EXPERIMENT NO: 02

Aim: To understand Version Control System, Git Installation and GitHub account.

What is Version Control System?

A version control system is a software that tracks changes to a file or set of files over time so that you can recall specific versions later. It also allows you to work together with other programmers. The version control system is a collection of software tools that help a team to manage changes in a source code. It uses a special kind of database to keep track of every modification to the code. Developers can compare earlier versions of the code with an older version to fix the mistakes.

The Version Control System is very helpful and beneficial in software development; developing software without using version control is unsafe. It provides backups for uncertainty. Version control systems offer a speedy interface to developers. It also allows software teams to preserve efficiency and agility according to the team scales to include more developers.

Some key benefits of having a version control system are as follows:

- Complete change history of the file.
- Simultaneously working.
- Branching and merging.
- Traceability.

What is Git?

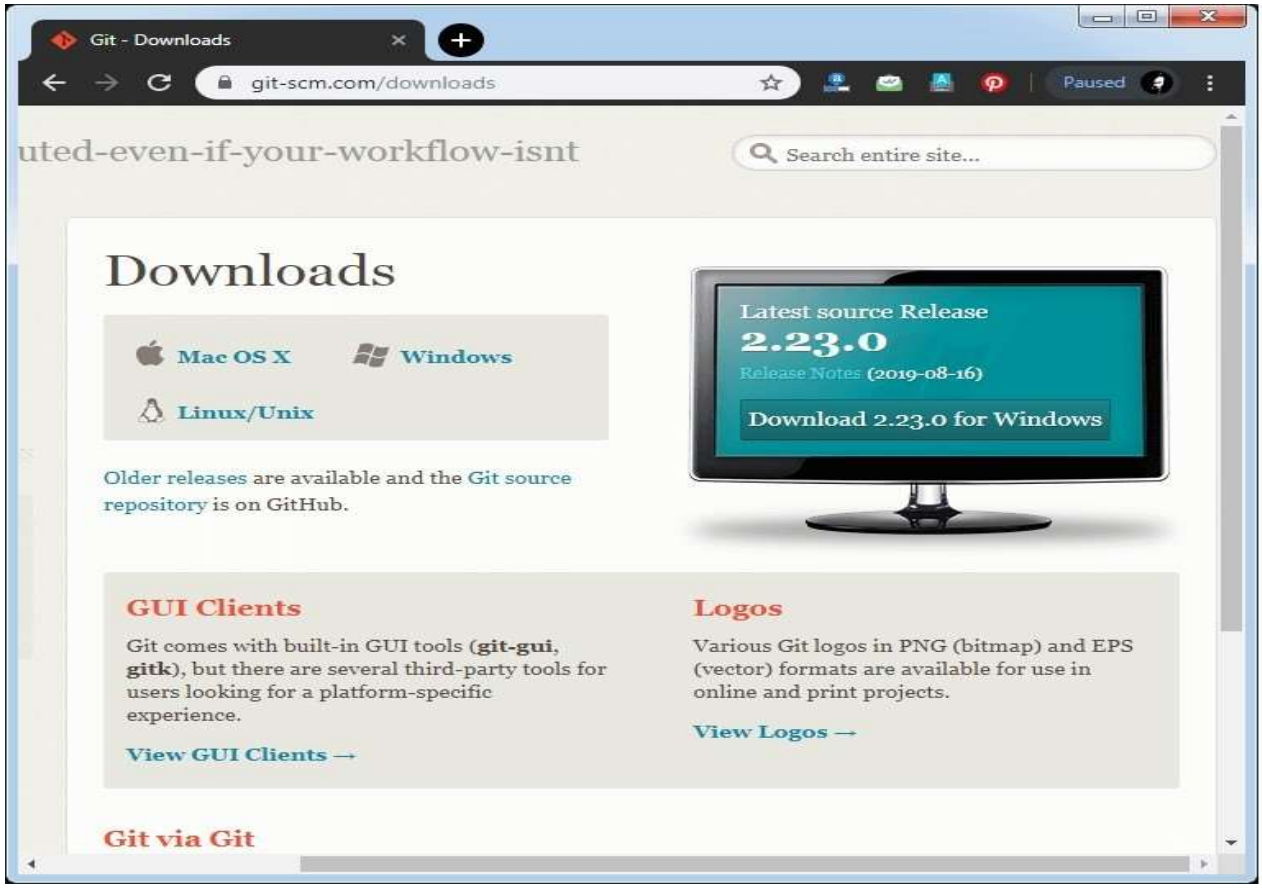
Git is a free and open-source distributed version control system designed to handle everything from small to very large projects with speed and efficiency. Git is easy to learn and has a tiny footprint with lightning-fast performance. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like cheap local branching, convenient staging

areas, and multiple workflows. Git is a distributed version control system that tracks changes in any set of computer files, usually used for coordinating work among programmers collaboratively developing source code during software development. Its goals include speed, data integrity, and support for distributed, non-linear workflows.

