

AUTOMATED BILLING SYSTEM

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ABSTRACT

In general, the consumer takes time to purchase something in huge store. The main part of the time that spend for searching the item then queueing and waiting for their turn to make payment. A long time at the teller waits for a turn to scan product and payment. This system consists of facilities to find the items in the cart using QR CODE which adds up the items and represent the number of items in the cart and amount should be paid. If in case, the customer misplaced the items without scanning the system detects the fault made by the customer it will be detected by the load cell. A buzzer is also enabled to notify the fault. If a customer needs any product system help to find where it is in huge store (e.g. milk- section1 row2 cloumn2).The inventory details are updated in the database to calculate the quality management of the shopping Centre.

I. INTRODUCTION

In our time, when a consumer purchases something at a huge store, consumers need the particular items from the display rack and then line up and wait for their turn to make payment. Consumers also need to queue for a long time at the billing section to wait for a turn to make payment. The time required for consumers to wait for the queue to scan every item that they collected and then making payment will surely consume a lot of time. This condition will make during the season of big sales or if the huge store still uses the easy way to key in the price of every item by hand to the cash register. And also consumers have to worry about the price of lots of things when going to the huge store. For example, most consumers will be concerned that the amount of money brought is not enough to pay for all the things that the consumer wishes to buy at the store. The consumers might also be worried whether certain food product available at the huge store or not. It will be a great convenience if the information of items that are available in the huge store can be obtained. It will be an improvement on the existing system if the technology of QR CODE and

LOADCELL are implemented. Consumers will be able to get information about all the items at the huge store, summarize the prices of items as they shop and save unnecessary time spent at the billing counter. This system gives an solution to manage a

shopping Centre. The system consists of a QR Code Scanner to read the items from the huge store in which we place in cart and load call are used to estimate the occurrence i.e. presence of an item in the cart. This package of the solution also derives an idea to track items in shopping Centre.

II. REVIEW OF RELATED WORK

G. Bremer Jr, G. Reyes, S. Samuel, B. Scatuorchio [1] proposed "Shopping Assistant with an interface for Wheelchair Users". In this task, a gadget is made which gives an answer for customers and furnishes them with a manual wheelchair. Two Batteries and two engines are utilized which will help the client to move around walkways. A bin is additionally utilized which is motorized for comfort. The Wheelchair is additionally tried for different conditions.

Yasushi Kambayashi et al [2] proposed" Design of an Intelligent truck framework for normal air terminals". In this venture, a structure whose fundamental focus of working is normal airplane terminals. RFID is utilized and portable operators are accustomed to finding the trucks that have scattered over. The calculation of Ant Colony Optimization is actualized.

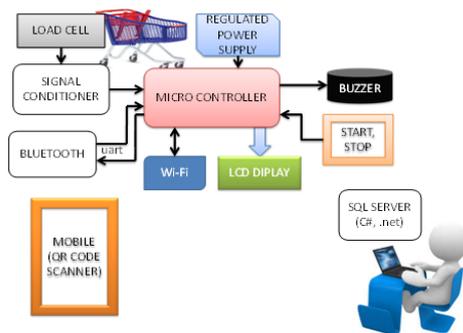
Chihhsiong Shih, Bwo-Cheng et al [3] proposed" An Automatic Smart Shopping Cart Deployment Framework Based on Pattern Design". In this venture, a savvy shopping basket has been utilized to make an example based programming model. The present area of a shopping basket is directed continually by Wireless Sensor organize by utilizing mark detecting system. The LCD help client to discover naturally decides a way.

W. U. L. J. R. Perera, M. S. Karunarathne [4] proposed "An indoor guide is planned and shown through an android application which the client can use to go and get the item that they require. The purchasing example of the clients are recorded and they are utilized to improve the shopping knowledge.

Tetsuo Tomizawa, Akihisa Ohya et al [5] proposed "Remote Shopping Robot System". A robot framework is intended to help the clients. The client does out the undertaking to the robot which at that point utilizes that data to make sense of the physical qualities of the question asked for by the client and afterward get it.

