INTRODUCTION

Purpose

- Receiving goods
- Tracking inventory
- Slotting for efficiency
- Picking and Shipping

Scope

- WMS is used for maintaining information regarding the various products stored in the Warehouse.
- It is used for maintaining information about various employees indulge in the Warehouse.
- WMS allows to add new item to the Warehouse.
- WMS provides automatic ordering of goods whenever predefined products availability edges are reached.

Definitions, Acronyms and Abbreviations

- WMS: Warehouse Management System
- DBA: Database Administrator

References

- www.qstockinventory.com/blog/warehouse-manangement-system/
- IEEE Recommended Practice for Software Requirements Specifications-IEEE Std. s830-1993.

OVERALL DESCRIPTION

Product Perspective

1. User Interface
   - A sign up screen for entering the Username, Full name of the user, Password and Confirm password. This Username and Password is used for Signing into the account.
   - A Log in screen for logging into the software. This screen asks for Username and Password. Correct Username and password is necessary for log in. If Username and password are not match, then a notification will be given regarding Wrong name/password.

- An Add item screen for adding new item information into the Warehouse. This screen has Item name, Item id, Supplier name, Supplier contact number, Brand name, Category.
- A Stock screen that will show the items present in the Warehouse.
- A Sell screen that will dispatch the item from the Warehouse.

2. Hardware Interface
   - Screen resolution of at least 800*600-required for proper and complete viewing of screens. Higher resolution would not be a problem.
   - Support for printer-that is, appropriate drivers are installed and connected printer will be required for printing of bills.
   - Standalone system or network based- not a concern, as it will be possible to run the application on any of these.
3. Software Interfaces
   - Any windows-based operating system.
   - Java 8.
   - MySQL as the DBMS.
4. Memory Constraints
   - At least 512 MB RAM
   - 100 MB space on Hard disk.
5. Operations
   - The Warehouse Manager will be responsible for deleting non required data.
   - Data backup and recovery will have to be handled by the DBA.

Product Function

The system will allow access only to authorized users with specific roles. Depending upon the user's role, he/she will be able to access only specific modules of the system.

A summary of the major functions that the software will perform:

1. A log in facility for enabling only authorized access to the system.
2. Purchasing Manager can add items in the stock if needed.
3. Shipping Manager can dispatch items from the stock.
4. Inventory Control Manager keep eye on the stock and sends request to the purchasing manager.
5. Customer can view the availability of different products.

User Characteristics

- Educational level: at least graduate should be comfortable with English language.
- Experience: should be well informed about the space availability in warehouse.
- Technical expertise: should be comfortable using general purpose applications on a computer.

Constraints

- It will be able to store a very huge number of items.
- No two items can have the same item id.
- Customer cannot modify the details of the items present in the Warehouse.

SPECIFIC REQUIREMENTS

External Interface Requirements

1. User Interfaces
   The following screens will be provided:

LOGIN SCREEN/SIGN UP SCREEN:

This is the first screen that will be displayed. It will allow user to access different screens based on the user's role. Various fields available on this screen will be

- User name: Alphanumeric of length upto 10 characters.
- Password: Alphanumeric of length upto 10 characters.
- Role: Will have the following values:
  Purchasing Manager, Shipping Manager, Warehouse Manager, Customer

One can also create a new account by Signing Up. To do so, one has to fill following fields:

- Name: Alphabets of length upto 20 characters
- User name: Alphanumeric of length upto 10 characters. This is used at the time of login. Also, Username should be unique.
- Password: Alphanumeric of length upto 10 characters.
- Role: Will have the following values:
  Purchasing Manager, Shipping Manager, Warehouse Manager, Customer
- Contact information: This includes contact number and email id of the user.

HOME SCREEN:

This screen will be accessible to all the users. This screen allows all of the users to access various information of the Warehouse. It shows total number of items present in the Warehouse, total number of suppliers that are supplying products to the Warehouse, total number of employee working in the Warehouse and much more.

