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Distribution of Rationing using Automation like RFID and GSM Technology

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***Abstract*— Ration Card is very important for govt to keep log and other information about people.** It is also useful for people to get govt subsidy, gas connection and even useful for residential proof. It has detail about every member in family. All the people use ration card to buy various things from ration shop like groceries,oil, kerosene. This system helps people to get this supplies at low price directly from government. This system has some drawbacks like the most of work is done by old or traditional instruments and mostly its manual work which gives many errors in measurement , and if people fail to buy their monthly subsidy then these shopkeepers sell this to other people at higher price and make money. All this happens because there is no centralized technical database for this information. The loss in this process is of people and govt who don't have any idea about all this. Our main objective here is to make this process automatic .In this paper, proposed an Automatic Ration Materials Distribution Based on GSM (Global System for Mobile) and RFID (Radio Frequency Identification) technology instead of ration cards. When people come to ration shop they have to scan their RFID card,these cards are magnetic and has information of the beneficiary . After scanning card it is verified through database to see if it is valid or not . Whenever the user logins in system they send an otp to registered number for security purpose. If its valid then the beneficiary selects material and quantity . After receiving these material the customer pays for it. In this way we can create transparency in this process.

***Keywords**: RFID tag, RFID reader, GSM, PDS, Microcontroller, PC*

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I. INTRODUCTION

An embedded system is a combination of electronic and computer system designed to do dedicated work and most of time real time work. It is embedded as part of a any big machine whose actual processing work is done by embedded systems. It is programmable. PDS(Public Distribution System) is a system in which in which government gives special subsidy to people in their buys. Our govt. is using same methodology since long time. There has been a lot of change since then in technology so it will be very useful to implement those new techniques in favor for people and plus government will also have all records of this distribution. Today we don't have any technical database connecting all small villages and areas. Yet today most of our database is hand written. Hence there is no proof if all those benefits are reached till those people or not. The other most important point here is corruption;since there is no actual count of beneficiaries the govt don't actually has proper record of it and hence there is large possibility of corruption at many stages. For making a smart country it is very important we start with small steps and improvise our old methods. This new technology can help us to do it.

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II. LITERATURE SURVEY

Now a days most people using ration card to buy grocery from ration shop it is necessary to submit ration card to ration distributer after verifying the information of user distributer gives material according to requirement but as per lot of government. They sign on ration card depending upon material taken. But there are two drawbacks inaccurate weight of material and if there is some ration ids remain then shopkeeper buy to other and doing deception.

The current ration distribution system involves corruptions and illegal activities of grocery during manual ration distribution process. To overcome these drawbacks automatic ration distribution system is very useful system to avoid corruption and it is easy for all people also.

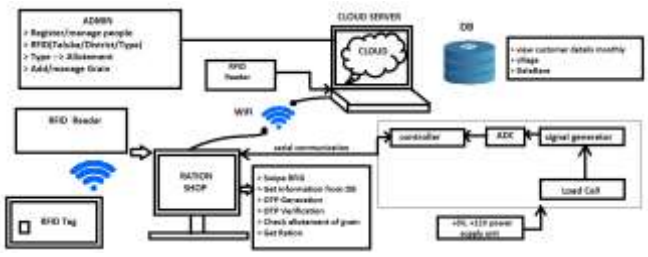
III. PROPOSED WORK

The proposed System fills the role of manually working ration shops. The motive behind the Distribution System is to provide commodities without human interruption and transparency. The proposed work is based client-server approach and GSM module for OTP generation. In this all the database is at the server side which can be accessible by the government to update the customer accounts. At the client, it consists of RFID (radio frequency identification) technology which plays an important role of identification and verification of the customers. The RFID technology consist two components RFID Reader, Tag as e-card or smart card. The server identifies and verifies the customer through this RFID technology. In this, RFID tag or e-card is allocated to the beneficiaries. There is administrator which controls all the activities of the system. The beneficiary can scan the smart card on the reader and then RFID reader reads the tag information. The tag information of the reader is the identified by the Server. In order to verify and authenticate the genuine beneficiary the OTP is generated which will be used as the run time password for the current Transaction which needs to be entered on the client interface. The server will authenticate the user through the OTP and then grant access to the account. The beneficiary then gets the view of the current state his/her account through interface and get a type of commodity by entering the amount of commodity.

