I wanted to create commandFplus to get a better understanding of how to structure a program, and to think more comprehensively about how I would be able to cut down on repetition in my writing. And even though any independent project would have helped me to get ready for the AP computer science exam, that was one of my goals as well, and I feel that the process of creating commandFplus gave me quite a bit of practice with strings, arrays, array lists, and for loops.

The first big obstacle that I faced was how to get my project off the ground. This project had been introduced to me right at the end of the school soccer season. It was getting closer and closer to States, and practices were becoming more intense. Every day after school I was supposed to have soccer practice, and it was quite difficult for me to keep on homework. I had to spend the time that I had keeping up on work from my other classes, and as a result, I think my pseudo code was not as good as it could have been, and it took me a lot longer than everyone else to start coding. If you look at my first github post, you can see that my pseudo code basically what I wanted my program to accomplish, and a vague idea of how I wanted to accomplish that. But what it lacked was how I wanted to organize the program, and because of this, I felt like I did not know where to start coding. (record of thinking 1)

During the first week while soccer was going on, I was also pretty shy and introverted. I felt like I was behind because of soccer, and I felt like I did not want to ask for help and show people that I was behind. I now realize that this was a terrible idea, because I got more behind. I talked to Ms. Nagoshi, and she helped me think of using the scanner to split up the writing as it comes in, and also introduced me to using overdrive to get syntax. (record of thinking 1)But since I did not yet start coding anything except declaring all the methods, I felt like I had no place to put it. Eventually, my lack of github posts caught up with me, and I had to start coding something. I went in to talk with Mr. Kiang, and asked him how I should sort the array list and read in the text, but he pointed me towards a couple of lessons on the online java textbook that I did not think I had enough time to read with so much soccer going on. During our discussion, Mr. Kiang told me that I should read in the text from a file instead of getting it through the command line. I guess seeing all of the reading that I had to do, and knowing that I had to figure out a whole new problem of reading in text from a text-file made me feel like not getting started. And even though Brianna had already found a way to read in text from a file, I was also initially scared to ask for her help. Looking back, putting off work like that seems silly, but at the time, I was so stressed out and in the moment, I decided to take the easy way out by completing my other school work that consisted of shorter assignments that could be quickly accomplished. By going through this experience, I learned that I cannot just differ my work. Instead, when I am stressed, I just have to work on one thing at a time, and reach out for help when I need it. (record of thinking 2)

I ended up going through the online textbook, and using the selection sort that they had. It helped to arrange an array list in order, and I just had to replace the greater than or less than signs with compareTo()'s, since I had an array list of strings. There were also many other ways to sort arrays and array lists, such as the bubble sort(which is the slowest) and merge sort(which is the fastest of the three). And at this time, I began to look on the stack overflow website for the String class or for the Arraylist class to help me with syntax. Through this process, I learned to take advantage of the different resources that I have. And I saw that in contrast to how I worked at the beginning, using these resources made coding much faster, because I would not have to stop and think every few minutes to recall syntax, or look it up from a past lab.(record of thinking 2)

I talked with Makana and Aliya, and they put it to me bluntly, that I should go and ask Brianna for help since I didn't figure it out yet, and she already had it done. So Brianna helped me to set up a buffered reader to get the text file, but I soon found out that this method of reading in text would not work for the needs of my program-- the buffered reader took out all of the spaces, making it difficult for the program to distinguish between the individual words. (record of thinking 3)

I went to Amanda next, because I knew she was making a program that also involved reading in text

from a text file. Amanda helped me to set up a loop to read in text, and it worked. I also added in the strip method adapted from a strings lab that we did earlier, which can be seen in my second commit. The next problem that I ran into was getting the individual words out of the string, and into an array list. I tried to break apart the string by using a loop and taking the characters between two spaces, but I ran into trouble when there were multiple spaces. For a while, I tried to iterate through the string so that there were only single spaces between words, but even though the code would compile, it did not correct the spaces the way I wanted it to. And while I was trying to solve this problem, I brought it up to Mark, and he told me to use the split method. This was great because it quickly split the string into an array of words and spaces. This experience showed me that I should keep asking for help when I have problems that I can't solve myself. I figured out that my classmates are a great resource, because they are going through the same things that I'm going through.(record of thinking 3)

One of the most important methods in my program was the mostCommonWords method, because it actually completed the function of my program. I spent quite a bit of time thinking about this problem on my own, and during class Mr. Kiang helped me to put my thoughts down on the whiteboard, and solidify exactly how I wanted to make the method work. I found out that writing out my thought process, made it much easier to backtrack and find out what was going wrong. It also makes it easier for other people to help me, because they can see what I'm thinking. After making a plan in class, I was able to go home, and write the method to find the most common word, and the next day, I was able to revise the method to get the three most common words, which can be seen in my third and fourth commits. This taught me the importance of planning, so that I can work smart and efficiently.

one of the last problems that I have was how to get the spaces out of the array list. But after fiddling around with some for loops, I came to Mr. Kiang, who suggested that I just disregard the one character words to make the count more accurate. And through this, I figured out that I have to take a step back when I'm trying to problem solve, because there may be an indirect way to solve the problem. (record of thinking 3)

At the beginning of the project, I had an idea of the user communicating a lot of information to the console, such as the words that the user would not want to include, and the number of words that the yawned returned, but as the project progressed, I saw that those variables would add a lot more complexity to the algorithm that I had, so in the interest of time, I simplified it to the three most common words, and only checked the words that had a length greater than one.

Another thing that I learned from this project was the importance of working consistently and setting deadlines. With this long term project, I found out that if I do not set deadlines for myself, the work takes forever to get done, and when it gets close to the real due date, I have to cram and spend late nights working on the project, which affects my sleep and stress at the time.

Another skill that I learned from this project was that of reflection. In my other classes, most don't do a project this big and have us reflect deeply about our process. But this is the only way for me to recognize where I can improve, and think about what I can do better the next time. I was proud that I thought to have the driver manipulate and call the methods, and have all the methods in a separate class. I was also proud of my collaboration with other students, and how I was outgoing at times, which brought me a lot of success. Towards the end, I was proud of the effort that I put into the project, but if I were to start it over again, I would definitely start earlier for everything-- coding, researching, reaching out for help, and pseudo coding. (record of thinking 3)

Over all, I thought that this project was a successful one, in the fact that it helped me to become a more resourceful coder, familiarized me with coding again, and taught me some new techniques about how to sort arrays and array lists.