



AUTOMATION OF RATION PRODUCT DISTRIBUTIVE SYSTEM USING EMBEDDED TECHNOLOGY

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Abstract- The proposed concept will convert the manual work to automatic distribution. The allowance of product is computerized by using embedded technology. This computerized system replaces the conventional system with the help of Aadhar Card. The consumer finger print is scene in the system to identify the correct consumer access. If the consumer finger print is matched with the existing one all the goods details is available on the screen. By selecting the goods on the screen the cash debited from the bank account of any number of family. The overall transactions between the consumer and computerized goods distribution system are controlled by government via GSM module. Any member of the family can get the goods at anywhere in the state.

Keywords: PIC16F877A Microcontroller, RC232 Interface, 500RPM DC Motor,Level Sensor,DC Water Pump.

I.INTRODUCTION

The largest retail system in the world world is Indian's public distributive system (PDS) with a network of 4.78lakh fair price shops (FPS) face problems due to in efficiency in the results. 40crores Indian's below the poverty line is supported by TPDS with monthly supply of subsidiezed food grains.The government of India is having a unique ID number called aadhar number, which contains all

information of individual like age, count of family, finger print of the family, address, contact numbers, bank account information etc. Using the aadhar number and the contact details, the government can send a message (SMS) to the individuals and record the products quality and quantity allotted to him/her to the ration shop.

In the automatic ration system Embedded PIC Microcontroller is interfaced to the PLC and then to the central data base of the government using GSM.The person have to enter the Aadhar number and finger print then detector detect both the entries of the customer. Once authenticated, system shows the information regarding the existing materials for the current user in the touch screen. The entries are given by the customer and select the product which they want in the touch screen. The money for the products will be transferred through bank account of any person in the family. After that it will be interfaced to the microcontroller unit, then it will be given to the PLC module and then products can be collected from the automated ration shop. Then the data will be stored in the database of the government, which will send the message or email to that family. The government will have all the transaction details in their database.

I several methods are used to make the existing ration shops as automatic. But, the implemented techniques were limited up to providing goods such as rice, wheat and sugar. There is no information about providing kerosene automatically. Also, the techniques did not mentioned about any money transactions. The aadhar id is used to Access the goods in the automatic system. Once the aadhar id is inserted into machine it debits the money from the respect consumer bank account and displays the available stock list on the screen.

II.MACHINE DESCRIPTION

The goods are distributed automatically to reduce the manpower and the malfunctions, wastage of the goods occur while distribution. Fig. 1 describes the fundamental module of automatic materials distribution and stock maintenance based on smart ration card technology. This system consists of the pic microcontroller, smart card, motor driver, LCD and GSM. The proposed system expresses sharing of grains as well as liquids.

