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SMART RATION CARD SYSTEM USING RFID BIOMETRICS AND SMS GATEWAY

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ABSTRACT: In this paper, we have proposed a survey apportion card utilizing Radio recurrence recognizable proof (RFID) system, biometrics and SMS entry way to keep the apportion fraud. In this framework, a RFID tag is utilized that conveys relative points of interest and the client needs to demonstrate this tag at the proportion shop. The client will likewise need to give thumb impact on the biometric machine. On the chance that the client is discovered bona _de then the amount of proportion to be given to client as per the aggregate number of family part will be shown on the LCD show This brilliant proportion card is free from burglary and imitation as the data about the conveyed proportion will be sent specifically to the administration and client through SMS portal. In this division, we present a concise introduction to Ration distributed system using Smart Card.

Keywords: GSM, Microcontroller, RFID, Public Distribution System (PDS).

1. INTRODUCTION:

Proportion card is an exceptionally vital archive for each resident in India. Proportion card is utilized to buy different essential things like sugar, oil and so on from the proportion shops at a less expensive rate, issued by the administration. This proportion card likewise goes about as address and in addition personality verification. Proportion card is required when you apply for identification, PAN number, driving permit and so on. Thus, proportion card is an essential archiveThe ration distribution system is established by the Government of India under Ministry of Consumer Affairs, Food, and Public Distribution to distribute grocery items to poor people at fair price . The existing conventional ration card system has numerous problems. These problems ranges from the basic issues of renewing the ration card every year by pasting excess leaves which has to be done manually by the employees to the malpractices done by FPS dealers like diverting food grains to open market to make profits. There is another problem of irregularity in opening shops and false announcements of deficit in food grains. By using this system the major problems like bribery, irregular distribution and other difficulties faced by the poor people are eliminated. Illegal activities in the FPS can be greatly reduced by this method. The distribution process is automated using centralized server and so the government facilities reach people properly. The corruption and bribery is the major problem in FPS which can be avoided using this system. The computerized database maintained avoids wrong entry of the product by the officials and provides authenticated transportation and distribution. Ration distribution an initiative by the Government of India under Ministry of Consumer Affairs, Food and Public Distribution intend for the distribution of commodities to destitute at fair price. In the projected system we use RFID Technology. One of its parts, a RFID tags hold a unique ID is issued to all the BPL card bearers. Here RFID tag (Smart Card) and the biometrics serves the purpose of authentication. Information and the finger print impression of the head of the family and one of the family members are cached in the centralized database whose access is only legitimized for a government authority. The first of the two authentication steps needs the beneficiary to swipe the Smart Card against RFID Reader installed at the FPS and the second step towards an authentication is that he/she should scan the fingerprint of his/her thumb against biometric.

2. RELATED WORK

In these, RFID built up programmed apportion shop is novel methodology in space allotment plan(PDS) deliberate for extra viable, exact, and programmed method of apportion dispersion. Space distribution game plan also shouted dividing course of action is one in all the broadly troublesome subjects that Vol-2 Issue-2 2016 IJARIIE-ISSN (O)-2395-4396 1785 www.ijariie.com 732 include misbehaviors. This proportion portion course of
action has downsides like wrong assortment of items, low process speed, substantial staying sum, physical stealing in proportion look. The embraced course of action replaces the manual include proportion seek. the most objective of the anticipated game plan is that the robotization of proportion inquiry to outfit straightforwardness. The embraced programmed proportion purchase space allotment course of action is built up on Wireless Recurrence Identification (RFID) data that replaces ordinary proportion cards. The RFID labels zone unit contributed as opposed to typical proportion cards. Client's data is kept in microcontroller that is contributed by Power Authority. Buyer needs to examine tag to RFID peruse, and next microcontroller checks client's alternatives on board keep to allot physical in proportion seek. Later prosperous confirmation, purchaser needs to go into very physical also as assortment of physical utilizing input gadget. Later conveying right physical to customer, the microcontroller sends the data to purchaser so also as PDS forces utilizing Globe Arrangement for Mobile (GSM) innovation. Programmed Ration Dispensing

System given here is an entangled framework supportive for the computerized & extra practical methodology of apportion distribution.[9] This task is proposed to constrict the manual mediation inside the technique for proportion appropriation, all together that extra straightforwardness & power will be kept up Our task concentrates on style and usage of Automation of Ration inquiry. In late circumstance, all the overall population and individual parts pick mechanization in their technique. Common gives Corporation is that the significant open part that oversees and appropriates the key items to all or any the voters. In this framework fluctuated item like Rice, sugar and coal oil zone unit conveyed exploitation standard apportion look framework. a number of the requirements of standard proportion look framework range unit owing to the manual estimations inside the standard framework, the client can't prepared to get the right measure of fabric. Also, conjointly there's an open door for the illicit utilization of our item inside the standard framework. i.e. the materials region unit victimized by making incorrectly passages inside the register while not the data of the personality card holder. Inferable from that gigantic amount of money given by government gets squandered. The Ration retailers can't prepared to meet the needs of the client inferable from the over populace of our nation. In this manner the procedure pace is low therefore, there's constantly horde of people inside the proportion look. E-

government is logically usual enhance straightforwardness inside the administration division and to battle against defilement. [8] E-government is being upheld in extra regions of administration organization for each the local and national levels around the world. E-government framework created to downsize debasement. The point of this paper is to plan and outline existing hypothetical and exact work on defilement with read trademark open doors for extra investigation. Automation will encourage in modernizing the PDS. The southern states as was basic have intersection rectifier the strategy on a few changes intended to handle the issues higher than, and logically considerably poorer states have presented changes in approaches and usage instruments to handle the issues of PDS. This paper examines technique hand crafted in exploitation ICT to oversee preoccupation and release inside the conveyance instrument and its thundering application in automation of nourishment item offer chain. As Partner in Nursing result of the venture 0.78 Million agriculturists have gotten portable PC created checks with none defer. Subject inclusion inside the framework has been duplicated in watching PDS. In this examination paper, the anticipated thought is to trade the manual include open circulation framework. The proportion circulation framework is programmed by exploitation PLC, which is similar to the ATM.

