INVENTORY SYSTEM

ABSTRACT

Inventory management system is a system used to maintain the status of the inventory stocks. We can use it to create a new purchase order which is a requisition for the materials or goods. Using inventory management systems we can edit, manage, approve, and delete purchase orders.

This system is crucial for the efficient management of a company or organization's inventory and saves a lot of time. This project is an application based on a local server which can be accessed by multiple users. It utilizes properties such as CRUD operations and ACID properties, ABC analysis, and Just-in-Time.

Inventory system which is helpful for the business operators, where shopkeeper keep the records of purchase and sales. Mismanaged inventory means disappointed customers ,too much cash tied up in slower sale and warehouses .This inventory is eliminate paper work, human faults , manual delay and speed up process .

This inventory system will have the ability to track sales and available inventory, tells a shopkeeper when it’s time to reorder and how much to purchase. Inventory management system is windows application developed for windows operating systems which focused in the area of inventory control and generate .

TABLE OF CONTENTS

INTRODUCTION

1.1 PURPOSE:

An inventory system is a process that tracks stock, supplier and sales through an entire supply chain. Companies use inventory systems to ensure they know exactly what items they have available and the location in which they reside.

1.2. SCOPE:

Inventory systems provide detailed records of new and returned products as they're entering or leaving the warehouse to help companies organize and account for their stock. These systems can also track data such as the number of units, cost per unit, serial number, lot numbers, purchase dates and production dates.

- **Inventory control :** keeping track of stock levels, managing re-order Points and ensuring optimal stock level.
- **Supply Chain management :** coordinating with suppliers and managing lead times to ensure timely replenishment of stack.
- **Demand forecasting:** Analysing Sales data to Predict future inventory needs and adjusting Purchasing accordingly.
- **Cost management :** monitoring the cost of goods sold (COGS) and overall inventors carrying costs to maximize Profitability.
- **Automation:** utilizing technology to automate tasks such as re-ordering, stock counting, and reporting to improve efficiency.

1.3 NEEDS FOR SYSTEM

A good inventory system needs to accurately track stock levels, facilitate efficient ordering and replenishment, and provide real-time visibility to ensure optimal inventory management.

- ❖ Stream lines operations
- ❖ Reduces costs
- ❖ Improves customer satisfaction
- ❖ Allows for better financial management

1.3.1 EXISTING SYSTEM AND ITS DRAWBACKS:

Existing inventory systems, whether manual or computerized, often struggle with inaccuracies, inefficiencies, and high costs, leading to problems like stock-outs, overstocking, and wasted resources.

DRAWBACKS

Inaccurate Data and Analysis Manual Systems:

- Relying on spreadsheets or paper records can lead to human errors, incomplete data, and difficulty in tracking inventory across different locations or departments.

Computerized Systems:

- Even with software, data inaccuracies can arise from poor integration with other systems, outdated data, or errors in data entry.

Inefficiencies and High Costs :

- Inaccurate demand forecasts, which leads to wasteful spending ,leaving your business bloated with costs.

Security Risks :

- Overstocking , leading to storage costs and obsolescence, or understanding ,causing stock-outs and missed sales.

Lack of Real-Time Visibility :

- Limited Information: Manual systems often provide limited real-time visibility into inventory levels and locations. .

