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Smart Rationing System

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ABSTRACT: Ration card system is used for the distribution of essential commodities to India's below poverty line population. Whereas use of a ration card to obtain the various goods (sugar, rice, oil, kerosene, etc) from the ration shops is common. This system was established in the year of 1960's. Till 1992 it was for everyone but in 1997 it has just targeted poor population. The present ration distribution framework has lot many irregularities such as Ration delivered to open market, ration is not available, ration provided is not of good quality or not in sufficient quantity etc. There is a possibility that ration shopkeeper sales products to consumers at higher rate than that of recommended by government. Because of lack of awareness toward ration allocation there is a long wait in time, people have to stand in Q for longer duration just to fulfill their basic needs. The proposed framework replaces these irregularities and provides efficient automated rationing system. The proposed automatic ration shop for public distribution framework is based on Smart Card innovation that replaces ordinary ration cards with Aadhar cards that provides unique barcode and QR code. Ration allocation without typically involving bribery by to below poverty line population defined by planning commission of India is thus possible. Smart card based automatic ration distribution system involves Real time database updating system that consist of information of goods allocated or pending in one's account including details about dispensing of goods using particular Aadhar card.

KEYWORDS: Raspberry pi 3, Relay, Solenoid, GSM

I. INTRODUCTION

The vast majority of the comprehensive group having a ration card to purchase the materials from the Ration shop. In conventional distribution system, chances of illegal smuggling of goods and corruption is more. To avoid this, we have proposed a Smart Ration card system based on GSM and Barcode scanner. So we are utilizing open sort Rationing System. The administration and share assets, and the administration settles on the choices towards financial objectives. Government regularly sets the cost and ration assets to deliver the goods. Open circulation framework i.e. rationing conveyance is one of the broadly questionable issues that includes defilement and unlawful pirating of products. The illicit exercises resemble, wrong section in enlist of shop about the measure of items that given to the general population, now and then there is shot of dispersion of low quality items than genuine item given by government to destitute individuals; individuals don't have thought regarding how much amount of good given by government to them and so forth. In this paper we propose the idea going to supplant manual work in broad daylight dissemination framework. In this robotized framework we supplant the convectional ration card by a strategy utilizing character acknowledgment of ns of GSM module. In the current framework, typically, we will utilize labor to appropriate the Ration materials like sugar, Rice, Wheat Etc. It will require greater investment to give the general population. And furthermore the approved individual offer individual too. The spillages have expanded contrasted with 1993-94 and



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1999-2000, and are evaluated at 28%. That about a large ration of the TPDS grains is spilled before achieving customers reflects wastefulness, debasement and robbery on a huge scale.

II. OBJECTIVES

- (a) In this paper, 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.
- (b) The microcontroller identified with the pursuer will exams for the customer validation. 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.

III. LITERATURE SURVEY

Dinesh Aitwade et al. [1] “e-Ration System Using RFID and GSM Technology” This paper proposes the advanced Ration Distribution System, named as “Smart Ration Distribution and Controlling”. Enormous measure of Govt. cash get squandered because of defilement in the traditional Ration Distribution System. This paper executes a straightforward PDA gadget (personal data assistant) with RFID tag utilized as an e-ration card set up instead of an ordinary ration card. This PDA gadget is like the ticketing machine utilized by transport conductor or bank pigmy operator and the e-ration card is like swipe card. The Subscriber needs to utilize this card rather than a conventional ration card to get ration from the merchant.

Mr. Nishant P et al. [2] “DEVELOPMENT OF E-PUBLIC DISTRIBUTION SYSTEM (E-PDS) USING SMART CARD” Smart card based programmed ration shop is novel approach in broad daylight dissemination framework (PDS) helpful for more productive, exact, and computerized system of ration appropriation. The present ration appropriation framework has disadvantages like mistaken amount of products, low handling speed, vast holding up time, material burglary in ration shop. The proposed framework replaces the manual work in ration shop. The proposed programmed ration look for open dissemination framework depends on Smart Card innovation that replaces ordinary ration cards. The RFID labels are given rather than ordinary ration cards.