Installation of Git and GitHub

Step 1:

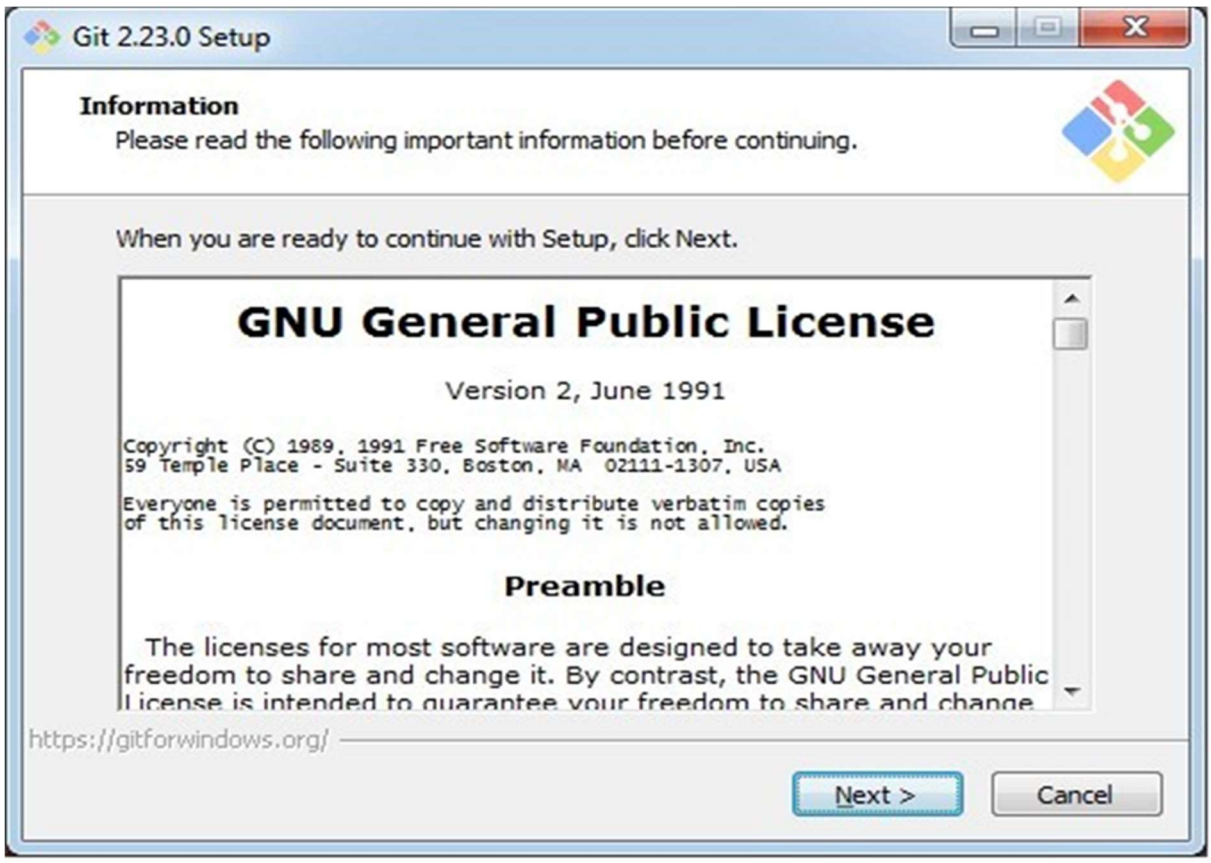
To download the Git installer, visit the Git's official site and go to download page. The link for the download page is https://git-scm.com/downloads. The page looks like as:



Click on the package given on the page as download 2.23.0 for windows. The download will start after selecting the package. Now, the Git installer package has been downloaded.

