Project 2

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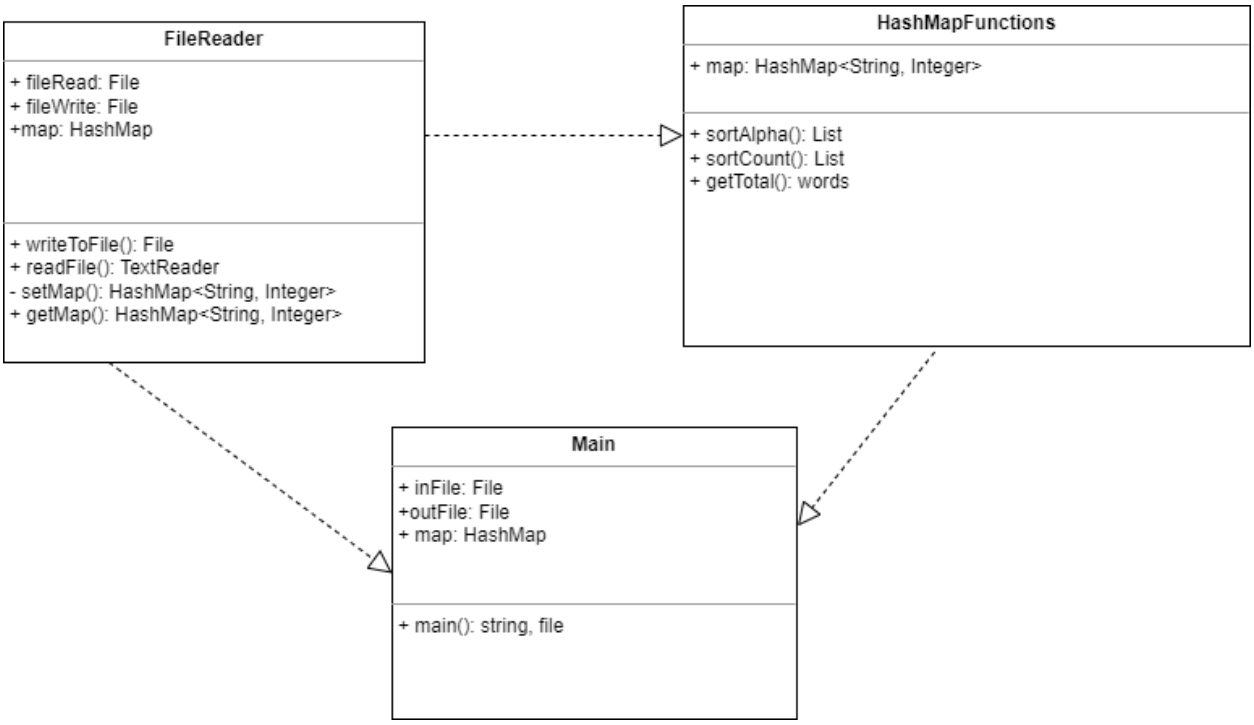
Introduction:

This project will use two implementations to take in a file and count the frequency in which words appear. The first implementation will be done through the command line and will write the data to a separate file sorted either alphabetically or by the frequency. After the program is run, the command line will output the name of the file with the frequency, as well as the total count of words and a brief sample size of the document.

Software Design Plans:

My initial thoughts for the first implementation were that I would need 3 classes. One class to read files and convert them into a HashMap and also write to the new file with the HashMap information. Second class would be to take the HashMap with the words and the frequency and reorder based either on alphabetically and by frequency. Also it should have the ability to count the total number of words. The third class is a main class that will implement all of the functions listed above. Below is a very preliminary UML Class Diagram to show the basics of how I think the classes should work together.



For the second implementation of this project, I will build upon the existing code from part one but will add a GUI to the program. This GUI will be able to read mouse inputs to determine the correct files to

use and calculate the word frequency within the file. This will require the addition of a couple classes, mainly a JFrame and a controller that will interact with the existing code to properly run.

Software Design for CLI Implementation:

To implement this project through the command line, following the UML class diagram above, I used three separate classes. I wrote a main class, that simply takes functions and implements them as intended. I wrote a class that specifically works with files called FileFunctions. This class opens files with openFile, reads files and places the words and their counts in a HashMap with readFileAndSetHashMap and 3 iterations of writeFile with the capability of writing a HashMap, TreeMap, and LinkedHashMap to a separate file that is defined by the readFileAndSetHashMap method, which adds count.txt to the file name. I also wrote a HashMapFunctions class which performs functions on the HashMap pertinent to how the project should be done. This includes a method to sort by alphabet, sort by count, get the top 5 values, get the bottom 5 values, and get the total number of words in the text file.

Preliminary GUI Design:

I explained my thought process above, but I will add a UML class Diagram.