CS-300

Code Reflection and Flowchart 2-3

Vector Sorting Algorithms

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The purpose of this program is to sort a text file using the quick sort and selection sort methods. This program can allow the user to specify the field to sort by and whether to sort using the quick sort or selection sort algorithm. It also includes error handling to handle cases where the file is not found, or the specified field does not exist in the file. The CSV text file is loaded, sorted, and displayed using the various algorithms and the time complexity value based on clock ticks as shown in the console. The user can easily modify the program to work with other types of delimited files by specifying the delimiter in the source code. Furthermore, the program provides an option for the user to output the sorted file. This feature helps to maintain the original file and enables the user to keep track of the sorted data by output to the console. Overall, this program provides a convenient and efficient way to sort large text files using various algorithms. I did have a problem setting up the program at first. I tried a couple of different IDEs and different versions until I found the correct compiler and program configuration. I still have a small problem with the output for the quick sort option.

The program has the following components:

* A Bid structure that holds the unique identifier, title, fund, and amount of a bid.
* displayBid: displays the bid information to the console.
* getBid: prompts the user to input bid information using the console and returns a Bid structure containing the bid info.
* loadBids: loads a CSV file containing bids into a vector<Bid>.
* partition: partitions a vector of Bid structures into three parts, low and high, and mid, based on the title of the bids.
* quickSort: performs a quick sort on the vector of Bid structures based on the title of the bids.
* selection sort: performs a selection sort on the vector of Bid structures based on the title of the bids.
* The main function contains a menu that allows the user to load bids from a CSV file, add new bids and sort bids by title using either quick sort or selection sort.

Below is a flowchart for the vector sorting algorithm:Diagram

Description automatically generated

Fig.1 Vector Sorting Flowchart.