

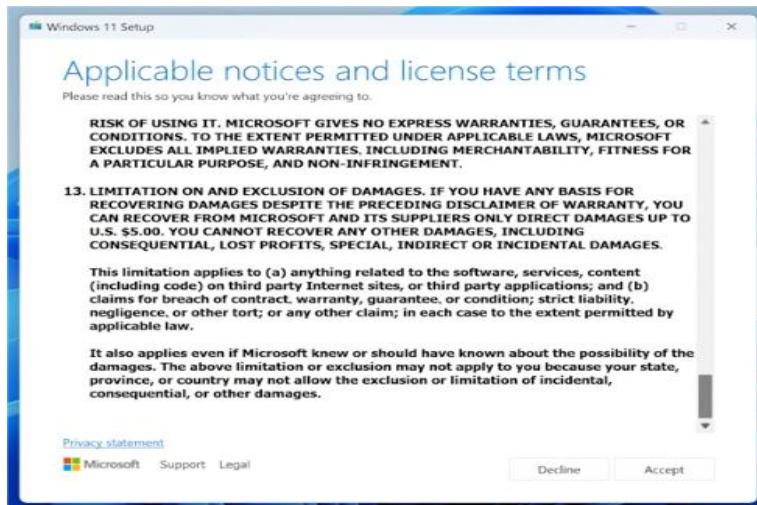
## **Setting up your Development Environment:**

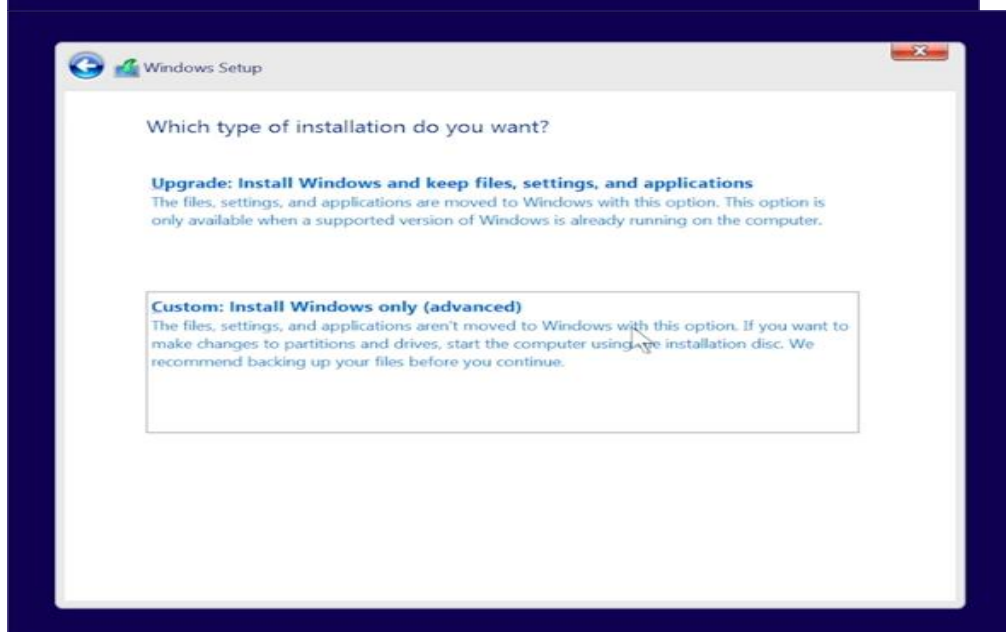
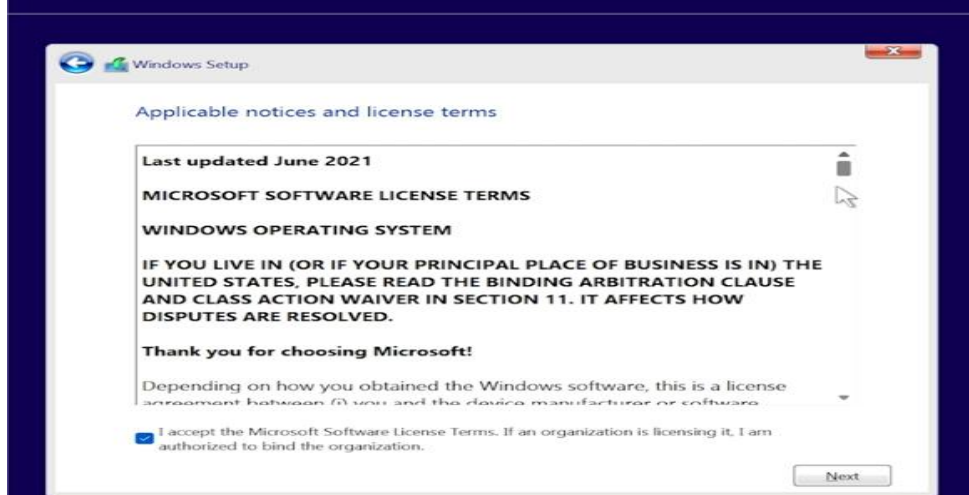
**Document detailing the setup process with step by step instructions and screenshots where necessary. A reflection on the challenges faced during setup and strategies employed to overcome them.**

