

Distributed Systems

Assignment 1

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Application Idea

The idea behind my application is a similarity checker between two text files. It's more catered towards checking any file the user uploads against a set file in the server. An application for it would be a teacher having an answer key, and uploading a student's file to check the differences between the two.

Novel Feature(s)

The program checks the entire line of both files to see if there are any differences. If there are, the program will print the line from both files, and the line number. It will also calculate the percentage of similarity by dividing the number of lines with differences by the total number of lines.

Challenges

The original idea was that the user would be able to upload two files and have the program store each string into a hashmap and determine how many times each string appears in both files. However this proved difficult, so I changed it to have the user upload one file and it would be checked against a file already in the server. The hashmap implementation was also tricky because it would need to detect what counts as a string, store it, and keep count of how many times it occurred. Then it would cross reference it with the other file to determine how many occurrences there are between the two files. Another challenge is that if the two files are not the same length, the program will stop checking after the last line of the shorter file has been checked.

Solutions

Essentially, the solution to my challenges was to simplify the program to do less than intended, in a broader way. Instead of checking each string, which would take large amounts of memory depending on the size of the file, it simply checks if the entire line is equal to the line of the other file. This has reduced versatility but the implementation was much simpler, and doesn't cost as much resources.