International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395 -0056
Volume: 03 Issue: 11 | Nov -2016 www.irjet.net p-ISSN: 2395-0072

Smart Ration Card System Based on GSM Technique

Ms. Kritika Patil[1] , Ms. Monica Sundrani[2], Ms. Sweta Kumari[3], Ms. Aditi Kakde[4], Prof. Mahesh Gosavi[5]

[1,2,3,4,5]*Department of Computer Engineering, SKN-Sinhgad Institutes of Technology & Science Lonavala, Pune, India.*

Abstract - *A Smart Ration Card is to bring the transparency between the government and user. In this system, a RFID tag is used which contains the family member details and the customer needs to show this tag to the RFID reader. The microcontroller connected to the reader will check for the user authentication. Hardware is connected to the GSM With the help of SMS Domain. The Web service requires Database which contains user interface system. There are three types of user for our system, Admin, User and District Admin. All the local level Information will be handled by admin. District admin can keep overlook on the overall transactions. The actual use of system will be done by user. This technique can able to reduce the corruption related with ration system. This smart ration card is free from theft as the information about the delivered ration will be send directly to the government without manual feeding using Global system for Mobile Communication (GSM) technology.*

Key words: GSM, SMS, Web Server, Level, Server, Notification.

INTRODUCTION

Now a days, ration card is an important document for everyone and it is used for many different field such as family members details, to get gas connection, it act as address proof for various purposes like issuing passport, pancard to buy the grocery (sugar, rice, oil, kerosene, etc) from the ration shops. But in this system has two draw backs, first one is there can be ration forgery and second one is it is very time consuming. In this paper, proposed a Smart Ration Card System which is based on GSM (Global System for Mobile) and RFID (Radio Frequency Identification) technology instead of ration cards. In this proposed system we are going to scan Adhar Card. To get the materials in ration shops need to scan the Adhar Card into the RFID reader, then controller will check the customer codes and details of amounts in the card. After verification, these systems will show the amount details. Then customer need to enter the required material , after receiving material, controller will send the information to government office and customer through GSM technology. This system provides an ease to the customer and avoids the forgery.

1.PROPOSED SYSTEM

In the proposed system, the transmitting pin of the RFID reader is connected to the receiving pin of the microcontroller and the transmitting pin of the microcontroller is connected to the receiving pin of the GSM module, which will be used to send the information about the delivered ration. Since, GSM works on 12V, 1A dc source. So that, we need an adapter to provide 12V, 1A dc for the GSM module. As we connect this adapter to the GSM module, 12V supply flows in the circuit. But the microcontroller works on 5V, so we need a power supply which converts 12V to 5V. Hence, this power supply is connected to the microcontroller. Here, alphanumeric LCD being used for the display of information. In this system, the RFID tag acts as a ration card.

The block diagram of smart ration card is shown in fig . In smart ration card system, we use an ATmega8 microcontroller, 16x2 LCD, Power supply, RFID reader, RFID tag and GSM module.

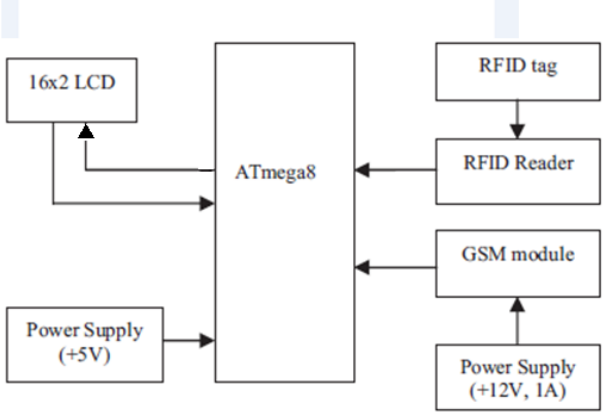

Fig 1: Block diagram of Smart Ration System

2. WORKING

The working of the smart ration card is divided into four parts-

2.1. Input part

Adhar Card which acts as a smart ration card, when scanned by any customer with the RFID reader, then reader will read the ration card and directly transmit the data directly to the microcontroller (our processing part). The system in which the RFID reader is connected to the microcontroller. Each RFID tag will develop a unique magnetic field which when comes under influence of the reader's field.

2.2 Processing

The receiving pin of the microcontroller received the data from the RFID reader. The microcontroller processes the ration card data and match the ration card details with the database and process it. If it is found reliable, then the process for the displaying and messaging system will start, otherwise it will shows an error message that the card is invalid.

2.3. Displaying system

If the data is found reliable, then the system will process for displaying the name of the ration card holder and the quantity of ration chosen for the customer.

2.4. Messaging system

When the ration card is recognised and delivery has been done, the message of information/ delivery of ration will be sent to the registered number of the customer so that if any forgery happens with the card, the customer can take the action or notify to the ration department.