Step 2:

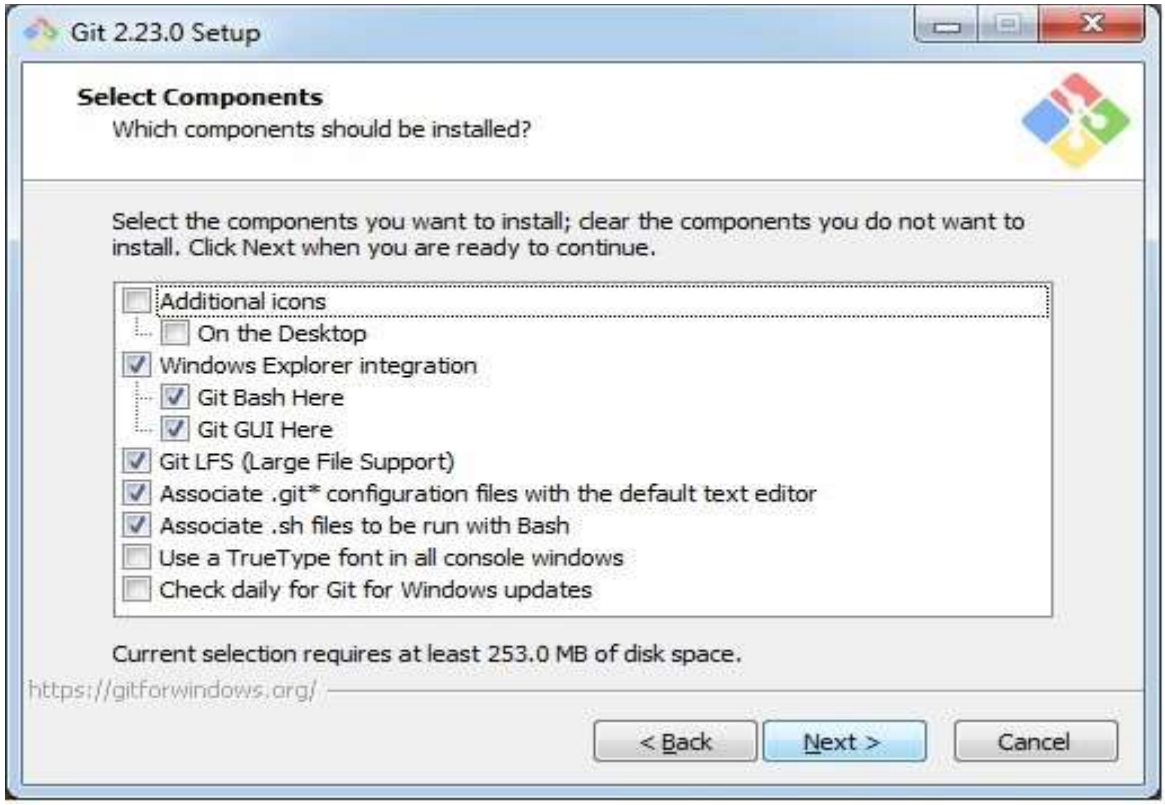
Click on the downloaded installer file and select yes to continue. After the selecting yes, the installation begins, and the screen will look like as:



Click on next to continue.

Step 3:

Default components are automatically selected in this step. You can also choose your required part.



Click next to continue.

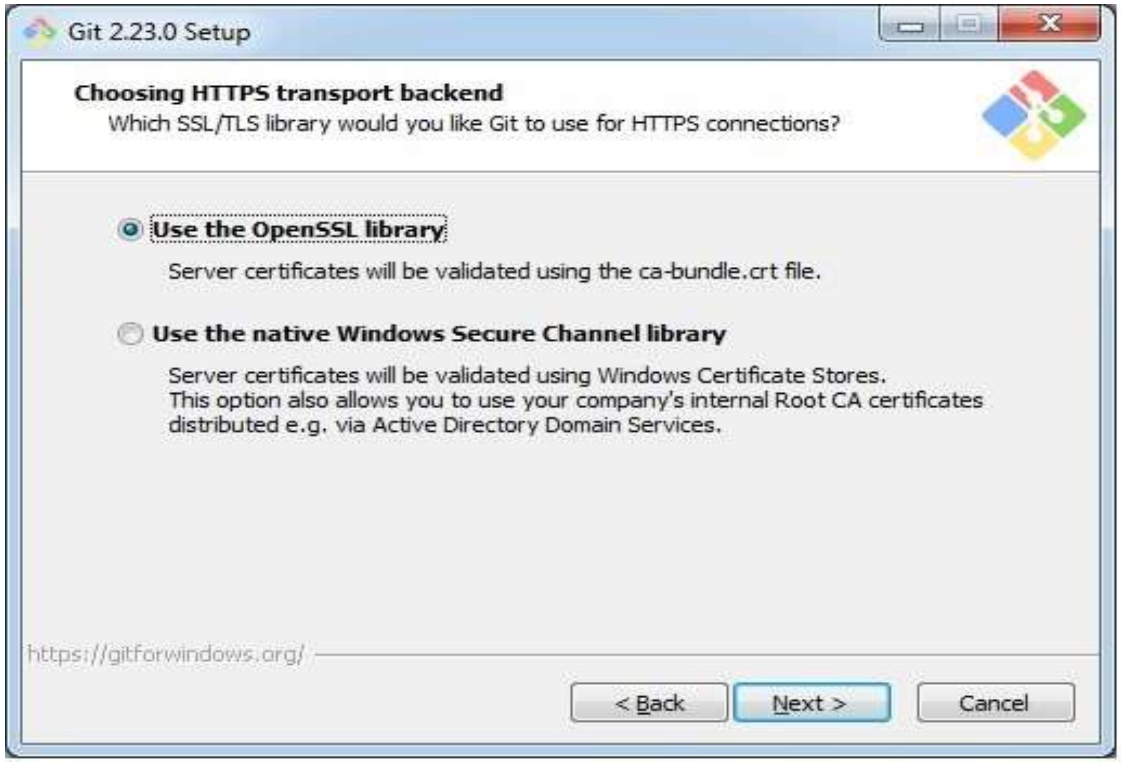
Step 4:

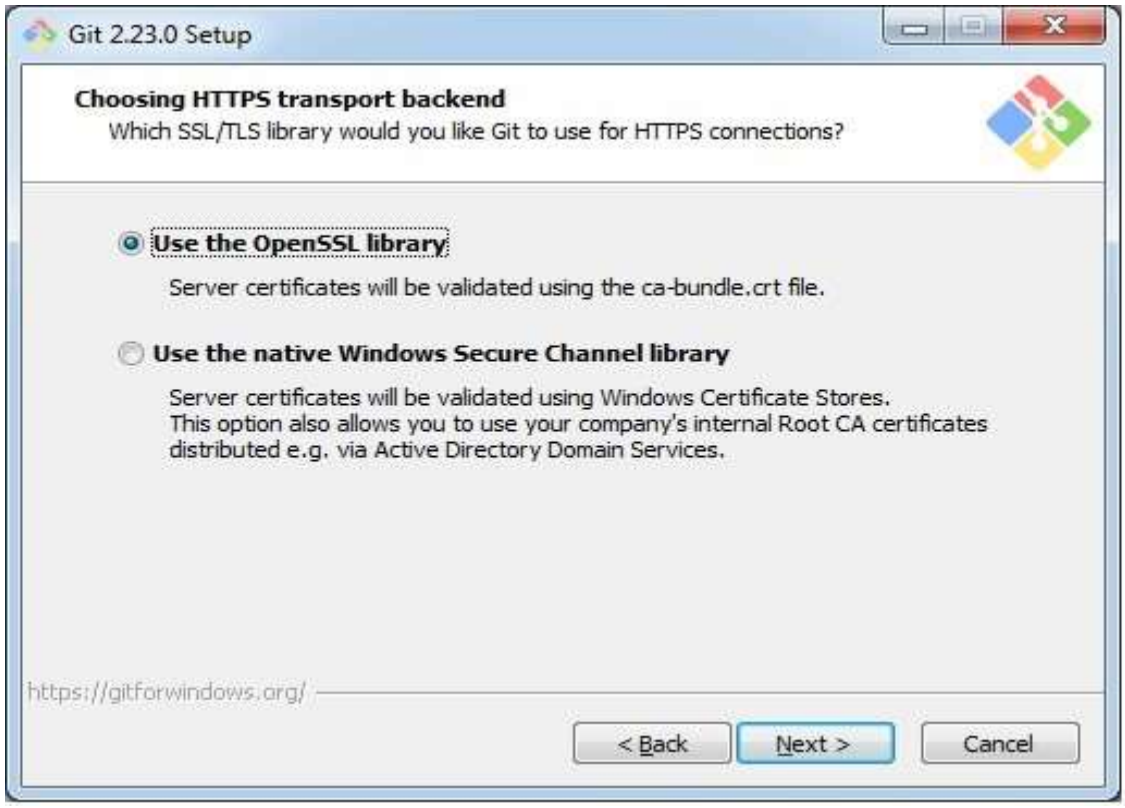
The default Git command-line options are selected automatically. You can choose your preferred choice. Click next to continue.

Install Git on Windows

Step 5:

The default transport backend options are selected in this step. Click next to continue.