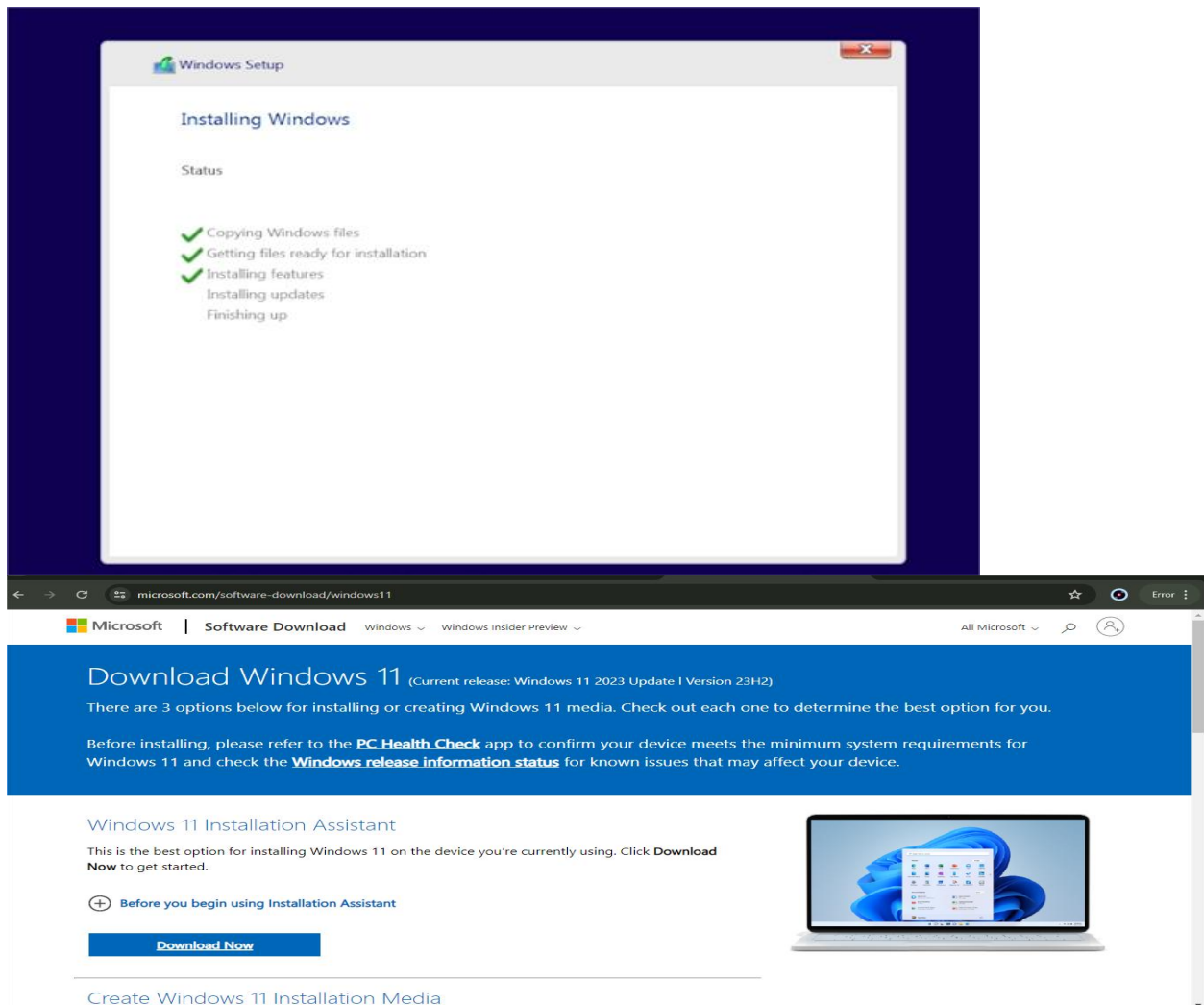
**1. Select your Operating system. Choose an operating system that best suits your preferences and project requirements. Download and install windows 11**

**<https://www.microsoft.com/software-download/windows11>**

To download and install Windows 11, start by confirming your PC meets the system requirements. Backup your important data beforehand by using a flash drive of at least 8GB free space. Obtain Windows 11 either from Microsoft website. Begin installation by running the setup file or inserting the installation media, following on-screen instructions to select language, agree to terms, and choose installation type (upgrade or clean install). The process involves multiple restarts as Windows installs. After installation, set up user preferences, activate Windows with your product key if required and update drivers and apps. Customize your desktop and restore backed-up files to complete the process successfully. Ensure a stable internet connection and power supply throughout.







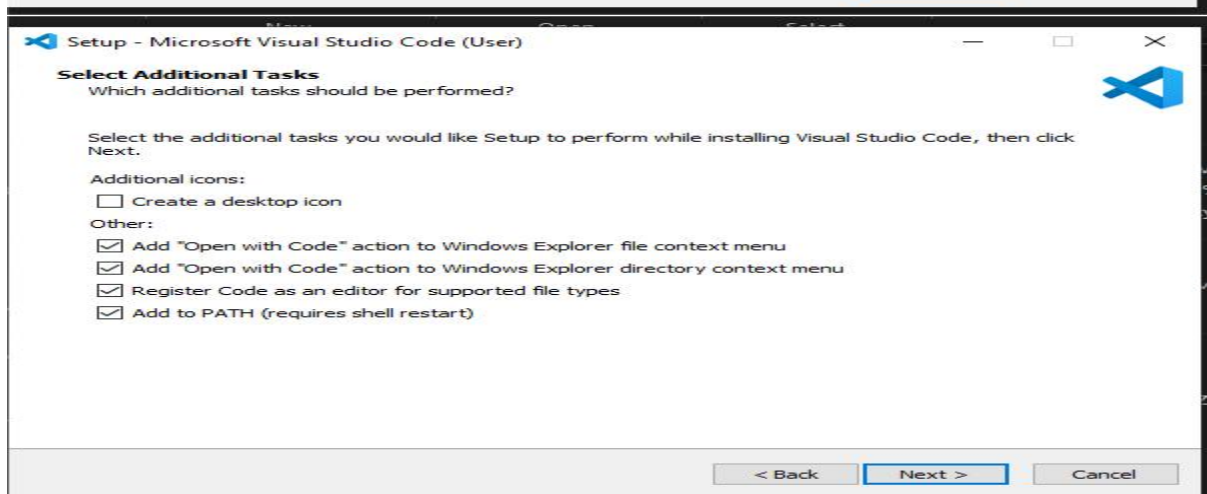
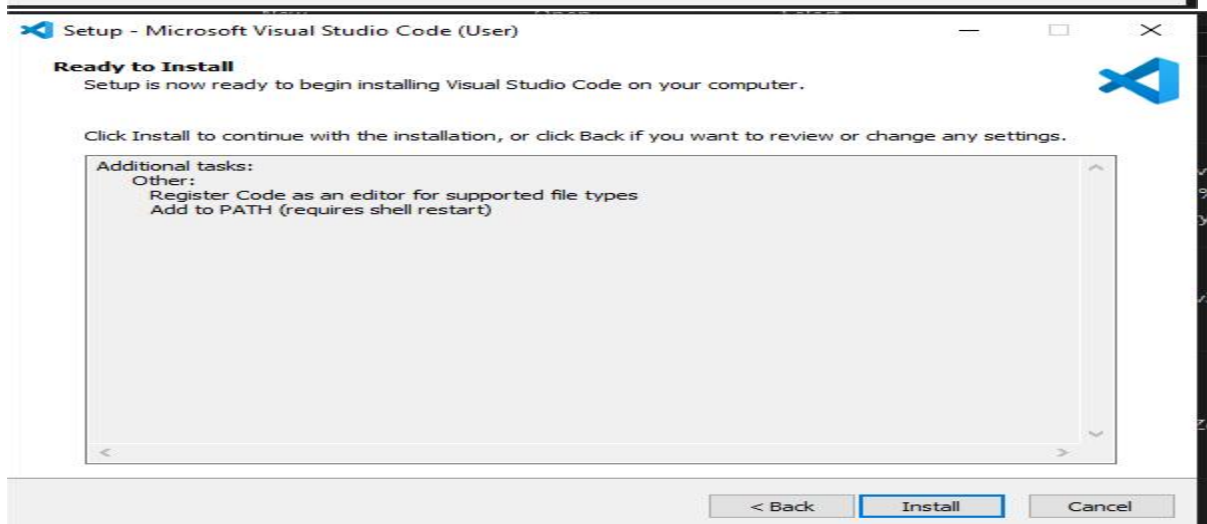
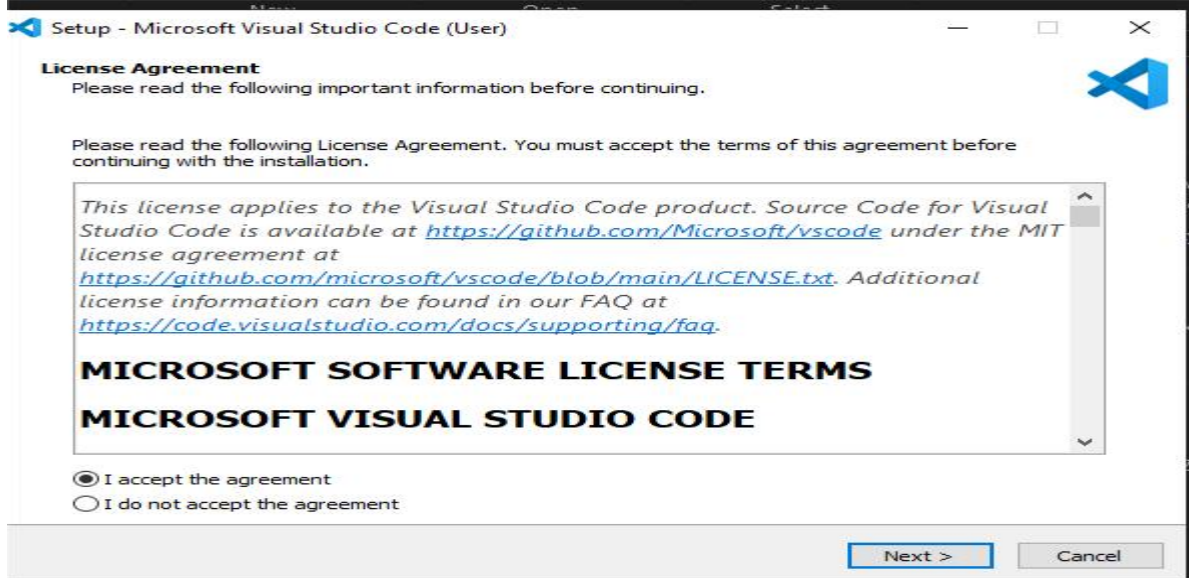
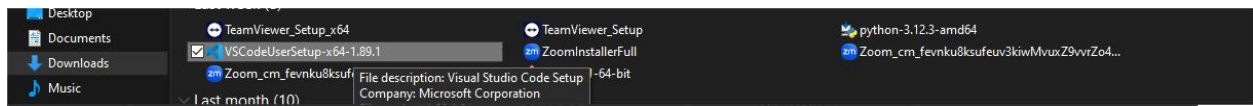
**2.Install a text editor or Integrated Development Environment. Select and install a text editor or IDE suitable for your programming languages and workflow. Download and install visual studio code.**

