- 1. I really liked the project and the restrictions imposed. I have only used protocol buffers 1 time before and I now feel a lot more comfortable using it . I also liked the fact that we had to write all the data to disk, this can allow for a lot of cool functionality if we are to extend the project. I don't feel like I have enough experience in any other programing language to take on a task like this.
- 2. There is a few cons with the decentralized system that we have developed. One is that once a file is committed then it cannot be modified, since the file is stored as multiple chunks across the cluster. The same goes for file searching, so you can't do a search and return all files that contains the name "Matthew" for example. But by storing a file as multiple chunks we have a distributed load of work across the cluster. This is a system that is ment to store data that will not change or queried.
- 3. The first thing i would extend is to add a backup coordinator that will take over once the main coordinator goes down. This could maybe also be implemented with multiple secondary coordinators that have a consensus algorithm to determine whos the new coordinator leader. The new leader would then inform all storage nodes to send heartbeats to him instead. Second would be a garbage collector that would clean up all files that are not necessary any more. As nodes goes up and down, they end up having multiple replicas of the same chunk, this in a large system could take a lot of extra memory.
  - Then last but not least I think that the system should support updating and deleting files. Depending on the file type, one could say "update funnyText.txt" this would display the text, and let you modify it.
- 4. I would say that I total maybe spent between 30-40 hours to finish the project. The part that i found the most difficult was actually testing. Every time i changed something the weirdest bugs could occur. Reproducing and fixing these bugs was very time consuming.
- 5. Since I have already had distributed systems I were really familiar with a lot of the project. But I have never worked with hash spaces before, and I found it a lot of fun to learn about. I have also never stored data as smaller byte chunks before, and I must say it was relieving when I was able to write and read the first file successfully.