Git 2.23.0 Setup
Choosing HTTPS transport backend
Which SSL/TLS library would you like Git to use for HTTPS connections?
Use the OpenSSL library
Server certificates will be validated using the ca-bundle.crt file.
Use the native Windows Secure Channel library
Server certificates will be validated using Windows Certificate Stores.
This option also allows you to use your company's internal Root CA certificates
distributed e.g. via Active Directory Domain Services.
https://gitforwindows.org/
< Back
Next >
Cancel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< Back
Next >
Cancel

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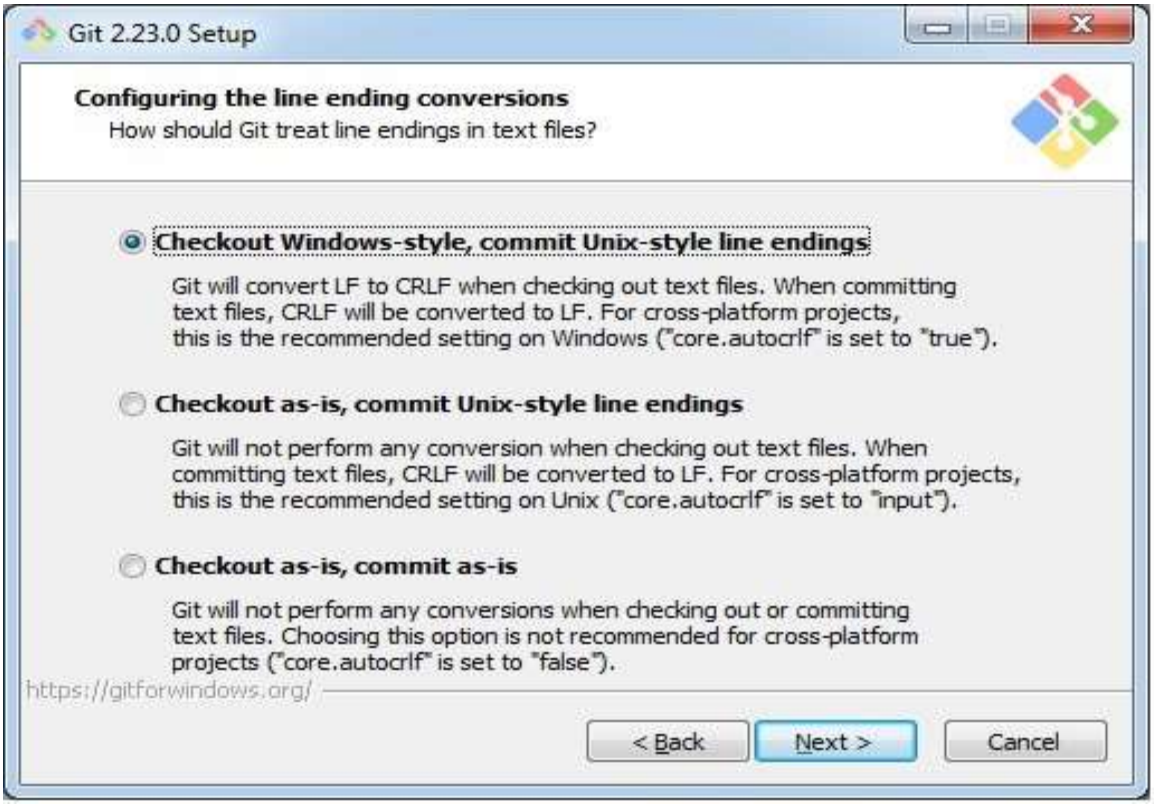
Step 6:

Select your required line ending option and click next to continue.



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Step 7:

Select preferred terminal emulator clicks on the next to continue.