ADD ITEM SCREEN:

This screen is accessible to Purchasing Manager only. Only purchasing manager can add any item to the Warehouse. To add any item Purchasing Manager has to fill these fields:

- Product Id: Numeric of length upto 5 characters.
- Product Name: Alphabets of length upto 20 characters
- Quantity: Number of items of that product to be added.
- Purchasing Price: It contains the cost at which the item is bought.
- Supplied by: It contains the name of the supplier that supplies that item to the Warehouse.
- Brand: It contains the name of the brand of the item being added.
- Category: It contains the category to which the item being added belongs. The Warehouse Manager can easily sort the items on the basis of their category and hence it reduces the effort of the Warehouse Manager in storing the products.

SELL ITEM SCREEN:

This screen is accessible to Shipping Manager only. Only shipping manager can remove any item from the Warehouse. To remove any item Shipping Manager has to fill these fields:

- Product Id: Numeric of length upto 5 characters.
- Product Name: Alphabets of length upto 20 characters
- Quantity: Number of items of that product to be dispatched. This value must be less than the quantity of that product present in the Warehouse.
- Customer: Alphabets of length upto 20 characters. It contains the name of the customer that has requested for any item.
- Selling Price: It contains the total cost to be payable by customer.

STOCK SCREEN:

This screen is accessible to all the users. It shows the information of all the items in the form of a table. The various columns of that table are:

- Product Id: Numeric of length upto 5 characters.
- Product Name: Alphabets of length upto 20 characters
- Quantity: Number of items of that product that are present.

- Supplied by: It contains the name of the supplier that supplies that item to the Warehouse.
- Brand: It contains the name of the brand of the item.
- Category: It contains the category to which the item being added belongs.

No one can change the information from this screen. Purchasing Manager may use this screen to keep records of all the items that are present in the Warehouse and then purchasing the item that is not in the Warehouse. Similarly, shipping manager can use this screen to see which products are available with the Warehouse and then shipping the products that are available to the customer. Customer can use this screen to see what are the various products present in the Warehouse and then places the order for an item.

CHANGE PASSWORD SCREEN:

This screen will be accessible to all the users. This screen allows all of the users to change their current password. This screen contains following fields:

- Current Password: Alphanumeric of length upto 10 characters.This is the current password of that user. The password must be correct to change it to new one.
- New Password: Alphanumeric of length upto 10 characters.This is the new password that user want to set for its account.
- Re-type Password: Alphanumeric of length upto 10 characters.This must be same as the new password.

ABOUT SCREEN

This screen is accessible by all the users. This contains the information about the developer team of the software.

2. Hardware Interfaces

- Screen resolution of at least 800*600-required for proper and complete viewing of screens. Higher resolution would not be a problem.
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Performance Requirements

In case of static requirements analysis-

- At a particular system only single user can work at a single time, however many users at different system operate WMS.

In case of dynamic requirement analysis-

- Adding and removing of items can be done at one time at a system, maximum number of items that can be added to the Warehouse is calculated on the basis of available area in the Warehouse.
- Most of the transactions can say about (95%-100%) are processed within a minute.
- An operator doesn't have to wait much longer for transaction to complete.

Logical Database Requirements

Warehouse Management System requires a local database stored on the host system which contains the user records and their credentials. It also contains records of stocks, brands, suppliers, clients, payment history.

Software System Attributes

- Reliability

To ensure reliability of this Warehouse Management system, stored user account details must be matched with entered details in Login screen to give user appropriate privileges. If any transaction with the database is interrupted, then the system must be rolled back to its previous stable state.

- Availability

  The database must be in consistent state when any transaction is about to occur and should be in ready state to accept any new entries or alter existing entries.

- Security

  The software is password protected, user have to enter correct pin code in order to access the software. The database can be accessed only by the admin of the software.

- Maintainability

  There is an actor which check and maintain the software system.