

Warehouse Management and Information Sharing System

E. Saraswathi¹, Dipon Sengupta², Sanjanaa Sri .M³

^{1,2,3}Department of Computer Science and Engineering, SRMIST, Tamil Nadu, India.

Abstract – The essential thought of this paper is to advance a task which manages dealing with a distribution center as names stockroom administration framework (WMS) and spotlights on how the things are taken care of in a warehouse. It includes all the vital activities with fundamental exchanges like refreshing another item or thing into the distribution center and additionally erasing a formerly sold product. It deals with the framework to be a la mode to monitor the information which is gainful for both the administrator of the stockroom while providing and the client while buying. The product is composed utilizing programming dialects predominantly cpp and the records are planned utilizing xml documents with the goal that the yield of the distribution center administration framework is organized legitimately. Above all the client can give different inputs about an item which may likewise help the organization to audit and expand a hand on drawing out a superior item as indicated by the client needs.

Index Terms – Design, Cpp, Warehouse Management, feedback.

1. INTRODUCTION

A Warehouse Management System (WMS) is a product application, intended to help and upgrade distribution center or circulation focus administration. They encourage administration in their everyday arranging, sorting out, staffing, coordinating, and controlling the use of accessible assets, to move and store materials into, inside, and out of a stockroom, while supporting staff in the execution of material development and capacity in and around a distribution center.

Stockroom administration frameworks arrive in an assortment of sorts and usage strategies, and the sort commonly relies upon the size and nature of the association. They can be remain solitary frameworks or modules in a bigger venture asset arranging (ERP) framework or store network execution suite.

They can likewise shift generally in many-sided quality. Some little associations may utilize a straightforward arrangement of printed copy archives or spreadsheet documents, yet biggest associations - from little to medium-sized organizations (SMBs) to big business organizations - utilize complex WMS programming. Some WMS setups are outlined particularly for the extent of the association, and numerous merchants have renditions of WMS items that can scale to various authoritative sizes. A few associations fabricate their own WMS starting with no outside help, yet it's more typical to actualize a WMS from a set up merchant.

In spite of the fact that a WMS is unpredictable and costly to actualize and run, associations pick up benefits that can legitimize the unpredictability and expenses. Executing a WMS can enable an association to lessen work costs, enhance stock exactness, enhance adaptability and responsiveness, diminish mistakes in picking and sending products, and enhance client benefit. Present day distribution center administration frameworks work with constant information, enabling the association to deal with the most current data on exercises like requests, shipments, receipts and any development of merchandise.

The related articles have come up with management system of warehouses and have led to improvement of the system with more and more improvisations that has to be done in the system to make it a perfect balance and more suitable as well as beneficial for both the user and the manager of the warehouse.

The warehouse management system that is built should maintain the following:

1. Achieving new files for the customers.
2. Can help to load old files of customers.
3. Add items to the warehouse.
4. Give review about a product.
5. Details of the warehouse should be stored.

2. RELATED WORK

Warehousing takes up to in the vicinity of 2% and 5% of the cost of offers of an enterprise and with the present very aggressive worldwide business condition associations are stressing on Return on Assets, and subsequently limiting warehousing costs has turned into an imperative business issue. Numerous organizations are mechanizing their essential warehousing capacities to accomplish the expansion in throughput rates or stock turns required for their warehousing tasks to be financially savvy. It is important to distribute stockroom assets productively and adequately to upgrade the profitability and diminish the activity expenses of the stockroom .One imperative territory deciding the proficiency of distribution center is the assurance of the best possible stockpiling areas for conceivably a large number of items in a distribution center. Different elements influencing the capacity

task like request picking strategy, size and design of the capacity framework, material taking care of framework, item qualities, request patterns, turnover rates and space prerequisites are been widely contemplated. It has been recommended that choosing fitting stockpiling task approaches (i.e. irregular, committed or class-based) and steering strategies (i.e. transversal, return or joined) concerning above elements is a conceivable answer for enhance the effectiveness.

Different choice help models and arrangement calculations have likewise been set up to take care of distribution center activity arranging issues. The usage of WMS for an organization requests critical venture and day and age (a while) which must be supported with the advantages got after execution. The avocation includes the great examination of the present circumstance of the distribution center and stockroom activity for a particular timeframe tuning the WMS. The firm ought to be set up to change the whole procedure and framework stockpiling. Just WMS usage without changing procedures demonstrate that does not prompt cost investment funds or effectiveness upgrades, it will just decrease blunders because of human components.

