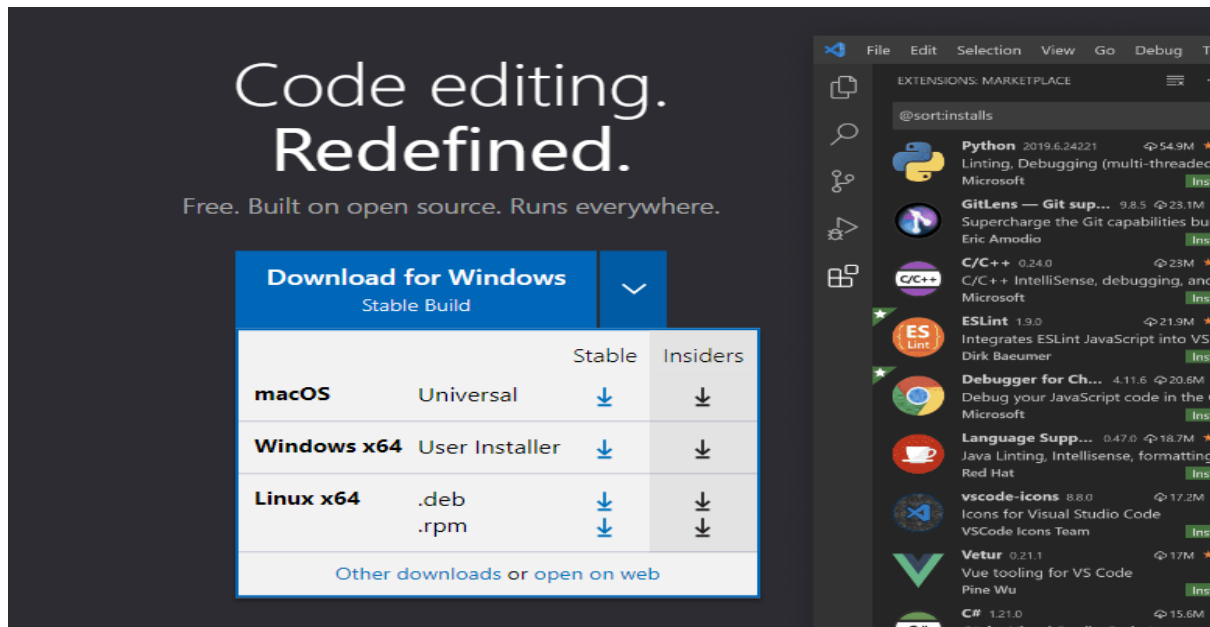
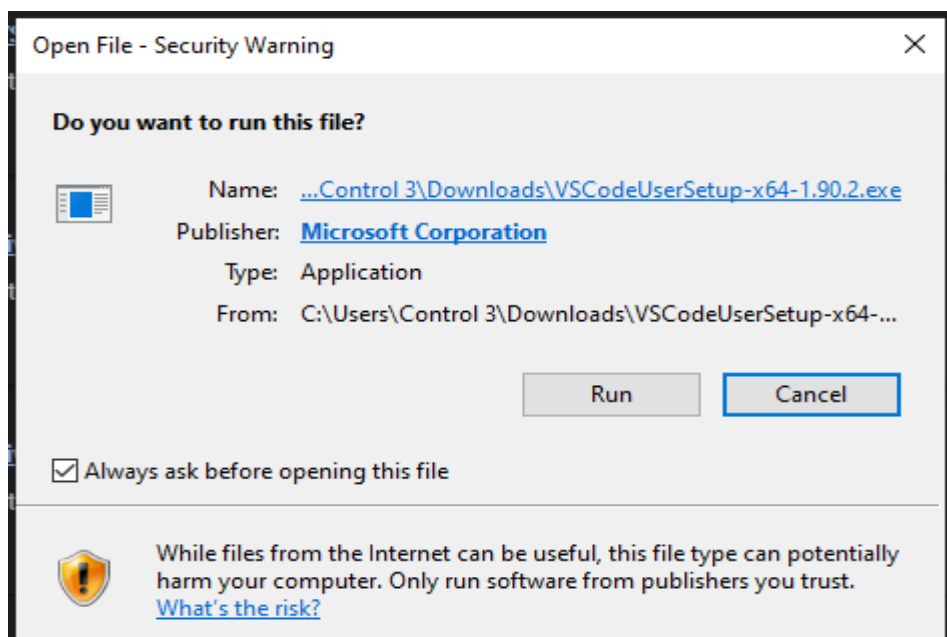


## 1. Visual Studio Code Installation.

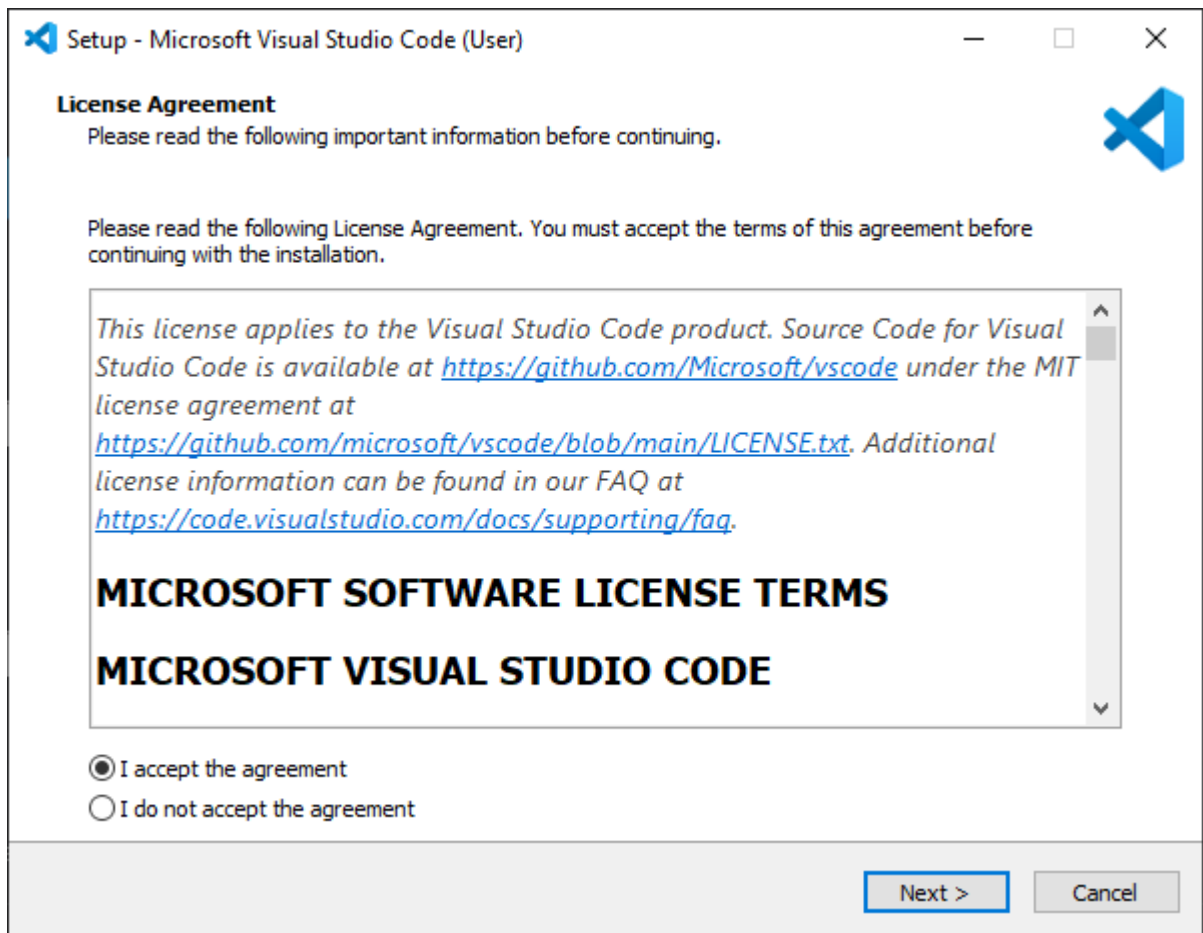
- What is Visual Studio Code? Visual studio code is a code editor redefined and optimized for building and debugging modern web and cloud applications. Below is a step by step guideline on how to install visual studio code.
- i) Open your browser on your PC and type this url: <https://code.visualstudio.com/> click on download and select your referred operating system. And wait until its done downloading.



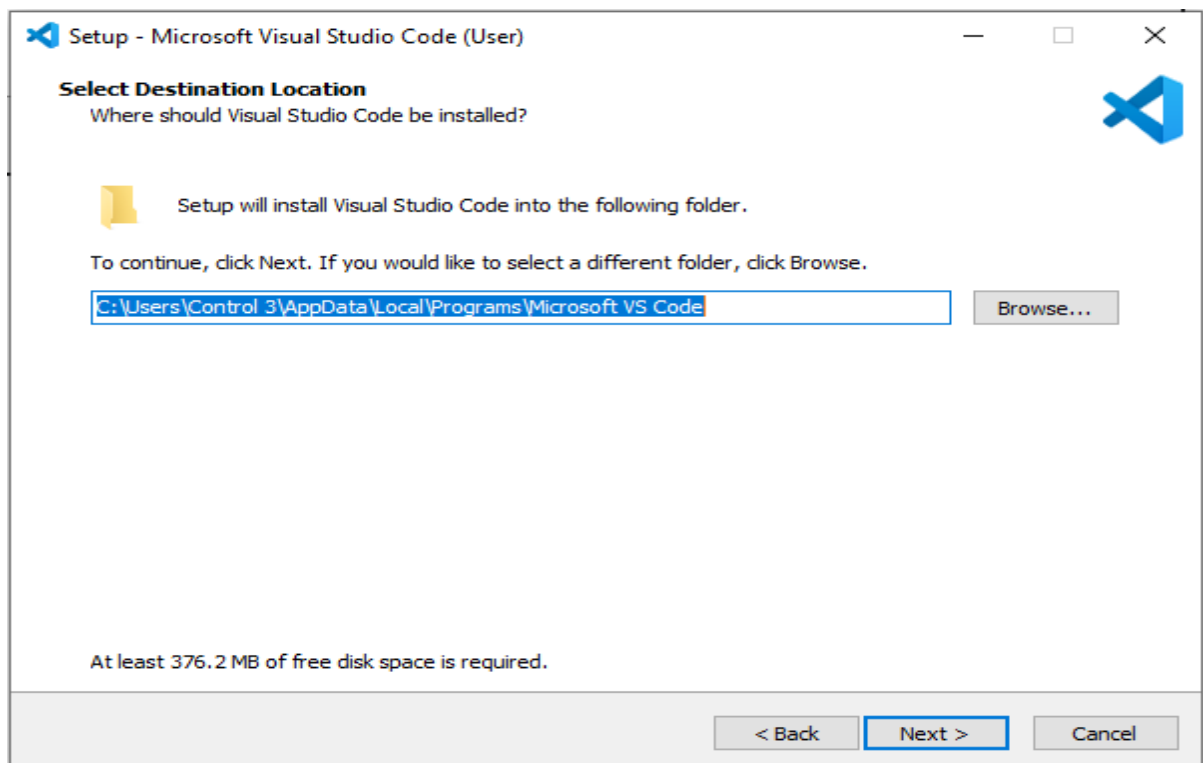
- ii) Once downloaded, double click on the downloaded file to initiate the setup. Click on Run.



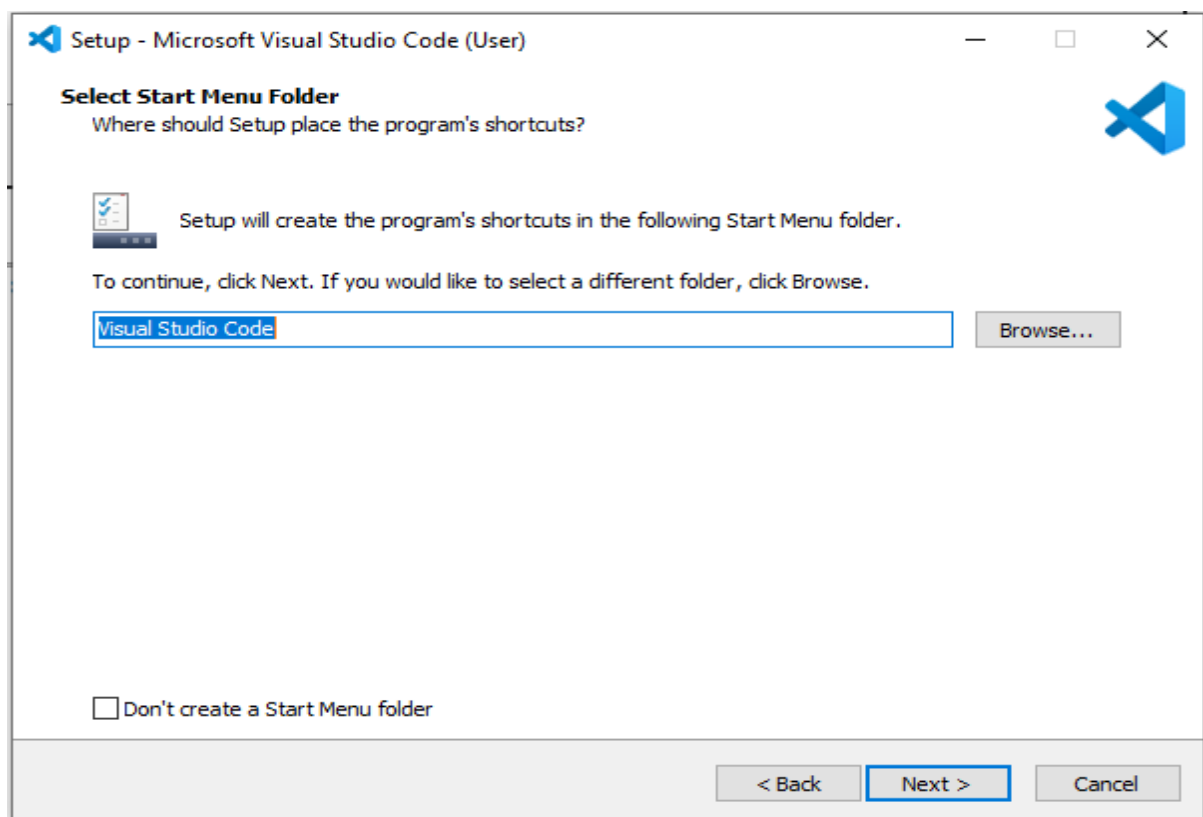
- iii) Accept license agreement and click next.



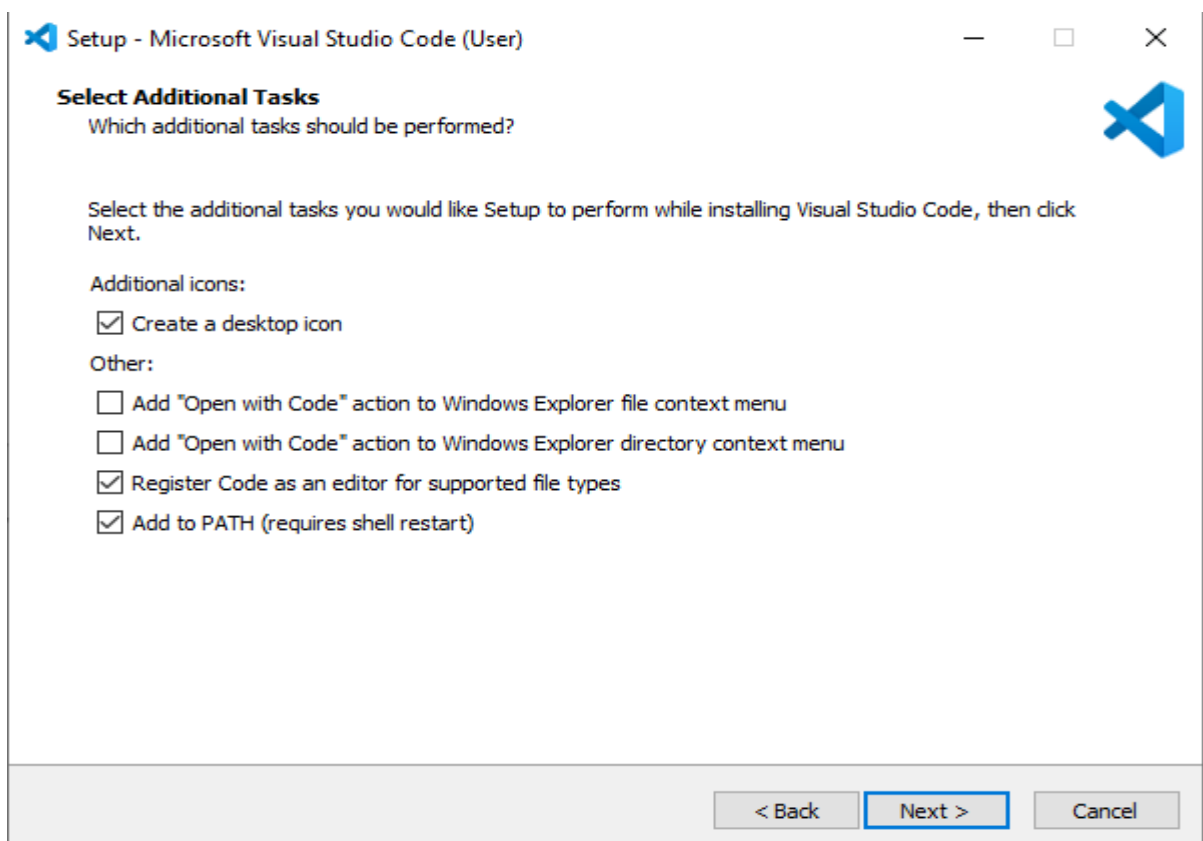
- iv) Let the installation locations be by default and click next.



