

Survey on Smart Ration Card using Internet of Things

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ABSTRACT

In this paper, information about smart ration card system using sensors, RFID, biometric and SMS gateways. This smart ration card system is implemented to prevent ration forgery. In this, RFID card will contain the details of family members. Using the biometric authentication will be provided to the user and he can take the ration as per his requirements. After that user will get information on mobile phone using SMS gateway.

General Terms

AES algorithm, weighing sensors, level sensors

Keywords

RFID card, biometric, Sensors, Sms gateway

1. INTRODUCTION

Ration Card is the important document for every citizen in India. People use ration card as their identity proof and address proof in India. But the very important thing is, it is used to purchase food items like sugar, rice, oil, etc. from the ration shop at very low cost. Actually, government issues particular amount of grains to each ration card holder who's having income less than specified amount granted by government. But the way in which this public distribution system works is very much less transparent and inefficient. And also it includes huge part of corruption. Because the exact amount of ration collected by the customer is not implicitly updated into the government database due to the lack of automation in the current system. And here get the chance for occurring the term ration forgery due to shopkeepers manual work for distribution. So, to avoid the manual work and ration forgery we have to move towards smart ration card which is based on automation. It is based on RFID, sensors, SMS gateway and Biometrics.

2. EXISTING SYSTEM

Ration card used by each and every Indian citizen as their identity proof. And it is used by the economically backward people for getting the subsidized foodstuffs and fuel. Every family has this ration card which is in the form of paper sheets. It includes their identity, age, gender with the number of family members. Then ration will be given according to that proportionate rate. All distribution is done manually and automation is nowhere.

3. PROPOSED SYSTEM

In proposed system user first has to register themselves through the web application. The user will be given an RFID tag which he/she has to carry it with them to the ration shop. Using Biometric authentication will be provided and the ration i.e. goods will be given to the customer. After collecting the goods the user will be notified on his mobile with the help of SMS Gateway. This is how the data will be entered automatically without manual interaction.

4. RFID

RFID tagging is an ID system that uses small radio frequency identification devices for identification and tracking purposes. It performs the operation using low cost components. It is easy to carry also. In proposed system RFID as a replacement of ration

sheets. The RFID card has all the information of customer. Customers all information about family and allocated ration will be displayed by tapping RFID to the RFID reader which is attached to the micro controller. RFID helps in providing one kind of security to the users. RFID cards are nowadays used a smart way to interacting with the computer systems in day to day life. So using this technique we are creating a same transparency in the system and user.

5. BIOMETRIC

Biometrics is the measurement and statistical analysis of people's physical and behavioural characteristics. The main aim of the bio-metrics authentication is that everyone is unique and an individual can be identified by his or her intrinsic physical or behavioural traits. Proposed providing biometric authentication of the customer to maintain privacy and security. And Biometric authentication of single person from family is allowed. There are different biometric authentications are used for security purpose like iris, fingerprints, etc. Thumb recognition is used in proposed system.

6. SENSORS

A device which detects or measures a physical property and records, indicates, or otherwise responds to it. Sensors are the device which are used to get information of the things which a human can't do it manually. Sensors can sense the environment and produce the output according to that. The specific input could be light, heat, motion, moisture, pressure, or any one of a great number of other environmental phenomena. To maintain transparency in between distributed and collected ration, using weighing and level sensors to collect the information about ration distribution which will further update in the government database. The input to the sensors will be grains, oil, kerosene etc.

The weighing sensors are used to sense the amount of grain the container has according to that give the measurements.

The level sensors are used to sense the liquid contained in it and measure it accordingly.

Sensors are easily available in market and some of them are costly as per their requirements. As sensors help use to get information of anything from anywhere.

7. SMS GATEWAY

An SMS gateway allows a computer to send or receive Short Message Service (SMS) transmissions to or from a telecommunications network. Most messages are eventually routed into the mobile phone networks. The connection to the mobile network is made by acquiring a SIM card number from the mobile operator and installing it in the gateway. Typically, direct-to-mobile gateway appliances are used for hundreds to thousands of text messages per month. More modern appliances now offer the capability of send up to 100,000 messages each day. SMS gateway is used to send message to customers after receiving their allocated ration.

8. COMPARISION AND ANALYSIS

Analysis of proposed system is more efficient then the existing system .In previous system paper sheets are used while in proposed system RFID cards are used. There is automatic entry in the database of proposed system. In previous system weighing is done manually while in proposed system weighing is done automatically. Proposed system is capable of providing fast speed.

9. CONCLUSION

This paper has proposed the smart ration card based on Internet of things based on bio metrics,sensors and RFID technology which will further can be extended with the an idea of clustering database for easily retrieve details. And future system could use high quality sensors and hardware for efficient implementation.

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