



## Online Ration Card System by using RFID and Biometrics

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**Abstract**— In this paper, we have studied online smart ration card system using RFID and biometrics. Radio Frequency Identification technique (RFID) is used to prevent the ration forgery. There may be chances that the shopkeeper may sell some amount of ration to the customer and make false record for that delivery of ration and sell remaining amount of ration to someone else with extra profit. RFID tag will contain the information about family members. RFID tag given to a particular customer needs show to the RFID reader. It will check whether the card is valid or not and if yes, then by using biometrics the customer authentication is performed. If the customer is authenticated then the monthly quota will get displayed according to the family members. After delivery of ration, records are maintained in the online database.

**Keywords**— RFID(Radio Frequency Identification), LCD, Biometrics

### I. INTRODUCTION

The Indian ration card is mainly used for purchasing capitalized food and fuel for example fuel. It is an important livelihood tool for the poor people, providing proof of identity and a connection with government databases. The motive of Ration cards initially was to control the issue of capitalized food rations such as sugar, rice, kerosene oil etc. Ration Card is one of the most important document which acts as identity proof for any individual. If you don't have a ration card you can apply for it. The process to apply for ration card has been facilitated to great extent but now a day this process is online which comes as blessing for the applicants who hate standing for long time in queues for filling the application form and then go to the office again to know the status. When there were no PAN cards or aadhaar cards, to some scope, the ration card was accepted as a ID of a person's address. In this each user will be having the RFID based ration card. The card will be written with a unique number. RFID reader will be present at the shopkeeper of the ration shop. Whenever the user wishes to buy the grocery from the ration book, he must show his ration card to the RFID reader. The reader will immediately reads the unique number present in the tag. The actual RFID can check user is valid or not. The biometrics will be used in this system. It works for an identification of user and display the provided grocery to the customer. The biometrics can only used to verify the person. In the previous system, the ration card system is implemented but the problem was forgery and the shopkeeper was make a fraud entries was there and because of that the fraud was there and the human efforts are also was there. Those are reduced in the next system. The new produced system will cover the human efforts and also the fraud is detected in that system and the forgery is also removed.

Biometric is used in security and access control applications to mean measurable physical characteristics of a person that can be examined on an automated basis. Biometric system refers to the various single components like various sensors, matching algorithms, and result. Biometric system that differentiates a submitted fingerprint record to a database to determine the identity of an individual. Fingerprints remain sustained throughout life. In over 150 years of fingerprint differentiation over worldwide no two fingerprints have ever been found to be similar, not even those of identical twins.

### II. RELATED WORK

Mohit Agarwal[1] proposed, the Smart Ration Card System which is implemented based on RFID and GSM Technique. In which RFID tag is read by using the RFID reader and check whether that user is valid or not, If user is valid then the allocated ration is provided to the customer. And message is send to that user by using GSM technique.

Rahul J. Jadhav[2] proposed, The smart card based system in which report integrates the idea to automation instead of manually manage public distribution system. The manual preservation of records for issuance of food grains at the Fair Price Shops aids in creating a encouraging environment for the FPS owners to disclose in malpractice. As a result, this new e-PDS system can reduce the possible errors created by human and provide accurate information of public distribution system at any point.

Rajesh Pingle[3] proposed, the system in which the committee member's is assign for a particular work under this scheme when government send foods for the customer at shop parallely send the message about this to the respective committee members and the job of member was to keep watch over distribution so that fraud of foods can be prevented.

V. Balamurugan[4] proposed, the system which is mainly focuses on security system which is provided by using fingerprints for a family card that has been used to the Civil Supply Corporation. Here the family members need to register to get the unique id with their fingerprints. The family members can access the possessions and access control will be provided for the family members and the controller. Only an authorized person can access the system.

S. Valarmathy[5] proposed, To get the materials in ration shops people need to show the RFID tag into the RFID reader, then controller check the customer codes and details of total quota in the card. After verification, these systems show the amount details. Then customer need to enter they required ration by using keyboard, after receiving ration controller send the information to government office and customer by the GSM technology. In this system provides the materials automatically without help of humans.

Kashinath Wakade[6] proposed, a system in which a simple PDA device with RFID tag used as an e-ration card in place of a standard ration card. This PDA device is similar to the ticketing machine used by bus conductor and the e-ration card is similar to swipe card. The user has to use this card instead of a book of ration card to get ration from the dealer. It mainly reduces the corruption and better management of public distribution system.

