RATION VENDING MACHINE USING FINGERPRINT RECOGNITION

Prof.Jagdish Patel[1], Mr. Deepak Mantala[2], Mr. Akshay Jain[3], Mr. Wabale Rushikesh[4]

[1] *Assistant professor, Electronics and Telecommunication, Sandip foundation, Maharashtra, India*
[2]*Student BE Electronics and Telecommunication, Sandip foundation, Maharashtra, India*
[3]*Student BE Electronics and Telecommunication, Sandip foundation, Maharashtra, India*
[4] *Student BE Electronics and Telecommunication, Sandip foundation, Maharashtra, India*

ABSTRACT

The government of India in an effort to ensure less price supply of ration items to all citizens of India. Supply of ration items like rice, wheat, sugar, kerosene, etc., are provided to the ration holders in limited quantity which is fixed by the government of India. For collecting the ration items person have to stand in long queue in ration shop. Ration shop also take delay in processing to provide ration items. In this paper we present initial design and result of a ration vending machine using fingerprint recognition. This system overcome the problem of standing in queue and having delay. It also effects on corruption which are been take place in ration shop on the bases of fake Id. So it will also provide security to ration holder. Data server and internet can help in modernizing the PDS/ FPS.

Keyword *: - Biometrics, fingerprint sensor, recognition, vending ration ,Database.*

1. INTRODUCTION

In recent scenarios, ration holder has to wait whole month to collect its ration item by standing in queue at a particular day of month. Still, it is not up to the security level, this system overcomes that problem by using ration vending machine system for the civil supply corporation. There are various ration items such as like wheat, rice, and kerosene which are provided using ration shops. Here the family members need to register with their fingerprints to get the unique family ID by using this unique ID. The family members can access the machine and access control will be provided for the family members and the administrator. Only an authorized person can access the system. We aim to provide security and transparency of authorization allocations of commodities equally to all the using citizen of India. Further the identification of ration holder can be done by linking aadhar card. Dealer may sale ration at higher rates than recommended by the government or he may do wrong entries in register. In this way, in the current situation we are facing problem of corruption in public distribution system. Vending machine system will effective system through which government gets acknowledgement of consumption of food grains by people.

1.1 Objectives

To provide security to the Ration holder due to fingerprint recognition.

Provide proper amount of Ration item with the help digital load sensor. Not need to stand in queue for long times to collect ration items.

2.METHODOLOGY

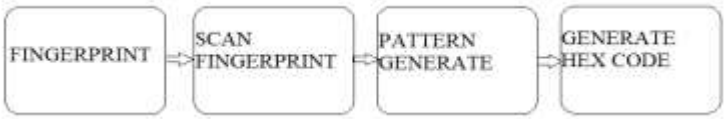

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Fig-1 Fingerprint Recognition Process

Biometrics refers to technologies that measure and analyze 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 analyze 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.

3.PROPOSED SYSTEM

E-Ration shop with biometric device is to give information related to card holders and to record all transactions. In this system, a fingerprint scanner is proposed to be used as the biometric device. Since the finger print of the citizens are already in the database of aadhar card, a positive match can be ensured each time the consumer visits the FPS. The following are a few tasks that are considered for implementation as a part of the proposed project to address lacunae in present manual PDS/ FPS

4.SYSTEM ARCHITECTURE

The Working Process of System Architecture in detail: System is divided in two part that is input's to the controller and output's from controller as

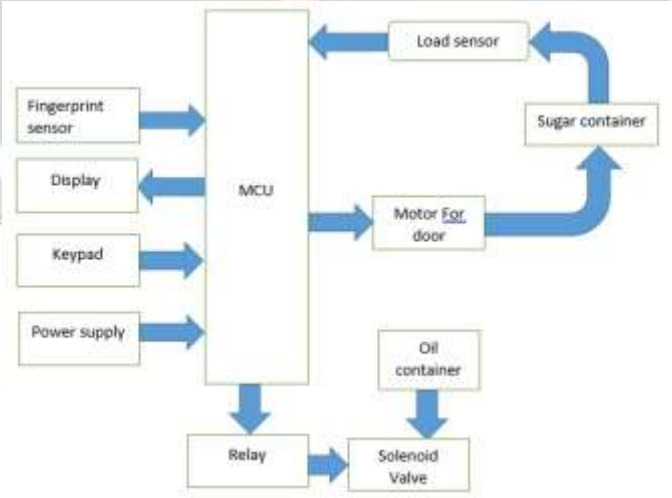

Fig-2 Architectural Diagram of Ration Vending Machine Using Fingerprint Recognition

4.1 Input to controller

A. Fingerprint will scan the finger of the ration holder which will be store in memory. The stored fingerprint will be generating Hex file code format by fingerprint module. When ration holder will give the fingerprint for next time the data and information of ration will be displayed.

