

IOT Based Smart Public Distribution System

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ABSTRACT: The idea of Internet of Things is one of the future prospects of technology. The rationale behind its working is the amalgamation of web, mobile and Information and Communications technology. It enables various devices in a system to communicate and interact with each other to perform their job in a harmonious way. The rising population of the world makes it necessary to facilitate the cities and villages to function in a smart way. However, very little has been done in villages where IoT could play a vital role in bringing 'smartness' to the typical village activities. This project mainly focuses on making the aspects of public distribution system (Ration). The project titled IOT based smart public distribution system proposes an automatic method of distribution of commodities to authenticated card holders and the details of transactions made are maintained in a database.

I.INTRODUCTION

Government provides food, oil and fuel to economically challenged people at subsidized rates which are distributed to the public through ration shops. The stocks for these ration shops will be bought from the farmers and then sold at subsidized rates. Every month fresh stock arrives at these shops and that needs to be distributed to public. The owner of most of the ration shops resort to malpractices and the allotted amount of ration is not distributed to authorized people. To counter these fraudulent activities this system is developed which incorporates the following features. 1. Fingerprint authentication system used to identify a particular user making the system secure. 2. The commodity and its quantity need to be selected using android application. 3. Predefined information about the amount of ration to be distributed. 4. Automatic ration distributing mechanism. Public distribution system in the country has undergone organic changes from the rationing system introduced during World War II to an important social safety program to ensure food security of the country. Under the public distribution System (PDS), the central government procures and supplies special essential commodities at fair price at fixed central issue prices. In the past, a number of items like iodized salt, palm oil, candles, ghee, cloth etc. have been distributed through the PDS, however at present department of food and supplies have confined the fair price distribution to few cereals, wheat, rice, sugar and kerosene oil. At present India has 4,78,000 ration stores operating across many localities, villages, towns and cities in the country making it the largest distribution network in the world. Department of food and supplies is providing ration cards to the citizens based on their economic conditions. There are mainly two types of cards: 1. Below poverty line (BPL) cards 2. Above poverty line (APL) cards. In IOT based Smart public distribution system 2016-17 Against the essential commodities act there are many fraudulent activities going on unfair price shops. Users are forced to wait in long queues for hours together to purchase the essential commodities. Card holders and their family member's details are stored in a notebook. Hence each time transaction is made by the card holder, entry had to be made manually in the book. Maintenance of record in book is difficult. Thus, an efficient and automated system is required to minimize the misappropriations. Quantity of ration to be given for these cards is fixed based on the number of members in the card holder's family. The Department of food and supplies enforces control over these provisions under the orders by the Essential Commodities Act, 1955 regulating trade in specified essential commodities by keeping a close watch on stocks, passage, quality and availability of these commodities. Enforcement consists of collection of information and evidence of contravention of provisions of the relevant control orders and action taken against them under the provisions of Essential Commodities Act.

II.LITERATURE REVIEW

Automated Public Ration Distribution System(M.Ravi1,A.Arunprasanth2, P.Arunprasath3 ,S.Aswin4,R.Balachandar5, **YEAR-2016**)The Public Distribution System (PDS) in India is the largest retail system in the world. Major problems in this system are the inefficiency in the targeting of beneficiaries, improper weighing machines used and illegal selling of goods. The QR code redirects to the webpage of the shop and the required items are selected and payment is done and then the items are collected from the machine.

Automatic Ration Distribution System Using RFID Technology (Abinaya, Alamelu, Benita, Karthikeyan and Kavitha, **YEAR-2018**) RFID based automatic ration distribution system is an approach in public distribution system useful for more efficient, accurate and automatic technique of ration distribution. In this paper proposed system is based on RFID and the proposed system replaces the manual work in ration shop. To get materials in shop need to

show the RFID tag to the RFID card reader, then the controller checks the customer's codes and details in the respective cards.

