

GIT VERSION CONTROL TOOLS ENHANCE INSTRUCTOR FEEDBACK AND TEAM INTERACTIONS



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GIT VERSION CONTROL PROVIDES A UNIQUE OPPORTUNITY FOR EDUCATORS TO PROVIDE COURSE CONTENT, GIVE DYNAMIC FEEDBACK TO STUDENTS, AND FOSTER A COLLABORATIVE ENVIRONMENT.

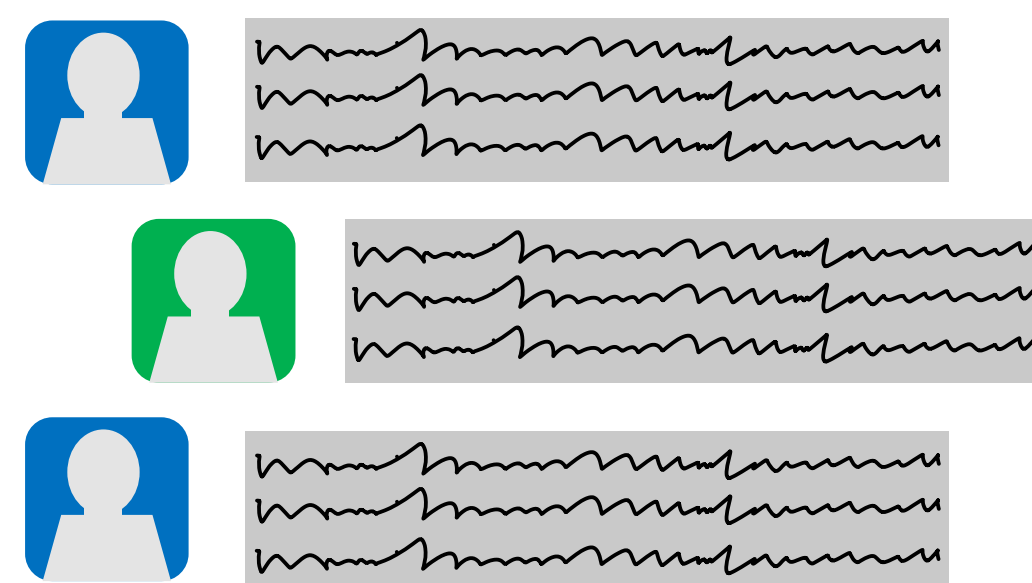
Traditionally limited to software developers, Git and GitHub are tools to manage changes to files and documents, especially among teams and groups. When used as a method of feedback delivery, instructor feedback can be directly integrated into student assignments as they are completed. GitHub repositories also provide a host of tools that can smooth out common challenges in teams, such as allocating tasks, managing versions among team members, and sharing files.