B. Keypad will make help to the ration holder to interference with the system. As soon as system search it ration holder it will ask to choose ration item and the quantity of that commodity.

C. Weightage will be calculated by the load sensor which will be connected to the container of particular commodity.

4.2 Output from controller

A. All the interference process details will show in the display means it will show the action done by the ration holder.

B. Relay and motor will get the command by the controller for the purpose of closing and opening of containers of assigned commodities.

5.SYSTEM DESIGN

The designing of system is done in to the three-part software, hardware and mechanism.
Software used to design this system is MPLAB X IDE v3.51. Fingerprint module, Display, keypad, load sensor are the hardware parts of this system. Relay and motor is the mechanism which is used to for the closing and opening of the of valve and door of the containers respectively. Different converter IC's are used to convert analog signal to digital signal as per the requirement.
The Prototype of an Automatic Ration Vending machine is as shown in the fig.3 which consists of a mechanism on which two containers are fitted so as to store the commodities which are required for the ration holders.

Fig-3 Prototype of Automatic Ration Vending Machine

6.PERFORMANCE ANALYSIS

The system has performance based on the various results displayed on the LCD.

Different stages of system are shown as below:

6.1 System to be begin:

Fig-4 LCD Displaying starting stage.

In this the system is being initialize and can be begin with the help of pressing 1 and 2 respectively.

6.2 Entering the details of ration holder

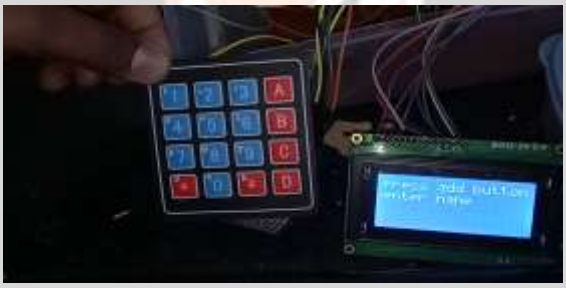

Fig-4.1 LCD Displaying User's Information to be displayed.

In this stage user is been able to fill his information for further process.

6.3 Selection of commodity

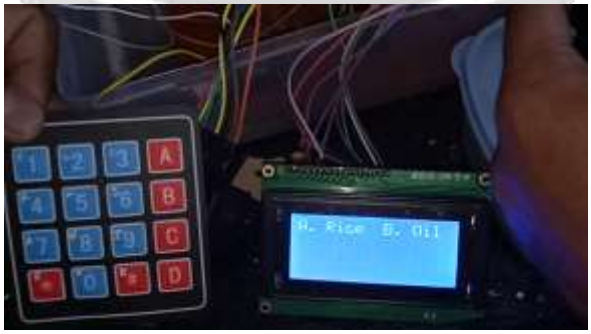

Fig-4.2 LCD displaying selection of the commodity

In this stage the commodity which is to be required by the ration holder is been selected.

6.4 Amount of Quantity to be selected

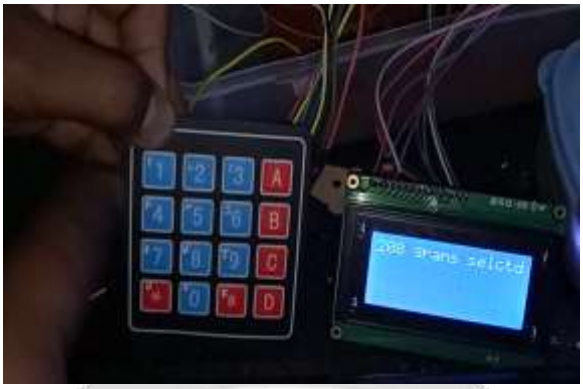

Fig-4.3 LCD displaying Quantity selection

In this stage of the system the amount of quantity which is to be required by the ration holder is been selected.

7. CONCLUSIONS

This paper portrays the automation of ration distribution and its recompense over the present fair price shops. In this system we can avoid the corruption level. It will help the country's economy to reach new heights. The automated ration distribution is easy to implement and requires much less hard work when compared to the other system using of this system we can avoid the malfunctions because there are no manual operations. Now in a new system all information is stored in database. So implementing this will be really helpful to the poor people nation.

8. ACKNOWLEDGEMENT

It is our immense pleasure to work on this project, Design of Ration Vending Machine Using Fingerprint Recognition. We offer our sincere thanks to our guide Asst. Prof. Jagdish Patel for his valuable guidance time to time. This work was supported in part by Sandip Foundation(SITRC), Nashik(MS)

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