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Automatic Ration Distribution System

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Abstract: The Government of India provides the Ration Cards as an official document authorizing the holder to a ration of food, fuel, or other goods. An Indian Citizen holding the Ration Card primarily uses it for purchasing subsidized ration like wheat, rice, sugar and kerosene. They are an important subsistence tool for the poor, providing documented proof of identity and a connection with the Indian government databases. All the people must have valid ration card to buy any material from the ration shops. This material has to be taken from the shopkeeper once in a month. In this paper we are trying to explore some monitoring systems which are to be linked with government offices, shopkeeper and the ration card holder.

Keywords: RFID Tag/Card, RFID Reader, AVR Microcontroller, Load-Cell.

I. INTRODUCTION

In order to be a part of the Automated Rationing System the end user will have to register just once. The details will be stored and used till the user has the right to the ration provided. The details will include user's name, family details with age, his/her salary details, etc. According to the information received the user will be given a RFID Tag. Information of the customer can be updated whenever needed. A new user can be added or registered whenever they register for the first time. Every user will have a Unique RFID Tag. This Tag can be used every time there is distribution of ration. In case of any misuse by the shopkeeper, the user will get to know of it as the amount of ration he is allotted will be present as a part of information on his RFID Tag. The information about the amount of ration allotted, supplied and remaining will always be conveyed to the user through messages.

II. PRESENT WORK

An official document entitling the holder to a ration of food, fuel or other goods issued by the Government of India is called Ration Card. They are usually used when purchasing subsidized foodstuffs (wheat, rice, sugar) and kerosene. The types of ration card are blue, orange,yellow. People who are above poverty line are given blue ration card. Orange ration card is also given to the people who are above poverty line but the income may vary according to the state. yellow ration card is given to the people who are below poverty line. They are an important tool for the poor, providing proof of identity and a connection with government. India's public distribution system (PDS) is based on the ration card, which it uses to establish identity, eligibility, and entitlement. One card is issued per family by the state government.
There are many facilities provided by the government for the poor but due to corruption done by some of the public servants, these facilities do not reach to the poor or needy people. There must be a valid ration card with the user's identity and name of all his family members, along with that family income is also mentioned on the card. The ration is supplied to the stores by the government and then this ration has to be collected from the shopkeeper. In case when a user does not collect the ration then this ration is misused by the store owners. This is because there is no monitoring of this ration once dispatched to the store by the government. The manual measurements are one of the major drawbacks of the ordinary ration store. So the quantity of ration is not so accurate.

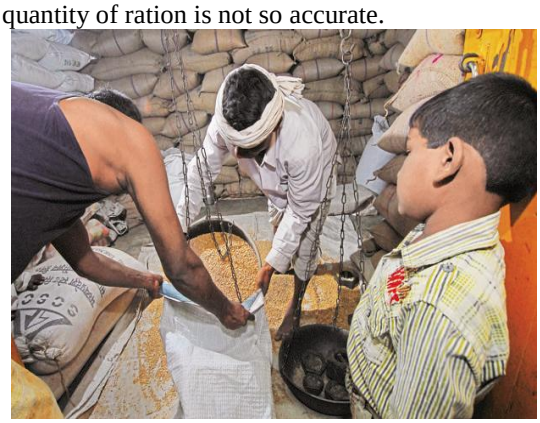

Fig. 1 Distribution of food grains in rural regions

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III.PROPOSED WORK

In this system all the transactions are monitored by the government. Government is a part of the process and this is done by connecting their database to that of the ration store. Advantage of this is that the government as well as the consumer has all the up-to-date information of the ration. Thus there is transparency in the system.
The main objective of this system is to reduce or eliminate the manual work in the conventional ration distribution system and to provide efficiency. The database is maintained, controlled and updated at one main control station or server. Hence the store owner cannot cheat the customer or the government. The RFID Tag is used for authentication and microcontroller AVR is used for ration distribution process.
RFID System is used for identification and tracking purposes with the help of small radio frequency identification devices. The RFID system includes a read/write device, tag and a host system application for collection of data, processing and transmission. An RFID tag(transponder) consists of a chip, some memory and an antenna.

Fig. 2 RFID Reader Module

Information from RFID card is read by RFID reader module. It fetches the information and transfers it to the system. Accordingly information is retrieved from the database about the owner of the RFID card. After all the operations are done the data is updated and saved. Atomicity is maintained by the system in which all the data is updates or no data is updated . RFID tags that contain their own power source are known as *active* tags. Those without a power source are known as *passive* tags. A passive tag is briefly activated by the radio frequency (RF) scan of the reader. The electrical current is small -- generally just enough for transmission of an ID number. Active tags have more memory and can be read at greater ranges. RFID Reader will read the user's Read tag. The assigned amount of ration on the Tag will be weighed and dispatched to the user.
AVR microcontrollers come in different packages, some designed for through-hole mounting and some surface mount. AVRs are available with 8-pins to 100-pins, although anything 64-pin or over is surface mount only. Most people start with a DIL (Dual In Line) 28-pin chip like the ATmega328 or the 40-pin ATmega16 or ATmega32.

Fig. 3 AVR Microcontroller

PC microprocessors are always at least 32-bit and commonly now 64-bit. This means that they can process data in 32-bit or 64-bit chunks as they are connected to data buses this wide. The AVR is much simpler and deals with data in 8-bit chunks as its data bus is 8-bit wide, although there is now an AVR32 with 32-bit bus and an ATxmega family with a 16-bit data bus. An AVR must have a program installed to be any use. This program is stored in memory built-in to the AVR, not on an external disk drive like a PC. Loading this program into the AVR is done with an AVR programmer, usually when the AVR is in a circuit or system, hence AVR ISP or AVR In System Programmer.

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IV.OBJECTIVES

This system increases awareness of the user, effectiveness of data and participation of users. The quality, Safety measure, Digitization, System validate techniques and transparency are improved. The System driven safety awareness, Innovation, Transparency, Simplicity for the Users is achieved. It helps to decrease human errors, dependency, infiltration of third party distributors. It Eliminate Resource Dependency and Other factor affecting system, corruption. Accelerate the data analysis process, functionality and time complexity, Data Fetching is done in minimum time.

V.CONCLUSION

Thus our system works for the benefits of the rural society. It also is a medium to minimize corruption, simplify the ration distribution system and provide transparency to the common people. Our system helps the user to get a modified version of the existing system thus helping them to understand and achieve the basic facilities provided by the government for the betterment of their living. Whenever the end user has to collect ration, he/she will simply have to login and get the information about the ration being supplied for them. Then he/she can visit the nearby distribution store and swipe the RFID Tag, the assigned amount will be supplied to them.

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