KEY TAKEAWAYS

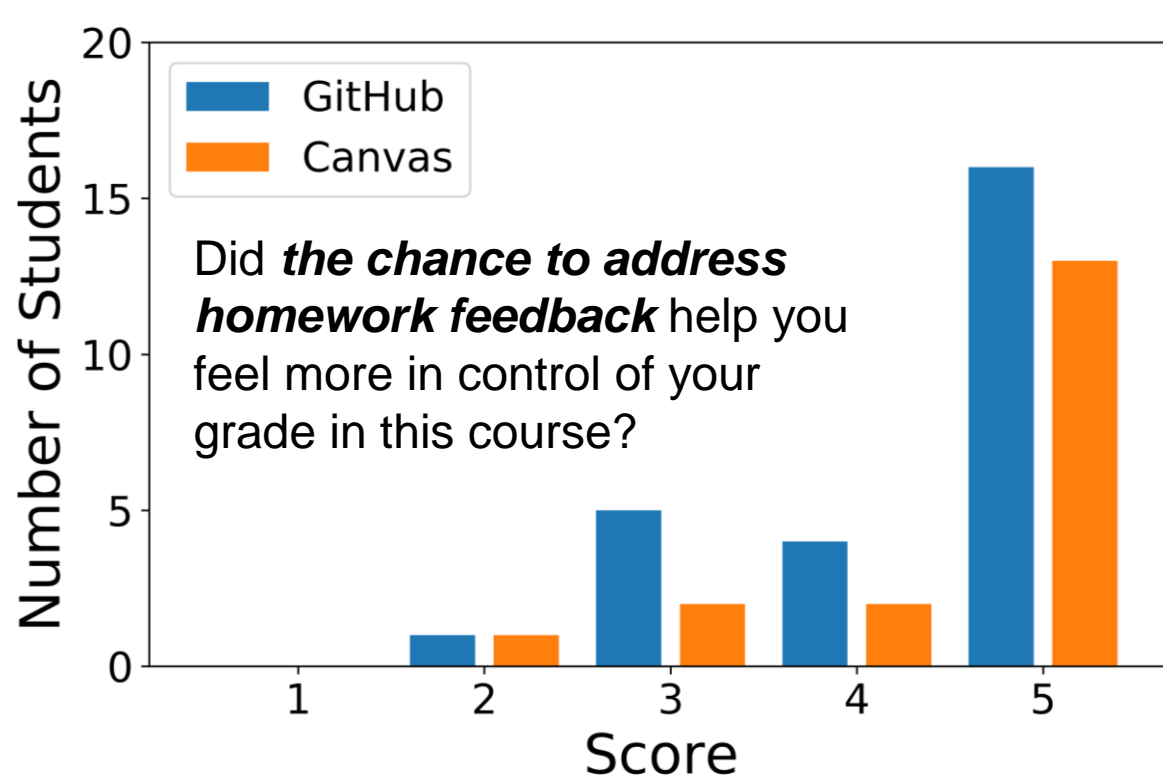
- Regardless of platform, students see value in the ability to **address feedback**.
- Students report benefits in using GitHub repositories in group projects in terms of **sharing files** and **allocating tasks**.
- Implementing GitHub involves a learning curve that must be accounted for in the curriculum.
- Students find GitHub less useful in the short-term compared to Canvas, because it involves a **new platform**.
- However, students foresee **long-term benefits** in terms of skillsets relevant to their career.

DYNAMIC FEEDBACK

Homework feedback to students was delivered in the form of **GitHub issues**, a forum-like tool to keep track of suggested improvements, tasks, or questions. Students can respond to instructor feedback for the possibility to receive full points in the assignment.

