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MOBILE BASED INVENTORY MANAGEMENT SYSTEM USING QR CODE

Rajesh Dilip Patil[1], Swapnil Vijay Aamode[2], Chetan Vinod Badgujar[3], Shivam Anil Dhamane [4]

[1,2,3,4]Computer Engineering Department, North Maharashtra University, India
Email: (rajeshkhairnar12[1], swapnilamode9175[2], badgujarchetan133[3], shivamdhamane1234[4])@gmail.com

ABSTRACT

The project is aimed at developing a mobile-based application named Inventory Management System for managing the inventory system of any organization. The Inventory Management System (IMS) refers to the system and processes to manage the stock of an organization with the involvement of a Technology system. This system can be used to store the details of the inventory, stock maintenance, update the inventory based on the sales details, generate sales and inventory report daily or weekly based. This project is categorizing individual aspects of the sales and inventory management system. In this system, we are solving different problems affecting to direct sales management and purchase management. Inventory Management System is important to quality control in businesses that handle transactions revolving around consumer goods. Without proper inventory control, a large retail store may run out of stock on an important item. A good inventory management system will alert the wholesaler when it is time to record. An inventory Management System is also an important means of automatically tracking large shipments. An automated Inventory Management System helps to minimize the errors while recording the stock.

Keywords*: Inventory Management System; Stock maintenance; Time to record; Minimize the errors*

1. INTRODUCTION

A Mobile-Based Inventory Management System Using QR Code The project Inventory Management System is a complete mobile-based Android application designed on JAVA programming language. In this proposed system, we attempt to create a mobile application, which is capable of providing us with information about the specific details of the equipment in the Inventory by Scanning the QR code. These include all the inventory details of the application and other information i.e. The QR code placed on the equipment will be scanned by the app. As soon as the QR Code is scanned, the equipment ID will be fetched by the app. Once validation is done, all the details from the database will be retrieved, which will readily give us proper and full-fledged information of previous services records which were carried out in the past with Serial Number and Date of Installation of that Equipment.

What is QR Code-based Inventory Management System?

QR Code-based inventory management system is an RFID (Radio Frequency Identification) based system. It is a process by which the contents of an inventory are identified with a QR code, which can be scanned for more information about the item and its location within the store. Generation of QR code for any item and scanning of the QR code are the two main features in the android app.

2. PROBLEM DEFINITION

The literal meaning of the "Inventory" is a stock of assets. Every enterprise need inventory for the smooth running of its activities. Inventory Management has been practiced by many companies to increase their work efficiency of item flow. Nowadays, small and medium entrepreneurs still practice inventory management using traditional methods such as paper bases, spreadsheets, etc. Although they are living in the era of technology. Still, the manual process is carried out on large scale. The use of paper and human power to maintain such inventory is practiced over the period and throughout the globe. Due to such practices, a huge amount of paper waste, lack of maintenance records, and communication gap is caused. So, the need for a virtual and computerized inventory management system has occurred which can overcome all the issues by utilizing the better use of technology.

- A Mobile-based Inventory Management System using QR code application
- A mobile application is required that is capable of Having all the details of the Product Date of Installation, etc. by scanning a QR code/ Barcode.
- Readily accessing the past service record by scanning a QR code/ Barcode.

- Entering the details and updating service history on the spot, just after maintenance.
- To make android based application of IMS for small organizations.
- To make the system easily managed and can be secured.
- To cover all the areas of IMS like purchase details, sales details, and stock management.

