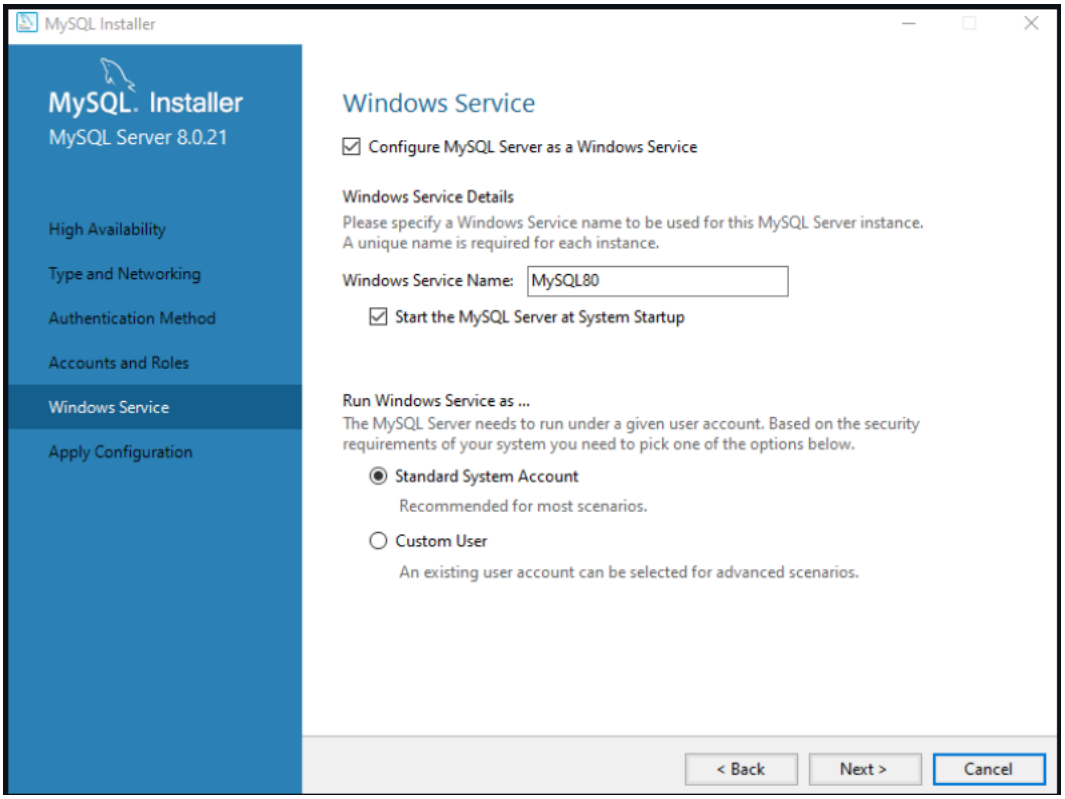
- Select "Use Strong Password Encryption for Authentication" and click "Next":



10. Accounts and roles :

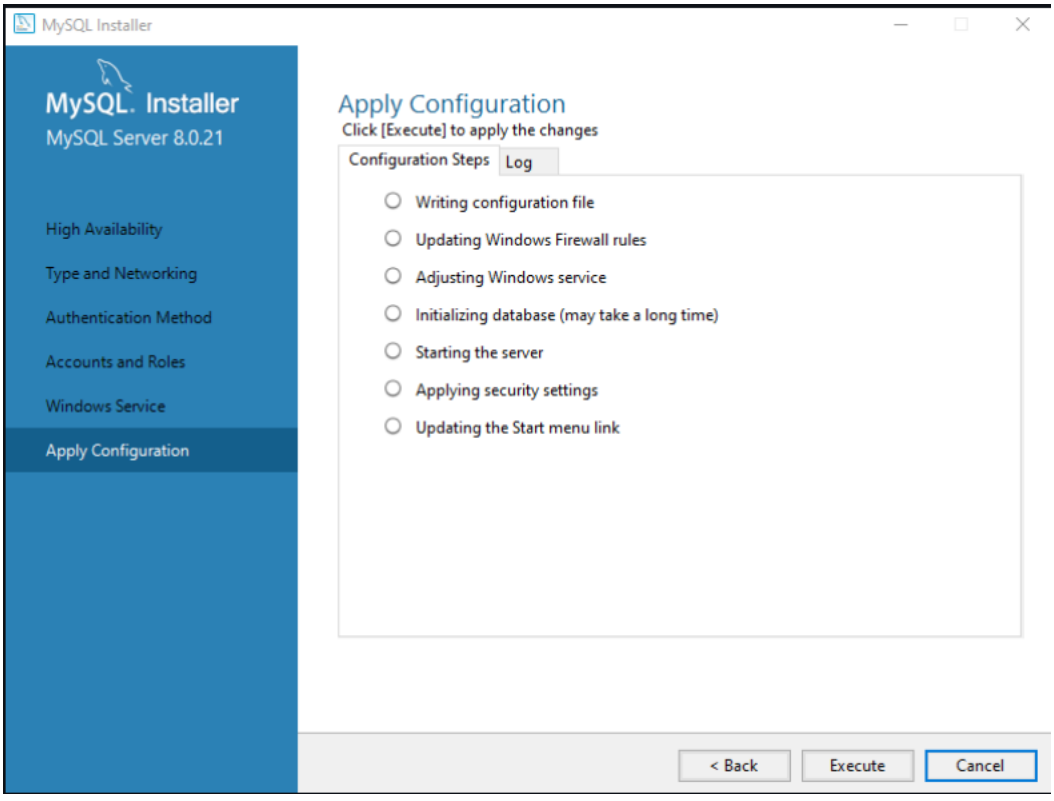
- In the next window, you need to set a password for the root user (administrator). Also, here you can add other users (by clicking the "Add User" button), if necessary. After entering the password, click "Next":

11. At the next step, we leave all the default settings, and click "Next":



12. MySQL server settings:

- Next, you need to apply the MySQL server settings by clicking "Execute":



13. Finish

- Finally, click "Finish" to complete the installation.

Reflection on Challenges

Challenges Faced:

- Configuring Git: Understanding Git commands and initial setup took some time.
- Python Installation: Ensuring Python was added to the PATH correctly required careful attention.
- Docker: Installing and configuring Docker took some time.
- MySQL Installation: Configuring the MySQL server and setting up the root password was challenging without prior database experience.

Solutions:

- Git: Followed detailed tutorials and referred to Git documentation.
- Python: Added Python to the PATH environment variable.
- Docker: Followed detailed tutorials and referred to Docker documentation.
- MySQL: Used MySQL official documentation and community forums for troubleshooting.

A GitHub repository containing a sample project initialized with Git and any necessary configuration files https://github.com/Martokim/NEW-REPO-