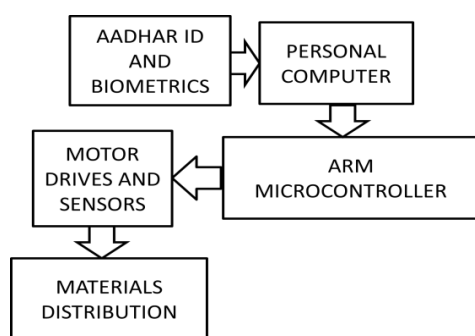


FIG 1. Machine description

III.SYSTEM DESIGN

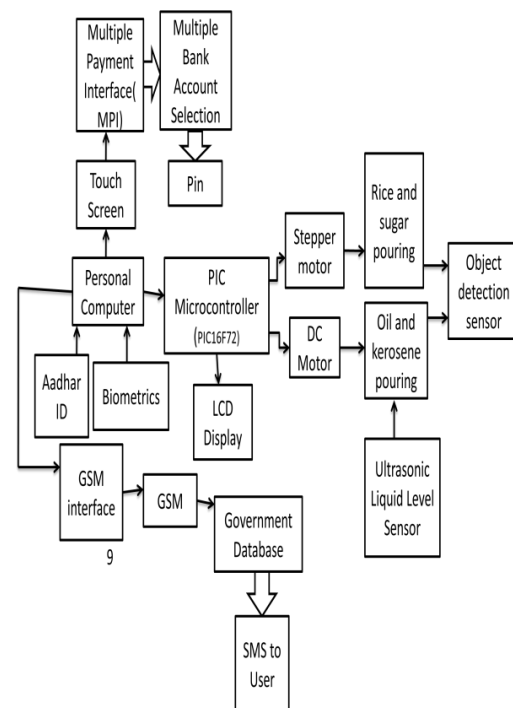


FIG 2. System Design

IV. PROCEDURE FLOW CHART

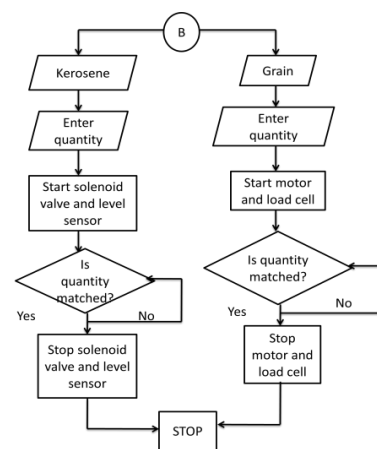
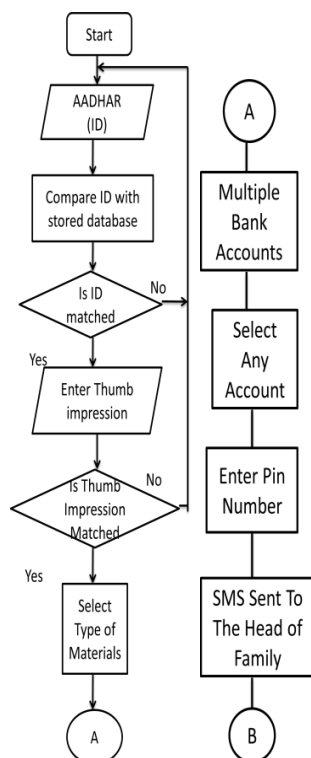


Fig 3.Procedure Flow Chart

V.AADHAR AUTHENTICATION



Fig 4.Aadhar Authentication

Every person has their unique ID named as Aadhar ID and every AADHAR ID has its own unique number, each and every person who uses the machine

should be enter the number to the system first and then to access their ID they should enter their thumb print, these can prevent misuse of their ID. Every person in the society can be grouped as family, any person in that specified family can able to buy the product allotted to their family once the purchase is completed their bill can be generated to the head of the family via SMS (short messaging service)

Finger print recogniser

The system is highly secured due to maintaining the finger print of the consumer. if user placed the aadhar card inside the aadhar card reader means the PC gives the user particulars which is already stored by the system. Subsequently the user thumbsour finger print into the finger print recognizer. If the recent finger print and saved finger print are matched means PC shows the user's quantity details.



VI.MULTIPLE PAYMENT INTERFACE

Members of each and every family can vary depending upon birth and death rate ,due to digital india criteria every person in a family should have a bank account, bank can vary according to their convenience ,account details of each and every

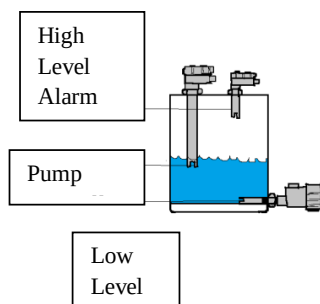
member of a family and the unique AADHAR ID details should be registered on family heads AADHAR ID, so that any person of a family can able to access their AADHAR ID and able to access any one of the registered bank account and able to pay amount for their kerosene.

VII.MATERIAL DISTRIBUTION

The payment process success means the PC sends comments to PIC microcontroller recording the material distribution. If users select rice or sugar means comments passed to motor driver circuit and the control stepper motor rotates clock wise to distribute the rice. Stepper motor will rotate in the anti clock wise for distributing suger. If the user select liquid item means the controller sends comment to relay circuit. At this time relay switch ON and pass comments to solenoid valve. The valve will be open and distribute the liquid items.

VIII.IR LEVEL SENSOR AND LIQUID FLOW SENSOR

The IR sensor is one type of object detection sensor. This is very useful for distributing the materials correctly. The sensor senses the object and gives the instruction to the controller. Then only the controller distribute the materials. At this time, liquid level sensor is used for calculating the liquid levels and distributing the liquids accurately. If the liquid level low or high means the buzzer will on automatically.



IX.MESSAGING MODULE

After material distribution, the PC maintains the stock details to the government head office with the help of computer generator mail. For this kind of process, we reduce the corruption and avoid the fake stock entry.

X.CONCLUSION

This proposed system can replace the existing goods distributing system of the government. By using the computerized technique to distribute goods to the consumer it is possible to avoid the malfunctions. The technique is efficient one which facilitates the users to get the goods 24 hours of 7 days. The users are allowed to get the goods at anywhere in the state. Hence, the system is user friendly one. The wastage of goods will be avoided by using this computerized distribution system. The government will save the money by using the computerized goods distribution system.

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