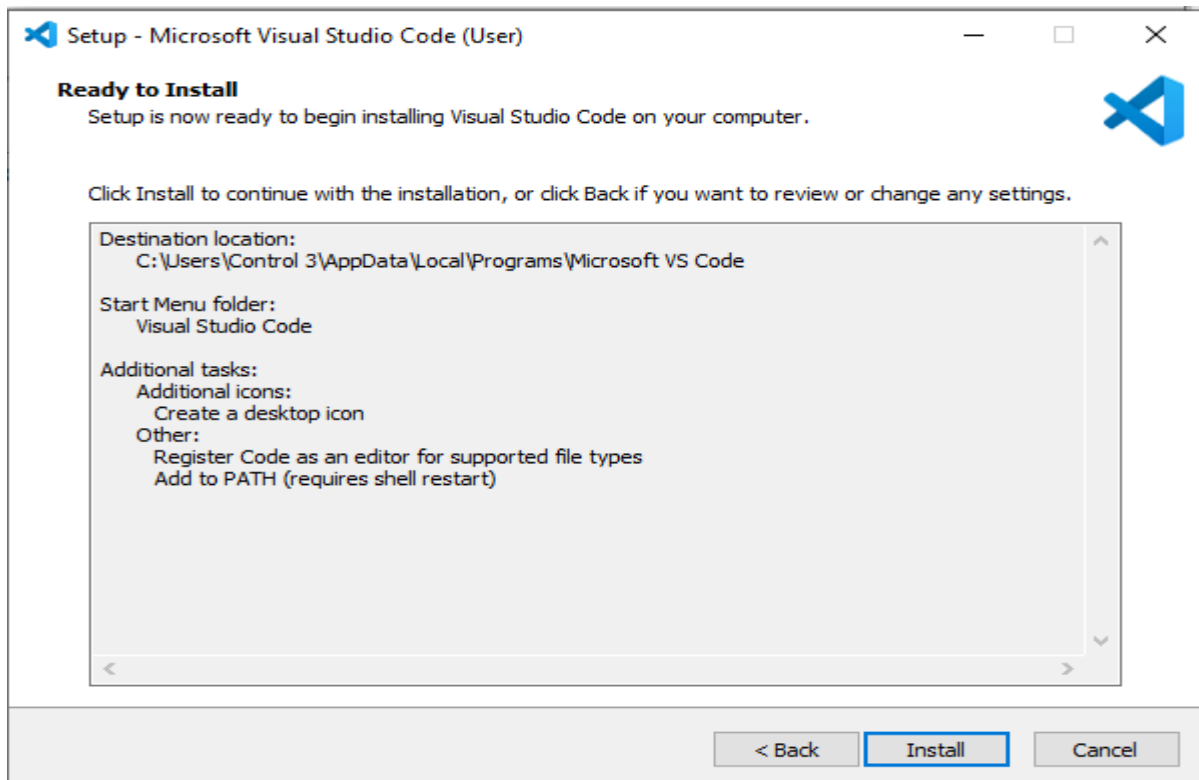
- v) Let the start menu be as default and click next.



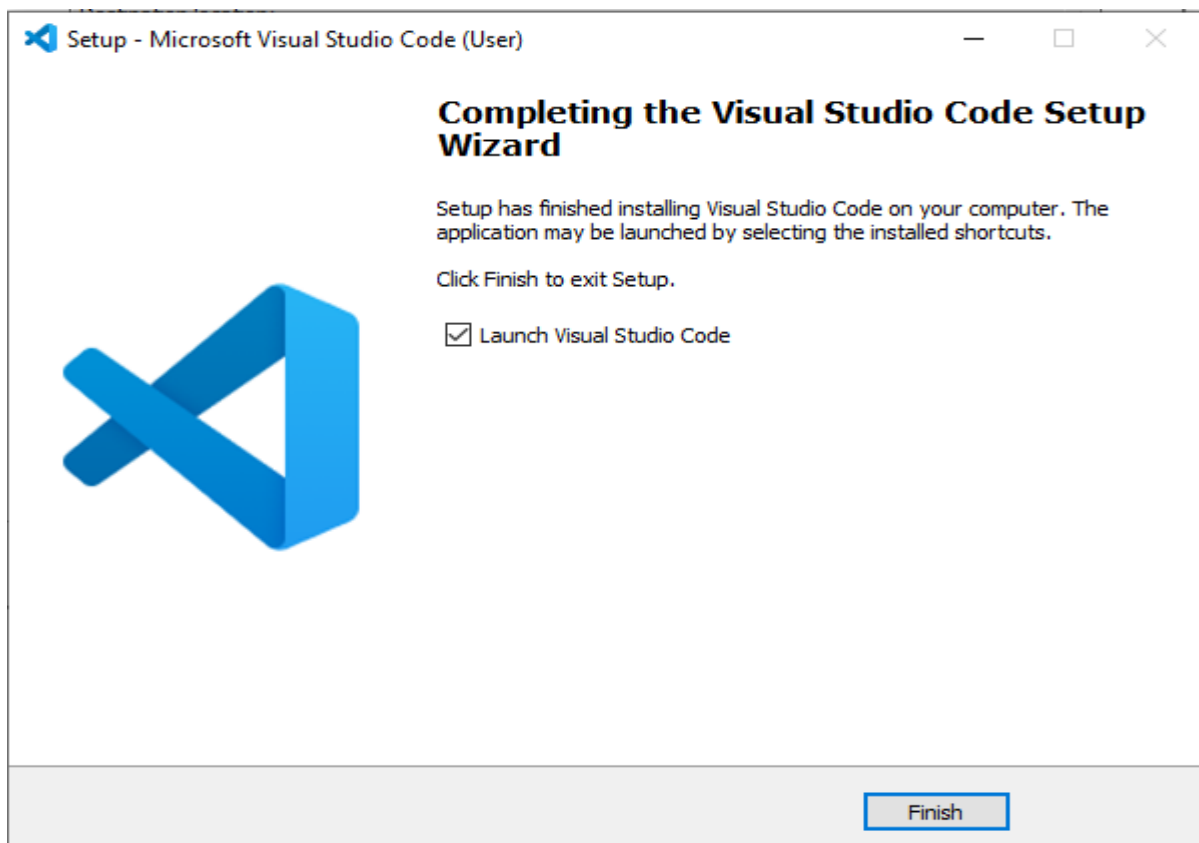
- vi) Click on create a desktop icon and click next.



vii) Click on Install.



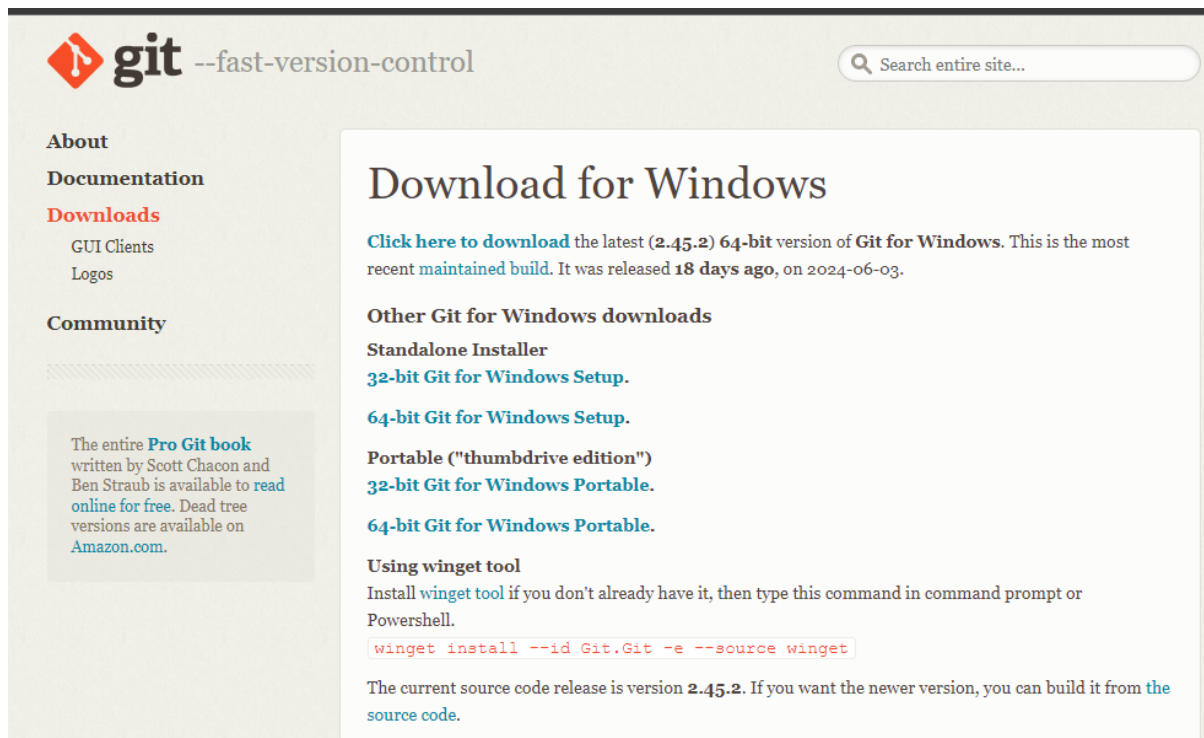
viii) Wait for the installation process to complete and click finish.



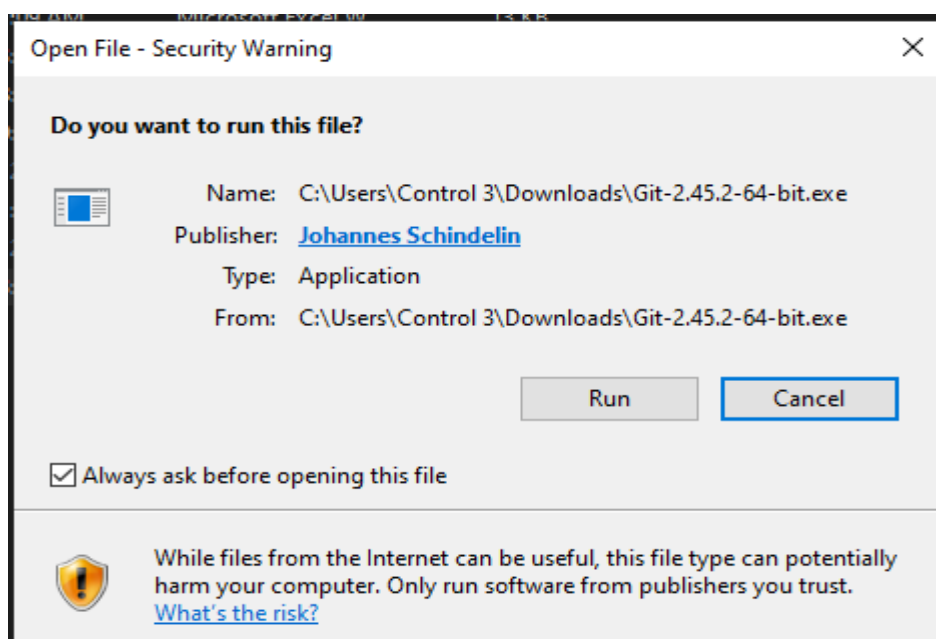
## 2. Git

What is Git.? Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency. Below is a step by step procedure on how to install Git in you PC.

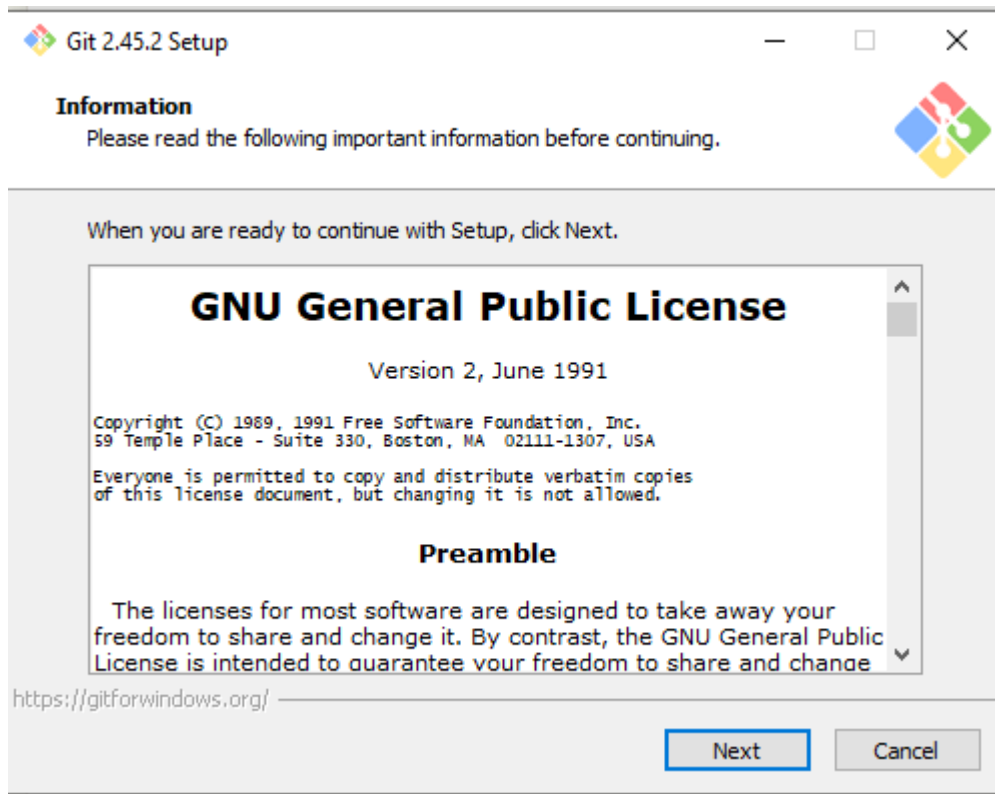
- i) Open your web browser on your machine and enter this url: <https://www.git-scm.com/>. And click download for windows and download your preferred operating system version.



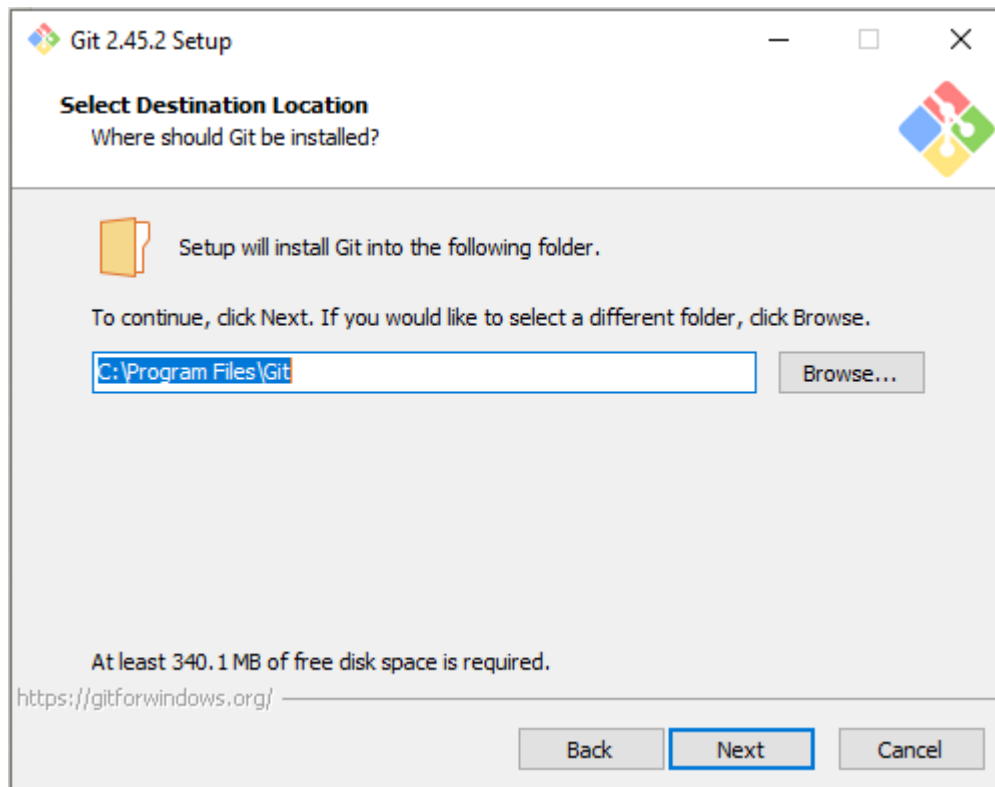
- ii) Double click on the download file to initialize the setup. Click on run.



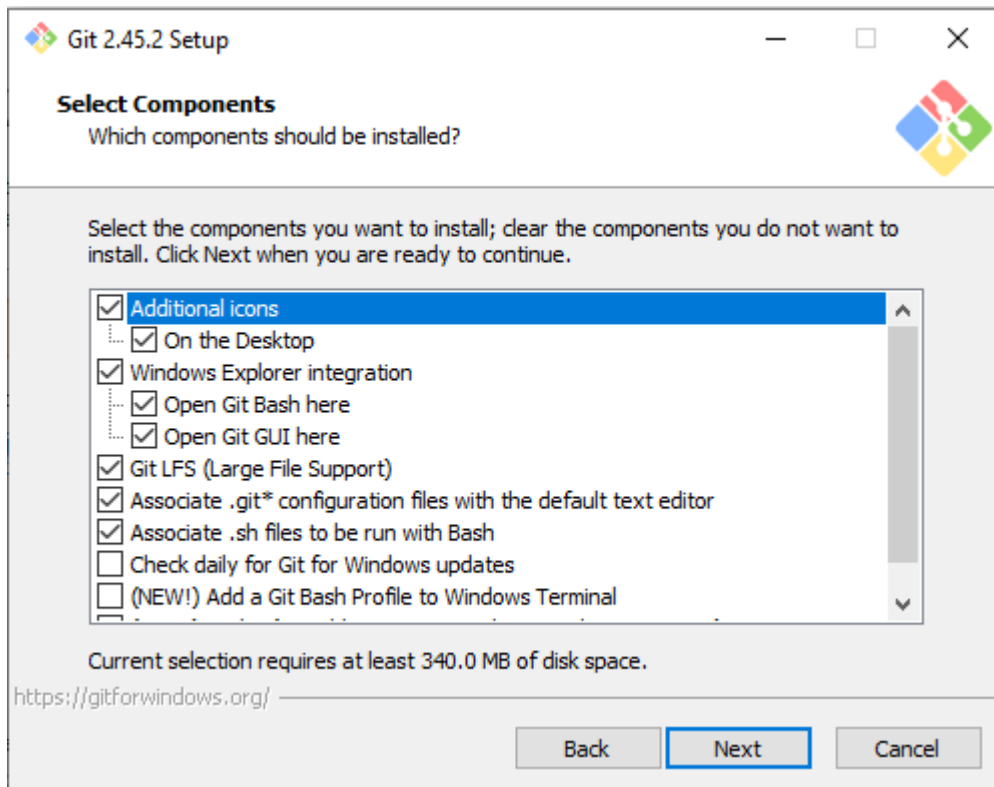
- iii) Read through the terms and conditions then click next.