Another issue that has practiced organizations as of late has been the level of innovation to use in warehousing activities. The decision ranges from regular warehousing – racking and racking with forklift or even manual tasks through to completely mechanized frameworks with transports and robotized guided vehicles (AGVs) and from merry go rounds to automated applications. The explanations behind the decision of a specific innovation level are not generally obvious, and run the array of money related, promoting and different variables, from organization's picture or adaptability for future change through to individual impression of the fittingness of a specific innovation to a specific business or organization.

“The existing systems do not have an organized set up for the warehouse manager to look for things in the warehouse and to be updated about each and every detail of shipments. Thus to validate the data a platform is built which has nearly all operations that a warehouse needs and for each and every customer individually the data is handled. Most importantly they do not have review for the products which is to be implemented so that the companies building the products can come up with better items in future keeping the customer reviews in mind.”

3. SYSTEM OVERVIEW

The system overview can be explained with the figure 3.1 as shown below which tell us the description of the system and the total transactions it will handle. The figure paves path for the modules which come into the picture for the users as well as the manager to facilitate the way in which he system design

will be integrated with any programming language. Thus explaining the diagram shown below:

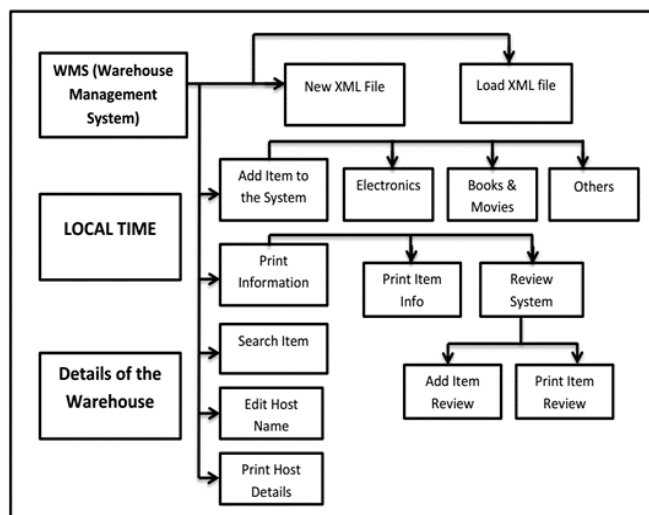


Fig 3.1 : System Overview

The system overview as described in the Fig 3.1 are broken into modules and submodules which help us to keep the system well organized. The rest of the description of individual modules are given in the next topic of Module Description.

4. MODULE DESCRIPTION

The fundamental thought of separating a task into modules is developed because of make the framework whose fabricated method is under action to be made simple for the general population relegated for its make. The modules are broken into submodules to encourage the utilization of an appropriate chain of methodology which will be accessible for the clients. The modules and submodules are upheld with the view depicted in the secluded frame in connection to a menu driven program.

Thus explaining about each module we have to start with the basic modules of “details of the warehouse” which will contain attributes like name, address and details of the warehouse builder and manager. The next module is just for the manager or customer to view the local time. The most important module is named as the WMS (Warehouse management System) which contains the sub modules as shown in Fig 4.1.

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Welcome to WMS:
[1] New / Load xml file
[2] Add item to the system
[3] Print xml content
[4] Search Item
[5] Edit host name
[6] Display system details
[7] Back
>
    