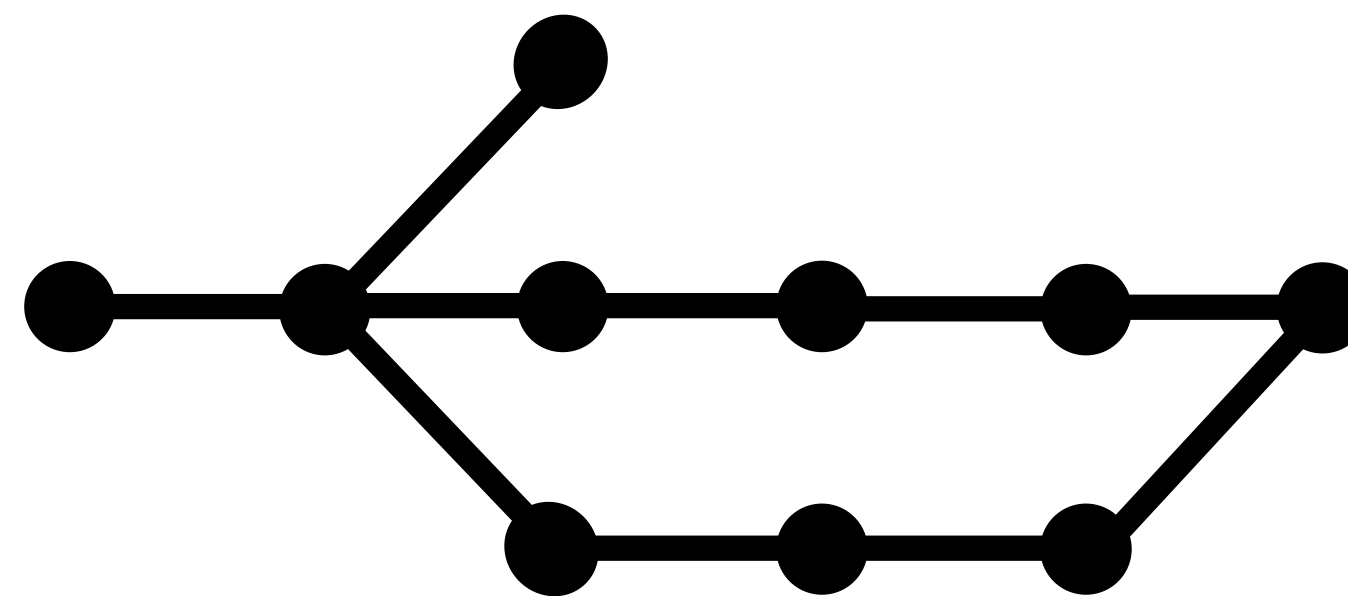


Regardless of platform, students indicated that the chance to address feedback was a positive aspect of the course [GitHub median 5 (IQR 4-5); Canvas 5 (IQR 4.25-5)]. This says less about the specific platform and more about the incorporation of **formative assessments** into the course structure.