1.3.2 PROPOSED SYSTEM AND ITS ADVANTAGES

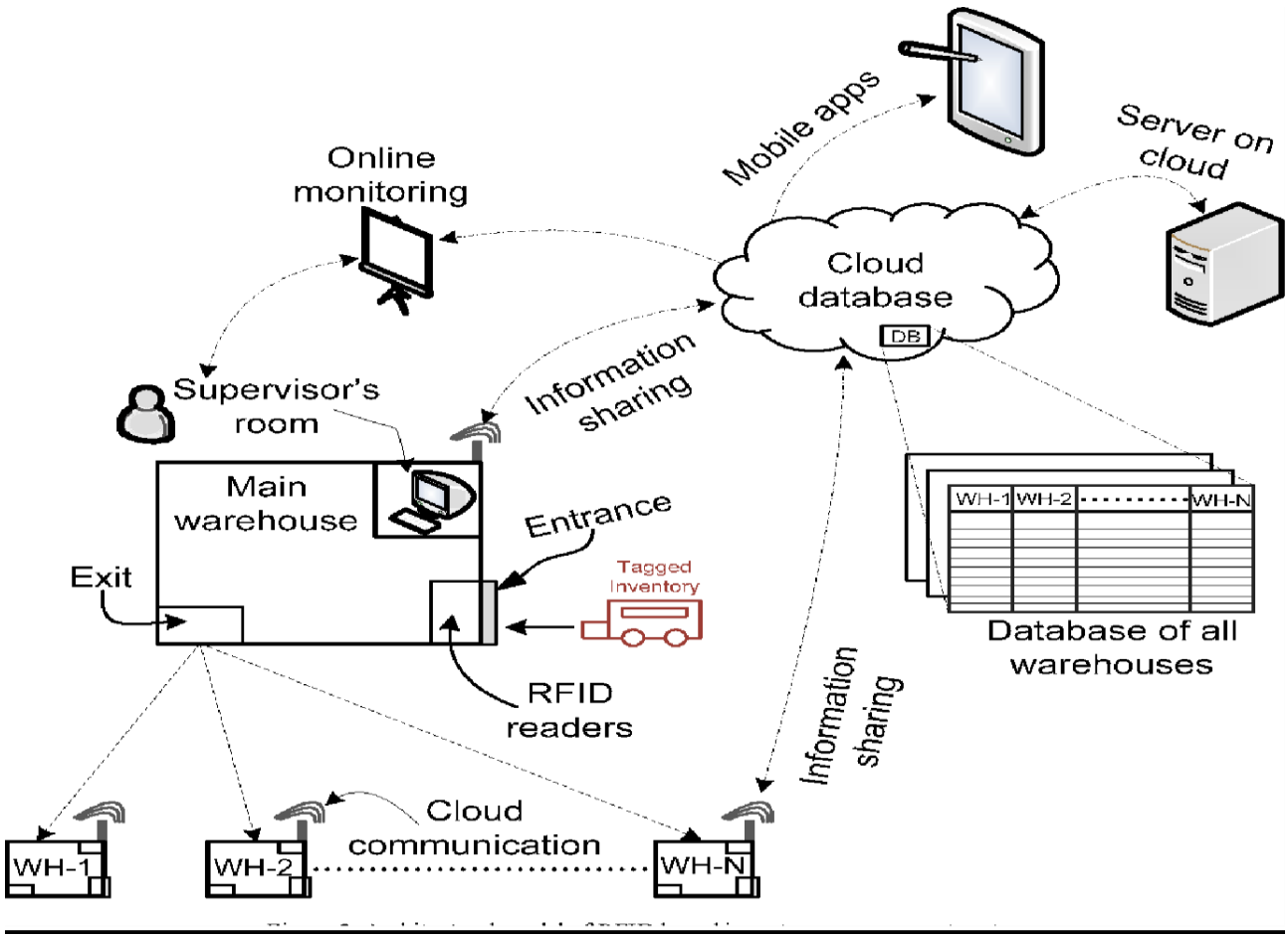
A well-designed inventory management system, whether perpetual or periodic, offers numerous advantages, including improved forecasting, reduced operational costs, and better visibility and transparency, ultimately leading to streamlined processes and increased efficiency.

Perpetual Inventory System: This system tracks inventory in real-time, updating stock levels with each sale or purchase.

Advantages:

- **Real-time visibility:** Businesses have constant access to accurate inventory levels.
- **Improved forecasting**: Data from real-time tracking helps in better demand prediction.
- **Reduced stock-outs:** Knowing exact stock levels minimizes the risk of running out of products.
- **Better inventory control:** Real-time data allows for more efficient management of inventory.

1.4 Architecture



SOFTWARE REQUIREMENTS ANALYSIS & SPECIFICATIONS

2.1 PRODUCT PERSPECTIVE :

An inventory management system is how businesses track and control stock before it is sold. Whether automated or manual, inventory systems seek to bring your inventory carrying costs down while ensuring sufficient stock is available to meet customer demand.

An inventory management system (or inventory system) is the process by which you track your goods throughout your entire supply chain, from purchasing to production to end sales. It governs how you approach inventory management for your business

2.2 PRODUCT FUNCTIONS :

- **Inventory Tracking:** IMS software helps monitor the movement and location of inventory, ensuring real-time visibility of stock levels.
- **Inventory Control**: This involves managing and regulating the flow of goods, tracking stock levels, and minimizing stock loss.
- **Order Management**: IMS facilitates the processing of orders, including picking, packing, and shipping, ensuring efficient fulfilment.
- **Forecasting and Planning:** IMS helps predict future demand and plan inventory levels accordingly, minimizing the risk of stock outs or overstocking.
- **Storage and Warehousing**: IMS manages the storage and handling of inventory, including warehouse layout, space allocation, and inventory movement within the warehouse.

