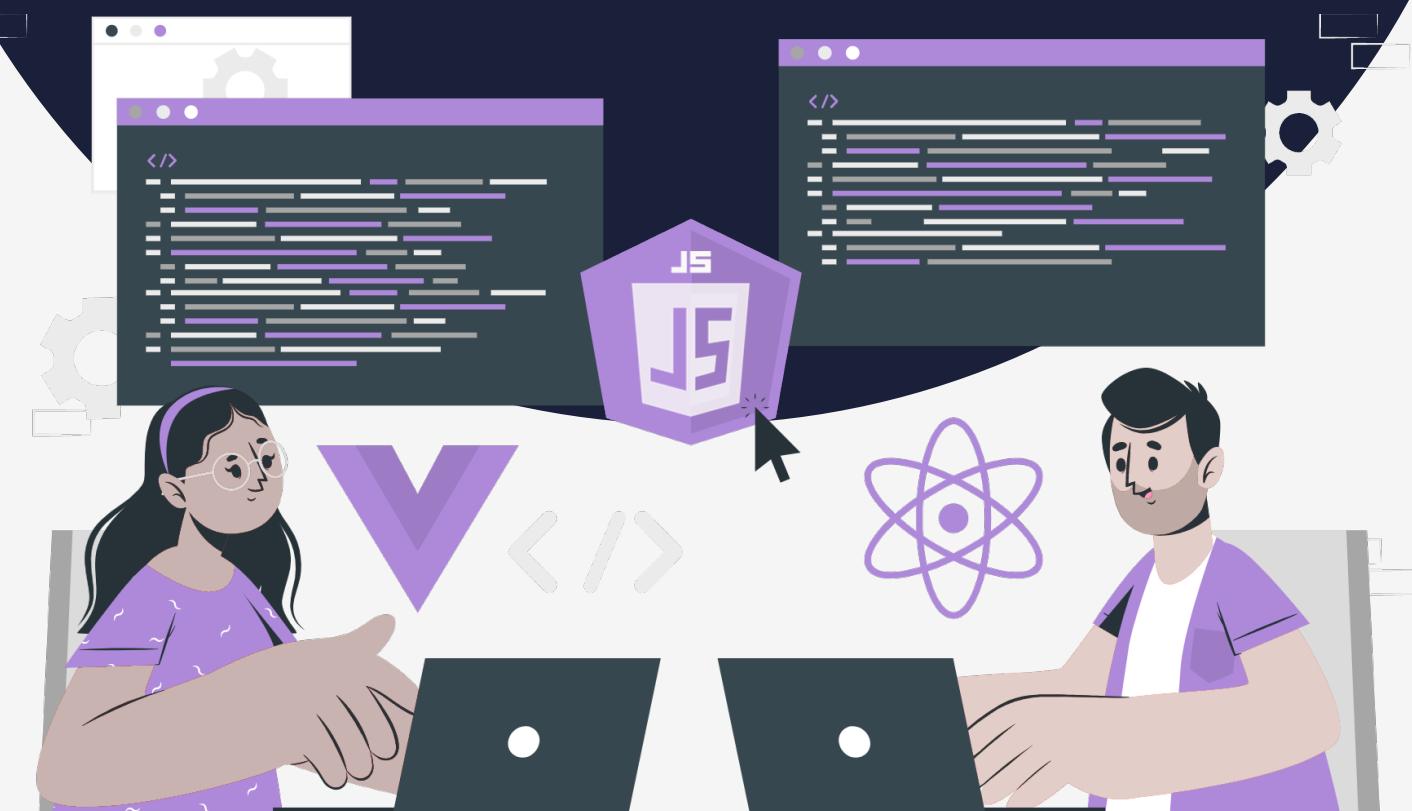


Lesson:

Introduction to Git and Explaining Version Control System



Topics Covered:

- What is Version Control System (VCS)?
- Examples of VCSS.
- What is Git?

A version control system (VCS) is a tool that helps software developers manage changes to their source code over time. It allows you to track and manage different versions of your code, collaborate with other developers, and revert to earlier versions of your code if necessary.

Version control systems work by creating a central repository that stores all versions of your code. Every time you make changes to your code, you create a new version and store it in the repository. This makes it easy to keep track of changes over time and revert to an earlier version if necessary.

VCS also allows multiple developers to work on the same codebase simultaneously, by creating branches where developers can work independently without interfering with each other's work. When a developer is finished with their changes, they can merge their changes back into the main codebase.

Overall, version control systems are essential tools for managing software development projects, allowing developers to work collaboratively, keep track of changes, and maintain the quality and stability of their code.

Example of VCSS:

There are several version control systems (VCS) available, each with its own unique features and advantages. Here are some examples of popular VCS:

- **Git:** Git is currently one of the most popular VCS, used by millions of developers worldwide. It's a distributed VCS, which means that each developer has their own copy of the entire codebase, allowing for easy collaboration and offline work.
- **Subversion (SVN):** SVN is a centralized VCS that has been around for a long time. It's popular among enterprises and larger teams because it's relatively easy to use and has good integration with other development tools.
- **Mercurial:** Mercurial is another distributed VCS that's similar to Git in many ways. It's known for its ease of use and fast performance, making it a popular choice among developers.
- **Perforce:** Perforce is a centralized VCS that's popular among game developers and other industries where large binary files are common. It's known for its ability to handle large files and its scalability for large teams.
- **Microsoft Team Foundation Server (TFS):** TFS is a centralized VCS that's popular among Microsoft developers. It integrates with many Microsoft tools and provides features like bug tracking, project management, and build automation.

What is Git?

Git is a distributed version control system that allows you to track changes in your code, collaborate with others, and manage your project's source code history. It was created by Linus Torvalds in 2005 for the development of the Linux kernel, but it's now used by millions of developers worldwide for all kinds of projects.

With Git, you can create a local repository on your computer, make changes to your code, and then save those changes to the repository with a commit message describing what you did. You can also create branches, which are separate versions of your code that you can work on independently, and then merge those branches back into the main codebase when you're ready.

Git also makes it easy to collaborate with others by allowing multiple people to work on the same codebase at the same time. You can share your code with others by pushing it to a remote repository, such as GitHub or GitLab, where others can make changes and submit them back to you through a pull request.

In simple terms, Git is a type of software that helps people keep track of changes they make to computer code. It's like a big "time machine" that records every change made to a file, allowing people to go back to any previous version of the code if needed. Git also makes it easy for people to work together on the same code, by allowing them to merge their changes together without overwriting each other's work. It's commonly used by programmers and developers to manage their code projects, but it can be used for any type of file, such as documents or images.

Overall, Git is a powerful tool for managing your code and collaborating with others, and it's essential for any serious software development project.