

Mobile Application for purchasing Items in Super Market

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ABSTRACT-There are big bound at the super markets on holidays and weekend. People purchase different items and put them in trolley. After completion of all the purchase, the customer needs to go to billing counter for payments. At billing counter the cashier prepare the bill using QR code or Barcode reader which is very time consuming which results in long queue at the billing counter. The project “MOBILE APPLICATION FOR PURCHASING ITEMS IN SUPER MARKET” that allows the user to scan the products he or she wishes to purchase, generate the bill for all the products scanned, make the payment and simply walk out of the store. This application will help avoid long queues and provide a hassle free check out. It will mainly reduce the amount of waiting time. The cashier is required only for checking the quantity of the product because long line at the cashier counters can cause people to wait for a significant amount of time even for a loaf of bread or a single product. A supermarket is a place where thousands of customers come to purchase a number of items which is made available to them at a single location. In the current scenario we notice a large amount of customers waiting in a queue for a long duration. In this application, waiting time is reduced to a great extent. This make use of an android java to develop an application on the smartphone that is used by the customer. This application is integrated with the database at the backend to keep track of various parameters such as selected item, available item and price of item. The main aim of this project is to proposed a real time capturing system for consumer using Quick Response (QR) code in an android smart phone. In recent years, extensive 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. The authentication is done through the scanning of QR code through the mobile scanner application. The

application provides an incomparable user experience with respect to ease of use, performance and quality. These are followed by customers in day today life in a different kinds of super market, shops and some other association with the aid of android application. For better shopping system, exclusive QR codes are produced to record product name, product ID and details of the products. Smart phone reads the QR code through the camera.

Keywords: Scanner, QR code, Smart phones, Queue.

I. INTRODUCTION

Modern application based design has acquired the status of most happening field in technology. In modern era for automation of super market we are developing a Mobile application based which is manual in admin side and an automatic in customer side. Only customer has to hold the barcode side of product wrapper in front of barcode scanner. Then corresponding data regarding product will be displayed on mobile screen. By using this smart application, customer can buy large number of product in very less time of effort. At the billing counter, computer can be easily interfaced for verification. The visually impaired people face a lot of challenges in their routine life. One such challenge is that they have to depend completely on others for purchasing. In the super-market, products are segregated and placed in the shelves. Each shelf is integrated with products along with unique barcode which describes the category of the product and its specification. On implementing this method, people can satisfy their purchasing needs without others support.

II. LITERATURE SURVEY

SMART GOODS BILLING MANAGEMENT
[Smart Goods Billing Management and Payment System for Shopping Malls – Jatin

Arora, Gagandeep, S.J. Sugumar, Ravinder Kumar]

In the present scenario, it is essential to have an automatic billing system for shopping malls, supermarket and other wholesale & retail stores. Numerous billing systems like barcode scanning mechanism-based systems or tag-based systems are available in the market. It is important to replace such existing system with better and robust systems so hereby we proposed "Smart Goods Billing Management and Payment System for Shopping Malls". In this system, the basic fundamental is barcode scanning for products, but we replace the conventional barcode scanner for faster and better results. In our prototype, the android phone is being used as a barcode scanner for simple, better and portable barcode scanner. This scanner is connected wirelessly to MCU via Bluetooth module. MCU is also connected to PC/Laptop for creating the database of all customers, their products, and bills. This database also tracks the total sale and number of goods sold per day. In addition, RFID technology is implemented in this system for payment through card-based system. Simulation and hardware-based results are proposed in this paper.

Keywords: Barcode Scanning, Bluetooth, Database, RFID, Smart Devices.

SMART TROLLEY

[Automatic Barcode Based Bill Calculation by Using Smart Trolley - R.Rajeshkumar, R.Mohanraj, M.Varatharaj]

The aim of this project is to utilize updated new technologies and suppresses the difficulties during shopping in consumer retail shop. In order to avoid the long queue in billing section we are introducing smart trolley technology in all super market for consider those difficulties. We proposed the system implementation WSN (Wireless Sensor network) using microcontroller as a technology updated in order to fulfil these needs and technology had come forward in implementing several automatic identification technologies. To implement the RFID (Radio frequency identification) in the shopping trolley in order to save the shopping time and we can calculate the barcode in a material, and doing calculation by providing the total amount which is the thing added in the purchasing trolley.

Keywords: Liquid Crystal Display, Microcontroller, Printer, RFID Reader, Trolley.

