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QR Code Based Lab Inventory Finder

Mansi Madhav Ghodekar[1], Adeeba Ashfaq Ansari[2] , Pooja Jitendra Chakor[3], Tahseen Akhalaque Ansari[4], Mansi S Sansare[5]

Student, Dept. of Computer Engineering, SND Polytechnic, Yeola, Maharashtra, India [1,2,3,4]

Lecturer, Dept. of Computer Engineering, SND Polytechnic, Yeola, Maharashtra, India[5]

ABSTRACT: This project is aimed at developing a mobile based application named QR-Code Base Lab Inventary Finder for managing the inventory system of any organization. The QR-Code Base Lab Inventary Finder refers to the system and processes to manage the stock of organization with the involvement of 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. Inventory management system which is a QR based system, plays a significant role in the management of stocks & Maintenance of equipment's for any or - Inventory Management System is software which is helpful for the businesses operate hardware stores, where store-owner keeps the records of sales and purchase .Mismanaged inventory means disappointed customers, too much cash tied up in warehouses and slower sales. This project eliminates the paper work, human faults, manual delay and speed up process. Inventory Management System will have the ability to track sales and available inventory, tells a store-owner when it's time to reorder and how much to purchase .Inventory Management System is an Android application developed for Android operating systems.

KEYWORDS: QR code, QR Scanner, Android Application, Inventory Management System, Database

I. INTRODUCTION

The lab is a facility that provides all kinds of equipment necessary for Programming activities. Lots of equipment stored in the laboratory to support learning in the Department of IT and CO. Because many equipment's in the laboratory, it is necessary to record inventory. The records that have been done so far are still manual using MS word or MS excel. One of the weaknesses of manual system is the possibility of missing notebooks, so lab work inventory evidence is missing. Of course, this will reduce the quality value of a laboratory and of course this is very ineffective. In the world today, we use technology to make our lives simple in all our everyday work. For all the people of the country, we have to make our India digital, stable, and transparent. In this proposed system, we attempt to create a mobile application, which is capable of providing us information about the specific details of the equipment in the Inventory by Scanning the QR code. An Android-based object recognition application based on reading QR codes. The system is designed to promote the identification of different items that exist in the inventory already produced. The developed framework consists of a database, a Network intermediary service for accessing the database, and an Android client program that can be run on Cell phones or Mobile tablet. How this method can be used for computer equipment cataloguing is seen, but the use of the system is not limited solely to this. The Quick Response Code (QR Code) is a machine-readable optical label that contains information about the equipment to which it is attached. These include all the inventory details of the application and other information i.e. (Serial Number, Date of installation, etc.). 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. This ID will be crossed verified with the database. Once validation is done, all the details from the database will be retrieved, which will readily give us a proper and a full-fledged information of previous services record which were carried out in the past with Serial Number and Date of Installation of that Equipment. It also enables the user to efficiently update the service history details on the spot from the app, which is done right after the maintenance.

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II. LITERATURE SURVEY

1. QR code was first developed by Denso Wave, a division of Denso Corporation which is a Japanese company and published in 1994. QR Code is an image containing a two-dimensional matrix that can store data with a size large enough. The QR Code was first introduced in Japan in 1994 by Denso, one of Toyota's subdivisions.

2. **PHP** Hypertext Pre-processor (PHP) is a server-side scripting language that integrates with HTML to create dynamic web.PHP is widely used for dynamic WEB site programming. Because PHP is serverside scripting then the syntax and PHP commands will be executed on the server then the results are sent to the browser in HTML format. So, the program code written in PHP will not be visible to the user so the security of web pages more secure. PHP version 5.3 is one version of PHP that is quite up to date and widely used by some programmers in creating a web application. PHP programming can also be combined with MySQL and AJAX in generating good web applications.

3. **MySQL** MySQL is a multi-user, multi-user SQL or DBMS database management software system with around 4 million installations worldwide [8]. MySQL AB makes MySQL available as a free software under the GNU General Public License (GPL) license, but they also sell under a commercial license for cases where its use does not match the use of the GPL.

III. OBJECTIVE AND SCOPE

The goal of this project is to develop a web-based and mobile base (Android)QR Code Information Generator and Scanner which can that helps user to get the information of computer location and scan the QR Code.

IV.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:

1. Maintaining and recording the information between too much and too little inventory in company.
2. Keep track of inventories as it is transported between different locations.
3. Recording products information in a warehouse or other location.
4. Having record of Picking, packing, and selling products from a warehouse.
5. Reduction of product obsolescence and decay.
6. 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.

