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CSCI 2270
12/10/18

Overview

The goal of our final project was to create a program that could be used by both employees and customers of a grocery store. We have created two main programs, one for the employees to search, add, remove, and view items that are expiring soon as well as items that need to be restocked. On the customer side, some of the functions that they will be able to do are actions like search for items, add items to a shopping list, export their shopping list to a file, and reserve items to be picked up. In both programs, users must login to their accounts to be able to access these functionalities.

Data Structures Used

The backbone of our project is based off of a hash table. We had a large data set of items, so a hashtable was the best option due to its fast searchability. To store usernames and passwords, we used a vector because vectors can be used dynamically. We also implemented queues to store the items that either need to be restocked or are expiring soon in order of priority. We used queues because they have a “first in first out” implementation, and as a result we can view and “pop” the items that are expiring soonest or are running very low.

Current Struggles

We wanted to have a priority queue for reservations in order to prioritize reservations based on the time and date it was placed. We found difficulties when it came implementing a way for employees to view these reservations, so we removed that functionality.

How To Use

To run program: compile projectMain.cpp hashTable.cpp customer.cpp employee.cpp simultaneously. The program will then read an option to view employee program or customer program.
If the customer option is chosen, the user will must first sign up, then they can log in. Then, they will be able to search the store, add items to their shopping list, view their shopping list, and export their shopping list to a file.
If the employee option is chosen, the user will first need to sign in using a username and password given in usernamePasswords.csv file. Then, the user will be able to add an item, search for an item, view items expiring soon, and view items that need to be restocked.

Task Division

Each group member worked on separate functions--a user function and a main function. Zaid mainly worked on the customer side of our functions, while Madison worked on the employee side of our functions. Both group members revised each other’s functions to ensure that the functions were the best we could implement.