2.3 USER CHARACTERISTICS:

- **Software Literacy:** Users should be comfortable using computer software and databases, as inventory management systems often involve data entry, analysis, and reporting.
- **Barcode Scanning/Tagging:** with barcode scanning and tagging systems can significantly improve efficiency in tracking and managing inventory.
- **Data Entry Accuracy:** Users need to be able to accurately input and update inventory data to maintain the integrity of the system.

2.4 MODULES

Inventory Management:

- **Item Management:** Allows users to add, edit, and manage product information (SKU, description, price, etc.).
- **Stock Tracking:** Keeps track of current inventory levels, including real time updates on stock changes.
- **Inventory Valuation:** Calculates the value of the inventory based on different costing methods (e.g., FIFO, LIFO, weighted average).

- **Inventory Adjustments:** Facilitates adjustments to inventory levels due to write-offs, returns, or other reasons.
- **Batch/Serial Number Tracking:** Allows tracking of specific batches or serial numbers for better control and traceability.
- **Barcode/QR Code Scanning:** Enables fast and accurate inventory updates using barcode or QR code technology.

Sales Order Management:

- **Order Entry:** Allows users to create and manage sales orders.
- **Order Fulfillment:** Tracks the status of orders from placement to shipment.
- **Invoicing:** Generates invoices for sales orders.

Reporting and Analytics:

- **Inventory Reports:** Provides reports on inventory levels, stock turnover, and other key metrics.
- **Sales Reports:** Provides reports on sales performance, customer orders, and other sales-related data.
- **Purchase Reports:** Provides reports on purchasing activity, supplier performance, and other purchasing-related data.
- **Reduced stock-outs:** Knowing exact stock levels minimizes the risk of running out of products.
- **Better inventory control:** Real-time data allows for more efficient management of inventory.

2.5 SYSTEM SPECIFICATIONS:

2.5.1 HARDWARE REQUIREMENTS:

1. **Servers and Computers:**
   - **For On-Premise Systems**: You'll need servers (and potentially workstations) with sufficient processing power, memory, and storage to run the inventory management software and store data, according to Activate.
   - **For Cloud-based Systems:** You'll primarily need devices (like computers, laptops, or mobile devices) to access the software through a web interface, says Unleashed Software.
2. **Barcode Scanners and Printers:**
   - **Barcode scanners**: Used for quickly and accurately tracking inventory, especially in warehouses or retail settings, according to Unleashed Software.
   - **Printers:** For creating labels, tags, or reports related to inventory.
3. **Mobile Devices:**
   - **Smartphones and tablets:** Enable real-time inventory access and management from anywhere, especially useful for multi-location businesses, notes SKU Savvy.

4. **Network Infrastructure:**
    - **Reliable internet connection:** Essential for cloud-based systems and for accessing online features.
    - **Local network (LAN):** Important for connecting multiple devices and servers within a single location.
5. **Other Considerations**:
    - **Storage**: Sufficient storage space (hard drives, SSDs, or cloud storage) is needed to store inventory data, images, and other related information.
    - **Monitors**: For displaying the inventory management software interface.
    - **Peripherals**: Keyboards, mice, and other peripherals are also needed for interacting with computers

2.5.2 SOFTWARE REQUIREMENTS:

An effective inventory management software system requires functionalities for tracking, forecasting, and reporting, along with integrations for seamless operation. Key features include real-time visibility of stock levels, automated processes, and user-friendly interfaces. Furthermore, robust security and data management capabilities are essential.

1. **Core Inventory Management Features:**
    - **Real-time Inventory Tracking:** The system should provide a clear and up-to-date view of all inventory items, including their quantities, locations, and movement.
    - **Automated Processes:** Minimizing manual tasks through automation for processes like stock adjustments, purchase orders, and replenishment.
    - **Reporting and Analytics**: Generate reports on inventory levels, sales history, turnover rates, and other key performance indicators.
2. **Advanced Features:**
    - **Integration with other systems**: Seamless integration with ERP systems, CRM software, e-commerce platforms, and other relevant applications.
    - **Mobile App Support:** Provide mobile access for real-time inventory tracking and management on the go.
    - **Demand Planning:** Utilize historical sales data and other factors to forecast future demand and optimize inventory levels.
    - **Multi-location support:** Manage inventory across multiple warehouses or locations.
    - **Batch Tracking:** Track individual batches of products, especially important for industries with strict quality control requirements.
3. **Data Management and Security:**
    - **Accurate Databases:** Ensure the integrity and accuracy of inventory data.