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Project on

SMART SHOPPING SYSTEM

Submitted By

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PROBLEM STATEMENT

To develop RFID based billing system for supermarkets in order to expedite billing process

INTRODUCTION

- Now a day's shopping at big malls is becoming a daily activity in metro cities. The huge rush at malls on holidays and weekends.
- After purchase, at the billing counter the cashier prepare the bill using bar code reader which is a time consuming process and results in long queues.
- The aim is to develop a system that can be used in shopping malls to solve the rush at billing counter using RFID.

EXISTING SYSTEM

- Manual billing.
- Use Barcode for billing.
- Human staff is needed for billing.
- Low product cost but over all expenses are much high.
- Getting product information is difficult & time consuming.

PROPOSED SYSTEM

- Automatic billing.
- Use RFID TAG for billing.
- No need of any staff for billing.
- Product is little expensive but over all expense is much low.
- Getting product information is easy and no extra time needed.

SYSTEM ARCHITECTURE

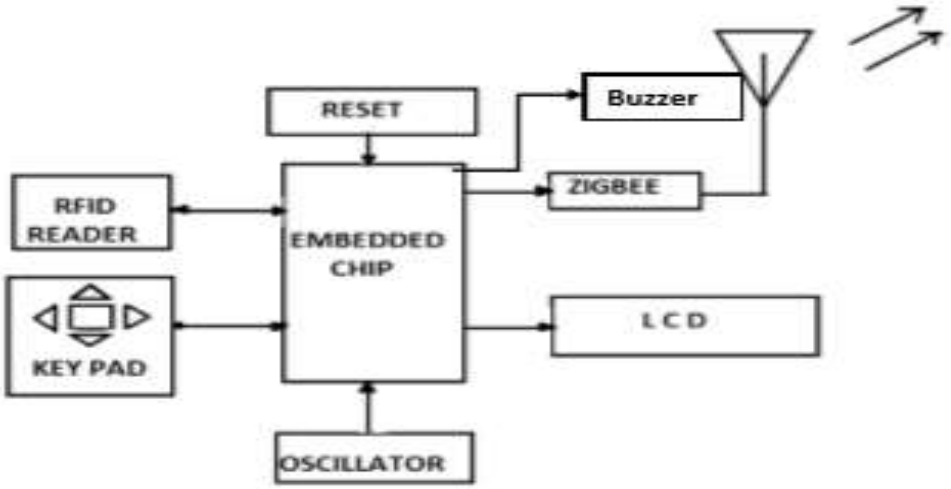

Fig 1.Trolley section.

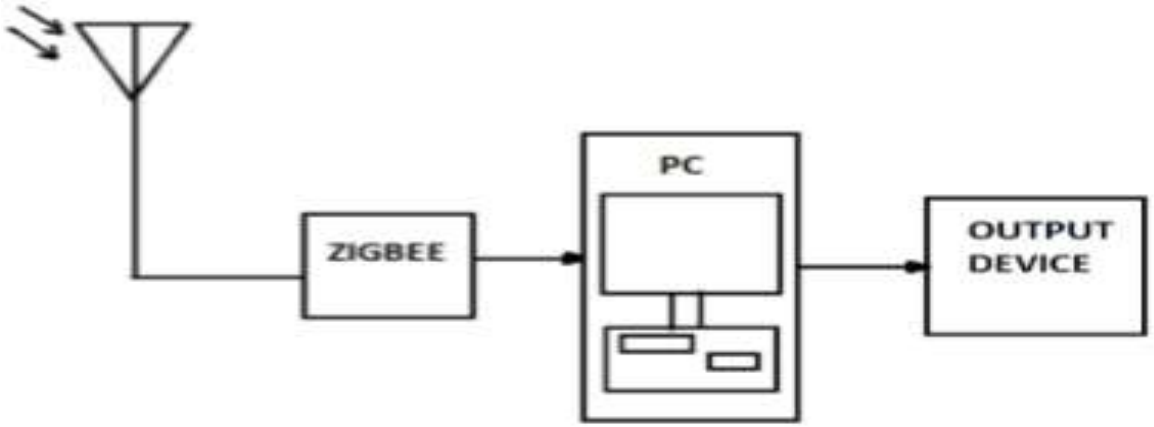

Fig 2.billing section.

METHEDOLOGY

- Every product has an RFID tag which contains a Unique ID. These ID’s are fed in the database assigned to the corresponding products.
- There will be another option provided to get the location of required product.
- If there needs to be a purchase done, then that product can be dropped in the cart where the RFID reader reads the tag. The information of the product is extracted and displayed on the LCD screen. At the same time billing information is also updated.
- When a customer wants to remove any product from the trolley, then that product needs to be scanned again.

