

Project1 👍

1. How many extra days did you use for the project?

7 days

2. Given the same goals, how would you complete the project differently if you didn't have any restrictions imposed by the instructor? This could involve using a particular library, programming language, etc. Be sure to provide sufficient detail to justify your response.

I probably would use gRPC. As I did File Transfer Lab2, all resources I googled were using gRPC to realize transferring data. I don't know if using the listener port and tcp protocol to transfer data(checksum) is efficient. I felt that this communication was awkward.

Personally, Go is not a familiar language for me, of course it is easier than C, but I still need time to be comfortable with it.

The last thing is I wrote an algorithm to calculate the length of each hop in the storage nodes ring with Least Common Multiple. I think there are better algorithms to guarantee the integrity of data.

3. Let's imagine that your next project was to improve and extend P1. What are the features/functionality you would add, use cases you would support, etc? Are there any weaknesses in your current implementation that you would like to improve upon? This should include at least three areas you would improve/extend.

a. *I did file failure checks, and planned to modify it with replicas when clients got the file. However, I believe that real world DFS should check data periodically. I would like to figure it out.*

b. *When I stored data, split chunks, the process was single-thread. I tried some methods but met a lot of problems about thread safety.*

c. *Google buffer protocols were too complicated, I thought some of them can be combined together.*

d. *How to reorder the file chunks after the client receives them? I simply did it by assigning each chunk an index and stored them together in file names. It is an awkward method but it worked. I am curious if there are some methods to handle this.*

4. Give a rough estimate of how long you spent completing this assignment. Additionally, what part of the assignment took the most time?

About two weeks.

The Get and Put application really took me the most time. It was the beginning of the project, perhaps because I was not familiar with it.

5. What did you learn from completing this project? Is there anything you would change about the project?

The structure of DFS. Golang. And TCP.

Untidy codes. I will modify it when I do have free time.

6. If you worked as a group, how did you divide the workload? What went well with your team, and what did not go well?

I did it myself. Honestly, I will do it as a group next time.