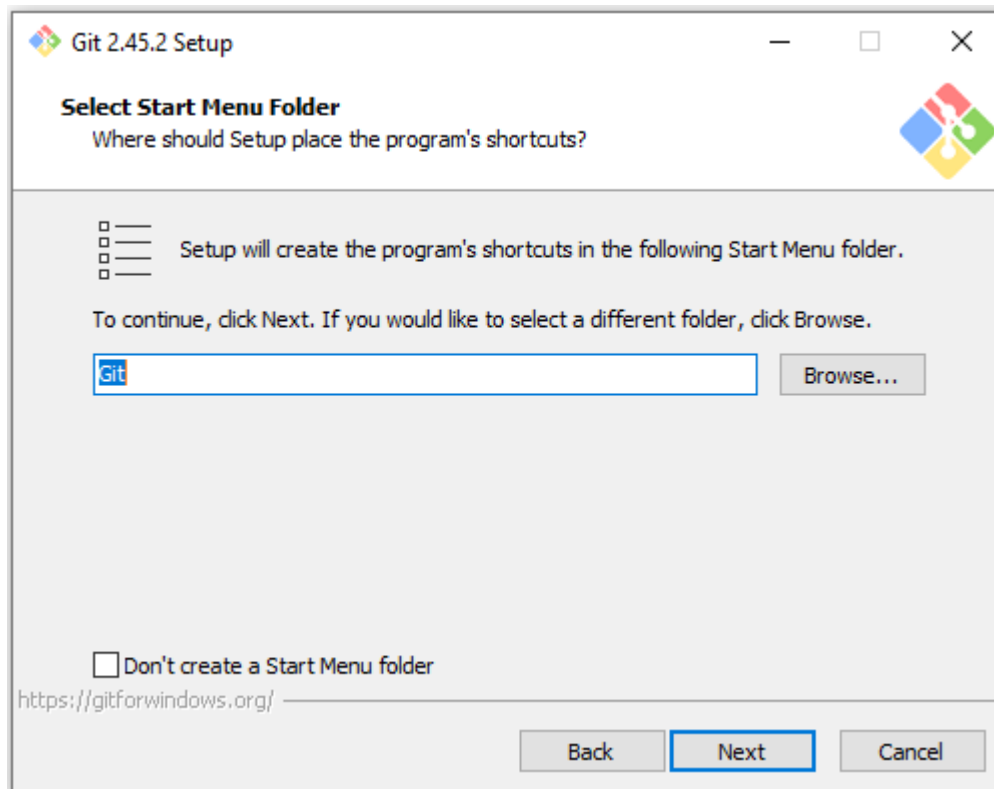
- iv) Let the destination location be a s default then click next.



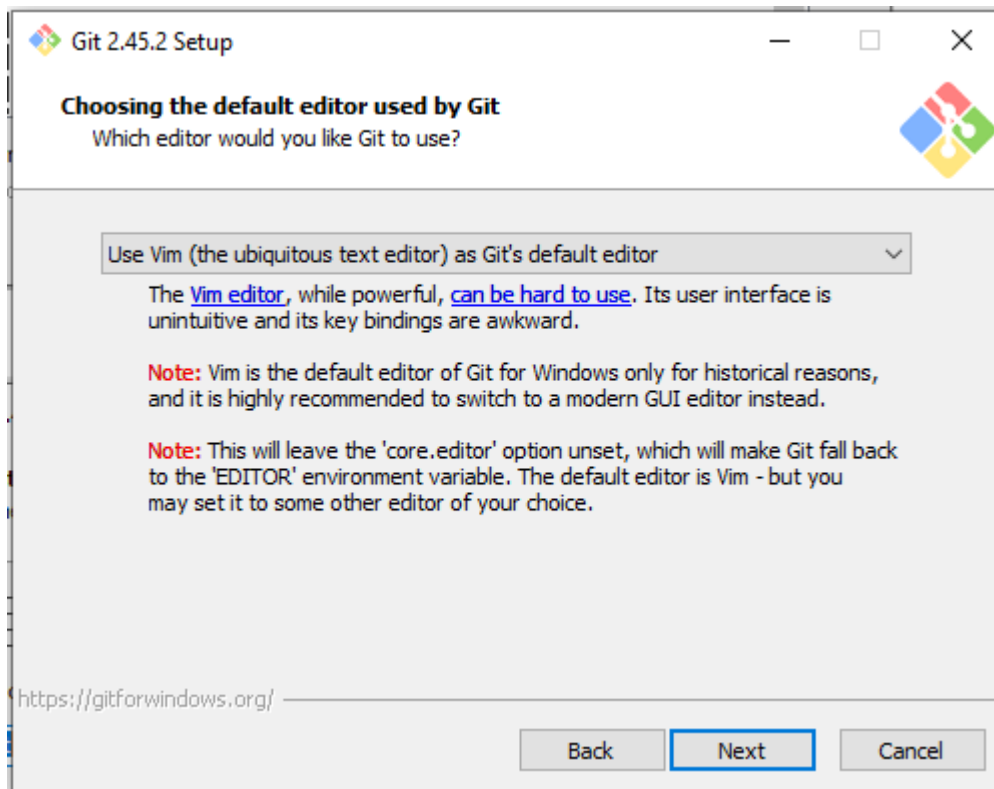
v) Tick the checkbox additional icons then click next.



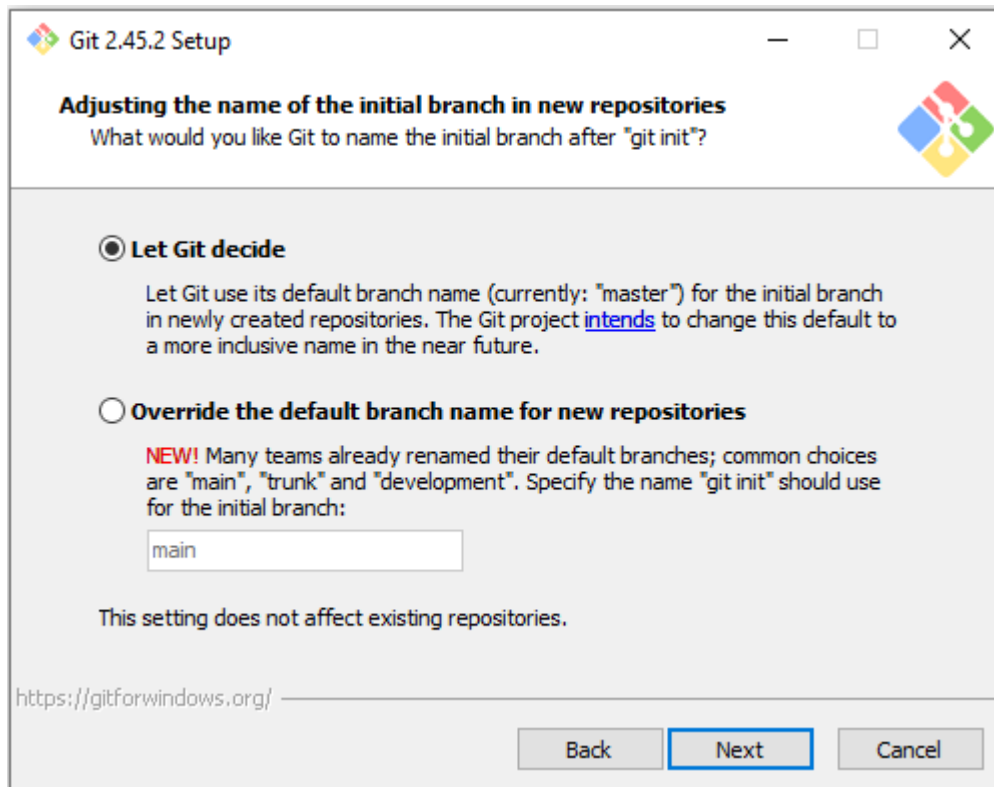
vi) Click next



vii) Click next

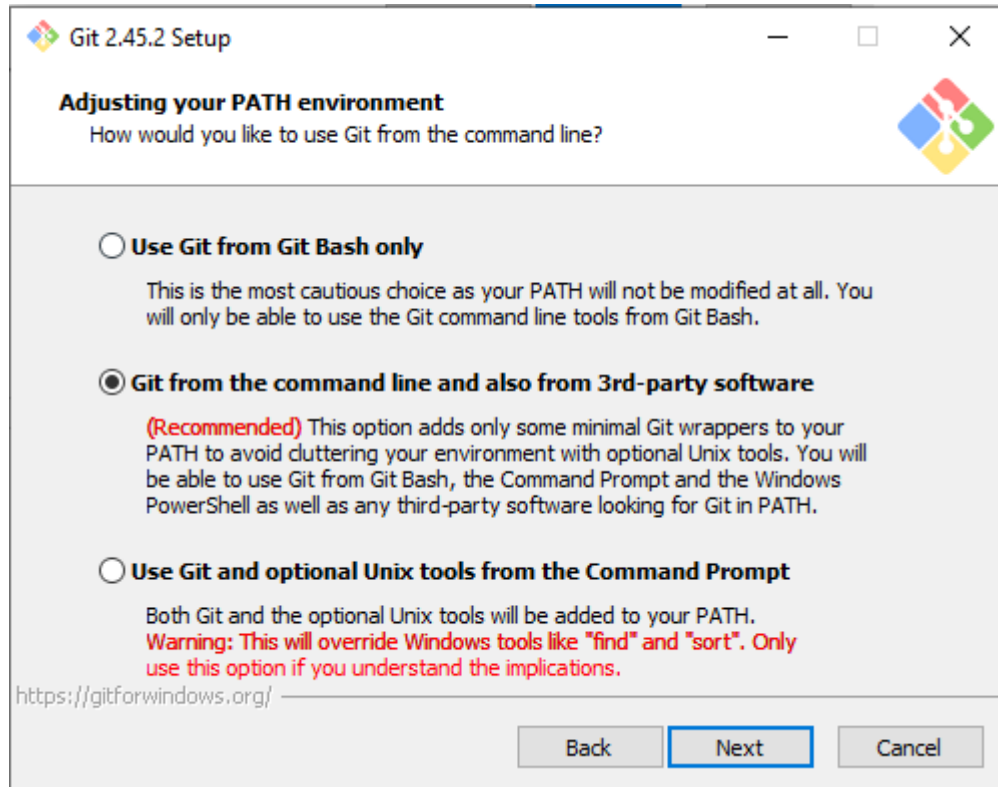


viii) Click next.

