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Smart Sensing Shopping Cart

Nitish Kurhadkar, Uddhav Raut, Vijay Tembhare, Prof.Nayan Shambharkar, Monika Kharpuriya , Manasi Bahad

Department of Information Technology Guru Nanak Institute of Engineering and Technology, Dahegaon Nagpur, Maharashtra, India

Department of Information Technology Guru Nanak Institute of Engineering and Technology, Dahegaon Nagpur, Maharashtra, India

Abstract: *Now days purchasing and shopping at big malls is becoming a daily activity in metro cities. We can see huge rush at malls on holidays and weekends. The rush is even more when there are special offers and discount. People purchase different items and put them in trolley. After total purchase one needs to go to billing counter for payments. At the billing counter the cashier prepare the bill using bar code reader which is a time consuming process and results in long queues at billing counters. Our aim is to develop a system that can be used in shopping malls to solve the above mentioned challenge. The system will be placed in all the trolleys. It will consist of a RFID reader. Shoppers can be guided electronically to find desired products location that are tagged with RFID chips and whose locations are feed in trolley. Smart shopping trolleys with electronic displays, can display a products location with a shopping list to identify a route to obtain the desired items.*
All the products in the mall will be equipped with RFID tags. When a person puts any products in the trolley, its code will be detected and the price of those products will be stored in memory. As we put the products, the costs will get added to total bill. Thus the billing will be done in the trolley itself. Item name and its cost will be displayed on LCD. At the billing Counter the total bill data will be transferred to PC.

Keywords: *RFID, Graphical Lcd,Crystal-12MHz*

I. Introduction

Shopping mall is a place where people get their daily necessities ranging from food products, clothing, electrical appliances etc. Now day's numbers of large as well as small shopping malls has increased throughout the global due to increasing public demand & spending. Sometimes customers have problems regarding the incomplete information about the product on sale and waste of unnecessary time at the billing counters. Continuous improvement is required in the traditional billing system to improve the quality of shopping experience to the customers. To overcome these problems stated above and to improve the existing system, we have designed a SMART TROLLEY USING RFID. This can be done by simply attaching RFID tags to the products and a RFID reader with a LCD display on the shopping trolley. With this system customer will have the information about price of every item that are scanned in, total price of the item and also brief about the product. This system will save time of customers and manpower required in mall and cost associated with the product. **AVR** was developed in the year 1996 by Atmel. The architecture of **AVR** was developed by Alf-Egil Bogen and Vegard Wollan. AVR derives its name from its developers and stands for **Alf-Egil Bogen Vegard Wollan RISC microcontroller**, also known as **A**dvanced **V**irtual **R**ISC. The AVR was one of the first microcontroller families to use on-chip flash memory for program storage. Till that time microcontroller comes with one-time programmable ROM.

The AVR is a modified Harvard architecture machine where program and data is stored in separate physical memory systems.

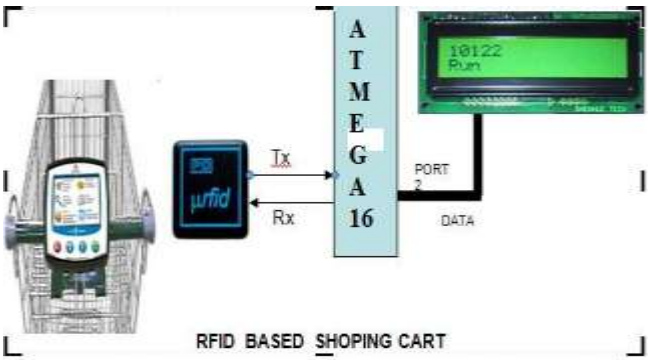

Fig.1. Block diagram of existing system

II. Existing System

Now days purchasing and shopping at big malls is becoming a daily activity in metro cities. We can see huge rush at malls on holidays and weekends. The rush is even more when there are special offers and discount. People purchase different items and put them in trolley. After total purchase one needs to go to billing counter for payments. At the billing counter the cashier prepare the bill using bar code reader which is a time consuming process and results in long queues at billing counters. So we proposed a new system.

III. Proposed System

To overcome these problems stated above and to improve the existing system, we have designed a SMART TROLLEY USING RFID. This can be done by simply attaching RFID tags to the products and a RFID reader with a LCD display on the shopping trolley. With this system customer will have the information about price of every item that are scanned in, total price of the item and also brief about the product. This system will save time of customers and manpower required in mall and cost associated with the product.

IV. Description

AVR was developed in the year 1996 by Atmel. The architecture of **AVR** was developed by Alf-Egil Bogen and Vegard Wollan. AVR derives its name from its developers and stands for **Alf-Egil Bogen Vegard Wollan RISC microcontroller**, also known as **A**dvanced **V**irtual **R**ISC. The AVR was one of the first microcontroller families to use on-chip flash memory for program storage. Till that time microcontroller comes with one-time programmable ROM.

The AVR is a modified Harvard architecture machine where program and data is stored in separate physical memory systems.

AVR microcontrollers are available in three categories:

1. **TinyAVR** – Less memory, small size, suitable only for simpler applications
2. **MegaAVR** – These are the most popular ones having good amount of memory (upto 256 KB), higher number of inbuilt peripherals and suitable for moderate to complex applications.
3. **XmegaAVR** – Used commercially for complex applications, which require large program memory and high speed.

V. Result

The android application gives the information about the college bus for students and staffs. The proposed system is more user friendly than existing system. And it also gives greater performance.

VI. Conclusion

In this paper we have reviewed a various existing techniques of shopping mall. By implementing this idea, we can improve the Billing Facilities and the quality of services to the shopping mall. The system will have latest technology and optimized algorithms with moderate cost. The system may focus on time management and position of the bus.

Future Scope

Using a GSM module, we can transfer the bills to the mobile instead of printing it this saves papers.

Application

It is used in super market as well as in college library and the super market as well.

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