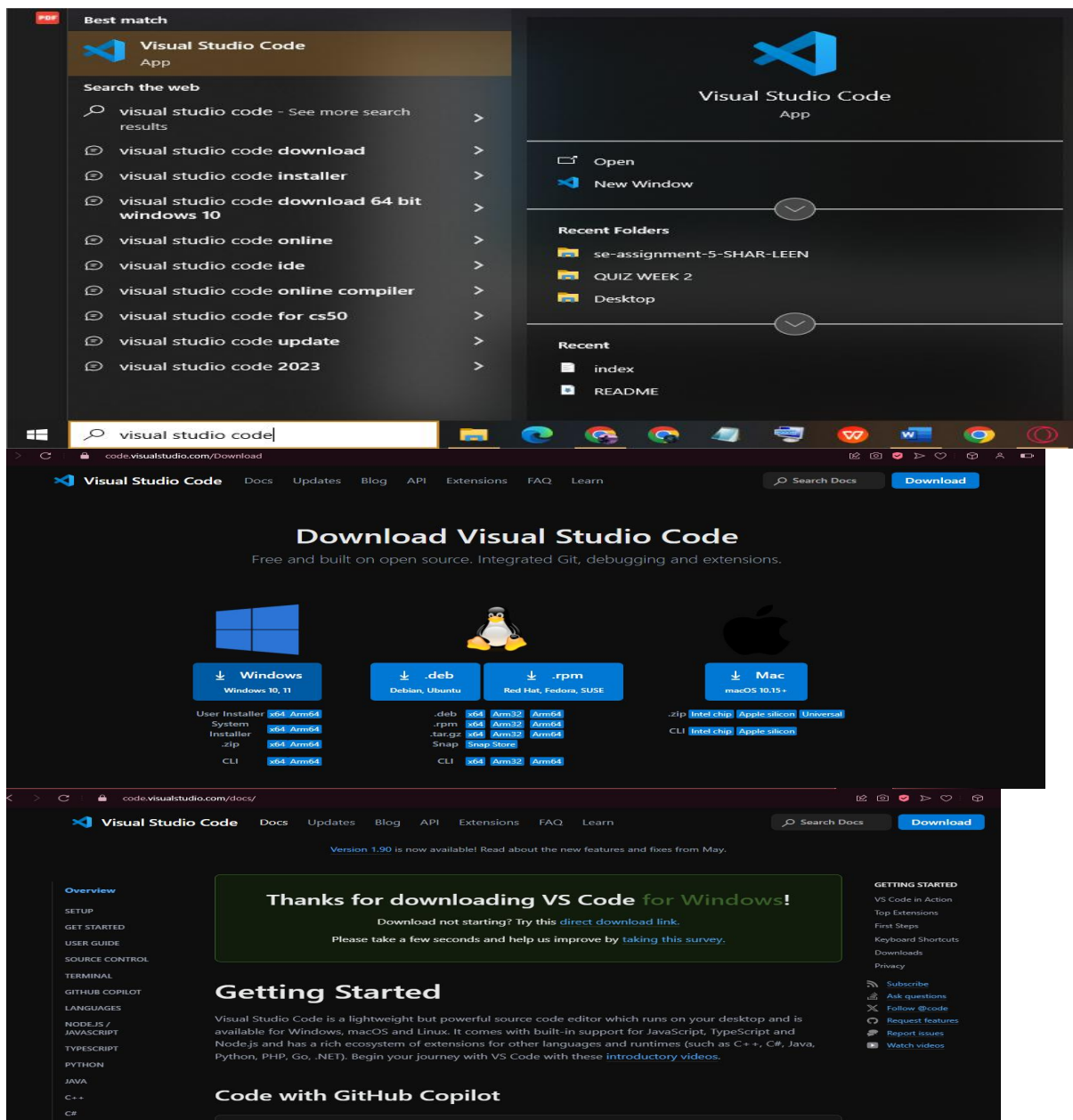
**<https://code.visualstudio.com/Download>**

**Download:** Open your web browser and navigate to the official Visual Studio Code website at <https://code.visualstudio.com/>.

**Installer download:** To download the installer file, click the "Download for Windows" button.

**Open Installer:** After the download is finished, find the installer file by double-clicking on it. It should be in your downloads folder. Observe the installation wizard's instructions. During the installation process, you can select where to install VS Code and whether to add it to your path (environment variables). Upon installation, you can use the Start menu to search for "Visual Studio Code" or double-click the shortcut icon on the desktop to open Visual Studio Code.





