

CS 240: Git Overview Transcript

[00:00:00] **INSTRUCTOR:** Hello everyone, thanks for watching. The subject of this series of videos is going to be Git and GitHub. Git is a tool that software developers use to manage their source code files, and it's one of the most important tools currently in the industry, and one of the most important things you can learn about.

[00:00:21] And we'll also talk about GitHub, which is a website where a lot of software developers keep their Git projects, and so that's also a very important tool for software developers, so we'll talk about that as well.

[00:00:36] So first we want to talk about what is Git, and why do you need it? So Git is what's called a version control system. Think of it this way, a software project is really just a bunch of files in a directory or a folder, and I'll use those two terms interchangeably.

Start visual description. Slide titled What is Git? Text reads:

- *Version repository for a directory*
- *Repository collaboration*
- *History*
 - *2005 Git released – Linus Torvalds*
 - *2008 GitHub released*
 - *2018 Microsoft acquires GitHub*

End visual description.

[00:00:55] Sometimes I'll say directory, sometimes I'll say folder, those are the same to me. So if you think about a programming project that you might do, it's really just a folder that has a bunch of source code files in it and maybe other kinds of files in it.

- [00:01:10] Lots of files, lots of folders, and that's your project. So in the software development business, the fruit of our labor is really just a bunch of files. So it's very important to us that we have good tools for managing the files that make up our projects.
- [00:01:25] So Git is a version control system, which means that as your project proceeds, obviously you're going to make a lot of changes to your project's files. You're going to add files, you're going to rename files, delete files, you're going to create folders, etc., etc.
- [00:01:42] So the project is always changing. And what Git lets you do is it lets you keep a historical record of all the different versions of your project. And so as it changes over time, Git remembers what it used to look like, and so what it does is it gives you the ability to move backward in history.
- [00:02:04] So if you ever need to go back to a previous version of your project's files, then you can go back to any point in time you want and Git can reproduce your project as it existed at any point that you want.
- [00:02:18] And so that's called version control because you can go back in time to any version of your source tree or your project folder. The other thing that Git is really helpful for is providing a system where multiple people can collaborate on a project as you're probably aware most software development projects are done by not individuals but groups of people or teams.
- [00:02:43] And so it's important that as multiple people are actually working on the same project they're all in there accessing the same files and folders that we have a system that helps keep track of everything that's going on.
- [00:02:56] And sometimes people that are working together can sometimes edit the same file or make changes to the same file, kind of at the same time. And so Git helps

resolve those kinds of issues when people try to change the same files at the same time.

[00:03:10] And so those are the two primary benefits of Git, version control and collaboration with a team of people. Now historically, Git's only been around for almost 20 years. And before that, we did have version control systems.

[00:03:30] There's been many systems like this over the years. But Git was created in about 2005 by a guy named Linus Torvalds. And this is the same person who was the original developer of the Linux operating system.

[00:03:45] And so Linus has been very influential in the software industry and he was the creator of Git. And when he released Git to the world, it really took the software development industry by storm because it really does version control better than any of the tools that preceded it.

[00:04:04] And so that's why it's become so popular is that it's such an elegant and powerful tool. And about three years later in 2008, some people created a website where software developers could create Git projects and host their source code in the cloud.

[00:04:22] And that company was named GitHub. And so GitHub was around for a while. It became very popular as well. And in 2018, Microsoft acquired GitHub. And so now currently GitHub is a Microsoft product, but it's extremely popular.

[00:04:38] Many companies use it for their work and individuals can use it as well. And so it's really important to learn about it.