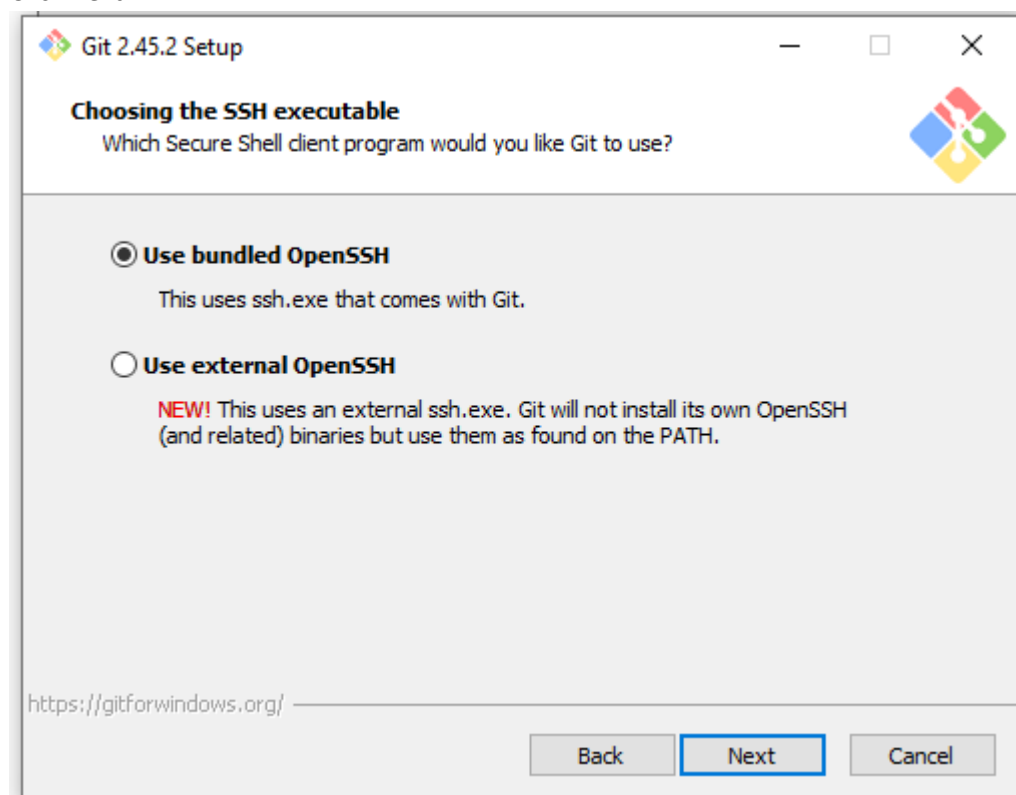




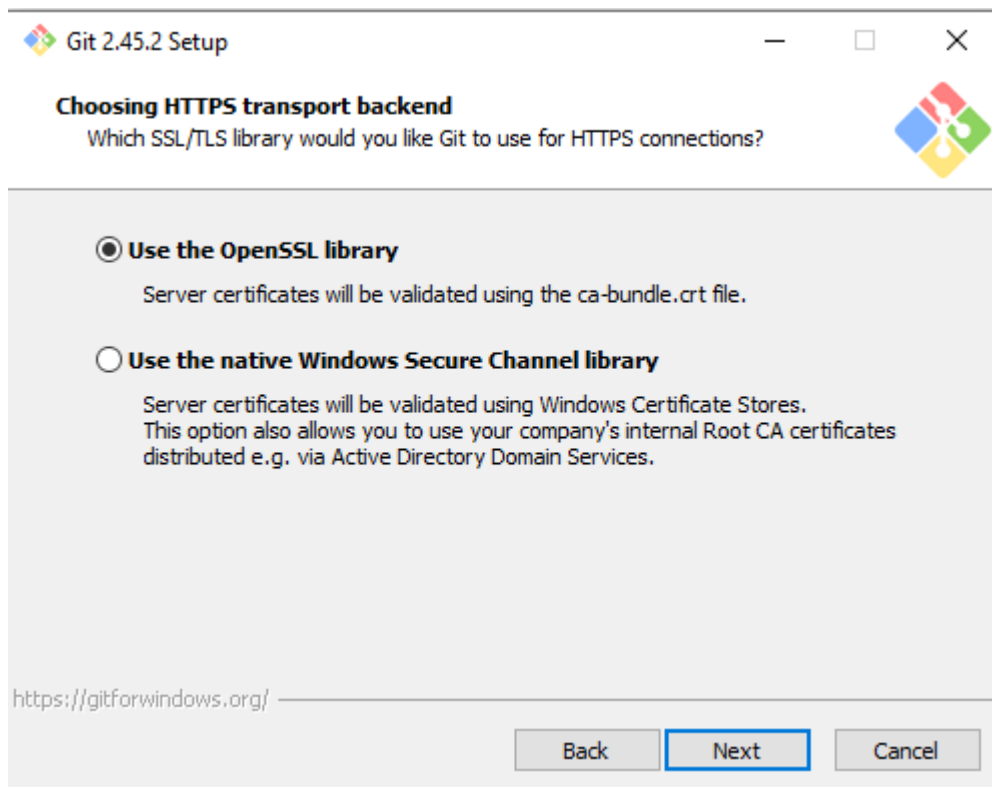
ix) Click next



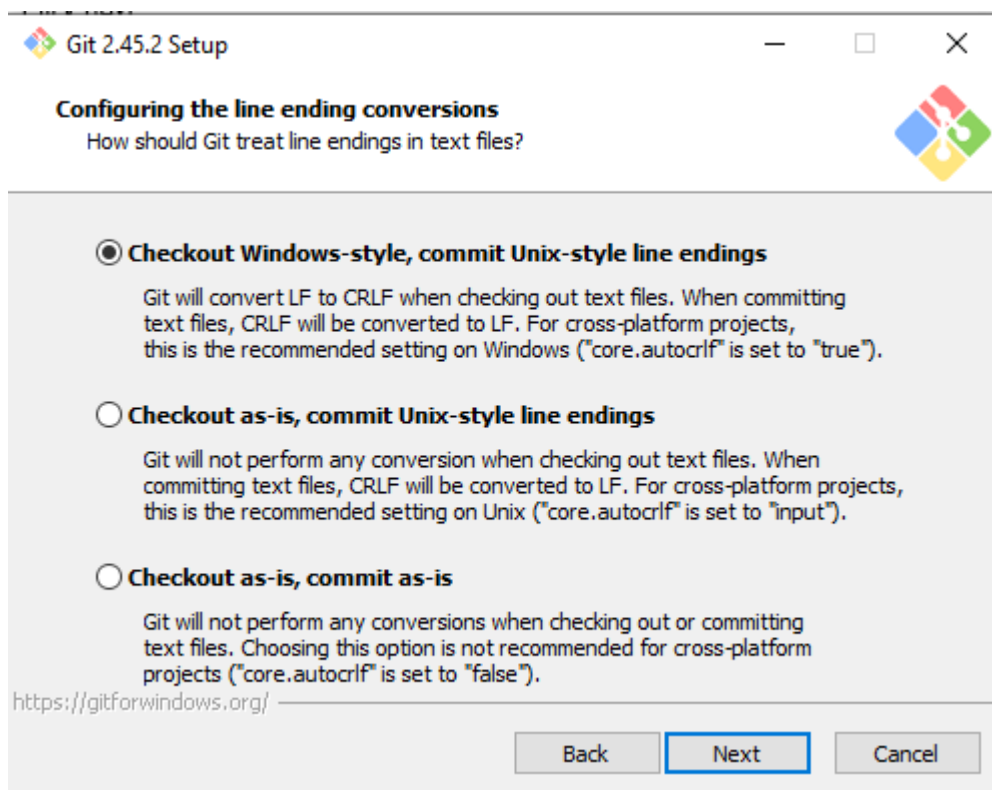
x) Click next



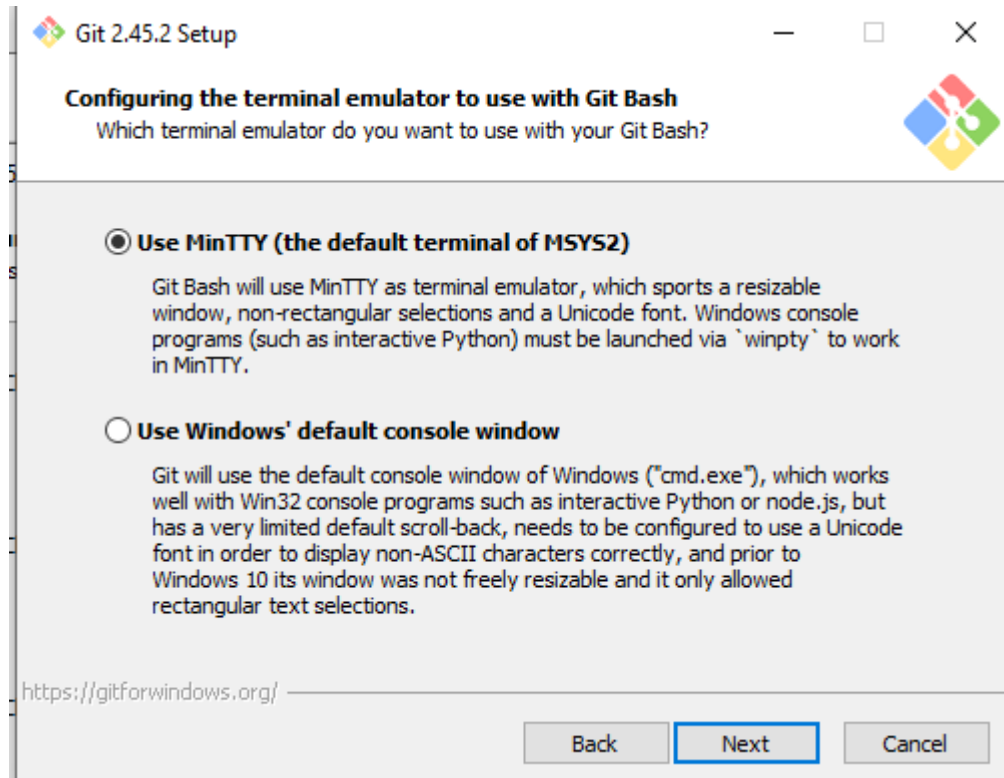
xi) Click next



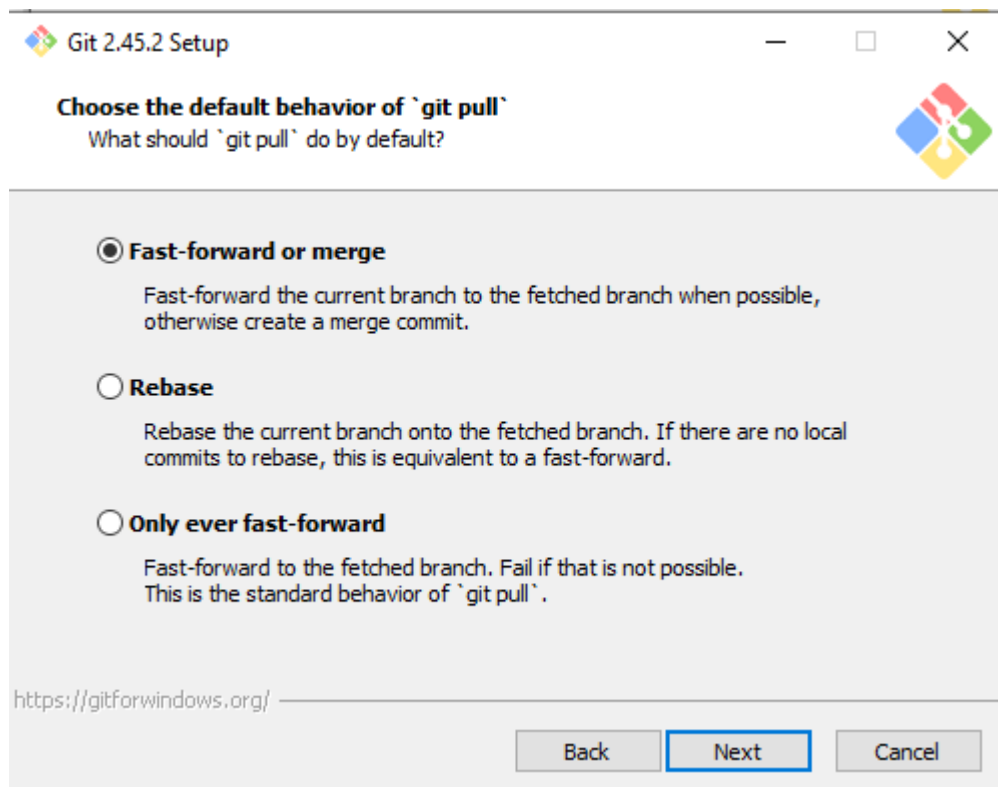
xii) Click next



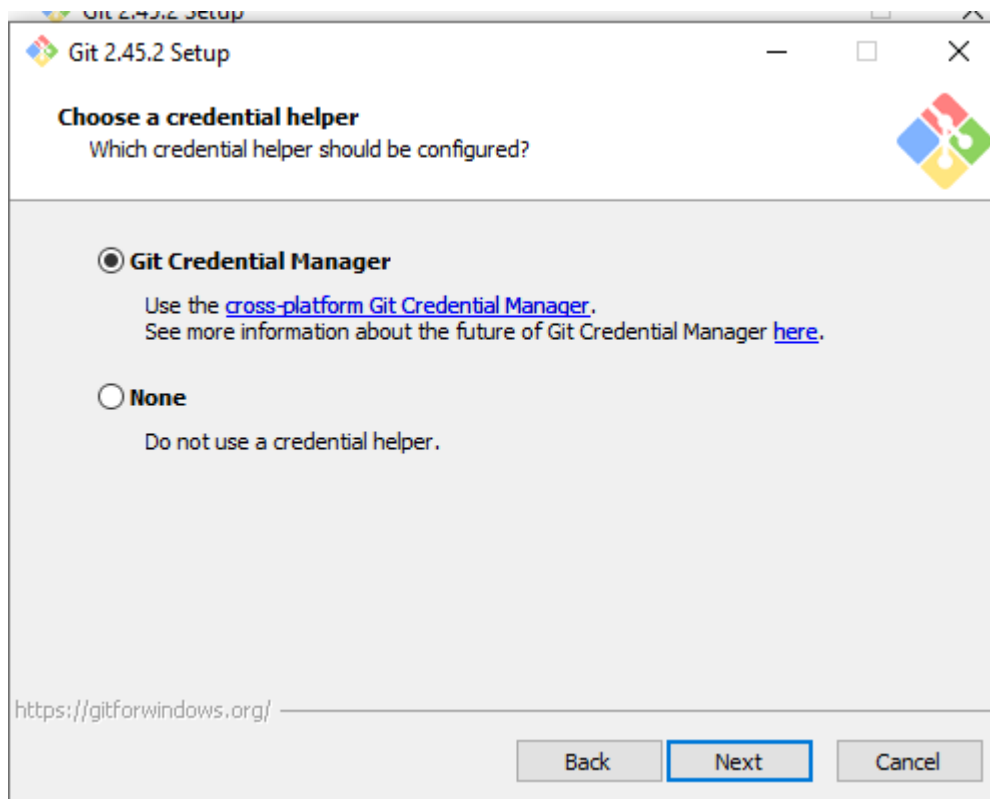
xiii) Click next



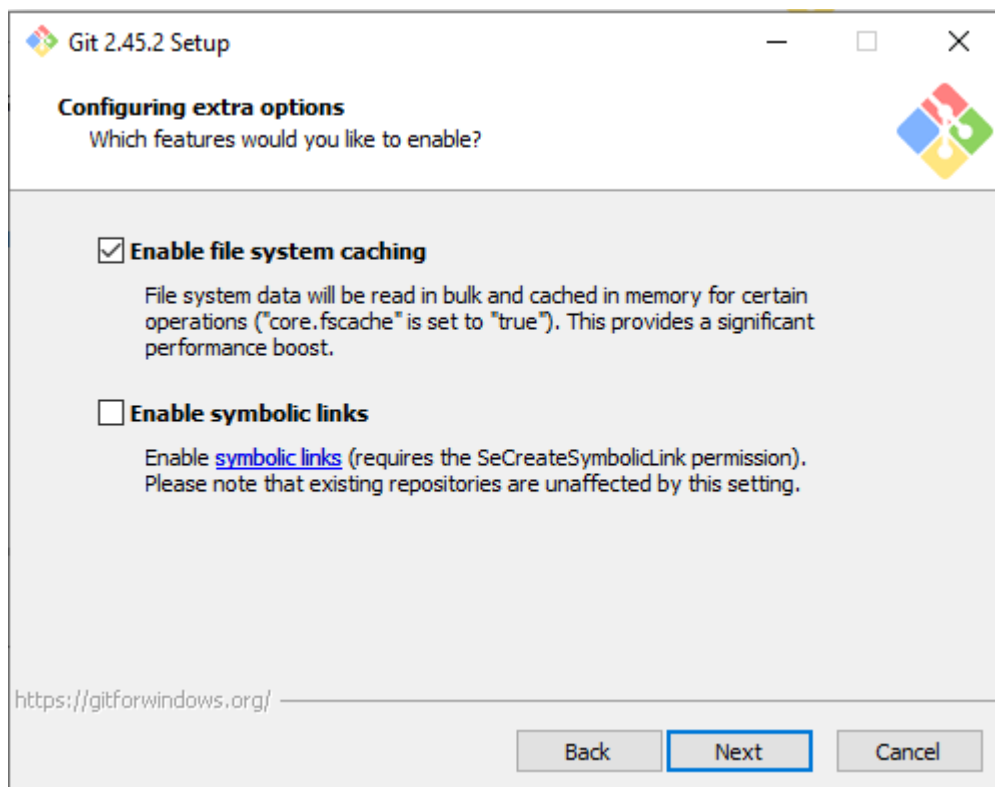
xiv) Click next



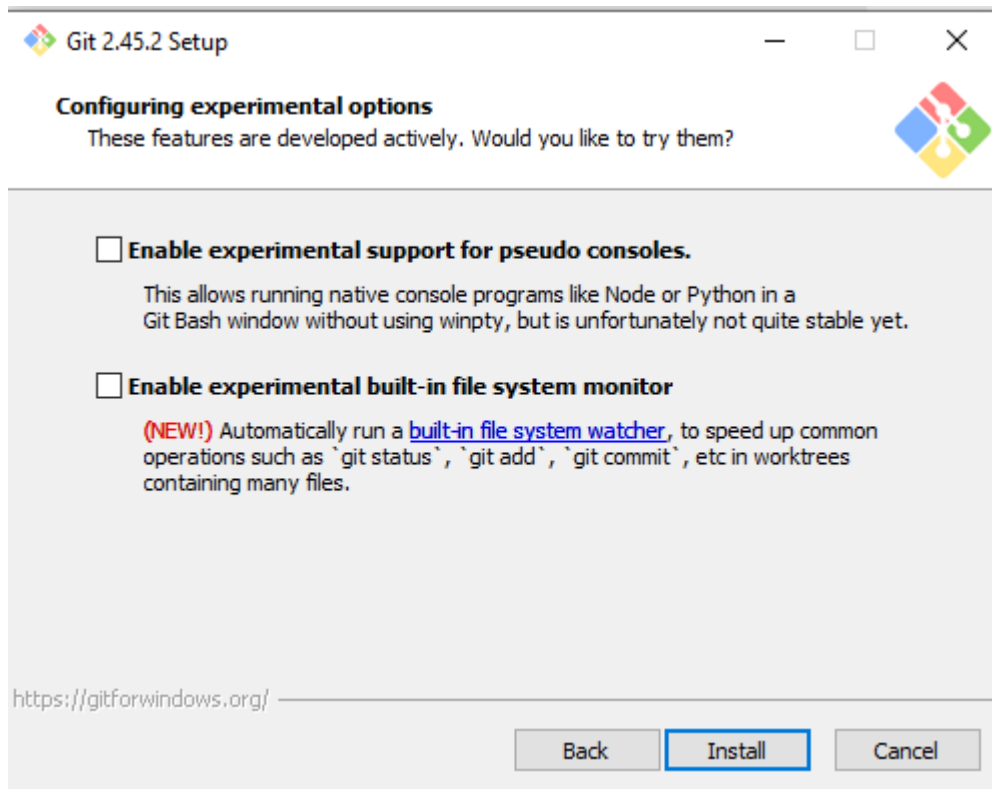
xv) Click next



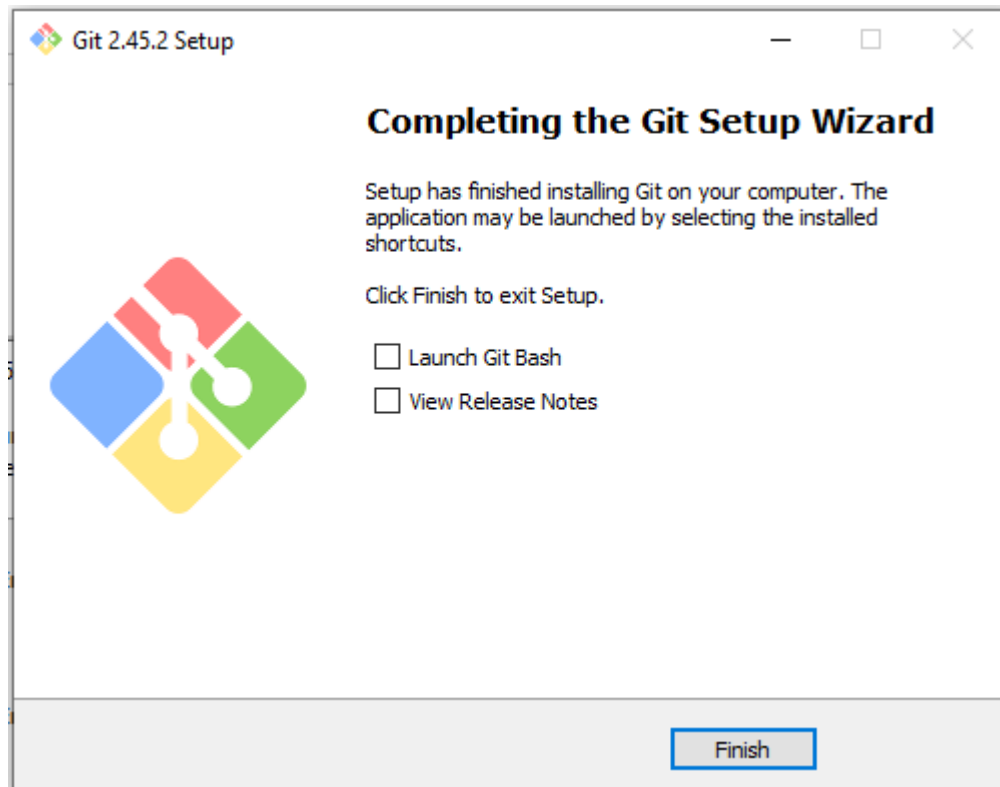
xvi) Click next



xvii) Click on install



xviii) Wait for setup to finish installing and click finish.



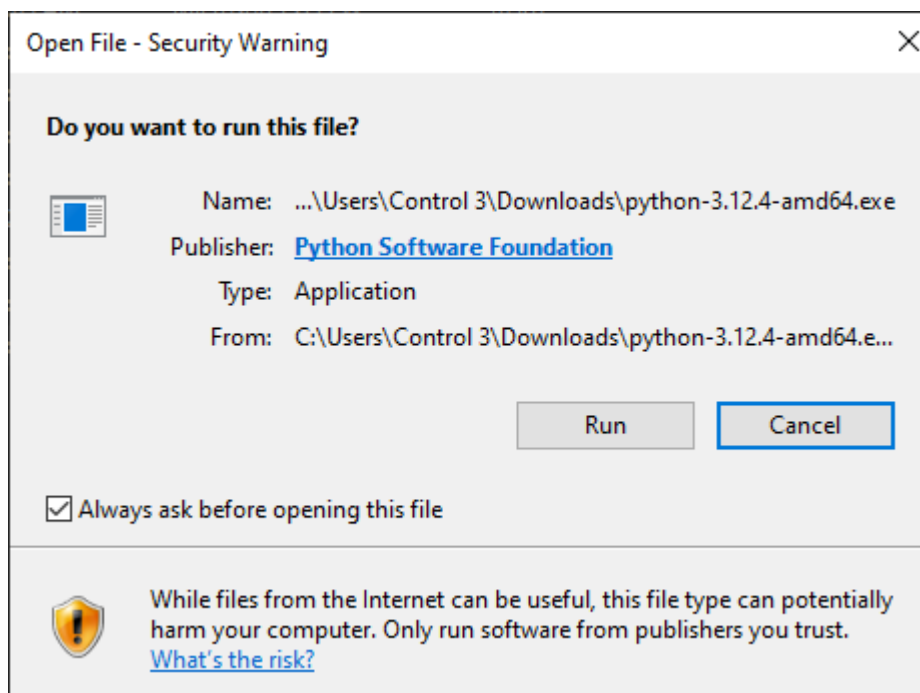
### 3. Python

What is python? Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. Its high-level built in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together. Below is a step by step guide on python installation.

