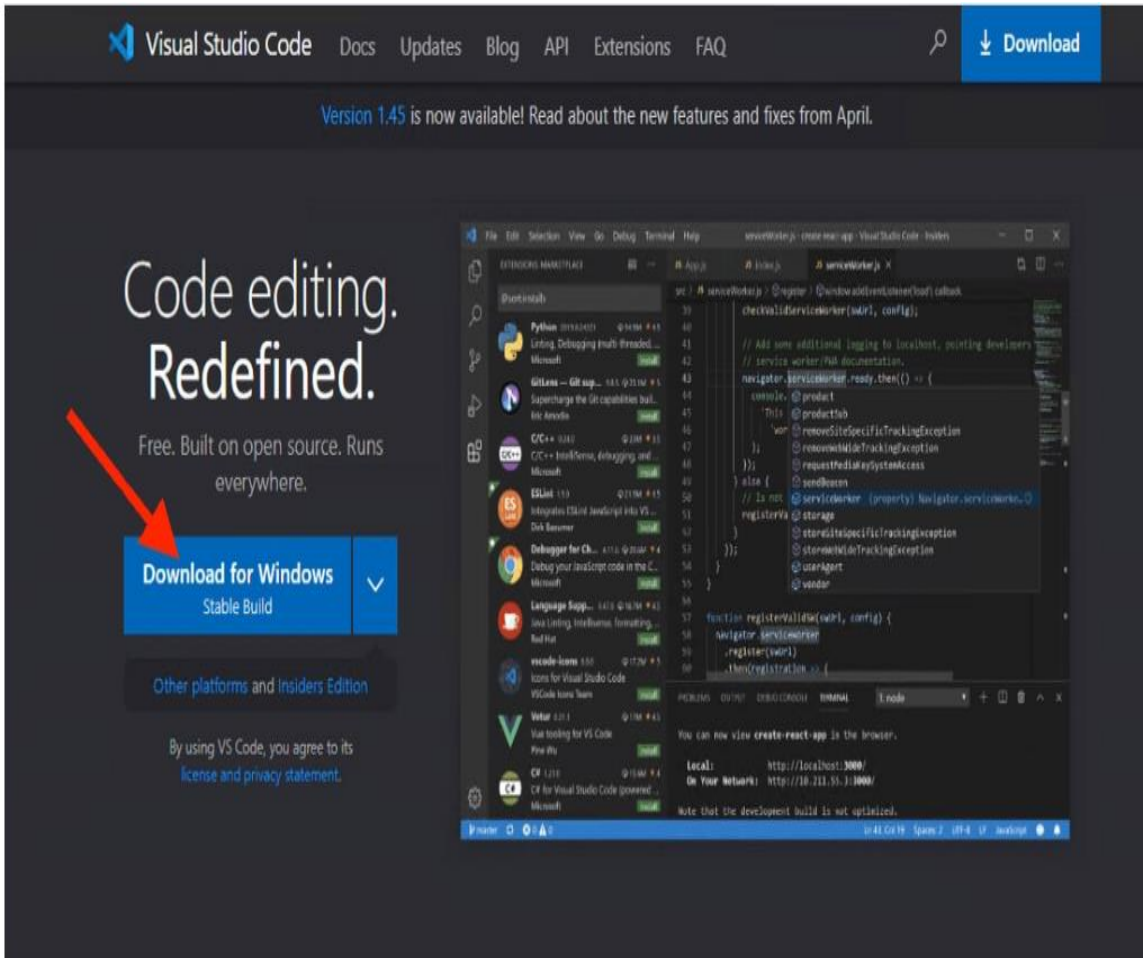
Q1. ANS: I have already done environment setup on Windows 10, and so I don't want to lose all the setups when installing Windows 11 also I don't have a Windows 10 license for upgrading to Windows 11.

Q2. Step-by-step insturctions on how to download and install VS Code on Windows 10

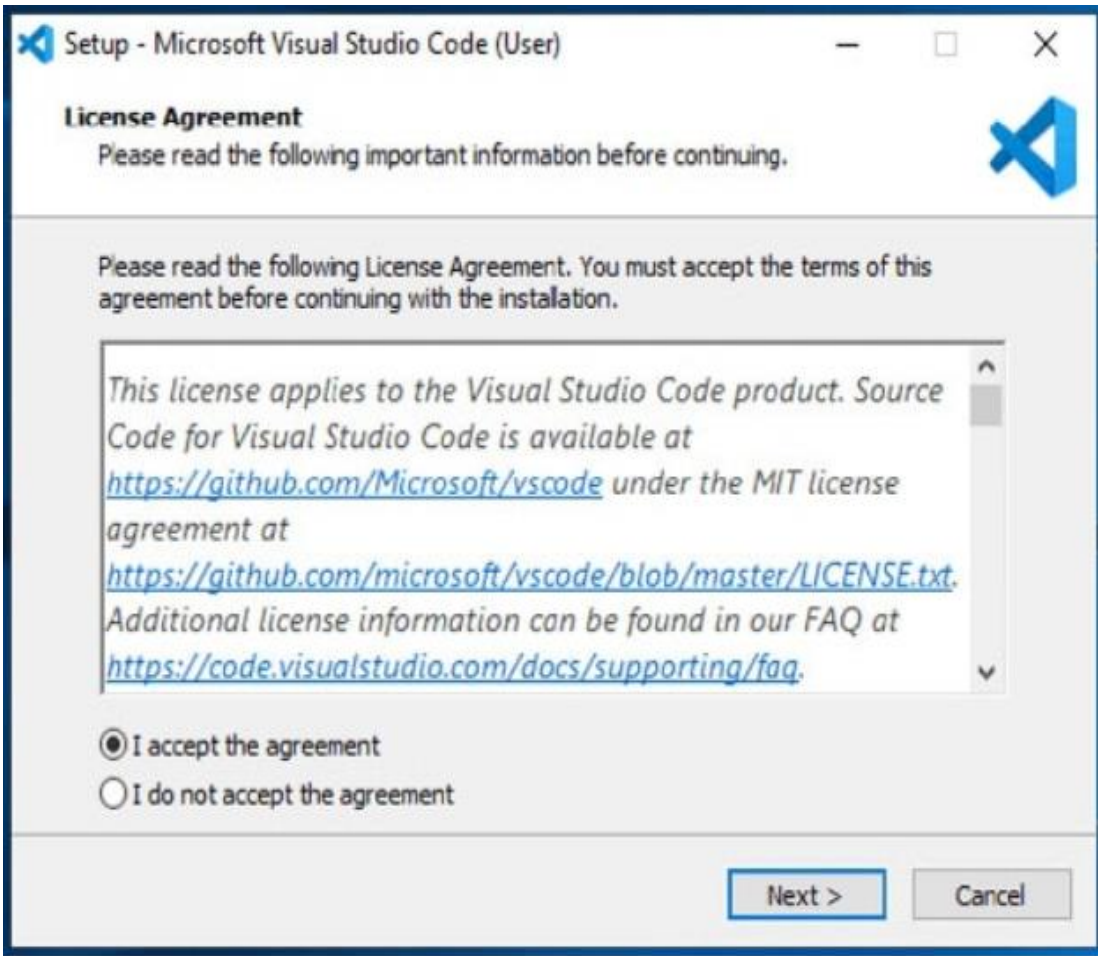
1. Download VS Code the official website

(https://www.code.visualstudio.com/download)



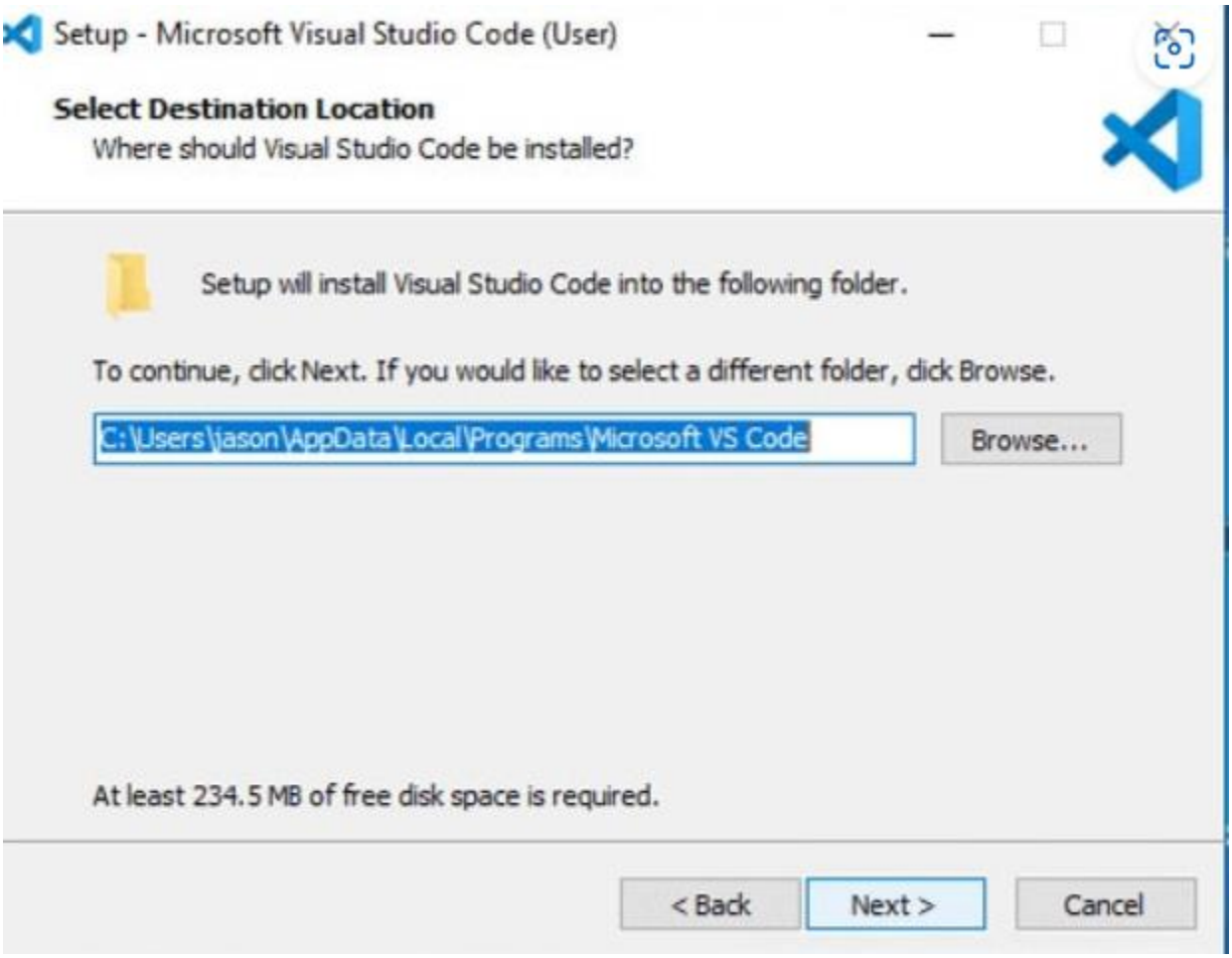
2. Install VS Code

Install VS Code by opening the downloaded setup file and following the prompts

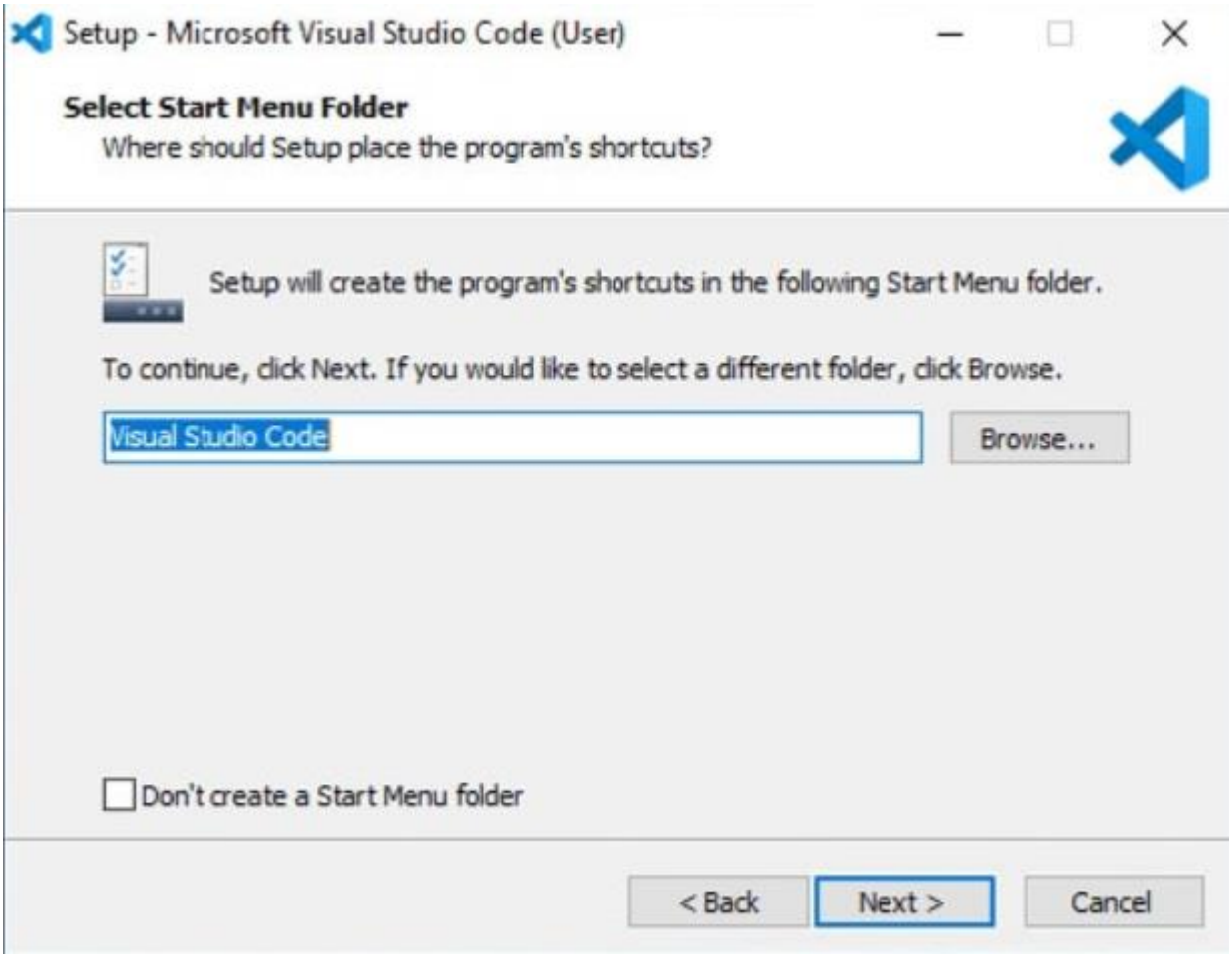


License Agreement.

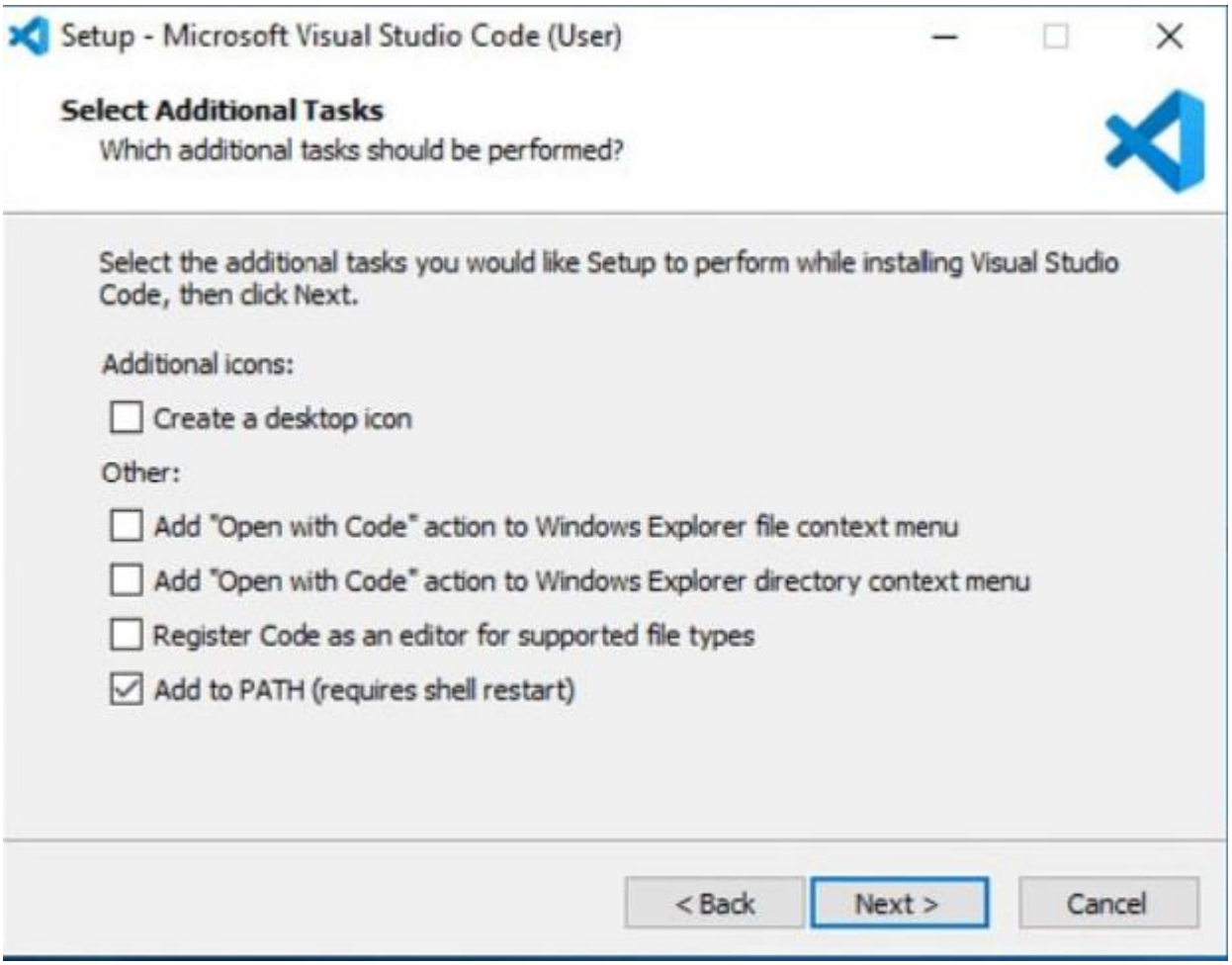
Click "**I accept the agreement**" and click **Next**



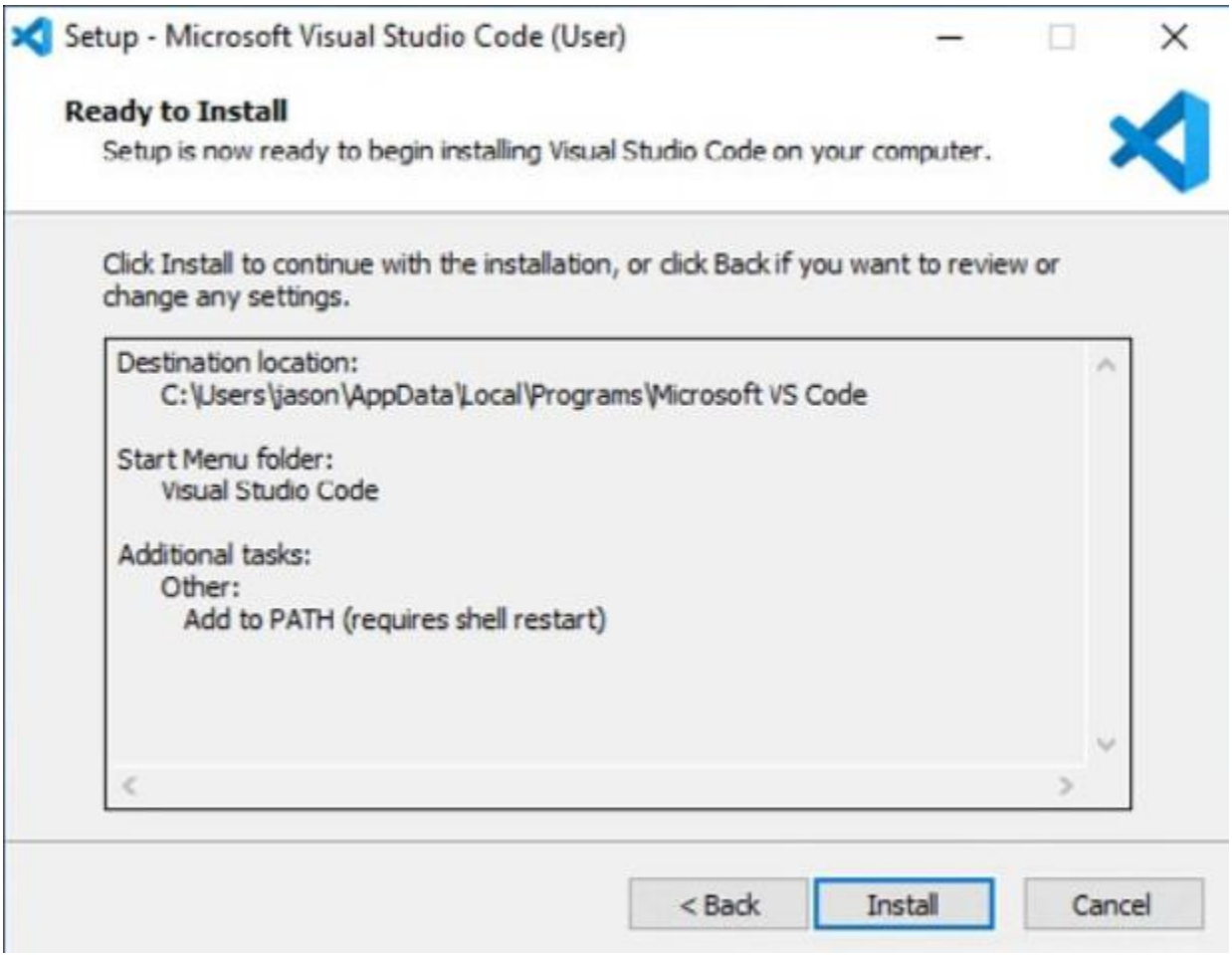
Click **Next** or click **Browse** if you want to select different location to install



