

A Study on Advanced Shopping Trolley

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Abstract: In the current scenario, one-day shopping at large malls is now becoming a daily activity in metro cities. Huge crowds at malls on holidays and weekends. After purchase, the cashier prepares the bill at the billing counter using a barcode reader, which results in a longer process and longer queues. We made an advanced trolley and whole shopping mall so the billing will easy for customers.

Keywords: AI trolley, Arduino Uno, GSM communication, RFID, Ultrasonic sensor.

1. Introduction

From day to day life everyone is busy in their own work whether in office or home or outside of city but their need is essential for them in everyday scenario so they rush to malls but in malls everyone is going to stuck in large line or queue. To overcome this problem, we made a system which is advanced from previous system. Our system is based on “advanced shopping cart” in which whole mall is connected to the trolley by an app which assist them to find their product if a person is unable to find the desired product it can help them to assist and by trolley RFID reader their billing will also become easy.

2. Literature Survey

In a centralized and automated billing system using RFID and ZIGBEE communication is employed. Each product is provided with a RFID tag. Each shopping cart is implemented with a Product Identification Device (PID) that contains microcontroller, LCD, RFID, and ZIGBEE module. Purchasing product information will be read through a RFID reader on shopping cart, this information is sent to the billing counter using ZIGBEE module. The billing system gets the cart information and EEPROM data, and then it accesses the product database and calculates the total amount of purchasing for that particular cart.

3. Objective of Our Project

The main objective of our project is to smoothen the billing at counter because in previous proposed systems the main focus is on billing and time efficient but in our proposed systems there is provide the virtual assistance though the app to a customer for better review in terms of carrying trolley and billing there is

no need to carry the trolley it will follow the customer automatically. Provide promotional offers to customer through Mall android application.

4. Comparative Study

While studying the other project we found that the existing system used ZIGBEE and RFID systems for making the bill of customer at central billing station.

A. Existing System

In existing system people approach in malls with the help of barcode scanner. The seller scans the product by barcode scanner. This is a slow process and the customer has to wait for long queues. So, this one reason so many people leave Mall for waiting in long queue to buy some products. To

avoid it, we want to buy more products in recent years Introduced new types of technologies. Customer put a product in a smart shopping trolley. Each and each product has a product id RFID reader can read product id. It will be useful customers. All such solutions are useful to the customer.

B. Existing System Disadvantages

In the existing system there is no assistance is providing to them for better shopping it means that the product is available in store but the customer unable to find where it is.



Fig. 1. Existing trolley

C. Problem Identification

The main problem has been the lack of Mall map in trolley and for handicapped people there is difficulty to carry them.

D. Proposed Work

The main objective of the proposed system is to provide a

technology-based, low-cost, easily scalable and rigorous system for personal shopping. An RFID-powered electronic shopping cart was built to enhance the overall shopping experience for electronics store customers. After placing an item in the shopping cart, the customer can access product information, advanced product features, product features, customer reviews and combination deals with other store products. If the customer is not sure about the physical location of an item, they can search for that item and see a live map of the store to find it. Other features include a live sum of all items in the cart, weekly store-specials and ready to pick up. For handicapped people an ultrasonic based module is provided in trolley to follow them and at exit point again a RFID reader will recheck the billing as anti-theft protection system.

5. Conclusion

The proposed model is easy to use, inexpensive and does not require special training. This model uses the current identities and account and uses of various radio frequency identification and detection technologies for item recognition, billing and inventory update. As the whole system becomes smarter, the need for manpower will decrease, thereby benefiting retailers. Theft in the mall is controlled using this smart system, which

further increases the cost efficiency. This system eliminates waiting queues so the time efficiency increases remarkably. At the same time, it can serve more customers, thereby benefiting both retailers and consumers. An android application is also being there for better view of mall map and promotional offers by which a customer can earn a lot of cashback which is not available on debit and credit cards.

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