AUTOMATIC RATION SHOP

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ABSTRACT: In today's challenging and emerging society, Meeting the basic needs of life-food,clothing and shelter has become a great demand. But meeting one of these need-food,that can be minimized to a level. This is satisfied by ration shops that provide food subsidies in a free manner equally to every people. But still there is a main drawback in our society regarding this ration shop particularly for lower class and lower middle class people. They provide provisions only once per month for the particular area within the prescribed time limit which leads to improper reach of government provisional products to the people. And also there is lot of corruption, Black market and improper weighing has been processed in ration shops.to overcome these issues our conventional ration shop project has been implemented with the help of ATM technology.it makes sure that products reach each and every citizen in our state in an easy manner as well as it serves the demanding poverty line in a dignified way.

I. INTRODUCTION

India's Public Distribution System (PDS) with a network of 4.78 Lakh Fair Price Shops (FPS) is perhaps the largest retail system in the world.Using the AADHAR number and the contact details, the Government can send information regarding quality and quantity of products allotted to him/her in a respective ration shop. The automatic rationing system, installed at the ration shop which contains two interfaces namely LCD screen, RFID reader. All these interfaces are interfaced to the advanced microcontroller. Embedded PIC Microcontroller is interfaced and further to the central database of the government. Automatic rationing system would get updated information regarding the existing subsidies for the current user and set the limit. The inputs are given by the consumer and select the products by the consumer itself through selecting subsidies. From the button inputs are given to the microcontroller unit, which are given to the PIC module and the products are obtained from the automated ration shop. Further to prevent irregularities in distribution of ration, government can supply various products (like rice, wheat, sugar etc.) to rationing shops in the form of sack stored in the container.

II. AUTOMATIC RATION SHOP

A. OBJECTIVE

In today's challenging and emerging society, Meeting the basic needs of life-food, clothing and shelter has become a great demand. But meeting one of these need-food,that can be minimized to a level. This is satisfied by ration shops that provide food subsidies in a free manner equally to every people. But still there is a main drawback in our society regarding this ration shop particularly for lower class and lower middle class people. They provide provisions only once per month for the particular area within the prescribed time limit which leads to improper reach of government provisional products to the people. And also there is lot of corruption, Black market and improper weighing has been processed in ration shops.to overcome these issues our conventional ration shop project has been implemented with the help of ATM technology.it makes sure that products reach each and every citizen in our state in an easy manner as well as it serves the demanding poverty line in a dignified way.

B. INTRODUCTION PIC MICROCONTROLLER

PIC is a family of Harvard architecture microcontrollers made by microchip technology, derived from the pic1640 originally developed by general instrument's microelectronics division. The name PIC initially referred to "Peripheral Interface Controller".

D. BLOCK DIAGRAM OF PIC

- CPU - the part that does all logic and arithmetic functions
- RAM - storage for programs and/or program variables
- ROM - read-only parts of programs
- I/O - connection to internal and external devices
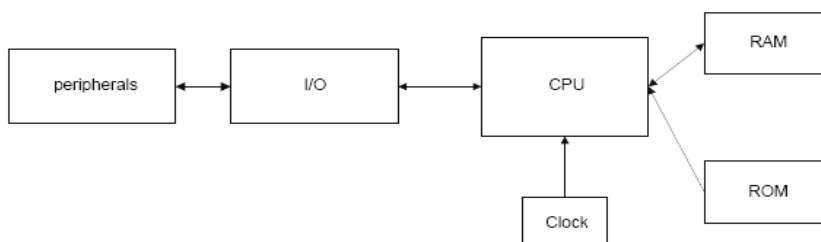
III. METHODOLOGY

When the user swipes the smart ration card, the card is detected and shows the user name on the LCD screen. Once the data is received to the pic microcontroller, it sets the limit based on user. Now the user selects the products to be obtained by selecting a button and click NEXT button. Once the particular button is pressed it can't be repeated by the same user in that particular access time. Then PIC does the various control process inside the unit and gives the absolute quantity of the products through the appropriate collecting lines. The User can access his card in the shop to take the subsidies only once per month based on the limit. Once the pic sends the data to the relay board it controls the motor based the limit predefined to the system.The subsidies will flow through a collecting line to the collecting bag from a way which converts the flow system to single outlet for the user to collect the subsidies.

IV. MECHANICAL DESIGN

A. STORAGE CONTAINER

A container with the storage space of 5kg of each subsidies was connected with the circuit board.once the motor gets the signal from the relay circuit it open the container for some time limit based on the user limit.

B. MOTOR STOPPER

The motor gets engaged and rotates based on the limit ent to it through the relay circuit from the PIC microcontroller.Once it get back to its position it has to be stopped on the collecting line.So to stop the motor on the perfect position a stopper was fixed on the end of collecting line where the motor gets stopped by it.

V. ELECTRONIC DESIGN

A. POWERSUPPLY

The power supply should be of +5V, with maximum allowable transients of 10mv. To achieve a better / suitable contrast for the display, the voltage (VL) at pin 3 should be adjusted properly.

B. HARDWARE

Develop a uniquely decoded 'E' strobe pulse, active high, to accompany each module transaction. Address or control lines can be assigned to drive the RS and R/W inputs.

C. EM-18 RFID READER

The EM-18 RFID Reader module operating at 125kHz is an inexpensive solution for your RFID based application. The Reader module comes with an on-chip antenna and can be powered up with a 5V power supply.

D. RELAY SWITCHING

The switching circuit consists of 12V Electro-magnetic relay. The relay has the coil and the contacts.

VIII.CONCLUSION

The Conventional Ration Shop was fabricated and operated with the help of PIC and RFID. This Project can be implemented in the real time by making it to cloud storage and with the ATM technology in the future which will gradually decrease the black market stocking in India and also it will be more helpful for the people below poverty line.

IX. REFERENCES

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