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Final Project Individual Summary

A few different concepts were used from class to design and implement my final project. The first thing I used was quite a bit of object oriented programming. I had to create two different classes with header and .cpp files called Item and Customer. These two different objects were compared a lot throughout my program. I passed in my Item and Customer classes in almost all of my functions in main, and this was a key part to my program. Another small concept from class that I used in my final project was how to use a static member variable and static function to create an ID pool. I used this ID pool to generate a different order number for each customer that places an order. My program also heavily relied on vectors and File I/O. This is because as I was working through exam 2, a lightbulb went off in my mind as I was thinking about what I could do for my final project. I realized vectors and File I/O could be very useful for keeping an inventory, and that is why I used a lot of vectors and File I/O. I used vectors to store and keep track of large amounts of inventory objects and customer objects. I also used accessor and mutator functions (learned in chapter 10 object oriented programming) to compare these vectors of objects to each other in order to get my program operating properly. The File I/O was used to output organized data so the company who is using my program can easily access it, and I also have an input file where the user can easily modify how much cash the company has available. This way, if someone is inexperienced with visual studio they can just edit the .txt file instead of sorting through all the code.

Outside of class, I reviewed some C++ Youtube videos that summarized some key concepts that we learned before ultimately starting on my final project. Instead of going back through the long Panopto videos, I thought that reviewing quick 10 minute summaries would be more time-effective and work out better for me. They did, and I was able to brush up on my skills with vectors and File I/O well enough for me to successfully complete this final project while only having to ask you a few questions.

What surprised me most about this work is how much attention to detail is actually required to put out a project from start to finish. Once I finished the functionality of the program, I thought I was close to being done. But I wasn’t. I had a lot of code to clean up and comment out to make it clear what the program is doing, and also had to make the output look clean. I also surprised myself that I was able to complete all my requirements on time. It was a daunting task to look at, but I am proud that I completed all four of my requirements listed in my proposal! Lastly, I am surprised I didn’t really have to use pointer memory in this project. This is something I need to work on and may incorporate in my “version 2” of this project if there is one.

There are a couple things I would do differently looking back on this project. The first thing I would do is incorporate the use of templates. I would either look at creating a Template class or template function in order to allow the company to easily modify something if they change the way they want to input their inventory in text files. For example, the current program only takes int values for price, but if a company prices items ending in .99 then I would need to update my program to take in double values. A fix for this would be to include templates throughout my program. Another thing I would do differently is only have one function for writing my inventory to file. I currently have two: void UpdatedInventorytoFile and void WriteInventorytoFile. I was running out of time and did not want to mess with the program, so I did not combine these into one. I could definitely make it work.

Finally, there are a few other things I would do differently and these would come in “version 2” of my project. The first thing would be to add size support. As I got to the end of my program, I realize I don’t have any sizing listed in my classes and this is unrealistic for a sporting goods company. This would be the first update pushed in V2. The second update would be to better support and organize multiple quantities of the same exact item. Instead of the same exact item showing up twice in the inventory list, it would be listed like: Nike Basketball Socks White Qty:2. This would allow for easier to read tracking and inventory lists. Another idea I had would be to take my profit made from one list of sales and add this into the available cash that the company has to spend on new product. However, you would have to take into account how some of that profit is going to pay employees and other expenses, so I would have to come up with a calculation to figure that out. The last idea I had was to add in more ways I could sort inventory, whether it is descending order, item name, etc. It would help the company to be able to have as many sorting options as possible.

Overall, I am very happy with the outcome of this project. I completed all my requirements initially proposed (with some minor changes). The requirements sheet will be updated on GitHub. If you have any questions regarding how to run the program with the test text files I provided, please email me. The test file you want to use for the fillInventory function is “Inventory.txt”, the test file you want to use for the Fillcustomer function is “Customer.txt”, and the test file you want to use for the BuyInventory function is “RestockInventory.txt”. Feel free to play around and add or make your own test files as well.