III. Project Implementation

There are four module used in it, they are
 Mobile Application
 Trolley
 Buzzer
 PIC microcontroller



Proposed system

MOBILE APP – we are presenting the mobile application to do the easy method of shopping. It helps to reduce the time of shopping and simplify the payment method. The mobile application was designed for Android by using eclipse software. The scanned product is added to the bill(server) if we consumer need to remove the product from the bill(server) consumer need to scan same product again to remove. The mobile application consists of a QR scanner which is used to collect the data of the material that user needs and display in LCD display helps them to make a budget purchase, it also helps the consumer to navigate the material that the user needs in the huge store to collect in their trolley. The mobile application was connected to the trolley through Wi-fi module. we designed a mobile application that helps in the way of the voice command to search a material in huge store It also replays as a voice command. Mainly it helps to the poor level of education.

TROLLEY – The trolley is placed at the entrance of the huge store. While entering the consumer needs to pick up the trolley in order to start purchasing. The consumer needs to connect the mobile application to their mobile by the Bluetooth connection. Now the trolley and consumers mobile are paired up.it helps the consumer to track they wanted products. The trolley is connected to the load cell and PIC micro-controller. The load cell is used to determine the weight applied on it and placed inside the trolley. The load cell sends the data to PIC micro-controller. There is a display in LCD, it shows the product name, price and total price of the material that we collected before.

BUZZER – IT is connected to the PIC micro-controller. It is mainly used for security purpose. It helps the consumer and seller avoid unnecessary problems. It will make a beep for the alert.

PIC MIC – PIC micro-controller is interconnected with the mobile application by Bluetooth and load cell, buzzer, Wi-Fi, and LCD. The operation of PIC micro-controller is to check if the collected data is same from the load cell and the data that is collected from the mobile application that consumer QR code that scanned. If the data is miss matched, then the buzzer will start beeping. It's an alert for both seller and consumer that the item that placed inside the trolley was not scanned. If the data from the load cell and the data from the QR scanner are same, it transmits the data to the server-side operation. The server is connected to the Wi-Fi and PIC microcontroller is connected to the Wi-Fi module. The Wi-Fi is used to transmit the data to the server for further process.

SERVER SIDE - The work on the server side is to collect the data from the PIC micro-controller. The data that was collected is used for billing purpose and also used for displaying it in a mobile app that stating whether the item that was added inside the trolley is ready for billing.

In the PIC microcontroller, there is a button to start and stop. After the consumer finished their shopping, the option stop option can be used to finish shopping. According to the data sent from the PIC micro-controller, it generates the bill and transmits it to the billing section after the consumer stop the shopping.

The server sends the information about the trolley to the billing section. It is used to reduce the time taken for standing in the queue and for scanning item in the trolley. It is used to direct the billing process and the payment process by the consumer.

The packing section is also one of the security alerts by cross-checking the bill and the item that is packing. Software used in our project are Proteus, CCS, Microsoft visual studio, SQL server, Eclipse. Proteus is used to generate the module for circuit simulation of hardware in this we compile the program by using CCS (Custom Computer Service) compiler. Microsoft

visual studio helps to develop the server page and SQL maintain a database on the server. Eclipse is used to design the mobile application that we used for scanning QR code and voice command navigation.

V. RESULTS AND DISCUSSION

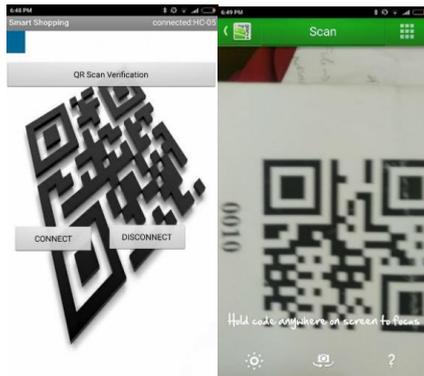


Fig.5.1.QR Scanner

QR scanner(Fig.5.1) Used for scanning purpose. App connects through Bluetooth and scans the product. There is a code to scan and it has the information of the product. Mobile app help to display the code in the LCD that connected with the tool and it sends the information to the server that consumer scanned. After scanning the consumer don't want that product scan the same product QR another time it will cancel the bill.