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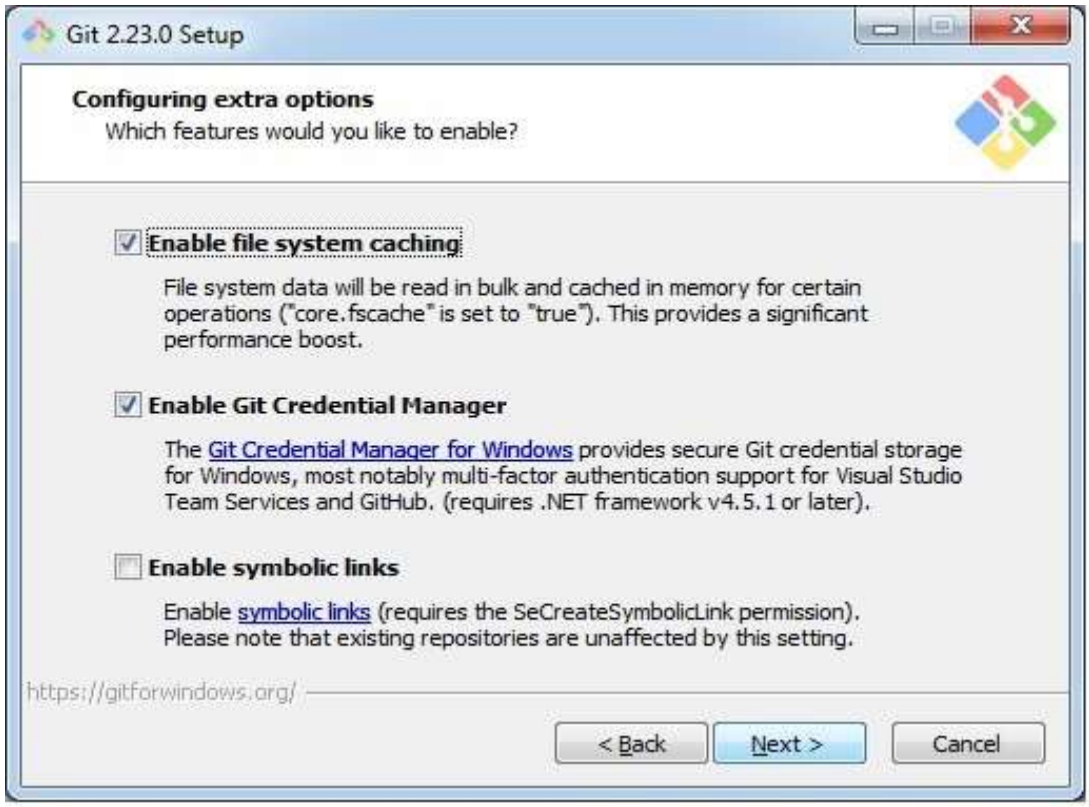
Step 8:

This is the last step that provides some extra features like system caching, credential management and symbolic link. Select the required features and click on the next option.



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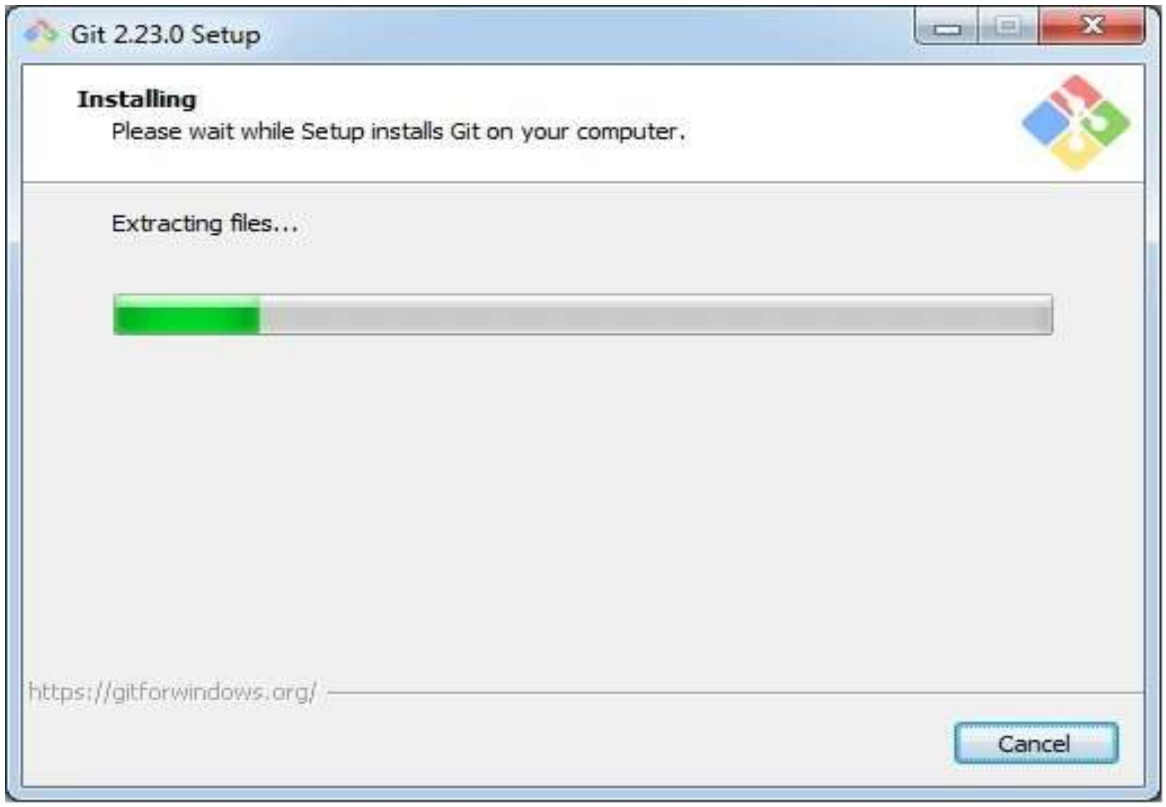
Step 9:

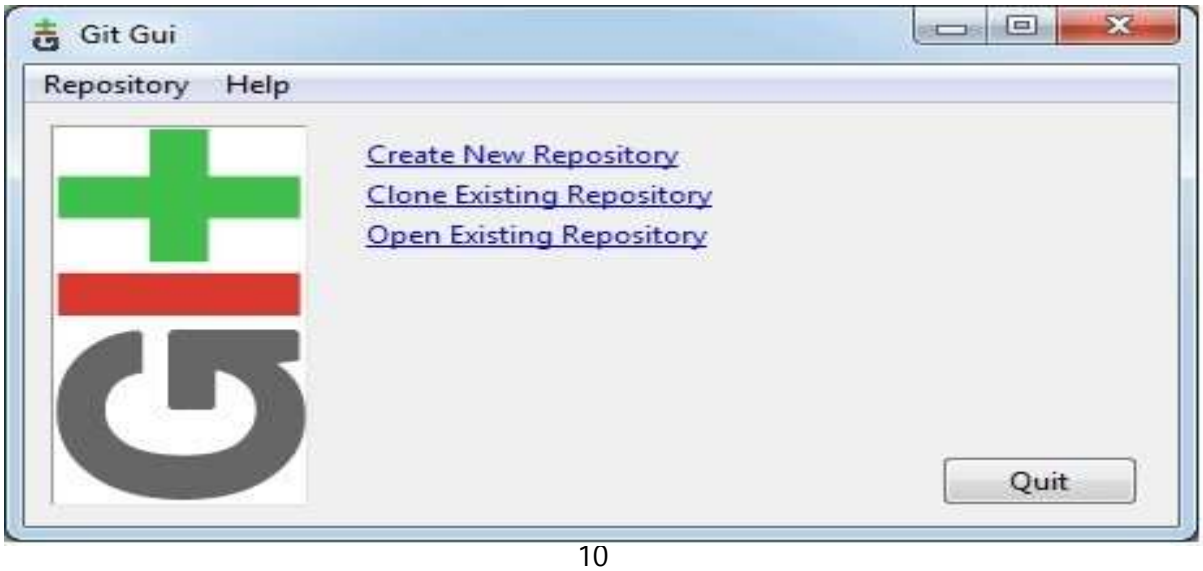
The files are being extracted in this step.



Install Git on Windows.

Therefore, The Git installation is completed. Now you can access the Git Gui and Git Bash.

The Git Gui looks like as:



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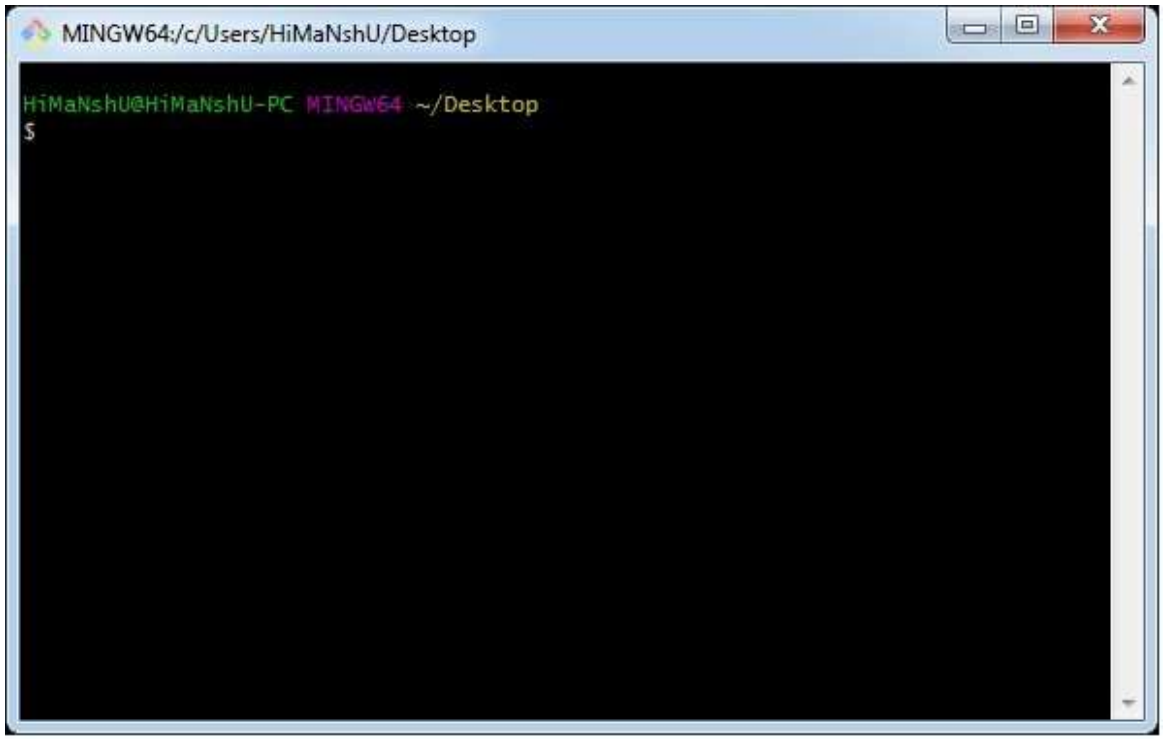
The Git Bash looks like as:

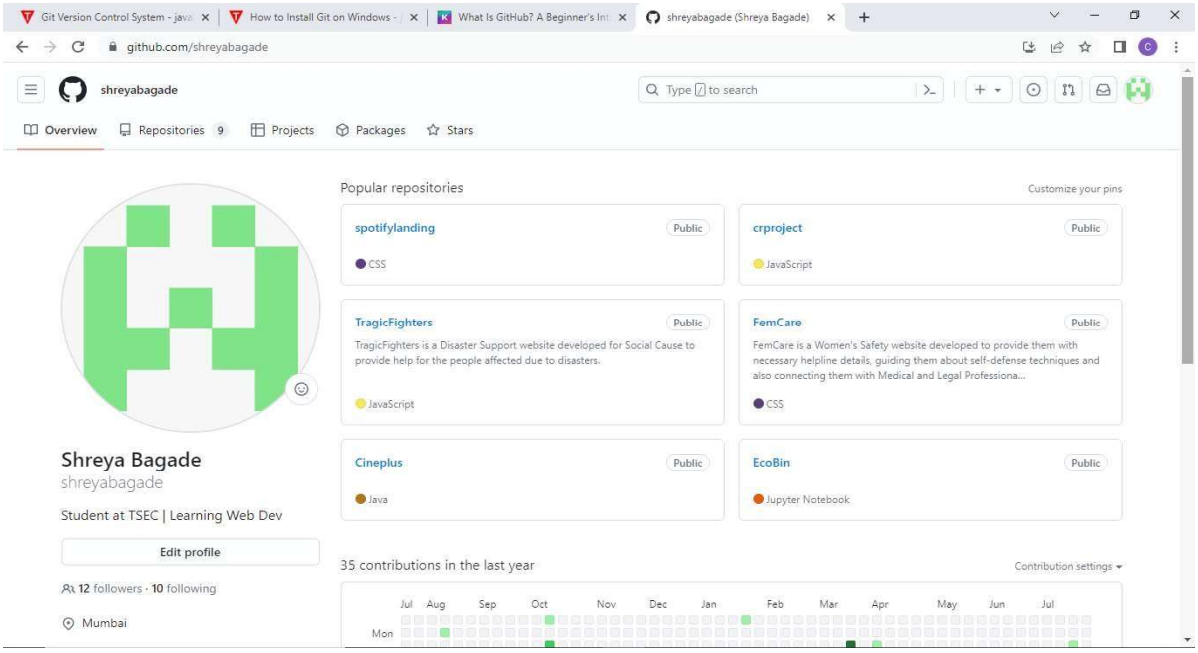


Install Git on Windows.

What is Github?

GitHub is a for-profit company that offers a cloud-based Git repository hosting service. Essentially, it makes it a lot easier for individuals and teams to use Git for version control and collaboration.

GitHub's interface is user-friendly enough so even novice coders can take advantage of Git. Without GitHub, using Git generally requires a bit more technical savvy and use of the command line. Additionally, anyone can sign up and host a public code repository for free, which makes GitHub especially popular with open-source projects.



Conclusion: We have understood Version control system, installed Git and created GitHub account successfully.

Lab Outcome: **LO1-** To understand the fundamentals of DevOps engineering and be fully proficient with DevOps terminologies, concepts, benefits, and deployment options to meet your business requirements.
LO2- To obtain complete knowledge of the "version control system" to effectively track changes augmented with Git and GitHub.