Pravada P. Wankhade et al. [3] "Real Time Vehicle locking and Tracking System using GSM and GPS Technology-An Anti-theft System", This paper deals the plan and improvement of a burglary control framework for a car, which is being utilized to avert or control the robbery of a vehicle. The reproduction of the circuit plan and its usage is done utilizing PROTEUS programming. This framework is intended to enhance vehicle security and availability. With the utilization of remote innovation vehicle proprietors can enter and additionally secure their autos with more aloof association.

Md. Wasi-ur-Rahman et al. [4] "Design of an Intelligent SMS based Remote Metering System", Automatic Meter Reading (AMR) is only a best in class innovation for perusing electric, gas or water meter readings naturally from a remote place with no human mediation. The idea of "automation" is the zone of enthusiasm of scientists for quite a long time. Remote control has picked up significance in numerous mechanical and local application situations. Remote metering guarantees quick and precise charging framework. In this paper, a strategy for remotely perusing power meter readings utilizing Short Message Service (SMS) has been outlined. Existing Global System for Mobile interchanges (GSM) systems have been utilized for sending and getting SMS. The proposed remote control framework works from anyplace in globe. This paper examines about its usage, its cost viability, its unwavering quality and so forth.

Parvathy A et al. [5] "RFID Based Exam Hall Maintenance System", Seating Arrangement of understudies amid examinations is conveyed. Understudies confront troubles as they need to search for their examination lobby numbers



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and seating game plan while they are minds end. An advancement which could help the understudies in discovering their exam lobbies and seats would welcome and exceptionally fulfilling. This paper "RFID BASED EXAM HALL MAINTENANCE SYSTEM", shows a modernized technique for examination corridor administration. It is workable for an understudy to distinguish the specific exam lobby from some other corridor, when they swipe RFID card in a card pursuer situated there.

IV. PROPOSED SYSTEM

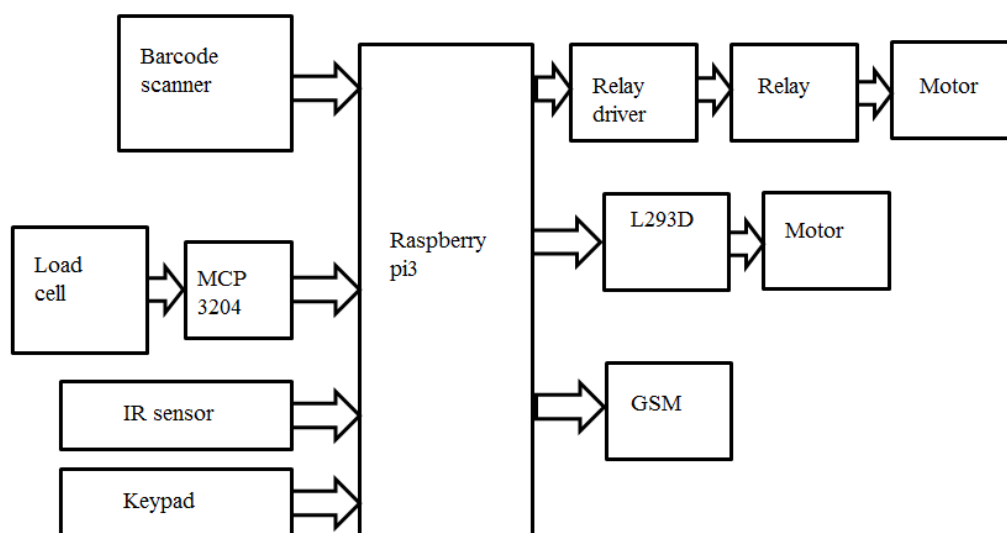


Fig 1 block diagram of proposed system

In proposed system first consumer register with the GOVT. portal afterwards consumer will get the User ID and Password through SMS. Then consumer will visit the ration shop that time he/she will scan the aadhar card through camera. If proper authentication is done consumers data will be visible to shopkeeper which includes allocated ration details to consumer to maintain transparency between shopkeeper and consumer. Then the respective ration that may be solid or liquid will dispense to him/her automatically. The consumer will get the confirmation SMS through GSM and database will be updated to government portal.

