



Vidyavardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science

Aim : To understand Version Control System / Source Code Management, install git and create a GitHub account

Objective: Objective is installing and configuring Git, a popular VCS tool, and creating a GitHub account, thereby enabling effective collaboration, code sharing, and version tracking in software development projects.

Theory :

Version Control System or Source Code Management Tool :

Version control is a system that records changes to a file or set of files over time so that you can recall specific versions later.

Example:

The most common type is a centralized VCS, which uses a server to store all the versions of a file. Developers can check out a file from the server, make changes, and check the file back in.

A source code management system is a software tool that coordinates a software development team's coding work. It may also be called a “version control system” or a “source control system.”

Example:

Bitbucket, IBM Rational Clearcase or open source tools such as Github and Apache Subversion

Source control (or version control) is the practice of tracking and managing changes to code. Source control management (SCM) systems provide a running history of code development and help to resolve conflicts when merging contributions from multiple sources.

How to install git?

Download for Windows:

- Browse to the official Git website: <https://git-scm.com/downloads>
- Click the download link for Windows and allow the download to complete.

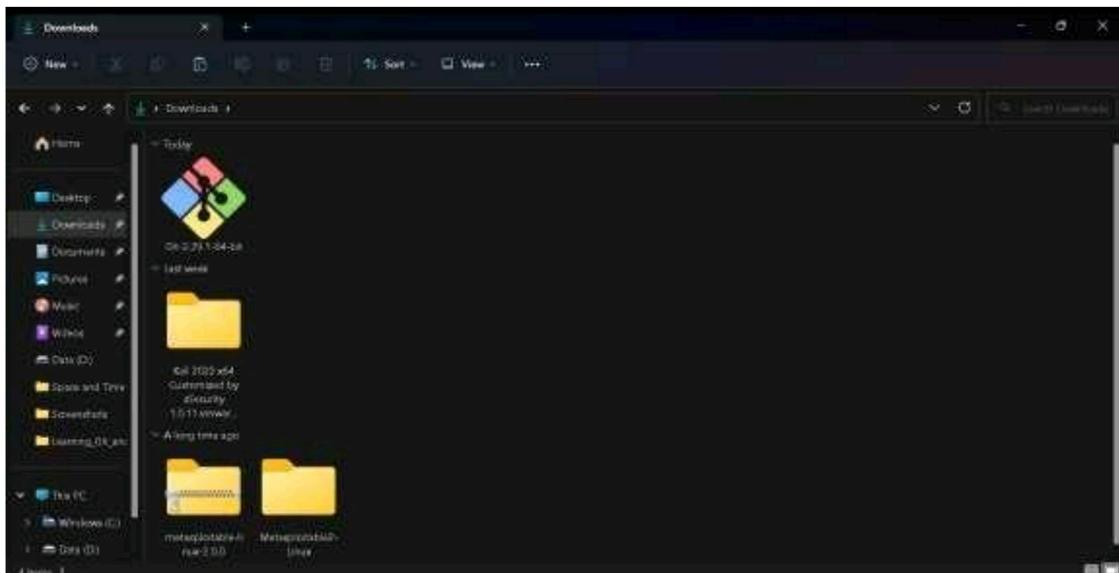


Vidyavardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science



Browse to the download location (or use the download shortcut in your browser). Double-click the file to extract and launch the installer.



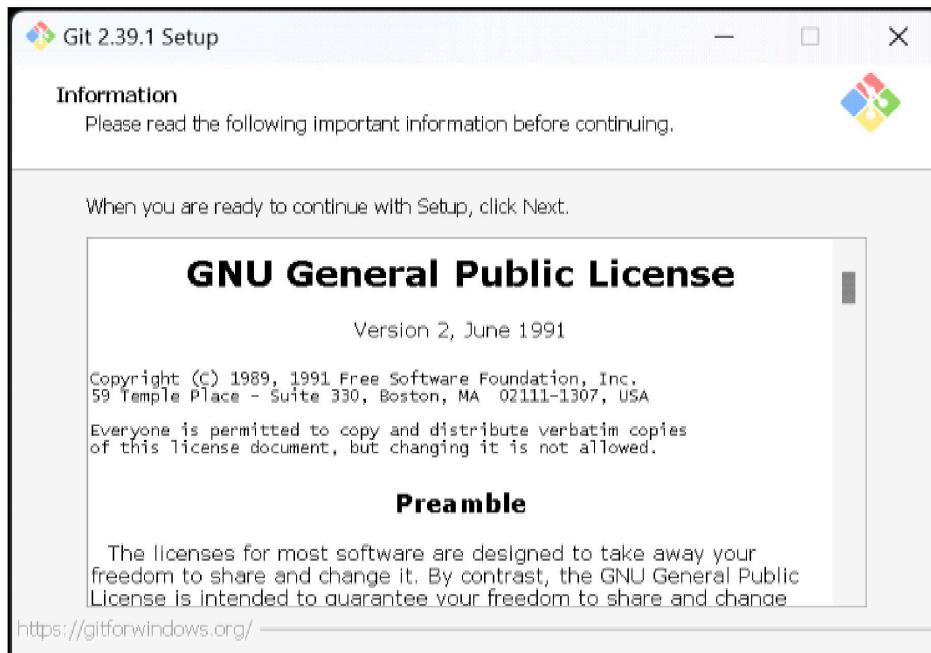
Allow the app to make changes to your device by clicking Yes on the User Account Control dialog that opens.



VidyaVardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science

Review the GNU General Public License, and when you're ready to install, click Next.

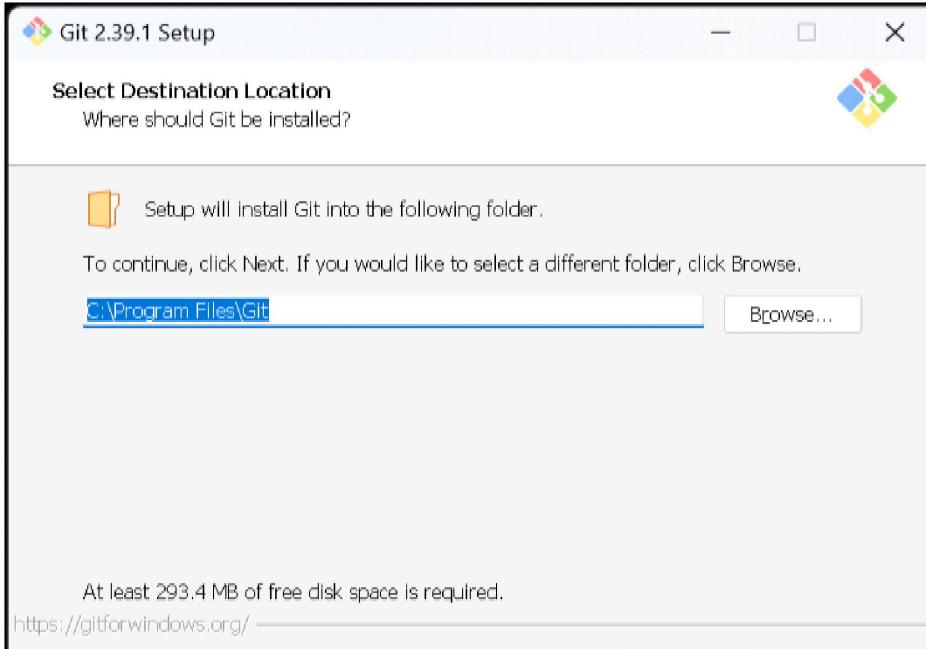


The installer will ask you for an installation location. Leave the default, unless you have reason to change it, and click Next.

