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REPORT ON INVENTORY MANAGEMENT SYSTEM

INTRODUCTION:

Inventory management systems, a type of software, help businesses manage their sales, restocking, and inventory levels. This project's goal is to develop an inventory management system for a supply company. The system gives the store owner access to adding items, seeing vendors, viewing products, viewing bills, issuing products, and viewing issued products. The project will be completed using Java and MySQL.

Implementing data structures:

In the system's implementation, we will use several data structures for distinct item categories. Queues, lists, and stacks will be utilized for categories 1 through 4, queues for categories 5 through 7, and lists for categories 8 through 11. We will use iterators, recursion, stack, and queue implementations of the list, among other techniques, to manage issued goods, viewing goods, and bills. Hash maps will be utilized to record vendor data and maps will be used to monitor product sales.

MySQL implementation using Java:

Java programming will be used to create the inventory control system. A complex program may be written in Java, an object-oriented language. As a database management system, MySQL will also be utilized to store and retrieve data as needed.

MySQL, a well-liked database management program, is fast, trustworthy, and secure.

Algorithms for searching and sorting:

We will use search and sorting algorithms for categories 6 through 11. The search and sorting algorithms will provide the business owner with efficient and speedy item discovery. We will use binary search techniques to look for items in categories 6 through 11. The items in these categories will also be sorted using the quicksort and merge-sort algorithms.

Performance Assessment:

Big O and Omega Notation will be used to gauge the system's effectiveness. Big O Notation is a way of expressing an algorithm's maximal time complexity. The Omega Notation can be used to describe the bottom bound of the temporal complexity of an algorithm. By assessing how effectively our algorithms work using these notations, we may enhance the system's performance.

Reports:

Reports will be produced to show how the data structure implementation was done.

The reports will outline the system's operation as well as the development of the data structures, searching, and sorting algorithms. We will also generate performance reports for the system using Big O Notation and Omega Notation. The shop owner will easily be able to obtain and review the reports.

CONCLUSION:

Finally, we developed an inventory management system for a provision shop using Java and MySQL. The system gives the business owner excellent management over sales, restocking, and inventory levels.

We have developed searching and sorting algorithms, and employed multiple data structures for different sorts of commodities, to make it simpler for the store owner to locate stuff. We also utilized Big O and Omega Notation to analyze the system's performance in order to show how the system works and how it operates.