

INVENTORY MANAGEMENT AND TAXATION

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Abstract: *Inventory Management is the primary problems in almost every company and stores. Before 10-15 years, paper tables and paperwork solutions were being used as inventory management tools. There we are very far from solution, it took so much time, even only for this there were need of employees specifically for this department. There was no any efficient solution available during these days. Each and Every process was based on paperwork, so that employees fault rate was very high, the process of tracing the inventory losses was not very possible, and there were no efficient logging systems like now days. After computers came in the market and ultimately in use the whole scenario gets changed. And now we have many technologies to overcome these problems. Software based systems are playing vital role in every company to manage their inventory efficiently and effectively with less number of employees. This project as final year engineering project will give new solution to efficient inventory management system. In this paper, a new solution for Inventory Management System (IMS) is designed and implemented. Most importantly, this system is designed for Small shopkeepers who are not capable to purchase licensed proprietary software's, this will be a open source software and used as Inventory Management System.*

Keywords: *Open source, inventory, standalone, alternative, management, software, application software, free and open source, accounting, cloud based*

1. INTRODUCTION

The Warehouse Management System is a real-time warehouse database capable of handling large inventories of an organization. This can be used to track the inventory of a single store, or to manage the distribution of stock between several stores of a larger franchise. However, the system merely records sales and restocking data and provides

notification of low stock at any location at a specified interval. The goal is to reduce the strain of tracking rather than to handle all store maintenance.

Objectives: - The main goal of Warehouse Management System is to ensure consistent availability of supplies for consumers. Thus, Warehouse Management System is directed toward owners of small to large stores and stock managers who are responsible of maintaining sufficient goods on hand in a retail or manufacturing business. It can scale from a single computer running both client and server software up to multiple stores and warehouses.

The system is also capable of tracking In & Out transaction of single or multiple stores as well as also generates their billing details. The system generates monthly reports of sales from which a manager of a respective store would be able to know the monthly sales transaction done. Warehouse Management system is a Desktop application.

- **Modules and their Description**

The system comprises of 3 major modules as follows:

- **Admin Module:** The system allows admin to perform the following task.
 - Add Products
 - In & Out Transactions
 - Add Supplier
 - Add Dealer
 - View Supplier/Dealer
 - View Transactions
 - Monthly Report
 - View Stocks
 - Billing of In/Out Transactions
- **Sales Manager Module:** The system allows Sales Manager to perform the following task.
 - In & Out Transactions
 - View Stocks
- **Warehouse Manager Module:** The system allows Warehouse Manager to perform the following task.
 - In & Out Transactions
 - View Supplier/Dealer
 - View Transactions
 - Monthly Report
 - View Stocks

1.1 Problem Statement

The traditional proprietary software's need to purchase license every year. Small vendors and organizations can't afford that much of amount. This software will overcome this problem and each and every user can use it freely. This will be a free and open source inventory management software which would be lightweight, fast and robust; and can be used online as well as offline, even in rural area also.

1.2 Aim

The main aim of this project is to make inventory management software that can be used on cloud as well as a standalone application. While using it on cloud, the user will be free from the hassle of setting up cloud, maintenance of database and server, keeping backup of data, installation of software, etc. While using it as desktop application, the user needs to just install the software and can use the system anywhere.

1.3 Project Scope

This system will be cloud based as well as standalone, so it can be used it online at the same time offline also. It can be used in all Small and medium organizations where they need to manage their inventory. It can also be used in rural areas where internet connections are not there as well as Small medical stores who can't afford traditional proprietary software's.

2. LITERATURE REVIEW

2.1 Introduction: In the previous chapter 1 discussed earlier the main objective of the senior project is to implement an inventory management system for reducing the errors and workload of employees in the Hashem Construction and Trading Co .This chapter will be cover the content that will include the different types of inventory management systems, similar systems how is it used, different software's used for the inventory management etc.

2.2 Existing Systems

2.2.1 Vendor management systems

This system is a new trend for inventory management system. With this system the distributors can control inventory management for customers .The reports are calculated on daily basis and are transferred from the customer to the vendor. The data gathered from these reports lets the vendor knows when to recalculate the stock of the customers merchandise. This method significantly reduces the load of paper work /the cost and the labor .There are few drawbacks of using this method which is this will be difficult for the

distributor/suppliers to keep up with demand of the product that is popular and is demanded by the customers from all around the world. Companies believe that the money saved in time and labor is worth the risks involved.

