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QR Code Generation for Mall Shopping Guide System with Security

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ABSTRACT

With the advent of smart and Web capable mobile devices, it witness a steady growth of interesting commercial applications using QR codes. As the movement of using QR codes in shopping is still in its infancy. Android is a developed technology which have started to fulfill provides with lots of application to make things handy. QR Codes can connect the users to the information quickly. In this project, we explain how QR codes can be used in shopping. The low technical barrier of creating and reading QR codes allows innovative shop owners to incorporate them into their shopping endeavors. The operations to restore or store QR codes are incredibly simple and easily, and with mobile devices. The consumer of the application can able to purchase products through the QR Code and stored that product in the cart. For wide access, the whole system is developed using open source and freely-available software.

Keywords: QR code, Android, Barriers and Consumer.

1. INTRODUCTION

Shopping malls today are increasing in dimension with more goods and variety of wares due to improved living standards resulting to pursuit of high quality consumer goods, which in turn reveals the demand for efficient shopping processes. According to, a similar trend exists for the online shopping system at even a greater pace than the traditional shopping malls. However, they also come with a number of flaws, thereby restrictive the objectives of electronic shopping. Some of the major problems faced could include security, fraud and more often, delay in delivery of orders.

The objective of this project is to propose a real time capturing system for consumer supplies using Quick Response (QR) code in an Android smart phone. In recent years, valuable research has been carried out on vision-based automatic identification technology that recognizes image codes using smart phones to provide various services that can recognize the authenticity of any product. Using Multiplexer and Demultiplexer process are used to encode and decode the information from single QR code with special symbols and split the data back to their QR Code pattern where these QR Code pattern can be read by Android mobile phones. Standard image codes like one-dimensional barcodes and two-dimensional codes with black and white patterns identify a product for its value and basic features but does not authenticate it, moreover not every product that is identified, is used for authenticating manufacturer's warranty. So QR code verify the products by capturing it through the smart phone, then decodes and sends it to the server for authentication. In particular, we concentrate on the cases where the memory entry and their relations form a binary Hamming space or an infinite square grid. Mainly, we focus on minimizing the number of input clues needed to retrieve information with small uncertainty and present good construction some of which are optimal. The customer forwards the selected product list to the server that enables the consumers to decide based on the products authenticity.

2. LITREATURE REVIEW

A b a r code is an optical machine-readable representation of data related to the object to which it is attached. Originally barcodes systematically represented data by varying the width and space of parallel lines, and may be referred to as linear or one-dimensional (1D).Bar codes consist of bars and spaces that vary in width. The bars and spaces on a bar code correspond to numbers and letters that represent descriptive data. In 1994 Denso Wave started using a type of bar code for their robots industry. It spread over to the car manufacturing industry. We never really saw the potential that had Q R Code technology. Unlike the standard bar code system in use today, QR codes are far more powerful and can contain much more information. While out current bar-coding system holds information only one-way, QR Code holds into both vertically and horizontally. In comparing the current bar-coding system with QR Codes, we also note that QR Code is really about convenience. In order to access the information contain within our current barcode system, we need a special scanner. The type of scanner and system isn't cheap. Therefore, you don't saw them in households and the system's use continues to be restricted to retailers and larger businesses.

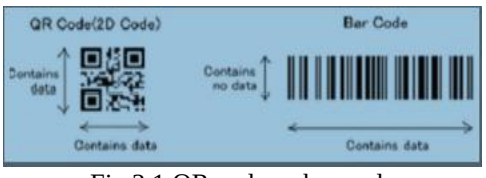


Fig 2.1 QR code vs bar code

COMPARSION OF QR CODE AND BAR CODE

Barcode Type	1D (Barcode)	2D (QR Code)
Information Density	Low	High
Information Capacity	Small	Big
Information Type	Numbers, Greek Characters.	Numbers, Greek Characters, Chinese Pictures, voice and other binary information.
Dependence on database	Must depend on database or communication network	Does not depend on database or communication network

Fig 2.2 Table Bar code Vs QR code

3. SYSTEM ANALYSIS

3.1 Existing System

Bar codes are often intended for consumer use where using a barcode device, a consumer can take an image of a bar code on a product. The barcode must be read using computer vision techniques and bar code can hold information, it makes this vision task in consumer scenarios unusually challenging. Bar code decoder can give the vision algorithm feedback, and develop a progressive strategy of the product.

3.1.1 Disadvantages

(1) System software failure may cost more long time and a light beam might be refracted by water particles suspended in the atmosphere, resulting in focus distortion.
(2) If the scan rate of a reader is exceed by the speed of movement of the bar codes, a loss of reading accuracy, together with Failure to read a bar code.
(3) A bar code reader may not be read a bar code if there is any obstacle between the reader and the bar code.

3.2 Proposed System

In the proposed system, we are using Multiplexing and demultiplexing algorithm for recognizes QR code image using smart phones to provide various services that can recognize the authenticity of any product. So QR code verifies products by capturing it through the smart phone, then decodes and sends it to the server for authentication. The customer forwards the selected product list to the server that enables the consumer to decide based on the products authenticity. In this paper, we explore how QR codes can be used in shopping. The low technical barrier of creating and reading QR codes allows innovative shop owners to incorporate them into their shopping endeavors. The operations to retrieve or store QR codes are incredibly simple and quick with mobile devices.