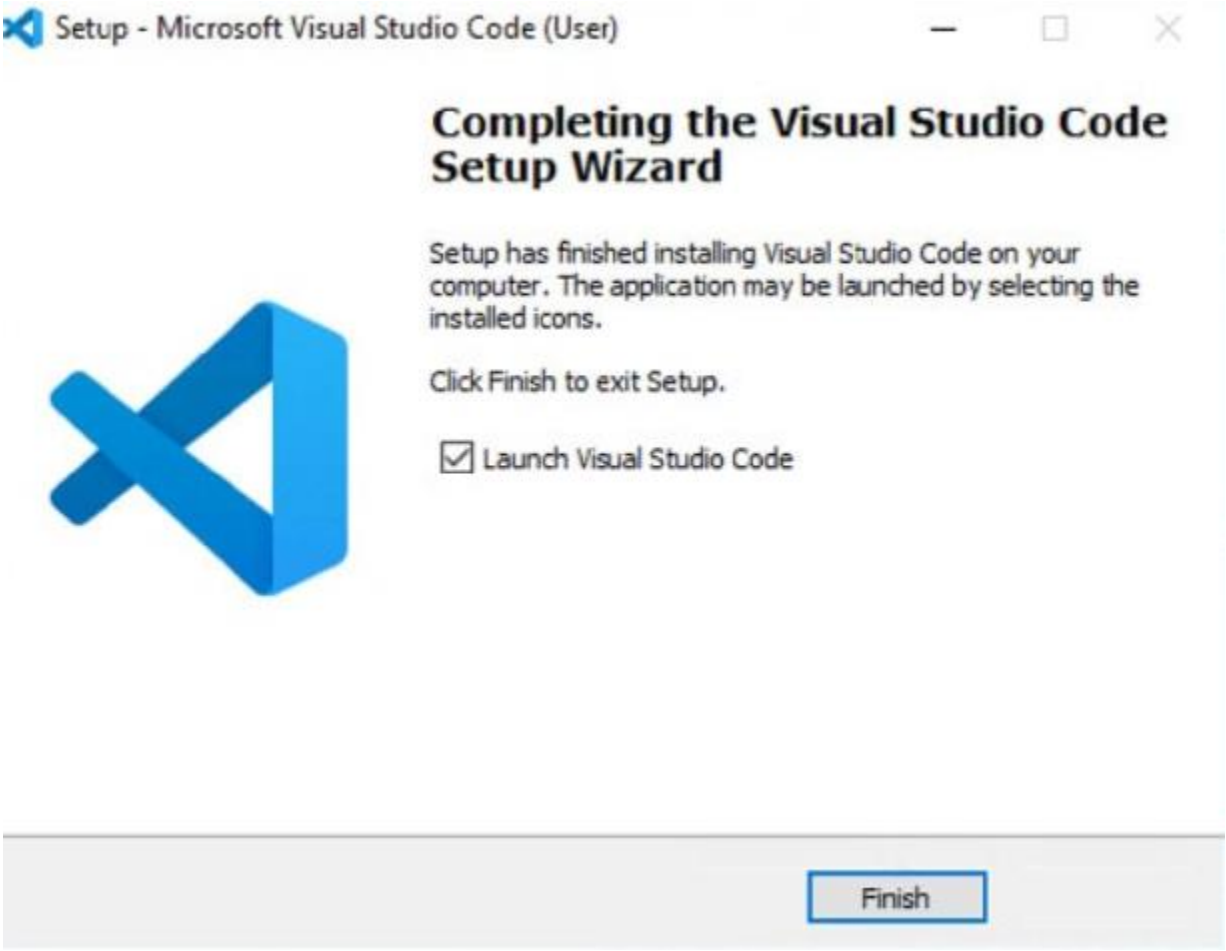
Check the box if you don’t want to create Start Menu Folder and click **Next**



Make sure to check the box "**Add to PATH**" to avoid the installation path to be manually added to Environment Variables and check the box "**Create a desktop icon**" and click **Next**

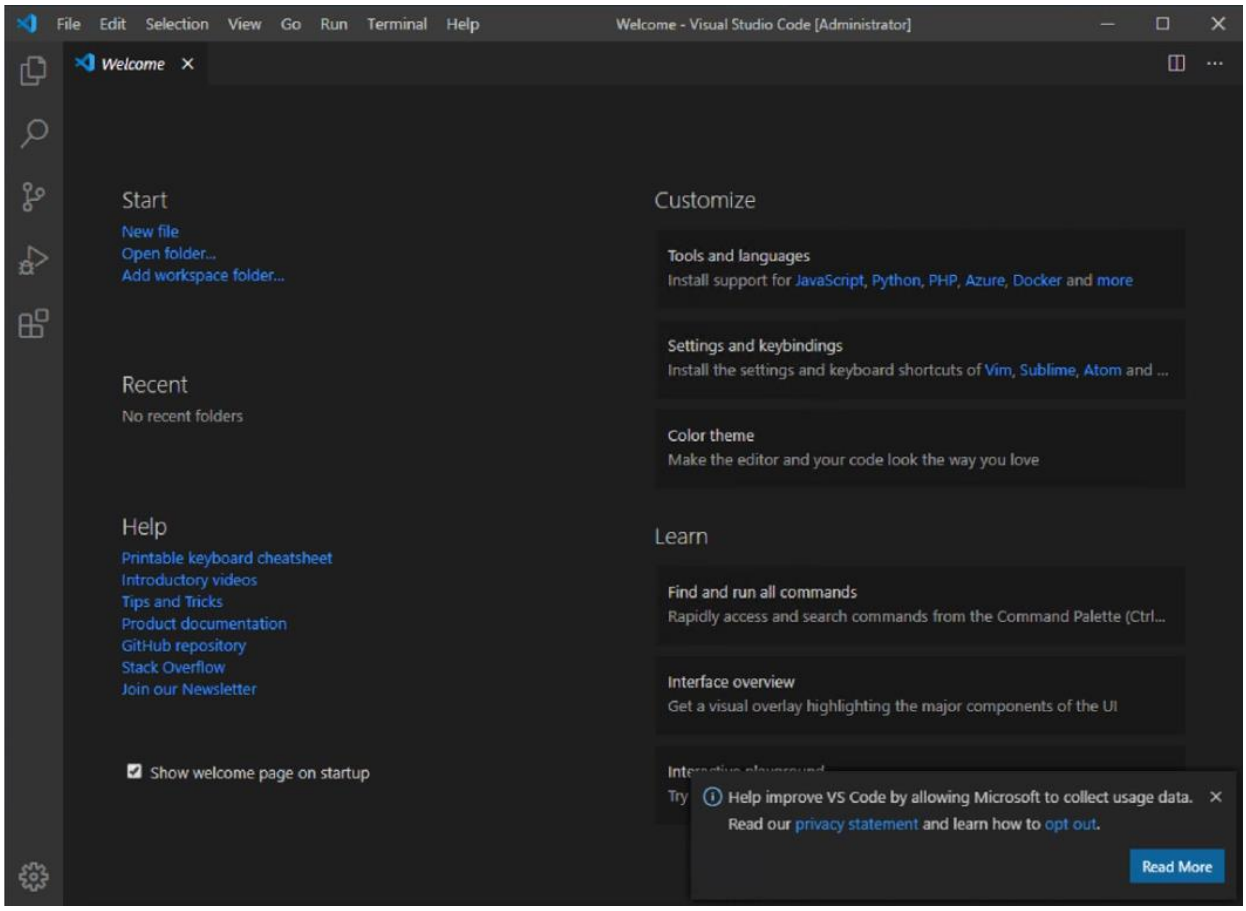


Click **Next** to install



Click **Finish**

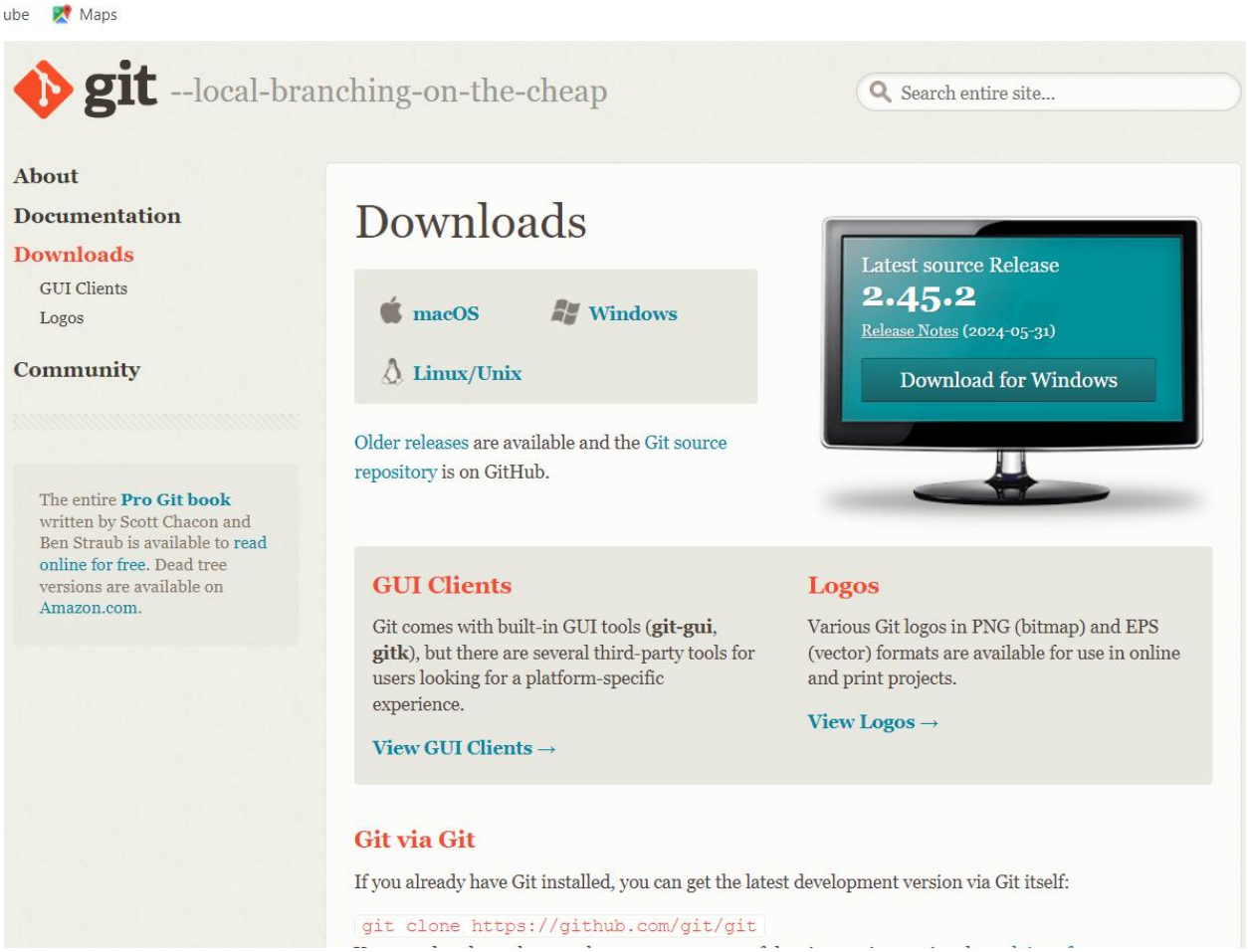
3. Start VS Code. Launch VS Code to test that it installed successfully



Now It's time to install extensions and customize the User Interface (UI) to your convenince.

Q3. Step-by-step instructions of downloading, installing, configuring Git as a Version Control System (VCS)

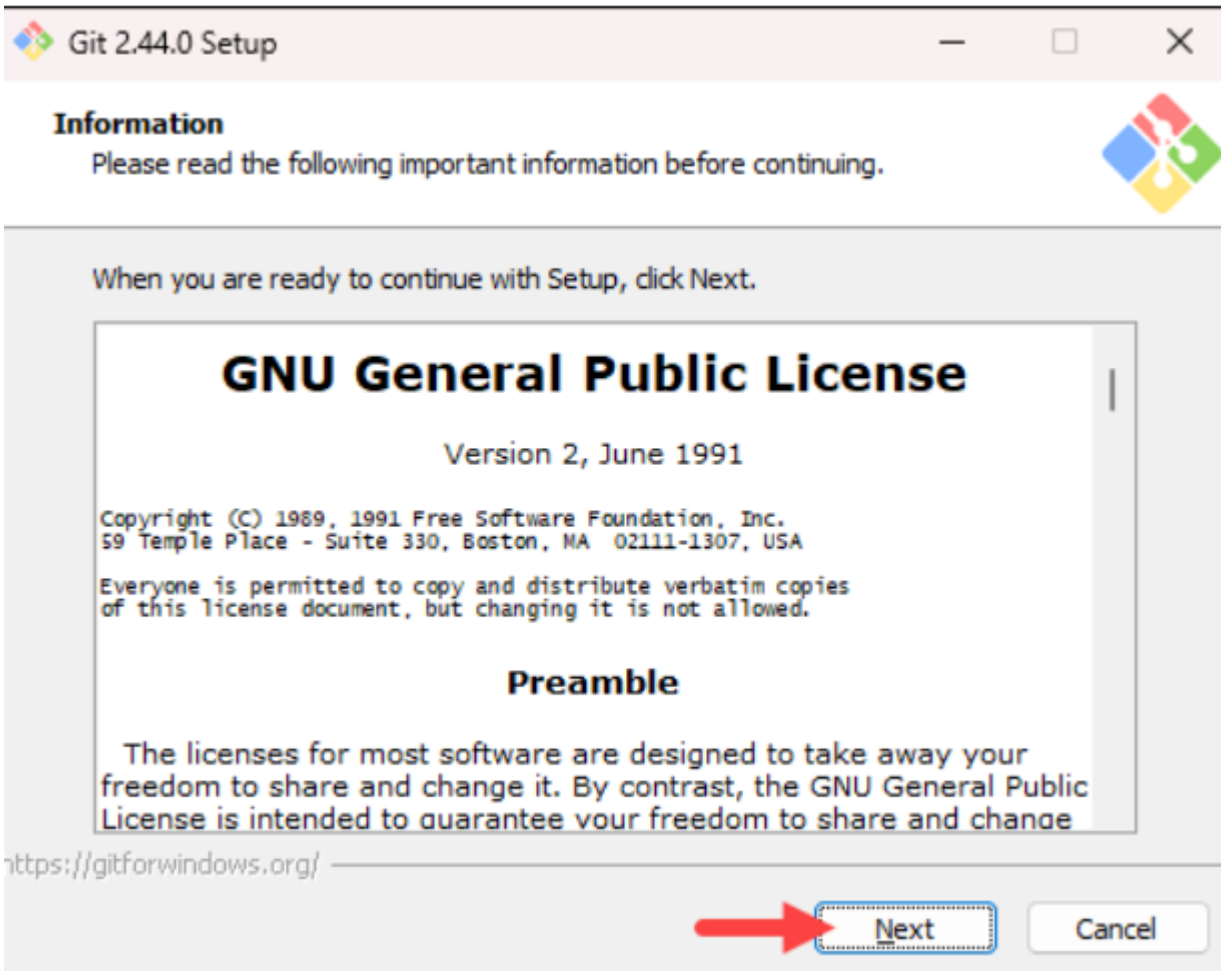
1. Download Git installer from Git's official website (https://git-scm.com/downloads)



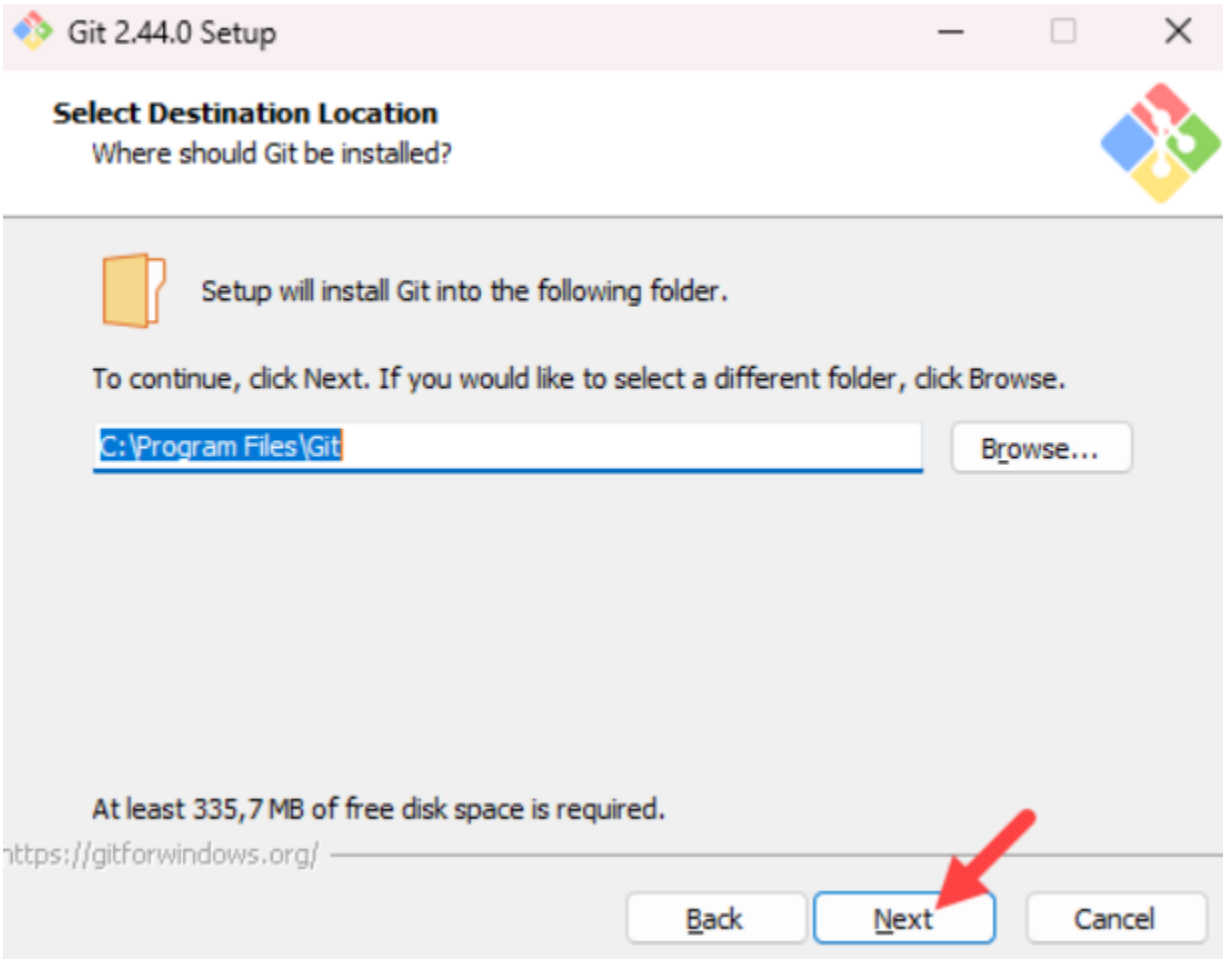
Download based on the different Operating Systems, Mac OS, Windows, Linux/Unix

