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A Lab VIEW based Smart Ration Card

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ABSTRACT

In this Paper we have developed the advanced ration distribution system named as "smart ration card using Radio Frequency Identification(RFID) technique in LabVIEW." to prevent the huge amount of Govt. Money get wasted due to the corruption in PDS (public distribution system). This paper implements the simple device with RFID Tag used as an e-Ration card in place of a conventional ration card. This device is similar to as ATM Machine the e-ration card is similar to as our debit/credit card. The user has to use RFID tag card instead of traditional ration card to get the ration from the proposed device which is built by NI myDAQ which can be modified easily and monitored clearly from front panel of this Reader compared to commercial RFID Reader and stored in NI LabVIEW integrated system. Efforts are put together from our side to reduce corruption and to have better management of PDS (public distribution system.

Keywords: Corruption;GSM; RFID; Servo Motor; Ration Distribution System,

1. INTRODUCTION

In India,ration distribution system is one of the largest Govt. economic policies. Its main purpose is to provide food grains (Wheat, sugar, kerosene, Rice, etc..,) to people at affordable rates. The network of ration shop is spread all over in India to provide food security to the people. This Distribution of ration is controlled and monitored by central Govt., along with the state Govt. But it has some many Limitations. Most of the ration shopkeepers keep fake ration card with them. Due to fake ration cards the dealer receives the extra ration from higher authority and he sells it in to the market at high prices. The dealer may not provide a sufficient amount of food grains to the consumers. Most of the time, people are not aware of the availability of ration in ration shop. In this way, the current situation we are facing problems of corruption in PDS.

Public distribution system (PDS) is one of the widely controversial offices that involve corruption. In order to make this process efficient and improve the current system of PDS we are implementing SMART RATION CARD. In our proposed system we have machines to do work. The quantity of goods will be accurate and records are maintained in data base. There is no effective system through which Govt. get acknowledgement of consumption of food grains by people. The rest of Paper is organized as follow: In section 2 related works on various smart ration system approaches is mentioned .In section 3 explains about the proposed smart ration card system, In section 4 gives the overview of smart ration card and in final section paper is concluded.

2. RELATED WORK

Recently Mohit Agarwal *et al* [1] has proposed Smart Ration Card System. In this system, microcontroller connected to the reader will checks for the user authentication. If the user is found authentic then the quantity of ration to be given to the customer according to the total number of family members will be displayed on display device. The smart card contains unique barcode by coding microprocessor chip present

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in it according to requirement by Vikram *et at* [2]. When the consumer visits the ration shop, In front of barcode reader, customer has to display the card. Dealer verifies the smart card & accordingly delivers ration. S Valarmathy *et al* [3], Mohan *et al* [5]. This system is automatic and provides ration without interference of human. In this system various sensors are used to measure and dispense the commodities. Dhanashri et. al. [6] and Neha et. al. [4] has developed web enabled superior public distribution system. The system remotely monitors the outlets of various goods and vehicles, providing ration to ration shop. In this system, subscriber has to access the website every time they desire to get a ration. Sharma *et al* [7] has proposed new ration distribution system using biometrics, face recognition and voice recognition system. In automated ration distribution system the setup is to be installed in every ration shop. In present scenario more than 0.5 million ration shops exist in India. So it is very costly to have an automated PDS and it is a tedious job for illiterate people operating such complex system. On the other hand barcode based systems are not secure because the dealer can have duplicate barcode on the basis of which fake ration cards can be made. The above barcode based systems can be rectified by using RFID tag. The basic purpose to use RFID is to automatically identify and track the attached electromagnetic tag. RFID cards are water proof and provide best reading range with 125 KHz RFID readers are used in this system. Cards are very popular in Access control applications but can be used in wide range of RFID applications. They have 18 no factory written ID that cannot be changed. These are read only tags [3]

3. PROPOSED METHOD

To overcome above stated problems, Automatic ration generation without a man involved process except during the process of grains installation. Our main Moto is to reduce human efforts in stores and maintain the records perfectly and deliver the accurate amount of grains given by the government to the people. Here without a mobile no one can access the machine. All the data is been stored in the data base like amount of grains present in the machine and how much amount of grains has been allocated to his/her account. The database can be changed by the issue authority according their rules. We are mainly avoiding the illegal usage of the ration material provided to the people.