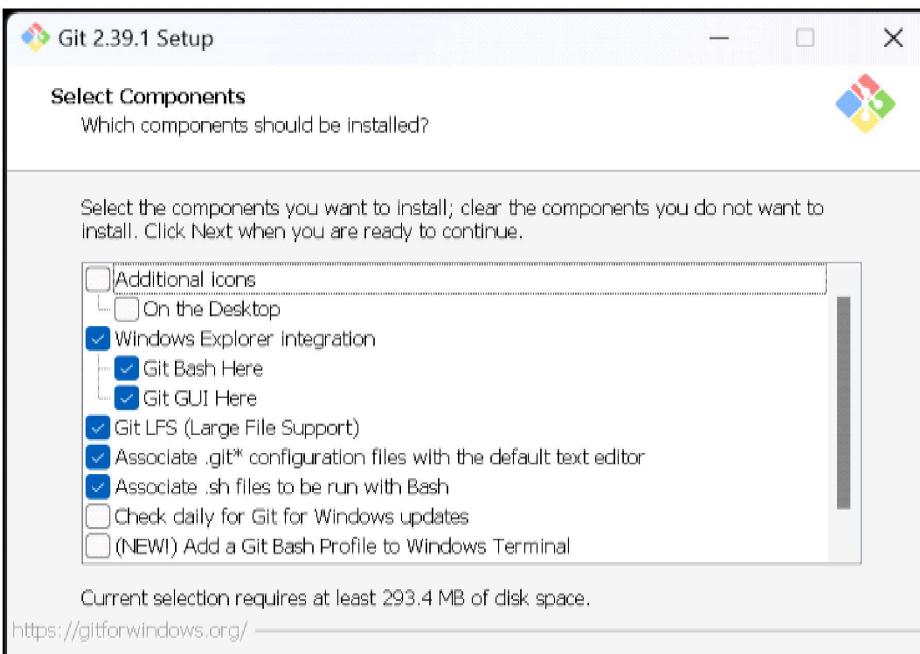


VidyaVardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science



Leave the defaults unless you have a specific need to change them and click Next.

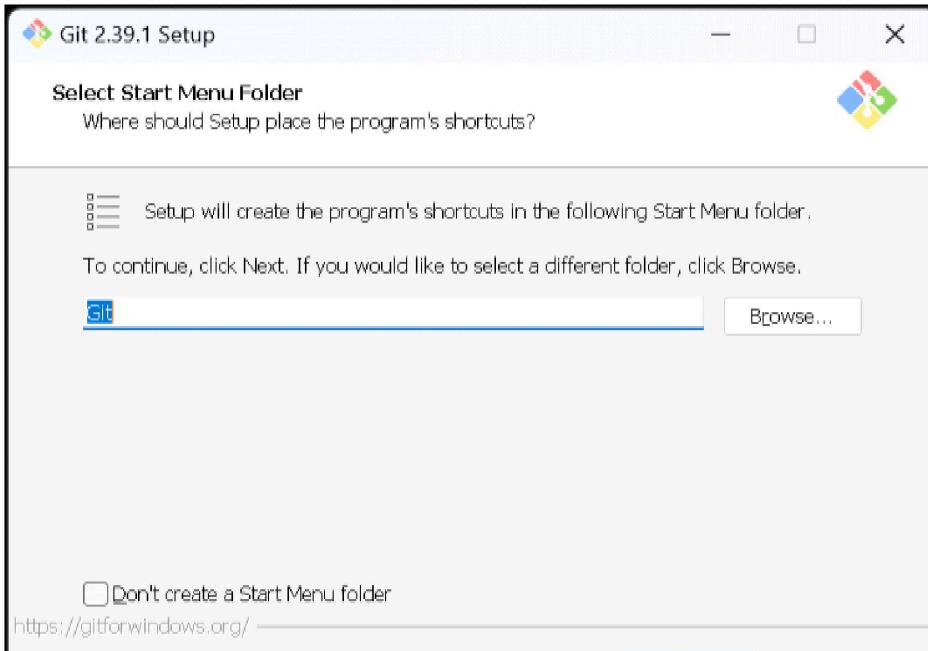


Simply click Next.

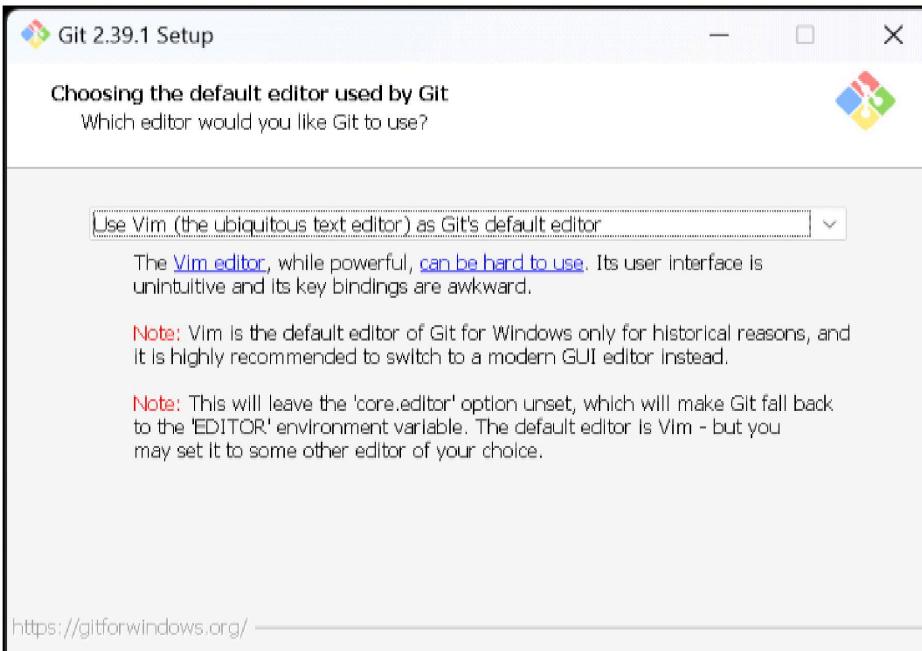


Vidya Vardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science



Select a text editor you'd like to use with Git.(whichever text editor you prefer) and click Next



The next step allows you to choose a different name for your initial branch. The default is 'master.' leave the default option and click Next.



Vidyavardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science

Git 2.39.1 Setup

Adjusting the name of the initial branch in new repositories

What would you like Git to name the initial branch after "git init"?

Let Git decide

Let Git use its default branch name (currently: "master") for the initial branch in newly created repositories. The Git project [intends](#) to change this default to a more inclusive name in the near future.

Override the default branch name for new repositories

NEW! Many teams already renamed their default branches; common choices are "main", "trunk" and "development". Specify the name "git init" should use for the initial branch:

main

This setting does not affect existing repositories.

<https://gitforwindows.org/>

This installation 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. Leave this on the middle (recommended) selection and click Next.

Git 2.39.1 Setup

Adjusting your PATH environment

How would you like to use Git from the command line?

Use Git from Git Bash only

This is the most cautious choice as your PATH will not be modified at all. You will only be able to use the Git command line tools from Git Bash.

Git from the command line and also from 3rd-party software

(Recommended) This option adds only some minimal Git wrappers to your PATH to avoid cluttering your environment with optional Unix tools.
You will be able to use Git from Git Bash, the Command Prompt and the Windows PowerShell as well as any third-party software looking for Git in PATH.

Use Git and optional Unix tools from the Command Prompt

Both Git and the optional Unix tools will be added to your PATH.
Warning: This will override Windows tools like "find" and "sort". Only use this option if you understand the implications.

<https://gitforwindows.org/>

The installer now asks which SSH client you want 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.

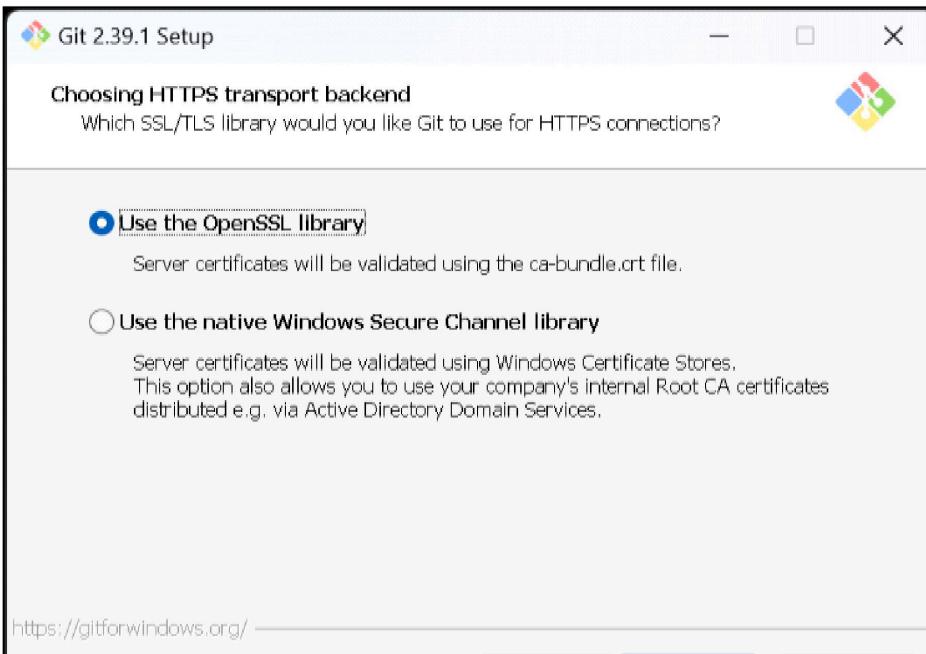


VidyaVardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science



The next option relates to server certificates. If you're working in an Active Directory environment, you may need to switch to Windows Store certificates. Click Next.