2. Installation

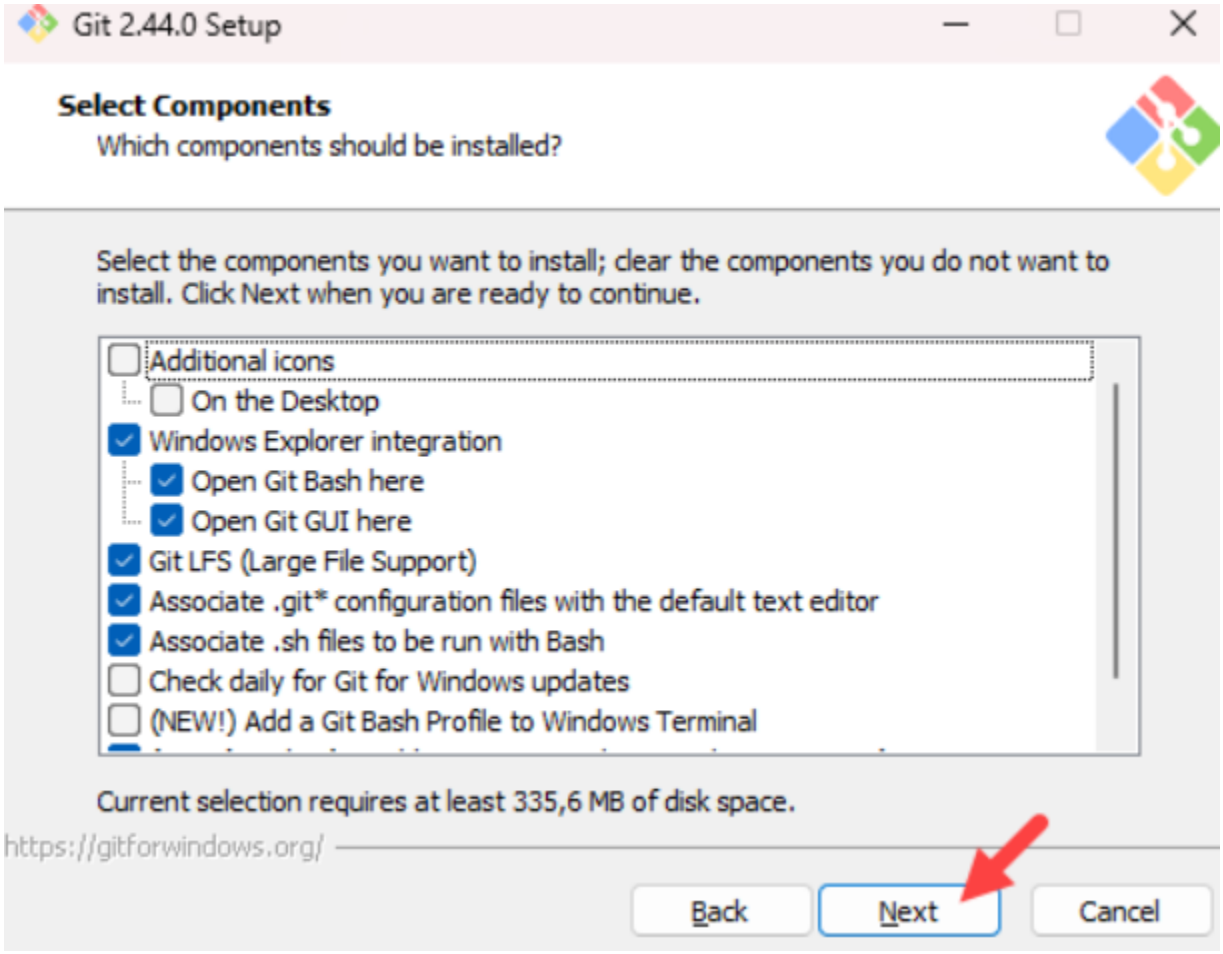
- Double-click the downloaded file to extract and launch the installer in the case of zip file download whilst double-click the executable (.exc) in the case of executable file download.
- Review the GNU General Public License, and when you are ready to install, click **Next**.



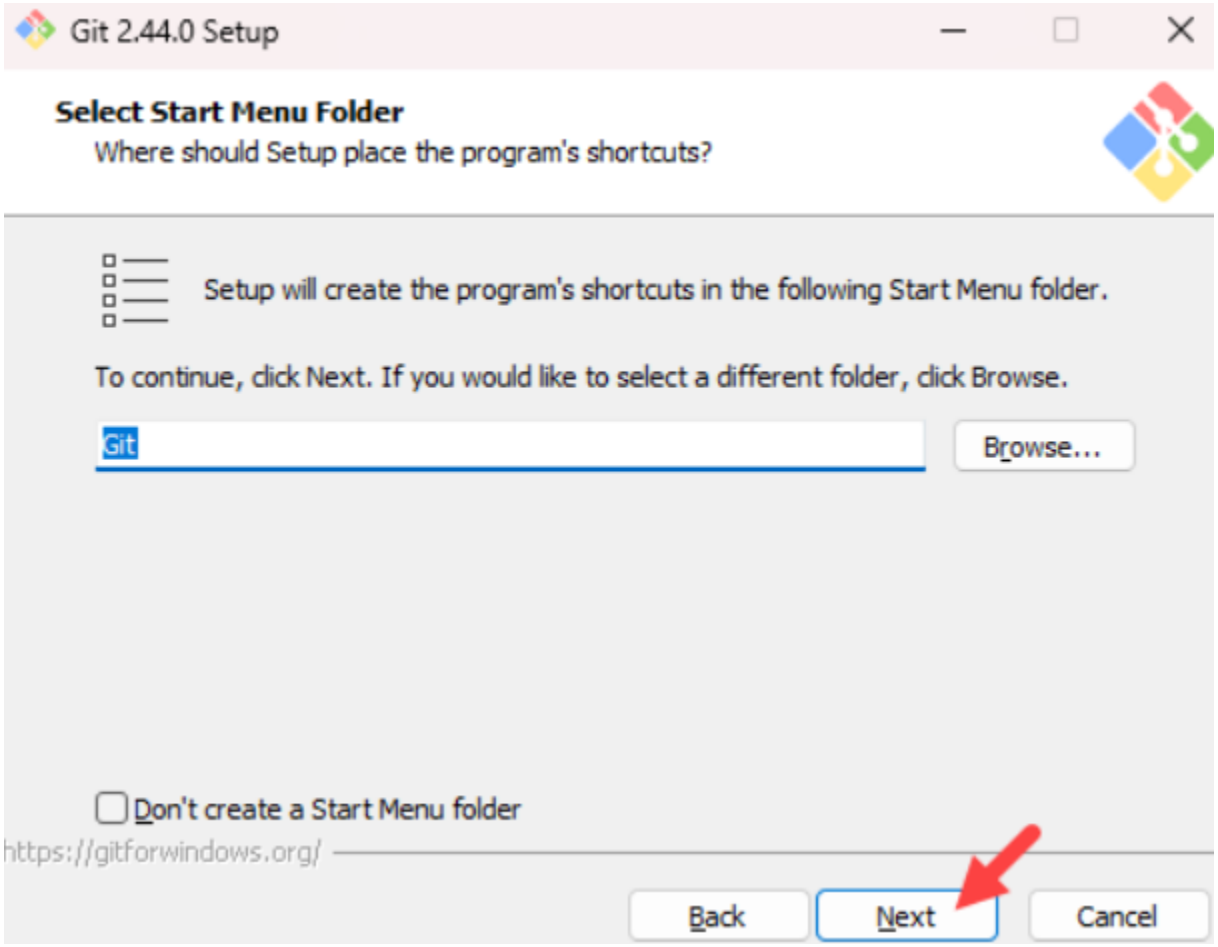
- The installer prompts you for an installation location. Leave the default one unless you want to change it, and click **Next**



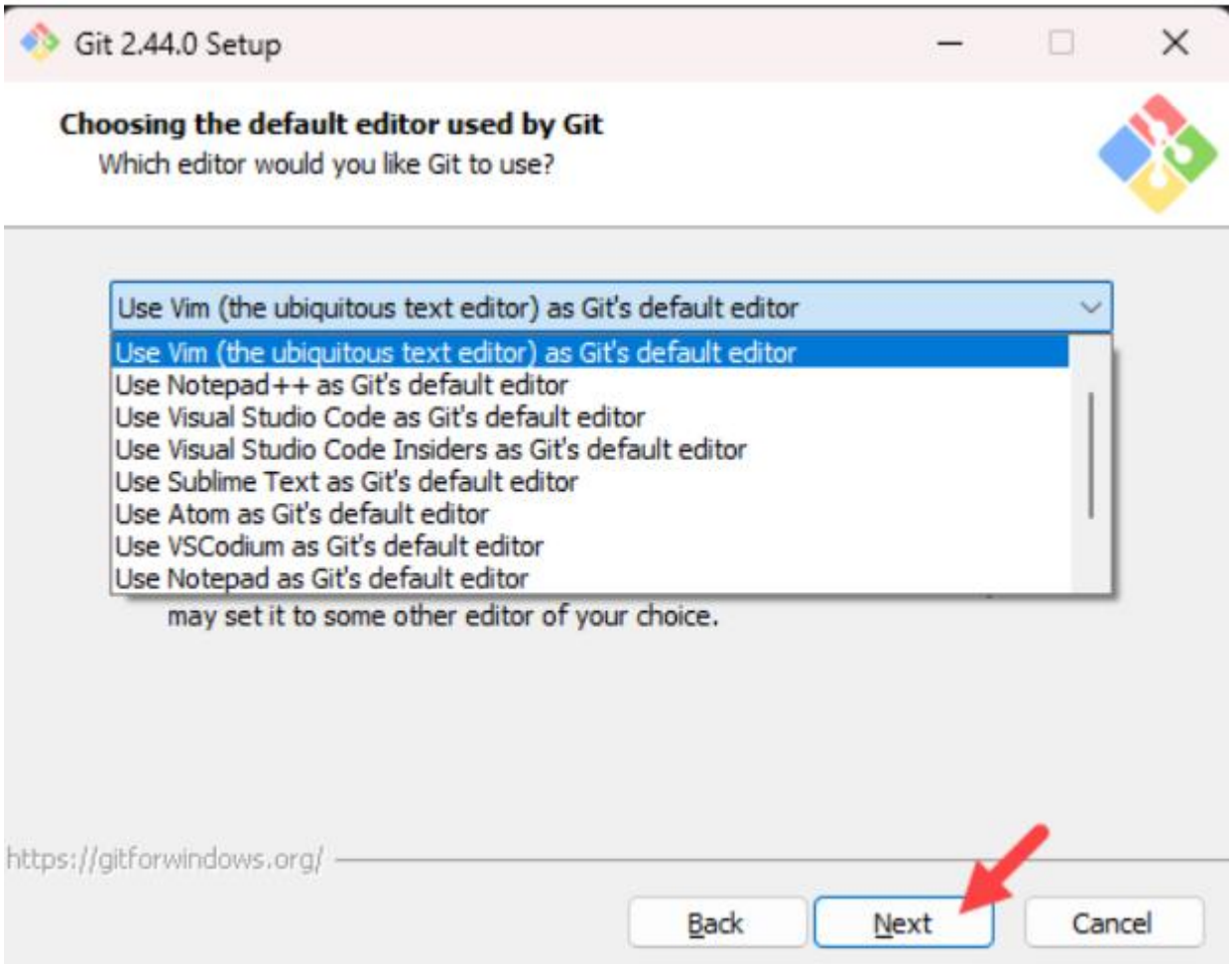
- In the component selection screen, leave the defaults unless you need to change them and click **Next**.



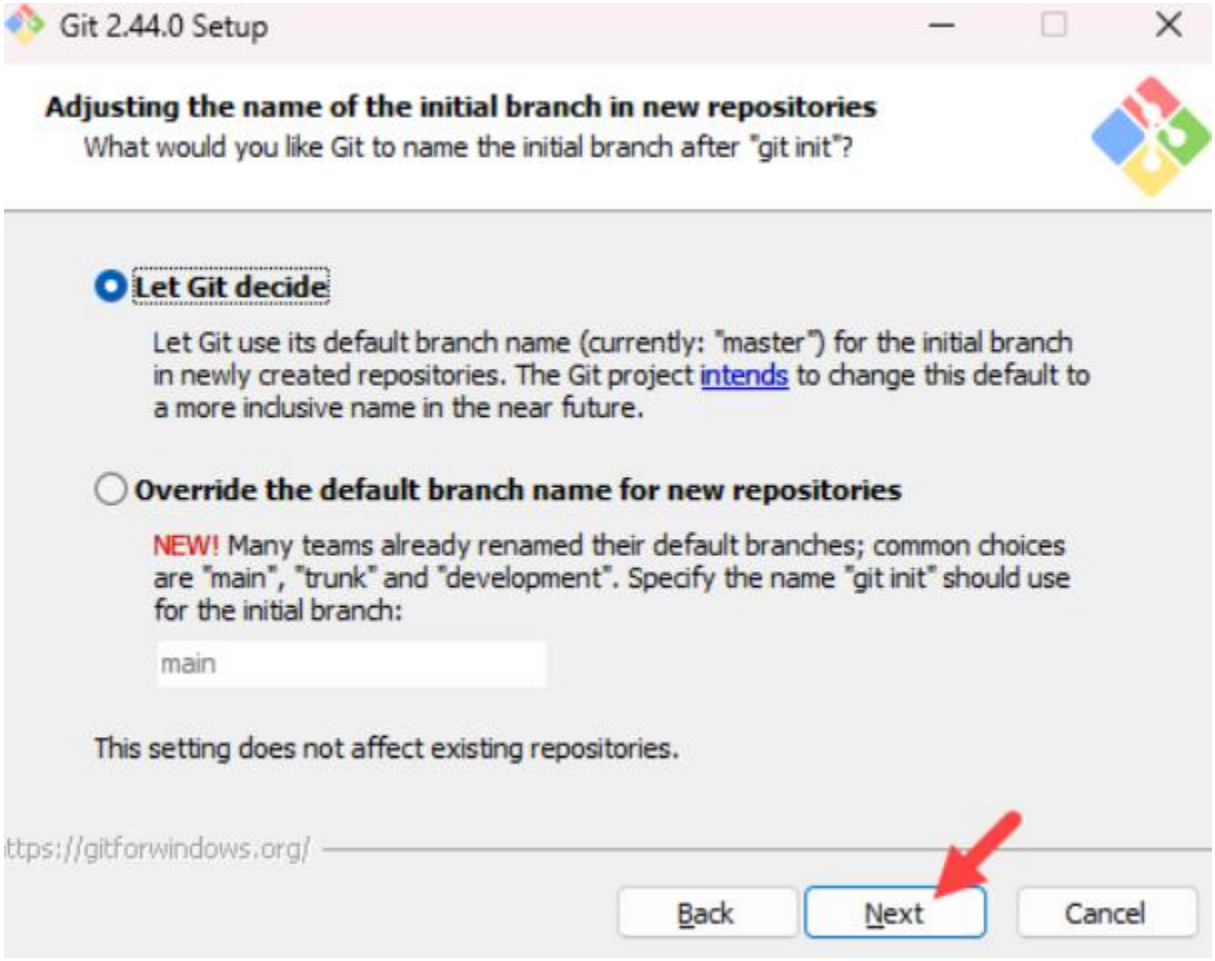
- The installer offers to create a start menu folder. Click **Next** to accept and proceed to the next step



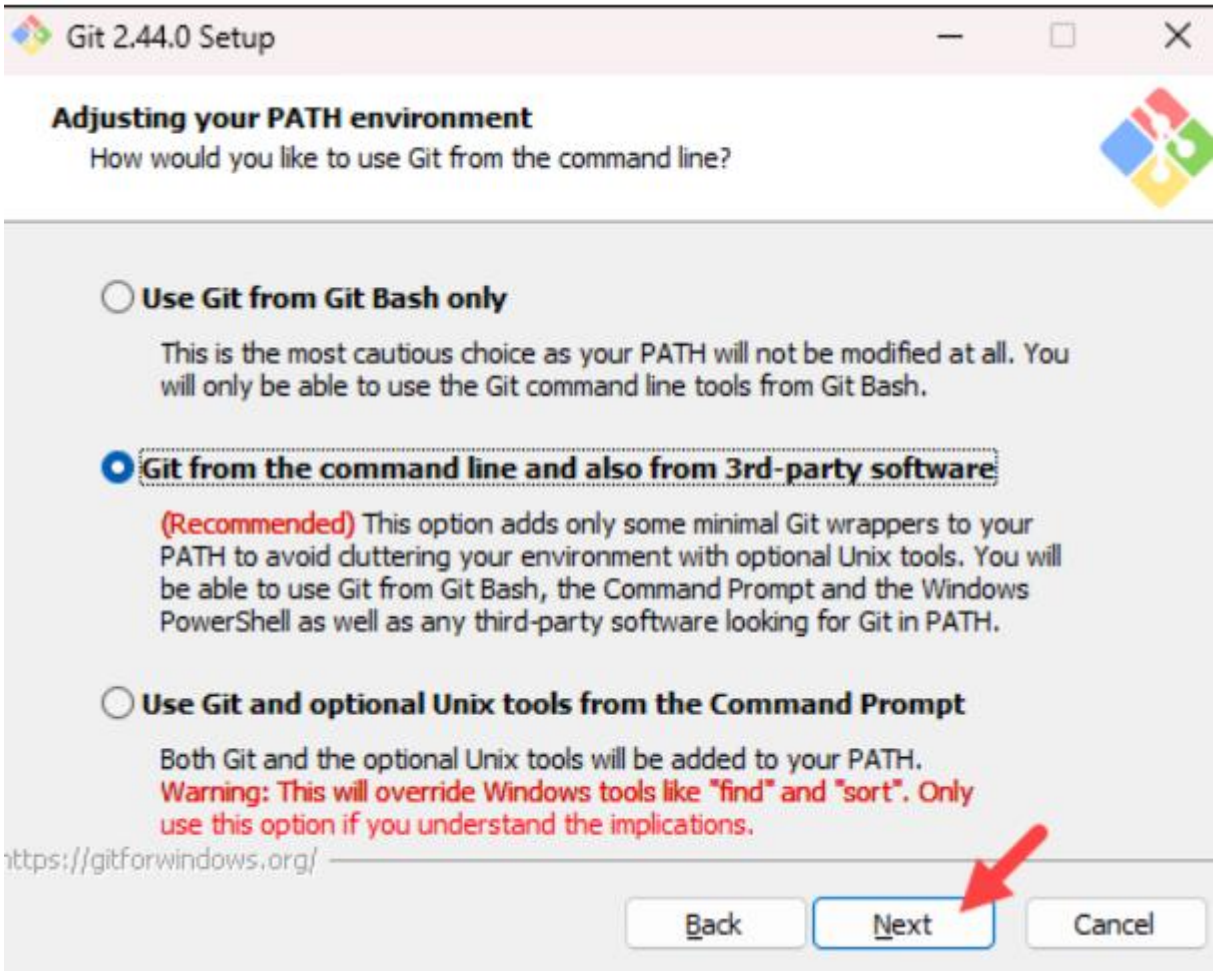
- Select a text editor you want to use with Git. Use the drop-down menu to select Notepad++ (or whichever text editor you prefer) and click **Next**.
- If you prefer to use a CLI text editor in Git Bash, select nano or Vim from the list



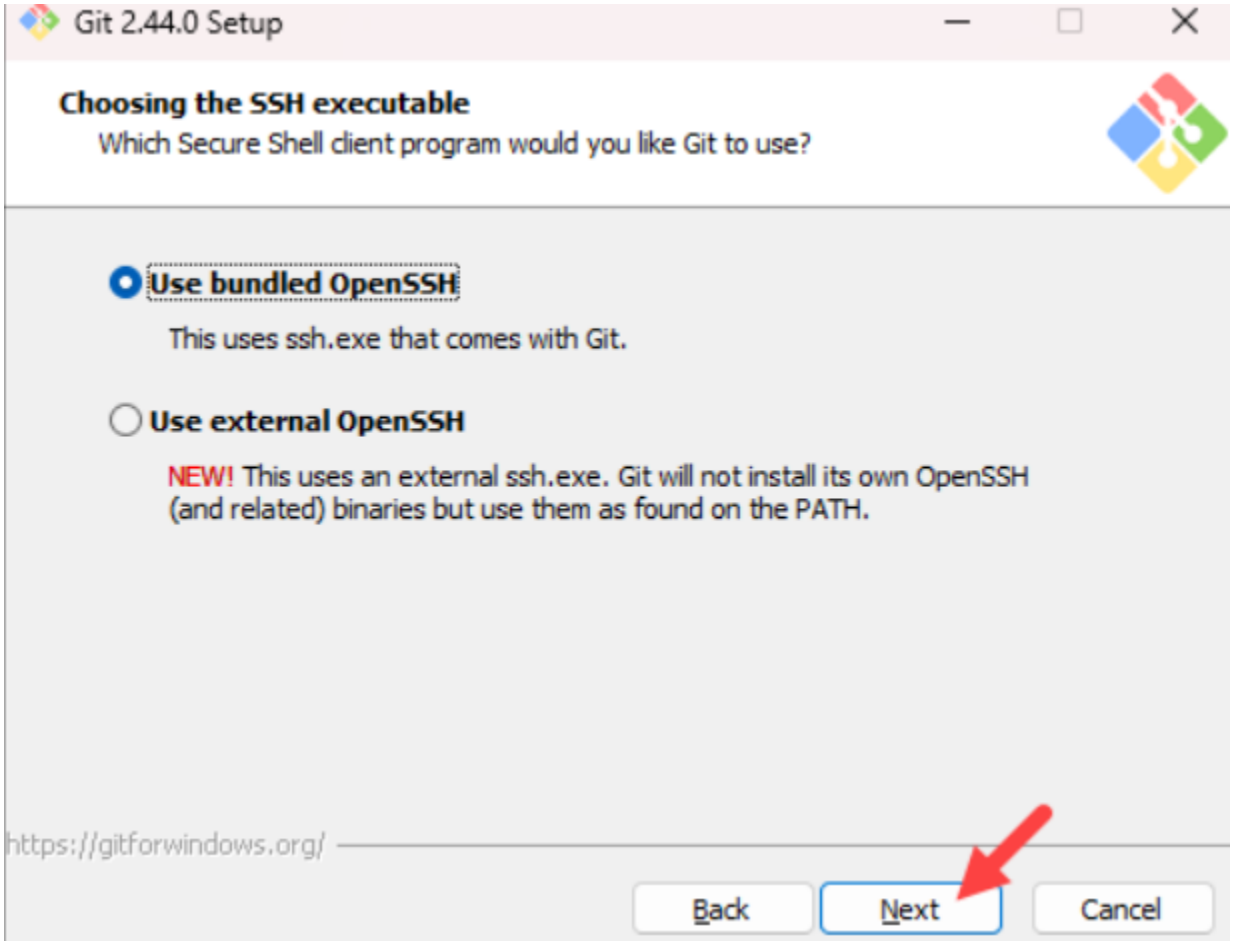
- The next step allows you to choose a different name for your initial branch. The default is `master`. Unless you are working in a team that requires a different name, leave the default option and click **Next**