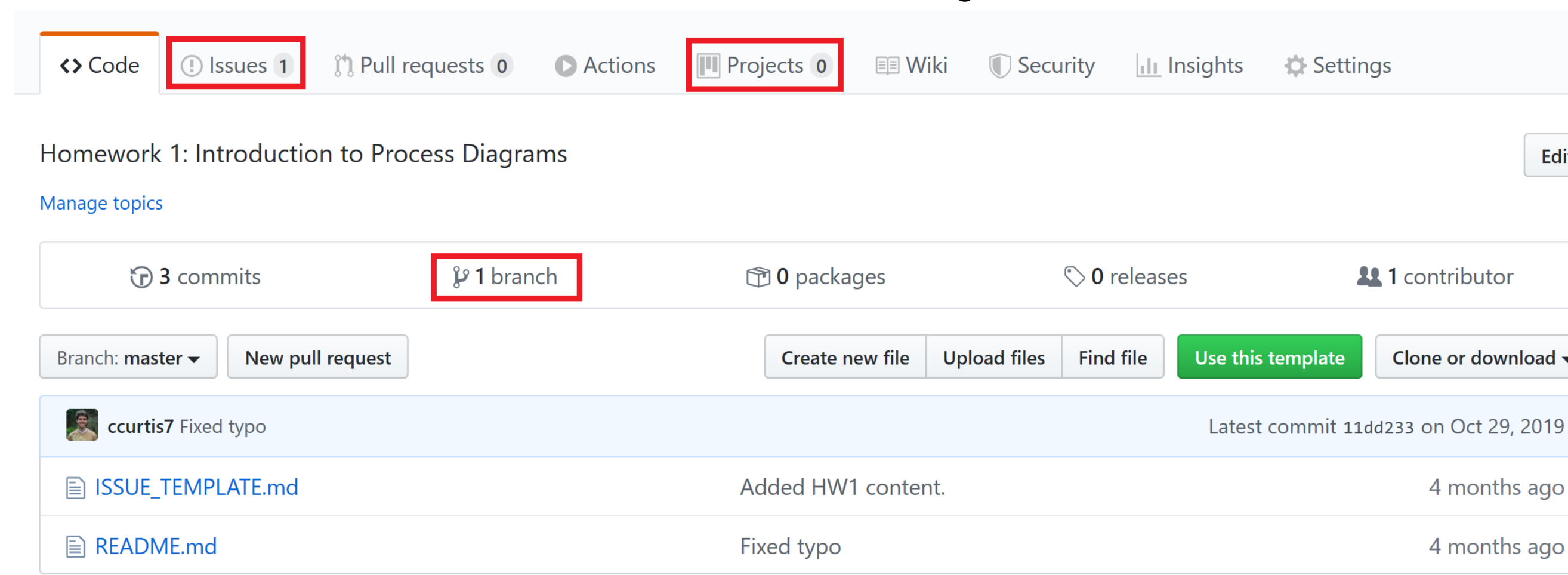
OUTSIDE THE CLASSROOM

Students indicated Canvas was more useful in terms of completing their education [GitHub 4 (IQR 3-4.75); Canvas 5 (IQR 4-5)], while GitHub was more useful in terms of future careers [GitHub 4 (IQR 3-5); Canvas 2 (IQR 1-3)]. Open-ended feedback suggests this is due to the fact that most other courses use Canvas. However, Canvas isn't a tool used in industry and isn't a skillset that will translate to future careers.