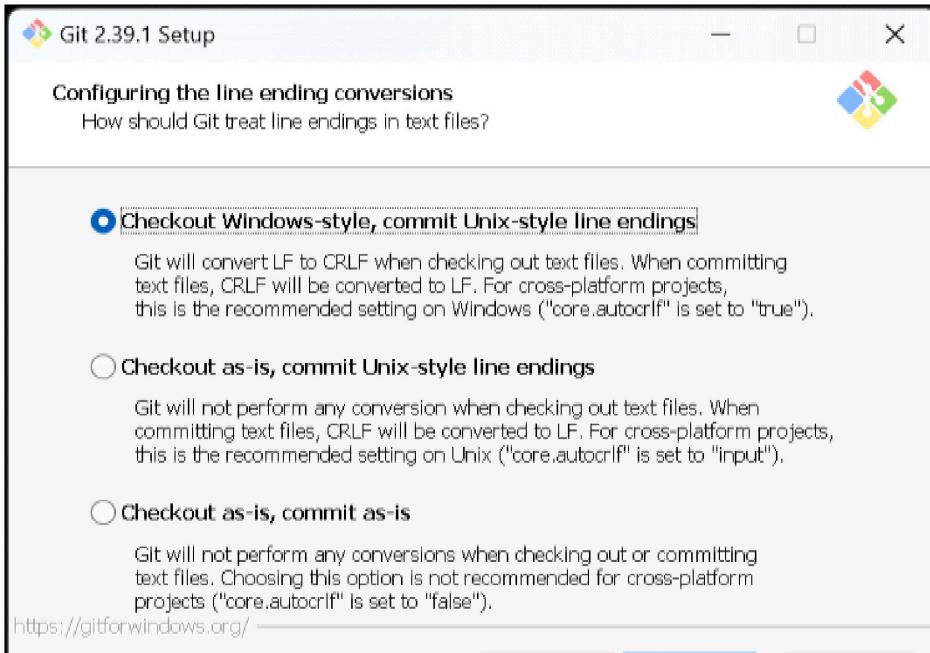


The next selection converts line endings. Click Next.