III. EXISTING SYSTEM

The super markets have huge number of customers daily. Customers have to wait for

painfully long duration during the checkout process, irrespective of the number of items they are checking out of the shop. This is especially true when the people in front of you are counting their cash or coupons at an unbelievably slow pace and during discount sales. The billing process at a shop is the most tedious part of shopping. Most of the existing systems are in hardware so that it can be failed easily. Another problem is that the customer cannot maintain the bill for a longer time since the printed ink can be vanished soon and also it is difficult to analyse the history of purchased items. At present, the customer walks into the supermarket with a trolley in their hand. Then they look around for the items they want to purchase. Once they decided on the items to buy, they place it in the trolley. After this, the customer joins a queue where they wait for their turn to be serviced. When their turn comes, the cashier scanned the selected items and a bill is generated containing the amount of the purchased items and it should be paid by the customer. The customer then makes the payment directly through cash or chooses debit or credit card. In another existing system, customer takes around a trolley and picks up all the necessary items and brings to the self-checkout counter and scan the item by themselves and pay by cash or card and pack the items and take it home where the whole process will be monitored by a supervisor and constant cameras at every counter. Usually, a customer takes number of items and gives it to the cashier. The cashier then scans each item and issues the bill. There is lot of time consumed on each customer and then the other customers have to wait for a long time in the queue. Waiting time is the foremost drawback in the supermarket environment. Another is time taken to scan items at the billing counter by inexperienced self takes longer time to scan all the items than the trained staff.

IV. DRAWBACKS OF EXISTING SYSTEM

There is no guarantee for scanner trolley and only it has 2 to 3years warranty for manual scanner trolley. Hardware scanner trolleys hasn't payment method.

V. PROPOSED SYSTEM

Barcodes are traditionally read by optical devices such as Barcode Reader or Scanner. New advances in technology allow consumers to scan barcode with their smart phones and tablets using build-in cameras. So that customer can easily detect the QR code via their android mobile itself. It reduces the time spent on shopping as choices are

easily made and products are quickly located. The basic problem in existing research proposals is using the separate system for every application and then makes it communication to the billing system using some wireless communication module. Such proposals make the system complex, inefficient and expensive. Barcode scanner is another factor which makes such system unreliable as the number of wireless communication modules used for every application. Moreover, sometimes customer may need to buy only a few items in which he/she may not require a trolley but they need mobile applications. The smartphones are utilized as barcode scanner using android application and connected to the main system wirelessly for purpose of updating the information about products, bills, payment and sales record. Android application is used for turning a smartphone into wireless barcode scanner. It keeps the track record of the product, individual product price, the total price for items purchased by customer, name of customer, date and time of products sold, sales record etc. Mobile screen has used for display the information related to product. The customers entered in super markets firstly need to open the “android application” and scan his/her purchasing product from the smartphones using the barcode. There is no limit of scanning goods so the customer can buy any number of items and quantity as per requirements. Now the database will up-date the total amount of shopping along with individual items and their cost. This total amount information will be sent back to customer’s smartphone. Customer can pay for the total amount via cash or card based systems. It also shows options like scan the barcode. The customer simply needs to click on scan barcode button on the application which begins the scanning via the rea camera of mobile. If received data is valid then it will display the details of the product accordingly. The number of products can be purchased by the user as per the requirement. The same product can also be purchased a number of times. Once the shopping is complete, total will be automatically calculated and send the amount to the database. Now customer will choose the payment method. For smooth functioning, we had to prepare a database by which we could enter the required data in their respective locations. In this database all the records of daily entry made are stored, so that we can use them in future whenever allotted to their caretaker. Other than no one could use this and on entering an illegal password or login name an error message get displayed.

