Kennesaw State University

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Github: Professor Assigned

Github: An Introduction

The world of computing is vast and complex. Even the most innocent looking software often contains hundreds of thousands of lines of code, spread out over hundreds of source code files, written by dozens of programmers if not more. This complexity and scope make mistakes and errors not just a common problem, but a continuous drain on resources that could be better spent on improving the products that help keep all those hungry programmers fed. This is where the ability to version control software becomes such an important tool in every programmer’s toolbox. This concept, the idea that any changes done to a program should be done in a clone of the official source code, not the original, has helped expand the once small world of technology into the multi trillion-dollar industry that is today. Although there any many ways that this can be accomplished one of the best is through the use of the software packages git and its accompanying file hosting website Github.

Github itself is not that complicated, it is merely a place on the web for developers to store their code, along with a few special features, like a GUI and flexible review processes. However, any discussion of Github must first start with git, the heart and soul of the entire Github ecosystem. “Git is a specific open-source version control system created by Linus Torvalds in 2005” (What is GitHub? A Beginner's Introduction to GitHub, 2019). It is the most widely used software of its kind, with over 87% of developers worldwide using it (Stack Overflow, 2018). Through just a few written commands and some simple checks, it allows developers to keep track of different versions of their software in order to simply and streamline the process of quality control. GitHub is merely a on the internet where teams of programmers can store those different versions for the purpose of collaboration and documentation. In essence there would not be a GitHub without git.

Github itself is one of many companies that attempted to take advantage of the versioning power that git offers developers by building a cloud hosted space for git file systems, known as repositories. Increasing the ease with which development teams and individuals can collaborate on different projects. This system has allowed GitHub to use the power of git and put it into a simple to use package that can scale to projects of any size. This versatility has help propel GitHub into use by much of the industry, from the smallest teams to multibillion-dollar corporations. This is because it helped to solve one of the oldest problems in a rapidly growing industry, how can dozens if not hundreds of individuals work on the exact same piece of software at the same time, without destroying what others have already done. By having all the different versions of a piece of software that exist in one place it becomes easier to maintain an efficient working space without sacrificing quality control and the strict code reviewing processes that have become a part of software engineering. If one person’s work breaks a part of the software, fixing it is as easy as reverting to the previous version and moving forward from there. The problem can then be fixed on that individuals’ local machine where it will not do damage to the official version of the product. GitHub is so successful at creating a place for developers to work and create as teams rather than individuals that the company was recently purchased by the largest corporation in the world, Microsoft.

In conclusion, GitHub and git are simple ideas with what have become vital and far reaching effects not just for technology but the rest of the world. Its use has allowed developers to produce better software, more rapidly than ever before. Which is vital since the world’s appetite for the technology that makes their lives better and more efficient has never been greater. Because of GitHub and other sites like it; developers can be free to innovate and create with the peace of mind that they can always learn from their mistakes rather than be destroyed by them.

# References

Stack Overflow. (2018). *Developer Survey Results.* Stack Overflow.

*What is GitHub? A Beginner's Introduction to GitHub*. (2019, August 22). Retrieved from Kinsta: https://kinsta.com/knowledgebase/what-is-github/