COLLABORATIVE PLATFORM

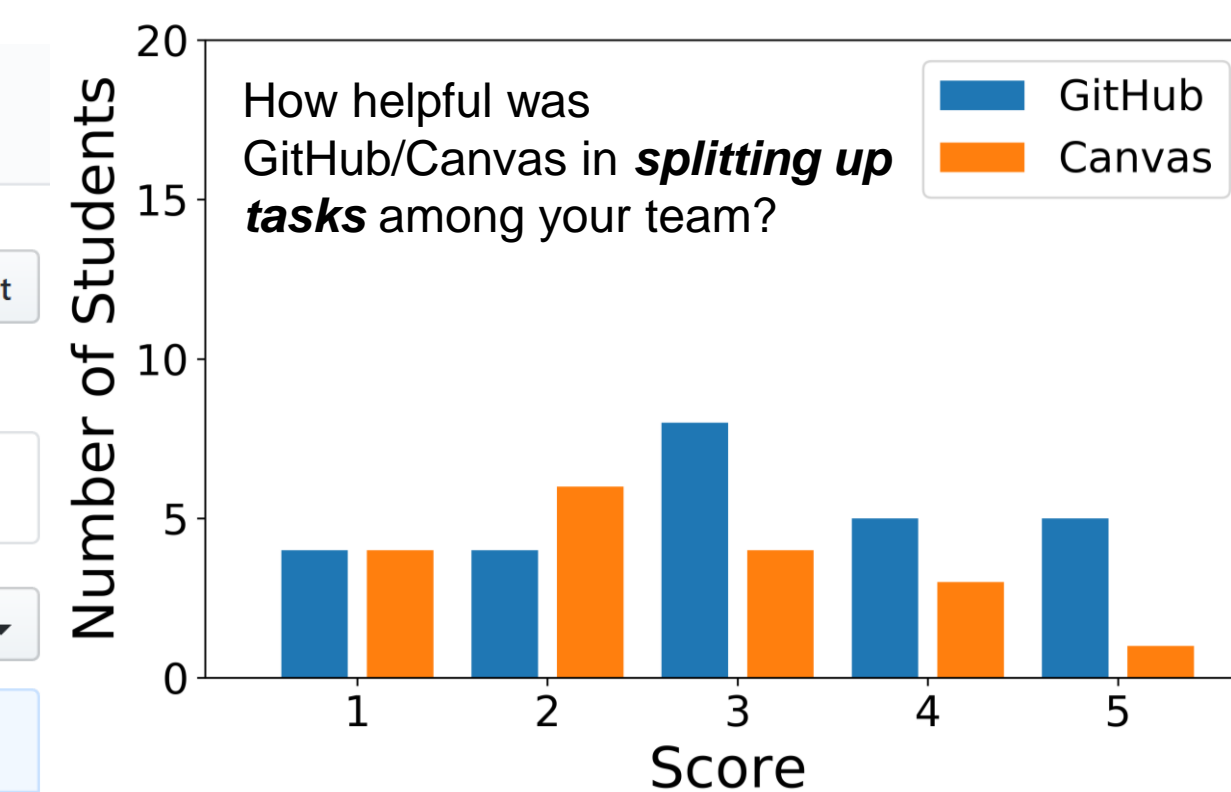
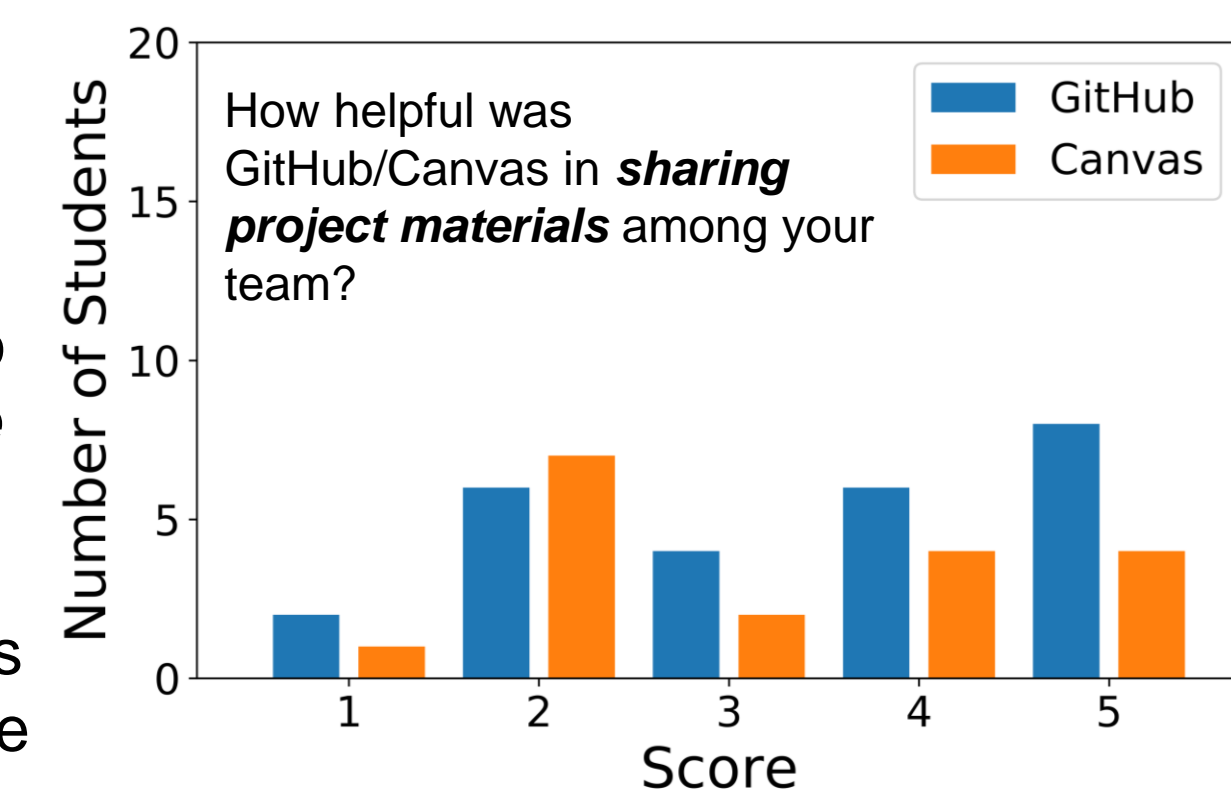
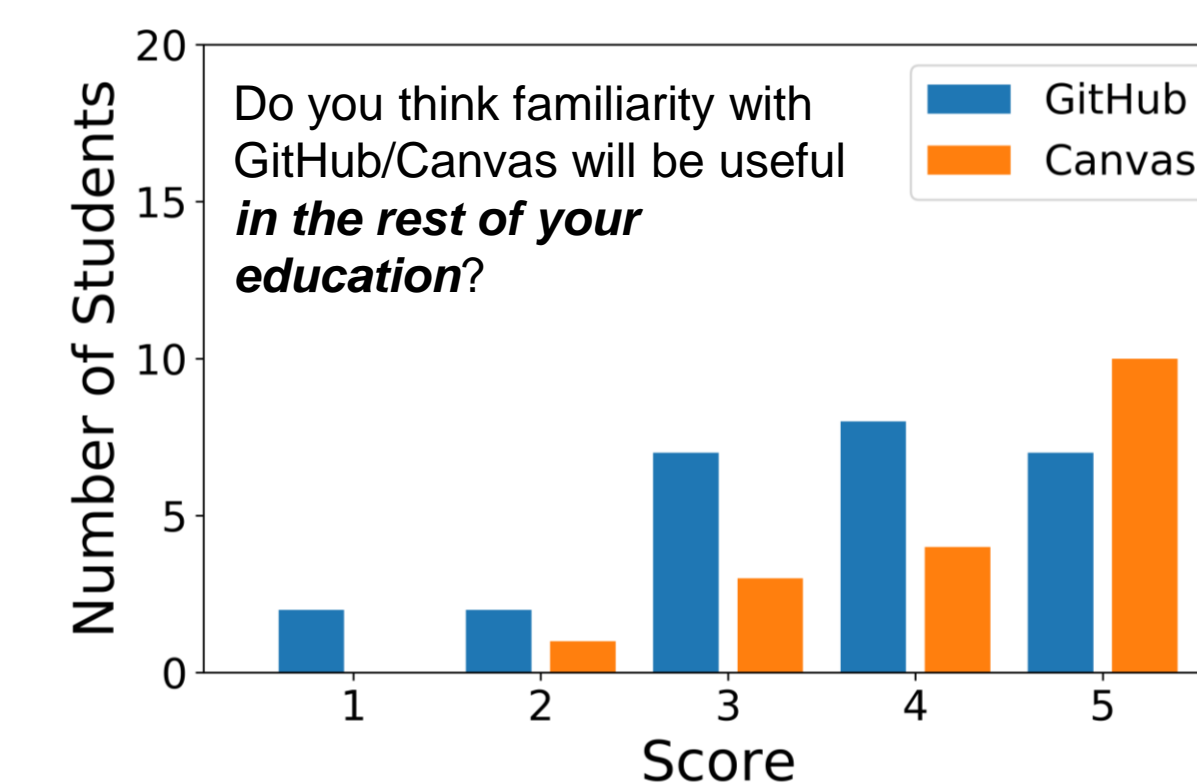
Final projects were organized using **GitHub repos**, essentially a folder with version control capabilities backed up to the cloud. This allows students to **share files dynamically** with teammates, and **allocate tasks** all while working on the same documents. Canvas provides tools for teams as well, including Google Drive integration and team discussion boards.



ChemE 485 HW1

Problem 1 (12.10) Process Flow Diagram

Take a flowsheet for one of the processes in Appendix B and identify the reactor feed preparation, reactor, separator feed preparation, separator, recycle, and environmental control sections. Is there any ambiguity concerning the demarcation of these sections? Explain.



Students rated GitHub higher in terms of sharing files [GitHub 4 (IQR 2-5); Canvas 3 (IQR 2-4)] and allocating tasks [GitHub 3 (IQR 2-4); Canvas 2 (IQR 2-3)]. However, students did not seem to incorporate more advanced tools of either platforms into their workflows e.g. GitHub branches (3 IQR 2-4), Canvas discussion boards (2.5 IQR 3-3.5). Open-ended feedback indicated that more in-class time demonstrating these tools would have increased their usage of these tools.