2.2.2 Tracker System

Tracker system is an inventory management system allowing you to control your inventory with this software management system the you can you can track and control purchasing, invoicing, product recalls, shipping and receiving, ordering and all other aspects of inventory management. The software comes with full system of reports allowing you to have the status of your inventory available at your fingertips. Some of the forms available with Traker Systems include packing slips, invoices and inbound receipts. Analysis reports include analysis summary, allocation reports, products lists, inventory summary and inventory history. The operating system required to use Tracker Systems is Windows 2000, Windows XP or Windows Vista.

2.2.3 Proactive Inventory Manager by Accuware : Is a Web based Inventory Management solution. Can be customized to your unique work flows. Hosted on ProActive servers or can be hosted on your server. Option to use barcodes and Mobile computing. . Built on Microsoft ASP.net and Microsoft SQL server database Data available for clients to use Adhoc reporting. Low cost Standard version, or full blown Enterprise version. Extensive set of versions for many Vertical industries.

2.2.4 ABC Inventory Software: ABC Inventory Software is a freeware inventory management application which should be an absolute choice for small and middle level business groups because it works like a professional. This program is jam packed with multiple features like purchase order management, complete inventory track along with barcode, sale and shipping order management, scheduling warehouse appointments, automatic stock report generation, sale quotations, unlimited database record, mailing labels and so on.

2.3 Disadvantages of Existing Systems

2.3.1 Cost: Cost can be a major disadvantage to suing the inventory management system. Many large companies can use the system but small business may find it difficult to afford the huge expenses of buying the system. Barcode readers and other hardware can compound this problem by adding even more cost to companies. The advantage of allowing multiple employees to perform inventory-management tasks is tempered by the cost of additional barcode readers.

2.3.2 Complexity: Inventory management system is not necessarily easier to learn , remember and use. A company's management team must dedicate a certain amount of time to learning the new system, including both software and hardware, in order to implement for usage .Most inventory management software includes training manuals and other information available to users. Despite its apparent complexity, inventory management software offers a degree of stability to companies.

2.3.3 Risk of fraud : Any computerized system carries the risk of intrusion, and with a computerized inventory management system comes the risk of fraud as well. A dishonest vendor could hack the system to receive payment for products never delivered, or a dishonest employee could redirect checks to themselves.

2.3.4 Accuracy Issues : A computerized system alone does not ensure accuracy, and the inventory data is only as good as the data entry that created it. Companies that plan to use a computerized inventory management system need to have a system in place to validate their data and check the numbers reported by the system. A select hand count or targeted audit may be necessary to ensure the integrity of the system.

2.4 Advantages of Proposed System:

The some of the advantages of inventory system are thus summarized below which can prevent the organization /firm from suffering from big financial loss and other problems that may occur during the daily operations of the firm that can be viewed as the materials being out of stock or machine failures and many other operations happening on daily basis.

2.4.1 Cost savings: In many cases companies inventory is one of the largest investments along with its workforce and locations. inventory management systems helps the companies to cut the expenses by minimizing the amount of unnecessary products and materials in storage.it also helps companies keep lost sales to a minimum by having enough stock to meet demand

2.4.2 Increased efficiency: the inventory management system allows for may automated inventory task for example the system can automatically collect data , calculate costs .this also reduces in costs saving and time saving and thus consequently leading to increase in business efficiency.

2.4.3 Warehouse organization: Inventory management system help distributors, wholesalers, manufacturers and retailers optimize their warehouses. If certain products are often sold together or are more popular than others, those products can be grouped together or placed near the delivery area to speed up the process of picking.

2.4.4 Updated data: provides up to date and real time data on inventory levels is and advantage of inventory management system. Company executives can usually access the software through their mobile devices, laptop for checking current inventory numbers this automatic updating of inventory allows the business to make informed decisions.

2.4.5 Data security: by accompanying with the restricted user rights, company managers can allow many employees to assist in inventory management. They can grant employees enough information access for tasks such as receiving products, making orders, transfer products and perform other tasks without compromising company security. This can speed up the inventory management process and save managers' time.

