**Software Requirements**

**Specification**

**for**

**Sales Management System**

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1. **Introduction:**

The retail industry is one of the industries that is growing at a fast pace where the number of retail businesses keep on increasing from time to time in order to meet the demand from consumers of specified areas. There are different types of retail shops available for consumers to choose ranging from hypermarket to mini market according to their convenience. Most of the shops can be found in residential areas, streets, or in a shopping mall. Basically, retail stores sell a wide range of goods and services from wholesaler or supplier to the end-user. Thus, the nature of retail business required a good management of inventory level in order to meet the demand of the customers.

The traditional way retailers keep their sales and inventory details is in spreadsheets which are not effective anymore when the size of the shop gets bigger. This is because more items will be made available in a larger quantity, thus tracking the sales made with inventory level in the shop would be complicated and time consuming for the retailer. Besides, the situation gets worse when the retailer does not have a proper method to determine items purchased by their customers.

Thus, this project will provide solution for retailers that are still using traditional way in keeping their inventory data like ‘Laxmi Store’ in Mulund west, Tronoh by creating inventory system.Sales and Inventory Management System is a computer- based system that provides the shop structure for maintaining and controlling goods to be stocked. The approach of Sales and Inventory Management System is commonly used to avoid product overstock or outrages by integrating daily ‘Point of Sales’ with store’s inventory level

**1.1) Purpose:**

To provide inventory and sales management systems to help the local business in management. To keep track of their inventory levels they have to calculate a list of the groceries utilized during a course of time, calculate and analyze the requirements for the future, and place their next order to the vendors if needed.

This process takes up a lot of time and human effort, and is also prone to human error. It takes up a lot of time to manually keep track of sales and place correct orders to vendors, wasting useful labor in trivial works. A product which would assist in tackling the above mentioned problems would prove to be fruitful to clients, as this product would help convert the unproductive time to something more useful, by removing the unnecessary error prone complications and efforts.

As the available existing system provides limited functions to the user, thus this project will contain enhanced and more flexible functions to the store. The objectives of the project include

* To provide function to manage goods in the store more efficiently. Basic functions such as ‘add’, ‘delete’, and ‘update’ for data management will be made available.
* Filling system in managing all transactions and documents that are relevant as the aid in the stock tracking routines.
* To automatically generate weekly reports on sales and inventory activities.
* To provide notifications on the goods’ expiring date for clearance activity.
* To generate receipts with proper format for customer references.
* To provide point of sales for each day.
* To reduce time and cost to control and manage inventory.

**1.2) Document Conventions:**

Main title – Font: Times New Roman, Font Size: 14 Bold

Subtitle – Font: Time New Roman, Font Size: 12

Content - Font: Time New Roman, Font Size: 12

The document follows the IEEE format standard (IEEE Std. 830 – 1998).

**1.3) Intended Audience:**

Intended audience are developers working on developing the system, to understand about the requirements of the system, users of the system, document writers, testers and project managers of the system. Users include the institute/company administrators responsible for conducting exams. Those business enthusiasts looking for inventory and sales management systems for improving their business operations.

**1.4) Project Scope:**

The project aims at providing an efficient interface to the businesses for managing their inventory based on each item sold. The basic idea involved here is that each item is stored in a database. At the end of each day, the system analyzes the total sale products and proportionately deducts appropriate amounts from the resource database. Then it compares the current available resources with the threshold level of each product. If it finds that certain ingredients are below the threshold, it will generate a purchase order for those item(s) and send it to the manager (admin) for approval.

We also propose to include a special feature “Prediction”. This feature keeps track of any upcoming occasions, climatic changes and special events that may influence inventory needs for the upcoming week. The system will then predict the required resources for these events based on previously accumulated information/knowledge. It will now generate an updated purchase order in accordance with the predictions.

The product also aims to keep track of the shelf life of resources. If any resource nears the end of its shelf life, it would intimate to the manager (admin) the details of the quantity that is near its expiration date. The store must function efficiently, the products must be tracked correctly, timely orders must be sent out to the vendors, and the inventory must be maintained and updated at all times.

* Sales Manager
* View the orders.
* Manage the orders record Update customer order status.
* Update customer payments record/status Generate sales and payments reports.
* Inventory Manager
* View Inventory record.
* Handle In and Out raw material.
* Handle In and Out finished goods.
* Generate raw material and finished goods reports.
* Customer Scope
* Customers can place an online product order.
* Customers can view product order status.
* Customers can view their history (payments, product orders).
* Customers can make the payments online and manually.

**1.5) Objectives:**

It is a user-friendly application for Businesses which reduces the burden and helps to manage all sales and inventory, which improves the processing efficiency. It deals with the automating tasks of maintaining Bills. In Inventory management, sales management is the key process. Including safe data stores about products as well as fast searching, delete and update of products. The inventory management system is easy for use so the user can do Inventory actions without ambiguities.