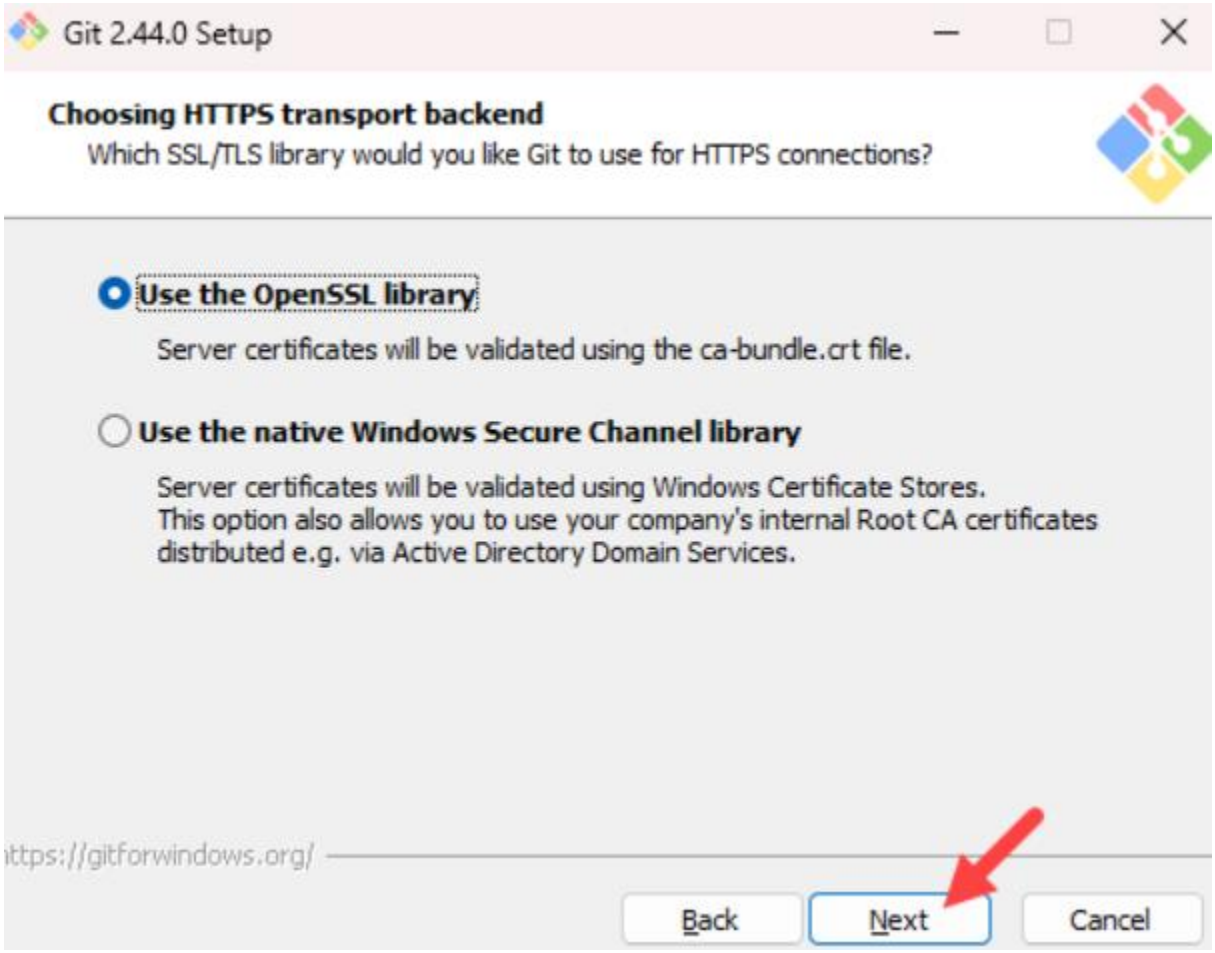
- The next step allows you to change the **PATH environment**. The **PATH** is the default set of directories included when you run a command from the command line. Keep the middle (recommended) selection and click **Next**.



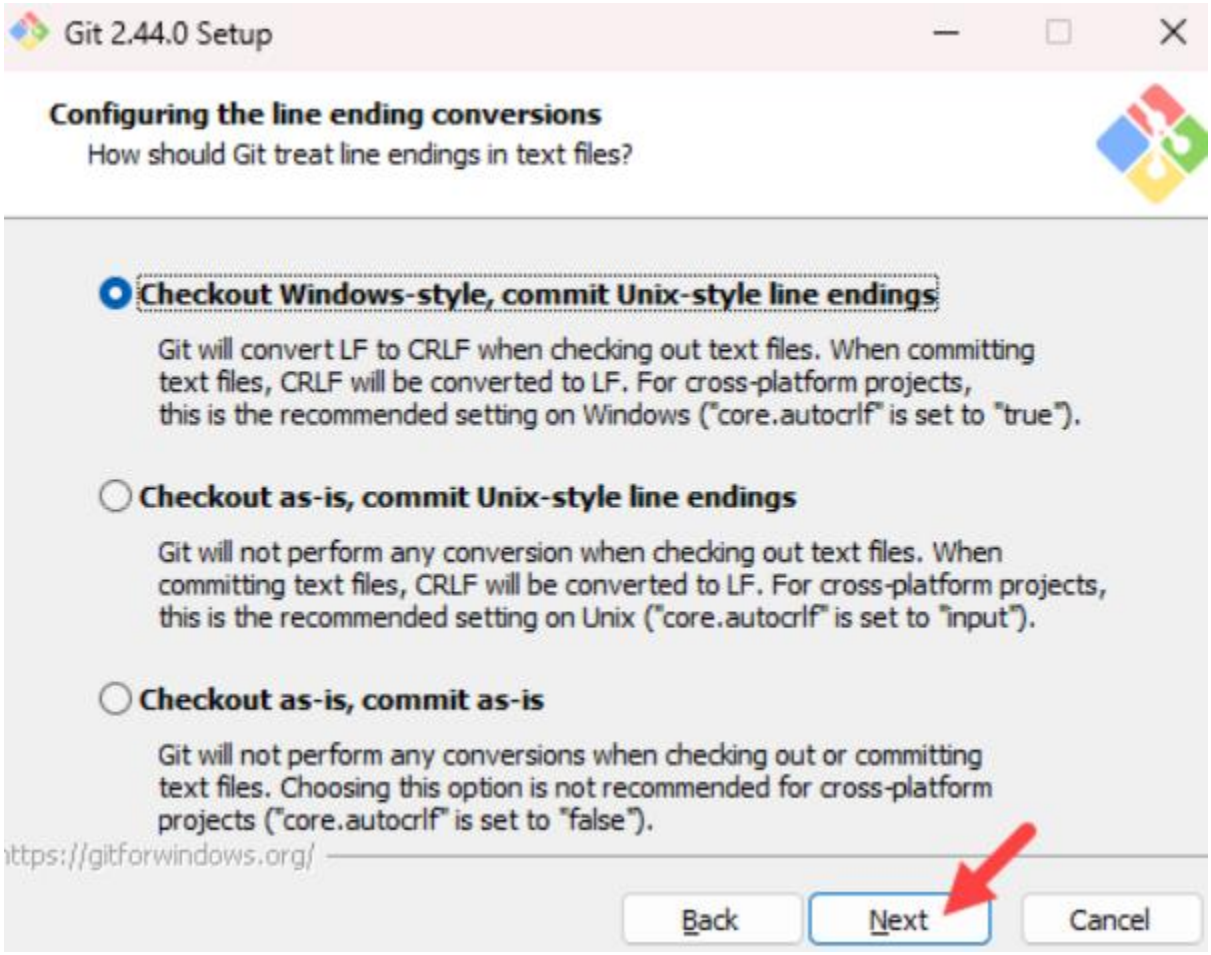
- The installer prompts you to select the SSH client for Git to use. Git already comes with its own SSH client, so if you don't need a specific one, leave the default option and click **Next.**



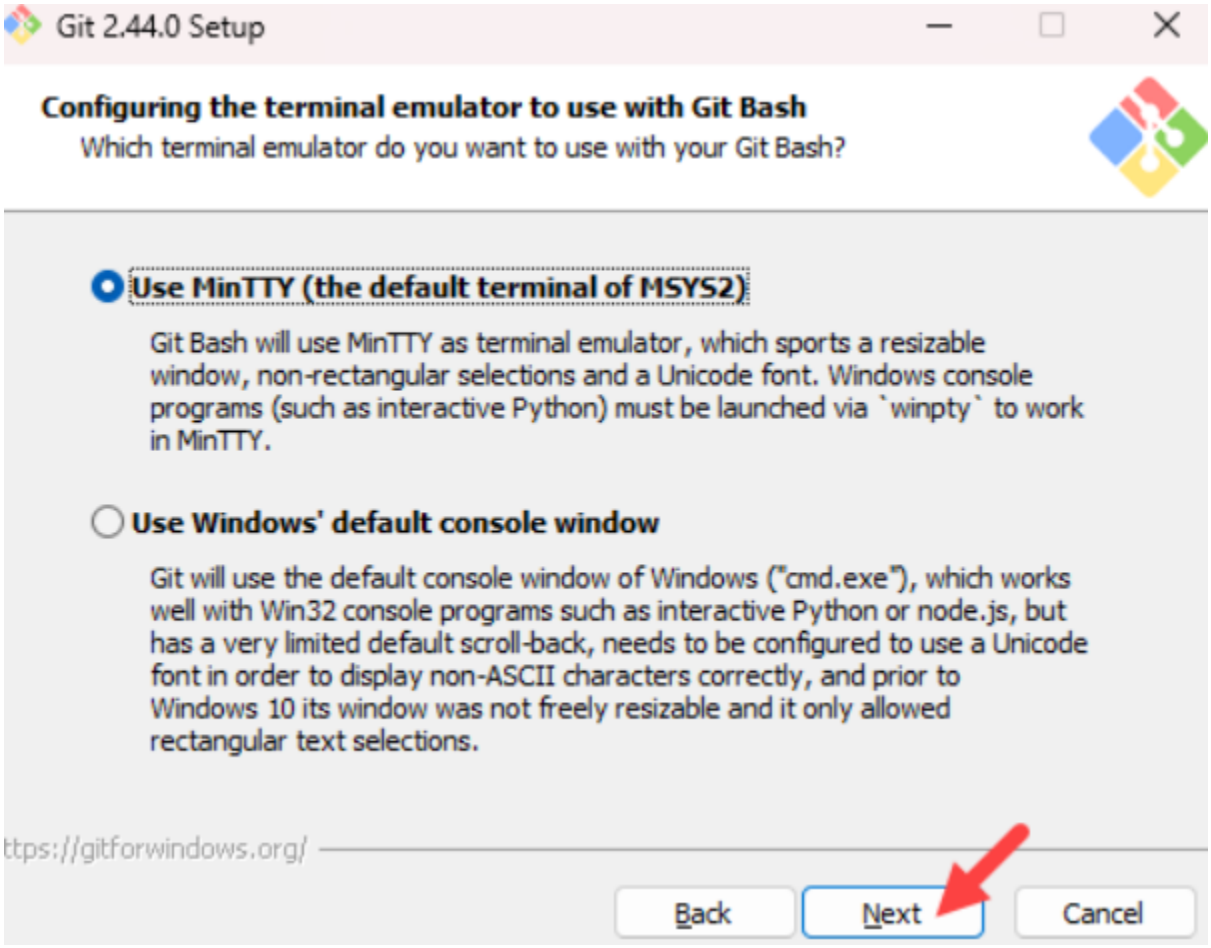
- The next option relates to server certificates. The default option is recommended for most users. If you work in an Active Directory environment, you may need to switch to Windows Store certificates. Select your preferred option and click **Next**



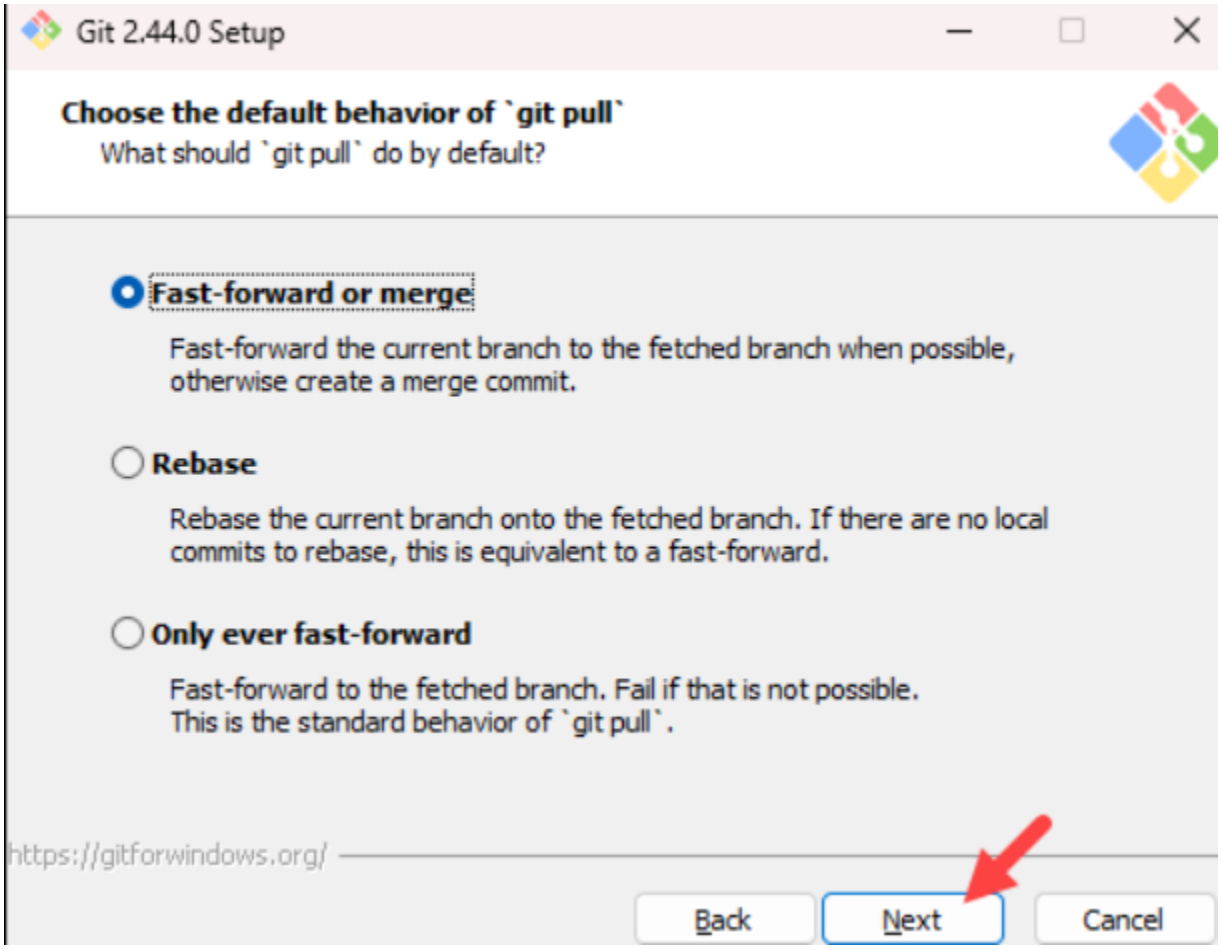
- The following selection configures line-ending conversion, which relates to the way data is formatted. The default selection is recommended for Windows. Click **Next** to proceed



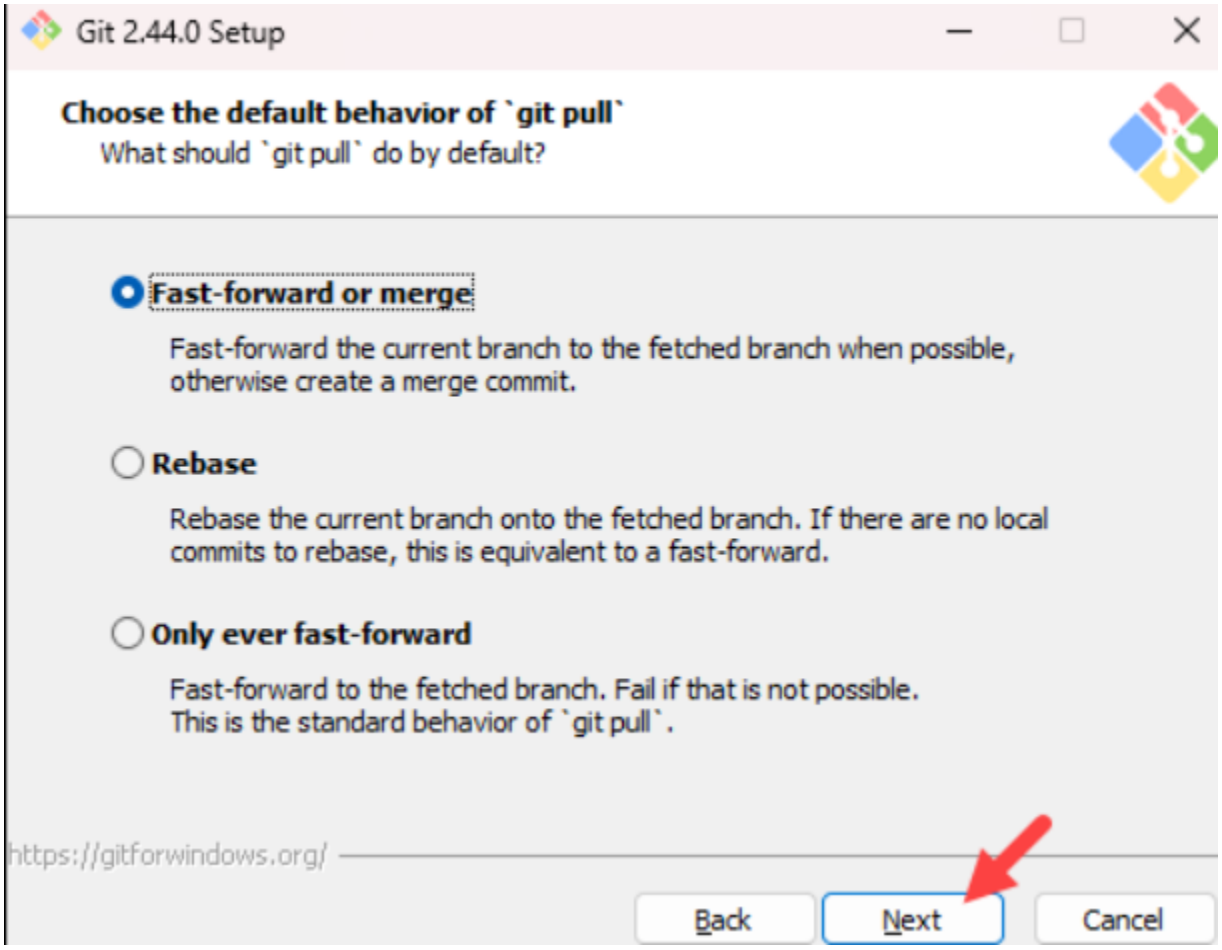
- Choose the terminal emulator you want to use. The default MinTTY is recommended for its features. Click **Next** to continue.