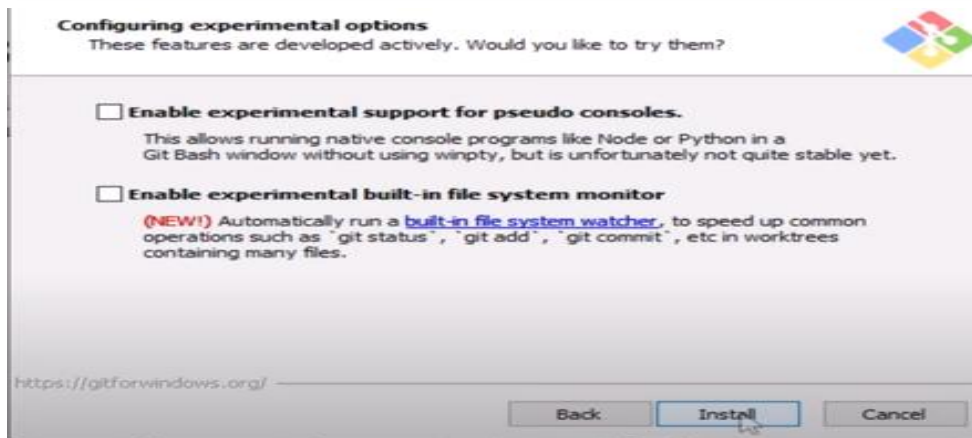
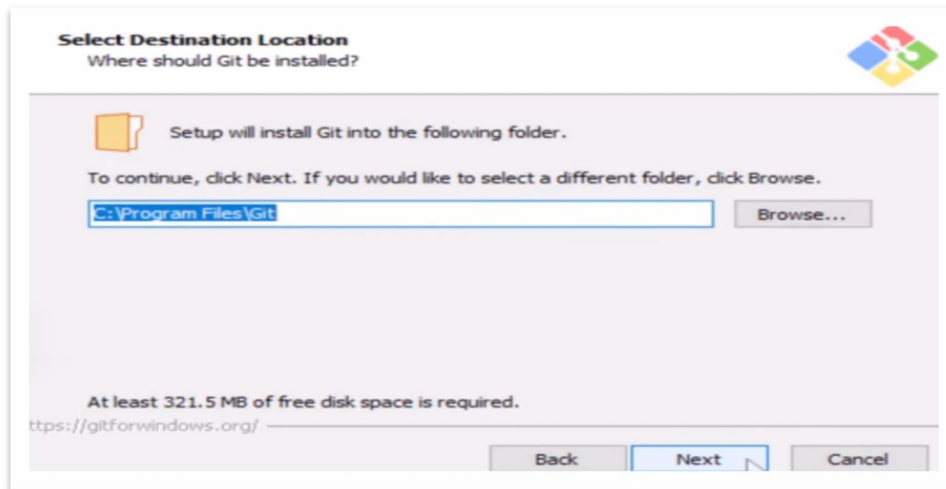
**3.Set up version control system: Install Git and configure it on your local machine. Create a GitHub account for hosting your repositories. Initialize a GitHub repository for your project and make your first commit.**

**<https://github.com>**

Download git using the link <https://git-scm.com/> and then run the installer following the prompts provided. Open up a terminal example command prompt and enter the command prompts shown in the screenshots below hence you will have configured your git. Creating a git hub account, you use the link <https://github.com> and sign up for a new account. To initialize, Login to the git hub



then go to the new to create a new repository. Enter the name of the repository then create repository. To make your first commit, go to your repository page and click on the code icon then copy the URL, open a terminal you are comfortable with and create a path to where you want to clone your repository. Change into the repository directory and create a new file, stage your changes and commit them using the commands provided in the screenshots below. Push your changes using the commands as shown and then go back to your repository on GitHub and refresh the page to make the changes.



## Completing the Git Setup Wizard

Setup has finished installing Git on your computer. The application may be launched by selecting the installed shortcuts.



Click Finish to exit Setup.

- ☐ Launch Git Bash
- ☒ View Release Notes

Finish

TeamViewer\_Setup\_x64 TeamViewer\_Setup python-3.12.3-amd64

VSCodeUserSetup-x64-1.89.1 ZoomInstallerFull Zoom\_cm\_fevnku8ksufeu3kiwMvuxZ9vvrZo4...

Zoom\_cm\_fevnku8ksufeu3kiwMvuxZ9vvrZo4... Git-2.45.1-64-bit

SHAR-LEEN / MY-FIRST-REPOSITORY

Type to search

<> Code Issues Pull requests Actions Projects Wiki Security Insights Settings

MY-FIRST-REPOSITORY Public

Pin Unwatch 1 Fork 0 Star 0

master 1 Branch 0 Tags

Go to file Add file Code

SHAR-LEEN hugu sana 84b6ed4 • 2 days ago 5 Commits

readme.md edited using word again 2 days ago

~\$readme.md edited using word 2 days ago

README

MY NAME IS KAMTU NA NAPENDA TUMTU. Qwertyuiopasdfghjklqwertyuiopgfdewsqdtyuiogtrfedswx