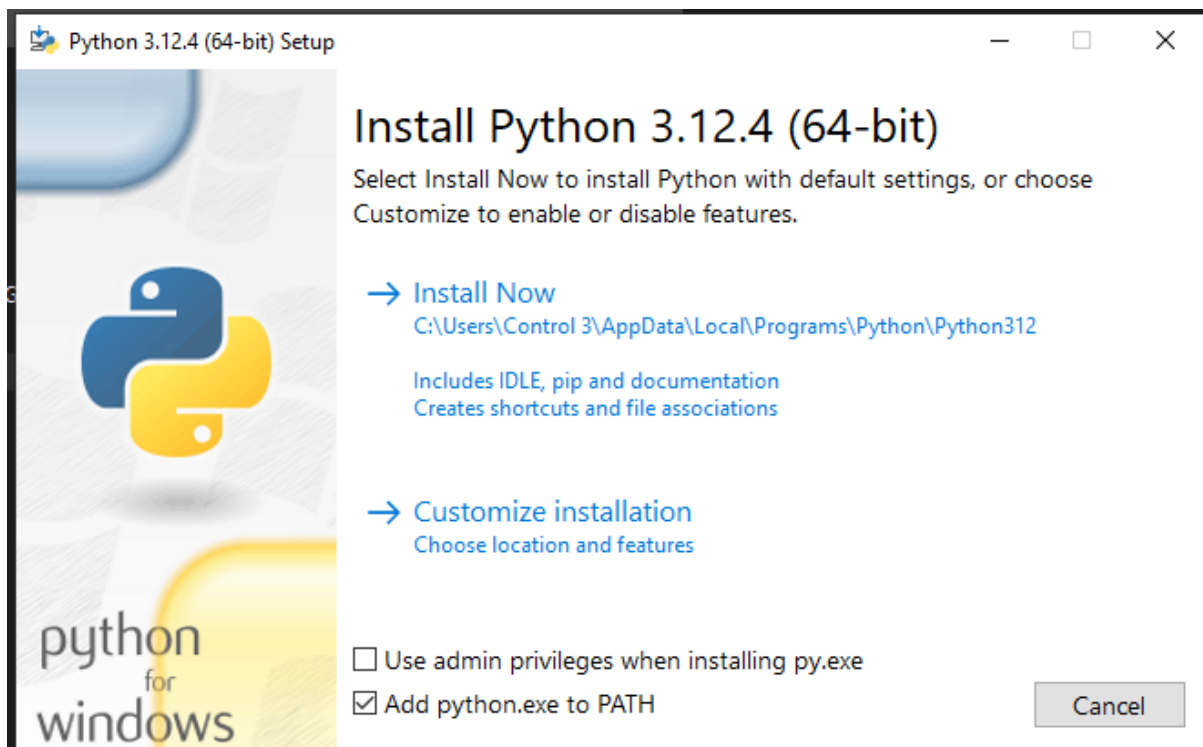
- i) Open your web browser and key in this url: <https://www.python.org/downloads/>  
And click on download.



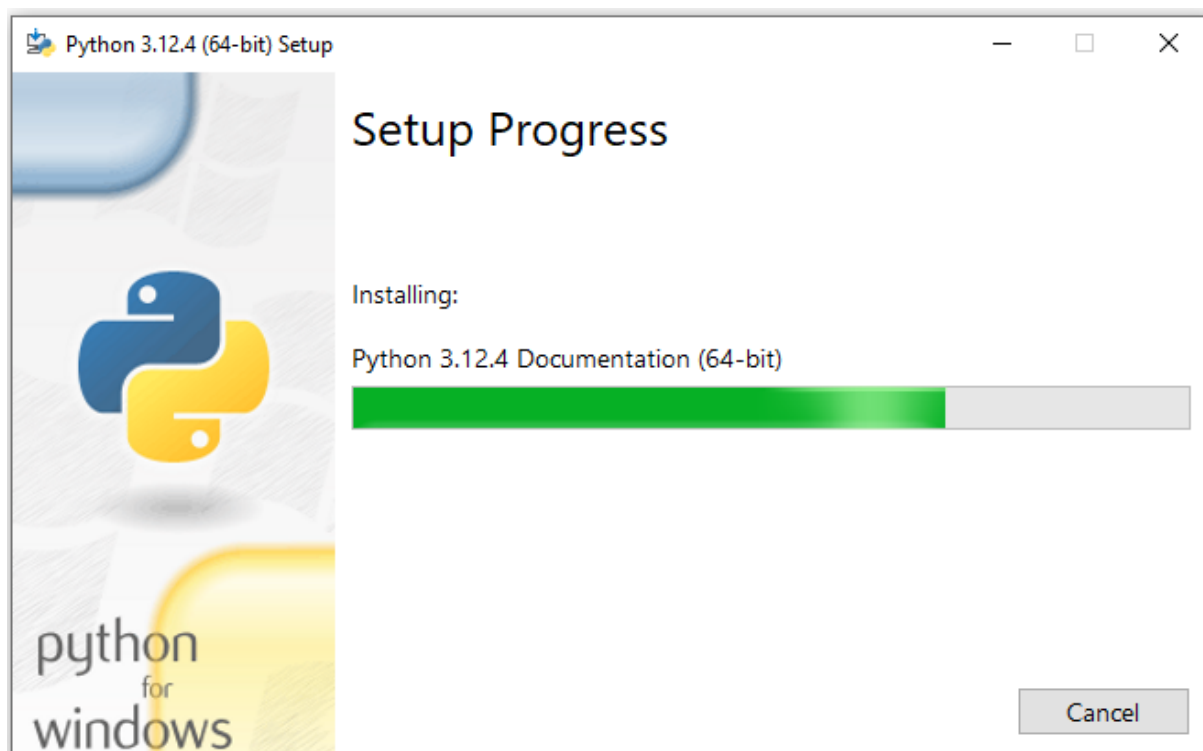
- ii) Double click on the downloaded file. And click on run.



- iii) Check the box "Add python.exe to PATH then click install now.



iv) Wait for the setup process to complete.

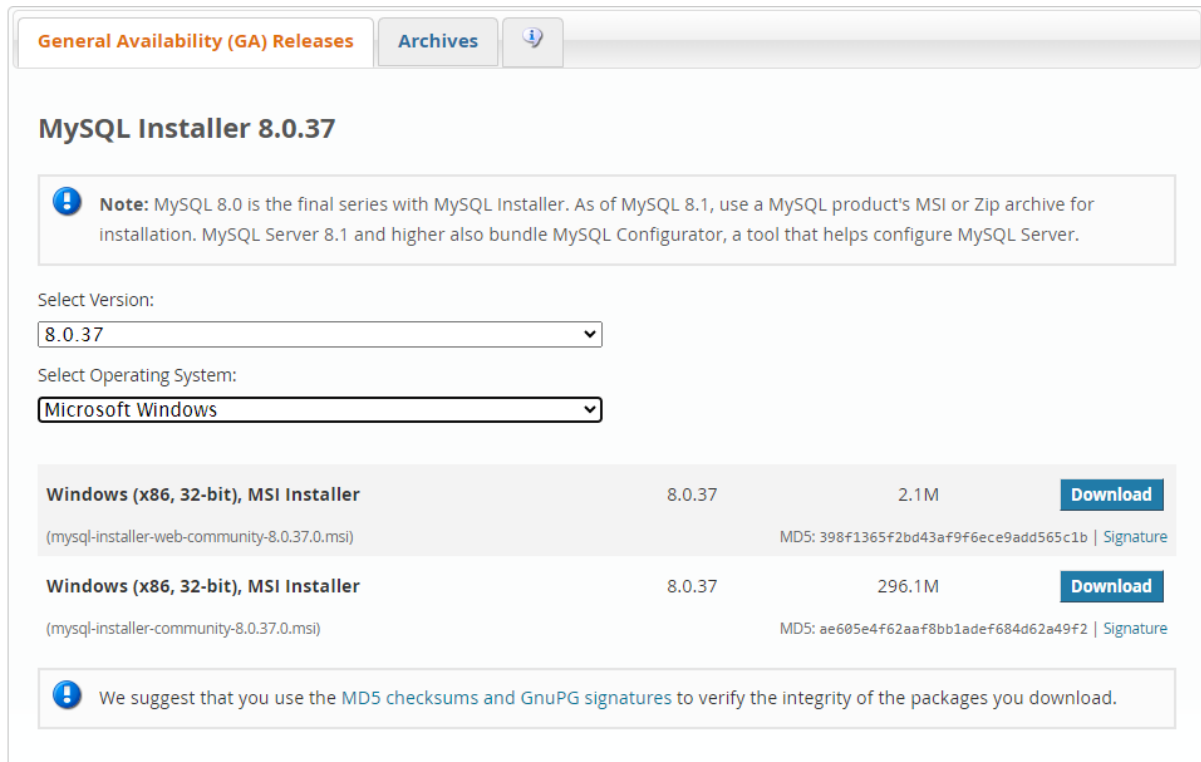


v) Once installation process is complete click on close.

#### 4. MySQL

What is MySQL? is a relational database management system. A relational database stores data in separate tables rather than putting all the data in one big storeroom. The database structure is organized into physical files optimized for speed. Below is a guide on MySQL installation.

- i) Open your web browser and type in this url:  
<https://dev.mysql.com/downloads/installer/> and select download.



**General Availability (GA) Releases** | Archives | ?

### MySQL Installer 8.0.37

**Note:** MySQL 8.0 is the final series with MySQL Installer. As of MySQL 8.1, use a MySQL product's MSI or Zip archive for installation. MySQL Server 8.1 and higher also bundle MySQL Configurator, a tool that helps configure MySQL Server.

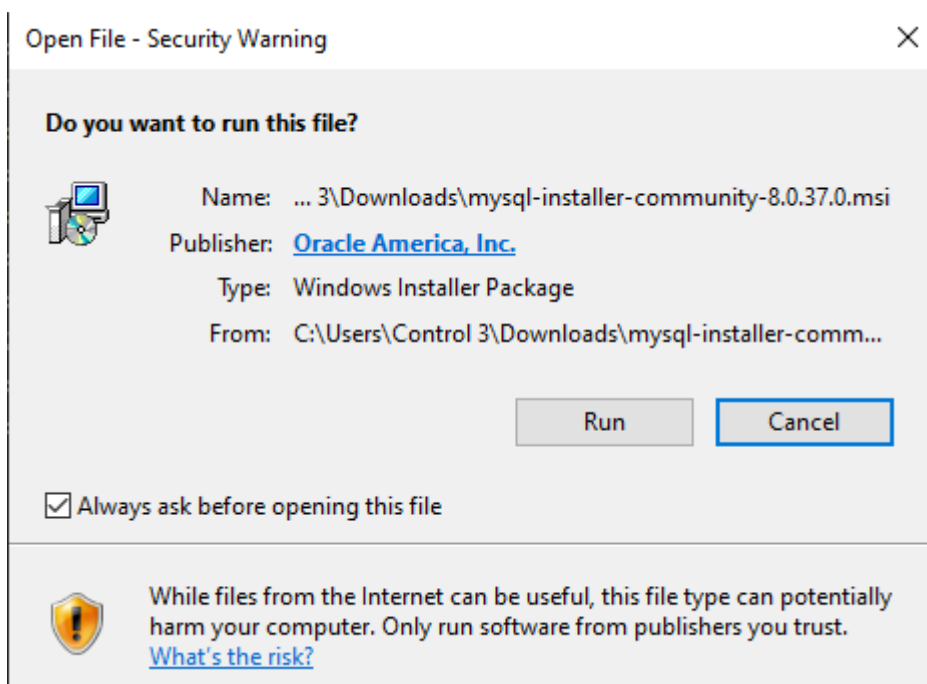
Select Version:  
8.0.37

Select Operating System:  
Microsoft Windows

Platform	Version	Size	Action
Windows (x86, 32-bit), MSI Installer (mysql-installer-web-community-8.0.37.0.msi)	8.0.37	2.1M	<a href="#">Download</a>
Windows (x86, 32-bit), MSI Installer (mysql-installer-community-8.0.37.0.msi)	8.0.37	296.1M	<a href="#">Download</a>

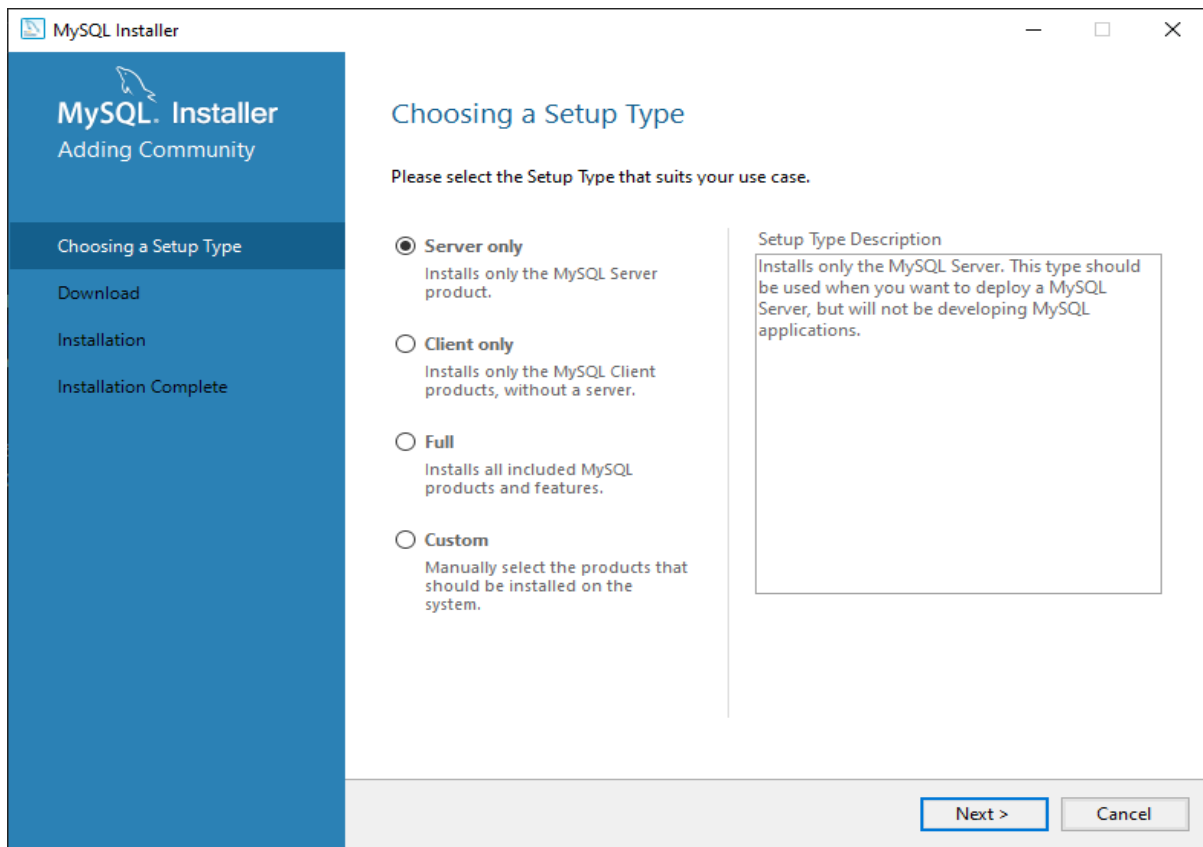
We suggest that you use the MD5 checksums and GnuPG signatures to verify the integrity of the packages you download.

- ii) Double click on the downloaded file and select Run.