The main Objectives of the IMS is making the businesses sales computerized by creating neat work through minimizing or eliminating wasting of time as well as removing the resources such as papers for data saving since now a days is paper based.

**1.6) References:**

* Wikipedia(2013), Inventory Management Software Retrieved 22 Jun 2013 from <http://en.wikipedia.org/wiki/Inventory_management_software>
* Anton Dolinsky (2007), Barcodes, sales and inventory control Retrieved 22 Jun

2013 <http://www.almyta.com/Inventory_Management_History_4.asp>

* Tim Crosby(2007) , How Inventory Management Systems WorkRetrieved 22,Jun 2013 from <http://money.howstuffworks.com/how-inventory-managementsystems-work1.htm>
* Software Requirements 3 (Book)
* Business Requirements Document
* <http://web.mit.edu/orange/www/req/node1.html>

1. **Overall Description**

**2.1) Product Perspective**

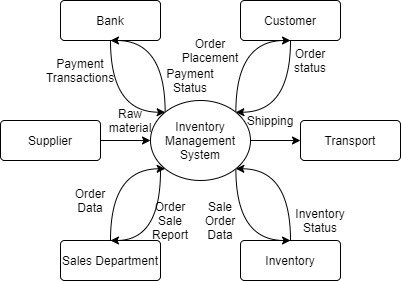
There are many businesses which require and use the inventory and slas management system to carry out their daily business. To come up with their product in market, they communicate with these stakeholders:

* Sales Manager
* Inventory Manager
* Customer

At present time, many businesses are dealing with all of his processes using Microsoft Excel and manual systems to handle the information flow and working process throughout the industry.

The big picture of work flow of the inventory management is described in the below context diagram. There are some basic modules which we do not consider in this SRS but to visualize the real environment they are necessary like transport and suppliers.

**2.1.1) Context Diagram**



## **2.2) Operating Environment**

The system services and goals are established by consultation with system users. They are then defined in details and serve as a system specification. System requirements are those on which the system runs.

**Software Environment:**

* Eclipse J2EE or any other IDE of your choice

**Software Requirements:**

* Windows/Linux
* .NET Framework.
* Java Virtual Machine/J2EE server.
* Jdk 1.6 or later.
* Net Bean 6.5.1
* MS SQL Server 2005.

**Hardware Requirements:**

* 1.8 GHz or faster processor. Dual-core or better recommended
* 2 GB of RAM; 4 GB of RAM recommended (2.5 GB minimum if running on a virtual machine)
* Hard disk space: up to 130 GB of available space, depending on features installed; typical installations require 20-50 GB of free space.
* Hard disk speed: to improve performance, install Windows and Visual Studio.

**Operating System:**

* Any OS (Windows, Linux or MacOS) with JDK

**2.3) User Classes and Characteristics**

|  |  |
| --- | --- |
| **User class** | **Description** |
| Inventory  manager | Inventory manager is an employee who maintain new raw material detail,  raw material stock detail, finished product details, and finished Product  stock detail. It also makes sure that stock should not cross the red line (limit). |
| Sales manager | Sales manager is an employee whose responsibility engage customers by  maintaining customer detail, meeting their demand in time. Generate sales  report in helping decision making and also handle customer payment  details. |
| Customer | Customer is a key person who places an order. View order status as if placed  order accepted or not. Pay his dues online by credit card number. Check  history of order details and payment details. |

**2.3.1) End Users**

* No specific knowledge or skills are required from the end user.
* End users should have a basic idea about computer operations and databases.

**2.3.2) Administrator**

* Administrators must have good knowledge of database management systems.
* Administrators must be capable of managing user rights.
* If the network connection does not work properly then our system should not work as intended.
* Also it is assumed that the product is installed properly on the web server.
* This system will not take care of any virus problem, which might occur either on the client or the server system. Avoiding the use of pirated software and ensuring that floppies and other removable media are scanned for viruses before use could minimize the possibility of viral infection.
* Recovery of data after a system crash will be possible only if backups are take

at regular intervals.

* Manual interfaces cannot be fully avoided. Documented proofs like data entry of

employees etc. will have to be verified by the concerned management staff

before entering it into the computerized system.

**2.3.3) Classes of Sales and Inventory Management**

* Inventory Class : Manage all the operations of Inventory
* Customer Class : Manage all the operations of Customer
* Purchasing Class : Manage all the operations of Purchasing
* Sales Class : Manage all the operations of Sales
* Payment Class : Manage all the operations of Payment
* Supplier Class : Manage all the operations of Supplier

**2.4) Product functions**

**2.4.1 Master module**

When the system is loaded, the screen displays the option available under the Master menu.