3.1. Flowchart

Every consumer is provided with a RFID card which is registered by the Government authority. At the time of ration distribution at ration shop, first RFID card is been scanned. User ID verified with the database provided by the Government authority which is stored in LabVIEW integrated system. Once verification is successful, a OTP is sent to the consumer mobile where the details are been stored in data base OTP received by consumer should be entered in to the machine if it matches it allows you to access the next page i.e., selection of grains. OTP received by consumer should be entered in to the machine if it matches it allows you to access the next page i.e., selection of grains. Consumer is asked for a select type of material. Next consumer needs to select the quantity required. Based on type of material and quantity chosen, the servo motor is activated with different time delays. Current stock in the ration shop is displayed

The Flowchart of smart ration card system is represented in fig 1

4. BLOCK DAIGRAM

In these proposed system the main components we used is RFID Reader& Tag, GSM, Servo Motor and my Data Acquisition (myDAQ) device. myDAQ is interfaced with the LabVIEW software to control the servo motor operation. In this method we have used 5 VI’s

4.1. Smart Ratio Card System VI

This is the main VI. Here in this we are reading the unique RFID code with the RFID reader which is connected to the system and interface with the LabVIEW software shown in fig 3. The input RFID reader

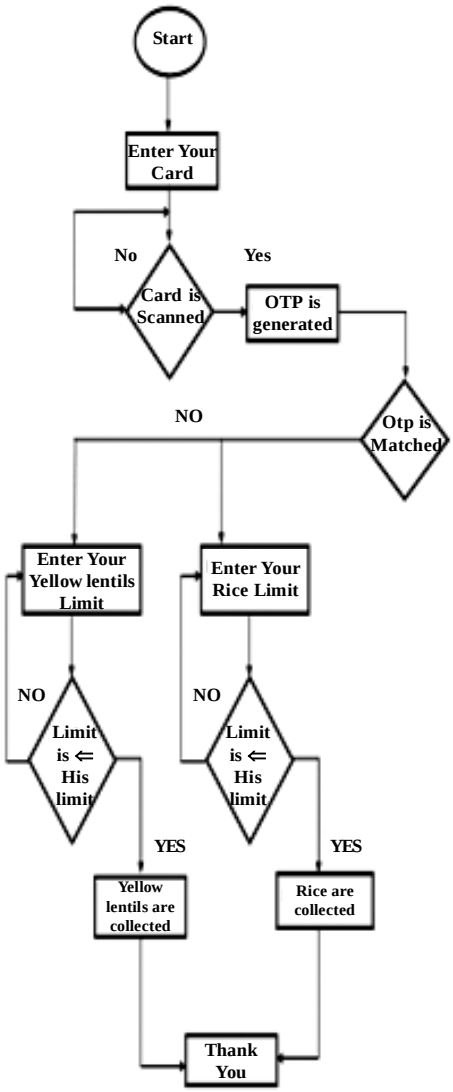

Figure 1: Flowchart for Smart Ration Card

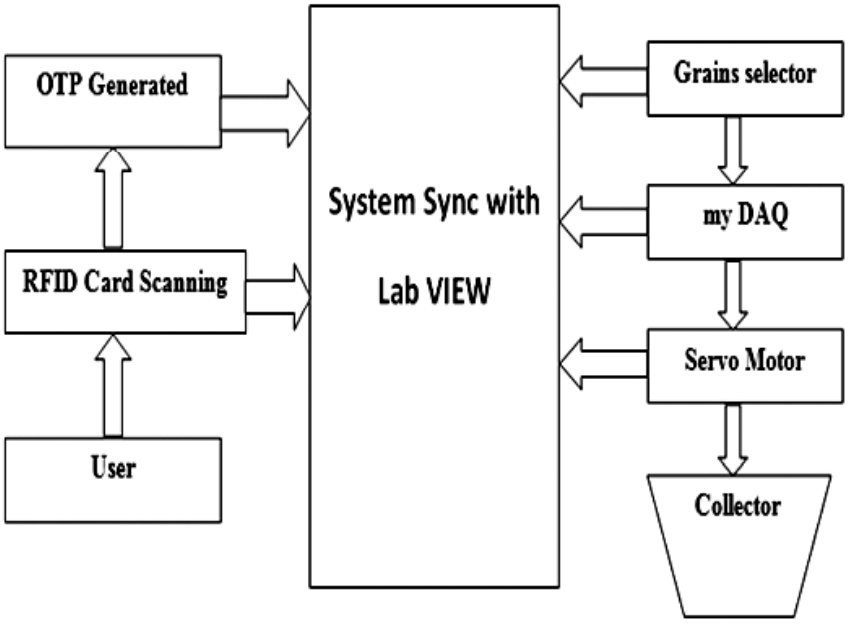

Figure 2: An overview of ration card VI

Figure 3: Front panel view of Smart Ration Card VI

compares with the inbuilt data base given in the program if it matches it generates the OTP and sends to the user, and OTP VI will be opened.