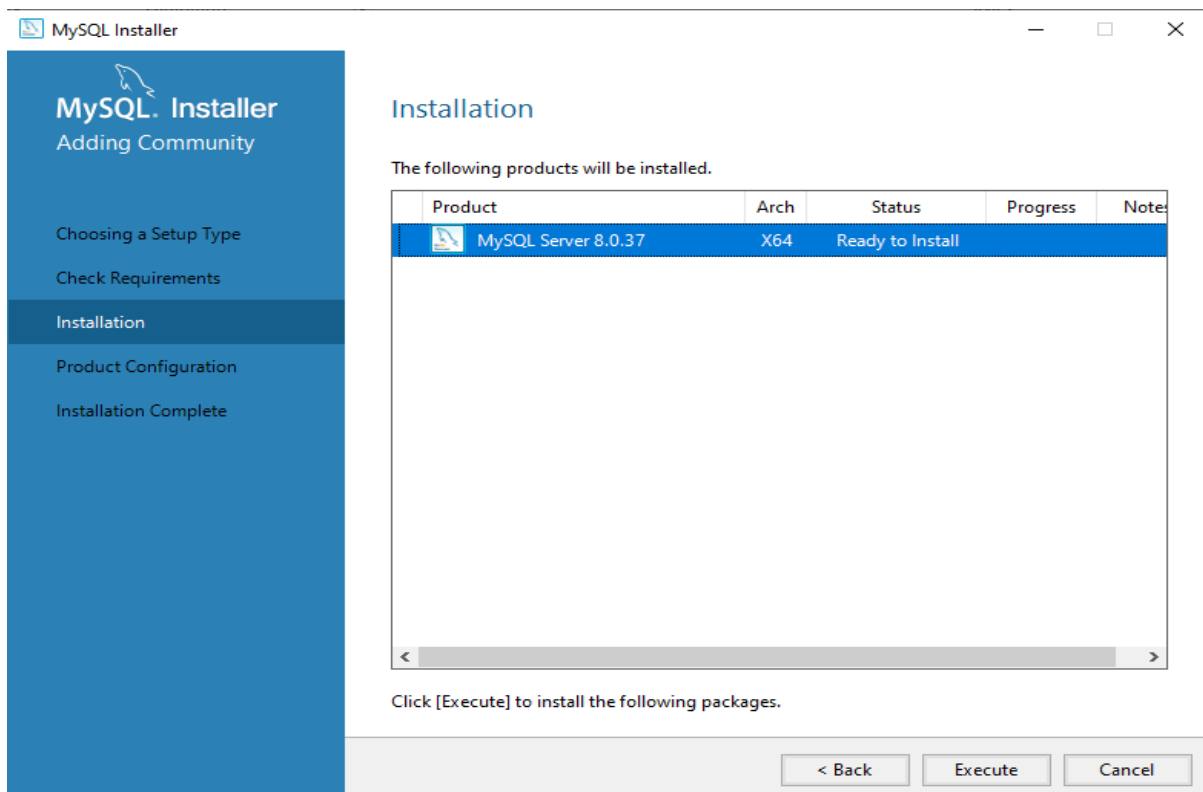




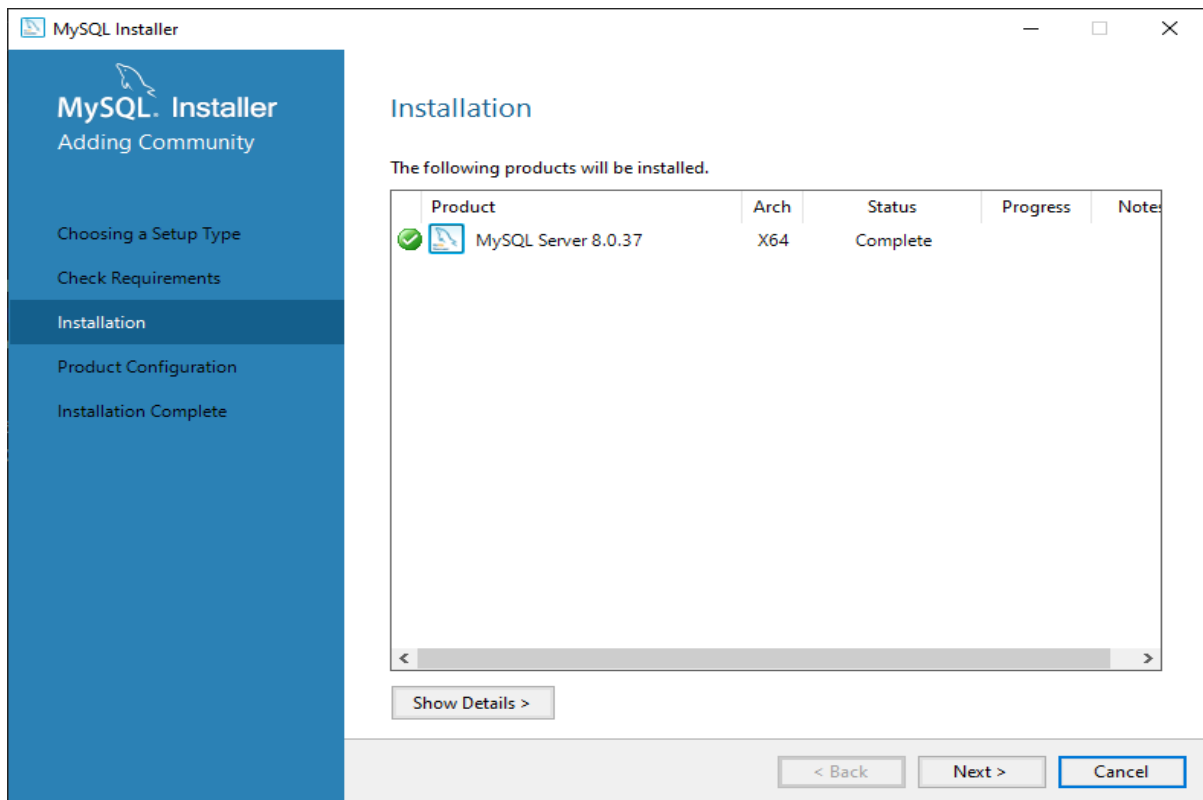
iii) Once it has finished extracting the required files, click on server only then next.



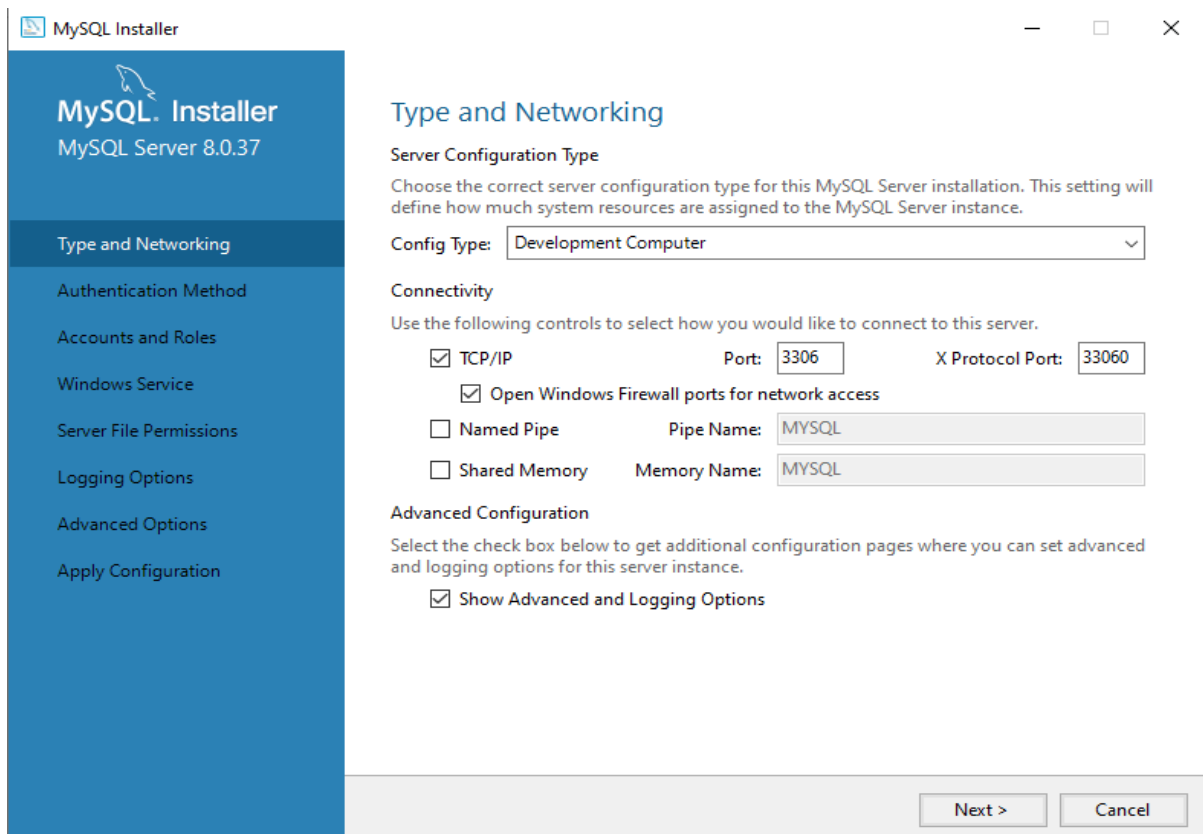
iv) Select MySQL Server 8.0.37 and click on execute.



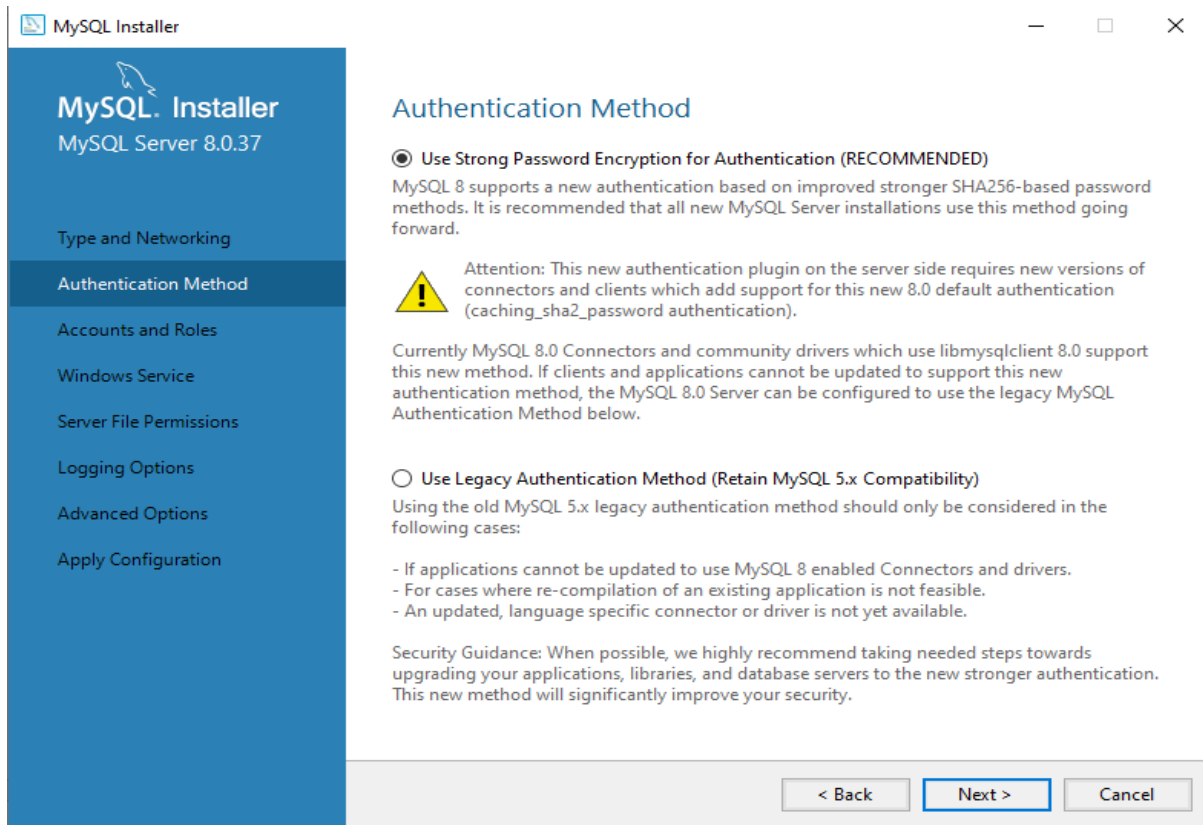
- v) Once the installation is complete click next.



- vi) Leave everything at default and tick on the check box "Show advanced and Logging options"



vii) Click on next



The screenshot shows the 'Authentication Method' step in the MySQL Installer. The left sidebar lists the installation steps: Type and Networking, Authentication Method (selected), Accounts and Roles, Windows Service, Server File Permissions, Logging Options, Advanced Options, and Apply Configuration. The main area has the title 'Authentication Method' and two radio button options. The first option, 'Use Strong Password Encryption for Authentication (RECOMMENDED)', is selected. It includes a warning icon and text explaining that MySQL 8 uses a new authentication method based on SHA256, which requires newer connectors and clients. The second option, 'Use Legacy Authentication Method (Retain MySQL 5.x Compatibility)', is unselected and includes text explaining it should only be used in specific cases where updates are not feasible. At the bottom, there are three buttons: '< Back', 'Next >' (highlighted with a blue border), and 'Cancel'.

MySQL Installer

MySQL Server 8.0.37

Type and Networking

Authentication Method

Accounts and Roles

Windows Service

Server File Permissions

Logging Options


Advanced Options

Apply Configuration

### Authentication Method

☒ Use Strong Password Encryption for Authentication (RECOMMENDED)

MySQL 8 supports a new authentication based on improved stronger SHA256-based password methods. It is recommended that all new MySQL Server installations use this method going forward.

 Attention: This new authentication plugin on the server side requires new versions of connectors and clients which add support for this new 8.0 default authentication (caching\_sha2\_password authentication).

Currently MySQL 8.0 Connectors and community drivers which use libmysqlclient 8.0 support this new method. If clients and applications cannot be updated to support this new authentication method, the MySQL 8.0 Server can be configured to use the legacy MySQL Authentication Method below.

☐ Use Legacy Authentication Method (Retain MySQL 5.x Compatibility)

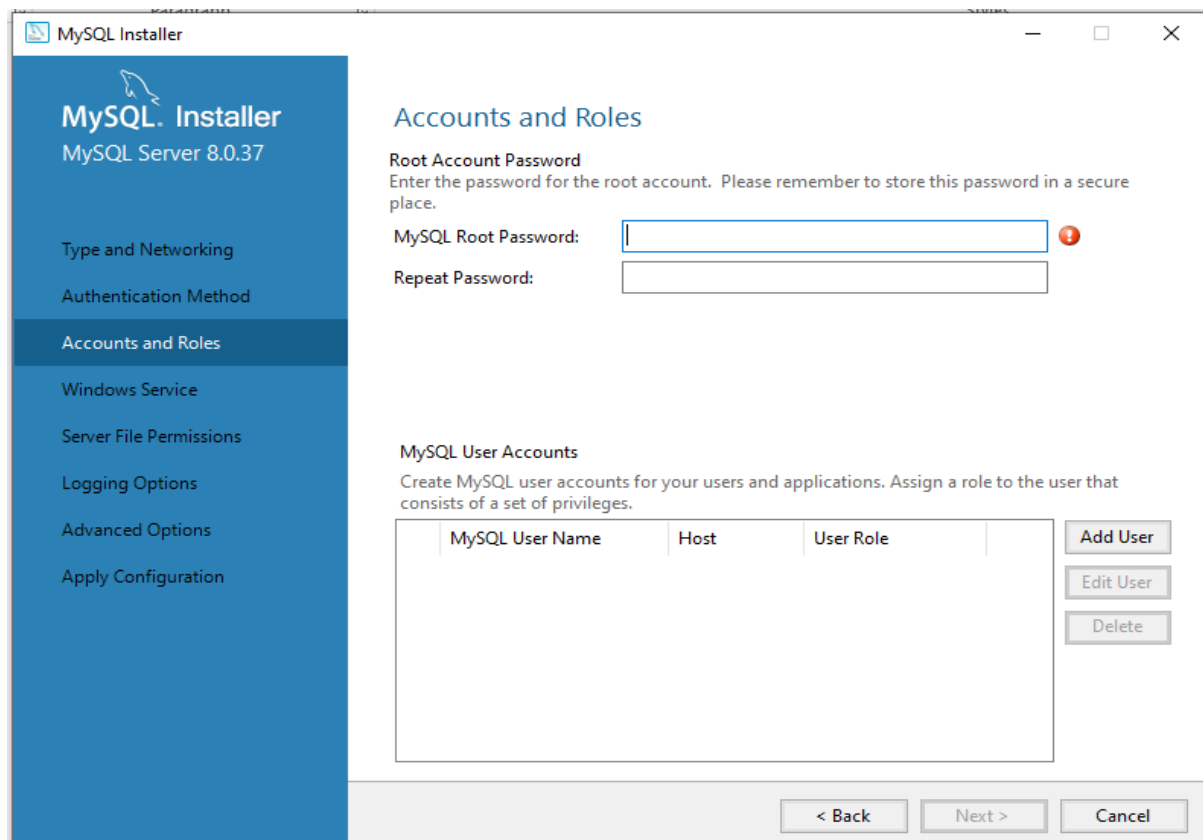
Using the old MySQL 5.x legacy authentication method should only be considered in the following cases:

- If applications cannot be updated to use MySQL 8 enabled Connectors and drivers.
- For cases where re-compilation of an existing application is not feasible.
- An updated, language specific connector or driver is not yet available.

Security Guidance: When possible, we highly recommend taking needed steps towards upgrading your applications, libraries, and database servers to the new stronger authentication. This new method will significantly improve your security.

< Back   Next >   Cancel

viii) Input a strong password. NB: input a password which you can easily remember as it will be required every time you log into the server. Click next.



The screenshot shows the 'Accounts and Roles' step in the MySQL Installer. The left sidebar is the same as the previous screen, with 'Accounts and Roles' now selected. The main area has the title 'Accounts and Roles' and a section for 'Root Account Password'. It prompts the user to enter a password for the root account and repeat it. There are two input fields: 'MySQL Root Password:' and 'Repeat Password:'. A red warning icon is next to the first field. Below this is a section for 'MySQL User Accounts' with a table to create new users. The table has columns for 'MySQL User Name', 'Host', and 'User Role'. To the right of the table are three buttons: 'Add User', 'Edit User', and 'Delete'. At the bottom, there are three buttons: '< Back', 'Next >' (highlighted with a blue border), and 'Cancel'.

MySQL Installer

MySQL Server 8.0.37

Type and Networking

Authentication Method

Accounts and Roles

Windows Service

Server File Permissions

Logging Options

Advanced Options

Apply Configuration

### Accounts and Roles

**Root Account Password**

Enter the password for the root account. Please remember to store this password in a secure place.

