GIT INSTALL AND SET UP:

Git is a free, open-source version control system (VCS) that allows developers to store, track, and manage code

Download Git: Go to git-scm.com and download the installer for your operating system (Windows, macOS, or Linux).

Run the Installer:

Windows: Run the .exe file, and follow the setup wizard. You'll get options to customize your installation, such as selecting components and configuring the initial branch name.

macOS: Install via the downloaded package or use a package manager like Homebrew (brew install git).

Linux: Use the terminal to install (sudo apt install git for Debian-based systems or sudo dnf install git for Red Hat-based systems).

Verify the Installation: Open a terminal or command prompt and type git --version. If installed correctly, it will display the installed Git version.

Initial Configuration: Configure Git with your name and email using:

bash
git config --global user.name "Your Name"
git config --global user.email "your.email@example.com"
After this, Git is ready to use for version control.

JENKINS Install and setup

Jenkins is a tool that is used for automation, and it is an open-source server that allows all the developers to build, test and deploy software.

Install Jenkins on Windows

1. Browse to the official Jenkins download page. Under the Downloading Jenkins section is a list of installers for the long-term support (LTS) version of Jenkins. Click the Windows link to begin the download.
2. Once the download is complete, run the jenkins.msi installation file.
3. The setup wizard starts. Click Next to proceed.
4. Select the install destination folder and click Next to continue.
5. Under the Run service as a local or domain user option, enter the domain username and password for the user account you want to run Jenkins with. Click Test Credentials to verify the login data, then click Next to proceed.
6. Enter the port number you want Jenkins to run on. Click Test Port to check if the selected port is available, then click Next to continue.
7. Select the directory where Java is installed on your system and click Next to proceed.
8. Select the features you want to install with Jenkins and click Next to continue.
9. Click Install to start the installation process.
10. Once the installation is complete, click Finish to exit the install wizard.

Version Control Systems

Version control systems are a category of software tools that helps in recording changes made to files by keeping a track of modifications done in the code.

Local Version Control Systems:
It is one of the simplest forms and has a database that kept all the changes to files under revision control. RCS is one of the most common VCS tools. It keeps patch sets (differences between files) in a special format on disk. By adding up all the patches it can then re-create what any file looked like at any point in time.
Centralized Version Control Systems
Centralized version control systems contain just one repository globally and every user need to commit for reflecting one's changes in the repository. It is possible for others to see your changes by updating.
Two things are required to make your changes visible to others which are:

- You commit
- They update

Distributed Version Control Systems:
Distributed version control systems contain multiple repositories. Each user has their own repository and working copy. Just committing your changes will not give others access to your changes. This is because commit will reflect those changes in your local repository and you need to push them in order to make them visible on the central repository. Similarly, When you update, you do not get others' changes unless you have first pulled those changes into your repository.
To make your changes visible to others, 4 things are required:

- You commit
- You push
- They pull
- They update

The most popular distributed version control systems are Git, and Mercurial.