3. PROPOSED SYSTEM

The Inventory Management System is a real-time inventory database capable of connecting multiple stores. This can be used to track the inventory of a single store, or to manage the delivery of stock between several branches of a larger franchise. However, the system merely records sales and restocking data and provides warning of low stock at any location through email at a specified interval. The goal is to reduce the stress of tracking rather than to holder all store maintenance. Further features may consist of the ability to create reports of sales, but again the explanation is left to the management. In addition, since theft does occasionally occur, the system provides solutions for confirming the store inventory and for correcting stock quantities. Production unit use inventory management system to reduce their transport costs. The system is used to track products and parts as they are transported from a seller to a storeroom, between storerooms, and finally to a retail location or directly to a customer. Inventory management system is used for various purposes, including:

- Maintaining and recording the information between too much and too little inventory in company.
- Keep track of inventories as it is transported between different locations.
- Recording products information in a warehouse or other location.
- Having record of Picking, packing, and selling products from a warehouse.
- Reduction of product obsolescence and decay.

Avoiding the out-of-stock situations. To overcome the drawbacks and limitations of the existing system, this inventory Management System software is proposed. It is a more efficient web application developed using Java. This application is more effective for stock data management; the data is more secured and can be accessed easily.

MODULES OF THE PROJECT

1: Start.

2: User (Employee or warehouse owner) create an account by providing email id as user id, its own password and other details

3: Log in with a credential and if the right user gets access to the application.

4: After getting access, Use will show dashboard of our application.

5: After the user can add products/delete using QR code according to need and maintain her Products.

6: after adding products user can deleting our products by scanning QR code.

7: Also, user can view our Previous stored inventory list and Track our Products on the spot.

8: After all Products Related data is stored in a database for further use.

9: The user can log out.

10: stop.

4. SYSTEM ARCHITECTURE

A System Architecture is the conceptual model that denies the structure, behaviour, and more views of a system, and architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and Assistant architecture can comprise system components, the extremely visible properties of those components, the relationship i.e., the behaviour between them. It can provide a platform in which systems can be procured, and systems developed, that will work together to implement the overall system.

This proposed system consists of the following parts:

1) **Registration**: The admin will register the valid user by verifying the required details of the user, and will enter the user data in the database and will provide user with login credentials.

2) **Login**: After successful registration, the user can log in to the application by the registered user id and password. On successful login, the user will be again validated by the database.

3) **Scanning QR Code**: Opening the QR Code Scanner, scans the QR Code which is attached to each item and after the QR Code is scanned the item related information will be shown on the screen which contains the product description, Serial No of the product, Date of installation, previous maintenance record and updated record.

4) **Update**: After scanning the QR Code, the authorized user will get complete detail of the product. In future, if any maintenance occurs that record can be updated through the same app interface using the Update option.

The android application begins with home activity one option is provided i.e., Scanning of QR Code. The Scan QR Code activity scans the QR Code and the information is then fetched from the database and is displayed on the same activity.

In Fig 1.1 System Architecture is Described

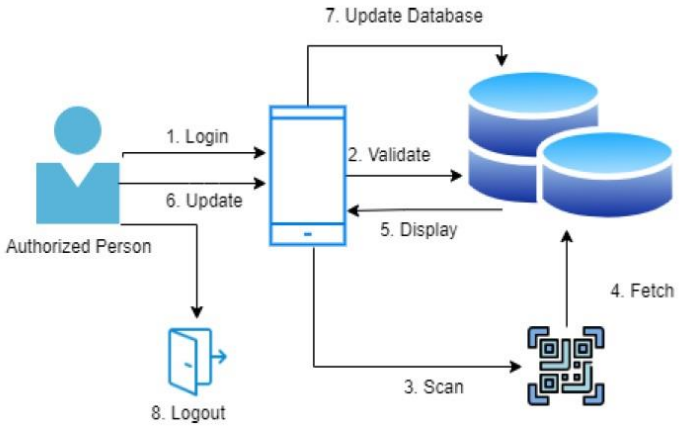


Fig. 1.1 System Architecture.

5. RESULT AND ANALYSIS

User Login/Registration the login information includes user name and password. For the new user, the user must sign up by providing Full Name, Email Id and Password. Once, he registers, the registered information is stored in the server and can be validated, checking for the valid credentials for the next time he logins with the application. After using the application. In Fig. 1.2 is Login/Singup Screen of Our Application.