2.4.6 Insight into trends : this helps tracking the products which are in stock and from which suppliers do they come from and the length of the time they are stored is made possible with inventory management system by analyzing this data the company can optimize their inventory levels and maximize the use of warehouse space. Additionally firms are more prepared for the demands and supplies of the market, especially during special circumstances such as a peak season on a particular month.

3. SYSTEM ANALYSIS

In this project the functional and non-functional requirements of the system are described and modeled using UML.

3.1 Requirement Analysis

3.1.1 Functional Requirements

The functional requirements of the system are:

- ☐ register a inventory,
- ☐ record details of inventory,
- ☐ Generate various invoices and bills, Update Database.

3.1.2 Non Functional Requirements

- Security requirements are important factors in this system as classified data will be stored in the database. User validation will be done during login to insure that the user is valid and that the user only has access to his or her permission data. General users will only have access through the user interface.
- The system will be easily maintained by the developer or other authorized trained person and it shall respond as fast as possible in generating report.

3.1.3 Software requirements

<i>Software</i>	<i>Requirements</i>
<i>Operating System</i>	<i>1.Ubuntu Linux,</i>

	<i>2. Windows</i>
<i>Supported Browsers</i>	<i>1.Google Chrome 2.Mozilla Firefox 3.Microsoft Intel Explorer 6.0,8.0</i>
<i>Language/software</i>	<i>1.Python 2. .Net 3.HTML5 4.CSS3 5.JavaScript 6.PostgreSQL 7.MySQL 8.Ajax</i>

3.1.4 Hardware Requirements

Hardware	Requirements
Processor	Intel Core i5
RAM	4 GB or more
Hard disk	16 GB or more

3.2. Risk Analysis

3.2.1 Operational Risk

Operational risk sources may be internal or external to the business and are usually generated by people, processes and technology. Identification is one of the most important areas of managing risk. Failure to identify risk will certainly mean that no action is taken to manage that risk.

There are a number of different techniques that can be used to identify risk. A common method used in risk identification is the use of workshops to 'brainstorm'. This can be used at different levels of the organization and can identify a large number of risks in a short time. To keep ideas flowing, it is important to keep identification sessions focused on identifying risks and not to move on to evaluate the risks.

Operational risks are largely based on procedures and processes, so this lends itself to the use of audit for risk identification purposes. Risk based audit can be used as a tool to identify risks, as well as a method of reporting to the board on the effectiveness of the organization's risk management framework.