3. FLOWCHART

Once, Adhar Card is scanned with the reader, the reader reads the information from the barcode and accesses its unique 12 bit hex code. The code is then matched with the database and if the information of the customer is in the database, then the display system (LCD) will display the name and the amount of ration allocated to the customer. After the delivery, the microcontroller will initiate the GSM module to send a SMS to the registered number of the customer about the delivered ration, as shown in fig 2.

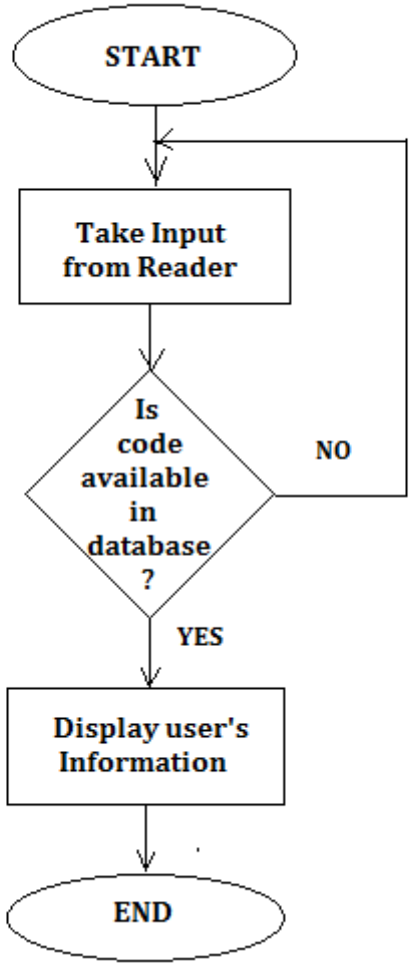

Fig 2: Flow Chart of Smart Ration Card

4. ALGORITHM

1. Every consumer is provided with a RFID card which is registered by the Government authority.
2. At the time of ration distribution at ration shop, first password of consumer is verified.
3. User ID verified with the database provided by the Government authority which is stored in the microcontroller.
4. Once verification is successful, consumer is asked for a select type of material and quantity required through push buttons and keypad respectively.
5. Based on type of material chosen, the motor or solenoid valve is activated.
6. The load cell or level indicator is checked for proper quantity.
7. After collecting proper quantity material motor or solenoid is disabled.

8. GSM module will send the information in form of SMS to the user as well as PDS authority.
9. Current stock in the ration shop is displayed using LCD.

4.1. ADVANTAGES

- The proposed system creates the transparency in public distribution system as the work becomes automatic.
- With the help of this system, it is possible to make public distribution system efficient and free from malpractices
- Reduces paper work, time saving approach and cost effective.

5. CONCLUSION

Smart Ration card system is based on GSM & RFID instead of ration card through which the controller will send the information to the customer & this same information will be updated on web page. By using this system we can avoid corruption in ration or public distribution system to some extent.

REFERENCES

[1] *R. Ramani, S. Selvaraju, S. Valarmathy, P. Niranjan, Bank Locker security System Based on RFID and GSM Technology, International Journal of Computer Applications (IJCA) (0975 8887) Volume 57 No.18, November 2012.*

[2] *Parvathy A, Venkata Rohit Raj, Venumadhav, Manikanta, "RFID Based Exam Hall Maintenance System", IJCA Special Issue on "Artificial Intelligence Techniques - Novel Approaches & Practical Applications"AIT, 2011.*

[3] *Pravada P. Wankhade and Prof. S. O. Dahad, "Real Time Vehicle locking and Tracking System using GSM and GPS Technology-An Anti-theft System", International Journal of Technology and Engineering System (IJTES): Jan March, 2011.*

[4] *Parvathy A, Venkata Rohit Raj, Venumadhav, Manikanta, "RFID Based Exam Hall Maintenance System", IJCA Special Issue on "Artificial Intelligence Techniques - Novel Approaches Practical Applications" AIT, 2011.*

[5] *Shi-Cho Cha Kuan-Ju Huang Hsiang-Meng Chang, " An Efficient and Flexible Way to Protect Privacy in RFID Environment with Licenses ", IEEE International Conference RFID, April 16-17,2008.*

[6] *[4] Kin Seong Leong, Mun Leng Ng, Member, IEEE, Alfio R. Grasso, Peter H. Cole, "Synchronization of RFID Readers for Dense RFID Reader Environments", International Symposium on Applications and the Internet Workshops (SAINTW"06), 2005.*

[7] *Kumar Chaturvedula. U. P, "RFID Based Embedded System for Vehicle Tracking and Prevention of Road Accidents", International Journal of Engineering Research & Technology (IJERT), Vol. 1 Issue 6, August–2012, ISSN: 2278-0181.*