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Git workflow

Git is a widely used version control system and Git workflow simply put is a blueprint in using Git and repositories to maximize the work potential and minimize errors. It’s very effective when working with a development team as it allows each individual to apply their own changes to the project without interfering with another developers work. There are many variations of Git workflow as they are many ways to go about working on a project. The team can choose which variation meets individuals needs and styles of working.

Git and Git workflow consist of repositories which are storages of data. In usual circumstances, Git workflow consists of a local repository and central or remote repository. The local repository is the code stored on your local computer or laptop with no one else being able to access it unless given permission. A central repository is the storage where the main project is stashed and all the side branches come together. For example, in a project your team will split up and work on different sections of a project. By uploading each person’s individual work to the central repository you can combine your work into a full fledged project. It also has the name remote repository as it can be accessed from anywhere given the correct permissions. With local repositories, you’re limited to your specific computer or laptop but say it gets destroyed or your hard drive becomes corrupted, all your work will not be completely destroyed if its saved on a remote repository.

Git has various commands and actions that can be called to organize workflow. One example is commit which, in other words, can be thought of as a snapshot. That is a stable and safe version of the project. However, commits do not interact with the central repository unless told to. Each commit, or snapshot, of a project version is saved in the local repository independent of one another and can be used at any time. Git Push is another command and it is used to upload the saved commits to the central or remote repository. Git pull is the command used to acquire the changes from the central or remote repository and update your local repository with those changes. Git merge is a command that combines a multitude of commits, also known as branches, together into a new separate commit.

Working as a development team the Git workflow provides a blueprint to make sure project development works as smoothly as possible. However sometimes errors are unavoidable, in one case a merge conflict can happen. This occurs when two developers are working on the same branch of code and one developer may delete a line of code that another developer is working on. This causes a merge conflict and while Git cannot automatically solve this conflict it notices when the conflict occurs and will warn the two developers that the conflict happened. It is then up to the developers to manually discuss and fix the issue themselves.

Git is a powerful tool for developers coming together and working on a full-scale project with 100% efficiency. To summarize, a central/remote repository is created for the project that can be accessed from anywhere given the permissions. Team members can then commit changes to their local system and when ready can push these changes to the main repository, updating for all team members. Once updated, other members can pull these changes into their local system in order to have the most up-to-date version of the project on their system. Conflicts may occur but Git is able to catch these conflicts and warn developers before it is too late.