The options are:

* All the products in inventory
* Suppliers Detail
* Exit

**2.4.2 Purchase Module**

* The General Store’s Purchase module deals with the purchase of the general store products from the suppliers. These products are then updated in the stock table.
* the bill number and bill date may be left blank in the figure above. There are cases when the bill is sent later than the delivery of the products.
* In the above figure, the user enters the supplier’s code and the supplier’s name automatically is displayed.

**2.4.3** **Edit Purchase Module**

* The Edit Purchase Module is for checking whether the entries made were correct or not. The user can search for a particular record by entering the challan number and the date.
* The navigation buttons have also been provided to move through the records. The user can then edit the particular record and then save it.

**2.4.4 Transactions Menu**

The options under the Transaction menu are :

* Sales
* Purchase
* product
* General Stores
* Edit Purchase

**2.4.5 Stock Menu**

The options under the Stock menu are:

* Opening Stock
* Edit Stock

**2.4.6 Report Menu**

The above screen displays the Report menu. It consists of reports for the Sales department and General Stores department.

The Sales department reports consists of:

* Daily Sales
* Monthly Sales
* Current Stock
* product Code List

The General Stores department consists of:

* Daily Sales
* Monthly Sales
* Current Stock
* Product Code List
* product and General Stores

**2.4.7 Inventory Stores with data**

* The Sales and General stores module basically deals with the information of product and general store products. The minimum stock level can be set here as shown in above figure. The minimum stock level will help the user to be warned when the stock level falls below the specified value.
* In this module the product ID i.e. code for each section is automatically generated. This is done when the user clicks on the ADD NEW button.
* The navigation buttons provided helps the user to navigate through the records. The buttons are PREVIOUS and NEXT. The option to edit, delete and save are also given so that the user can modify the records.

**2.4.8 Supplier’s Information**

* The Supplier’s module deals with all the supplier’s information. This information will be used when we want to check which company supplies what products. The basic information such as address, telephone number, etc.
* Whenever we add new supplier’s information by clicking on ADD NEW button the supplier ID is generated automatically.
* The suppliers ID textbox is locked so that the user will not enter an invalid code.

**2.4.9 Sales Module**

* The Sales Module deals with the sales of products. Whether the product is of type product or General Store is dependent on the action selected. The option for cash or credit sales also has been provided for the user.
* If the payment is in cash the cash balance for today’s sales and total sales will be accordingly updated. If payment is credit then no changes will be reflected on cash balance.
* When we click on the ADD NEW button the cash memo or credit memo number is generated automatically.
* The patient’s information is also saved at the same time when the entire detail is saved. This helps for keeping the details of the creditors. Along with the patient’s information the doctor’s information, who refers the patients to the Inventory is also kept.
* The module also gives the information about the current stock level and the minimum stock level. If the stock level falls below the minimum value it will display a critical message, warning the user that the stock quantity level is low.
* We click on SAVE to save the information and then click on PRINT to print the receipt.

**2.4.10 Product Purchase Module**

* The product Purchase module deals with the purchase of the product from the suppliers. These products are then updated in the stock table.
* Note that the bill number and bill date is left blank as shown on the figure above. There are cases when the bill is sent later than the delivery of the products.
* In the above figure, the user enters the supplier’s code and the supplier’s name automatically is displayed.

**2.4.11 General Store’s Purchase Module**

* The General Store’s Purchase module deals with the purchase of the general store products from the suppliers. These products are then updated in the stock table.
* the bill number and bill date may be left blank in the figure above. There are cases when the bill is sent later than the delivery of the products.
* In the above figure, the user enters the supplier’s code and the supplier’s name automatically is displayed.

**2.4.12 Edit Purchase Module**

* The Edit Purchase Module is for checking whether the entries made were correct or not. The user can search for a particular record by entering the challan number and the date.
* The navigation buttons have also been provided to move through the records. The user can then edit the particular record and then save it.

**2.4.13 Opening Stock Module**

* The Opening Stock Module deals with the initial stock entry when the system will be implemented for the first time.
* This module takes the opening stock of the product and the general store products. The option button is provided for this purpose. When selecting the respective option the records that are available are displayed.
* Then navigation buttons are also provided for moving through the records. And accordingly edit the record.
* This module deals with the new entries of the stock. Both the product and general store products are available here. We can search for a particular stock by entering their respective code or product ID.

**2.5) Design and Implementation Constraints**

This application is a web oriented application which has the basic constraints on design and interfaces. Effective security is also a constraint because it manages the organization business and interacts with many users online and offline.

Inventory Management System is meant to be quick and responsive, even when dealing with large groups And transactions, so each feature must be designed and implemented with efficiency in mind.

The Internet connection is also a constraint for the application. Since the application fetches data from the database over the Internet, and online integration with many different business modules. As applications receive online sales orders they have to provide order status and other management so the internet is one of the basic constraints in the effective running of the inventory management system.