IV. METHODOLOGY

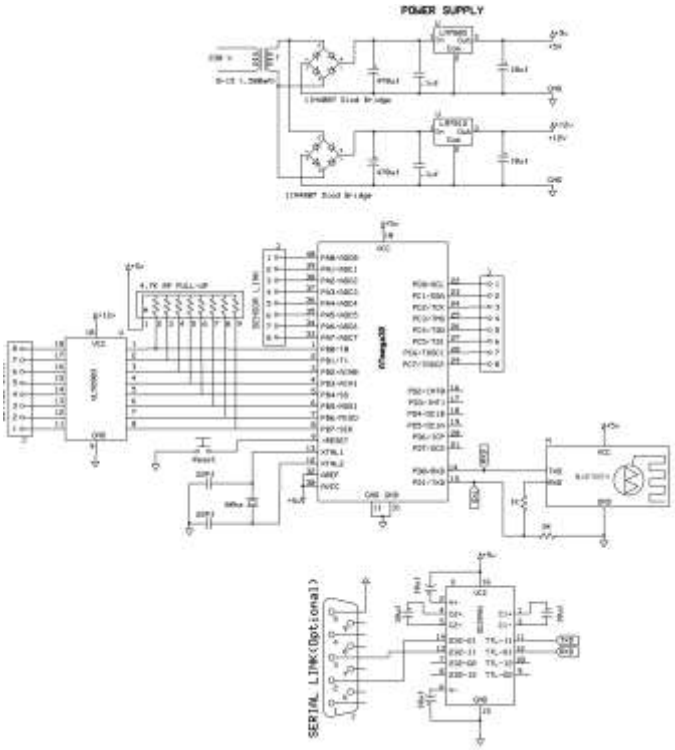
Block Diagram:

Block diagram consists of cloud server for database and admin to register and allotment, RFID tag, reader at taluka /district level, client System with display for interface for secure through OTP password and get information about current status, wireless communication system between client and server, micro-controller with the serial communication to client system and a power supply unit of +5V,+12V.



Circuit diagram :

Circuit diagram consists of LM7805 output +5 v, LM7812 output +12 v as voltage regulators with a power supply of 230 v as a power supply unit, CMOS microcontroller ATmega32 based on RISC architecture, ULN2803 darlington array of transistor, MAX232 is a dual transmitter/receiver with serial link.



A. *Software Requirement:*

Editor : Netbeans
DataBase :MySql
server:glassfish
GUI:AWT swing
Platform Windows

B. *Hardware Requirement:*

RFID Reader & Tag
LoadCell Sensor
Processor
10Gb HardDrive
2Gb RAM

V. ALGORITHM

1.Every customer is provided with RFID which is registered with the government database.
2.At the time of public distribution at ration shop the customer scans the RFID card with the
RFID reader.
3.The Tag is scanned by the reader and it verifies the tag with the server database.
4.At the time of verification the OTP is generated by the GSM module and is send to the registered mobile number of the customer.

5.The runtime password i.e OTP generated is then entered on the client (ration shop) interface for authentication.
6.After the successful authentication customer will get a successful login page and can get view of the account and allotment details.
7.Based on the type of commodity the amount of it is asked by the system which will be delivered by the PDS System and finally views the amount of remaining allotments.

VI. CONCLUSION

Ration forgery is basically concerns to the food distribution department, it is just a smart card for the customers to get food item at low price. Ration forgery is particularly for family having four to five members, however there may be quite chances where ration is delivered to payee and fake record are noted down. Regarding the delivery by commission agent, if the commission agent is a medium then there will be chances of getting betrayed by him however he can get commission from us without having any security. Therefore the purpose system is more secure and transparent then normal existing system. The entry of wrong data in ration distribution system can be prevented by the use of smart card and also additional security is provided by the biometric confirmation. The commission agent is only responsible for entering the quantity of the commodities. The updating and deducting is done by the server. The database is helpful for sending the massages to the payee about ration delivery the sending process is done by automatic system. This process is make the transparency in public distribution system

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