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## **Reflection Statement**

After completing our project, STREAM, we learned, in hindsight, that we should have spent more time gauging the interests of our potential users, focused on delivering a better user interface, and tested more frequently. However, despite our shortcomings in the mentioned aspects of development, we found that the constant communication within our team ultimately allowed us to succeed.

Users drive the requirements of a project. We learned that we should have considered spending more time during the early stages of planning asking potential users what they would like to see in our app. At the same time, we should have researched what features could be implemented in our program within the timespan allotted for this project to an extent that will be useful to our users. Due to our lack of knowledge and research, we initially planned and worked on features that were hard to fully implement, such as chat. As a result, our team lost time that could have been used to enhance and improve other areas of the project.

When interacting with users and clients of the project, we also learned that an excellent interface increases a user's trust and confidence in an application. When we showed our initial prototype to friends and the teaching staff, the application was not well received and did not appear to be particularly useful. After our team improved the user interface significantly, our friends began to understand how convenient our application could be for managing their projects, as it was simple, clean, and easy to use.

Another lesson our team learned is to test often. We did not immediately adopt a test driven development style and even planned on writing tests during our last sprint. However, many bugs became visible each time we integrated our application, and detecting bugs required manual testing. Realizing that this slowed our development and integration process by our third sprint, we wrote unit tests for the back end for each major component to ensure that each core feature did not break upon integration. This allowed us to more quickly confirm if the back end functioned correctly and isolate bugs associated with the UI. In the future, writing tests early

could speed up our development process by cutting time on manual testing and more quickly determining the source of errors.

In retrospective, we have had some shortcomings in our development with some poor choices. However, we were able to successfully create our project thanks to excellent time dynamic. We were in constant communication; each user had access to our Slack chat on their phone and computers and quickly responded to concerns the team had. Our team met up once or twice per week for several hours in order to accomplish big chunks of our project. The in-person meetings were extremely important because we were able to discuss design problems and help each other out. Additionally, with these meetings, our team could easily figure out who was working on what and so members who were more free could work on other things thereby speeding up the development process. Ultimately, these meetings helped with integrating multiple features together and testing them to ensure that the application works. Communication played a huge part in the development of STREAM, allowing us to succeed despite a few weaknesses in our development plan.