```

Fig 4.1 : Module Description

4.1 File Handling

The main type of file used in this project is XML files that are used to categorize data with XML tags which when opened in a browser can show the details in perfect alignment. In this menu user can load the existing xml file, create a new xml file, and go back to WMS menu. When the user entered “1” in WMS menu the system should display the menu.

Then user can enter 1 or 2 to create new xml file or load an xml file, the system should also notify the user if the file already exists or the loaded file name doesn't exist.

4.2 Add Item into System

In this menu the user can add item to the WMS system. The items are categories in three types, the “Electronics”, “Books and Music”, and “Others”. The system ask user to enter different information accordingly to the categories user selects. If the user did not load or create the xml file first, the system should warn the user.

4.3 Printing Data

This menu is totally based on submenu architecture which has multiple options in this submenu itself as described below as the user now should be able to edit item, delete item and read reviews:

4.3.1 Modify Item data

This menu has the option of editing an existing item which is present in the system for example after purchasing the system has to be updated about the number of items in stock so in future the purchasing of that item can be done accordingly. If an item is stopped from entering the warehouse due to an issue or the company has stopped its manufacturing then the item has to be deleted from the system so delete option has to be facilitated. Lastly printing the items and its components which are different for each category is done after each submenu is called to update the user or the manager about the product availability and details.

4.3.2 Enter Item Review

This menu is totally based on entering a review for an item where we need to enter a product number in the file and the corresponding review file is loaded and the user has to enter the review about the item. The review updating time and date is loaded simultaneously.

4.3.3 Print Item Review

This menu is totally based on printing the menu for a particular item which is present in the system where the user or the manager of the warehouse can view all the reviews updated for a particular item present in the warehouse. This is one of the modifications of what is done in order to improve the existing system.

4.4 Searching Item

This menu is totally based on searching for an item with a keyword and it returns if the keyword matches with any valid fields present for a particular item. The user can enter two keywords together atmost and even can have a condition between them like ‘&’ which represents AND symbol and ‘|’ which represents OR symbol and the results are validated according to the condition applied.

Thus the basic modules have been explained in the module description and it also gives an added field for changing and printing the hostname and directory which is contains the path for the last loaded or used XML file in the system.

5. RESULTS

The necessary screenshots of the results achieved are shown in Fig 5.1 which shows us the main menu and how it looks. Fig 5.2 gives us a vivid idea of giving the filename and path about which the file handling concepts of xml files is achieved. Fig 5.3 explains how we can add an item in the file whereas Fig 5.4 depicts how the items are printed after extracting the information from an XML file.

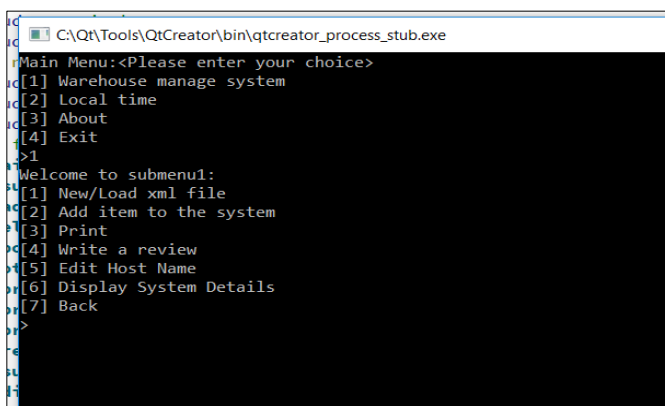


Fig 5.1 : Main Menu

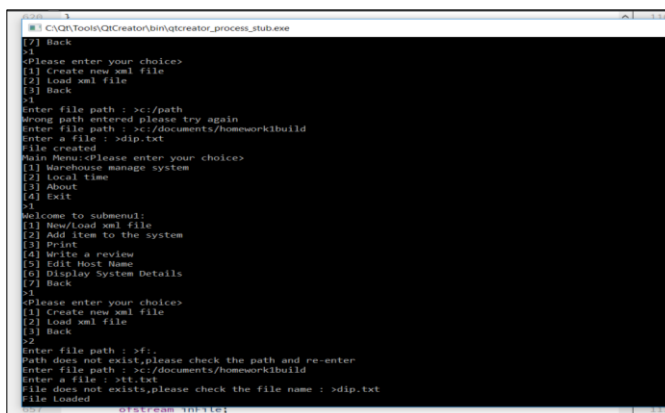


Fig 5.2 : File Handling Concepts

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C:\Qt\Tools\QtCreator\bin\qtcreator_process_stub.exe
[1] New/Load xml file
[2] Add item to the system
[3] Print
[4] Write a review
[5] Edit Host Name
[6] Display System Details
[7] Back
>2
Please select the category of the item:
[1] 3C electronics
[2] Books and Music
[3] Others
[4] Back
>3
Please enter the item name : >dove
Please enter the price :
>99
Please enter the units in stock :
>20
Please describe the item :
>soap
Please enter the customer review path and name :
>c:/dove.txt
Item Created
Main Menu:<Please enter your choice>
[1] Warehouse manage system
[2] Local time
[3] About
[4] Exit
>1
Welcome to submenu1:
[1] New/Load xml file
[2] Add item to the system
[3] Print xml content
[4] Search Item
[5] Edit Host Name
[6] Display System Details
[7] Back
>3
Items in <dipon.xml>


| Index | Item Name    | Price | Units In Stock |
|-------|--------------|-------|----------------|
| 1     | Redmi Note 4 | 10000 | 100            |
| 2     | Inception    | 438   | 23             |
| 3     | dove         | 99    | 20             |
| 4     | Iphone5      | 40000 | 100            |


[1] Show Detail
[2] Edit
[3] Write a review
[4] Print a review
[5] Delete
[6] Back
    
```