4.2. OTP VI

1. OTP saved in the database.
2. OTP is received by the user has to be inputted in this VI shown in fig 4.
3. It compares with the database and opens the buttons selection VI.

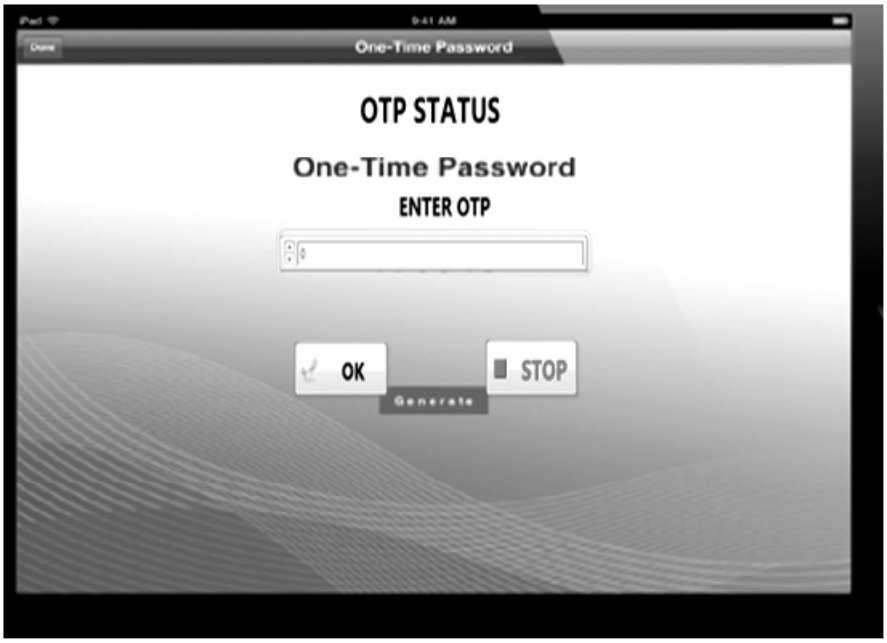

Figure 4: OTP VI

4.3. Otp Generator VI

1. It generates the OTP.

2.Sends message through the GSM module.

4.4. Buttons VI

We can select what ingredients we want shown in fig 5.

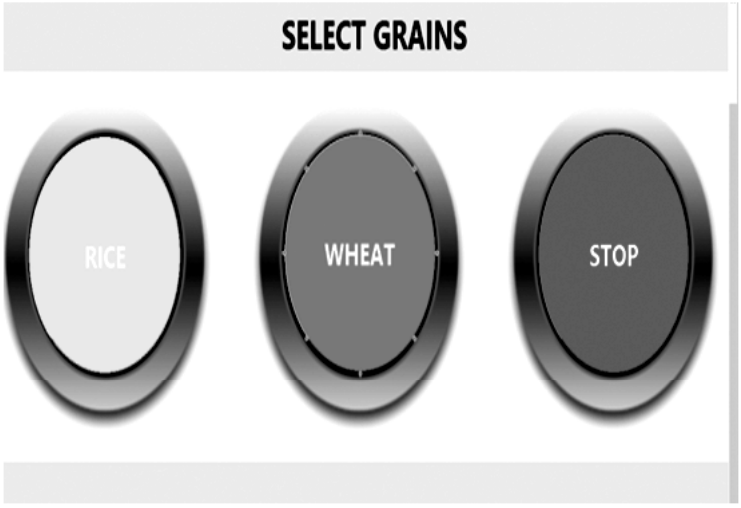

Figure 5: Buttons VI

4.5. Grains VI

1. After selecting the buttons.
2. We have to give the input which required in Kg's.
3. It will run the program according to the given VI shown in fig 6.