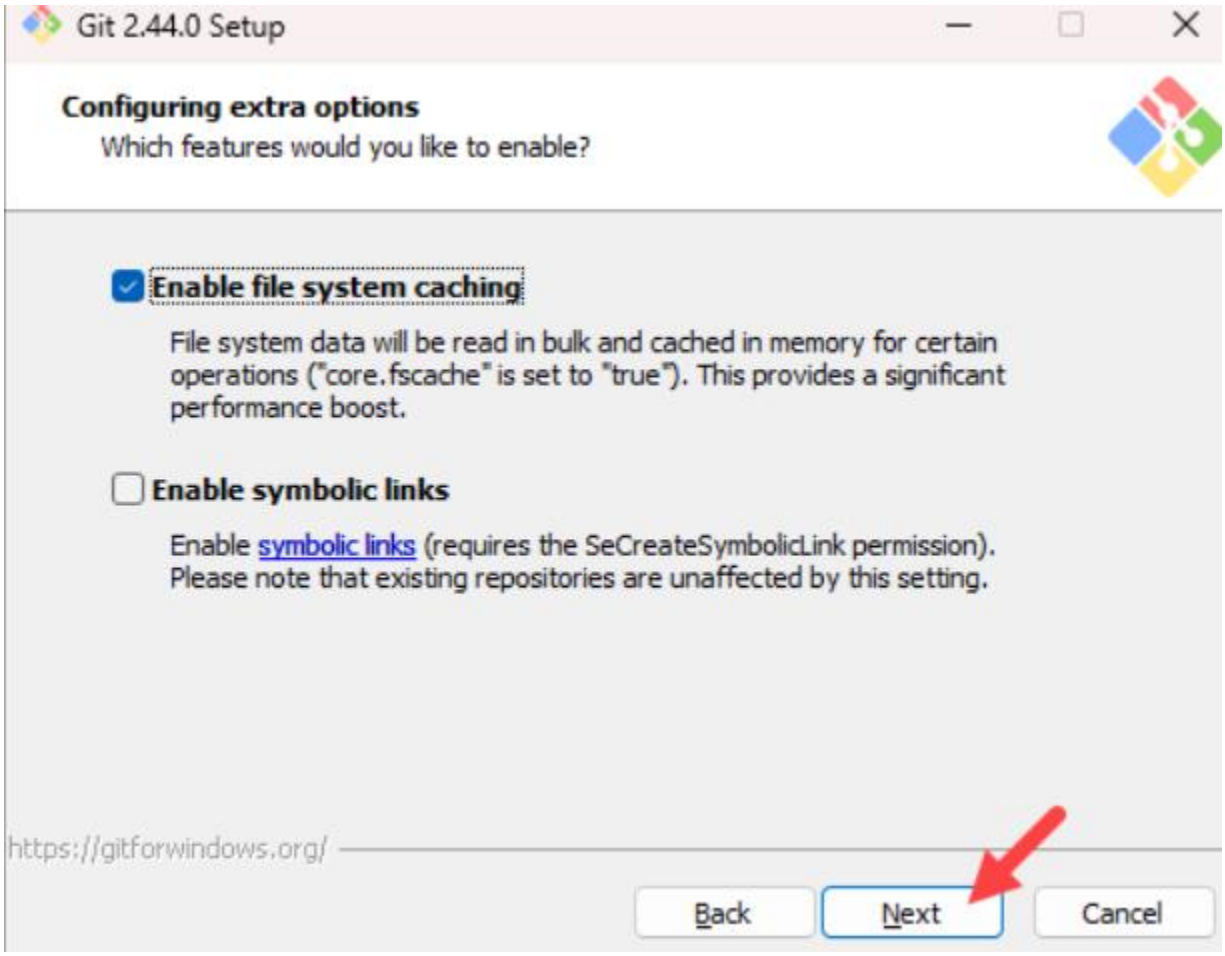
- The next step allows you to choose what the `git pull` command will do. The default option is recommended unless you specifically need to change its behavior. Click **Next** to continue with the installation.



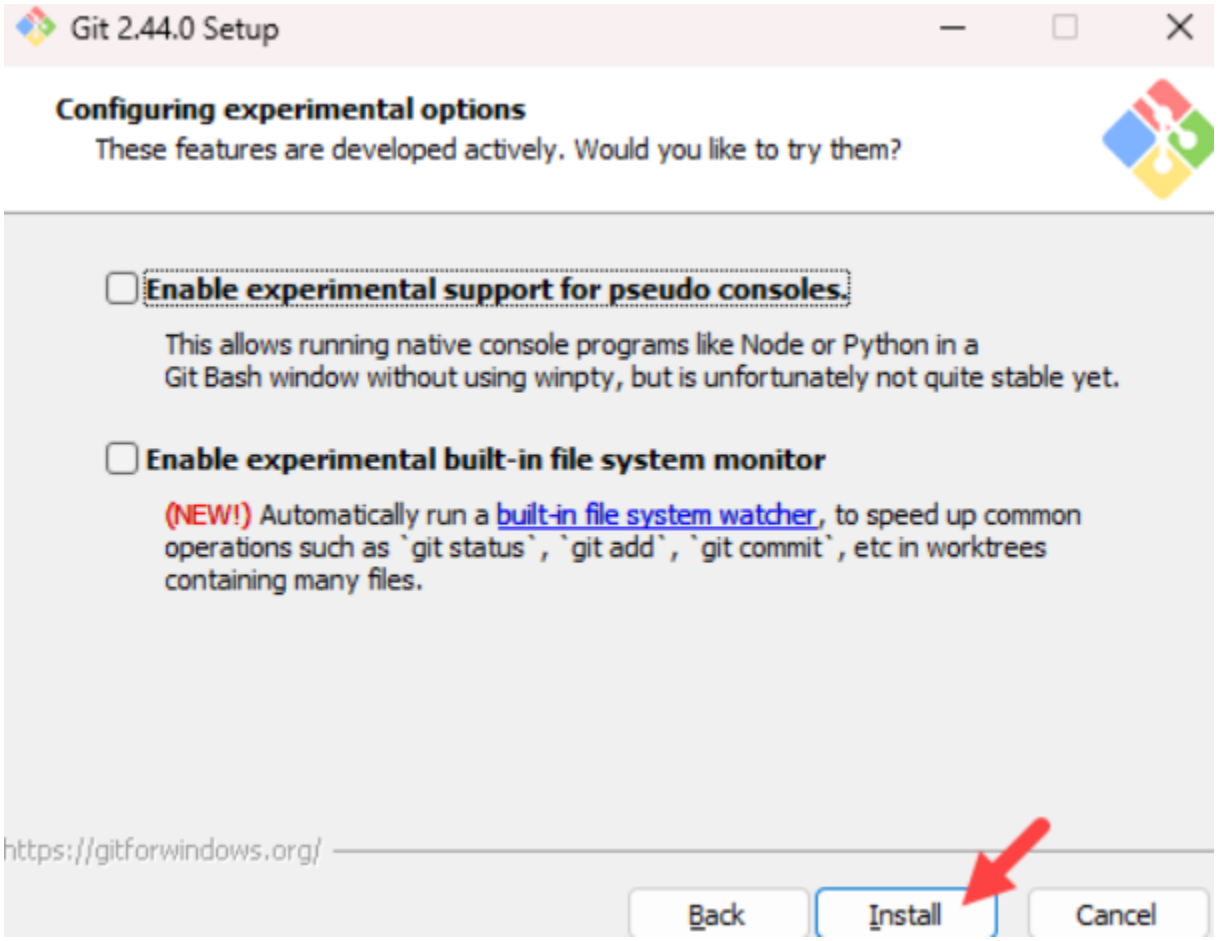
- The next step is to choose which credential helper to use. Git uses credential helpers to fetch or save credentials. The default option is the most stable one. Select your preferred credential manager and click **Next**



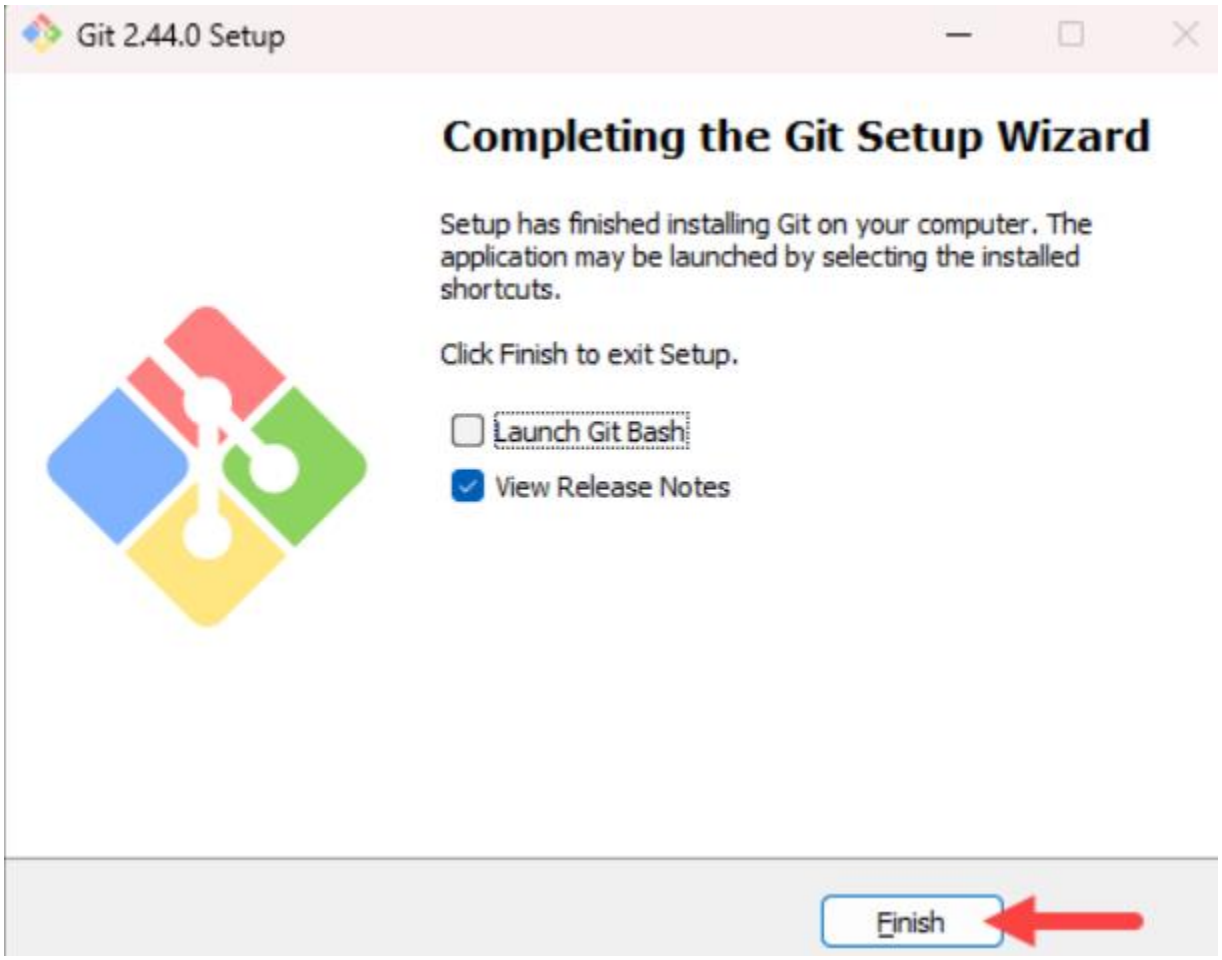
- The next step lets you decide which extra options to enable. If you use symbolic links, which represent shortcuts for the command line, tick the box. Keep file system caching checked and click **Next**.



- Depending on which Git version you are installing, it may offer to install experimental features. At the time this article was written, the installer offered options to include support for pseudo controls and a built-in file system monitor. For the most stable operation, do not install experimental features and click **Install**.



- Once the installation is complete, tick the boxes to view the Release Notes or launch Git Bash if you want to start using Git right away, and click **Finish**



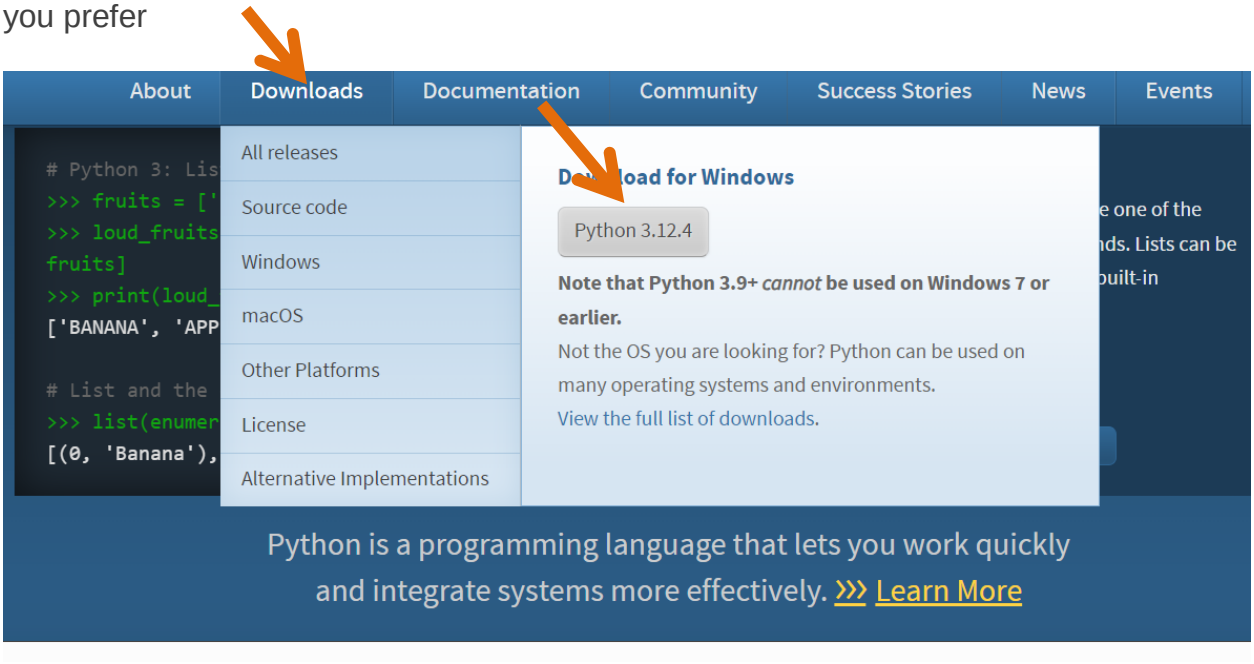
Now that Git is installed, you can check the version installed using the command “git –version”

Q4. Python Installation on Windows

The installation requires downloading the official Python *.exe* installer and running it on your system. The sections below will explain several options and details during the installation process.

Step 1: Select Python Version

Deciding on a version depends on what you want to do in Python. The two major versions are Python 2 and Python 3. Choosing one over the other might be better depending on your project details. If there are no constraints, choose whichever one you prefer

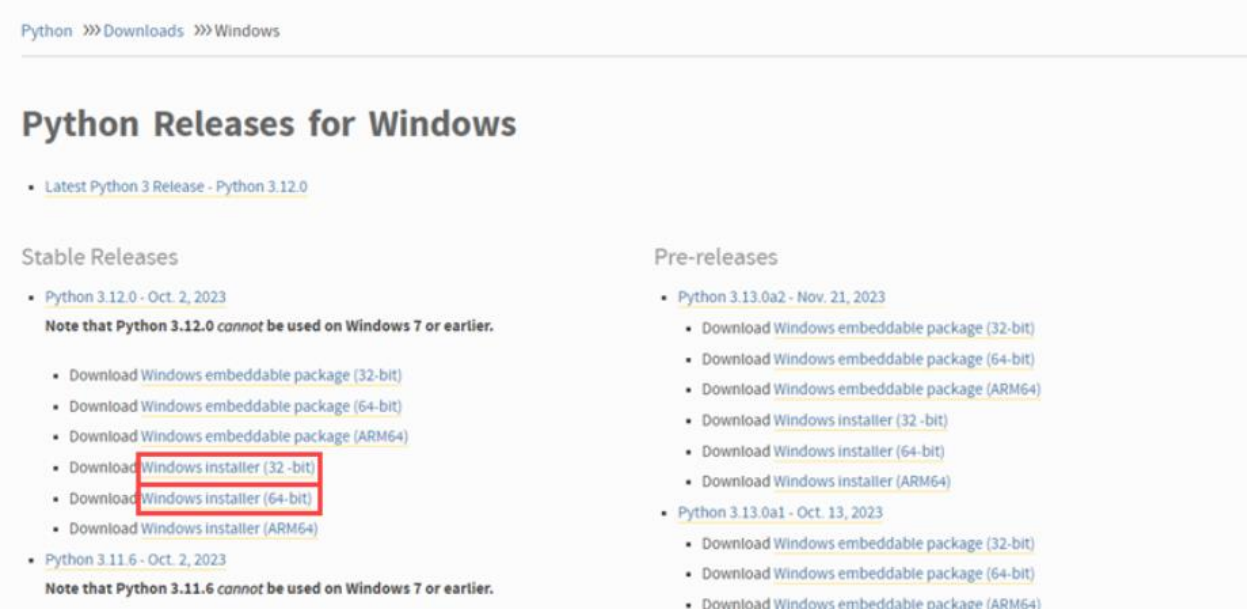


Step 2: Download Python Executable Installer

Start by downloading the Python executable installer for Windows:

1. Open a web browser and navigate to the Downloads for Windows section of the official Python website (https://www.python.org)

2. Locate the desired Python version.



2. Click the link to download the file. Choose either the Windows 32-bit or 64-bit installer.

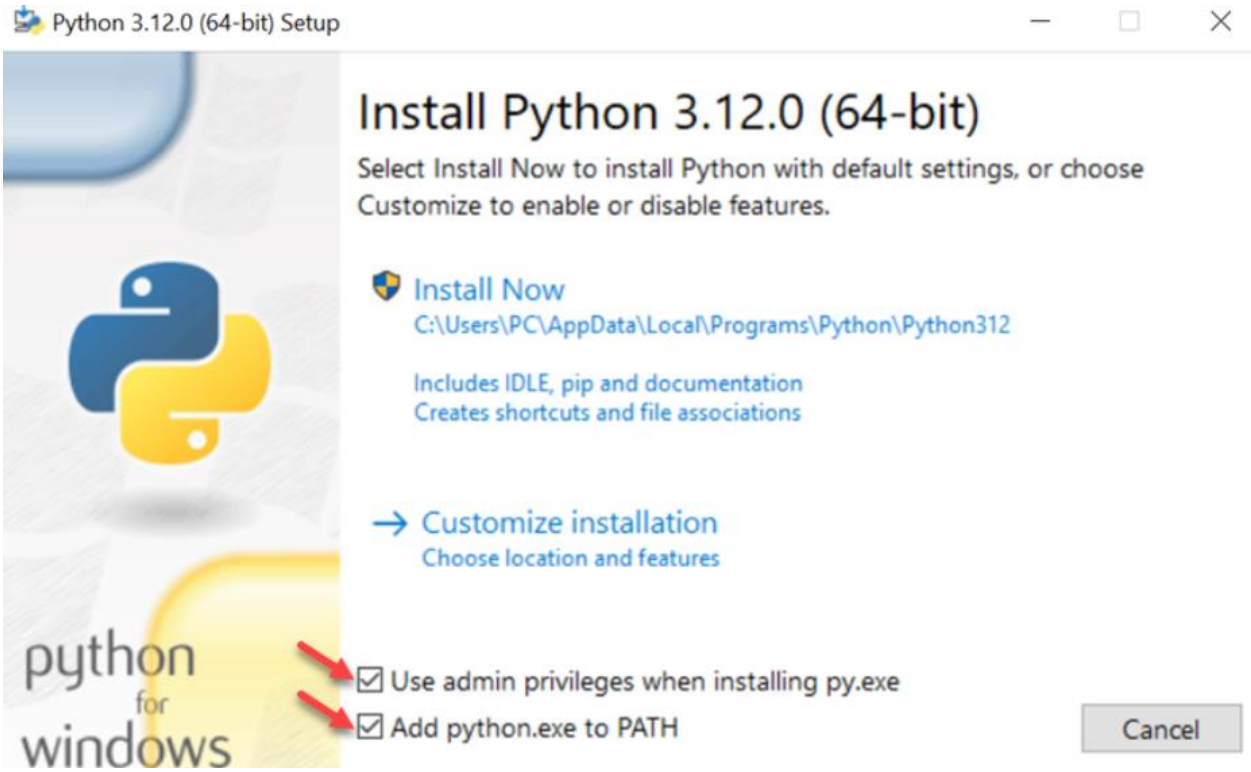
Step 3: Run Executable Installer

The steps below guide you through the installation process:

1. Run the downloaded **Python Installer**.

2. The installation window shows two checkboxes:

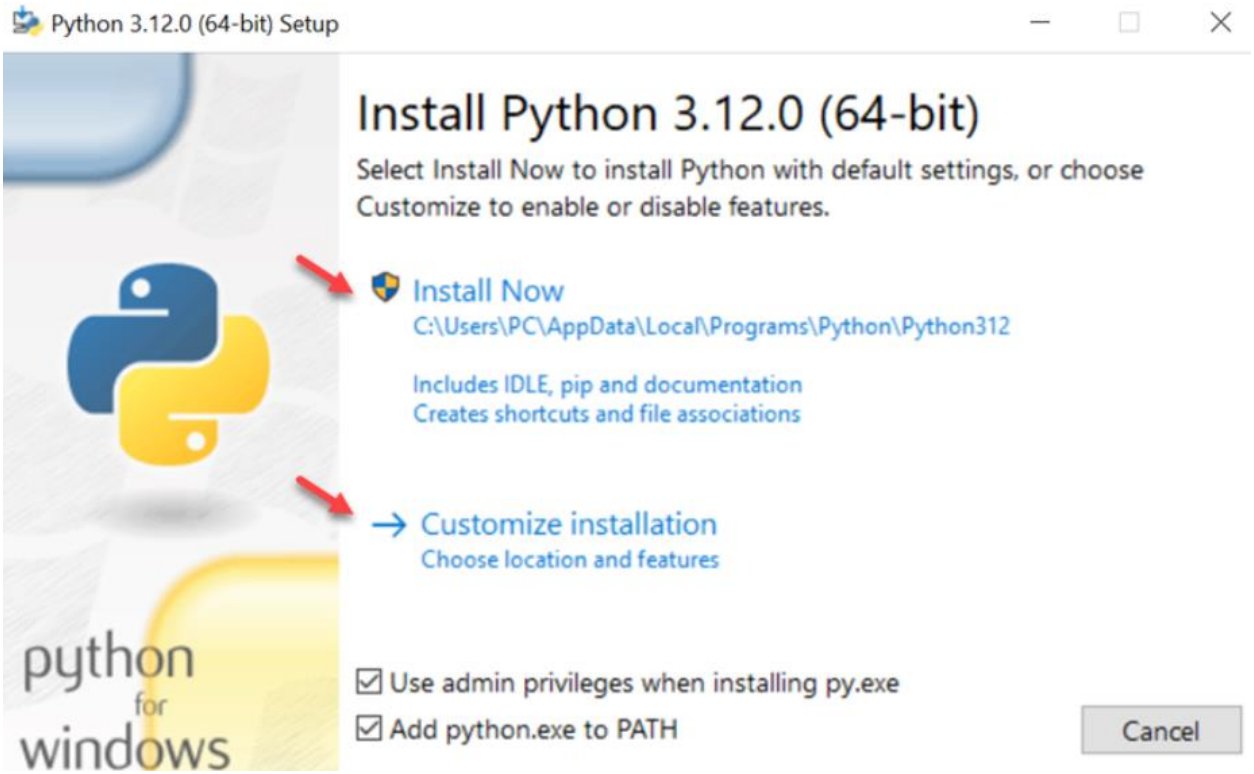
- **Admin privileges**. The parameter controls whether to install Python for the current or all system users. This option allows you to change the installation folder for Python.
- Add Python to PATH. The second option places the executable in the PATH variable after installation. You can also add Python to the PATH environment variable manually later.



