International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 06 Issue: 03 | Mar 2019 www.irjet.net p-ISSN: 2395-0072

SMART TROLLEY FOR BILLING SYSTEM

Phatale Shweta A.[1], Shete Poonam J.[2], Khot Sushmita S.[3] , Assoc. Prof. Sharma S. S[4]

[1.2.3]BE in Electronics and Telecommunication Engg. SGI,Kolhapur(Atigre),Maharashtra,India.
[4]Professor Sharma S.S , Dept. of Electronics and Telecommunication Engineering, SGI,Kolhapur(Atigre),Maharashtra, India.

Abstract - *In todays world everyone spend their lot of time on shopping. People chose a mall or super markets for shopping because all things they get there like clothes, grocery, electronics gadgets etc. Now a days there is no time to stand in a long queue for paying the bill. People always try to minimize their task and time and make work faster. Shopkeeper always try to fulfill the customers requirements and update their systems. At the time of shopping customer use a shopping cart or trolley to put their products in that and then on the counter the billing is done. In a smart trolley the product is scanned by a barcode reader and display the product price and total count of products. Because of this on the counter the time is reduced for billing. And also we an add and remove the product at the time of purchasing by seeing our budget which is already fixed using keypad.*

Key Words: - **Barcode Reader, Smart Trolley, Wi-Fi, Microcontroller, Buzzer, Keypad**

1. INTRODUCTION

Now a days all people choose the shopping malls and D marts for the shopping because in malls all products are get together. Every shopping mall, supermarket give a trolley or a cart facility to drop the product which the customer want to purchase. In a modern trolleys a barcode reader facility is available.

Barcode reader scan the barcode and store the product price in a memory. Also the count of products and a total amount of it is displayed on the LCD display. At the time of shopping customer can fix their budget at starting. They enter their budget using keypad and when the budget is overflow the buzzer make the sound. So we can add or remove the products by checking our budget. The total bill is also displayed at last. At the billing side the data is transfer to the computer using Wi-Fi module. Using this system customer have spent very less time at counter. They don't need to stand in a long queue to pay the bill.

1.1 LITERATURE SURVEY-

[1]In this paper they used modern embedded system for the trolley which is used for smart shopping in malls. Here in this project their goal is growing technology to make life more easier. In this project they are used RFID Tags instead of Barcode reader. When the costumer puts their product in the trolley and it will be scanned by the RFID reader. RFID reader capture the products name, cost, expiry date. This data is stored using AVR microcontroller. And this all details are displayed on the LCD display. And at last all the data will transferred to the main pc for billing via a Bluetooth module. Here also a deduct key is available. When customer want to remove any product from trolley that time first they press deduct key and remove product. At that time the amount of this product is also deducted from total amount.

[2] In this paper they used IOT based system. Here when we take a trolley that time first it initialize the power of that particular kit. Then it is ready to use. Then the customer puts their products in the trolley. Here they use RFID Tags and RFID Reader to read the product value, product name. This information about products is send to the microprocessors and it crosschecks the information which is given by the RFID. When both information matched they display the product information and total amount on the LCD display. When user want to remove any product Its simply remove from trolley and again display the total amount and product information. Here they used ESP module for transferring the data to server. This main server has its own cloud. Using this cloud owner can access the information from anywhere and anytime, with help of user ID and password.

[3] In this paper they design the shopping trolley with advanced way. Here they use Server unit SU) [i], User Interface unit(UIU)[ii], in built Billing Unit(BU)[iii],Central Unit(CU)[iv]. This different units are designed for different purpose. SU [i] are used to interface with the server to the trolley. Here when customer purchase any product that time the product will scanned by themselves and the product size, weight, name are displayed on the LCD screen and it will be keep updating while adding product. In the trolley ultrasonic sensors and IR sensors are used. Using this sensors trolley is moved itself. IR sensor detect the obstacle between the trolley and customer. If the obstacle is detected it indicate to the user. Here the in built billing function is used. They provide a card to pay the bill. When all shopping is done customer should press the done key. Then the amount of shopping is deducted by the card. The user may asked for the password and then payment is done by the card.