As Inventory management system is for business organization and it’s needed for integration with different other offline modules like (Sales, Manufacturing and Inventory).

**2.6) Assumption** **and Dependencies**

The software will use the machine local time so it is assumed that no tampering is done with that clock time otherwise wrong data will be recorded and this can be misused by anyone.

**2.6.1) Assumptions**

* The system will be facilitated with 24/7 hours internet high speed connection to make it quick and responsive.
* The system will be fast in working with a minimum specification of 4GB RAM and 3.2 GHZ.

**2.6.2) Dependencies**

* **Suppliers** Suppliers are the backbone of the NIMS because in Naeem industries they almost depend on suppliers for raw materials to deliver orders and manufacturing of products.
* **Banks** As Inventory management system accepts payments slip of bank to maintain customers’ accounts. So they directly depend on banks for successful running of the system.
* **Transports** For the movement of material (raw material and products) Naeem industry depends on the transporters.
* **Internet Service Provider** Inventory management system is an online web-based information system, which demands internet connection for the interaction with the customers.

**2.7) User Documentation**

* FAQ Section question list
* User manuals document describing functionalities with corresponding screen details.
* Online Help

**3) External Interfaces**

**3.1 User Interfaces**

The software provides a good graphical interface for the front end which is self explanatory.

The Main screen of user will contain following buttons

1. Login

2. Quit

**3.1.1 Login**

It will contain two text boxes for entering the password .It will have one submit button for submitting the information .

It tells about all the different interfaces present in the system. It will open another interface if information entered matches

1. Enter Employee’s Info

2. Show Employee’s Info

3. Show PaySlip

4. Delete Employee’s Info

5. Show All Employee Info

**Enter Employee’s Info:**

It will open an interface which will contain the text boxes in which will take user input of the system information required by the user to enter.

**Show Employee’s Info:**

It will open a window which shows a particular employee's information stored in the database. It is just a read only window.

**Show Employee’s PaySlip:**

It will open a window which shows a particular employee’s payslip info stored in the database. It is just a read only window and contains an exit button to close.

**Delete Employee’s Info:**

It will delete the particular employee’s info as entered by the admin which is stored in the database.

**Show All Employee Info:**

It will open a window which shows all employee’s information stored in the database. It is just a read only window.

**3.1.2 Quit**

This will exit the system and all the windows will be closed.

**3.2 Hardware Interface**

It is just that the system must have sufficient memory for the storage of the details in the database.

Various interfaces for the product could be:

* Computers
* CPUs
* Keypad
* Mouse
* Keyboard
* Continuous battery backup
* Printer (Colored/B&W) which can produce the hard copy.
* Xerox Machines
* Headphones
* Memory minimum of 1GB RAM
* Hard disk of 40 GB

**3.3 Software Interfaces:**

* Any windows operating system.
* The final application must be packaged in a set up program, so that the products can be easily installed on machines.

**3.4 Communication interfaces**

Windows Forms

**4) System Features:**

**4.1) Create Login Interface**

**Use case name** : Login to System

Summary : System validates the user

Actor : The Inventory Manager

i) *Description and Priority:* Create a login interface which provides authentication to the owner to access the other information.

ii) *Stimulus/Response Status:* If the entered password is not in the correct it will display an error message. It will open the next interface if the login credentials are correct.

iii) *Functional Requirements:* It should ask for : Enter Password

iv) *Pre-conditions*: The admin must have the password.

v) *Post-conditions*: The admin has access to the information and modify it.The

The username and password of the user is Validated.

vi) *Inputs*: Password to enter.

vii) *Output*: Display error “Invalid details” if the or password is not in the database

**Main sequence:**

1. The Inventory manager goes to the login menu and clicks on it.

2. System prompts the user for username and password

3. The Inventory manager inserts username and password to the fields.

4. System checks the username and password.

5. If the input were valid value then system will display general system of the

Inventory system.

**Alternative sequence:**

Step 5: if the username or password is not correct, the System displays an

Error message. And prompts for the correct username and password.

Step 5: if the user tries to insert username and Password three times

Without restarting the System it will close.

Step 1-4: if the user clicks on cancel, the system will go on the Inventory Navigation page.

**4.2) Use case description for Info about Inventory**

**Use case name :** GetInfoAboutInventory

Summary: Makes the user understand about the Inventory.

Participating Actors: InventoryManager, Customer

i) *Description and Priority:* The system administrator can add Inventory details in the system. He is also responsible for modifying and deleting the details as and when required. The Inventory details include name, address, phone number, id, stock of products, and cost of the product.

ii) *Stimulus and Response:* The administrator searches for the information and it is reflected on the screen.

iii) *Functional Requirements:* The administrator must make sure he has access to the data and the database before trying to retrieve any information.

iv) *Pre-conditions:* The Inventory’s details to be known must exist in the database beforehand.

v) *Post-conditions*: The Inventory details required are shown to the user.

vi) *Inputs*: Inventory details that are to be known.

vii) *Output*: Inventory details are shown on the screen.

