IOT BASED INTELLIGENT TROLLEY FOR SHOPPING MALL

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ABSTRACT

A daily activity in metrocities are purchasing and shopping at big malls.On holidays and weekends we can see huge rush at malls.The individuals invest maximum measure of energy is in shopping is one of the significant task.Individuals get their every day necessities running from sustenance items,garments,electrical machines and so forth where shopping center is a spot.The customer required products are placed in their carts and for payment of bills wait at the counter.It is really troublesome and time consuming process which thereby increasing a heavy crowd at the counters when the payment of bills at the counter.To solve these dilemmas and provide a better shopping experience we have come up with an android application which can be used in smart shopping carts.To scan the products we used an RFID Reader.

Keyword : - *RFID Reader, RFID tag , Wi-Fi , Zigbee etc,.*

1.INTRODUCTION

In the world, India is the largest marketing hub. The production, as well as consumption in India, has increased drastically over the past few decades and it's very important that we provide consumers with the best experience.People find it rather difficult when it comes to shopping and tiring to locate the products they wish to buy. Long and crowded billing counters make shopping a timeconsuming task.Technology shows that , mobile devices are not just tools for making calls or sending a message. In india there are more than 300 million of smartphone users. Hence its all the more necessary to develop better and more sophisticated android applications in order to take India to the next level in shopping. The billing system mainly focuses on automatically updating the list and amount of the products purchased by the user. The tag number of the product can be read by RFID scanner which is fixed in the product.

2.LITERATURE SURVEY

2.1.Design and Implementation of an Android Application for Smart Shopping- Rajesh Kannan Megalingam, Souraj Vishnu, Swathi Sekhar, Vishnu Sasikumar, Sreekumar S and Thejus R Nair International Conference on Communication and Signal Processing, April 4-6, 2019.

The adoption of android applications in our daily lives has saved us a lot of time and effort. When we take a survey, people doing outdoor shopping is declining at a rapid pace as compared to online shopping mainly because of the painless and time-saving advantage of the later. This motivated us to design smart app which reduces the energy in supermarket carts and aids the user to find the products easily. This will motivate more people to come back towards the supermarket experience that is rapidly declining. Another major drawback of the existing shopping systems is the use of barcode scanning where communication is based on the line of sight propaganda. With our efficient billing system using RFID, customers don't have to stand in billing queues for long hours. We have come up with a solution where the total amount to be paid by the customers is displayed in the app

2.2. i-Shop: A Model for Smart Shopping- Mr. Anal Kumar, Professor. A B M Shawkat. 2019 3rd Asia-Pacific World Congress on Computer Science and Engineering.

The current trend of online shopping has been shown in the previous sections. As the whole process of online purchase is via the Internet, in the virtual environment, there are many factors that are tough for online consumers to control, such as online security, privacy protection, and after-sales service. Many people believe that these problems could directly influence their attitude in adopting online shopping. People also believe that it is too complicated to process online shopping and that it is impossible to physically check the quality of the merchandise. Moreover, fraud has also become a serious issue that has discouraged e-consumers. There are quite a few advanced capabilities that i-shop provides to the vendors. The ability to update customer records, the ability to view and update order status. The status of orders can be changed, from 'pending' to 'delivered' for example, and comments can be added. The status and comments associated with an order can be optionally emailed to the customer directly from the Administration area or made viewable in the customer's "My Account" area. Control over the addition, removal and modification of categories, products, manufacturers, customers and product reviews.

2.3.Smart Shopping Prediction on Smart Shopping With Linear Regression Method - Medina Diani Nastiti, Maman Abdurohman, Aji Gautama Putrada 2019 7th International Conference on Information and Communication Technology (ICoICT).

Barcode scanning function is a barcode scanner via a webcam installed on Raspberry Pi. The webcam will take a photo of a barcode image which will be processed by Raspberry Pi using a barcode reader code and the processing results will return a line of the barcode numbers. This function will automatically run every time add a stock number menu and add a stock usage number menu is selected by the user. The success of this function occurs when the scanning and translating images process the numerical value as the goods. Shopping website is used to display data stored in the storage database. The website displays shopping list data and this week goods stock number.

2.4. Novel Approach for Revamping Smart Shopping Experience - Vidya K P, Swathi K M, Chaitra D, and Jayalakshmi S H, Manoj Kumar M V and Sneha H R, Likewin Thomas, and Puneetha B H. 978-1-5386-5323-4/18/$31.00 ©2018 IEEE.

During the phase of literature review we realized that majority of the individuals select to walk out of the mall tired of standing in big queues to purchase a small number of items. Addition to this, customers find it tough to find the item to buy, after picking item they should wait in the long queue for making payment. For solve this problem, there are several technological solutions implemented in hypermarket help. All such solutions share the same aims: Save customers money and time, help the venders to win trustworthy customers. The wholesale industry has been encouraging Smart Shopping for many years by adopting various tools to improve the shopping experience in the trade atmosphere. The idea of smart shopping assurances to offer on the spot data about numerous concessions, schemes, etc. whenever is needed. While coming across various technologies such as online shopping, where items are purchased online through various webs.

3. EXISTING SYSTEM

Now a days most of the items are secured by considerable amount of individuals in the markets.During purchasing consumer face many problems and difficulties. These problems comprise worrying about the money which they have brought would be insufficient for all the items purchased and also dissipating a lot of time at the cashier.Getting product information is difficult and time consuming It does not disclose any automatic way of indicating to shopper how the total bill is affected as the objects are added or removed from the cart.Low product cost at over all expenses are much high.Difficult to track the product.