1.2 SYSTEM ARCHITECTURE

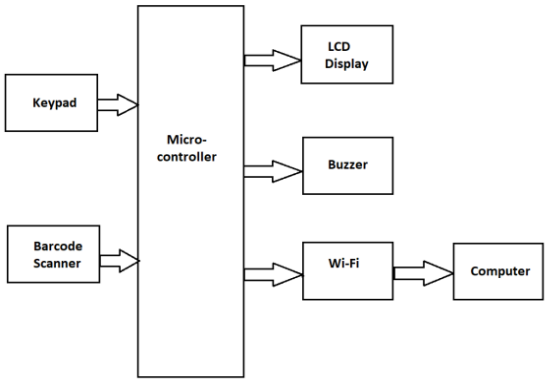


Fig.1

1.3 Hardware Specification:

a) PIC18F46K22

b) Barcode Reader

c) LCD module

d) Keypad

e) USB Barcode decoder

f) Wi-Fi module

a) PIC18F46K22:

Fig.2

PIC18F46K22 is a 40 pin IC. Which is low power, high performance microcontroller. It include upto 1024 bytes EEPROM,5 I/O ports, 2 capture compare mode, 10 bit ADC with 2 interrupt and 28 input, 5 bit DAC , 16 bit 4 timer are available,2 serial communication EUSART, extended Watchdog timer.

b) Barcode Reader:

Fig.3

Barcode reader is a device which is used to scan a barcode. This read the barcode and then it will display on the LCD display. On the database the value of particular barcode is stored. When barcode is scan that time the value of that particular barcode which is present on that product is displayed.

c) LCD Module:

Fig.4

The LCD is a liquid crystal display which is used to display information. Here 2*16 LCD display is used. It is a seven segment display. It displays the product details which is added in the bucket and its total bill. Using display we can monitor number of product and total cost of all products.

d) Keypad

Fig.5

Matrix keypad is most commonly input device used in many application such as calculator, atm etc. It is a 4*3 matrix keypad which consists of set of switches arranged in a matrix format of rows and columns. Here we can connect any column to any row. At each intersection of a row and column there is a switch present. When switch is pressed the row is connected to column.

e) USB Barcode decoder

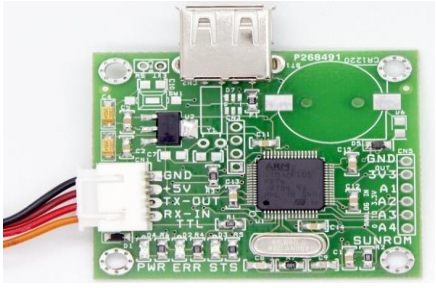


Fig.6

USB decoder accepts any barcode scanner at its USB port and decodes the barcode reading. It uses 9600 baud rate

for easy interfacing with various application. The output is suitable for 3v or 5v microcontroller application.

f) Wi-Fi Module

Fig.7

ESP8266 is set of high performance, high integration wireless communication system. It provides unsurpassed ability to embed WI-FI capabilities within other system, or performed other application standalone. Cost of this module is very low, and also minimum space requirement.

1.4 Software Description:

In this project here we use two types of programming concepts first is a embedded system and second is visual basics. Visual basics is tool of that allow you to develop windows(Graphic user interface) application. The application have a familiar appearance to the user.

In this project we an use Visual Basic 6.0 version-some new features like fast complier ,it is a new data control object .it allows database integration with wide variety of application, new data report designer It is additional internet capabilities. In this class, we will use Visual basics 6.0 under Windows 95 .

An embedded system can be thought of us computer hardware system having software embedded in it. An embedded system can be an independent system or it can be a part of a large system .it will designed to perform a specific task.

In embedded system three types of component's. First is it has hardware, second is it has application software and last is it is real time operating system(RTOS)

2. WORKING:

The main device which is used here is barcode reader. When we take a trolley first add the budget using a matrix keypad. Then take products and scan its barcode using barcode reader. The barcode is displayed on the screen and also display its price and total quantity of products. Then by using keypad we can add and remove products. All data are stored to the database. And it send to the main PC via Wi-Fi module. The communication between microcontroller and barcode reader is possible using USB decoder. At the counter the customer share its final amount to main PC through wi-fi. At the counter the customer only paying its bill. The database is stored at the visual basic software.