3. SYSTEM ARCHITECTURE

The proposed system replaces the manual work in FPS. The prime objective of the designed system is the automation of FPS to provide transparency. The proposed automatic FPS for public distribution system is based on RFID technology and biometric authentication technology that replaces conventional ration cards. The RFID tags are issued to a beneficiary instead of conventional Ration Cards. Beneficiary's information along with the finger print impression of the head of the family and one of the family members is stored in the centralized database which is only updated or accessed by the government authority. Beneficiaries have to scan the RFID Smart Card against RFID reader after which he/she should scan the fingerprint of his/her thumb against biometric, and then an appropriate fingerprint id checks for valid beneficiary's information in the database, after successful verification of the beneficiary, information is fetched onto the main interface, and beneficiary needs to enter type of commodity as well as quantity of commodity using keypad. After delivering proper commodity to him/her, the beneficiary is sent the SMS (Short Message Service) about the commodities bought by him. The below mentioned figure 1 demonstrate the flow of the system.

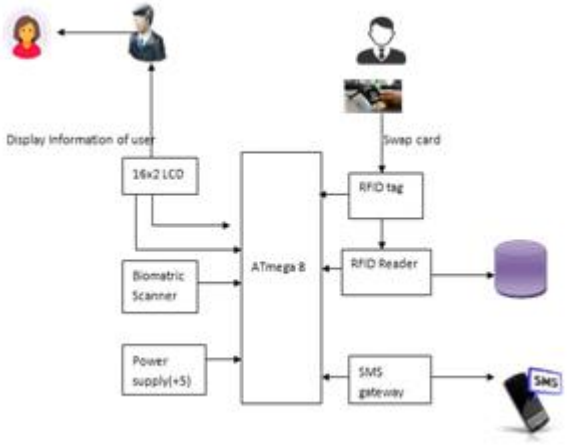

Figure 1: RFID based Smart Card verification

4. Methodology

Following are the modules used by the projected system

1. Login Module

In this module, the system registers beneficiaries details that includes their name, address, fingerprint, date of birth, age, contact number for sending SMS alerts, count of family members and category of the card to which the family belong, with all the information being uploaded in the database.

2. RFID Card Verification Module

RFID being a part of Automatic Identification and Data Capture (AIDC) technologies is considered to be a fast and reliable means of identifying objects. RFID based Smart Card verification module consists of two prime components, they are interrogator and transponder. The interrogator (RFID Reader) is needed to broadcast the signals through its antenna and the transponder (tag) will be activated after it receives the signals from the interrogator.

3. Biometric Verification Module

The fingerprint scanning system has two processing steps. Firstly, it enrolls the fingerprint, where it gets an image of the thumb, and finally performs matching, later it determines if the pattern of ridges and valleys in the image are matched with the pattern of ridges and valleys in pre-scanned images.

4. Purchase Module

Once authenticated, the beneficiary has to select the list of commodity he/she wants to purchase. The system will display the total quantity of the commodities along with the information regarding previous transaction made by beneficiary. Once after he/she confirms the commodities, payment is done and beneficiaries are given a receipt in form of a SMS. A beneficiary is permitted to take only those subsidies on products apportioned to him/her by government according to the available database inventory.

5. Alert Module

A SMS gateway API serves the purpose of sending bulk messages to its users; here in this project it plays a role for intimating the beneficiary about the recent transaction made by him/her by sending him/her the message on his/her registered number.

6. Stock Module

The food department will send the stock to the respective distribution centers and also automatically update the stocks of the distribution center in the database. In this module the system maintains the details of incoming stock, distribution and remaining stock

5. APPLICATIONS

1. RFID and GSM technologies used in all real time transaction for unique identification , Like ATM machine.
2. In Smart Rationing card system we Applied Those Technologies For reliable and Faster Delivery of food.
3. The ration items will be effectively delivered to the valid ration card holders who are below poverty line.
4. The main advantage here is that the beneficiaries get their rightful entitlement in terms of quantity. What's meant for them cannot be diverted to the open market because of maintaining the database correctly.

6. CONCLUSION AND FUTURE WORK

In this system we have proposed a model for Smart Ration Card by using RFID, biometrics and SMS gateway technology. In the current system ,there is a drawback of ration forgery. So, in proposed system we are replacing the manual entries and thereby reducing forgery. As we are using RFID card which contains detail information of user with his/her thumb impression thus there is very less chances to misuse the Ration card. Also, the system will send transaction details to the users registered mobile number through SMS gateway thus transparency is maintained in the system.

The future work on this framework is to append a weighing framework with the goal that weighing of proportion ought to be precise. We can likewise build up an online database for expansive number of clients and get an affirmation for the conveyed message.

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