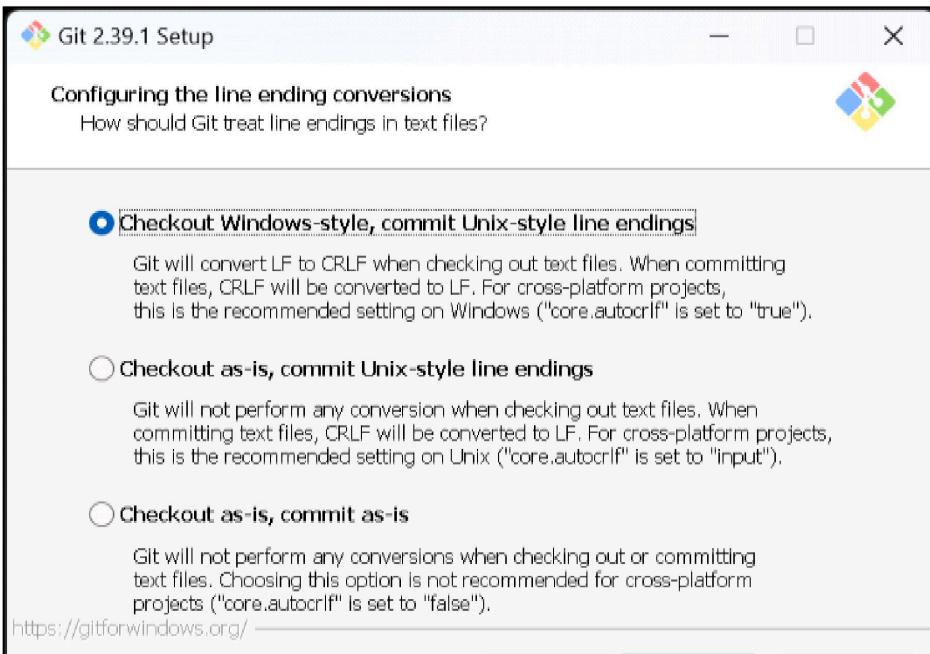


VidyaVardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science



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

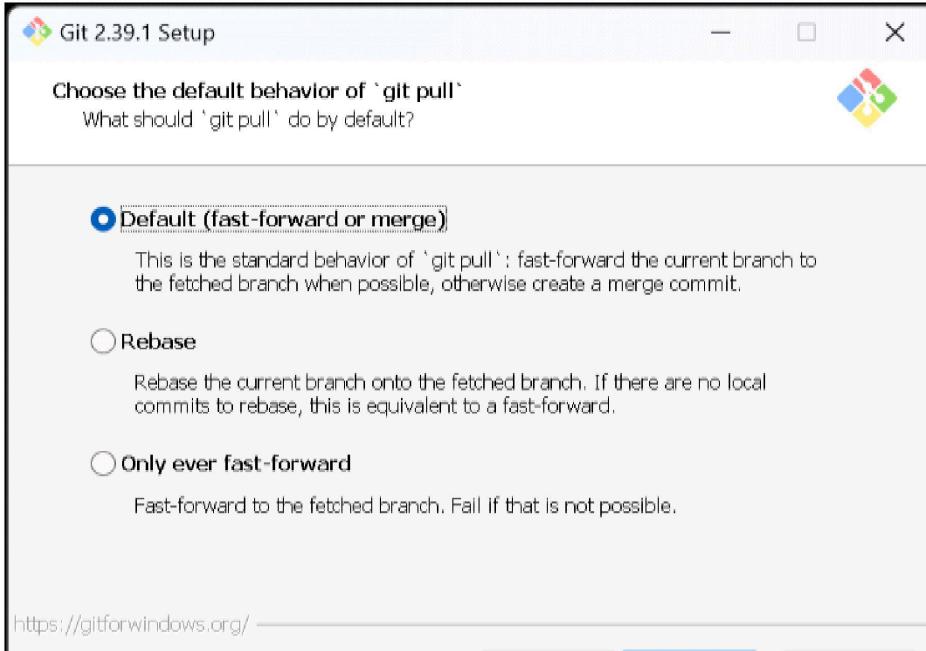


The installer now asks what the git pull command should do. The default option is recommended unless you need to change its behavior. Click Next to continue .

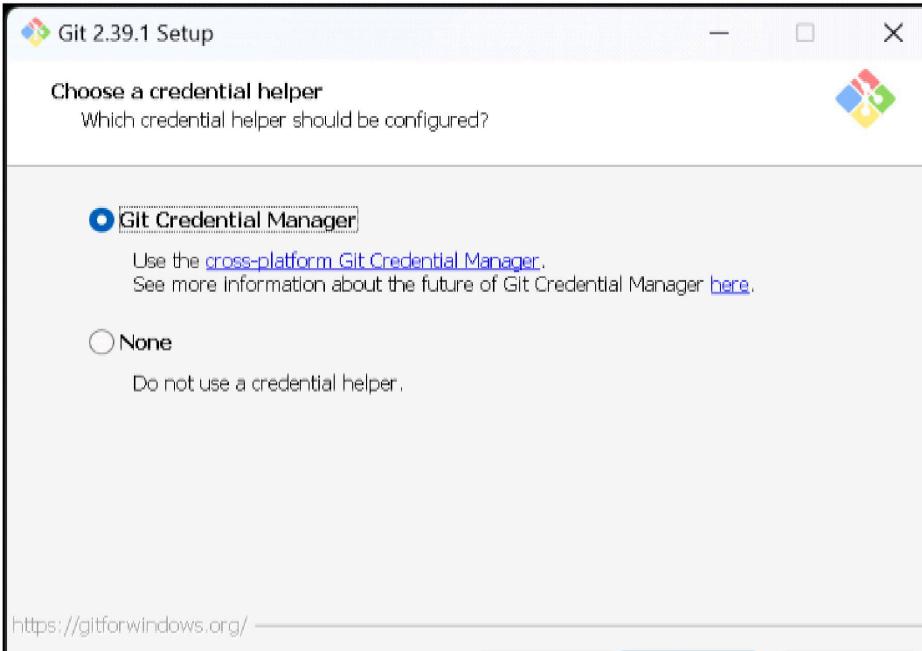


VidyaVardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science



Next you should choose which credential helper to use. Git uses credential helpers to fetch or save credentials. Leave the default option and click Next.