Fig 5.3 : Adding an item

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C:\Qt\Tools\QtCreator\bin\qtcreator_process_stub.exe
[OK] File has perfect tags throughout
Main Menu:Please enter your choice>
[1] Warehouse manage system
[2] Local time
[3] About
[4] Exit
>1
Welcome to submenu1:
[1] New/Load xml file
[2] Add item to the system
[3] Print xml content
[4] Search Item
[5] Edit Host Name
[6] Display System Details
[7] Back
>3
Items in <dipon.xml>


| Index | Item Name    | Price | Units In Stock |
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| 2     | Inception    | 438   | 23             |
| 3     | dove         | 99    | 20             |
| 4     | Iphone5      | 40000 | 100            |


[1] Show Detail
[2] Edit
[3] Write a review
[4] Print a review
[5] Delete
[6] Back
    
```

Fig 5.4 : Print menu

6. CONCLUSION

Due to worldwide rivalry and store network ideas, including an attention on fundamental stock control, warehousing has turned into a basic action in the inventory network to outflank contenders on client benefit, lead-times, and costs. Timely and precise data about items, assets and procedures are basic to operationalize an arranging and control structure that successfully and proficiently accomplishes the superior of stockroom activities required in the present commercial center. Distribution center many-sided quality influences the arranging and control structure through the thoroughness of the work to be finished. In exceedingly complex stockrooms, sustaining hierarchical performers with the correct sort of data and learning at the perfect time is troublesome. In any case, an intricate warehousing activity requires a control structure that has a lot of data, information, and learning about items, procedures, clients, and assets promptly accessible. In this way, Optimization techniques are used to position item accessibility and conveyance as an upper hand while likewise enhancing the cost exchange offs related with transportation, offices, hardware, workforce, and other basic cost factors. Conveyance focus additionally encourage time utility by putting away item until the point that it is requested.

7. FUTURE WORK

Due to worldwide rivalry and store network ideas, including an attention on fundamental stock control, warehousing has turned into a basic action in the inventory network to outflank contenders on client benefit, lead-times, and costs. Timely and precise data about items, assets and procedures are basic to operationalize an arranging and control structure that successfully and proficiently accomplishes the superior of stockroom activities required in the present commercial center. Distribution center many-sided quality influences the arranging and control structure through the thoroughness of the work to be finished. In exceedingly complex stockrooms, sustaining hierarchical performers with the correct sort of data and learning at the perfect time is troublesome. In any case, an intricate warehousing activity requires a control structure that has a lot of data, information, and learning about items, procedures, clients, and assets promptly accessible. In this way, Optimization techniques are used to position item accessibility and conveyance as an upper hand while likewise enhancing the cost exchange offs related with transportation, offices, hardware, workforce, and other basic cost factors. Conveyance focus additionally encourage time utility by putting away item until the point that it is requested.

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Authors



Dipon Sengupta originating from West Bengal is currently pursuing his B.Tech Degree from SRM Institute of Science and Technology. He has been to National Taipei University of Technology for Semester Abroad Program. His main areas of interest are Information Security and Internet of Things.



M . Sanjanaa Sri hailing from Chennai, pursuing B.tech from SRM Institute of Science and Technology. She has been to National Tsing Hua University for Semester Abroad Program. She has been a part of a Major project in Taiwan. Her main area of interest is Internet of things (IoT).