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Ration Material Distribution and Stock Information Interchange using Finger Print

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ABSTRACT

The ration card is very important for every home and used for various field such as family members details, to get gas connection, it act as proof for various purpose. All people having ration card for buying various materials (sugar, kerosene, oil, rice) from the fair price shops. The present ration distribution system has drawbacks like inaccurate quantity of goods, low processing speed, large waiting time, material theft in ration shops and also some malpractices. The main objective of our proposed system is to avoid these drawbacks. In our proposed system, the proper information about the distribution of ration material is given to the people through GSM, ration card is digitalized and verified with biometric to avoid malpractices. This paper gives the solution for the problem facing by the people in ration shops with the following arrangements in the proposed system.

Keywords: Microcontroller, GSM, RFID and Finger Print.

1. INTRODUCTION

The largest retail system in the world is India's Public Distribution System (PDS). Public Distribution System provides a ration card issued under an order or authority of the state government for the purchase of essential consumer materials like rice, wheat, kerosene, oil. The consumer material is supplied to ration card holders in the first week of every month by Ration keeper.

Public Distribution System is one of the widely controversial issues that involve malpractice. The manual intervention in weighing of the materials leads to inaccurate measurements; the ration shop owner illegally uses consumer materials without prior knowledge of ration card holders. The proposed system aids to control malpractices which are present in ration shop by replacing manual work with automatic system based on RFID, GSM and Finger Print. Every consumer i.e. family head provided RFID card which has unique identification number. The consumer scans the card on RFID reader which is interfaced with microcontroller kept at ration shop. Once consumer is validated by fingerprint, the system asks the consumer to select appropriate material and quantity of material through keypad.

Based on material chosen by consumer, appropriate circuitry will be activated and consumer gets material. GSM interfaced with the microcontroller sends information in the form of SMS to related people about the availability of products daily in the morning and at the month end entire list of product entire list of product distributed in the month is send to the higher authority. The proposed RFID based automatic ration shop system would be transparency in public distribution system and become helpful to prevent malpractices.

2. RELATED WORK

The existing predictable ration system has the basic issues of renewing the ration card every year by the employees to the malpractices done by the ration store dealers like diverting food grains to open market to make profit. To tackle this problems Vinayak.T.Shelar, Madhev.S.patil proposed the "RFID and GSM based Automatic Rationing system using LPC2148" on JUNE-2015 which replaces the ration card with RFID card and asks for password and then it will distribute the products and then at last it sends the Product bill to the card holders number. The current PDS involves corruption and illegal smuggling of goods because of manual work. A.N. Madur et al., developed the "Automation in Rationing system using ARM 7" in this project, first user is authenticated, and then system shows balance of a person. User have to enter the amount of Kg he want to withdraw. After Payment the grain is distributed to the customer.

Fig.1. Available Ration Material Distribution

2.1 Disadvantages

1) Manual Ration card having the problem of Renewing every year.
2) Other than family member can also buying products.
3) People not able to know about the working days and availability of product ration shop.
4) Because of manual work No proper list is verified by higher Authority.

Fig.2a. Existing Ration Card

3. PROPOSED SYSTEM

The proposed work of Ration material distribution is the system consists of RFID, GSM and Finger print Verification. At the morning the list of availability of products and its total quantity is send to all the card holders' mobile number through GSM. Our ration card is replaced with RFID. In Fair price shop during distribution the RFID Reader interfaced with microcontroller verifies the RFID with Stored Database and if matched it will asks for Finger Print. The Finger print sensor is interfaced with Microcontroller. It will verify the finger print with the already stored Database and Aadhar Number. After all these verification the card holder select the needed quantity through keyboard Then the product will be distributed to the people, the bill of the product purchased in ration shop is send to the card holders' mobile number through GSM. At the Month end with the help of distributed Database the Initial amount of stock, distributed stock and Remaining of stock these information will be send to Higher Authority through GSM. This system is used to avoid the malpractices.

3.1 Advantages

1) The digitalized card is compact to use.
2) Proper intimation about working and availability of products to the people.
3) This system can avoid malpractices done by retailers.
4) Due to stock information to higher authority it is easy for them to exchange the excess of products between ration shops.
5) By this Fingerprint only Family members able to get the product from Ration shop.

4. BLOCK DIAGRAM

4.1 Hardware Requirements

1) PIC Microcontroller
2) RFID
3) RFID Reader
4) GSM
5) Finger print sensor
6) DC Motor
7) Power supply unit
8) Crystal oscillator
9) RS 232 Cable

4.2 Software Requirements

1) MP Lab
2) Mikro C

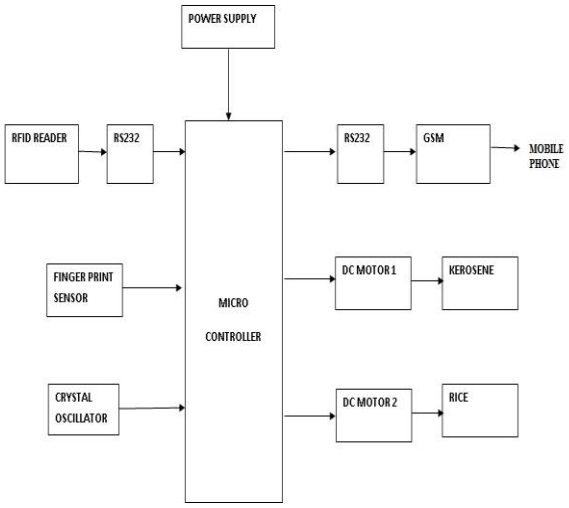

Fig.2b. Block Diagram

5. OUTPUTAND RESULTS


Fig.3. Overall circuit of the system

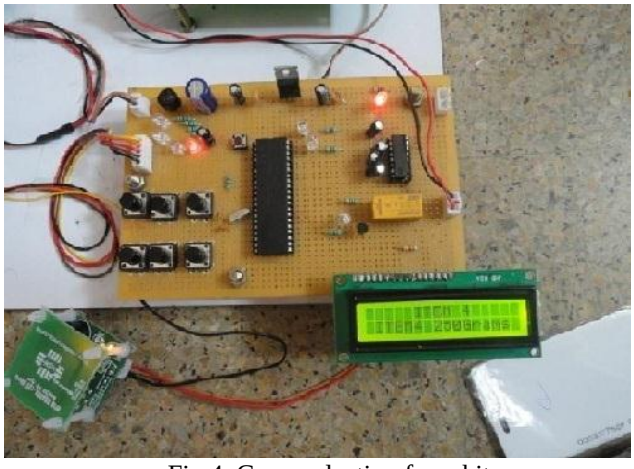
Fig.4. Gram selection from kit

Fig.5. Grain Drawn From the System

Fig.6.Text Message to People

6. CONCLUSION

This project portrays the Automation of the Public Distribution System (PDS) and its recompense over the present Fair Price Shops. By means of this performance we can reduce the corruption level. It will help the country's economy to reach new heights. This type of Automation system is easy to implement and requires much less hard work when compared to other system using of this system we can avoid malfunctions from both sides also now in new system all the information is stored in database and given to the higher office. So implementing this will be really helpful to the people below poverty line.

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