CS-210 Programming Languages

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The purpose of this project is to import data from a record of chronologically ordered items and output the data in a more user-friendly format. The program allows the user to choose from multiple options that display the data accordingly. The first option asks for user input of an item name, then displays the number of times that item was recorded. Second, the user can display all the items recorded in the day with a numeric count equal to the number of times each was purchased. Finally, the user can select an option to show all the items and the number of times they were purchased in the format of a histogram. Of course, the program also allows the user to input an option to exit.

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The first option works by first asking for the user’s input; the user should input an item name. Then the program confirms whether that item existed within the initially provided data. If so, the program outputs the item followed by the number of times it was purchased, if not, the program prints the item followed by zero.

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The second option works by taking the data that was exported into a map, looping through each “key: value” and printing it out in a readable format for the user. This provides the user with a list of all the items that were purchased as well as their quantity.

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The third option functions by creating a string equal to the quantity of each item in asterisks. Then it wraps that string and the items name in a block of “-“ and “|” characters to create a histogram. Finally it prints out another block of those characters with the strings “item” and “quantity” to label the axises.

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The program controls the menu and the menu options through a Menu object. That object has two variables, string display and int menuOption. The Menu class provides mutators and accessors to each variable as well as two built in functions, one for printing the display and another for getting the menuOption from the user’s input. The logic for controlling which function is called using the menuOption is held in a switch case that rests inside of the main function.

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Lastly, the program begins with importing the data from an input file and then backing up that data into an output file. If either instance fails, there is code put in place to catch the failure and inform the user.

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