For the most straightforward installation, we recommend ticking both checkboxes.

3. Select the **Install Now** option for the recommended installation (in that case, skip the next two steps).

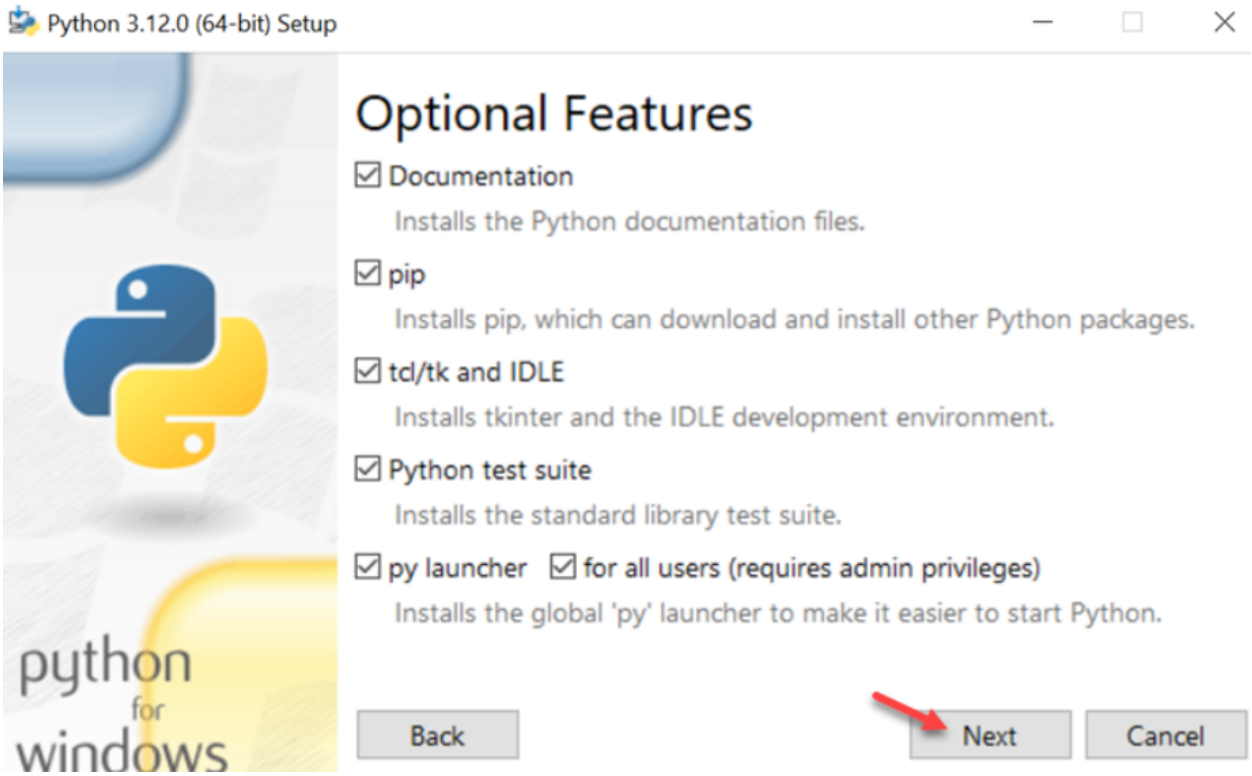
To adjust the default installation options, choose **Customize installation** instead and proceed to the following step



The default installation installs Python to *C:\Users\[user]\AppData\Local\Programs\Python\Python[version]* for the current user. It includes IDLE (the default Python editor), the PIP package manager, and additional documentation. The installer also creates necessary shortcuts and file associations.

Customizing the installation allows changing these installation options and parameters.

4. Choose the optional installation features. Python works without these features, but adding them improves the program's usability.

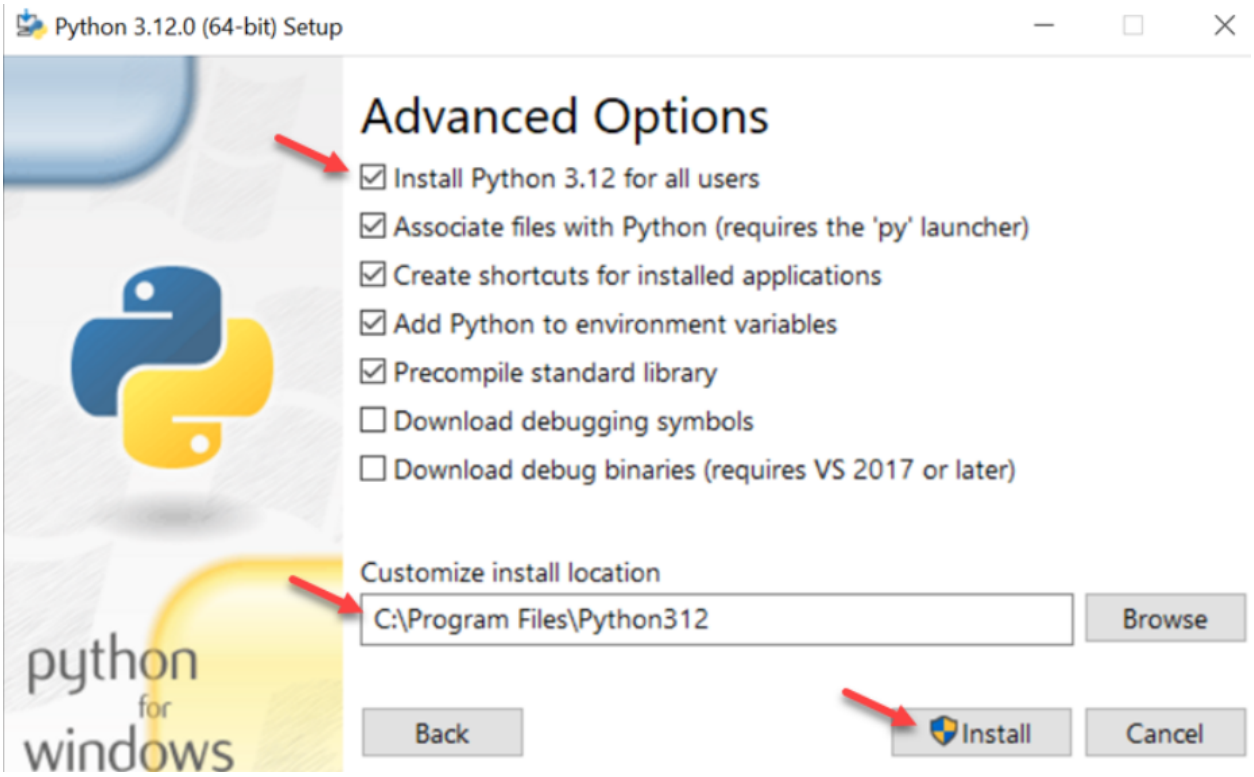


Click **Next** to proceed to the Advanced Options screen.

5. The second part of customizing the installation includes advanced options.

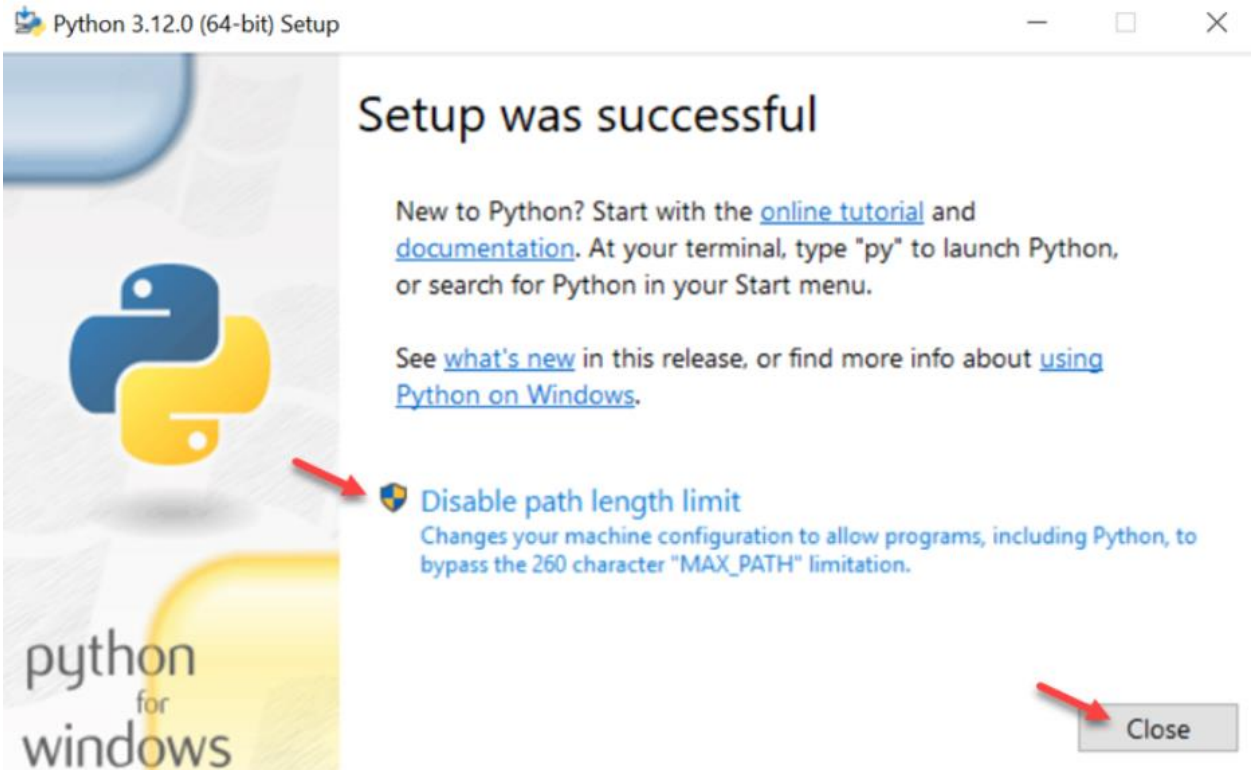
Choose whether to install Python for all users. The option changes the install location to *C:\Program Files\Python[version]*. If selecting the location manually, a common choice is *C:\Python[version]* because it avoids spaces in the path, and all users can access it. Due to administrative rights, both paths may cause issues during package installation.

Other advanced options include creating shortcuts, file associations, and adding Python to PATH



After picking the appropriate options, click **Install** to start the installation.

6. Select whether to disable the path length limit. Choosing this option will allow Python to bypass the 260-character `MAX_PATH` limit.



The option will not affect any other system settings, and disabling it resolves potential name-length issues. We recommend selecting the option and closing the setup.

Step 5: Verify Python Was Installed on Windows

The first way to verify that Python was installed successfully is through the command line. Open the command prompt and run the following command:

```
python --version
```

```
C:\Users\PC>python --version
Python 3.12.0
```

The output shows the installed Python version

```
Q5.Install Package Managers:
   If applicable, install package managers like pip
(Python).

   ANS: Not application because Python comes with pip
for installing necessary packages
```

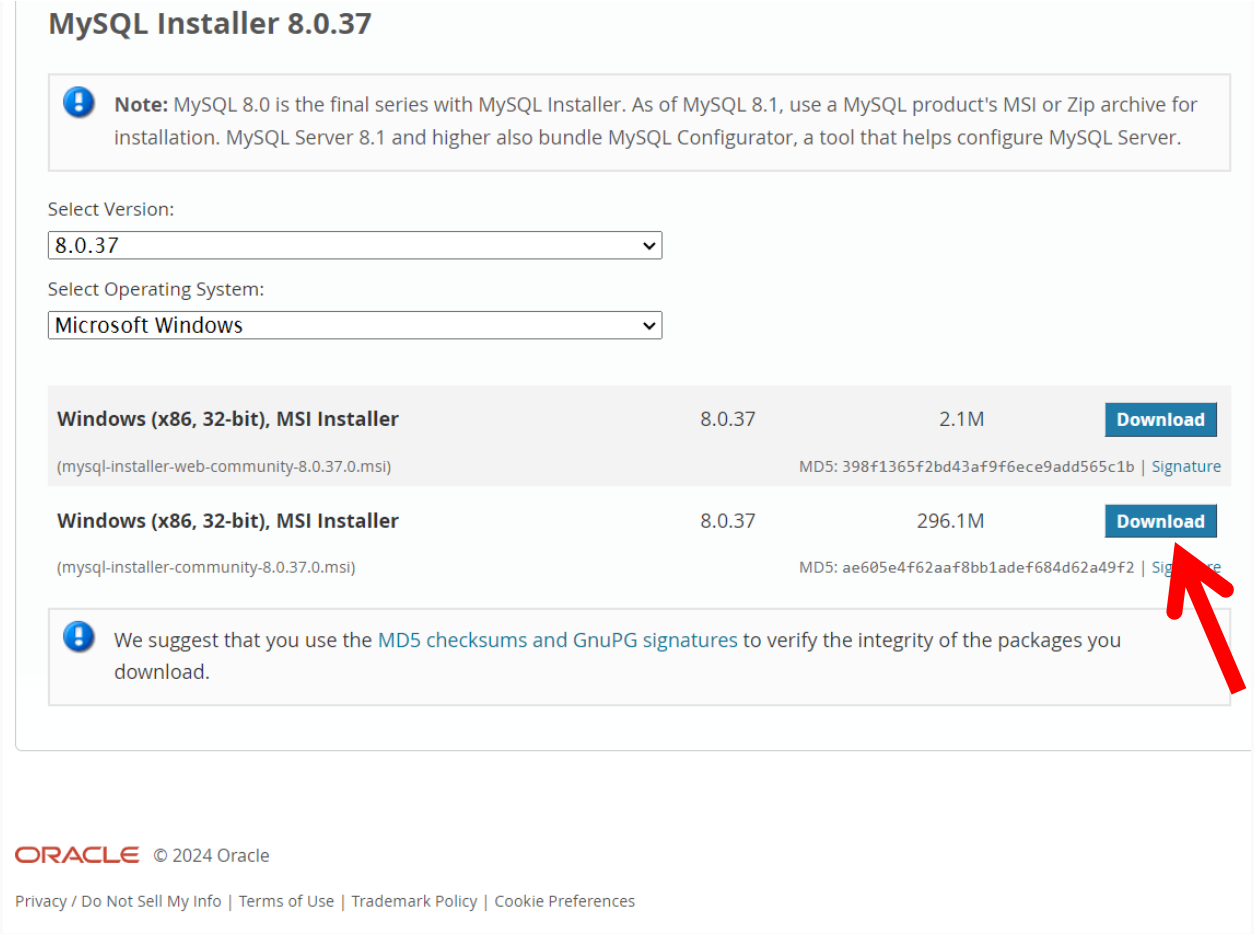
Q6. How to Install MySQL on Windows: Step-by-Step Guide

Downloading the distribution kit

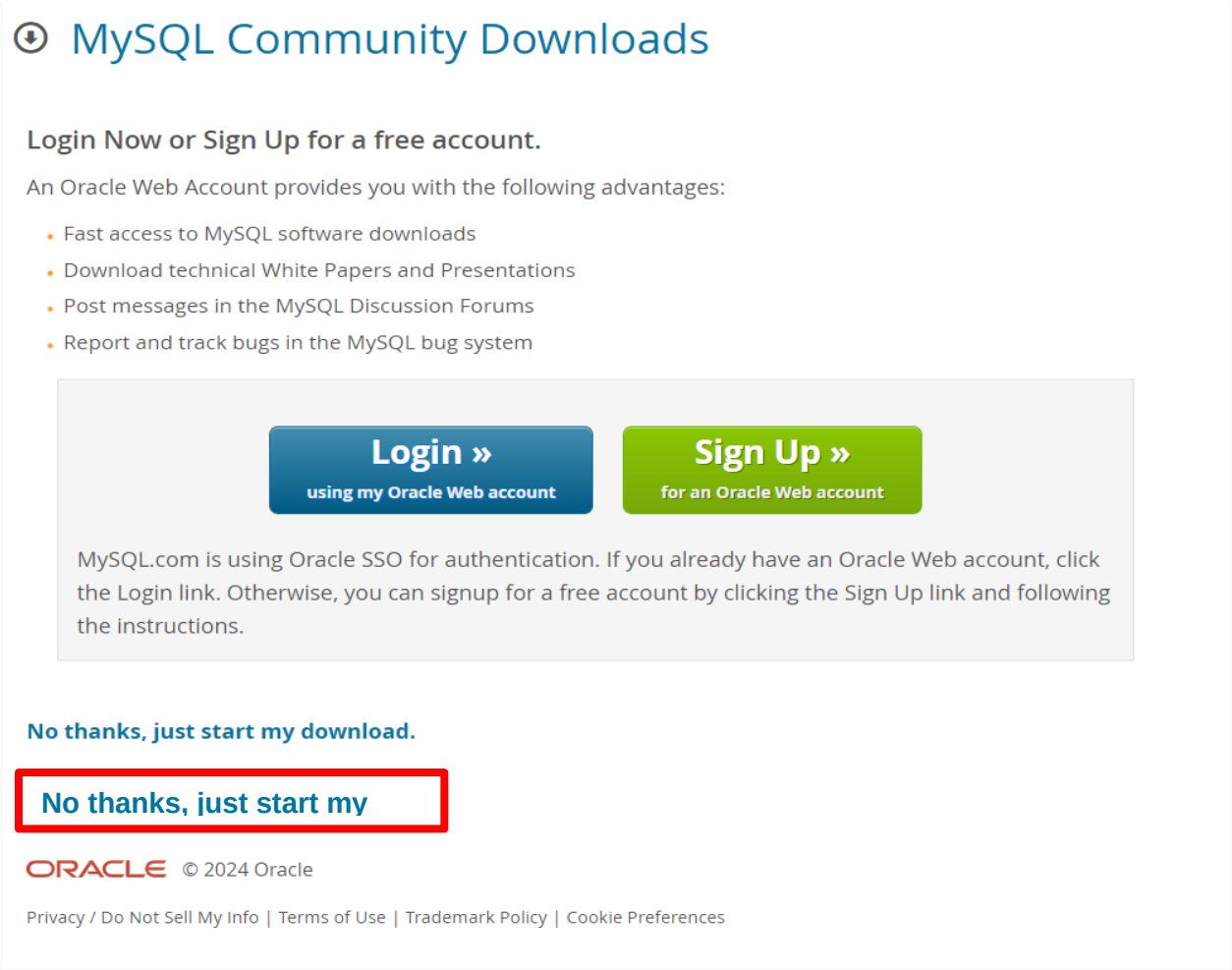
First, you need to install the distribution kit from the MySQL official website. There are two download options:

1. The first option is to download the bootable file mysql-installer-web-community.msi. It will automatically install all the necessary components. To use this installation method, you must have an Internet connection.
2. The second option is to download the bootable file mysql-installer-community.msi. It will allow you to install all components even if the server is not connected to the Internet.