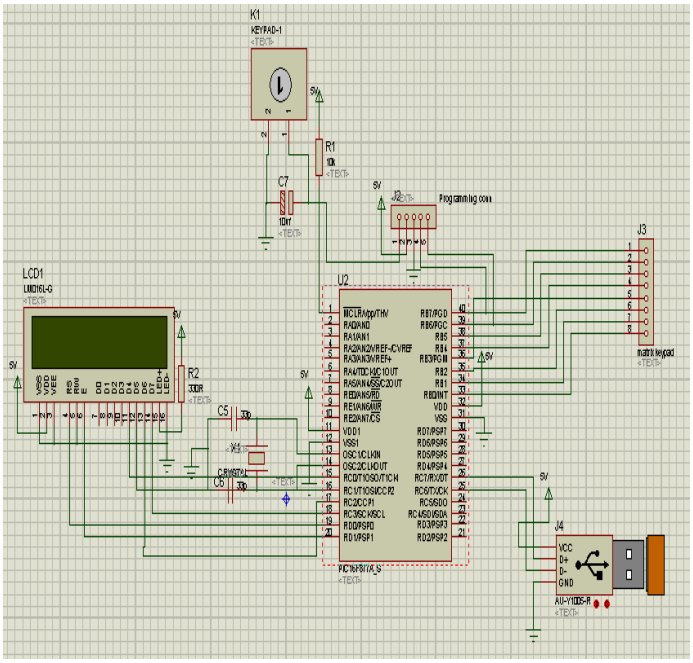
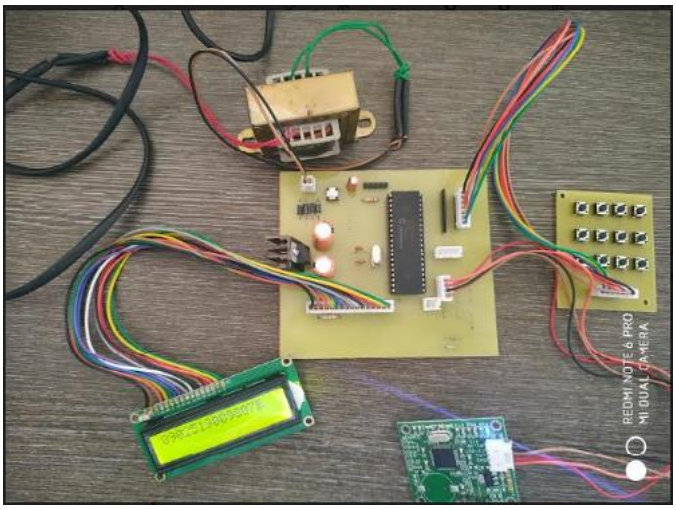


Fig.8

2.1 OUTPUT



3. FUTURE SCOPE:

Taking into account the changing trend in retail shopping, we come to a conclusion that the Intelligent Shopping Basket is most certainly a definite necessity for the Retail marketing industry, scope up with the advancement in technology and save time and manpower.

4. CONCLUSION

In purposed model is easy to use, low priced and dose not require special training. This model keeps an account and uses of the existing development and various types of wi-fi module.

REFERENCES

[1] Ghatol Sonali Digambar ,Mrs.V.S.Jahagirdar, Pratiksha Dattatraya Khamitkar, "Smart Shopping Using Smart Trolley", International Research Journal Of Engineering and Technology Vol.05 Issue 05 May 2018.

[2] Dhavale Shraddha D, Dhokane Trupti J,Shinde Priyanka S, "IOT Based Intelligent Trolley For Shopping Mall",International Journal Of Engineering Development and Research Vol4, Issue 2,2016.

[3]Leena Thomas ,Renu Mary George, Amalasree Menon, GreeshmaRajan, Reshma Kurian, "Smart Trolley With Advance Billing System", International Journal Of advance Research in Electrical, Electronics And Instrumentation Engineering Vol6, Issue 3 March 2017.

BIOGRAPHIES

Phatale Shweta A
Student of Sanjay Ghodawat Institute,Atigre.

Shete Poonam J
Student of Sanjay Ghodawat Institute,Atigre.

Khot Sushmita S
Student of Sanjay Ghodawat Institute,Atigre.

Mrs. Sharma Susmita S
Professor at Sanjay Ghodawat Institute Atigre.