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GitHub WorkFlow

GitHub is a code hosting platform for version control and collaboration. It allows individuals to work together on projects remotely. A workflow is a configurable automated process that runs one or more jobs. Workflows are defined by a YAML file in your repository. A repository contains all of your project’s files and each file’s revision history.

On GitHub, you can commit, push, and pull files. A commit is the equivalent of a snapshot of the changes to the content in a repository at a particular time. Each commit records the changes made to files and directories in the repository since the previous commit. Git records metadata about the commit, including a commit message. Git is a distributed version control system that allows software developers to track changes to the codebase of a project over time. Git and GitHub are two different things. GitHub is a web-based platform hosting Git repositories while Git is primarily a command-line tool that provides the basic functionality for version control. Commit messages are essential when pushing a commit because they provide a summary of the changes made in the commit.

In Git, git push is a command used to upload local repository changes to a remote repository. When a developer makes changes to their local repository, they use the git add and git commit commands to save those changes to their local Git history. However, those changes are only stored on the developer's local machine.

You can also create branches which is a contained area of a repository where you can develop features, fix bugs, and experiment with new ideas. When a developer creates a new branch, they create a copy of the current codebase, including all the files, directories, and commit history. They can then make changes to this branch independently of the main codebase, without affecting the main branch's stability or functionality. Developers can use branches to experiment with new features, fix bugs, or make changes to the codebase without disrupting other developers' work. Once they have made the changes and tested them, they can merge the branch back into the main codebase, incorporating the changes into the main branch. To update the remote repository with those changes, the developer uses the git push command. This command sends the local changes to the remote repository, allowing other developers to access and collaborate on the updated codebase.

Git pull is a Git command that is used to fetch and integrate changes from a remote Git repository into your local repository. It combines two Git commands, git fetch and git merge, to update your local repository with any changes made to the remote repository. When you run git pull, Git will first fetch the latest changes from the remote repository and then merge them with your local changes. If there are conflicts between the remote changes and your local changes, Git will prompt you to resolve them before the merge can be completed.

Git merge is a Git command that allows you to merge changes from one branch into another branch. When you run git merge, Git takes the changes from the specified branch and applies them to the current branch. This creates a new commit that contains the merged changes.A merge conflict occurs when there are conflicting changes made to the same lines of code in different branches of a Git repository, and Git is unable to automatically merge those changes. When Git encounters a merge conflict during a git merge or git pull operation, it will pause the merge and notify you that a conflict has occurred.

Sources