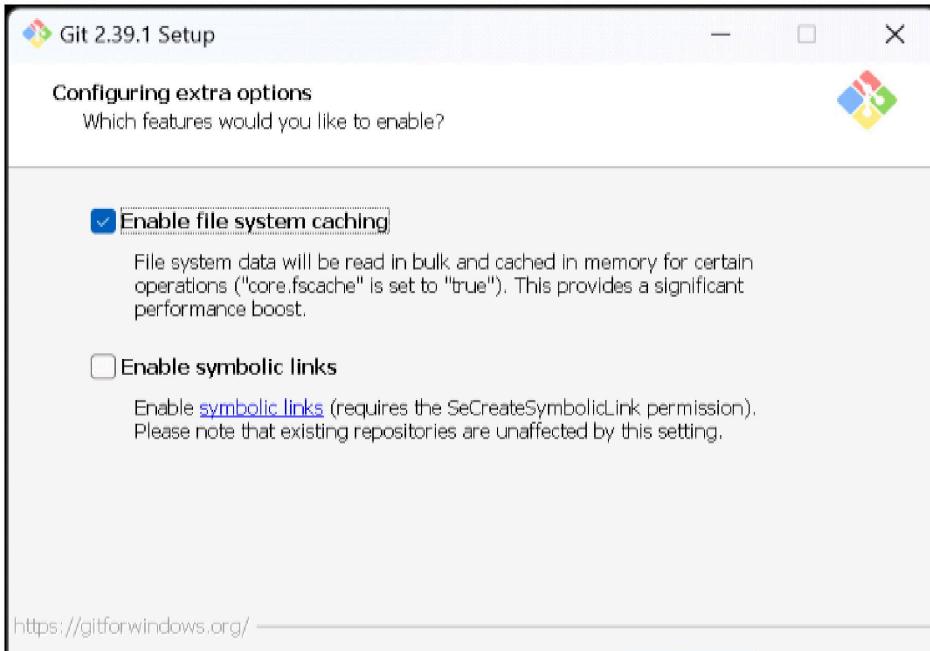


The default options are recommended, click Next.

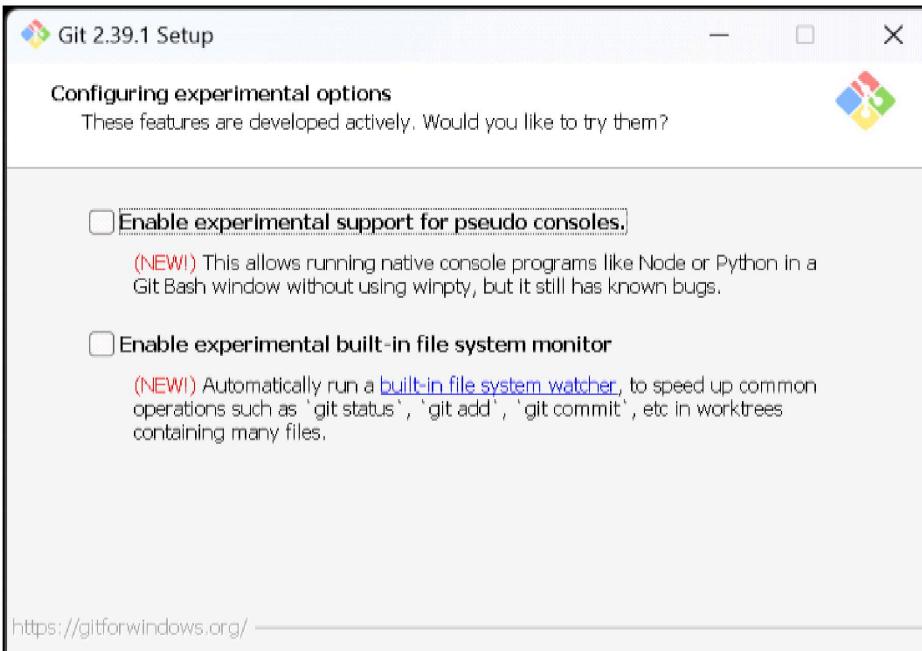


VidyaVardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science



Leave them unchecked and click Install.