**Flow of event :**

1. The Inventory manager initiates the system.

2. The system displays the first page.

3. The first page consists of menu’s product , and About Inventory

4. The customer or the Inventory manager enters product menu

5. System displays the product available on the Inventory with cost and

purpose.

6. The customer or the Inventory manager enters About Inventory

7. System displays about the organization services and establishment.

**Alternative sequence:**

Step 5-7: if the user enters cancel the Inventory management system will

Stop the operation.

*Entry condition :* The Inventory manager system must be in process or opened.

*Exit condition :* The Inventory manager making Transaction could not be processed.

*Quality Requirements :*.The transaction must be processed less than two seconds.

**4.3) Use case description for Add New product Data**

**Use case name :** AddNewProductData

Summary : successfully record new product data

Actor : Inventory Manager

Dependency : include login into the system

i) *Description and Priority:* The system administrator can add a product record for use at any point.

ii) *Stimulus and Response:* The administrator can use this functionality and can add all the required information on a product. The information will be added to the database and will be available to the admin on the system page.

iii) *Functional Requirements:* The database must hold all the records and a reliable backup of the database must be made available.

iv) *Pre-conditions*: All the details regarding the product must be available to the admin in order to add to the database.

v) *Post-conditions*: The details of filtered employees will be displayed to the admin.

vi) *Inputs*: product details details which are to be added.

vii) *Output*: product added to the Inventory record.

**Flow Of event :**

1. The Inventory manager logs into the system.

2. Go to the system settings and menus.

3. Select a new product record option.

4. The system display record form

5. Then the Inventory manager fills the form that the product data has.

6. Then save the product that fills in step 5.

7. System checks the data entered whether correct or not

8. If the data’s input were correct then the system saved it into the disks.

**Alternative sequence :**

Step 7: If the input form have error the system displays “Saving error” message

Step 1-7: if the user enters cancel the Inventory management system will

Stop the operation.

*Entry condition* : The Inventory manager system must Be on process and login to the system.

*Exit condition* : The Inventory manager making the transaction could not be processed.

*Quality Requirements* : The transaction must be processed in less than two seconds.

**4.4) Use case description for Update product Data**

**Use case name :** UpdateproductData

Summary: successfully updated product data

Actor : Inventory Manager

Dependency : include login into the system

i) *Description and Priority*: The system administrator can update any product’s record for use at any point.

ii) *Stimulus and Response:* The administrator can use this functionality and can update all the required information of one/all products. The information will be fetched from the database and will be available to the admin for update on the system page.

iii) *Functional Requirements:* The database must hold all the records and a reliable backup of the database must be made available.The product’s details to be updated must exist in the database beforehand.

iv) *Pre-conditions*: The admin must have access to the database.

v) *Post-conditions*: The details of all employees will be updated to the admin.

vi) *Inputs*: product ID whose details are to be updated.

vii) *Output*: Details Updated successfully.

**Flow of event** :

1. The Inventory manager logs into the system.

2. Go to the system settings and menus.

3. Select on product records option.

4. The system display the available products that is recorded before

5. Then the Inventory manager selects the product that he/she wants to update.

6. Then press the update from available options.

7. The system displays the product data that is recorded before.

8. The Inventory manager change the data that displayed in the form

9. Save the updated fill form.

10. System checks the data entered whether correct or not

11. If the data’s input is correct then the system saved it into the disks.

**Alternative sequence :**

Step 10: If the input form have error the system displays “Updating error”

message.

Step 1-10: if the user enters cancel the Inventory management system will

Stop the operation.

*Entry condition* : The Inventory manager system must be on process and login to the system.

*Exit condition* :.The Inventory manager making the transaction could not be processed.

*Quality Requirements* : The transaction must be processed in less than two seconds.

**4.5) Use case description for Delete product Data**

**Use case name :** DeleteproductData

Summary: successfully deleted product data

Actor : Inventory Manager

Dependency : include login into the system

i) *Description and Priority*: The system administrator can delete any product’s record for use at any point.

ii) *Stimulus and Response:* The administrator can use this functionality and can delete all the required information of one/all products. The information will be fetched from the database and will be available to the admin for deleting on the system page.

iii) *Functional Requirements:* The database must hold all the records and a reliable backup of the database must be made available.The product’s details to be deleted must exist in the database beforehand.

iv) *Pre-conditions*: The admin must have access to the database.

v) *Post-conditions*: The details of all products will be deleted to the admin.

vi) *Inputs*: product ID whose details are to be deleted.

vii) *Output*: product Details Deleted successfully.

