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Assignment 2 - FS & IPC
10/1/2023 - Post Review

Implementation Success:

Fio Library:

- The write and create functions were implemented effectively and efficiently at the start of development. No significant issues arose from their usage.

C Files:

- Sort - bubble sort method was an effective and efficient way to handle the problem presented and ultimately returned an alphabetical ascending list. (There was an issue with Sort that will be addressed in the following section.)
- Makewords - using a function to evaluate each character and replace white spaces with a new line was effective at accomplishing the task desired with no significant issues arising.
- Unique - the implementation of a checker to see if a line was already within the array was effective at identifying unique data from non-unique data.

Bash Scripts:

- Similar to above; the implementations went smoothly.

Implementation Changes and Rationale:

- The largest issue throughout the entire projects implementation was trying to identify **where** something was going wrong causing the end output to fail the autograder for matching the desired output. After rigorous testing to identify the issue; I discovered an issue with my original Sort methodology that caused unintended effects.
    - Essentially what was happening was that sort had a section that searched for white spaces, tabs, or new lines. There was an edge case in which a previous C files execution caused an additional whitespace to be translated into the input that the Sort function would then read and cause two new lines to be created. Initially I had remedied this within the sort function which caused additional issues.
    - Eventually I discovered that the root problem was within Makewords; a simple adjustment to the logic behind the “replace white space” with a “new line” fixed the error from recurring and all was well with the world.

Research Progress:

- A lot of research into how to properly write in Bash; the syntax is new so essentially everything I wrote I needed to look into documentation as to how and what it was doing. For the sake of not listing a bunch of basic information; I had to research all of the basics. How to initialize a variable, how to structure an if else statement. How to properly pipe executions together. The only thing I remembered from the start of this assignment was how to compile and run c files for the build.sh file.
- There was research into different standard library additions within C. One that came into play a lot was strcmp which allows for two arguments and compares if

they are similar of value or not. If they are it returns a pseudo true boolean, if not equal in value it would return a false value. This was extremely effective for much of the comparison needed for unique and mismatch functions.