ASSIGNMENT

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GIT as a Version Control System

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 lighntning effects. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like cheap local branching convenient staging area, and multiple workflows.

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.

What is GitHub

GitHub is one of the world's largest community of developers. It's an intricate platform that fosters collaboration and communication between developers. GitHub has a number of useful features that enable development teams to work together on the same project and easily create new versions of software without disrupting the current versions, but it doesn't stop there.

Once new additions to a program are complete, for example, they can easily be incorporated into existing programs. GitHub also makes it extremely simple to work together on strings of code to really dial in and perfect even the smallest parts of a program. With GitHub, you can collaborate and work on projects with others anywhere in the world.

it enables slick and easy collaboration and version control. This allows you to work on code with anyone from anywhere. Additionally, many employers use GitHub. So, if you plan on getting a job, you'll look really good if you already know your way around GitHub. And don't forget about the connections, learning, and portfolio aspects. GitHub is a robust learning and collaboration platform. Take time to explore it and see just how much it can expand your programming knowledge.

Working directory and staging area

The Working Tree is the area where you are currently working. It is where your files live. This area is also known as the “untracked” area of git. Any changes to files will be marked and seen in the Working Tree. Here if you make changes and do not explicitly save them to git, you will lose the changes made to your files. This loss of changes occurs because git is not aware of the files or changes in the Working Tree until you tell it to pay attention to them. If you make changes to files in your working tree git will recognize that they are modified, but until you tell git “Hey pay attention to these files,” it won’t save anything that goes on in them.

The Staging Area is when git starts tracking and saving changes that occur in files. These saved changes reflect in the .git directory. That is about it when it comes to the Staging Area. You tell git that I want to track these specific files, then git says okay and moves them from you Working Tree to the Staging Area and says “Cool, I know about this file in its entirety.” However, if you make any more additional changes after adding a file to the Staging Area, git will not know about those specific changes until you tell it to see them. You **explicitly** have to tell git to notice the edits in your files.