V. COMPONENT USED

1. LOAD CELL

A load cell is a transducer that is used to create an electrical signal whose magnitude is directly proportional to the force being measured. The various types of load cells include hydraulic load cells, pneumatic load cells and strain gauge load cells.

2. RELAY

It is on/off switch which uses 12V supply. It is use to make the switch on or off. A relay is an electrically operated switch. When an electric current is passed through the coil it generates a magnetic field that activates the armature and the consequent movement of the movable contact either makes or breaks a connection with a fixed contact.

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6. Power supply

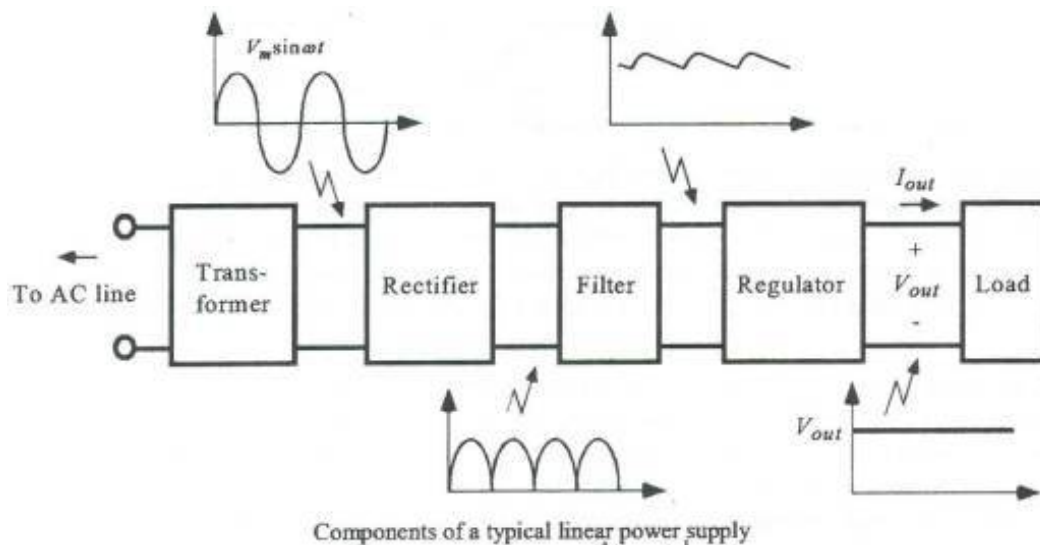


Fig 2 POWER SUPPLY

a. RECTIFIER UNIT:

In a power supply unit, rectification is normally achieved by a solid state diode. Diode contains two electrodes called the anode and the cathode. A diode has the property that will let electron flow easily in one direction. As a result when AC is applied to a diode, electrons only flow when the anode is positive and cathode is negative. Reversing the polarity of voltage applied to a diode will not permit electron flow. It is to be noted that the current flow through the load is always in one direction for each alteration of the applied AC input. This is of course, means that AC is rectified into DC. The output DC is not a pure DC. It is pulsating DC voltage.

b. FILTER UNIT:

After pulsating DC has been produced by our rectifier, it must be filtered in or for it to be usable in a power supply. Filtering involves the ripple frequency. Depending on the design, it may be used to regulate one or more AC or DC voltages.

11. Motor driver IC:

L293D contains two inbuilt H-bridge driver circuits. In its common mode of operation, two DC motors can be driven simultaneously, both in forward and reverse direction. The motor operations of two motors can be controlled by input logic at pins 2 & 7 and 10 & 15. Input logic 00 or 11 will stop the corresponding motor. Logic 01 and 10 will rotate it in clockwise and anticlockwise directions, respectively.