Readme Activity 0 stars 1 watching 0 forks

Releases

No releases published

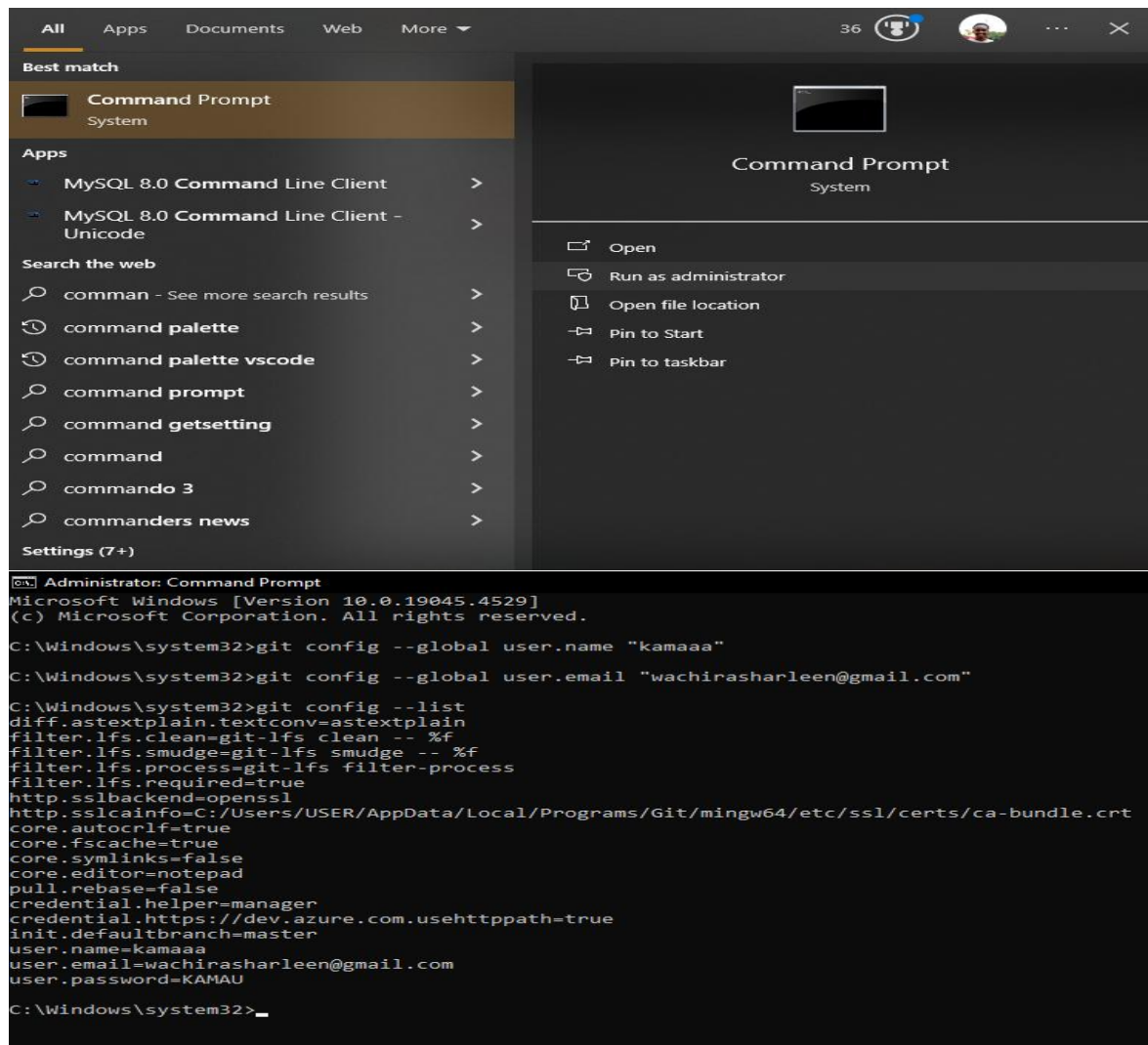
Create a new release

Packages

No packages published

Publish your first package





The image shows a GitHub 'Create a new repository' page and a terminal window. The GitHub page is for creating a new repository, with fields for Owner (SHAR-LEEN), Repository name, Description, and visibility (Public/Private). Below the form is a terminal window showing the following commands and output:

```
MINGW64:/c/MY-FIRST-REPOSITORY
USER@SHEE MINGW64 ~ (master)
$ cd c:/

USER@SHEE MINGW64 /c
$ cd documents
bash: cd: documents: No such file or directory

USER@SHEE MINGW64 /c
$ git clone https://github.com/SHAR-LEEN/MY-FIRST-REPOSITORY.git
Cloning into 'MY-FIRST-REPOSITORY'...
remote: Enumerating objects: 14, done.
remote: Counting objects: 100% (14/14), done.
remote: Compressing objects: 100% (11/11), done.
remote: Total 14 (delta 1), reused 13 (delta 0), pack-reused 0
Receiving objects: 100% (14/14), 1.06 MiB | 2.79 MiB/s, done.
Resolving deltas: 100% (1/1), done.

USER@SHEE MINGW64 /c
$ cd MY-FIRST-REPOSITORY/

USER@SHEE MINGW64 /c/MY-FIRST-REPOSITORY (master)
$ git add .

USER@SHEE MINGW64 /c/MY-FIRST-REPOSITORY (master)
$ git commit -m "nugu sana"
On branch master
Your branch is up to date with 'origin/master'.

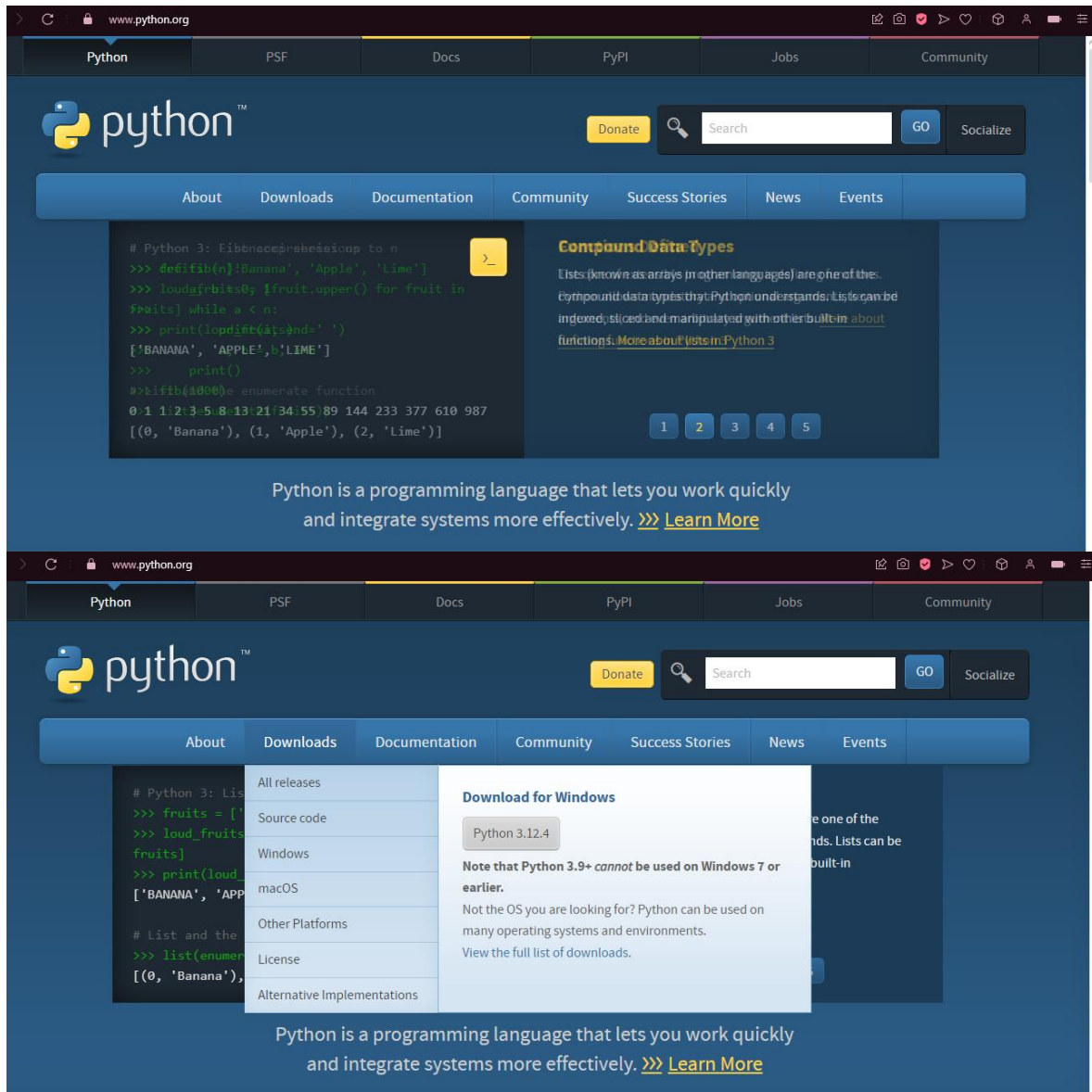
nothing to commit, working tree clean

USER@SHEE MINGW64 /c/MY-FIRST-REPOSITORY (master)
$ git push origin master
```