3.1 DISADVANTAGES
* It is labor intensive as it requires to be scanned individually.

* This information is critical for making decisions, such as determining the separate amount for item, identifying product quantity, and etc on the purchasing time.

* Long time we want to wait for a billing in a queue.

- For old age people this system not used.

4. PROPOSED SYSTEM

The main objective of proposed system is to provide a technology oriented,low cost,easily scalable and rugged system for assisting shopping in person.The RFID shopping cart is used for the electronic store consumer for easy shopping.Upon placing an item in the shopping cart,the consumer can access the product information, product specifications,product features, and combination deals with the other store products.If a consumer is not sure of the physical location of the item,they will able to search for the item and view the direct map of the store to find it.Other features include the live total of all items in the cart,being able to view the weekly in-store specials and ready for pickup.

4.1.ADVANTAGES

- Reading and bill amount in mobile via Wi-Fi can be seen.

- Payments and billing can be done in trolley.

- This system helps in achieving a faster billing system

- This innovation payment method avoid the long waiting time.

- No need of any staffs for billing.

5. BLOCK DIAGRAM
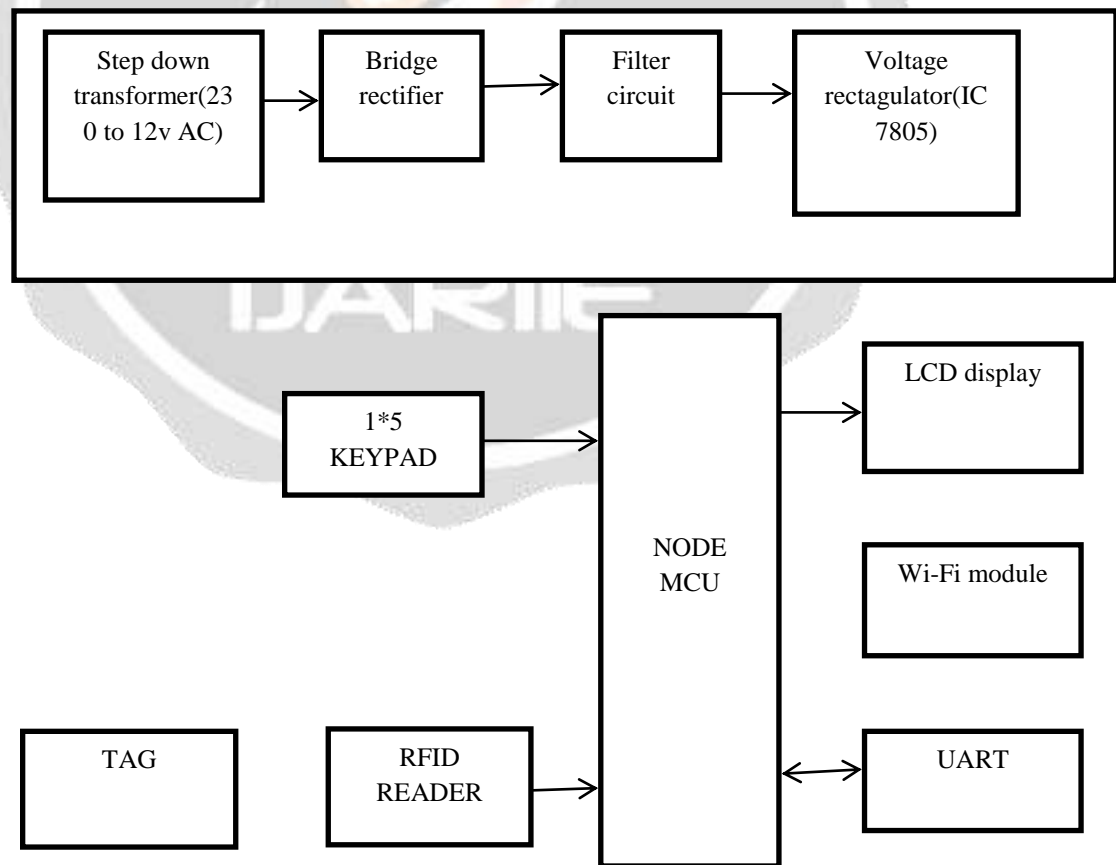
6. HARDWARE REQUIREMENTS

- NodeMCU
- Wi-Fi module
- UART
- 1X5 Keypad
- LCD display
- Mobile phone
- Zigbee
- Power supply unit

7. SOFTWARE REQUIREMENTS

- Arduino IDE
- Embedded C

8. IMPLEMENTATION

In this model features a cart equipped with an RFID reader,a zigbee transceiver and an LCD display.The cart is initially deactivated .The RFID tag is attached to an every product which is placed in the store.During purchasing the consumer select the product and scan the RFID tag using the RFID scanner. Then with the help of the LCD display the weight and the price amount of the product will be displayed .The 1*5 keypad is placed in the cart which is used while removing the products in the cart.The billing can be carried out within the trolley with the help of swipper.After consumer finished purchasing He/She can make a billing process by selecting the proceed button. The RFID card contains certain points while swipping the card in the swipper the points gets decreased based on consumer purchase.The bill amount and all the purchasing details will sent to the registered mobile number of the consumer through Wi-Fi.

9. CONCLUSION

By using this device,the time consumption at the billing section will be reduced and results in fast billing and reduction of   manpower due to usage of RFID which increases the speed of billing which does not require any line of sight for scanning of products. This device has a facility to keep track on the customer budget and cost of each product by his/her own. Since this is less in cost this can be installed in every shopping mall.

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