



Intelligent Shopping Cart with Anti-Theft

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ABSTRACT

Nowadays in mall for purchasing daily using products, it requires trolley. Every time customer has to do calculations of those products and need to compare it with his budget in pocket. In addition, customer has to work for selecting the right product. In addition, after that, it is hectic to stand in line for billing all the goods. Hence, we are proposing to develop a smart shopping cart system that will keep the track of purchased products and online transaction for using RFID. At billing counter the cashier prepare the bill using bar code reader which is very time consuming process and results in long queue at billing counter. This automatic billing system in the shopping mall will reduce time required for billing. The main aim of this project is to improve the quality of shopping experience to the customers.

Keywords: At mega, 16A , RFID Tags,LCD Display

I. INTRODUCTION

Now a day's interest in shopping malls is widely increasing among people. In the present shopping malls, customers find various difficulties. We spend much time in searching for our desired products and finally overall shopping process becomes more time consuming too. In this application, each item in Supermarket is tagged with a unique RFID label. Each shopping cart is designed or implemented with a Product Identification Device (PID) that contains microcontroller, LCD, an RFID reader .RFID Reader recognizes the products put in the cart. As soon as each item is placed, various information like item name, price of the product is displayed in the LCD display placed in the cart. Along with this total sum is also displayed. Therefore, this project improves the security performance and the speed.

II. METHADODOLOGY

The system is having two barcode scanners placed at two different checkpoints namely entry and exit points respectively. A smart device will keep record of information of all the products that customers have purchased. The scanned products will automatically bill in wireless device for purchases and as we know, time has become money so thereby significantly, it reduces turn out time and there is no need to stand in long queue.

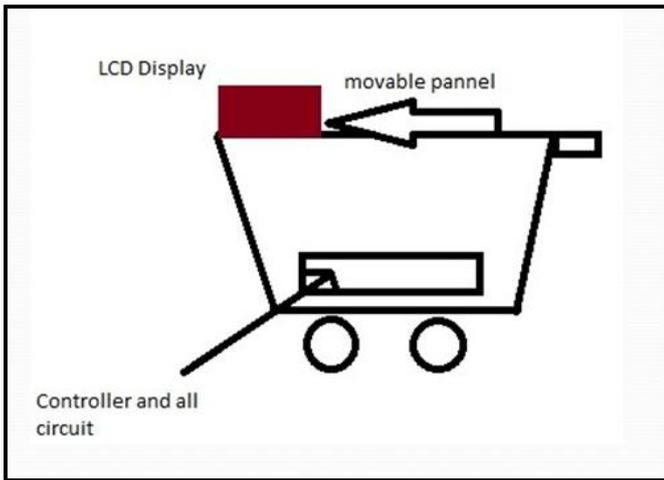


Figure 1. Visual Abstract of Intelligent Trolley

III. WORKING

Following flowchart will illustrate the working of this system.

Step 1: When customer enters in shopping mall, customer will be given one unique card that is Used open the shutter and initialize the system.

Step 2: Then customer has to scan the products with the help of RFID scanners and the Information regarding the products will be stored and it is done through entry side point.

Step 3: If customer’s budget exceeds his pocket then he can go for his desired products. All the Information will be deleted and it is done through exit side point.

Step 4: AT mega, 16A will perform addition and subtraction of products.

Step 5: All the information regarding cost, quantity etc will be displayed on LCD screen and send To person who is sitting at counter

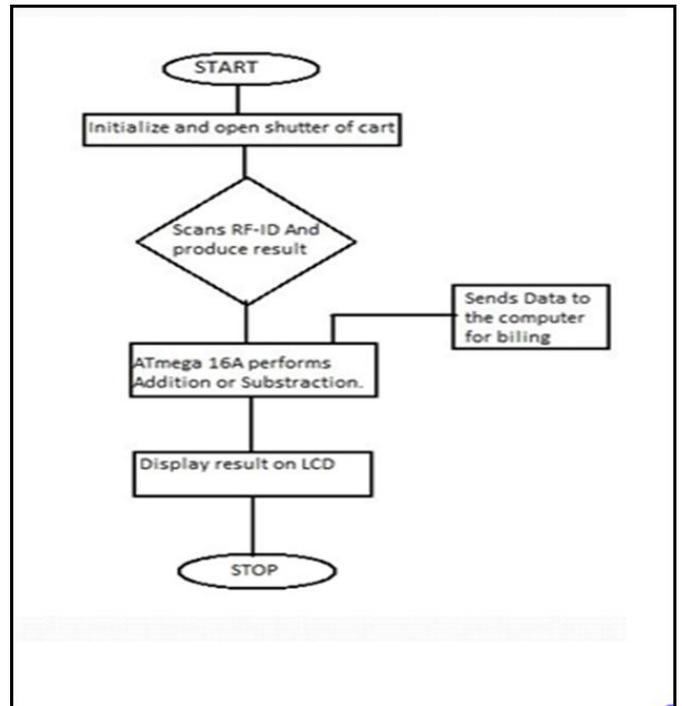


Figure 2. Flowchart

The system having following components:

RFID Tags:

RFID Reader is attached to the trolley. Whenever a customer put RFID Tag near to RFID Reader, RFID Reader detects the RFID Tag and trolley act as Smart Trolley. All this process going to works using radio frequency. Tags are of two types. Passive and Active tags. Passive tags have no battery life, and Active tags have battery life4 .Through the RFID implementation of mobile technologies and automatic recognition, technologies become easier for smart cart. With the help of wireless networks, RFID makes the conventional retail process fast, transparent and efficient.

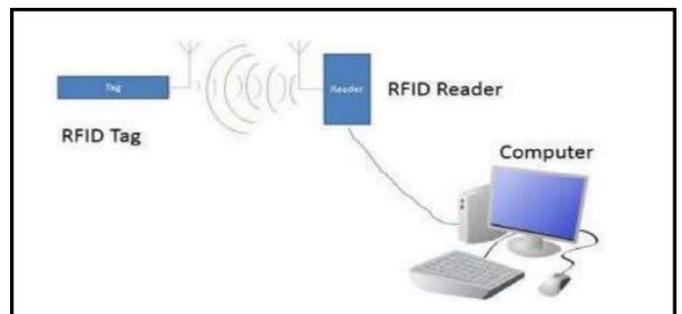


Figure 3. RFID System

AT Mega 16A:

Here we are using a very easy to use microcontroller called ATmega16A. It is a low-power CMOS 8-bit microcontroller and it is based on the AVR enhanced RISC architecture. By executing powerful instructions in a single clock cycle, the ATmega16A achieves throughputs approaching 1 MIPS per MHz allowing the system designer to optimize power consumption versus processing speed. It is the heart of the system. As it is very cheap, it makes system very efficient. It performs the function of storing the information of products.

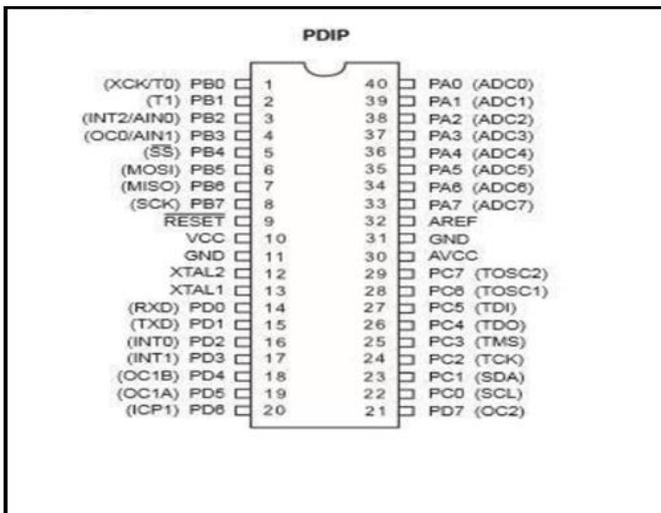


Figure 4. AT Mega 16A

LCD DISPLAY:

In this project document, we will discuss about character based LCDs, their interfacing with various microcontrollers, various interfaces (8bit/4-bit), programming, special stuff and tricks you can do with these simple looking LCDs which can give a new look to your application. Usually these days you will find single controller LCD modules are used more in the market. Therefore, in the project document, we will discuss more about the single controller LCD, the operation and everything else is same for the double controller too.



Figure 5. LCD Display

IV. ADVANTAGES

- ✓ It operates on less power and requires less space.
- ✓ It is less bulky and cheap.
- ✓ It reduces time and increases speed.
- ✓ It reduces human efforts like standing in queue.
- ✓ It is very efficient as customer is able to balance their budget

V. FUTURE SCOPE

In this, details of products should be updated in memory unit of trolley. We take the use of IOT for updating information. It can follow the customer by making use of optical sensors, Motor, motor drivers. We will make trolley in such a way that it should make safe distance Between trolley and customer.

VI. RESULT AND CONCLUSION

In this intelligent trolley system, now there is no need for the customer to stand in queue and Scan all the products at the end. So in this way it reduces time of customer and shop owner as Well. Especially during weekends or festivals season people can return their home quickly and Enjoy with family that means there is no wastage of time in long queue. As it is very beneficial, it can attract more customers.

VII. REFERENCES

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