**Flow of event** :

1. The Inventory manager logs into the system.

2. Go to the system settings and menus.

3. Select on product records option.

4. The system display the available products that is recorded before

5. Then the Inventory manager selects the product that he/she wants to delete.

6. Then press the delete from available options.

7. If the system can successfully delete then displays the message “successfully

deleted”.

8. The system removes the product data from the disk.

**Alternative sequence :**

Step 7: If the system cannot successfully delete the product then system

displays “not delete” message

Step 1-7: if the user enters cancel the Inventory management system will

Stop the operation.

*Entry condition* : The Inventory manager system must Be on process and login to the system.

*Exit condition* : The Inventory manager making the transaction could not be processed.

*Quality Requirements* : The transaction must be processed in less than two seconds.

**4.6) Use case description for prepare bill for product**

**Use case name** : PrepareBill

Summary Give Bill for sold product

Actor : Inventory Manager

Dependency : include login into the system

i) *Description and Priority:* The system administrator can prepare a bill for products purchased from the Inventory in the system. He is also responsible for verifying and printing the details of the bill as and when required. The bill includes the name of the product, address of the Inventory, phone number, id, number of products, and cost of the product.

ii) *Stimulus and Response:* The administrator searches for the information and it is reflected on the screen.

iii) *Functional Requirements:* The administrator must make sure he has access to the data and the database before trying to retrieve any information.

iv) *Pre-conditions:* The Inventory’s details to be known must exist in the database beforehand.

v) *Post-conditions*: The Inventory details required are shown to the user.

vi) *Inputs*: Inventory details that are to be known.

vii) *Output*: Inventory details are shown on the screen.

**Flow of event :**

1. The Inventory manager login

2. The Inventory manager used the option prepare bill.

3. The system displays bill form

4. The Inventory manager fill the form

5. The Inventory manager uses the option to either save or print.

6. If the Inventory manager press on these options

7. System checks whether the input data were correct or not

8. If it is correct the system saves into the disks if the bill maker press on option saves and

sent to the printer if the bill maker used an option print bill.

9. The system closes the bill form.

**Alternative sequence:**

Step 7: If the input data is not correct then system displays “Error in preparing

bill” message

Step 1-8: if the user enters cancel the Inventory management system will stop

the operation.

*Entry condition :* The Inventory manager system must be on process and login to the system.

*Exit condition :* The Inventory manager making trans-action could not be processed.

*Quality Requirements :* The transaction must be processed less than two seconds.

**5) Functional Requirements**

**5.1) Quotations**

|  |  |
| --- | --- |
| **Sr. No.** | **Functional Requirement** |
| FR-01 | System shall be able to provide facility to the admin to create a sale quotation. |
| FR-02 | System shall be able to provide facility to the admin to update the sale quotation. |
| FR-03 | System shall be able to provide facility to the admin to view the sale quotation. |
| FR-04 | System shall be able to provide facility to the admin to remove the sale quotation. |
| FR-05 | System shall be able to provide facility to the admin to print sales quotations. |
| FR-06 | System shall be able to provide facility to admin to send email of sale quotation. |
| FR-07 | System shall be able to provide facility to the admin to confirm the sale quotation. |
| FR-08 | System shall be able to provide facility to the admin to cancel the sale quotation. |
| FR-09 | System shall be able to provide facility to the admin to add multiple sale items in detail. |
| FR-10 | System shall be able to provide facility to the admin to add suggested items on sale quotation. |

**5.2) Orders**

|  |  |
| --- | --- |
| **Sr. No.** | **Functional Requirement** |
| FR-11 | System shall be able to provide facility to the admin to view sale orders. |
| FR-12 | System shall be able to provide facility to the admin to update the sales order. |
| FR-13 | System shall be able to provide facility to the admin to delete the sales order. |
| FR-14 | System shall be able to provide facility to the admin to update print order. |
| FR-15 | System shall be able to provide facility to the admin to make duplicate copies of the sales order. |
| FR-16 | System shall be able to provide facility to the admin to lock the sale order. |
| FR-17 | System shall be able to provide facility to the admin to send by email sale order to customers. |
| FR-18 | System shall be able to provide facility to the admin to create a new sales order same as the quotation. |
| FR-19 | System shall be able to provide facility to the admin to view reports against the order of vendors. |
| FR-20 | System shall be able to provide facility to the admin to view and save the total account report of orders. |

**5.3) Customer**

|  |  |
| --- | --- |
| **Sr. No.** | **Functional Requirement** |
| FR-21 | System shall be able to provide facility to the admin to add new customers in the system. |
| FR-22 | System shall be able to provide facility to the admin to view customer’s details. |
| FR-23 | System shall be able to provide facility to the admin to remove customers. |
| FR-24 | System shall be able to provide facility to the admin to update customer records. |
| FR-25 | System shall be able to provide facility to the admin to upload customer profile pictures. |
| FR-26 | System shall be able to provide facility to the admin to add customer detailed information. |