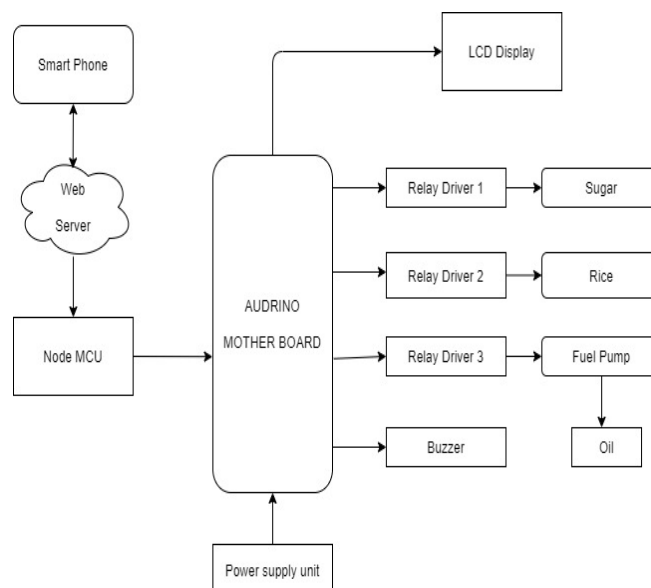
Smart Public Distribution System Using AVR Microcontroller(Salila Hegde, Anusha GA, Safreena PH, Arpitha BV, Shwetha TK, YEAR-2019)The system of providing basic domestic commodities on subsidy to poor families in developing countries like India is a vital aspect to satisfy basic requirement of citizens. The existing public allocation system in Ration shops wants manual measurement of quantity and maintenance of record of transactions - Public distribution system using SMART card and GSM technology (B. Gaikwad Priya ; Sangita Nikumbh, YEAR-2017)In India E-ration PDS using SMART CARD and GSM technology is an innovative approach in public distribution system (PDS) which is very useful for efficient, accurate, and automated distribution of ration distribution system. Main objective of the designed system is to replace manual work with the atomization of ration shop to have a transparency in PDS. Proposed E-ration shop for public distribution system replaces conventional ration card by smart cards which consist of all the details about the card holder like family details, type of card and its validity etc.

Smart Ration Distribution and Controlling (Kashinath Wakade*, Pankaj Chidrawar**, Dinesh Aitwade**, YEAR-2015) This paper 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. firefighting robot. They are the very fast equipment and they responses in the very less time probably millions part of the second which can provide you real time fire safety without delay and it can also activate with the different sign of fire taking over the place like smoke, increasing temperature etc.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.

III.MATERIALS USED

1. Mother Board
2. Node MCU ESP8266
3. Relay Driver
4. Motor Driver
5. Buzzer
6. LCD Display
7. Power Supply

IV.BLOCK DIAGRAM



V.CONCLUSION

This project focuses on design and implementation of the fair price shop automated vending machine design using RFID technology, and removes major drawbacks of conventional ration system namely, the in-appropriate quantity of products and making of fake entries, material hijacking, card piracy, black market and human errors. This project is low cost, low power consumption and more accurate suited for real time implementation. Some of the limitations of this prototype are that people will need to be made aware of the functionality of the machine. Safeguarding of the equipment might also pose a challenge. There will need to be technicians who are trained to operate and further troubleshoot these machines. The machines need to be produced at an industrial level as small-scale production might not be economically viable. In this project, we have tested an Automatic Ration Materials Distribution Prototype based on RFID technology in place of paper-based ration cards. The existing system has two major drawbacks, first one is weight of the material may be inexact due to human error and secondly, if not buy the materials at end of the month, they will sale to others without any hint to the government and customers. These drawbacks can be rectified by this method. Using this proposed system, we can improve the working of the ration distribution system. Government can have indirect check on the availability of the ration to the beneficiaries. It is transparent and has control over prices of some commodities in the open market. System helps to modernize traditional rationing system and fight corruption up to a great extent.

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