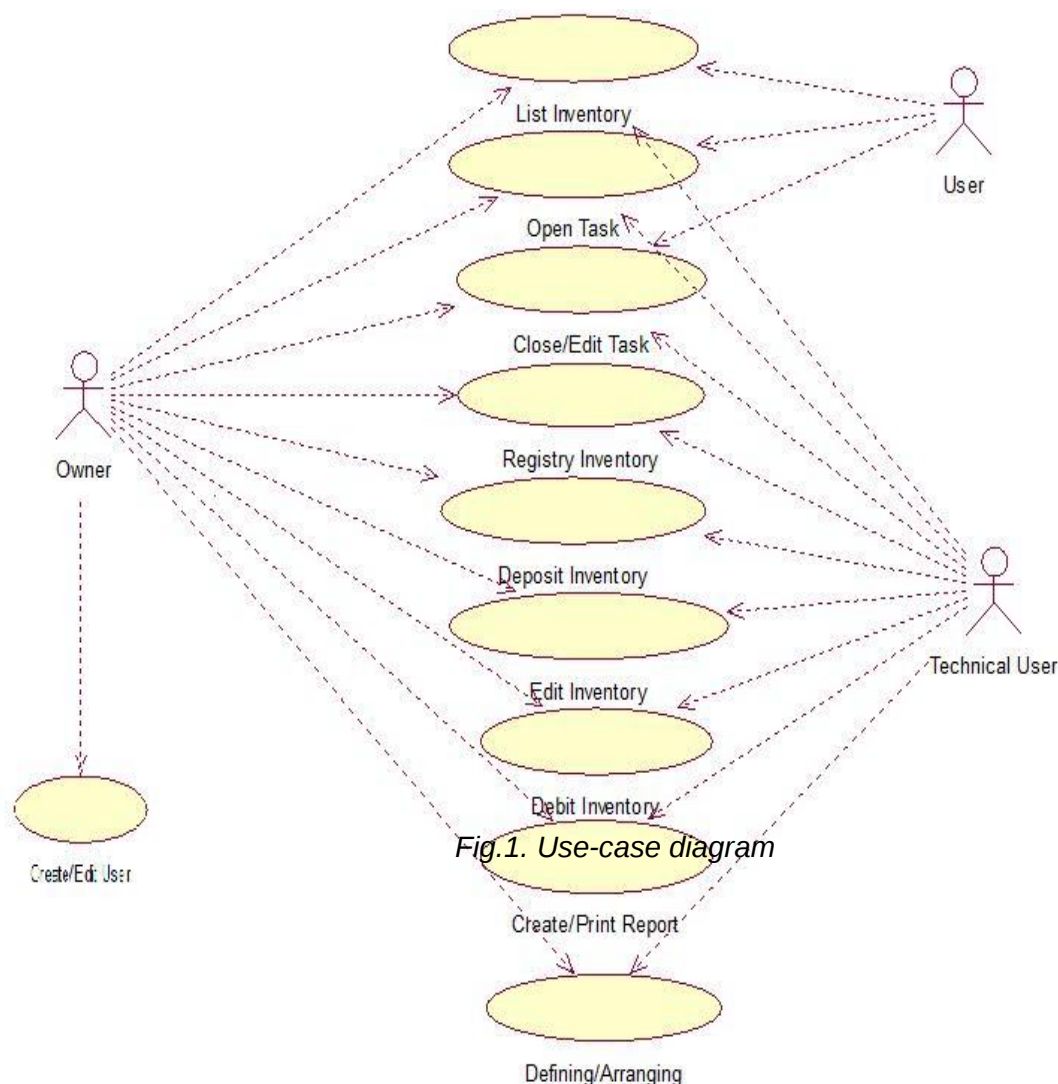
3.2.2 Technical Risk

Technical risk is the possible impact changes could have on a project, system, or entire infrastructure when an implementation does not work as anticipated. Failure to identify or properly manage these threats results in performance degradation, security breaches,

system failures, increased maintenance time, and a significant amount of technical debt for your organization. It is essential to have a reliable analysis solution for technical risk management to ensure early detection of these problems. This will prevent issues from occurring without warning and drastically decrease the required efforts for alleviating sudden infrastructure or system problems.

3.2.3 Use Case Diagram

A use case diagram is a representation of a user's interaction with system and designing the specifications of a use case. A use case diagram can portray the different types of users of a system and the various way that they interact with the system