MySQL Root Password:

Repeat Password:

**MySQL User Accounts**

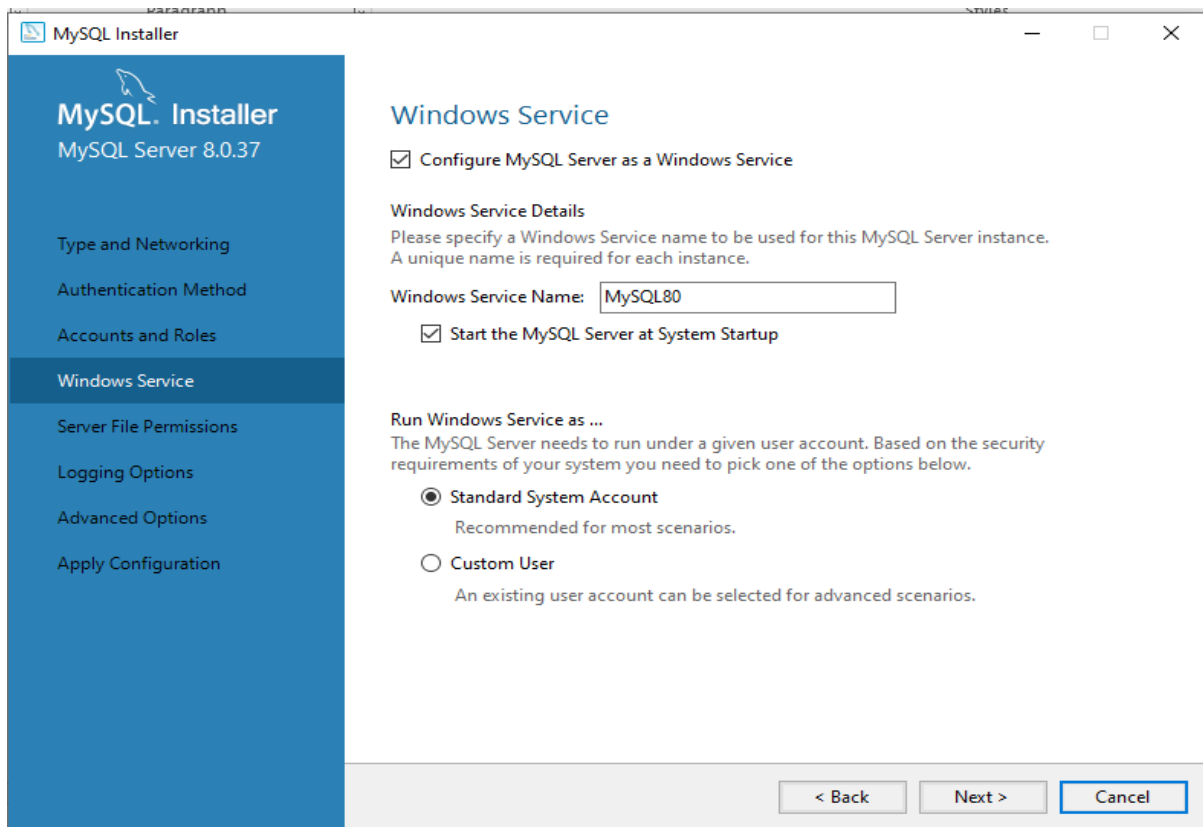
Create MySQL user accounts for your users and applications. Assign a role to the user that consists of a set of privileges.

MySQL User Name	Host	User Role
-----------------	------	-----------

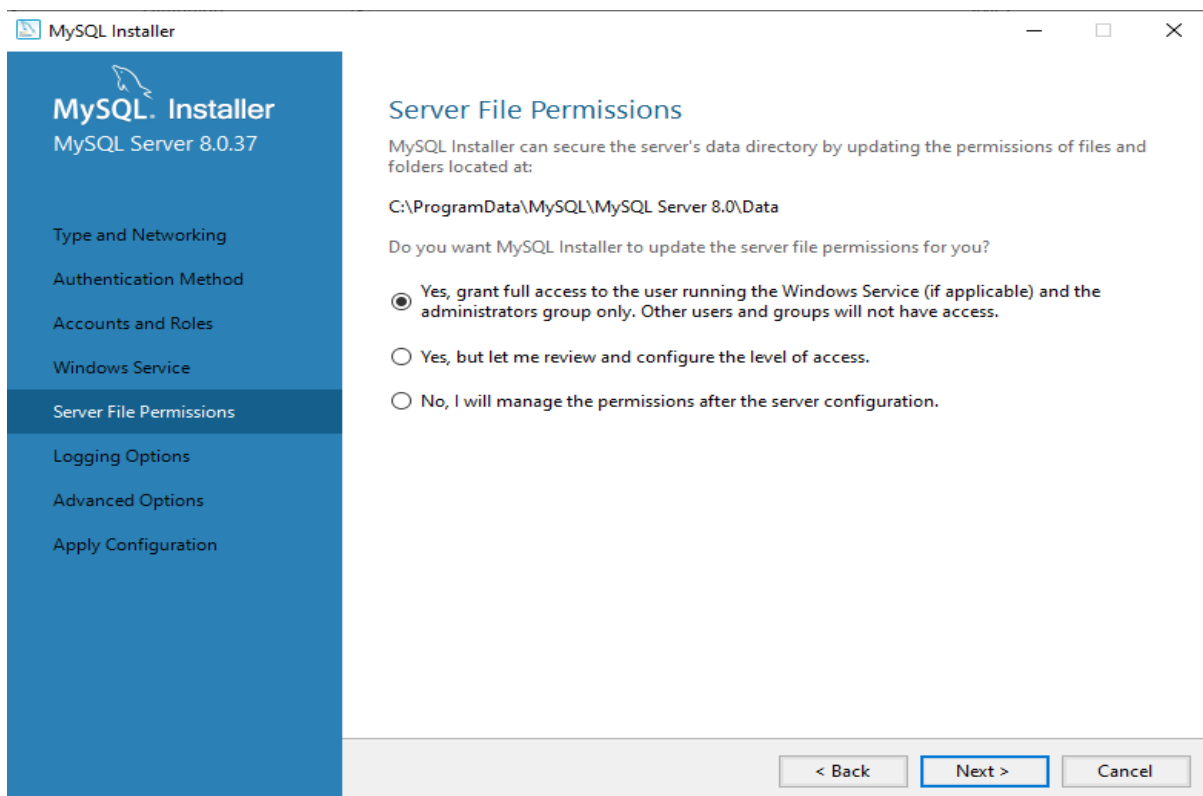
Add User   Edit User   Delete

< Back   Next >   Cancel

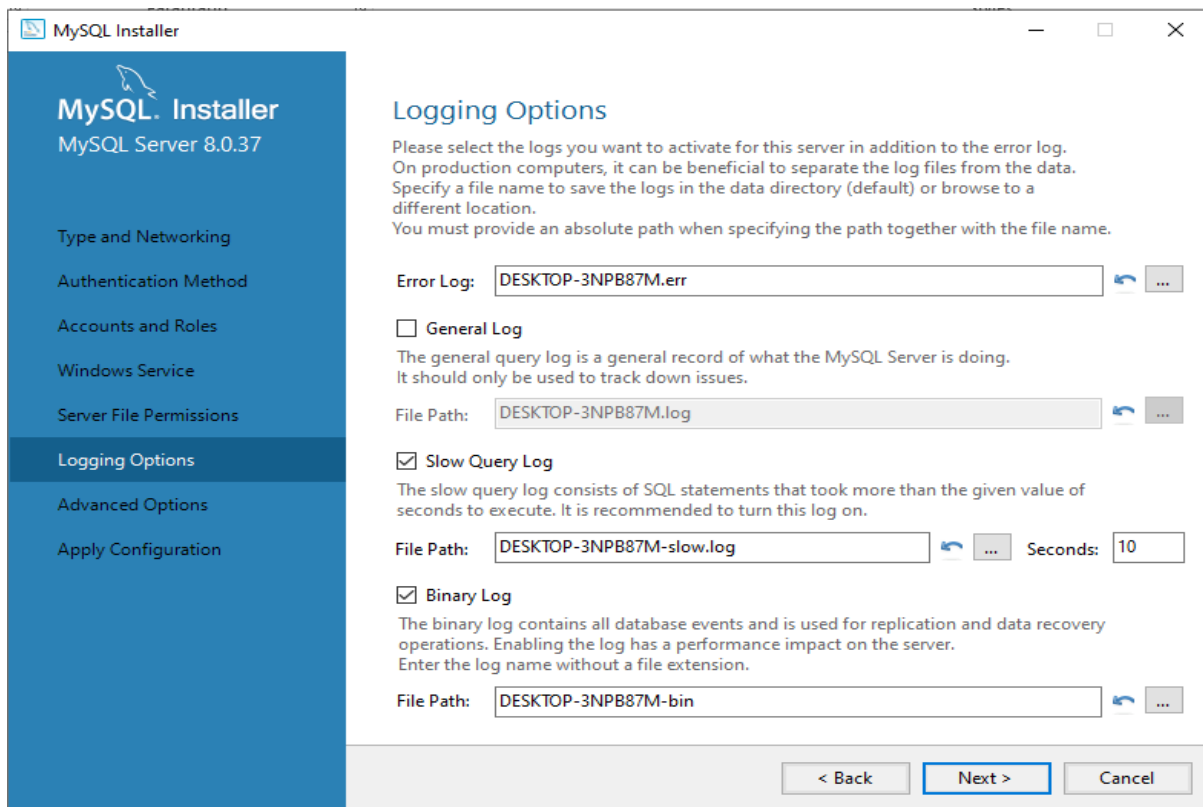
ix) Click next.



x) Click next.



xi) Click next.



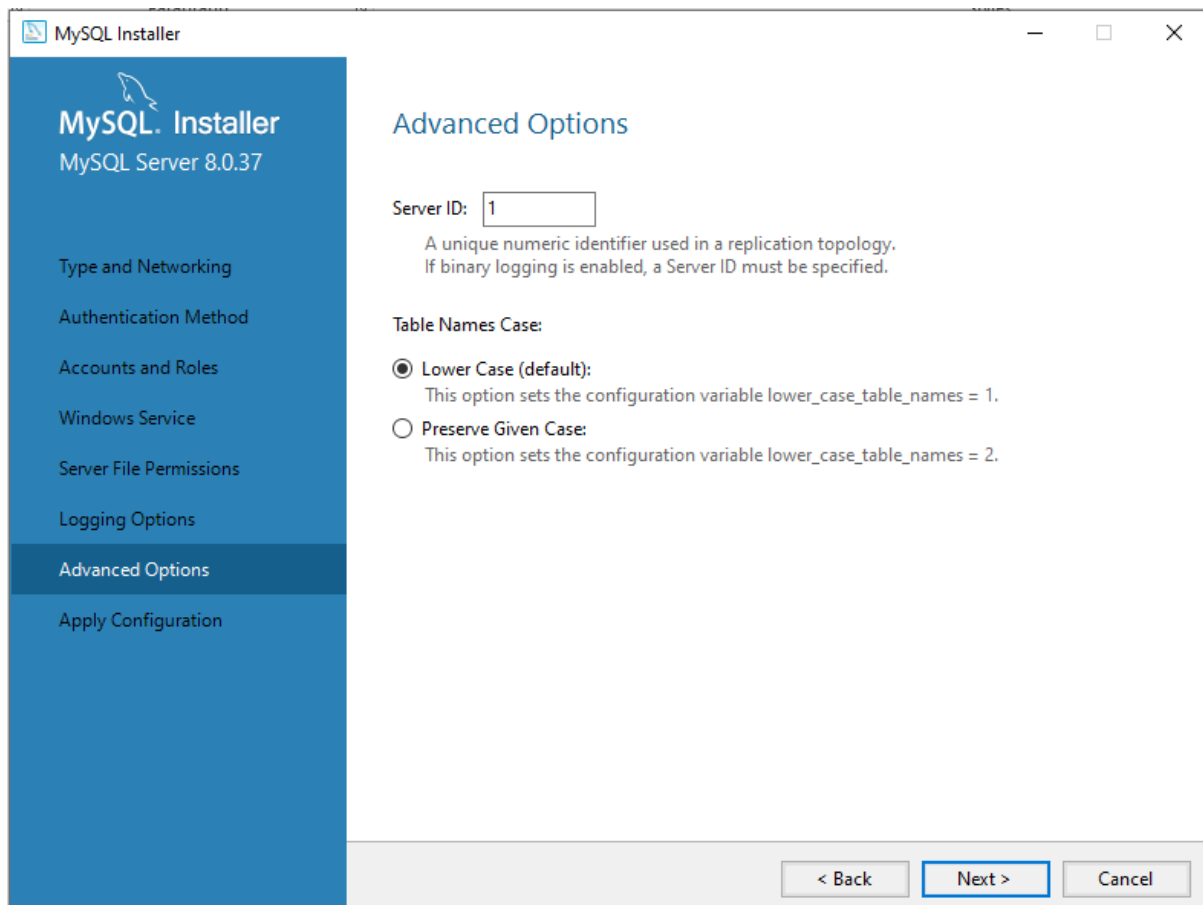
The screenshot shows the 'MySQL Installer' window for 'MySQL Server 8.0.37'. The left sidebar contains a list of installation steps: 'Type and Networking', 'Authentication Method', 'Accounts and Roles', 'Windows Service', 'Server File Permissions', 'Logging Options' (which is highlighted), 'Advanced Options', and 'Apply Configuration'. The main area is titled 'Logging Options' and contains instructions: 'Please select the logs you want to activate for this server in addition to the error log. On production computers, it can be beneficial to separate the log files from the data. Specify a file name to save the logs in the data directory (default) or browse to a different location. You must provide an absolute path when specifying the path together with the file name.'

The configuration options are as follows:

- Error Log:** The text box contains 'DESKTOP-3NPB87M.err'.
- General Log:** The checkbox is unchecked. The description states: 'The general query log is a general record of what the MySQL Server is doing. It should only be used to track down issues.' The 'File Path' text box contains 'DESKTOP-3NPB87M.log'.
- Slow Query Log:** The checkbox is checked. The description states: 'The slow query log consists of SQL statements that took more than the given value of seconds to execute. It is recommended to turn this log on.' The 'File Path' text box contains 'DESKTOP-3NPB87M-slow.log' and the 'Seconds' spinner box is set to '10'.
- Binary Log:** The checkbox is checked. The description states: 'The binary log contains all database events and is used for replication and data recovery operations. Enabling the log has a performance impact on the server. Enter the log name without a file extension.' The 'File Path' text box contains 'DESKTOP-3NPB87M-bin'.

At the bottom right, there are three buttons: '< Back', 'Next >' (which is highlighted with a blue border), and 'Cancel'.

xii) Click next.

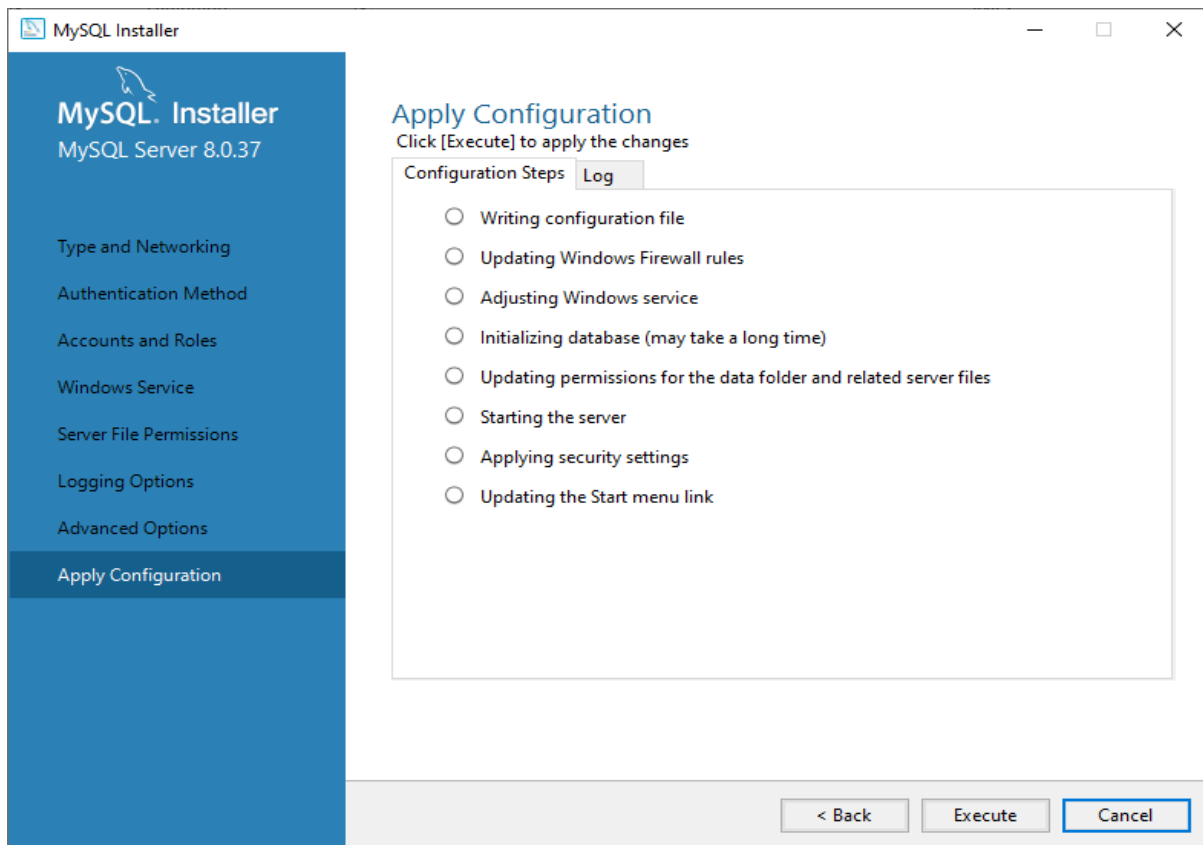


The screenshot shows the 'MySQL Installer' window for 'MySQL Server 8.0.37'. The left sidebar is the same as in the previous screen, but 'Advanced Options' is now highlighted. The main area is titled 'Advanced Options' and contains the following configuration options:

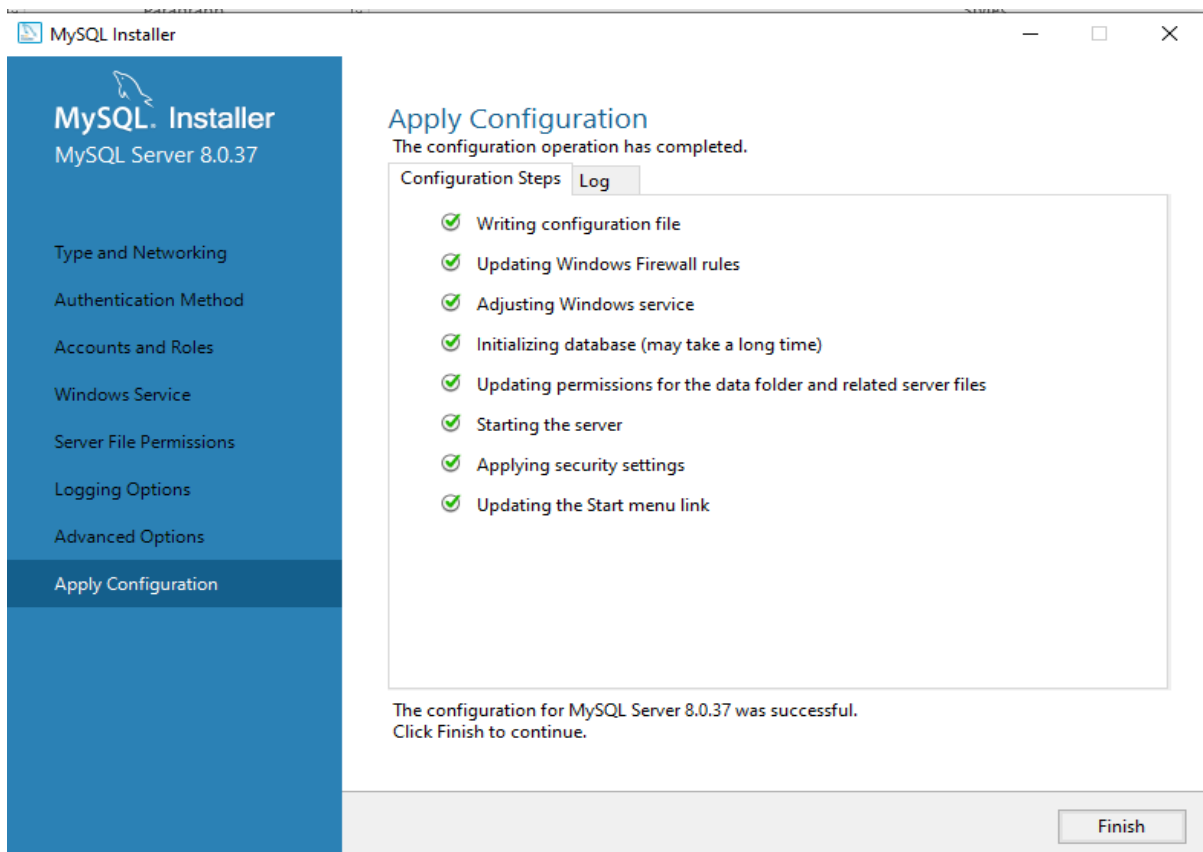
- Server ID:** The text box contains '1'. A note below states: 'A unique numeric identifier used in a replication topology. If binary logging is enabled, a Server ID must be specified.'
- Table Names Case:**
  - ☒ **Lower Case (default):** This option sets the configuration variable `lower_case_table_names = 1`.
  - ☐ **Preserve Given Case:** This option sets the configuration variable `lower_case_table_names = 2`.

At the bottom right, there are three buttons: '< Back', 'Next >' (highlighted with a blue border), and 'Cancel'.

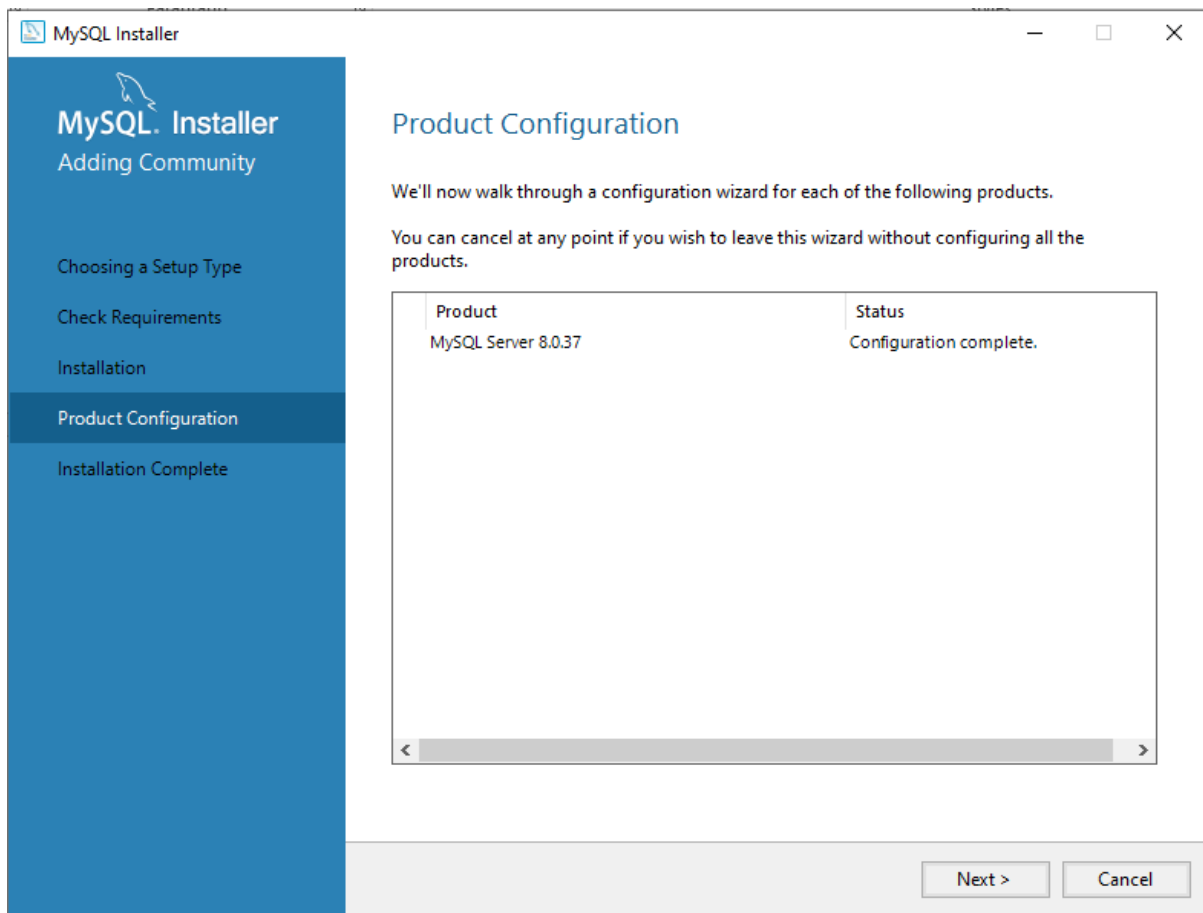
xiii) Leave everything at default and click execute.



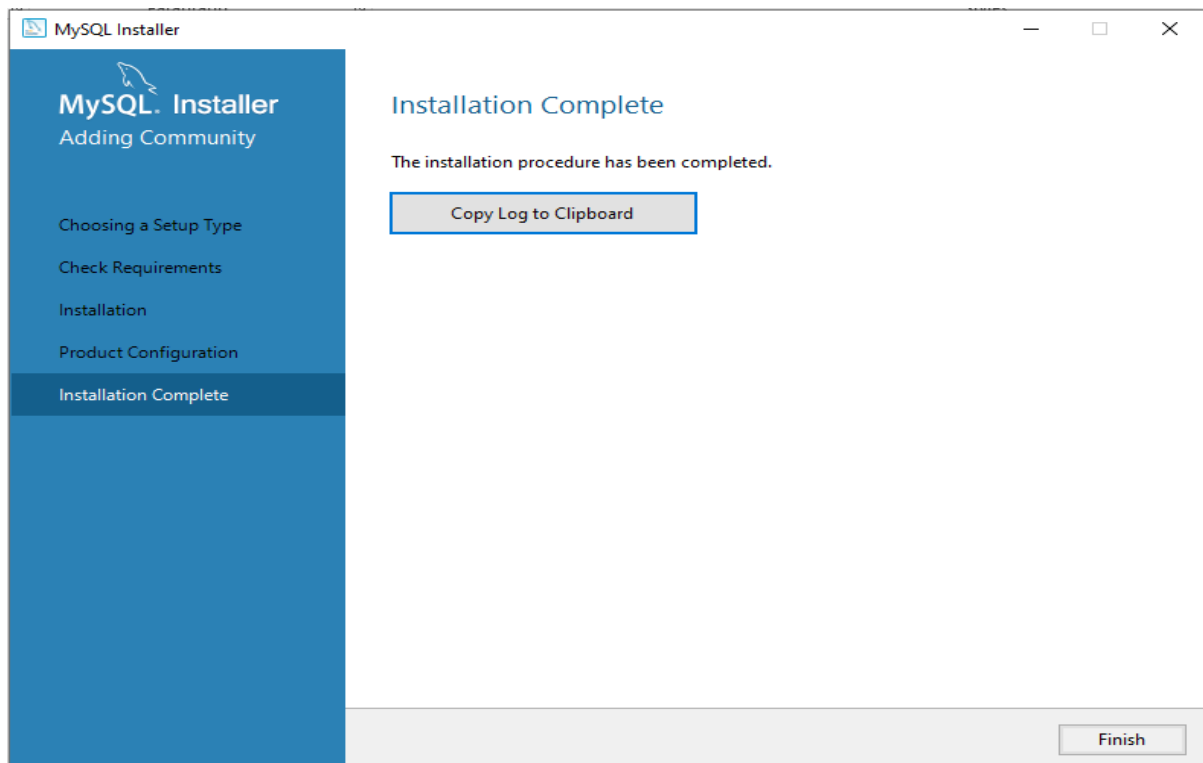
xiv) Ensure all check boxes are ticked green the click on finish.



xv) Click on next.

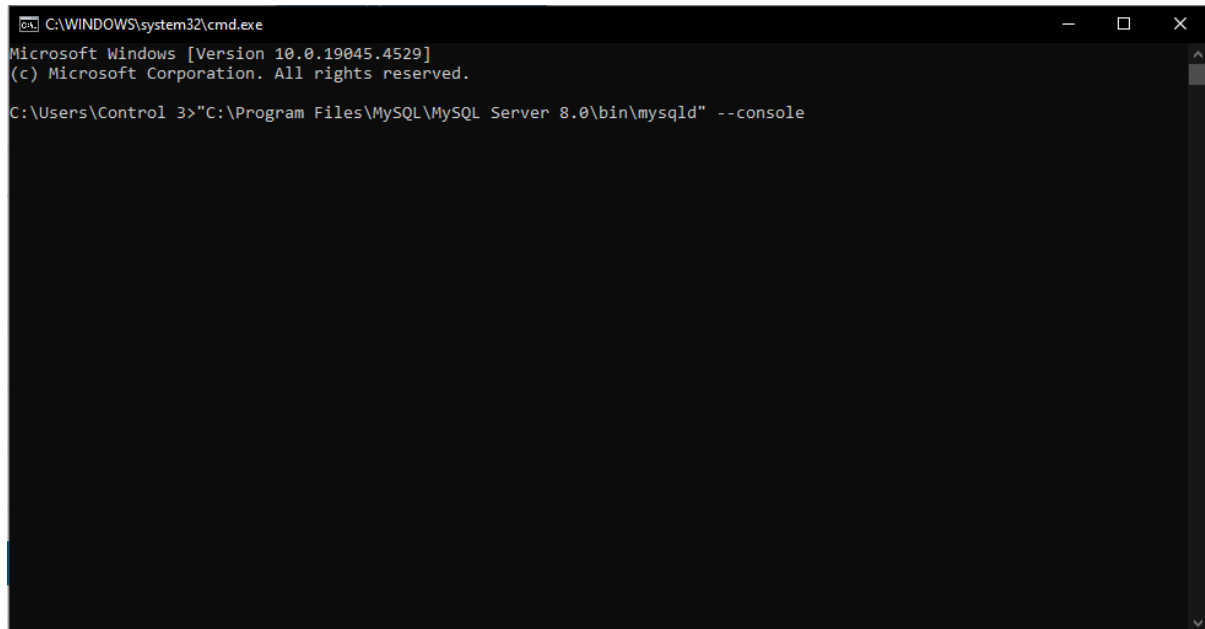


xvi) Click finish.



- xvii) On your machine run command prompt and make sure you run as an Administrator. Then key in the following command. "C:\Program Files\MySQL\MySQL Server 8.0\bin\mysqld" --console

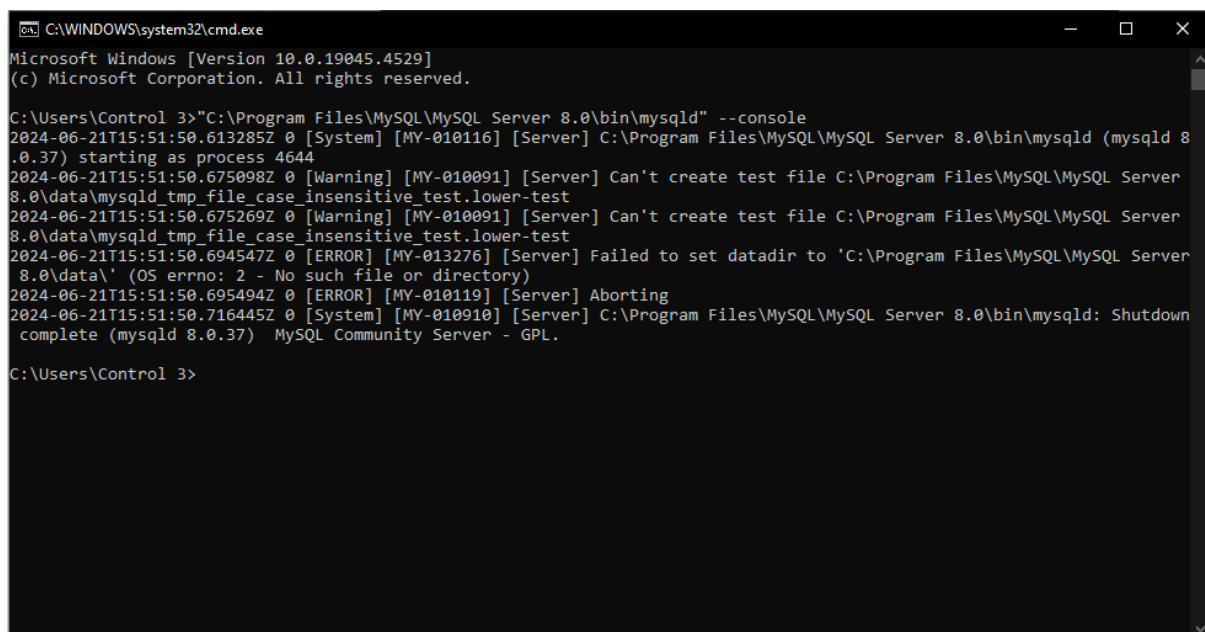
And press enter.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.19045.4529]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Control 3>"C:\Program Files\MySQL\MySQL Server 8.0\bin\mysqld" --console
```

NB: the above is used to start the MySQL server.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.19045.4529]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Control 3>"C:\Program Files\MySQL\MySQL Server 8.0\bin\mysqld" --console
2024-06-21T15:51:50.613285Z 0 [System] [MY-010116] [Server] C:\Program Files\MySQL\MySQL Server 8.0\bin\mysqld (mysqld 8.0.37) starting as process 4644
2024-06-21T15:51:50.675098Z 0 [Warning] [MY-010091] [Server] Can't create test file C:\Program Files\MySQL\MySQL Server 8.0\data\mysqld_tmp_file_case_insensitive_test.lower-test
2024-06-21T15:51:50.675269Z 0 [Warning] [MY-010091] [Server] Can't create test file C:\Program Files\MySQL\MySQL Server 8.0\data\mysqld_tmp_file_case_insensitive_test.lower-test
2024-06-21T15:51:50.694547Z 0 [ERROR] [MY-013276] [Server] Failed to set datadir to 'C:\Program Files\MySQL\MySQL Server 8.0\data\' (OS errno: 2 - No such file or directory)
2024-06-21T15:51:50.695494Z 0 [ERROR] [MY-010119] [Server] Aborting
2024-06-21T15:51:50.716445Z 0 [System] [MY-010910] [Server] C:\Program Files\MySQL\MySQL Server 8.0\bin\mysqld: Shutdown complete (mysqld 8.0.37)  MySQL Community Server - GPL.

C:\Users\Control 3>
```

- xviii) You can as well stop the server using the below command on cmd.

"C:\Program Files\MySQL\MySQL Server 8.0\bin\mysqladmin" -u root shutdown



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.19045.4529]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Control 3>"C:\Program Files\MySQL\MySQL Server 8.0\bin\mysqld" --console
2024-06-21T15:51:50.613285Z 0 [System] [MY-010116] [Server] C:\Program Files\MySQL\MySQL Server 8.0\bin\mysqld (mysqld 8
.0.37) starting as process 4644
2024-06-21T15:51:50.675098Z 0 [Warning] [MY-010091] [Server] Can't create test file C:\Program Files\MySQL\MySQL Server
8.0\data\mysqld_tmp_file_case_insensitive_test.lower-test
2024-06-21T15:51:50.675269Z 0 [Warning] [MY-010091] [Server] Can't create test file C:\Program Files\MySQL\MySQL Server
8.0\data\mysqld_tmp_file_case_insensitive_test.lower-test
2024-06-21T15:51:50.694547Z 0 [ERROR] [MY-013276] [Server] Failed to set datadir to 'C:\Program Files\MySQL\MySQL Server
8.0\data\' (OS errno: 2 - No such file or directory)
2024-06-21T15:51:50.695494Z 0 [ERROR] [MY-010119] [Server] Aborting
2024-06-21T15:51:50.716445Z 0 [System] [MY-010910] [Server] C:\Program Files\MySQL\MySQL Server 8.0\bin\mysqld: Shutdown
complete (mysqld 8.0.37) MySQL Community Server - GPL.

C:\Users\Control 3>"C:\Program Files\MySQL\MySQL Server 8.0\bin\mysqladmin" -u root shutdown
mysqladmin: connect to server at 'localhost' failed
error: 'Access denied for user 'root'@'localhost' (using password: NO)'

C:\Users\Control 3>
```