**4. Install necessary Programming languages and runtimes. Install python from <http://www.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.**

To install python, click on the link <https://www.python.org> and then click on the installer of your operating system. Open the downloaded installer, add python to path then click on download now to get started. Follow the prompts to complete the installation process. Open the command prompt and type the commands as shown on the screenshot to check the python version and pip version. Install code editors like vs code. Install the python extension from the vs code marketplace, create a virtual environment, activate it and follow the commands as written in the

screenshot. Install the necessary python packages by using pip and run the commands below



## Python Releases for Windows

- [Latest Python 3 Release - Python 3.12.4](#)

### Stable Releases

- [Python 3.12.4 - June 6, 2024](#)

**Note that Python 3.12.4 cannot be used on Windows 7 or earlier.**

- [Download Windows installer \(64-bit\)](#)
- [Download Windows installer \(ARM64\)](#)
- [Download Windows embeddable package \(64-bit\)](#)
- [Download Windows embeddable package \(32-bit\)](#)
- [Download Windows embeddable package \(ARM64\)](#)
- [Download Windows installer \(32-bit\)](#)

- [Python 3.12.3 - April 9, 2024](#)

**Note that Python 3.12.3 cannot be used on Windows 7 or earlier.**

- [Download Windows installer \(64-bit\)](#)

### Pre-releases

- [Python 3.13.0b2 - June 5, 2024](#)

- [Download Windows installer \(64-bit\)](#)
- [Download Windows installer \(ARM64\)](#)
- [Download Windows embeddable package \(64-bit\)](#)
- [Download Windows embeddable package \(32-bit\)](#)
- [Download Windows embeddable package \(ARM64\)](#)
- [Download Windows installer \(32-bit\)](#)

- [Python 3.13.0b1 - May 8, 2024](#)

- [Download Windows installer \(64-bit\)](#)
- [Download Windows installer \(ARM64\)](#)
- [Download Windows embeddable package \(64-bit\)](#)
- [Download Windows embeddable package \(32-bit\)](#)
- [Download Windows embeddable package \(ARM64\)](#)

[/www.python.org/ftp/python/3.12.4/python-3.12.4-amd64.exe](https://www.python.org/ftp/python/3.12.4/python-3.12.4-amd64.exe)

```
Command Prompt
Microsoft Windows [Version 10.0.19045.4529]
(c) Microsoft Corporation. All rights reserved.

C:\Users\USER>python --version
Python 3.12.3

C:\Users\USER>pip --version
'pip' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\USER>install pip
'install' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\USER>winget pip
Windows Package Manager v1.7.11261
Copyright (c) Microsoft Corporation. All rights reserved.

Unrecognized command: 'pip'

The winget command line utility enables installing applications and other packages from the command line.

usage: winget [<command>] [<options>]

The following commands are available:
install      Installs the given package
show         Shows information about a package
source       Manage sources of packages
search       Find and show basic info of packages
list         Display installed packages
upgrade      Shows and performs available upgrades
uninstall    Uninstalls the given package
hash         Helper to hash installer files
validate     Validates a manifest file
settings     Open settings or set administrator settings
features     Shows the status of experimental features
export       Exports a list of the installed packages
import       Installs all the packages in a file
pin          Manage package pins
configure    Configures the system into a desired state
download     Downloads the installer from a given package
repair       Repairs the selected package
```



```

Command Prompt
validate    Validates a manifest file
settings   Open settings or set administrator settings
features    Shows the status of experimental features
export      Exports a list of the installed packages
import      Installs all the packages in a file
pin         Manage package pins
configure   Configures the system into a desired state
download    Downloads the installer from a given package
repair      Repairs the selected package

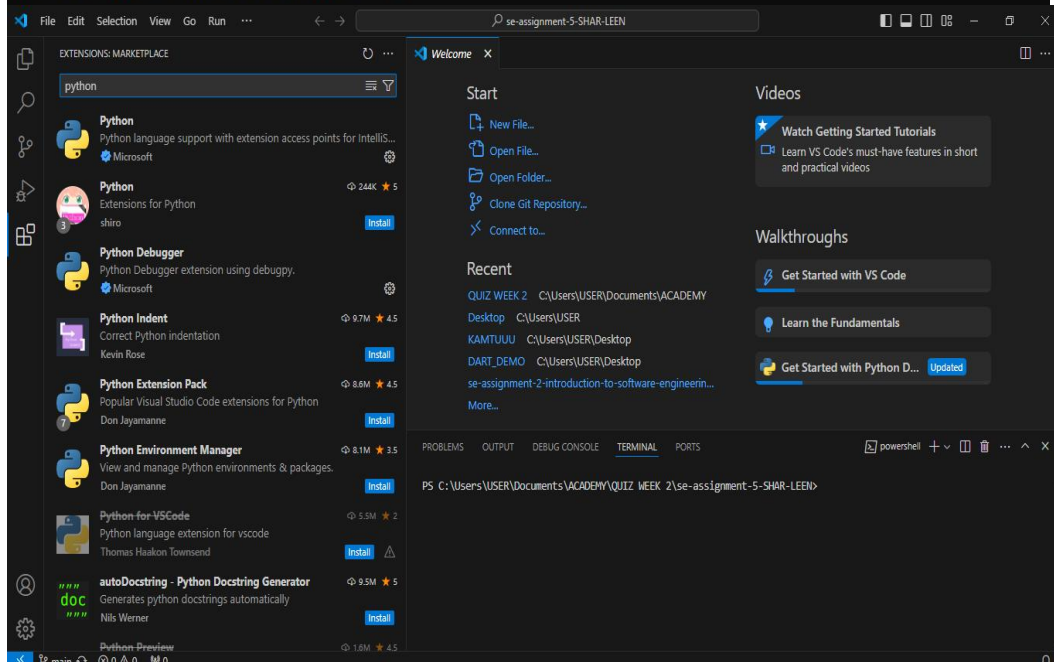
For more details on a specific command, pass it the help argument. [-?]

The following options are available:
-v,--version    Display the version of the tool
--info          Display general info of the tool
-?,--help       Shows help about the selected command
--wait          Prompts the user to press any key before exiting
--logs,--open-logs  Open the default logs location
--verbose,--verbose-logs  Enables verbose logging for winget
--disable-interactive  Disable interactive prompts

More help can be found at: https://aka.ms/winget-command-help

C:\Users\USER>python -m ensurepip --upgrade
Looking in links: c:\Users\USER\AppData\Local\Temp\tmp6f4qrnat
Processing c:\users\user\appdata\local\temp\tmp6f4qrnat\pip-24.0-py3-none-any.whl
Installing collected packages: pip
Successfully installed pip-24.0