**5.4) Product**

|  |  |
| --- | --- |
| **Sr. No.** | **Functional Requirement** |
| FR-27 | System shall be able to provide facility to the admin to add new products in the system. |
| FR-28 | System shall be able to provide facility to the admin to view the product's details. |
| FR-29 | System shall be able to provide facility to the admin to remove products. |
| FR-30 | System shall be able to provide facility to the admin to update product records. |
| FR-31 | System shall be able to provide facility to the admin to add new customers. |
| FR-32 | System shall be able to provide facility to the admin to upload product pictures. |
| FR-33 | System shall be able to provide facility to the admin to add product detailed information. |
| FR-34 | System shall be able to provide facility to the admin to add On hand product in inventory. |
| FR-35 | System shall be able to provide facility to the admin to add products for saleable and purchasable with options. |
| FR-36 | System shall be able to provide facility to admin to update product On hand inventory. |
| FR-37 | System shall be able to provide facility to the admin to print products. |
| FR-38 | System shall be able to provide facility to admin to duplicate product. |
| FR-39 | System shall be able to provide facility to the admin to add the manufacturing method of the product. |
| FR-40 | System shall be able to provide facility to the admin to add logistics about the product. |
| FR-41 | System shall be able to provide facility to the admin to add lead-time of the product. |

**5.5) Reporting**

|  |  |
| --- | --- |
| **Sr. No.** | **Functional Requirement** |
| FR-42 | System shall be able to provide facility to the admin to view sales order reports in different graphs. |
| FR-43 | System shall be able to provide facility to the admin to view sales channels reports in different graphs. |
| FR-44 | System shall be able to provide facility to the admin to view all sales channels reports in detail. |
| FR-45 | System shall be able to provide facility to the admin to view inventory reports in different graphs. |
| FR-46 | System shall be able to provide facility to the admin to view manufacturing orders reports. |

**5.6) Manufacturing**

|  |  |
| --- | --- |
| **Sr. No.** | **Functional Requirement** |
| FR-47 | System shall provide facility to the admin to view manufacturing orders. |
| FR-48 | System shall provide facility to admin to check availability of product. |
| FR-49 | System shall provide facility to the admin to unlock the manufacturing order. |
| FR-50 | System shall provide facility to the admin to cancel the manufacturing order. |
| FR-51 | System shall provide facility to the admin to make work order. |
| FR-52 | System shall provide facility to the admin to plan production order. |
| FR-53 | System shall provide facility to admin to delete and duplicate the order. |
| FR-54 | System shall provide facility to the admin to check finished product against order. |
| FR-55 | System shall provide facility to add new manufacturing order. |
| FR-56 | System shall provide a facility to add Bill of material against any product. |
| FR-57 | System shall provide a facility to check availability of raw material of any product. |
| FR-58 | System shall provide facility to add new raw material of the product. |
| FR-59 | System shall provide facility to delete raw material form record. |
| FR-60 | System shall provide facility to update raw material. |

**6) Nonfunctional Requirements**

**6.1) Performance Requirements**

* PER-4. At least 98 percent of the time, the Naeem industries system shall notify the customer on the fulfillment of the order within 2 second after the updating sales order.
* PER- at least 95 percent of the time, the system takes less than 1.0 sec to search the sales order from the record of 20,000 sales order records.
* The core better will be system performance.
* It should have built in error checking and correction facilities.
* The system should be able to handle large amounts of data comfortably.

**6.2) Security Requirements**

* Passwords must be a minimum of eight characters and must contain one to seven digits.
* Email addresses should be verified before the system grants user access. This verification shall be exercised by sending the prospective user a confirmation email after enrollment. This email must contain information specific to completing the enrollment process.
* All exchanges from client to server involving private data shall occur using the highest available level of secure connection (e.g., https).
* The system is secure and can manage user records reliably.
* This is a very important aspect of the design and should cover areas of hardware reliability, fall back procedures, physical security of data and provision for detection of fraud and abuse.
* Some of the factors that are identified to protect the software from accidental or malicious access, use, modification, destruction, or disclosure are described below.
* Keep specific log or history data sets
* Assign certain functions to different modules
* Restrict communications between some areas of the program.

**6.3) Safety Requirements**

* The server should always be confirmed to run properly and the data are saved to the database at consecutive intervals.
* Power is a significant feature and the power supply should be always taken care of.
* Power supply must be uninterrupted. Unsaved data might be lost due to sudden power failure.
* The database may get crashed at any point of time due an operating system failure or any other reason. Therefore a reliable backup system has been implemented.
* Safeguard the system and server side and database from People ,earthquake, fire, temperature, humidity etc.

**6.4) Business Requirements**

Frequency of use can be varied depending on where it is used.