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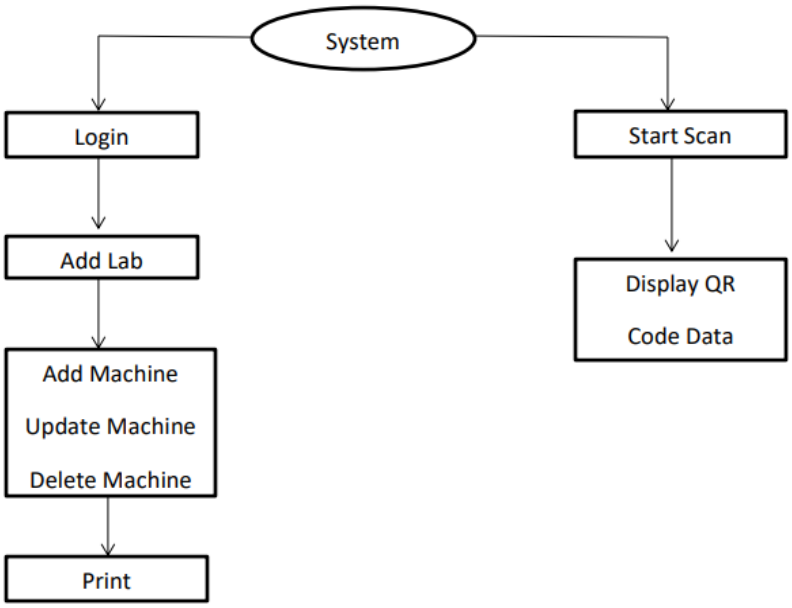
V. FLOWCHART



VI. METHODOLOGY

For the design and implementation of the mobile application, five stages were considered. Initially, the analysis stage was carried out, where the user's requirements were obtained and classified using a participatory approach, that is, including in its entirety the directly impacted population, such as those in charge of the computer center. At the same time, the appropriate literature on the functionality of QR codes and methodologies for the development of mobile applications were reviewed. Subsequently, the design stage was carried out, where the technological scenario was defined and the solution was structured by means of a use case diagram, integrating time and other resources. Below is the general use case of the application.

- **Hardware Requirement:**

Processor-i5
Ram-8gb
Hard disk-120gb
Printer

- **Software Requirement**

IDE-Android studio
IDE-VS code
Database-MySql
Browser-Google Chrome ,firefox ,etc
Server-Xampp

- **Admin Panel**

Font End- HTML /CSS/Javascript
Code Behind- python
Backend- MySql
Technology- Django

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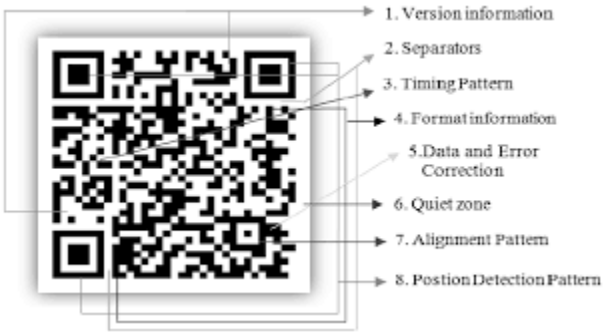
VII.WORKING OF QR CODE

A QR Code, or Quick Response Code, is a code that a cell phone (hence the word "quick" in the name) can read easily. A large amount of information is transmitted when the QR Code is scanned using a spacing combination as some kind of Matrix Barcode (a 2-D Barcode).



QR codes are widely used in all types of sectors, including retail, marketing, and distribution. In practice, while QR Codes and Barcodes are identical, QR Codes provide more information since they can carry both horizontal and vertical information. Only horizontal information is used in barcodes. While barcodes work well for situations such as scanning supermarket products, QR codes have a much greater capacity to move data, possibly due to their simplicity, which has made them extremely prevalent. With the increase development in technology, the uses of electronic devices are also increasing and so as the various applications of QR codes. QR Code has been approved as an AIM (Automatic Identification and Mobility) Standard, a JIS (Japanese Industrial Standard) Standard and an ISO standard Indefinitely QR Code is being used in a wide category of applications, such as manufacturing, logistics, and sales applications. QR codes are being used as ticket checker for various transportation systems to avoid manual works and queues. It helps in providing station level security by acting as a ticket and validating the users whether he enters or leaves the station

VIII. FUNCTIONALITY OF THE APPLICATION

In the development stage, a main menu containing the main functionalities of the mobile application was coded based on the application design:

1.The list of articles or equipment that the computer center has.
2.Module to perform the scanning of QR codes used for the search of inventory articles.
3.Module to generate the QR codes used for new or modified articles.
4. Next are shown some of the more important screens of the mobile application.

IX. 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 decrea sed 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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