

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 1, January 2019

QR Authenticated Smart Ration Distribution System

Deepak Ranawade, Mayuri Dhanrale, Aditi Pansare, Mrunal Mahajan, Prof.S R Nalamwar

Department of Computer, AISSMS, Pune University, Pune, Maharashtra, India

ABSTRACT: Present ration distribution framework has downsides like wrong amount of products, low processing speed, and large wait in time, material theft in ration shop. The proposed system replaces the manual work in proportion shop. The principle goal of the planned framework is the automation of ration shop to give straightforwardness. The proposed automatic ration shop for public distribution framework is based on Smart Card innovation that replaces ordinary ration cards. Aadhar cards are given instead of conventional ration cards. Smart card based automatic ration shop is novel approach in public distribution framework (PDS) valuable for more productive, precise, and automated strategy of proportion conveyance. Open dissemination framework additionally called rationing distribution framework is one of the generally disputable issues that include malpractices.

KEYWORDS: Automation, PDS, UID no, Smart card, QR code.

I. INTRODUCTION

Ration cards are issued by the Indian Government. Ration Cards enable user to buy kerosene, food, etc. at subsidized rates. Ration Cards are an important document which can also be used as an identity proof. These groceries are distributed to the eligible customers at Fair Price Shops (FPS). The existing system has many loopholes. It consists of a ration book for three categories. The ration card book is updated manually according to the purchase and has to be renewed every year. This manual process is tedious and fraudulent. The customers buy extra goods on the names of dead or ineligible people. The retailers practice forgery by not selling the required quantity of goods and so customers do not get the deserved quantity of grocery. Many efforts are being taken to improve this system. Considering all the limitations of the existing systems, we have proposed a Smart Ration Card System with Two Factor Authentication using Quick Response Code, One Time Password and SMS Gateway. The customer has to scan his QR Code which is generated after registration and is store in the database using a QR Scanner in his Smart Phone. On scanning, the customer's personal details such as name, address, number and names of family members, quantity bought and quantity remaining, etc. will be displayed. For purchase, the customer will further have to enter an OTP sent this registered mobile number using Short Message Service Gateway. This ensures the identity of the customer. Based on the income and number of family members, the total permissible quantity for each grocery item consumed by a family is decided by the Government. In this System, the databases will be automatically updated according to the purchase done by the customer and the supplies sent by the Government to the local Fair Price Shops. To maintain the transparency, a SMS containing the purchase details will be sent to the customer's registered mobile number. The customer will also be able to view the quantities supplied by the Government to the shops. In case of theft, damage or any irregularities, the customer can view and update details by entering the user name and password. This will generate and store a new QR Code which can be downloaded.

The present ration distribution framework has downsides like wrong amount of products, low processing speed, and large wait in time, material theft in ration shop. The proposed framework replaces the manual work in proportion shop. The principle goal of the planned framework is the automation of ration shop to give straight forwardness.

We have built up a smart ration card, the utilization of Web Camera technique to save you the ration forgery as there are chances that the shopkeeper may additionally promote the material to a person else and take the earnings and located a few fake amount in their statistics. Barcode is utilized that incorporates the relative data and the individual demonstrate this to pursuer. The micro-controller identified with the pursuer will exams for the customer validation.

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 1, January 2019

This clever ration card is unfastened from robbery because of the reality the certainties around the presented ration could be send immediately to the administration without manual sustaining utilizing (GSM) approach.

II. RELATED WORK

Public distribution system i.e. rationing distribution is one of the issues that involves corruption and illegal smuggling of goods. In this paper we propose the concept of replacing manual work/job causing these irregularities in public distribution system (rationing distribution system in India) by automated system which can be installed at the ration shop with ease. In this automated system, we replace the conventional ration card by ATM card. Proposed system also uses AADHAR No (UID) for user's authentication. Using such a system, Government would have all required control/monitoring over the transactions at ration shop. To involve Government in the process we proposed connecting the system at ration shop to a central database (provided by Govt.) via GSM module (SIM300D) and RS232. [1].

Ration Card is one of the important documents for every Indian family. Every family is given facility by government to receive food grains against a card. But there is lot of corruption involved in TPDS such as black marketing of the subsidized food grains as many families do not claim their quota of food grains and many families claim the quota of other families. As a solution to above problems this paper proposes a system which is highly scalable Ration Distribution System based on embedded system. The main target of this project was to bring transparency between government and customer, and this transparency is provided by webpage. Here the conventional paper ration book is replaced with RFID based smart card. When any transaction is done by customer he/she will receive a message on his mobile through GSM technology. [2]. In this system, proposed an Automatic Ration Materials Distribution Based on GSM (Global System for Mobile) and RFID (Radio Frequency Identification) technology instead of ration cards. To get the materials in ration shops need to show the RFID tag into the RFID reader, then controller check the customer codes and details of amounts in the card. After verification, these systems show the amount details. Then customer need to enter they required materials by using keyboard, after receiving materials controller send the information to government office and customer through GSM technology. In this system provides the materials automatically without help of humans [3].