```



```

Command Prompt
C:\Users\USER>python -m venv myenv

C:\Users\USER>myenv\Scripts\activate

(myenv) C:\Users\USER>source myenv/bin/activate
'source' is not recognized as an internal or external command,
operable program or batch file.

(myenv) C:\Users\USER>pip install package_name
Collecting package_name
  Downloading package_name-0.1.tar.gz (782 bytes)
  Installing build dependencies ... done
  Getting requirements to build wheel ... done
  Installing backend dependencies ... done
  Preparing metadata (pyproject.toml) ... done
Building wheels for collected packages: package_name
  Building wheel for package_name (pyproject.toml) ... done
  Created wheel for package_name: filename=package_name-0.1-py3-none-any.whl size=1232 sha256=2048c47051397c506b2e14d242ce86f8ebad4278b078baa776cf7e93cbdceff3
  Stored in directory: c:\users\user\appdata\local\pip\cache\wheels\7e\ae\6f\ce521d547a4606ce65f6bcdcefd1c847622c6451dce9f3e8e5
Successfully built package_name
Installing collected packages: package_name
Successfully installed package_name-0.1

(myenv) C:\Users\USER>

```

**5.Install package managers: if applicable install package managers like pip(python).**

Process is done in the above question 4.

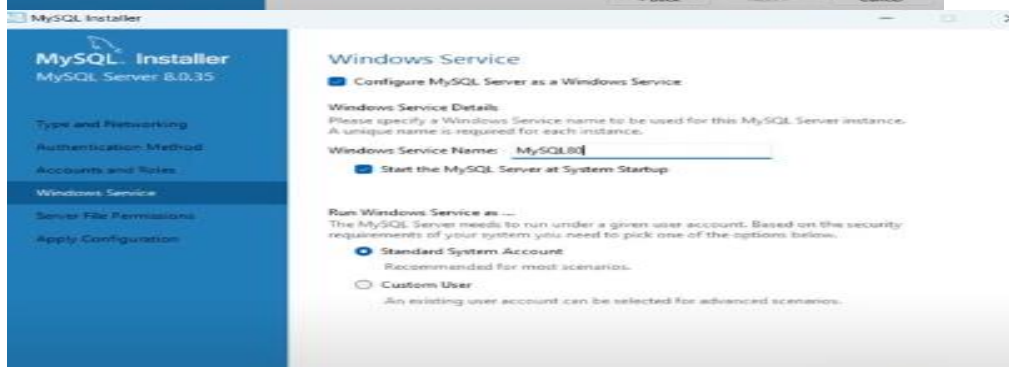
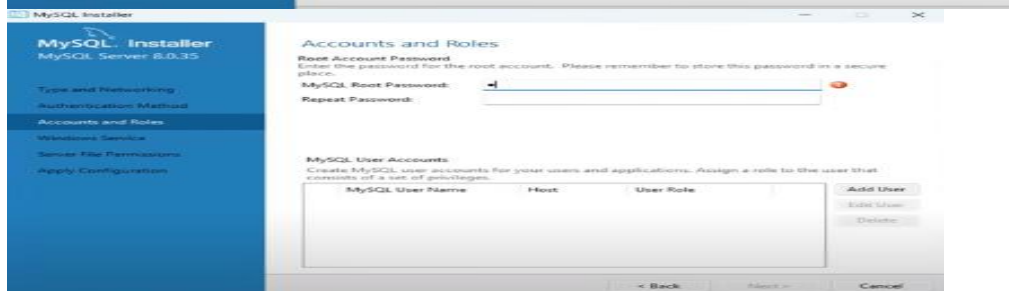
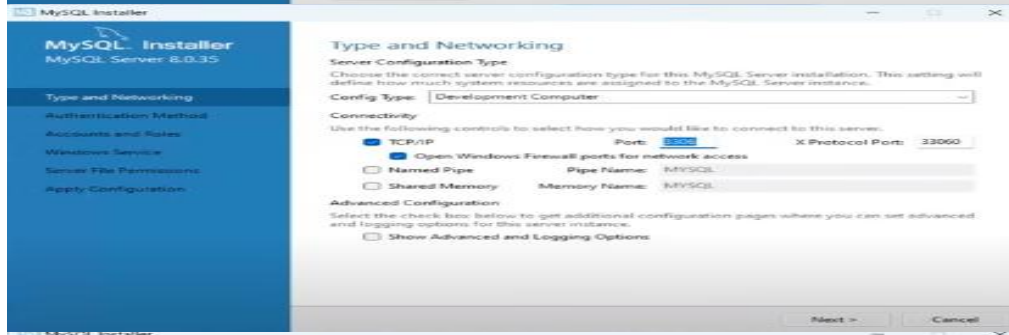
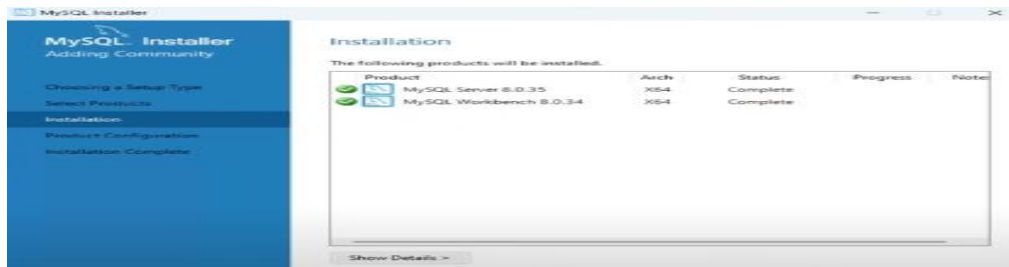
**6.Configure a database (MYSQL): Download and install MySQL database**