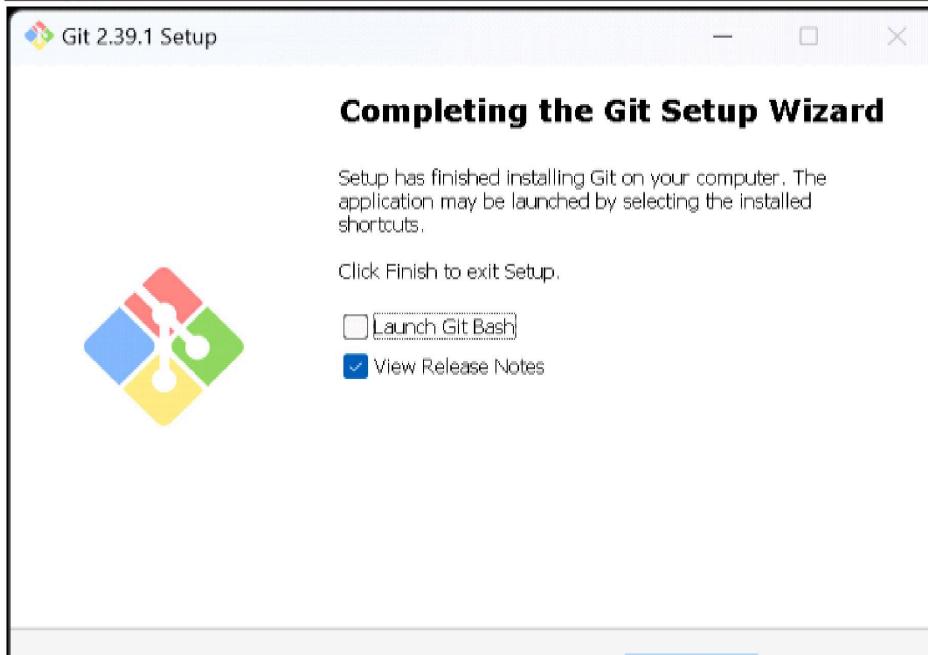


Once the installation is complete, tick the boxes to view the Release Notes or Launch Git Bash, then click Finish.

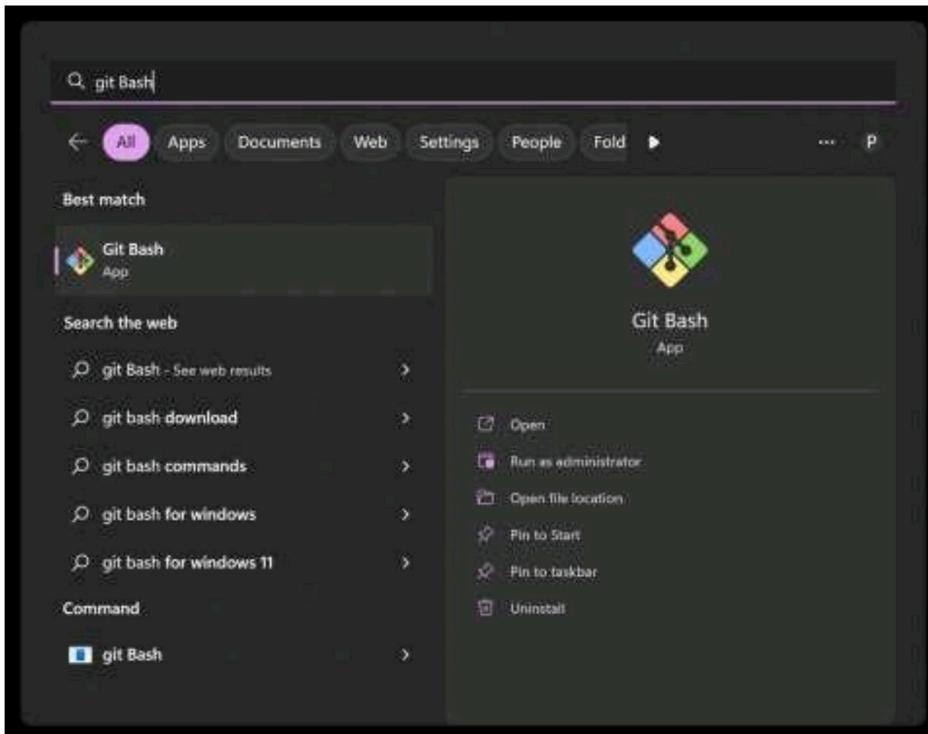


Vidyavardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science



To launch Git Bash open the Windows Start menu, type git bash and press Enter





Vidya Vardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science

CREATE A NEW GITHUB ACCOUNT :

- Go to <https://github.com/join> in a web browser.
- Enter your personal details.
- Click Verify to start the verification puzzle.
- Click the green Create account button.
- Verify your email by entering the code. (After clicking Create account, you'll receive an email with a code. Enter this code on the verification page.)
- Select your preferences and click Continue.
- Note the types of plans offered by GitHub. (choose Free)
- Note the types of plans offered by GitHub. (You are ready with your github Account)

Conclusion :

Q1. What is a Version Control System ?

Ans: Version control, also known as source control, is the practice of tracking and managing changes to software code. Version control systems are software tools that help software teams manage changes to source code over time. As development environments have accelerated, version control systems help software teams work faster and smarter.

Q2. Which is the difference between GIT and GitHub?

Ans: The key difference between Git and GitHub is that Git is a free, open source version control tool that developers install locally on their personal computers, while GitHub is a pay-for-use online service built to run Git in the cloud. Git is a piece of software. GitHub is an online SaaS service.