

SMART SHOPPING USING QR CODE AND RFID SYSTEM



Prof. Smitha P ¹, Aishwarya M U ², Deepthi A ³, Likhitha K ⁴

¹Associate professor EWIT, India, Smitha P @ewit.edu

²Student, EWIT, India, Aishwarya M U @gmail.com

³Student, EWIT, India, Deepthi A @gmail.com

⁴Student, EWIT, India, Likhitha K @gmail.com

ABSTRACT

RFID generally encompasses any wireless (or partially wireless) communication that allows for remote retrieval of information associated with a particular commodity, product, component, or other item. In RFID environments, each suitable item is tagged with an RFID tag that includes and (actively or passively) transmits one or more pieces of information including, for example, a unique

identifier and such. These pieces of information are requested or retrieved by an RFID reader. Moreover, the RFID often must be manually docked or interfaced with a port such that the collected RFID information can be processed. In many circumstances, RFID technology allows the two devices (the tag and reader) to communicate with one another while not maintaining a line-of-sight in various weather conditions. Extensive research has been carried out on vision based automatic identification technology that recognizes images codes using smart phones to provide various services that can recognize the authenticity of any product We are using Multiplexing and De multiplexing algorithm for recognizing QR code image using smart phones to provide various services that can recognize the authenticity of any product.

Keywords-WSN, RFID, ZigBee, Trolley.

1. INTRODUCTION

The Smart Shopping methodology, presents a novel method of collaborating ease in smart shopping and the sense of security money wise as well as for customer satisfaction while doing shopping offline. This is implemented using an Android application. In shopping mode, the customer needs to physically pick up his purchase, carry cash, along with them and wait in the long queue to make payments. The application mentioned here would read the QR code(s) of the product(s) & add it to the shopping cart in the application. It provides methods to change the quantity of product/s purchased and edit the list. Along with this the customer would be informed about the on-going offers in the store. Payment can be according to customer convenience. The idea for the project is to optimize this process of shopping at a retail store, by enabling the customer to handle the check-out process. We propose to do this by using a smart phone application that allows the user to scan the products he or she wishes to purchase, generate the bill for all the products selected, and make the payment. Instead of using traditional bar codes

we propose to use Quick Response (QR) codes to identify each product. The application includes an option to search where a product is located in the store.

The entire process of bill generation is automatically carried out, and is displayed on the interface as the user continues shopping. Once all the items are scanned and the user confirms the purchase order, the final bill is generated and the user is be redirected to payment options. The customer has the option to sign up for a custom wallet that can be used for faster payment. addition, to further ease the shopping experience, we propose to use Radio Frequency Identification(RFID) to identify when a customer enters the store. RFID is a method for Automatic Identification and Data Capture (AIDC). Each customer has a unique identification card, with an RFID tag that sends their information. This is read by

an RFID Reader and processed by the microcontroller, tracking a customer's entry in the store and authenticating the phone application for use via internet. This application will provide the user an overall better shopping experience, as it will help avoid long queues, an easy method to find particular commodities in a large store, as well as remove the need for a cashier and will make the transaction itself automated and hard cash-free. Traditional shopping is a tedious and time consuming job. Although the growing trend of online shopping has reduced some load, there is still some difference in actually going to shops, and hand picking products to get the feel of their quality and features, that cannot be experienced online. Customers also feel wary to carry out online purchases due to fear of less secure transaction process that may lead to hacking of user's sensitive data, insecurity of credit/debit cards, unreliability or breach of privacy. The project aims at removing flaws of both kinds of shopping, and bridge the gap between physical and virtual world. In traditional shopping, the customer has to wait in long queues at the cash Counter

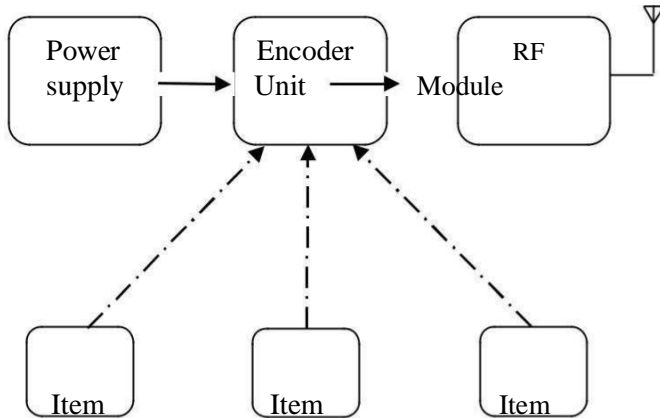
the cashier scans barcode for every individual products and then generates the bill. This consumes lot of time and energy of both the shopper as well as cashier. To overcome this flaw, the customer himself can scan the barcode using his mobile while making purchase, retrieve essential details of all products from shop's database and generate bill himself. This bill can be sent to the cashier's computer using web service. Thus the user can make quick payment at the counter and leave the shop early.

