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Github Essay

9/15/2023

Github Overview

Github is a web-based service that allows version control and collaboration on projects between multiple people. Developers are able to create a repository in Github’s cloud-based storage system that is accessible from anywhere. Then it is possible to upload code, files, documents, or any file to the repository. This allows for ease-of-access and easy collaboration between a team of developers, or even a solo developer who wants to keep track of their work. When a repository is cloned to your local system, you are able to make changes locally that do not automatically update in the repository. When you are ready to push your changes onto the repository and make it accessible for everyone, you can create a push request. This push will analyze your local repository folder for any files that have changed since the last time there was an update on the main branch. Any new file(s) or changes will be pushed onto the repository. Others who want to gain access to these files or changes can now create a pull request, where those changes can be pulled from the repository to their local system. This process of pushing and pulling is referred to as merging, as you are merging changes on a different branch to the main branch. You are also able to create different branches so you can work on your own piece of work individually and continuously update it until that feature is perfected. When it is perfected, you can then merge it to the main branch of the repository. However, you have to be careful when merging because it’s possible that two people may have worked on the same file(s) separately. Then, when they both try to push their changes, you may run into a merge conflict because Github isn’t able to determine which changes to use because they are both from the same file. At this point, the merge will be paused and the workers will have to manually fix the merge conflict. The two workers can both review the conflicts and decide which piece of work to keep. Then, they can discard one person’s work and merge using the other file. Github provides a very simple user interface that allows workers to see merge conflicts and easily revert them or change them if needed. Another unique function of Github is the commit functionality, which is essentially a snapshot of a repository at a certain point in the development cycle. Each commit can have comments that all collaborators can view to allow them to see what that version of the repository has added. For example, if somebody creates a function to calculate the speed of something and commits it to the repository, they can comment it as “Added speed function” so other team members know what it is without analyzing the code. This allows you to easily track and view the history of the repository, something that cannot be done on any other file storage system. This is what puts Github at the top when it comes to version control and collaboration for developers.