In this guide, we will use the second option



Once you select the option, the service will prompt you to register an Oracle web account or log in with your existing data. You can skip this step. To do this, click the link as shown in the picture below.



Installing MySQL

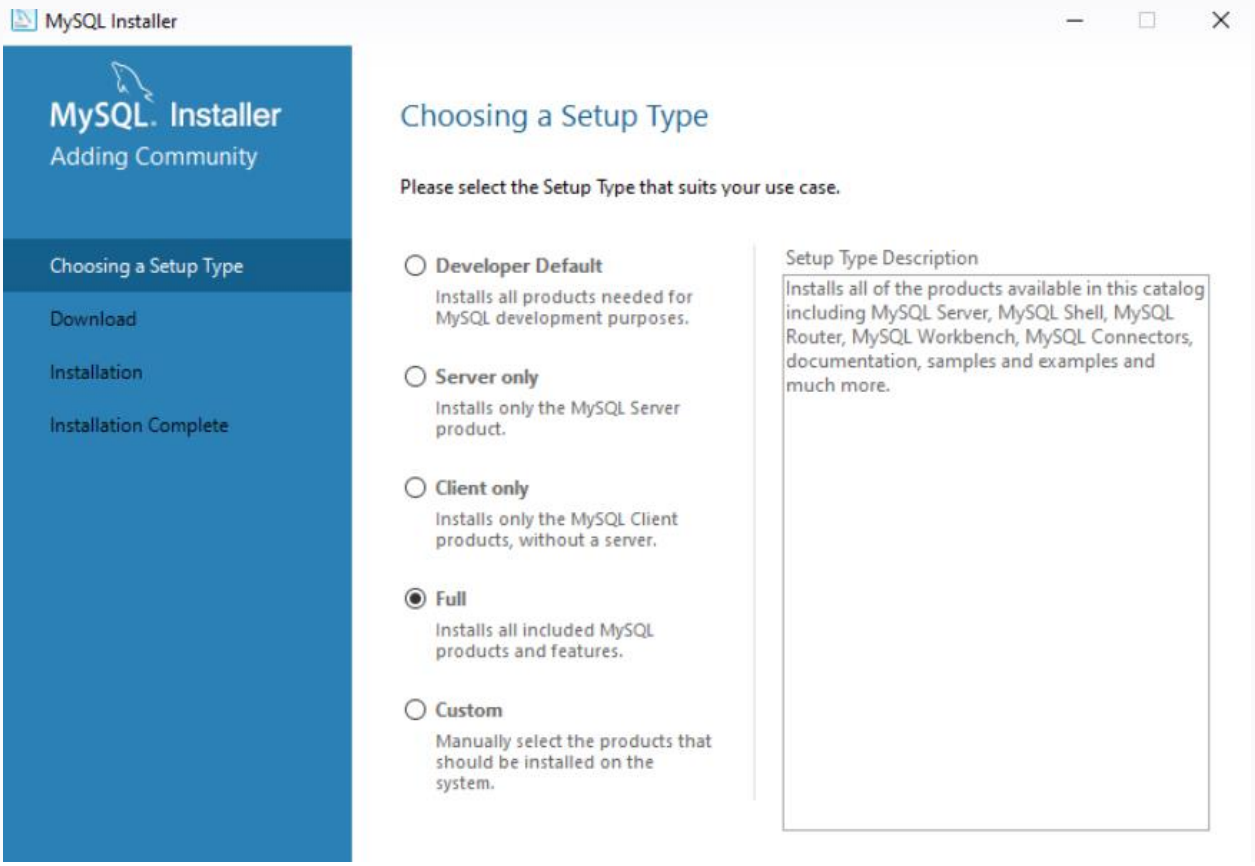
After successfully downloading the file, you will need to run it. Next, the installation program should open.

You will see several installation options. Among them:

- Developer Default is the default option. It implies installation of all the necessary components for the developer.

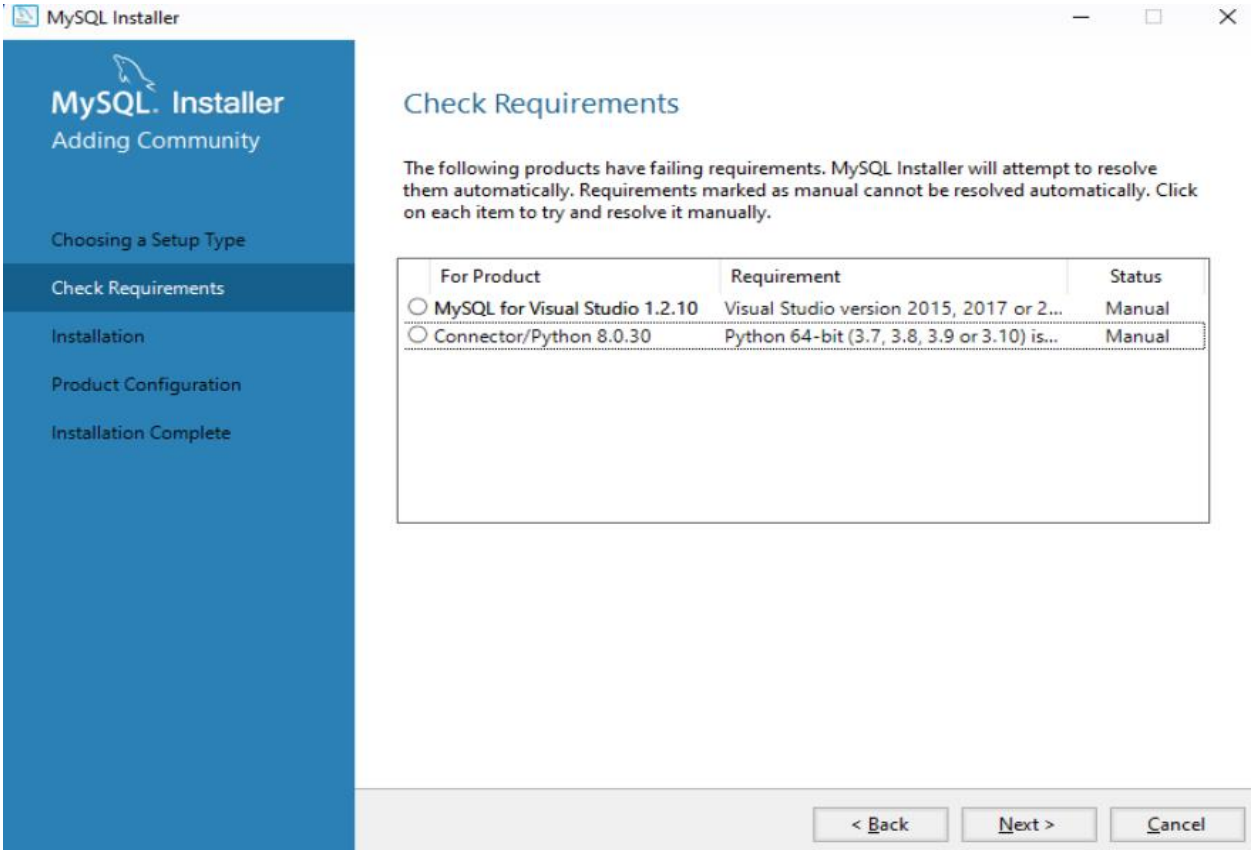
- Server only will only install the DBMS server.
- Client only will only install the DBMS client part.
- Full is for installing all the components of the downloaded distribution kit.
- Custom allows you to select the components you want to install.

Unless you know exactly what you need, choose the full installation ("**Full**"). This will be the best option for novice users. After selecting it, click the "**Next"** button

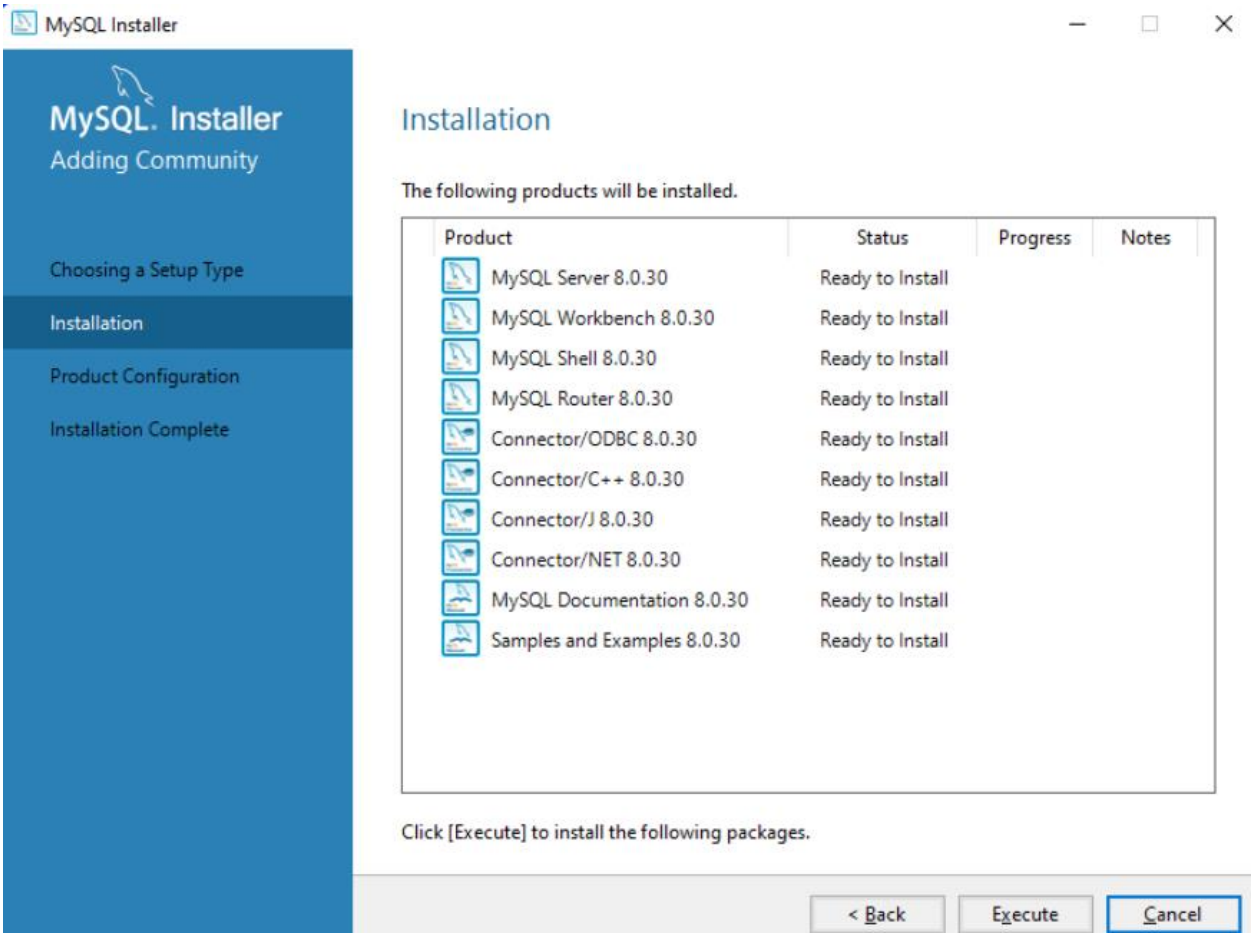


Now, you'll be prompted to install the components required for DBMS extensions operation. If they have the Manual status, they will not interfere in any way with the program's stable task execution. You can select the necessary components from the list, then press the "Execute" button and install them, or skip this step and press the "**Next**" button. If you

choose the second option, the system will inform you that some components are missing. Press "**Yes**" to confirm your choice

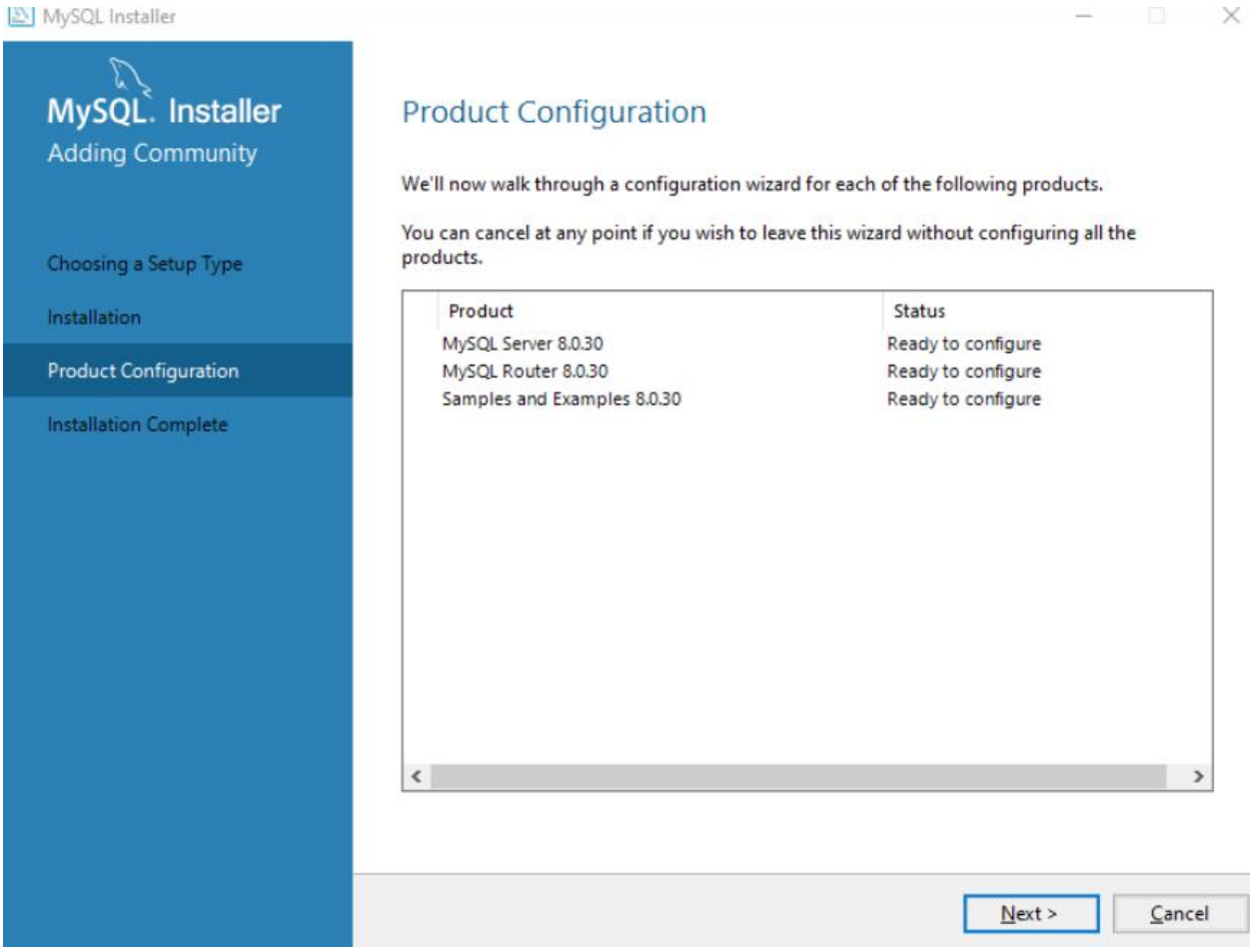


The next step is to install all DBMS components sequentially. To do so, click the "**Execute**" button



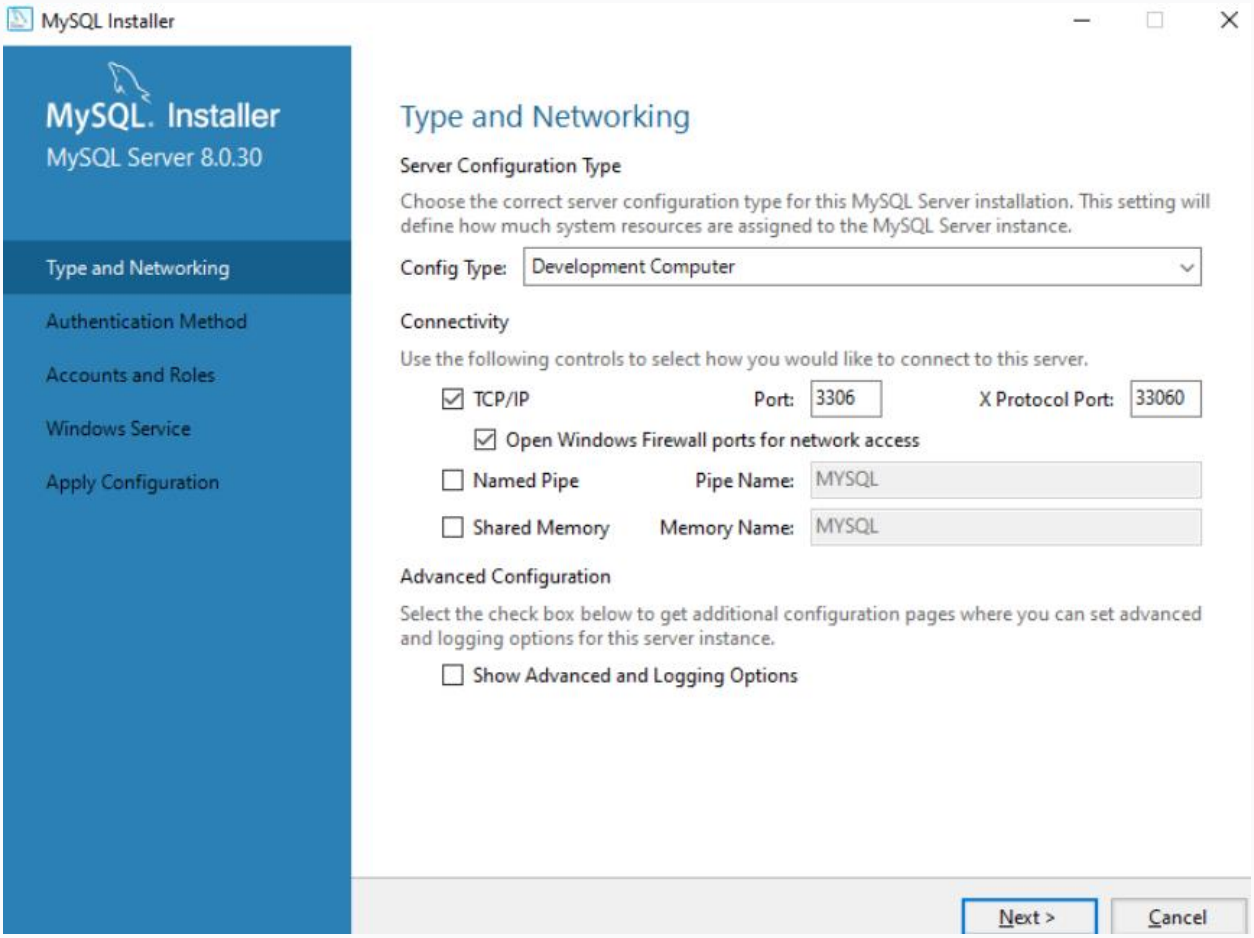
Once all files have been successfully uploaded, a green check mark will appear to the left of each component, and the status will change to "**Complete**". Click "**Next".**

Next, the installation program will offer to configure some components. Click "**Next**" and proceed to the configuration.