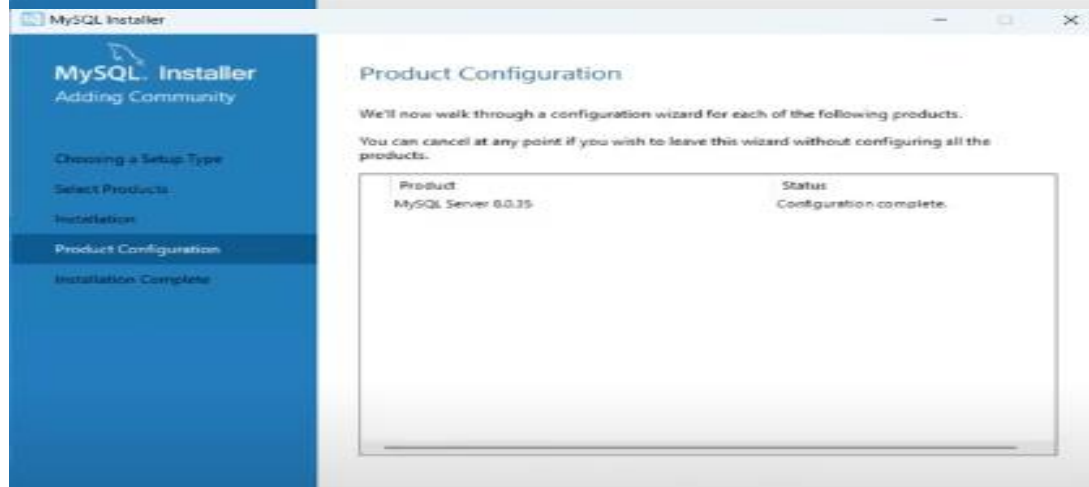
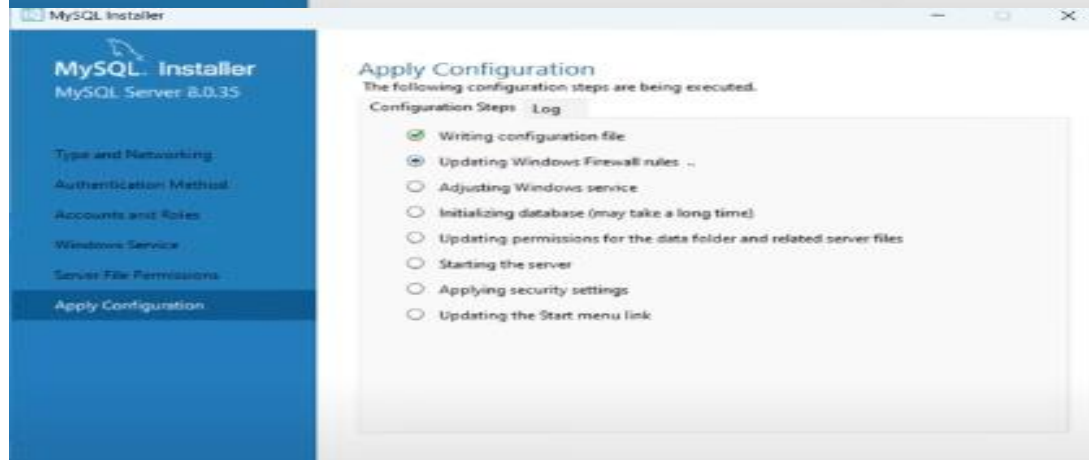
**<https://dev.mysql.com/downloads/windows/installer/5.7.html>**

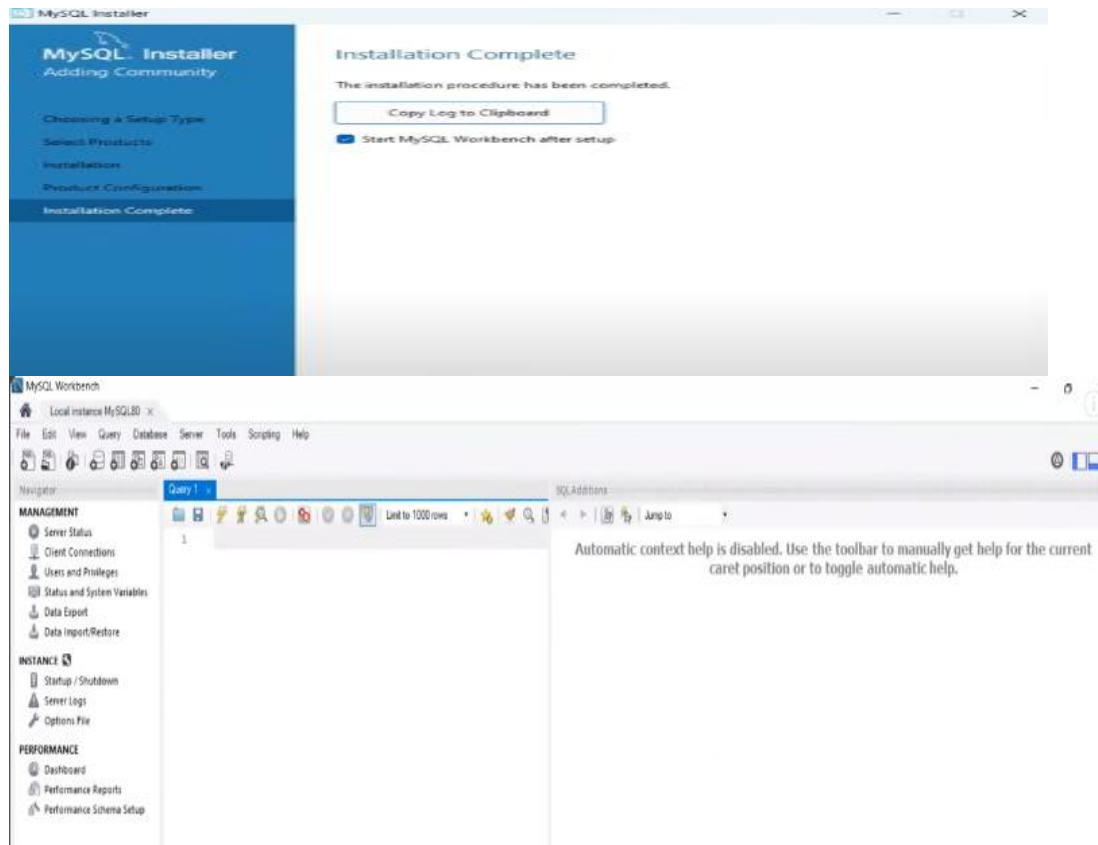
Download MySQL from the link [dev.mysql.com/downloads/installer](https://dev.mysql.com/downloads/windows/installer/5.7.html). Download the MySQL Installer from the official MySQL website before installing MySQL on a Windows computer. Open the installer executable that you downloaded, choose "Developer Default" setup type, and MySQL Workbench and other required tools will be installed. Installing any missing components will be caused by the installer, which will check for them. Click "Execute" to download and install the necessary components after making sure the products and features are selected correctly and selecting the installation path. Choose the development configuration type for MySQL Server, create the root password, and add more user accounts as necessary. Make sure MySQL Server is launched automatically at system startup and set it up to operate as a Windows service. After applying the configuration settings, the installation is complete.











## **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.**

In Visual Studio Code (VS Code), popular extensions include Python for rich support, Prettier for code formatting, ESLint for linting, GitLens for Git integration, Live Server for live reloads, Docker for container management, Debugger for Chrome, and Jupyter for notebook support.

Confirm that the editors you use support syntax highlighting for the languages you work with. Code formatting is to ensure a consistent code style, use formatters. Plugins that linter code can help enforce coding standards. Use plugins for Git integration to easily manage versions inside your editor. VS Code's Live Server and other live preview plugins can speed up your web development process.

### **Challenges that were encountered:**

Compatibility Issues: There is a chance that different software versions will not cooperate well.

Dependency conflicts may occur when necessary tools don't work well together.

Configuring Environment Variables: It can be difficult to get the right paths and configurations.

More setup issues may arise with larger or older projects.

**Strategies:**

Having virtual environment for example python to help manage dependencies separately.

Having version control systems that keeps track of changes and makes setups easy.