3.3 System Design

3.3.1 Architectural Design

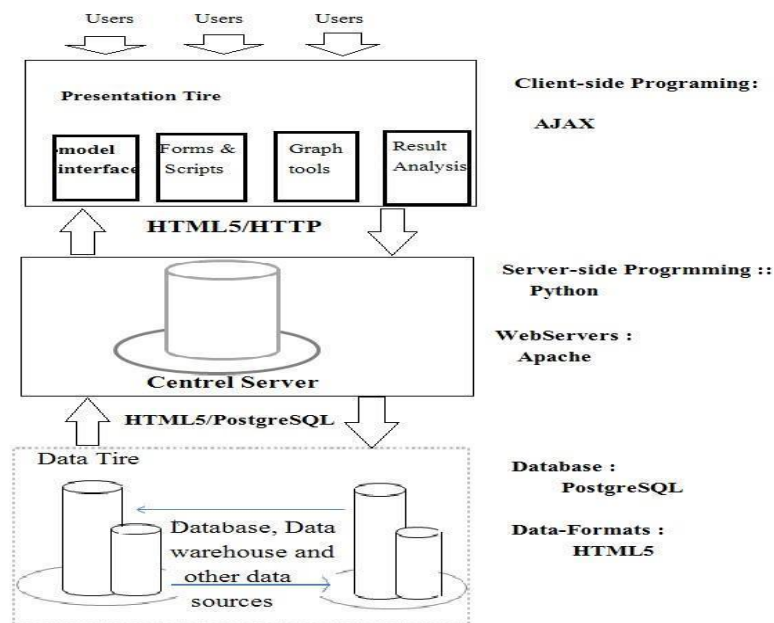


Fig.2. Architecture diagram

3.3.2 Architecture diagram

Client-server architecture, architecture of a computer network in which many clients (remote processors) request and receive service from a centralized server (host computer). Client computers provide an interface to allow a computer user to request services of the server and to display the results the server returns. Servers wait for requests to arrive from clients and then respond to them. Ideally, a server provides a standardized transparent interface to clients so that clients need not be aware of the specifics of the system (i.e., the hardware and software) that is providing the service. Clients are often situated at workstations or on personal computers, while servers are located elsewhere on the network, usually on more powerful machines. This computing model is especially effective when clients and the server each have distinct tasks that they routinely perform. In hospital data processing, for example, a client computer can be running an application program for entering patient information while the server computer is running another program that manages the database in which the information is permanently stored. Many clients can access the server's information simultaneously, and, at the same time, a client computer can perform other tasks, such as sending e-mail. Because both client and server computers are considered intelligent devices, the client-server model is completely different from the old "mainframe" model, in which a centralized mainframe computer performed all the tasks for its associated "dumb" terminals

4. PROPOSED SYSTEMS POSSIBLE OUTPUTS CAN BE LIKE FOLLOWS

4.1 Invoice

Record Purchase Invoice Create Sale Invoice View Invoice

Delivery Note : **Invoice No :** **Date :**

Supplier : **Supplier Address :** **Supplier TIN :**

Product	Quantity	Price Per Unit	Tax Rate	Tax Amount	Total
Select Product	0	0.00	0.00	0.00	0.00
Total					0.00

4.2 Delivery Note

Delivery In Delivery Out View Delivery Note

Note No : **Note Date :**

Supplier : **Supplier Address :**

To Godown : **Type of transaction :**

Product	Quantity
Select Product	

4.3 Cash Memo

bvcoe (Profit Making) Financial Year : 01-01-2017 to 31-12-2017

Add Cash Memo View Cash Memo

Cash Memo No : **Date :** **VAT Applicable to :**

Product	Quantity	Price Per Unit	Tax Rate	Tax Amount	Total
Select Product	0	0.00	0.00	0.00	0.00
Total					0.00

4.4 Godown

bvcoe (Profit Making) Financial Year : 01-01-2017 to 31-12-2017

Create Godown Edit Godown

Godown Name :

State :

Address :

Contact Name :

Designation :

Contact Number :

Press Enter Key twice to shift focus to Contact Name.

4.5 Transfer Note

The screenshot shows a software application window titled "bvcoe (Profit Making)". The window has a menu bar with "Create Transfer Note" and "Received" tabs. The "Create Transfer Note" tab is active. The form contains the following fields: "Transfer Note No." (text input with a hint "Enter Transfer Note no"), "Date" (with DD, MM, and YYYY dropdowns), "Number of Packets" (text input), "From Godown" (dropdown menu), "To Godown" (dropdown menu), "Mode of Transport" (text input), "Name of Issuer" (text input), and "Designation" (text input). There is also a table with two columns: "Product" and "Quantity". Below the table is a hint "Press and to Enter No of Packets". At the bottom of the form are three buttons: "Save", "Cancel", and "Save & Print". The window title bar also displays "Financial Year : 01-01-2017 to 31-12-2017".

5. CONCLUSION

In any business, make it big or small, we must understand that taking good care and managing of our warehouse is very important. If we as managers do not understand the concept of good warehouse management, we must learn to be familiar with it and its applications. One of the reasons for the failure of a business is its warehouse

6. FUTURE SCOPE

The main goal of Warehouse Management System is to ensure consistent availability of supplies for consumers. Thus, Warehouse Management System is directed toward owners of small to large stores and stock managers who are responsible of maintaining sufficient goods on hand in a retail or manufacturing business. It can scale from a single computer running both client and server software up to multiple stores and warehouses. The system is also capable of tracking In & Out transaction of single or multiple stores as well as also generates their billing details. The system generates monthly reports of sales from which a manager of a respective store would be able to know the monthly sales transaction done. Warehouse Management system is a Desktop application.

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