Recording System for Aunt Mining

Defining the problem

The client, my Auntie Mining, runs a small grocery store with three salespeople in Guangzhou, China. Her customers are students nearby, neighbors and people pass through. She has recorded all her goods and every transaction made by salespeople in a notebook to calculate profit and the sales of each salesperson. The current manual system has become inadequate as more customers come and salespeople increase to five. She wastes valuable time to memorize item details and record transactions by hand on the book. Now, Mining wants to improve the efficiency of store running. She has heard that I study Computer Science in high school, so she wants me to help her create a new record system. When a transaction is made, she wants the system can help her to record the type of goods, quantity sold, and the salesperson who makes it. The system also has to generate reports about the most profitable products with total profit and sales of salespeople.

I consider this new system and ask my Computer Teacher, Mr. Ye for help. My aunt do not wish to invest a lot of money and, to make the record easy for her, I should create a user-friendly interface and clear documentation to help her use and maintain the application.

Rationale for the proposed solution

I decided that a user-friendly GUI interface would be the best solution for Mining. GUI can make her recording more convenient, for Mining only has a low level of computer skills. She can use this system by understanding simple figures without reading lots of words. This will accelerate the process of recording and improve the efficiency of running the store.

Moreover, I chose Java language to develop this system, because java is the main language I studied and I'm familiar with it. Also, Java is object-oriented. It allows me to create modular programs, which will make the subsequent maintenance of program much more convenient. Furthermore, it can abstract all products in the store into a type of object. This makes programming easier and more logical, which can improve efficiency.

Lastly, I planned to use a hash table to record all the details of products in the store. Since searching in a hash table has a big O notation of O(1), which is highly efficient, information of goods as a record stored in a hash table can be easily located and be deleted.

Successful criteria

1. Store information of each product including its name, price, cost, and amount and information of each salesperson including its name and sale.
2. Store records of all products and salespeople in the system.
3. Have entrance for Auntie Mining to add/delete products or salesperson.
4. Adjust the amount of products and sales of salespeople, according to the detail of each transaction.
5. Record down the update of system data as a transaction occurred in order to prevent

volatility.

6. Generate reports, one in the ranking of the most profitable Goods, another in the ranking of the most sales of SalesPerson.
7. Have a user-friendly interface (which only requires simple operation).

(Word count: 392 words)