* To automate the ordering system in order to reduce Time consuming on order placement and Order confirmation.
* Reduce effort on daily bases a large amount of data entry and minimize chances of errors in data entry.
* To maintain the inventory against the orders to fulfil the customers orders.

**6.5) Usability Requirements**

* A trained customer shall be able to place orders from a product catalog in an average of three minutes, and in a maximum of five minutes, 95percent of the time.
* 95 percent of customers who have never used the System before shall be able to place orders correctly with no more than 15 minutes of orientation.

**6.6) Serviceability Requirements**

* Mean Time between Failures (MTBF): The system will be developed in such a way that it may fail once in a year.

**6.7) Manageability Requirements**

* The software must be looked upon every hour for any instability or any unlawful activity.
* The number of users per hour should be tracked, the number of users returning to the system and failure statistics should be noted.

**6.8) Recoverability Requirements**

* Recoverability is the ability to restore function and data in the event of a failure.
* The failure of the system must be found within 30minutes and repair should take less than 2 hours.

**6.9) Data Integrity Requirements**

* User data is confidential and should be stored in an encrypted way, to prevent unauthorized access and misuse.
* Users must be told to upgrade their passwords periodically, to improve security and confidentiality of their data. Encryption keys must not be made publicly available.

**6.10) Capacity Requirements**

* The system is capable of handling 250 users a time.
* A large amount of data will be stored on such a platform, hence the data storage should be as efficient as possible. Data access and data management should be efficient. Since many users do not have large amounts of internet data that can be used, the platform should efficiently use network resources, and not consume unnecessary data bytes for communication. It should also not store much cache data on the user side, to keep the application size small.

**6.11) Availability Requirements**

* The service should not be denied at any time to any authorized user. Routine maintenance should be performed at hours of low user activity, to reduce the number of users inconvenienced. If the platform is not available for use by any user, at any point, efforts should be taken to make it available with as little delay as possible.
* The system is available 100% for the user and is used 24 hours a day and 365 days a year.
* The system shall be operational 24 hours a day and 7 days a week.

**6.12) Scalability Requirements**

* With the increase in users over 500 that is double the capacity of the system, the performance will be affected and would slow down.
* To integrate a greater number of users the bandwidth of the server and ability to respond to queries should be continuously monitored and improved.

**6.13) Interoperability Requirements**

* The system can be adapted to run on computers other than the one for which it was designed.
* Degree of hardware independence: There is no interdependence between the hardware components
* Implementation language: the JSP pages can be run on all web browsers.

**6.14) Reliability Requirements**

* The system should be robust and recovery schemes must be provided to restore the system state in case of a crash. User data should be backed up at periodic intervals.
* The software size should be kept as small as possible, since smaller systems have lower chances of crashing, and are therefore more robust.
* The code should also be capable of handling edge cases, and the implementation should be abstracted to prevent modification by any outsider.

**6.15) Maintainability Requirements**

* The maintenance of the system shall be done as per the maintenance contract.

**6.16) Regulatory Requirements**

* The system shall comply with the TCP/IP protocol standards and shall be designed accordingly.
* The coding standards and naming conventions will be as per the American standards.

**6.17) Environmental Requirements**

* The system should be developed in a well-lit and cool room to maintain the server. There should be less interference in the wireless signals in case of wireless connectivity to the internet. the temperature within the range of 18 ºC to 23 ºC and the humidity within the range of 50 % to 70 % independent of weather conditions.

**6.18) Software quality attributes**

The source code of the product is going to be open as this is going to be open source software. It will be free for further modifications and improvements.

* **Usability:** The user should be able to use the application on any operating system without difficulty. It should have a smooth user interface on all platforms of all sizes.
* **Availability:** The service should not be denied at any time to any authorized user. Routine maintenance should be performed at hours of low user activity, to reduce the number of users inconvenienced.
* **Confidentiality:** User data is confidential and should be stored in an encrypted way, to prevent unauthorized access and misuse. Information regarding customers must be treated with utmost confidentiality. Users must be told to upgrade their passwords periodically, to improve security and confidentiality of their data. Encryption keys must not be made publicly available at any cost.
* **Efficiency:** A large amount of data will be stored on such a platform, hence the data storage should be as efficient as possible. Data access and data management should be efficient. Since many users do not have large amounts of internet data that can be used, the platform should efficiently use network resources, and not consume unnecessary data bytes for communication. It should also not store much cache data on the user side, to keep the application size small.
* **Robustness:** The system should be robust and recovery schemes must be provided to restore the system state in case of a crash. Employee and admin data should be backed up at periodic intervals. The software size should be kept as small as possible, since smaller systems have lower chances of crashing, and are therefore more robust. The code should also be capable of handling edge cases, and the implementation should be abstracted to prevent modification by any outsider.