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COMP 465W

Assignment #1, Draft #1

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Data Structures and Obstacles

Last semester, in my COMP 285: Data Structures and Algorithms class, our final project became the most difficult program I have ever worked on. The assignment instructed us to create a Java program that takes three .csv files as input, parses them, and sorts them by the stock symbols that appeared as one of the comma-separated values. The program had to provide search functionality by stock symbol, identify the fifteen companies with the highest “MarketCap” from largest to smallest, and it had to display a menu to offer the user their choice in which functionality to run. This instructor’s previous assignments involved tasks such as coding an AVL tree and reading and sorting an input file, so I assumed that another assignment involving input files and data structures would not be too difficult. However, this assignment quickly became daunting as I struggled to decide which data structure I should implement and each compilation seemed to produce more and more errors.

Through research online, I eventually decided to use a linked list to store the data from the .csv files. I was able to get relatively close to completing the program, but I was unable to resolve some of the errors I was receiving. On the day of the submission deadline, a friend of mine advised me to use a tree set and a tree map in addition to a linked list. I implemented the new data structures and, with some rushed research and luck, got past the errors that I had been encountering. Unfortunately, the program was still unable to run due to errors on one last function – the function to display the fifteen companies with the highest “MarketCap.” This function seemed like the easiest one to me, so I was especially aggravated that the program was still not working. Luckily, I was finally able to get the program to run within an hour of the deadline, but unfortunately, I cannot remember what I changed in my *market15* method. The change must have been relatively small for me to forget, but I am nonetheless relieved that I could submit a working project on-time.

In total, the program took me about two weeks. I decided to start on the program relatively early because I knew that I would need to visit my professor’s office hours frequently. I received a substantial amount of help from my professor, who guided my program in the right direction several times. I originally intended to use a hash map to store the information from the .csv files, but my professor advised that I use a linked list instead. By the end of the project, every method and function that my program implemented had been reviewed and changed through others’ advice. Unfortunately, since this program was turned in around the same time as the final exam, I was unable to receive feedback on my completed program from my professor. I would very much like to discuss some of the alternate ways of completing this project to see if any of my earlier ideas could have worked.

As with most programs, this final project involved many unexpected challenges – especially when trying to compile the program. If I were to work on a similar project in the future, I would try to allocate even more time for the program because I have learned that I have to vastly scale up my allotted time for larger programs. If my small programs yield errors in nearly every method, I should expect large programs to do the same and therefore take far longer to complete. In this expanded time frame, I would also attempt to utilize my resources in a smarter fashion. Although I was doing a fair amount of research online, I should have consulted with my colleagues in the beginning. The web has great information, but oftentimes my classmates will have better answers.

The programs that will be assigned to me this year are going to be even more challenging than the one I have discussed. I am glad that I was given an opportunity to reflect on my programming experience so that I can explicitly tell myself how to improve. The obstacles that I overcame with this COMP 285 final project will serve as reminders that I have to be smart and realistic about my approaches to programs. I hope to see these lessons in action this year by completing programs more efficiently.