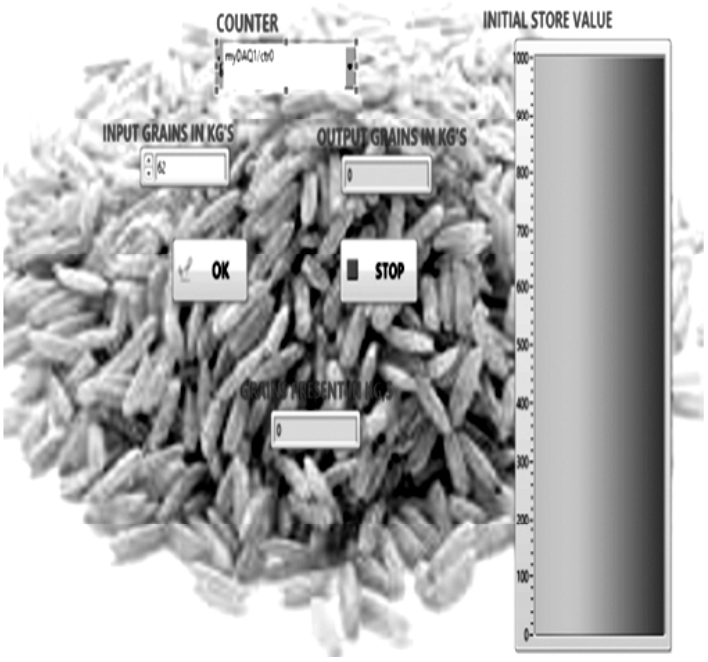

Figure 6: Front panel view of Grains VI

In this system both the RFID reader and GSM are connected to the system integrated with LabVIEW software through serial to parallel converters (HL-340). Servo motors are connected to my DAQ digital ports i.e. P3 (it is for counter pin) .VCC =5v (it is for supply voltage to servo motors) and a GND pin Both the RFID reader and GSM are connected with the separate adapters

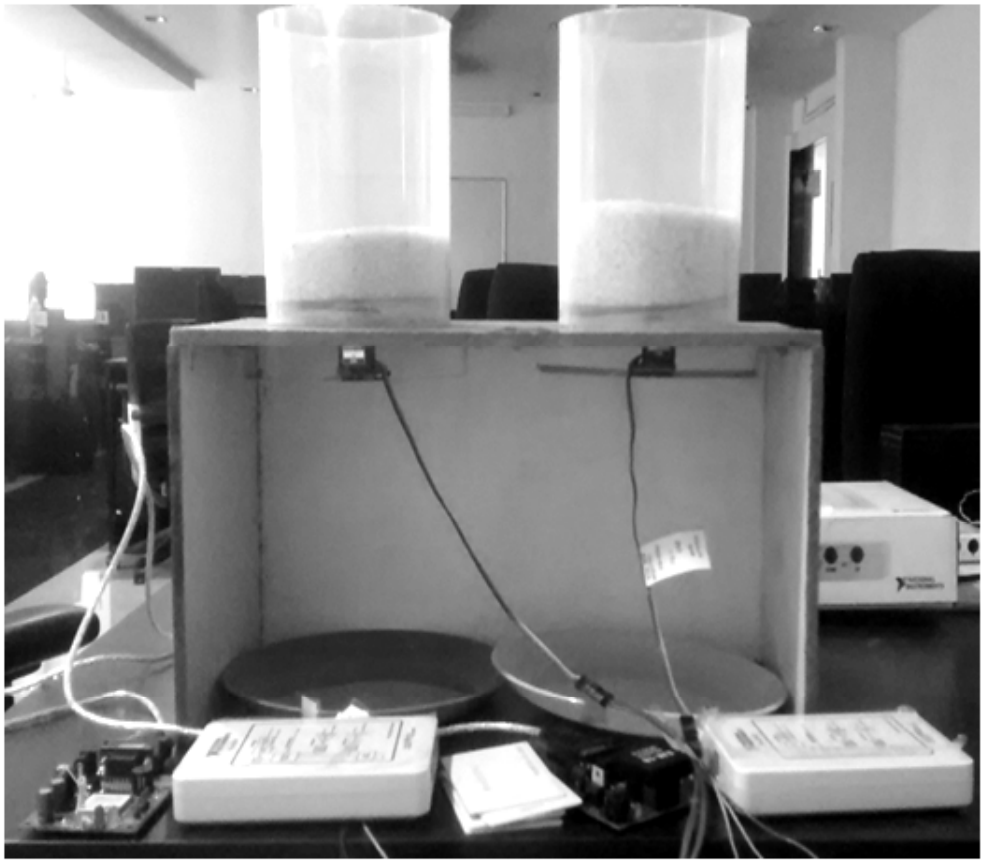

Figure 7: Prototype of Smart Ration Card System Using LabVIEW

5. CONCLUSION

Using this proposed modern system we can have Better management of the public distribution system. Govt. can have indirect check on the availability of the ration to the beneficiary. Dealer will not be able to keep fake ration cards with them. System helps to modernize traditional rationing and combat corruption up to a great extent. the database in this system can be changed by the Govt. authority person at any time.

6. FUTURE SCOPE

For better authentication of consumers, a biometric system can be used. The provision can be made such as PDA device will update data directly to server online. For accurate amount of commodities we can use the load sensor.

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