In Fig. 1.3 Dashboard of Our Application. This is application dashboard or home page of our application.

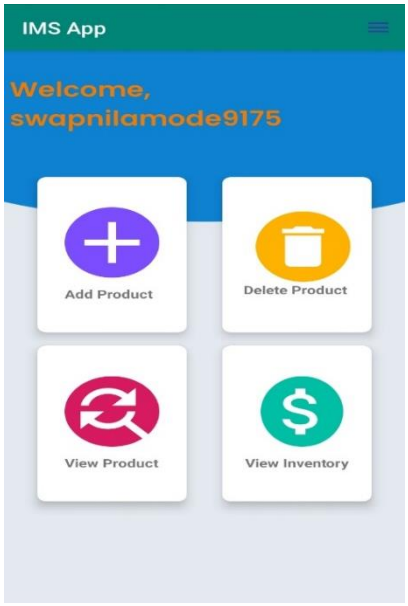
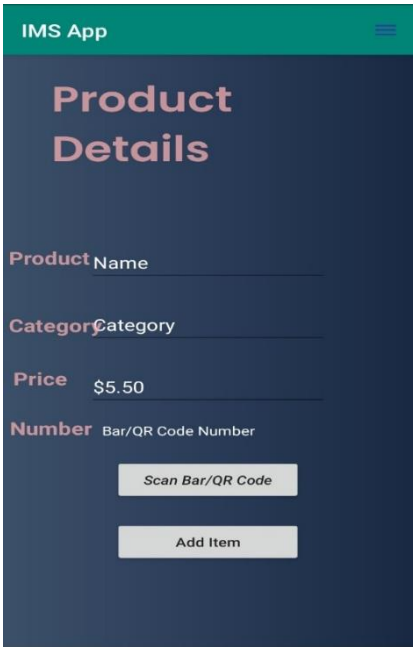


Fig 1.2 Log in/Sign up Screen

Fig 1.3 App. Dashboard.

The below Figure 1.4 is Add Product Details Page of Our Application.

The below Figure 1.5, is the instant search which helps in finding whether the item is available or not. This could help the users in saving time by searching for the item which is not available in the store because of no stock. Search model is created using Web Services which displays the information to the user. In Figure 1.5 Shows Instant Search Page of our Application.



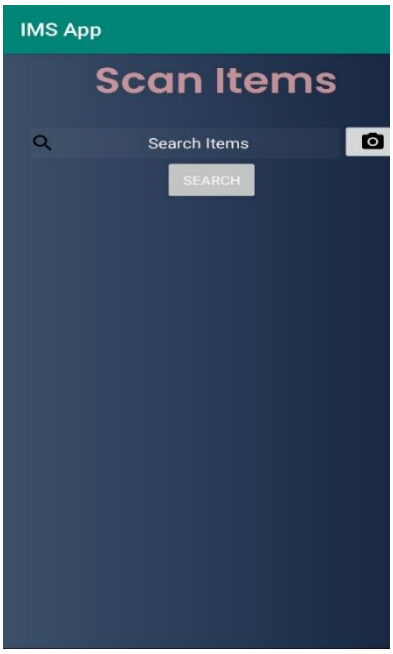


Fig 1.4 Add Product Page

Fig 1.5 Search Product Page.

6. CONCLUSION

The purpose of this study was to identify efficient flexibility to deal with Modern Inventory management. Based on the research conducted, that Digitalization was indeed necessary for convenient and immaculate management of Inventory in Contemporary forms. We can conclude that "A QR Code Technology for Centralized Inventory management system" will contribute towards digital and go green movements. This project includes the most versatile smart QR code technology which increases the reliability of the project. The system developed by us will be able to help the inventory management authorities to centralize their inventory process. The amount of manpower needed in the past has decreased because of the centralized inventory management system.

As a result of digitization, technology replaces the manual ways of keeping records. We conclude that the proposes system brings effective improvements as well as enhances the productivity of the current system.

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