3.PROPOSED SYSTEM

The main objective of this is to provide a technology oriented, low-cost, easily scalable, and rugged system for assisting shopping in-person.

The main technological objective for our presented solution is the usage of RFID technology for the automatic product identification inside the shopping eliminating consumer intervention in the process of product reading for payment. . In the proposed system, if the object is dropped into or removed from the trolley, the RFID tag identifies the product and updates the bill. After shopping, if we press the zigbee button and the details are sent to the master computer through zigbee and the customer has just to pay the amount and leave the mall, which saves the precious time of the consumers. Technological objective for our presented solution is the usage of RFID technology for the automatic product identification inside the shopping cart thus eliminating consumer intervention in the process of product reading for payment. . In the proposed system, if the object is dropped into or removed from the trolley, the RFID tag identifies the product and updates the bill. After shopping, if we press the zigbee button and the details are sent to the master computer through zigbee and the customer has just to pay the amount and leave the mall, which saves the precious time of the consumers.

4.BLOCK DIAGRAM PRODUCT SECTION



The handheld RFID reader generally requires the operator to be within five feet to query the desired RFID tags. Some stationary or fixed mount devices offer relatively greater distance communications, but are also usually larger than the handheld devices. Moreover, the RFID often must be manually docked or interfaced with a port such that the collected RFID information can be processed .

FEATURES OF THE APP

TROLLEY SECTION

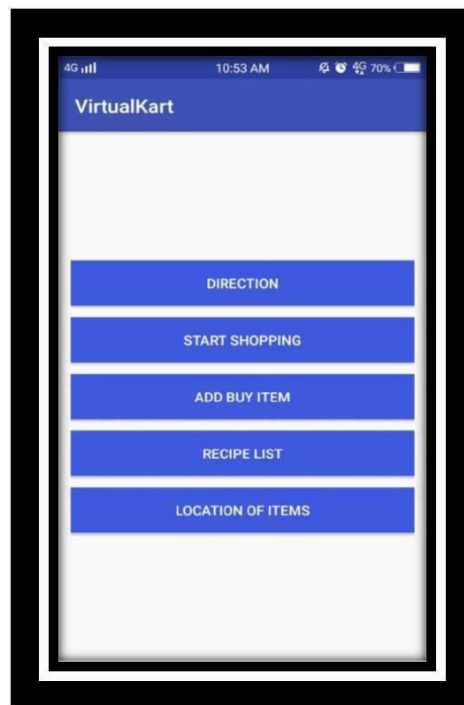
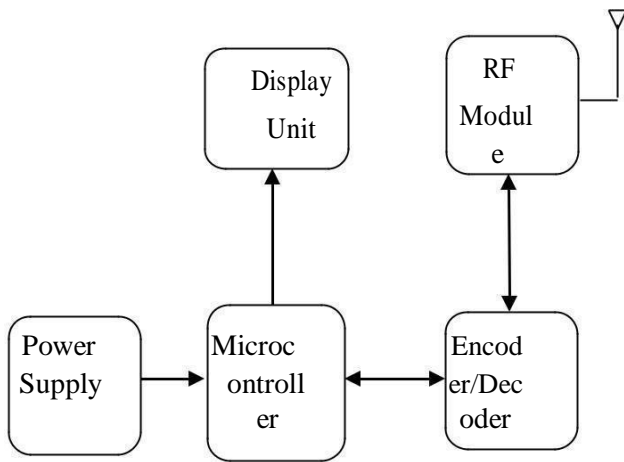


Figure shows the main part of the application where you can view the 90% features that are present in the application. As you can visualize above there is different features available such as you can find the icon of direction which will connect you to the google map directly and not only that there is an add buy item icon where you can prepare the list of items that you have to buy at home before going to the shop. The next is the recipe list where for a particular item you can get the complete ingredients. Finally you can start shopping.

5. CONCLUSION

The intended objectives were successfully achieved in the prototype model developed. The developed product is easy to use, low-cost and does not need any special training. We have also learned the architecture of the system that can be used in the shopping systems for intelligent and easy shopping in the malls to save time, energy and money of the consumers. Present trends point towards the fast growth of RFID in the next decade. There are a few challenges/drawbacks that can be resolved to make proposed system more robust. This issue will have to be resolved specifically with respect to billing to promote consumer confidence. Further, a more sophisticated microcontroller, larger display system, GPS to track the product, internet facility inside the card to browse the offers, deals and facility of payment within the cart by using swapping card can be used to make cart more advance provide better consumer experience.

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