This system proposes the advanced Ration Distribution System, named as "Smart Ration Distribution and Controlling". Huge amount of Govt. money get wasted due to corruption in the conventional Ration Distribution System. This paper implements a simple PDA device (personal data assistant) with RFID tag used as an e-ration card in place of a conventional ration card. This PDA device is similar to the ticketing machine used by bus conductor or bank pigmy agent and the e-ration card is similar to swipe card. The Subscriber has to use this card instead of a traditional ration card to get ration from the dealer. Efforts are put together from our side to combat corruption and to have better management of public distribution system [4].

Automatic Ration Materials Distribution Based on GSM and BIOMETRICS Technology to avoid the drawbacks. In this system, only authentic person can be recovered ration materials from ration shops based on the amount available in the data base. The traditional PDS is used to distribute grocery items to India's poor people who are valid ration card holders. The validity and the allocation of the ration cards is monitored by the state governments. It contains separate record for each family which includes details like no. of members in family, names of the members, head of the family, permanent address, present living address, and phone number. The main reason for using this Biometric system and making this process computerized is to remove the drawbacks of the present way of issuing products based on ration card.[5]. This paper has proposed the smart ration card based on Internet of things based on bio metrics, sensors and RFID technology which will further can be extended with the an idea of clustering database for easily retrieve details. And future system could use high quality sensors and hardware for efficient implementation. [6]. A Smart System and Application for ration card contain Biometric and Radio Frequency Identification (RFID). To preventing the ration forgery as there are chances that the shopkeeper my sell the material to someone else and take the profit and put something false recodes in system. In smart ration system, RFID tag act as ration card and all details of ration holder and there family member is stored in RFID Tag. RFID reader is used for reading RFID tag and user verification. The microcontroller connected to the reader will checks for the user authentication. If the user is found authentic then the quantity of ration to be given to the customer according to the total number of family members will be displayed on display device. A smart system is free from thieves. Delivered ration details directly send through web application to

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 1, January 2019

the government of India without any manual feeding and also sending message to customer's register mobile number and ration receipt.[7]

In the existing system having two drawbacks, first one is weight of the material may be inaccurate due to human mistakes and secondly, if the materials are not bought at end of the month, they can be sold to others without any intimation to the government and customers. The above drawbacks can be rectified by the proposed method. In this system, ration materials (sugar, rice, oil, kerosene, etc.) are distributed through an automatic mechanism without any help of humans. After receiving the materials, information is sent to government and customer through GSM technology. This system is very accurate, which is used for the real time applications. Thus, on the basis of literature survey and by analyzing the existing system, we have come to a conclusion that the proposed system will not only aid the government agencies but will also help to digitize the system and in turn help to deploy resources efficiently to the citizens. [8]. The apportion card framework confronts two disadvantages:- first the businessperson who weighted the material can be erroneous as a result of his misstep. Second is if the material is not purchase toward the finish of the month they will send to others without authorization of the administration. To conquer this downside we have proposed in this paper "Programmed Ration Card Using RFID and GSM". RFID is (Radio Frequency Identification) and GSM (Global System for Mobile) technology rather than proportion card. The RFID (Radio Frequency Identification) innovation is supplanted by old framework apportion card. The utilization of RFID here is as opposed to giving proportion card to client they are giving RFID tag. On the off chance that any individual need to purchase any material from the proportion shop he will basically swap the RFID card to RFID per user then subsequent to swapping RFID card microcontroller will distinguish every one of the points of interest with put away to appropriate material in apportion shop. After effective check client expected to enter the required material with the assistance of keypad. [9]. 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. [10]

III. PROPOSED SYSTEM

The below fig shows the block diagram for smart ration card system. This system consists of camera for scanning customers Aadhar card. Camera is connected to raspberry pi. The customer's details scanned by camera are send to the database Raspberry pi. After getting customers data into database ration will be allocated to the authenticated person. Solenoid valve connected to the raspberry pi through by relay.