Fig.5.2 Voice command

Voice command (Fig.5.2) is used to search the item in a huge store. Mainly it designed to help the consumer who lows in education. If a consumer searches the item in the store the app makes easy to find. In mobile app press the search button and give a voice command to

search it gives the result as both display and voice to suggest the item located

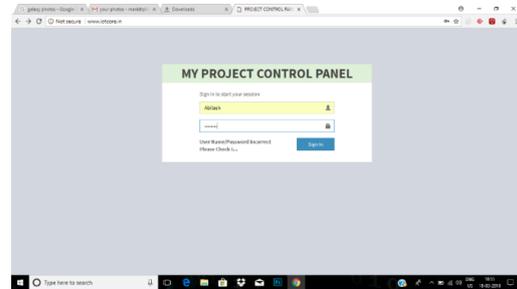


Fig.5.3.Server login

The Fig.5.3 represent the login page of the server

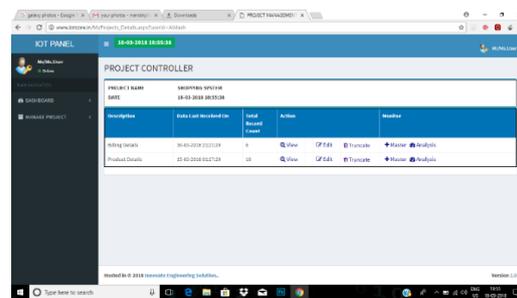


Fig.5.4.Project Controller

In this Fig.5.4 it shows the billing details and product details.

Slno	Date Invented On	Product Name	Product Code	Location	Quantity	Product Size	Expiry Date
1	15-03-2018 01:22:29	Energy	8030	Part 6 Row 3 Column 7	85	76	13/03/2018 12:00:00 AM
2	15-03-2018 01:28:39	seeds	8030	Part 7 Row 2 Column 8	80	85	13/03/2018 12:00:00 AM
3	15-03-2018 01:28:06	meats	8030	Part 7 Row A Column 1	96	96	13/03/2018 12:00:00 AM
4	15-03-2018 01:27:51	green sauces	8037	Part 3 Row 4 Column 2	81	87	13/03/2018 12:00:00 AM
5	15-03-2018 01:24:56	Par Boats	8036	Part 4 Row 4 Column 4	68	150	13/03/2018 12:00:00 AM
6	15-03-2018 01:24:03	Chips	8045	Part 4 Row 3 Column 3	33	80	13/03/2018 12:00:00 AM
7	15-03-2018 01:23:00	Chocolate	8034	Part 5 Row 2 Column 5	42	100	13/03/2018 12:00:00 AM
8	11-03-2018 12:31:53	Milk	9030	Part 9 Row 7 Column 10	40	120	13/03/2018 12:00:00 AM
9	11-03-2018 12:31:24	eggs	9032	Part 2 Row 10 Column 8	402	200	13/03/2018 12:00:00 AM
10	11-03-2018 12:29:40	Ground Oil	9036	Part 8 Row 8 Column 9	71	220	13/03/2018 12:00:00 AM

Fig.5.5.Product details

In above Fig.5.5, it represents the product details like product name, product code, product location, product rate, product expiry date



Fig.5.6.Billing details

In billing details(Fig.5.6), it represents the order date, bill number, buyer id, order details.

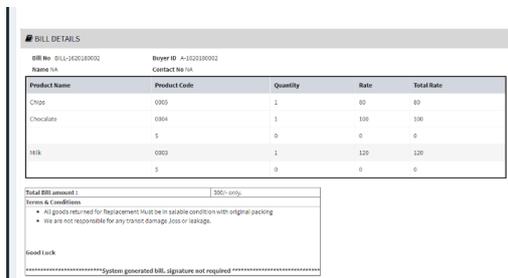


Fig.5.7.Generate bill

In order details(Fig.5.7), it shows the bill details and the total amount the consumer should pay

VI.CONCLUSION

The project is implemented and help the consumer to reduce the scanning time and locate the product that user needs.

VII. REFERENCES

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[5]G. Bremer Jr, G. Reyes, S. Samuel, B. Scatuorchio-2011- Shopping Assistant with Interface for Wheelchair Users