- At the same time the billing information is updated. The total amount of purchases is also displayed on screen.

- These steps are repeated until the end of shopping button or send bill button is pressed. This generated bill is sent to billing side computer to get the computerized bill.

- The customer can straight away pay the bill and leave.

- Inventory status of the products is also updated at the end of shopping. Simultaneously the temporary data present in microcontroller is reset, so that it can be reused.

- If the customer has registered user card, the payment can be done by swapping user card in the trolley itself.

REQUIREMENTS

➢Hardware Requirement

- •RFID tags
- • RFID reader
- •LCD Display (20x4)
- • Buzzer
- •Microcontroller Arduino pro mini ATmega328
- •Zigbee

➢Software Requirements

- •JCreator
- •Programming Languages
  - i. Embedded c
  - ii. JAVA
- •Database: Microsoft Access

SCREENSHOTS

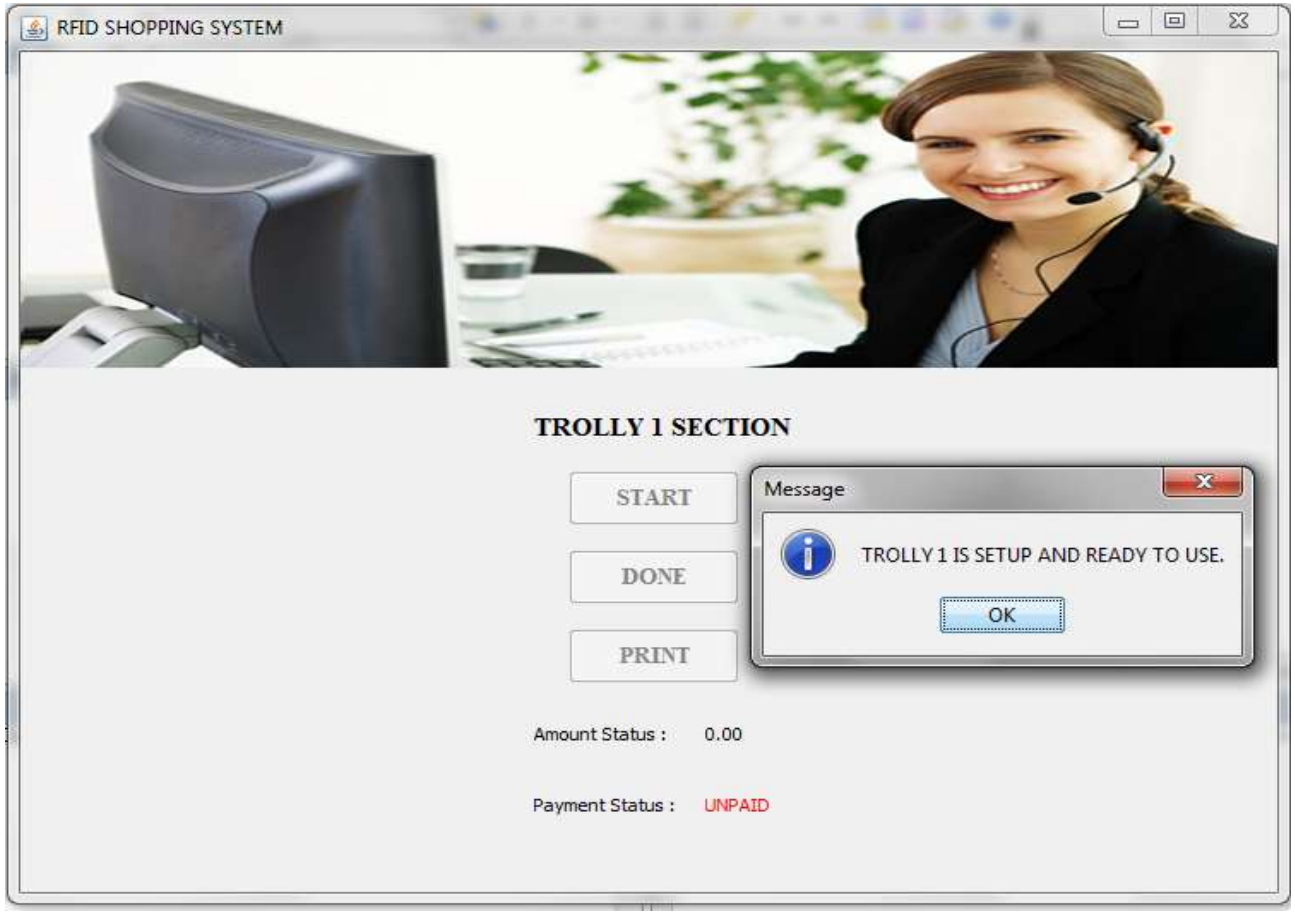

Fig. Server side

Fig. Product details

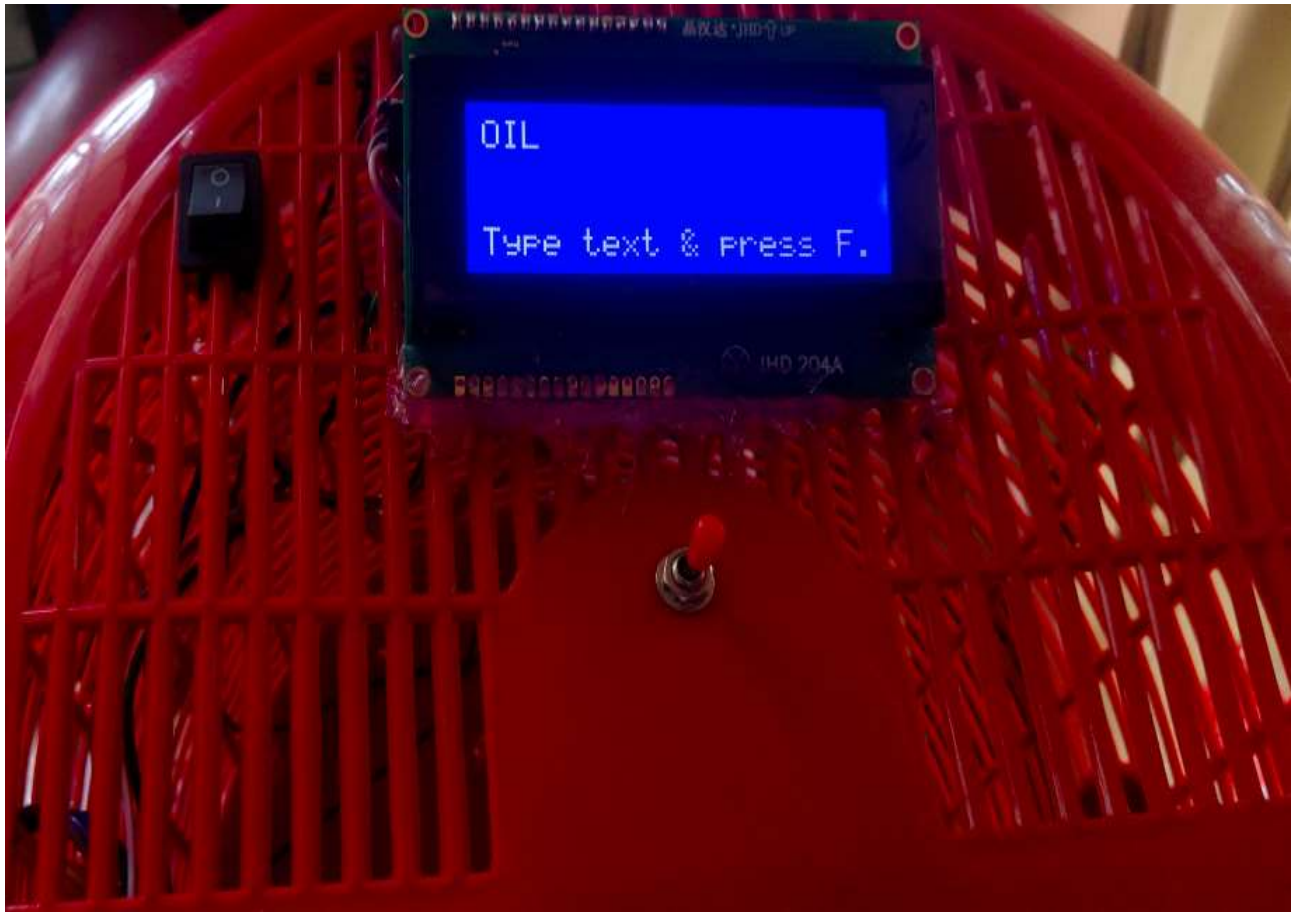

Fig. Search mode

Fig. Payment status at customer side

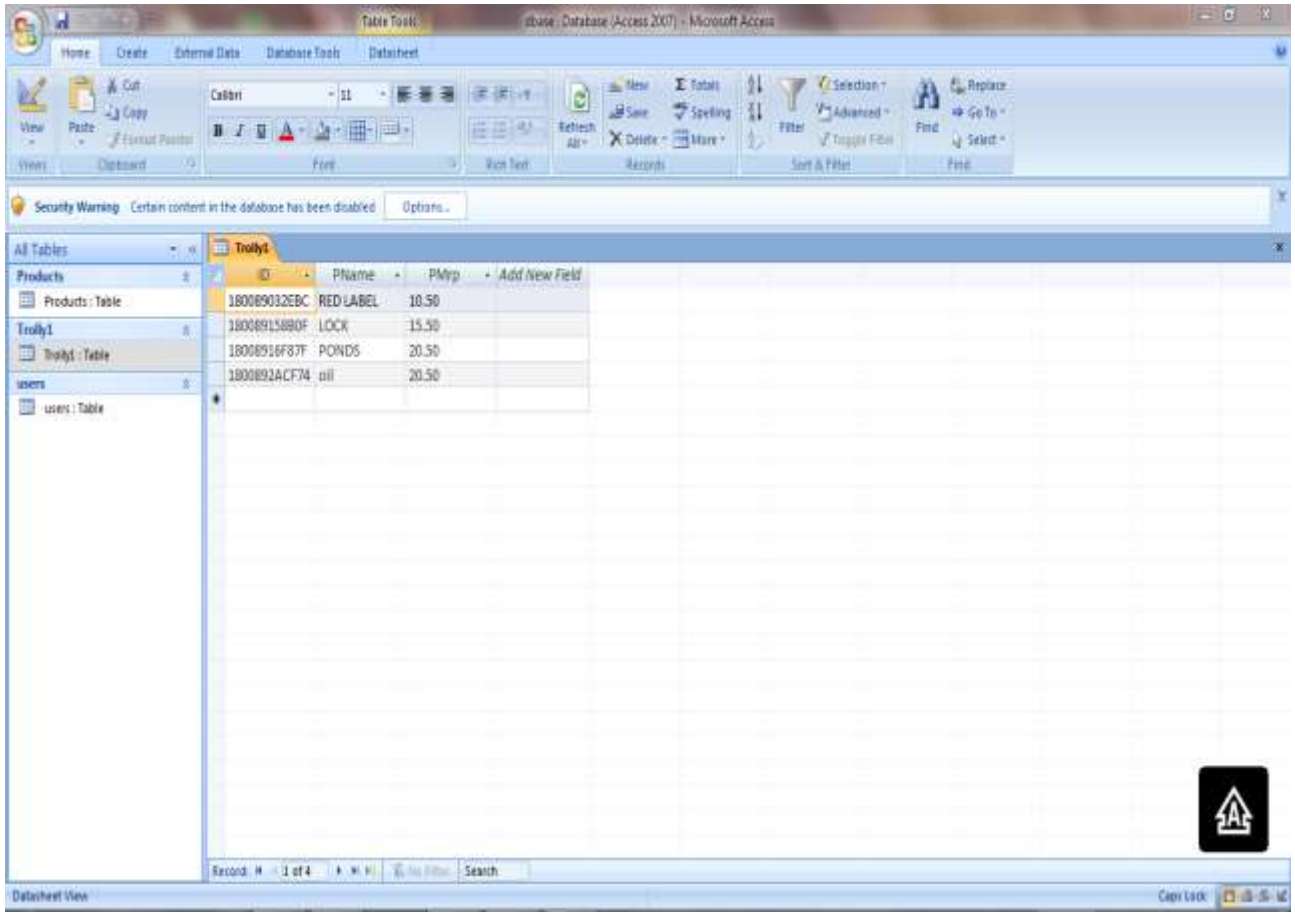

Fig. Trolley Details

CONCLUSION

The proposed model is easy to use, low-priced and does not require any special training. This model keeps an account and uses of the existing developments and various types of radio frequency identification and detection technologies which are used for item recognition, billing and inventory update. As the whole system is becoming smart, the requirement of manpower will decrease, thus benefiting the retailers. Theft in the mall will be controlled using this smart system, which further adds to the cost efficiency. The time efficiency will increase phenomenally since this system will eliminate the waiting queues. More customers can be served in same time thus benefiting the retailers and customers as well.

REFERENCES

[1]Dr. Suryaprasad J, Praveen Kumar B O, Roopa D & Arjun A *K "A Novel Low-Cost Intelligent Shopping Cart"*, 2014 IEEE.

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[3] Mr. P. Chandrasekar, Ms. T. Sangeetha, *"Smart Shopping Cart with Automatic Central Billing System through RFID and ZigBee"*, 2014 IEEE.

Thank You