

LEARNING VERSION CONTROL WITH GIT PROPOSAL

Names

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Problem Statement

Audience

Our primary audience consists of people who have heard of version control and its uses from peers before but have limited or no actual experience using version control with Git. This primary audience includes most students taking freshman or sophomore level computer science courses and first-timers at hackathons. Our secondary audience consists of interns who have some experience with Git but would like a reference to keep around for more uncommonly used Git commands. Considering the incoming computer science course has around 150 students and 15-112 (the introductory computer science course) has around 480 slots available, we estimate a potential target audience of around 800 students at Carnegie Mellon University. The most appropriate audience members for user testing would be those who have taken computer science courses or worked on coding projects before but have little to no experience with Git. A good second choice for user testing would be individuals with some experience with Git but would still like some reference material for more obscure commands.

User Profile: Steven Brown

Steven Brown is a freshman computer science major attending his first hackathon. Stephen is the only freshman in a team of four at the hackathon. He has heard the others talking about “setting up a repository on GitHub” but only has a vague idea of what is going on.

User Profile: Jane Smith

Jane is a sophomore working at her first software engineering internship. She has used Git in her personal projects in the past, but her usage has been mostly in a relaxed context. Her coworker’s code reviews request that she break down her commits into multiple, smaller commits but Jane has been facing some difficulty finding the optimal way to do so.

Problem Statement

Most CS students come to CMU having never used version control. Since the mid 2000's, git has been the industry standard for version control software. Understanding how to effectively use git is a critical skill for software developers across the world.

While the quality of the git documentation has recently improved, the documentation can be overwhelming even for experienced git users, let alone CS freshman. A popular joke amongst software developers is that no one truly understands git. In order to further demonstrate the need for these instructions, we may include a pre-test as part of our user-testing strategy.

This set of instructions aims to give freshman CMU CS students the ability to effectively use git for school and personal assignments.

Purpose Statement

Git is an complex version control system. To build expertise in using it would take years of experience. The purpose of our tutorial is not to try to bring users to this highly experienced level. Rather, it is to teach users the necessary skills to use Git for use in their computer science work. The boundaries of the instruction set are to include commonly used features of Git but leave out all but a few of the special case features. The tasks we would like to discuss include the necessary setup procedures, the basics of adding, removing, committing, and merging. The more advanced topics will be on rebasing and cherrypicking. Finally, we want to discuss using Git with other tools like Vim and Github as well as the general workflows when working with version control. Our instruction set is non-trivial because to a beginner with no previous experience with Git, there are a variety of concepts they need to learn before they can effectively use Git. However, if they are not taught in a systematic way, it will simply be a series of commands they will have to memorize rather than actually understanding their workflow. An instruction set like this is novel because the existing instruction sets are either too detailed and complicated or are simply just a cheat sheet of commands, which to a beginner would not facilitate understanding.