

**SPRING 2019-20**

**Department of Computer Science**

**College of Arts and Applied Sciences**

**What is version control? why is it important? give an example.**

Version control is a type of system software that allows you to keep track and manage changes made to your code over time by creating a file repository in your computer device. It was first created in 2005, by Linus Torvalds and a group of hackers. Additionally, Version control can sometimes be referred to as revision control or source control and It’s considered to be a major component of software configuration management. Git is one of the most commonly used version control systems. It is a distributed version control system, that acts as a localized repository with its entire history. Git is a tool that, in combination with services like GitHub (hosts Git repositories on the cloud), facilitates and helps you use version control.

As coding is a fundamental aspect of data science, it is the most beneficial practice to use version control to check source code and databases. In a version control system, changes can be recorded in a repository, which is a data structure that saves files and a history of changes made to those files, this is what makes it very helpful and important.

Version control is essential especially for programmers because, as mentioned above It allows you to manage changes of your data over time. You can also track the updates of your project’s assets. Those assets involve source code, graphics either 2D or 3D (for game and product development), videos, audio, analog, and digital semiconductor designs, or any different type of digital asset. Usually, programmers use it with the help of GitHub (a website repository) to send their files remotely since Git is only a local repository.

A version control system is a great way for coordinating and organizing work amongst programmers and work teams since it’s essential for today’s development of teams. Using version control will Enhance visibility and Help teams collaborate around the world by sharing their work and revising it together. In addition to that it provides faster product delivery.

To start using Git you will need to download it first. Then you will need to initialize the Git repository in your project’s directory. To do so you will have to type **Git init** in your terminal. After that your file or project will be tracked by Git. You can also add commits and save files to the staging area using **Git add .** and **Git commit –u “your comment”**. To check whether your files are modified or committed type **Git status,** this will give you the current state of the repository and what is in your project’s directory.

All in all, version control or Git, is a powerful tool that is used to keep track of files and documents as well as their all the old and new alterations made to them. Version control is used with GitHub to share send files and records remotely. In another words, Git is considered as a local repository that records the user’s file history and tracks all the changes that happen in future.

Student: Amal Anwar Aldhahab 201600321

Teacher: Mr. Nasser Tabook

Course: CMPS420

**SOURECES USED:**

<https://towardsdatascience.com/a-quick-primer-to-version-control-using-git-3fbdbb123262>

<https://www.perforce.com/blog/vcs/what-is-version-control>

https://en.wikipedia.org/wiki/Git