Sorter P0 - Harsh Patel

I had to do the whole project alone since my partner didn’t help me at all. I was supposed to do sorter is implemented perfectly however, it was his job to do merge sort which he said it he was working on till the last day(oct 2). Professor Andrew told me to finish up whatever I could manage to finish to implement merge sort.

I have used a Makefile to compile my project. I have put this Makefile in the submission. "make" should compile the project.

My sorter. c file starts off with checking if an sorting field was passed to it. If not then it it continues to skipping the first line of the CSV file since we it is not required. For getting each line from the CSV after I used a while loop with getline till it hits the end. The line that just came in is cycled through another while loop that breaks up the tokens of the line using strsep. I had originally implemented strtok but it couldnt handle empty cells. In the while loop where the line gets broken into tokens each token is added to an array of struct using a switch. there is a counter that the switch is compared with. Since know that there are 28 fields there are 28 cases for the switch. I have handled the special case of commas in movie titles with an if statement. This if statement basically checks if the token being added is a movie with quotes then it breaks up the token and adds it. After that I free the line. Then run MergeSort on the Data. Sorter.h file contains my struct for storing the data from CSV and also function definitions for Mergesort.

My plan for merge sort.

Add a value finding function. Will be called from sorter.

This is not a separate function, but I added if statements to the switch statements in the while

loop. This does the job of getting the input sorting field and sets it equal to a number between 1 to 28.

Add a function to create an array of void pointers. Will be called from sorter.

These pointers will point to the field that's being sorted. There is a for loop that runs for however many elements are in the csv file. There is a switch statement in the for loop. The condition being the int passed back from the function above. So if the for loop runs 5 times with an input of 5 for the switch statement, the 5th field in the struct which is the 5th column in the csv file would have void pointers attached at the end of the loop. This will help keep all the data of the struct in order when sorting is being done. Also in the switch cases add statements that will update an int variable that will act as following. Strings will be 0, int will be 1, and float will be 2. This will help determine what kind of data is being sorted.

Merge sort

Takes in the struct array, void pointers array, length sizes, and a value to indicate if the field is a string int or float.

Mergesort is only partially implemented since I did not have much time to finish it all by myself.