

SECURE SMART SHOPPING SYSTEM BY IOT APPLICATION

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ABSTRACT

A shopping center or complex is where individuals purchase item(s) for their general utilizes. The clients need to hold up in long lines to get their items filtered utilizing standardized tag scanner and get it charged. To overcome this, we have developed a Smart Shopping Cart using RFID (Radio Frequency Identification). This usage is utilized to help a man while shopping and furthermore to abstain from remaining in long lines and accordingly sparing time. The items in the strip malls will have RFID labels to recover/get to data about it. At the point when a client puts an item in the keen trolley, the RFID Reader will read the Product ID and the data identified with it will be put away in controller. GPRS is used to upload the data to the server.

Keyword, RFID Reader, GPRS, LCD display, Bluetooth

1. Introduction

Presently days acquiring and shopping at huge shopping centers is turning into a day by day action in metro urban communities. We can see colossal surge at shopping centers on vacations and ends of the week. The surge is much more when there are unique offers and rebate. Individuals buy distinctive things and place them in trolley. The framework will be put in all the trolleys. It will comprise of a RFID per user. Every one of the items in the shopping center will be outfitted with RFID labels. At the point when a man puts any items in the trolley, its code will be identified and the cost of those items will be put away in memory. As we put the items, the expenses will get added to add up to charge. In this manner the charging will be done in the trolley itself. Thing name and its cost will be shown on LCD. Likewise the items name and its cost can be declared utilizing headset. At the charging Counter the aggregate bill information will be exchanged to PC by remote modules. The basic purpose of this technology is to minimizing tasks and making every day jobs easier and faster, irrespective of the various domains available. A major duty on which human beings are found spending significant amount of time in shopping. According to a Survey, approximately many of the human beings spend 1.5 hours daily on shopping. More number of customers will walk out of a queue if the queue is very long. Product name and its cost will be shown on LCD module. At the charging Counter the aggregate bill information will be exchanged to PC by remote modules. by using a microcontroller

2. Literature Survey

Dr. Suryaprasad J in "A Novel Low-Cost Intelligent Shopping Cart" is proposed to help the customers for the selection of the products and also inform the customer any offers present on the products as they move all over the shopping malls. "Developing a Multitasking Shopping Trolley Based on RFID Technology" was developed by Satish Kamble which is used to help a person in shopping for reducing time while purchasing products. The main aim of proposed system is to provide a technology oriented, lowcost, easily scalable, and strong system for helping customers in shopping. The purpose of the "Smart Shopping Cart with Automatic billing System through RFID and Zigbee" was to devise a system with automatic billing which is proposed to Mr. P. Chandrasekar. This avoids the

long queues in supermarkets and shopping malls. Customers can pay their bill through credit/debit cards. The limitations are I2C protocol was not supported and another one is not specifying how they can access their database to read and write data. Dashmir Istrefi, Betim Cico presented the “mobile payment through integrated module on Smart phones” examined the idea of implementing additional security layer that will enable protecting NFC transactions. Also, idea for improving customer’s online shopping experience has been has been proposed. The disadvantage is applicable only for smart phone users

3. Proposed System

In the Proposed System we have implemented the system efficiently to transfer the Data Successfully to the Billing Session. In this System we are using RFID Reader and Bluetooth to Data Transferring. GPRS used to upload the data in cloud server. The block diagram of the smart shopping cart is shown in the figure1.