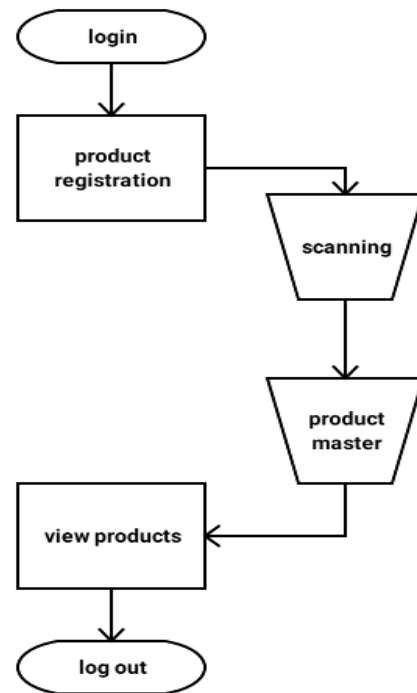


Fig 6.1 Proposed system overview for administrator application

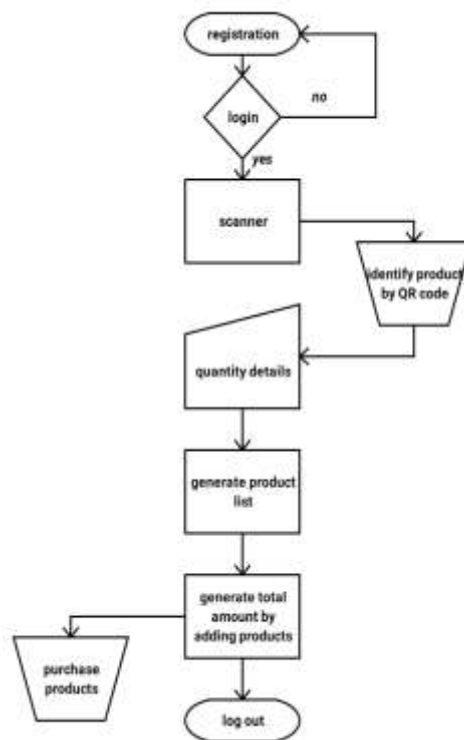


Fig 6.2 Proposed system overview for customer application

VII.COMPONENTS

SOFTWARE REQUIREMENTS

Android is an open source operating system for mobile devices and a corresponding open source project led by Google. This site and the Android Open Source Project (AOSP) repository offer the information and source code needed to create custom variants of the Androids OS, port devices and accessories to the Android platform, and ensure devices meet the compatibility requirements that keep the Android ecosystem a healthy and stable environment for millions of users. As an open source project, Android's goal is to avoid any central point of failure in which one industry player can restrict or control the innovations of any other player. To that end, Android is a full, production-quality operating system for consumer products, complete with customizable source code that can be ported to nearly any device and public documentation that is available to everyone.

OPERATING SYSTEM



Fig 7.1 Android 8.0

Android 8.0 (API level 26) introduces a variety of new features and capabilities for users and developers. PIP is a special type of multi-window mode mostly used for video playback. PIP mode was originally available for Android TV only. Android 8.0 makes the feature available on other Android devices. Android 8.0 (API level 26) introduces a new object, `PictureInPictureParams`, which you pass to PIP methods to specify how an activity should behave when it is in PIP mode. This object specifies properties such as the activity's preferred aspect ratio.

Windows 7 was primarily intended to be incremental upgrade to Microsoft Windows, addressing Windows Vista's poor critical reception while maintaining hardware and software compatibility. Windows 7 continued improvements on Windows Aero (the user interface introduced in Windows Vista) with the addition of a redesigned taskbar that allows applications to be "pinned" to it, and new window management features. Other new

features were added to the operating system, including libraries, the new file sharing system Home Group and support for multi touch input. A new "Action Centre" interface was also added to provide an overview of system security and maintenance information, and tweaks were made to the User Account Control system to make it less intrusive. Windows 7 also shipped with updated versions of several stock applications, including Internet Explorer 8, Window Media Player and Window Media Centre.

SOFTWARE



Fig 7.2 JDK 13

Java Development Kit (JDK) 13, the latest version of standard Java, is now available as a production release. Highlights include Z Garbage Collector enhancements, application class-data sharing, and previews of switch expressions and text blocks. One capability proposed for JDK 13 but never added to the official list, the `java` package tool for packaging self-contained Java applications, has missed the cut. It is no longer under consideration for JDK 13.



Fig 7.3 Android IDEs

Android IDEs (Integrated Development Environments) for mobile app development is similarly high as a result, the demand for using different Android IDEs. Fortunately, there are tons of tools and platforms available in the market that can help to build incredible mobile apps for Android.

FRONT END

XML 1.0(fifth edition) The Extensible Markup Language (XML) is a subset of SGML. Its goal is to enable generic SGML to be served, received and processed on the Web. XML has been designed for ease of implementation and for interoperability with both SGML and HTML. XML

shall be straight forwardly usable over the Internet, support a wide variety of applications, compatible with SGML and easy to write programs which process XML documents. The number of optional features in XML is to be kept to absolute minimum, ideally zero. XML document should be human-legible and reasonably clear.

BACK END

SQL 15.0 introduces Big Data Clusters for SQL Server. It also provides additional capability and improvements for the SQL Server database engine, SQL Server on Linux, SQL Server Machine Learning Services and SQL Server Master Data Services. SQL Server also includes an assortment of add-on services. While these are not essential for the operation of the database system, they provide value added services on top of the core database management system. These services either run as a part of some SQL Server component or out-of-process as Windows Service and presents their own API to control and interact with them. SQL Server supports different data types including primitive types such as Integer, Float, Decimal, Char, Varchar, Text, Binary among others.

HARDWARE REQUIREMENTS



Fig 7.4 RAM

Primary memory : 512 MB RAM or above

Secondary memory : Hard disk 80 GB or above

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