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12. RELAY AND RELAY DRIVER CIRCUIT:

Relay is an electromagnetic switch; consist of a coil, 1 common terminal, 1 normally closed terminal, and one normally open terminal.

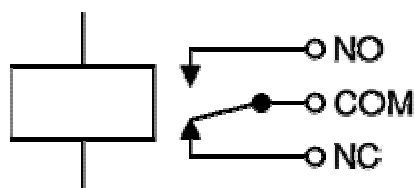


Fig 3 Circuit symbol for a relay

VI. EXPERIMENTAL SET UP

In the proposed system Raspberry pi 3 processor is used to automate the product distribution with proper alert to the people and authenticated access to the system. In proposed system first consumer register with the GOVT. portal afterwards consumer will get the User ID and Password through SMS. Then consumer will visit the ration shop that time he/she will scan the Aadhar card through web camera technique. And if authentication is done then the required amount of ration that may be solid or liquid will get dispense automatically after giving an input by shopkeeper. The consumer will get the confirmation SMS through GSM. And database will be updated on government portal. Fig shows how input will be asked to shopkeeper after proper authentication of barcode on aadhar card.

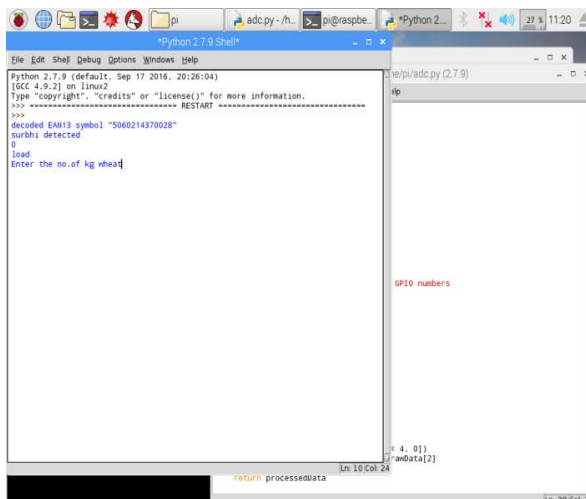


Fig 4 Keypad input at shopkeeper side

Allocation of type of goods with its quantity and time being changes for different consumers are also required Fig shows admin view where government authorized person can allocate different types of goods. He can edit its quantity for consumers which will get automatically updated after dispensing.



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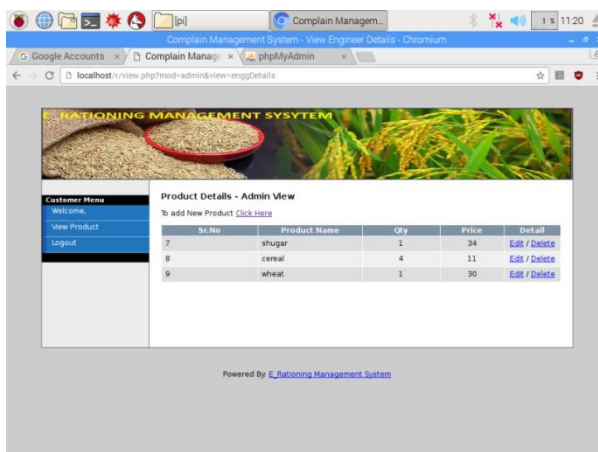


Fig5 Product Details

Fig shows hardware implementation of ration distribution system using raspberry pi 3 with clear pictorial view of solenoid valve for liquid dispensing and motor connected to load cell for solid goods dispensing.

VII. CONCLUSION

Subsequently finish of the venture is to secure and safe access of ration cards in savvy way, and it is extremely secure with mystery scratch protection. In order to overcome the problems in the existing system, an automated embedded system is proposed. In proposed system first consumer register with the GOVT. portal afterwards consumer will get the User ID and Password through SMS. Then consumer will visit the ration shop that time he/she will scan the Aadhar card through web camera and can get allocated ration after barcode authentication. The consumer will get the confirmation SMS through GSM and database will be updated in real time.

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