3.2.1 Advantages

(1) Simple scan captures the desired information.
(2) The Demultiplexing data can be stored in the server and can be viewed by the cashier.
(3) High accuracy in image capturing.
(4) Customer can easily detect the QR code.
(5) Image, via his Android mobile itself.
(6) No Wiring Required for Reader Installation.
(7) The database is automatically updated for accuracy and reliability of information each time the product code is scanned.
(8) Reduces the time spent on shopping as choices are easily made and products are quickly located**.**

4. DATA FLOW DIAGRAM

The user can perform sign in and sign up. After sign in the user can scan the product and can able to view the product details if he/she needs the product he/she can purchase the product. Then the product has been delivered to the customer.

5. NEW PRODUCT QR CODE

QR Code with the encoded product details. The code is generated after adding new product information to the database. This QR code can dynamically generate after adding the product details. The result of a scanned QR Code from a mobile smart phone. After scanning the code, it reveals the product information and the user can purchase the product.

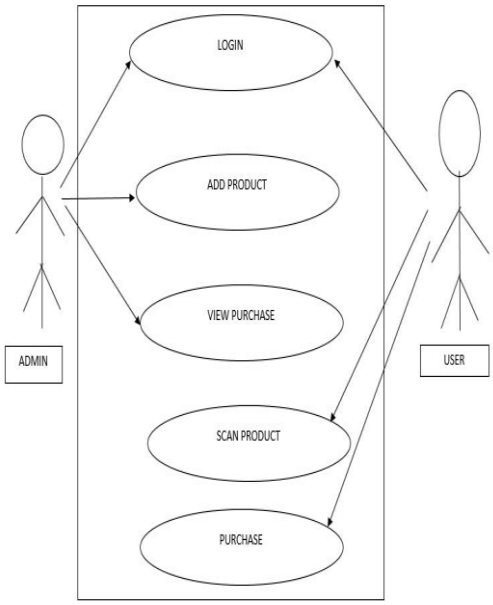


Fig. 5.1 Data flow diagram

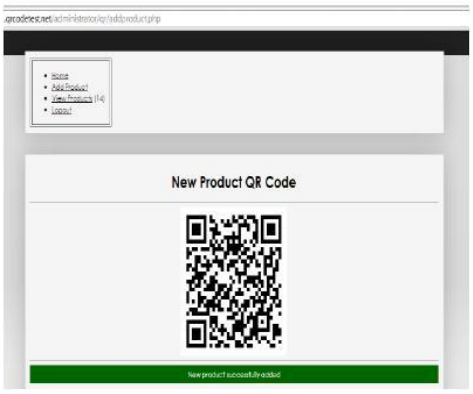
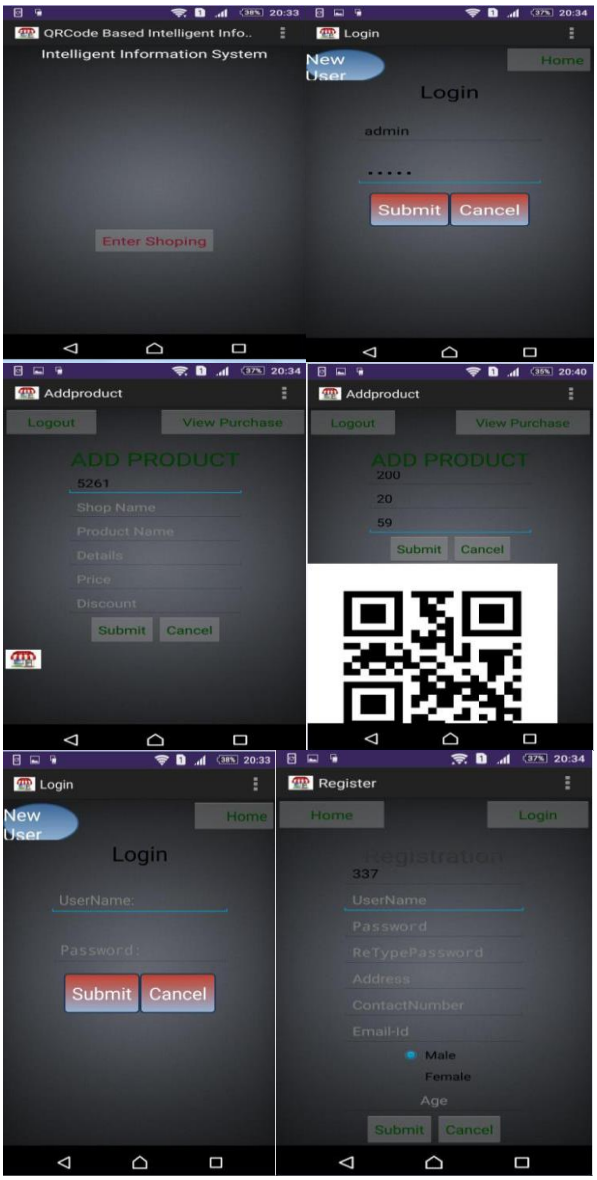


Fig 6.1 New QR CODE

6. CONCLUSION

This project will benefit small & medium business to adopt new technology and increase the consumer traffic. It is cost effective solution to medium sized business as compared to the individual hosted solution. This application establishes that the use of QR code in shopping malls can greatly influence fast and efficient shopping. Here enables the customers to access online real time information (online catalog system) about products by simply scanning product QR code. In addition, the system will enable accurate statistical data report and reliable data mining for the shopping mall on both consumer and product information. Customers also want the opportunity to explore the capabilities of their smart phones.

7. OUTPUT SCREEN



8. FUTURE ENHANCEMENT

Consumers find QR barcode a new way of getting information about the products and services and gain information before they visit the store or purchase online. It is recommended that virtual shopping process should be simple and short, captures shopper's interests effectively and ensure the security of virtual shopping by offering safety payment methods. To incorporate an enhanced security feature on the QR codes so that customers can securely scan codes and comfortably perform financial transactions using their mobile phones

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