### III. EXISTING SYSTEM

The existing system includes the smart ration card which is mainly based on the RFID and the GSM technique in which by using RFID Reader the RFID tag is read and it will check whether the user is valid or not, if the user is valid then monthly quota of ration for that user is distributed. In this system the fraud of selling the ration is mainly avoided and also the GSM technique is used that's why the message is automatically send to a person. In our system online registration is done and also biometrics is mainly used for the security purpose. The drawback of existing system is that manually registration is included that's why human effort's is required also the cost of the system is high. The existing system works on the ration distribution and the ration card entries was written by hand and human efforts was there. The system also contain the security but there was a forgery.

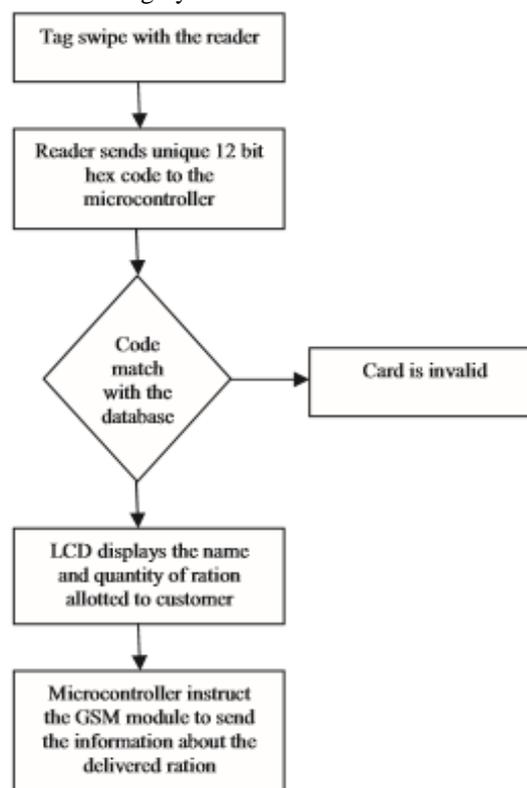


Fig., Flowchart of Smart Ration Card

### IV. PROPOSED SYSTEM

In the proposed system we will develop the Online smart ration card system based on the RFID and the BIOMETRICS, in which the user can fill their data online. And also the manual working is not there. When user wants a ration, he/she comes with the Smart card, then the card is swipe and check whether the user is valid or not. The fingerprints of that user also check and the allocated ration is distribute to that particular user, changes of adding and issuing of ration is done automatically in the government database. In the above flowchart the card will swap and then the RFID will read the tag ad then for the valid user the finger prints will taken and then check for the valid or the invalid user. If user is not valid then exit or the user not able to take the ration and if valid then the list of grocery will display on screen and then the distributor will distribute the grocery and then pay a money and then exit.

#### RFID:

Radio Frequency Identification (RFID) is a concept in which unique items are identified by using radio waves. RFID systems are built up of three components: readers (interrogators), antennas and tags (transponders) that take the data on a small microchip. Now a day's RFID technology is used in many applications, including security and access control, transportation and supply chain tracking etc. It is a technology that works well for collecting multiple pieces of data on items for tracking and counting purposes in a common environment. Many types of RFID exist, but at the highest

level, The RFID devices are divided into two broad classes: active and passive. Two types of chips are available on RFID tags, Read-Only and Read-Write. Read only chips are fixed during the manufacturing process with unique information stored on them. The information which is on read-only chips can never be changed.

## BIOMETRICS:



fig. biometrics

Biometrics refers to technologies that measure and analyse human body characteristics. There are some characteristics such as DNA, fingerprints, eye retinas and irises, hand measurements, and voice and facial patterns for authentication purposes. But in our paper, we will use biometrics to analyse a fingerprint and also the security will be provided by this technique. In this proposed system we will use the biometrics for security purpose, because of that chances of fraud will get reduced.

## V. CONCLUSIONS

The challenges for the system, and for this administrative unit is to face the difficulty revealed with the ration forgery. There may be chances where ration is delivered to the customers and false records are made regarding to that delivery by the shopkeeper. Shopkeeper will sell the ration with extra profit to another person etc. The proposed system is more secure and transparent than the normal existing system. Influence of fraud data entry in the ration database can be maintained simply with the use of this online smart ration card system. Only authorized person(shopkeeper) can maintain the database. Customer can be authenticated using card swapping and thumb detection. In the planned thesis, this paper will try to build a smart ration card with online database system that will help while sending messages to the customers about ration delivery. It is expected that the proposed system will be more glassy, reliable than the existing ration card system.

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