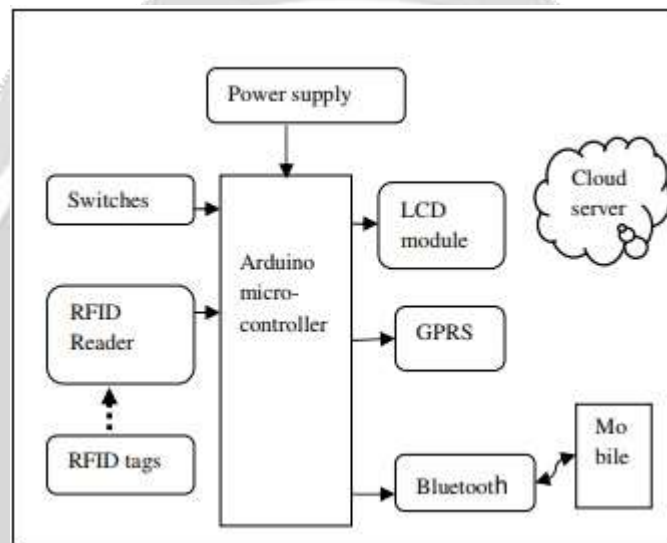


Fig-1: Block diagram of smart shopping cart

4. Hardware Requirements:

- Arduino
- Power supply
- RFID Reader and Tags
- LCD Module
- GPRS
- Bluetooth

The modules can be described as below:

Arduino

The Arduino Micro Controller is a greatly simple to use and introduced on an unmarried chip. It is an In-System-Programmable Device this suggests the client haven't any need to use the discard the IC, we can immediately join the Arduino to the PC and picking the most ideal COMM port. The Arduino has many sorts like UNO, MEGA and various others; here we use Arduino UNO board. The UNO board will show up along these lines.



Fig-2: Arduino board

The Programming of the Arduino is either in C/C++. On the off chance that you're acquainted with C, programming of the Arduino is immediate to see. If you are not familiar with C no try grabbing data of is to be had in the case codes. The Arduino Board is alluded to as ISP changes into when the code dumped inside the Board can be use at each time, wherever.

Arduino Board

Consequently the Arduino Board does not have ability to execute code independent from anyone else, with no outer Power Supply. To speak with the outside world the Arduino board has I/O pins. It contains add up to 14 pins from 0 to 13 that can be utilized as contribution from Switches. Each stick has a 40mA of current goes through it. The Arduino has inbuilt program to check whether it is working or not. The Arduino board has simple perfect interface outline, for speaking with the Sensors it require just 5v supply.

LCD:

LCD (Liquid Crystal Display) screen is an electronic show module and locate an extensive variety of utilizations. A 16x2 LCD show is extremely fundamental module and is usually utilized as a part of different gadgets and circuits.



Fig-3: Liquid Crystal Display

The information given to the LCD has been stored. An order is a guideline given to LCD to do a predefined undertaking like instating it, clearing its screen, setting the cursor position, controlling showcase and so on. The information enlist stores the information to be shown on the LCD. The information is the ASCII estimation of the character to be shown on the LCD. The LCD is used to display the product details such as cost and name of the product and also total amount can also be displayed.

RFID:

These modules are favored more than seven portions and other multi fragment LEDs. A 16x2 LCD module can show 16 columns and 2 rows In this LCD each character is shown in 5x7 pixel framework. This LCD has two registers, specifically, Command and Data.



Fig-4: RFID Reader

RFID is a following innovation used to recognize and validate labels that are connected to any item, individual or creature. Radio recurrence Identification and Detection is a general term utilized for advances that influence utilization of radio waves keeping in mind the end goal to recognize questions and individuals.

5. Working of The Project

The Working in this undertaking is straightforward and effectively reasonable, so would product be able to be dropped in the truck the RFID peruses the Tag information which is connected to the Product and recover the Price and Quantity of the tag. The Price and Quantity Data is specifically exchanged to the Serial window by the including every item the Price is naturally summed and if any item must be expelled from the truck at that point and leave catch is accessible, which you have hold and evacuate the item then it will consequently decrement the cost from the Total. After the Completing the entire shopping simply tap on the Completed the aggregate charging cost is sent to the Billing Section and from the billing section to cloud using GPRS.

Applications

- Easy shopping
- Super markets
- Industries
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Advantages

- Easy Handling

6. System Implementation and Result



Fig-5 Displaying Price List of the Product

7. CONCLUSION

Hence from the above proposed method we have described the Smart shopping cart and its working. With this type of technology, we can easily get the clarity about the shopping which we are buying and it looks Smart during the Usage.

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