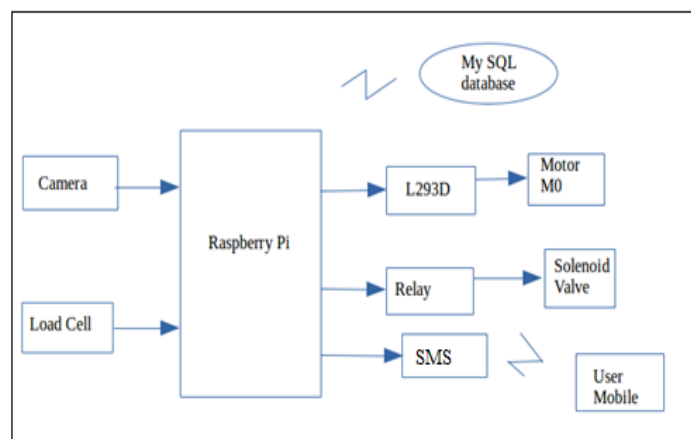


Fig 1:- System Block Diagram

Motor M0 connected to L293D motor driver will give the ration allocated to person. Solenoid valve will lock after the allocated ration give to the person. Finally person gets status of ration to his account on mobile phone via SMS. Only

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 1, January 2019

authorized person (shop keeper, tradesman) can operate the database. All the records are display to government so that the corruption would not take place.

IV. CONCLUSION

This system is more secure and maintain transparent than the normal existing system. Influence of fraud falsity data entry intake in the ration database can be maintained simply with the use of this smart ration card system. Only authorized person (shop keeper, tradesman) can operate the database. Customer can be authenticated using the Aadhar card scan through web camera and can get allocated ration after barcode authentication. If customer doesn't need the allocated ration then it is given to the customers who really need the ration. The consumer will get the confirmation SMS and database will be updated in real time. The main advantages of this system are increased corruption government as well as market sector can be prevented if system becomes automated, the customers get their rightful entitlement in terms of quantity. What's meant for them cannot be diverted to the open market because of maintaining the database correctly and generating bills properly, active contribution towards step towards digital India, proposed system replace manual work in ration shop. The system has some limitations like without Proper QR code system cannot display details and Power failure will suspend the system. The system has wide variety of application like similar digitized web applications, Useful in providing transparency to both Government and consumers. This system mainly useful in government rations distribution system to avoid corruption in ration/public distribution system to some extent. It is possible to use this system in fuel distribution i. e kerosene, etc as well as in pesticides distribution.

REFERENCES

- [1] Harshali P. Rane, Kavita S. Patil, AditiS. Chaudhari, Priyanka M.Pendharkar, "Automated Rationing System Using Raspberry Pi", International Journal of Innovative Research in Computer and Communication Engineering, Vol. 5, Issue 4, April 2017
- [2] Kumbhar Aakanksha, Kumavat Sukanya, Lonkar Madhuri, Mrs. A.S. Pawar, "Smart Ration Card System Using Raspberry-pi", International Journal of Advanced Research in Computer and Communication Engineering, Vol. 5, Issue 4, April 2016
- [3] S.Valarmathy, R.Ramani, Fahim Akhtar, S.Selvaraju, G.Ramachandran "Automatic Ration Material Distributions Based on GSM and RFID Technology", I.J. Intelligent Systems and Applications, 2013, 11, 47-54, Oct 2013.
- [4] Kashinath Wakade, Pankaj Chidrawar, Dinesh Aitwade, "Smart Ration Distribution and Controlling", International Journal of Scientific and Research Publications, Volume 5, Issue 4, April 2015.
- [5] Rashmi Pandhare, Mayur Rewatkar, Nikita Meghal , Nikhil Bondre, Ashvini Ambatkar ,Akshaya Dole, "Modern Public Distribution System for Digital India", International Research Journal of Engineering and Technology (IRJET) Volume: 03 Issue: 03 | Mar-2016.
- [6] Survey on Smart Ration Card using Internet of Things Aarti Bhosale Shweta Bhor Pratima Sabale Pushpak Shinde International Journal of Computer Applications (0975 – 8887) Volume 180 – No.3, December 2017
- [7] Chetan S. Kandare Trimbakeshwar Nasik Vaishali R. Tribhuvan Smart Application using Biometric and RFID for Ration Card International Journal of Computer Applications (0975 – 8887) Volume 177 – No.4, Nov 2017
- [8] Golden Bagul1, Brendon Desouza2, Tejaswini Gaikwad3, Ankush Panghanti4, Trupti Kumbhare A Survey on Smart Ration Card System International Journal Of Engineering And Computer Science Volume 6 Issue 1 Jan. 2017, Page No. 20096-20098
- [9] Prashant Kontam1, Ajinkya Tarlekar2, Akshay Deshmukh3, Vivek Kale4, Prof.Sachin Patil5 A Review on Smart Ration Card System International Journal of Innovative Research in Computer and Communication Engineering Vol. 5, Issue 3, March 2017
- [10] Ms. Kritika Patil1 , Ms. Monica Sundrani2, Ms. Sweta Kumari3, Ms. Aditi Kakde4, Prof. Mahesh Gosavi Smart Ration Card System Based on GSM Technique International Research Journal of Engineering and Technology (IRJET) Volume: 03 Issue: 11 |Nov -2016 Page 1318