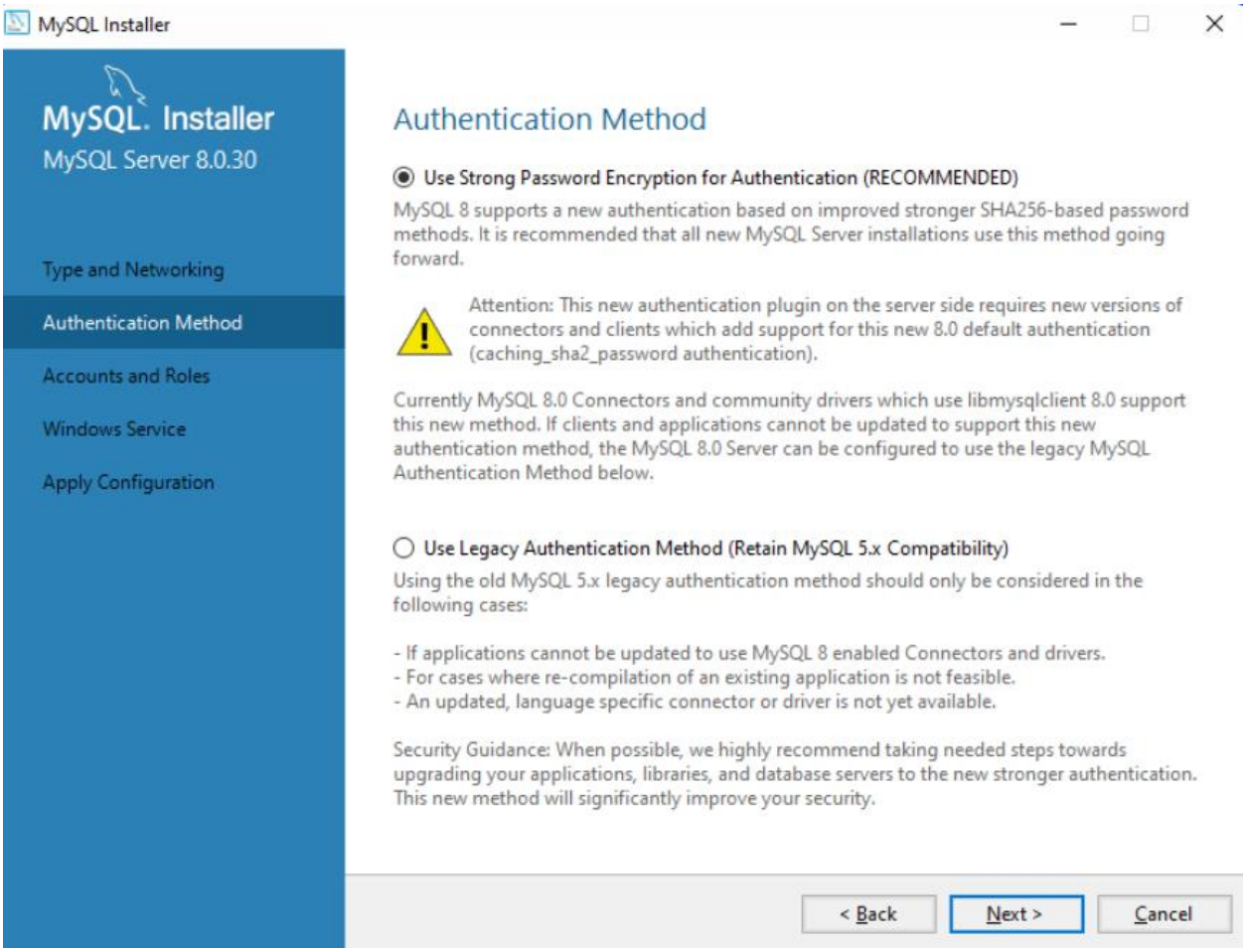

MySQL Installer
MySQL. Installer
Adding Community
Choosing a Setup Type
Installation
Product Configuration
Installation Complete
Product Configuration
We'll now walk through a configuration wizard for each of the following products.
You can cancel at any point if you wish to leave this wizard without configuring all the products.
Product
Status
MySQL Server 8.0.30
Ready to configure
MySQL Router 8.0.30
Ready to configure
Samples and Examples 8.0.30
Ready to configure
Next >
Cancel

Setting up MySQL Server configuration

We have already installed MySQL Server and need to customize its configuration. All the necessary default settings will already be set in the window that opens, so click "**Next**"

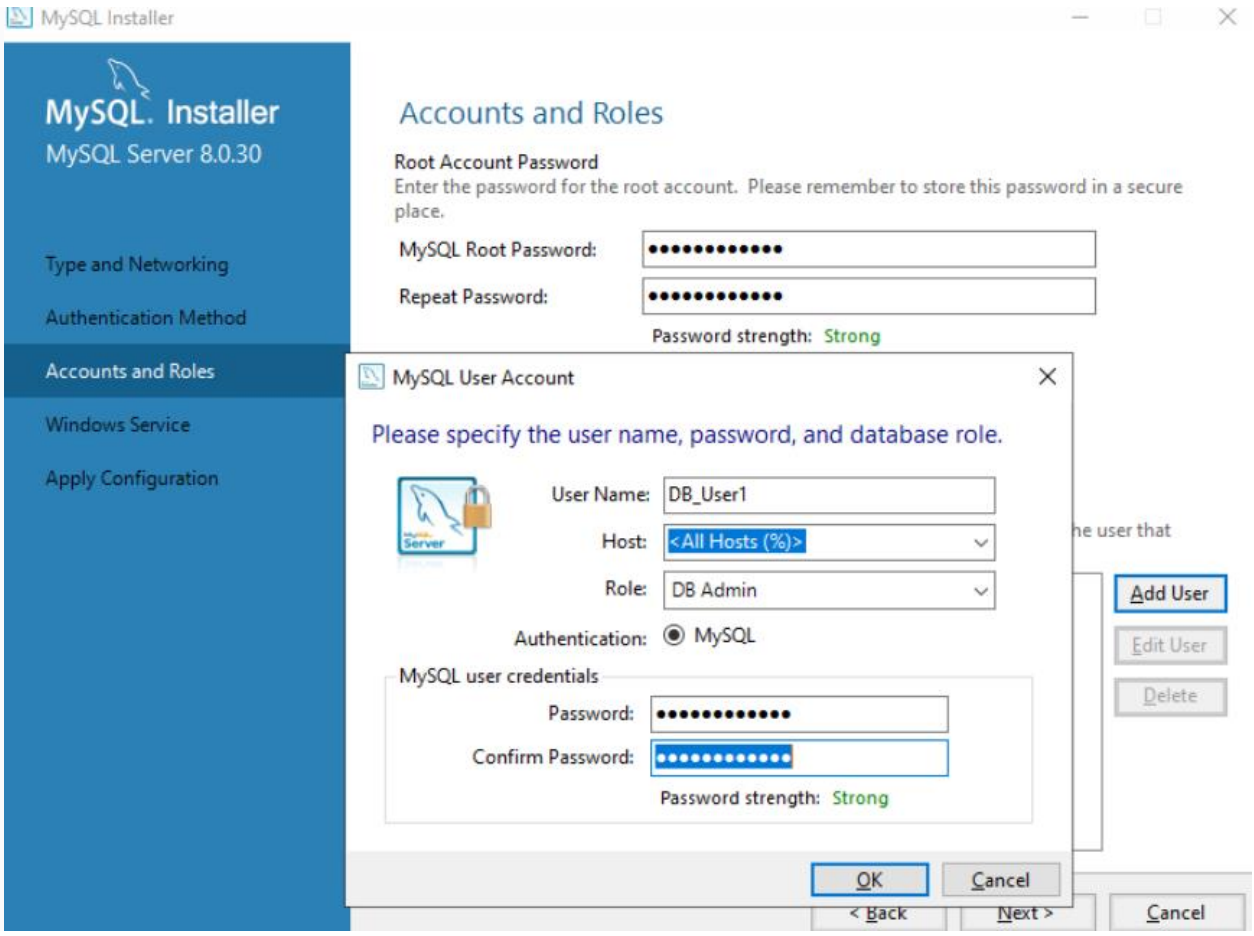


After that, you will need to choose the type of authentication. Let's leave the recommended one and proceed to the next step.



In the next window, set the root password. In addition, at this stage, you can add other users. To do this, click the "Add User" button and fill in the required fields:

- User Name
- Host, which is the host from which the user will be authorized.
- Role, which is the user's role for working with the database
- Password
- Confirm Password



Click "**OK**". It will create the user and set the password for the root user. Click "**Next**".

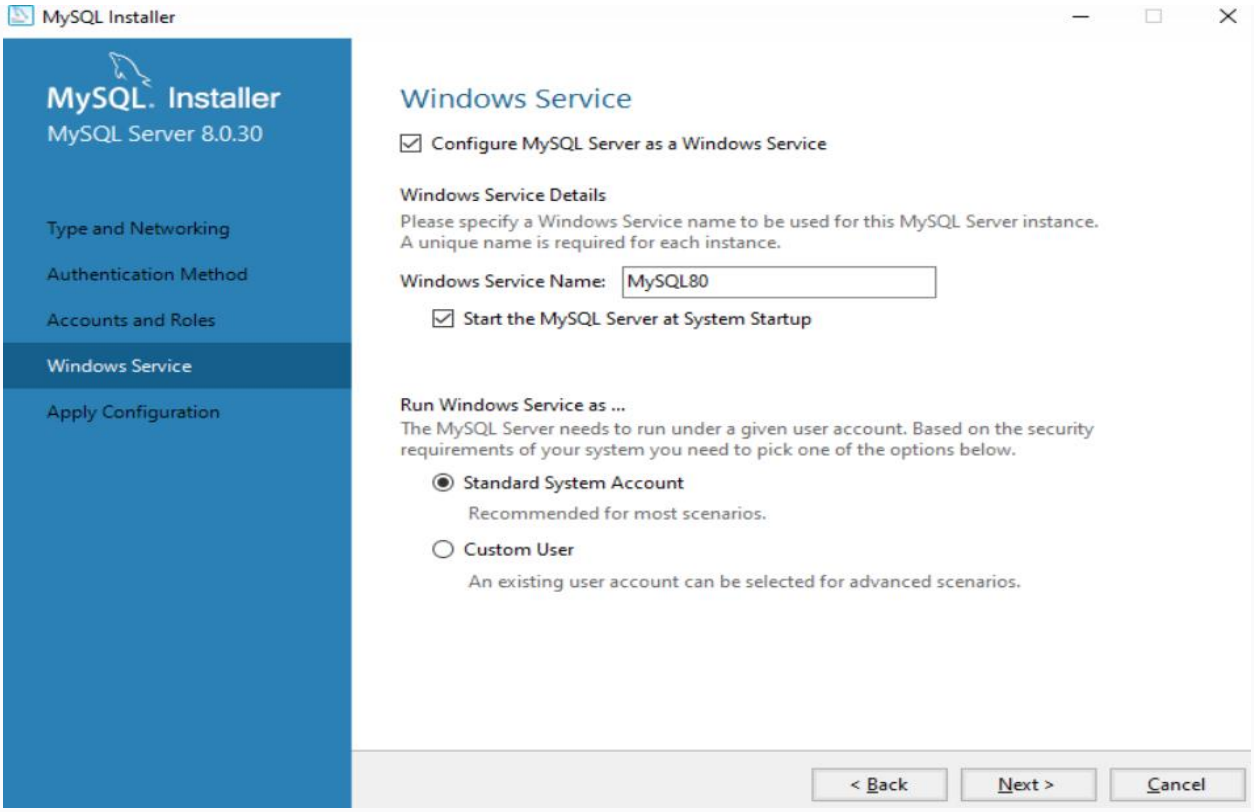
The installer will offer to run MySQL Server as a Windows service. If you uncheck this option, you'll have to launch it from the command line.

You can either leave the suggested name of the Windows service or change it to a different one.

The next checkbox is responsible for launching the service and the server at the same time.

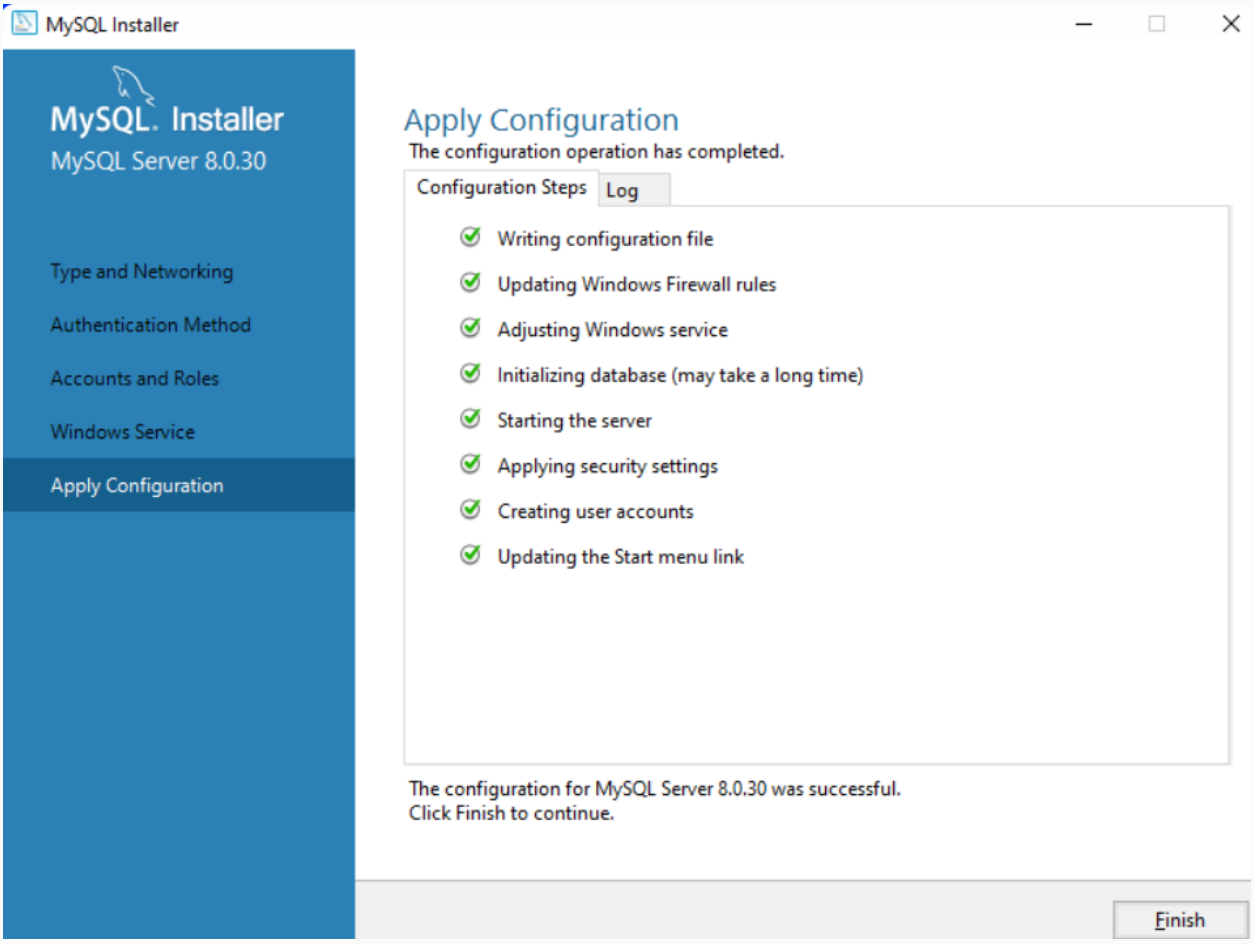
In the Run Windows Service block select the account that will run the service. We will not make any changes here and choose the option offered by the installer.

Let's move on to the next step.



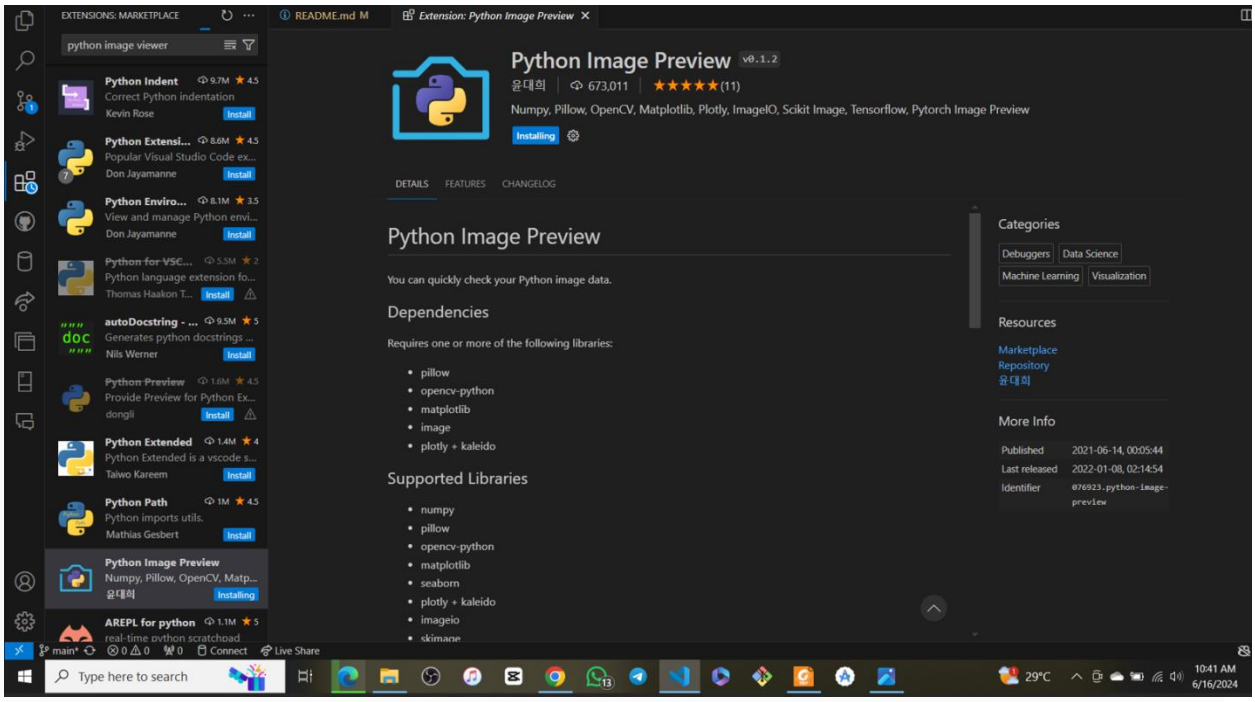
You need to apply the updated configuration parameters. To do this, press the "**Execute**" button.

As soon as all green ticks next to the items are checked, click "**Finish**".

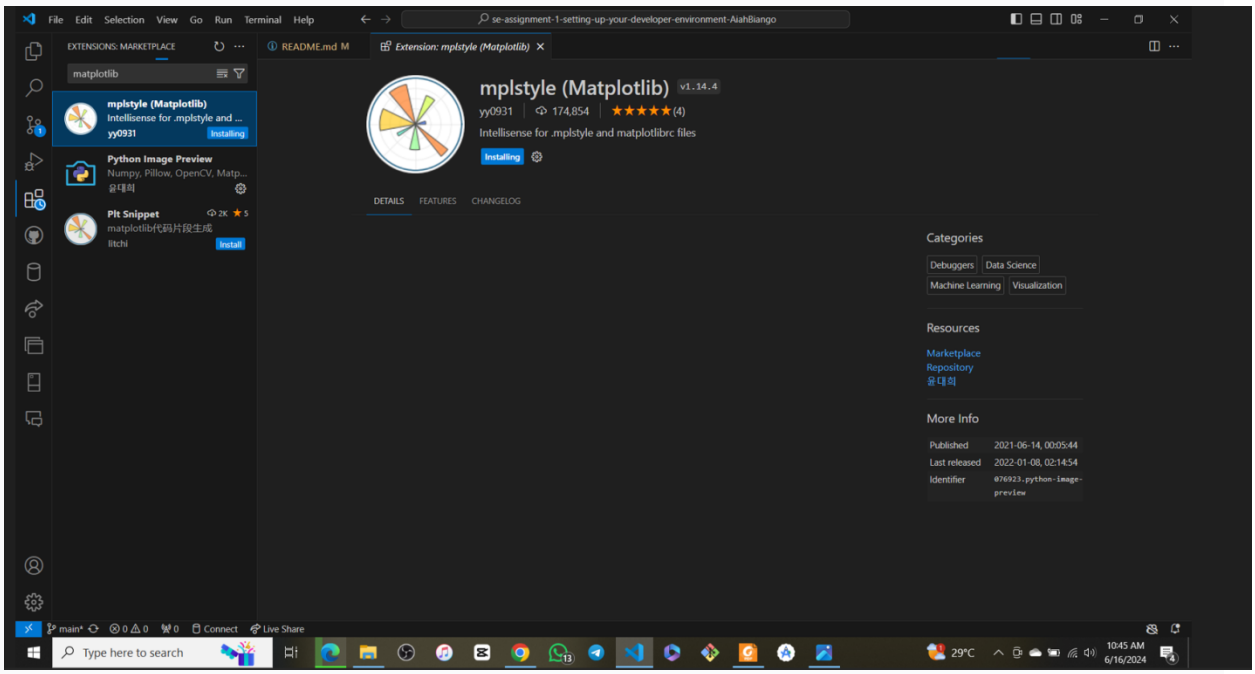


Q7. Set Up Development Environments and Virtualization (Optional):
Consider using virtualization tools like Docker or virtual machines to isolate project dependencies and ensure consistent environments across different machines.

Q8.ANS: Extensions such as mplstyle (Matplotlib), Python Image Preview, Django-intellisense, Syntax Highlighter were successfully install to VS Code.



Python Image Preview extension successfully installed in VS Code



Mplstyle (Matplotlib) also installed as an extension in VS Code.