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Advance Ration Distribution System Using IOT and GSM

Jagruti Nagaonkar[1], Pankaj Gharge[2]
[1]*Assistant professor,* [2]*Student, Fr. Conceicao Rodrigues College of Engineering, Mumbai*

Abstract: ***Ration card is very important for every house and it is used in various fields, it acts as a proof for details of family members, it helps in getting a gas connection, it can be used as a proof of address for various purposes etc. People having a ration card can buy various groceries such as rice, wheat, coconut oil etc. specified for them from the ration shops. Present ration system has Some imperfections, so we are trying to automate and upgrade the Ration Distribution System by our project. In this project, we have proposed an Automated Ration Material Distribution System based of Fingerprint/RFID login technology instead of traditional ration cards to get ration materials which uses manually hand written quantity feeding in the card but in our project, we have upgraded that part using IOT mail and SMS which will also reduce the effort of writing and carrying that old ration card but also it is time Consuming***
Keywords: Ration Distribution, Material Distribution, RFID, Fingerprint Login, IOT.

I. INTRODUCTION

In this project with the help of AVR micro-controller the system is developed. GSM and IOT innovation have been utilized for remote information transmission. Using RFID and GSM Technology, this project contain a proficient strategy to buy the items from the ration shop just by login with RFID card or Fingerprint by the user. Rationing for Public Distribution System utilizing RFID, GSM and IOT to Prevent Irregularities and Malpractices. According to study it has been discovered that around 22 states are utilizing the manual ration distribution process. A portion of the states are in the process to overhaul the framework with including the utilization of bio-metric confirmation process for apportioning dispersion. The data collected in the month of Sep 2018 from internet resources. Fig.1 shows Survey Summery and Fig.2 show the manual distribution process[2].

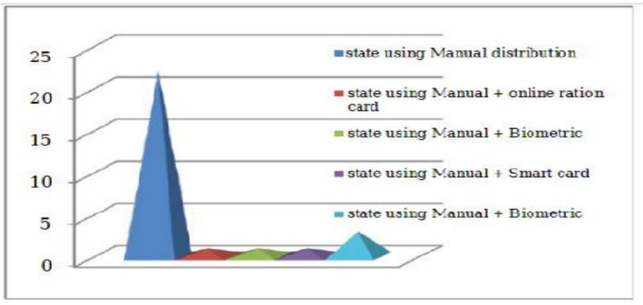


Fig.1



Fig.2

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II. PROJECT OBJECTIVE

Ration Distribution System means distribution of essential commodities to a large number of people. It is done by the government. Public Ration Distribution system is one of the widely controversial officers that involves corruption, malpractices and illegal smuggling of goods. All these happen because every job in the ration shop involves manual work and there are no specific high-tech technologies to automate the job[1]. Our main objective here is to automate the process of the distribution. The classical method involves customer to tell the person handling the ration shop outlet, the amount of the commodity he/she needs and the type too. The person working then measures the commodity and gives it to the customer and enters and send the data by himself to the authorities. In our version of the system, we have developed an embedded system project where we will have the customer to input via login in the system then she/he requires to enter the parameters for dispatching ration via matrix key pad and then the system will automatically collect that much amount of Ration in a container and also update the authority, user and shop handler that keeps the record. It is a new concept which takes into account the various social, economic and general aspects relating to technical as well as day to day disciplines.

III. BLOCK DIAGRAM

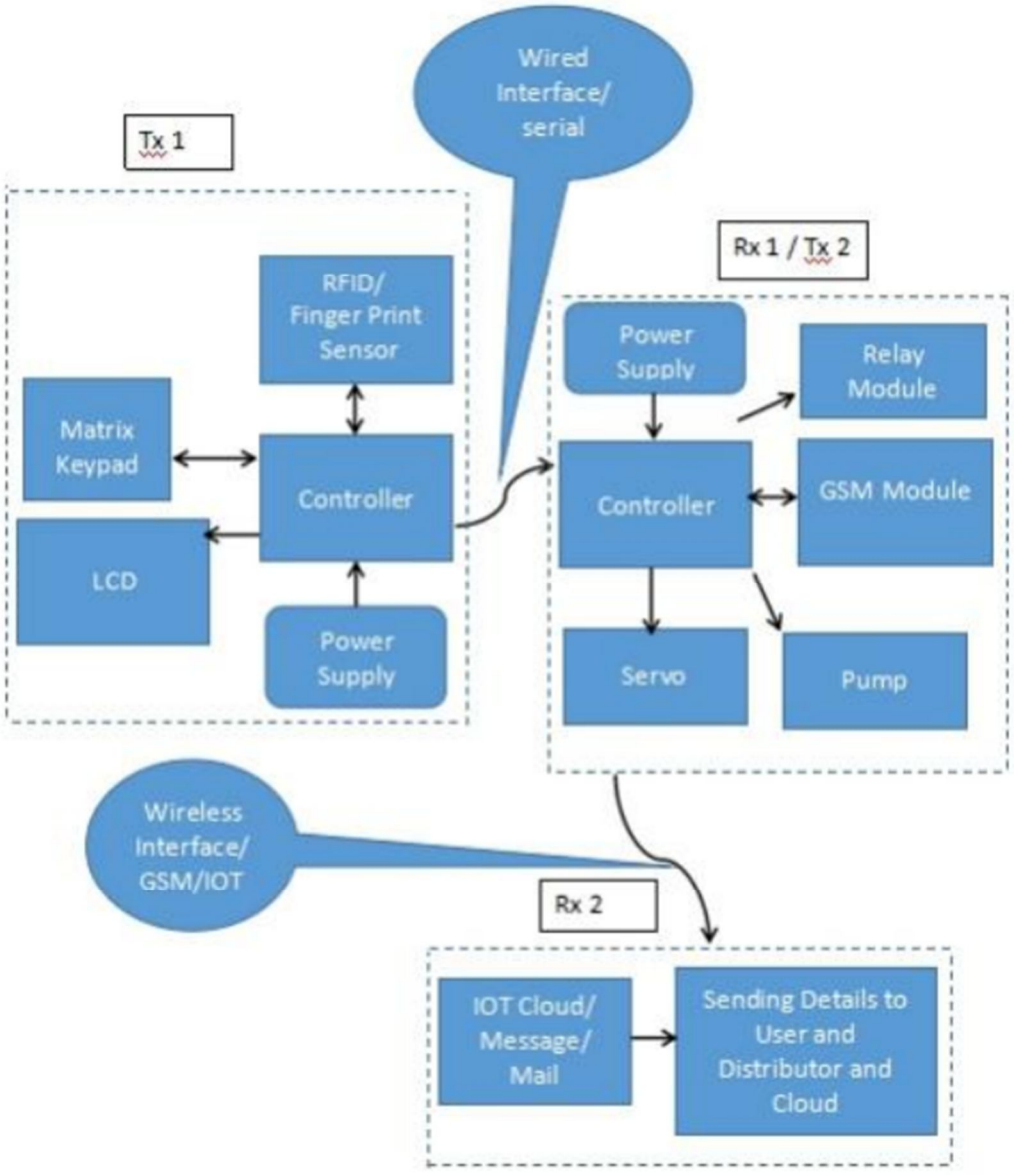


Fig.3

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IV. FLOW CHART

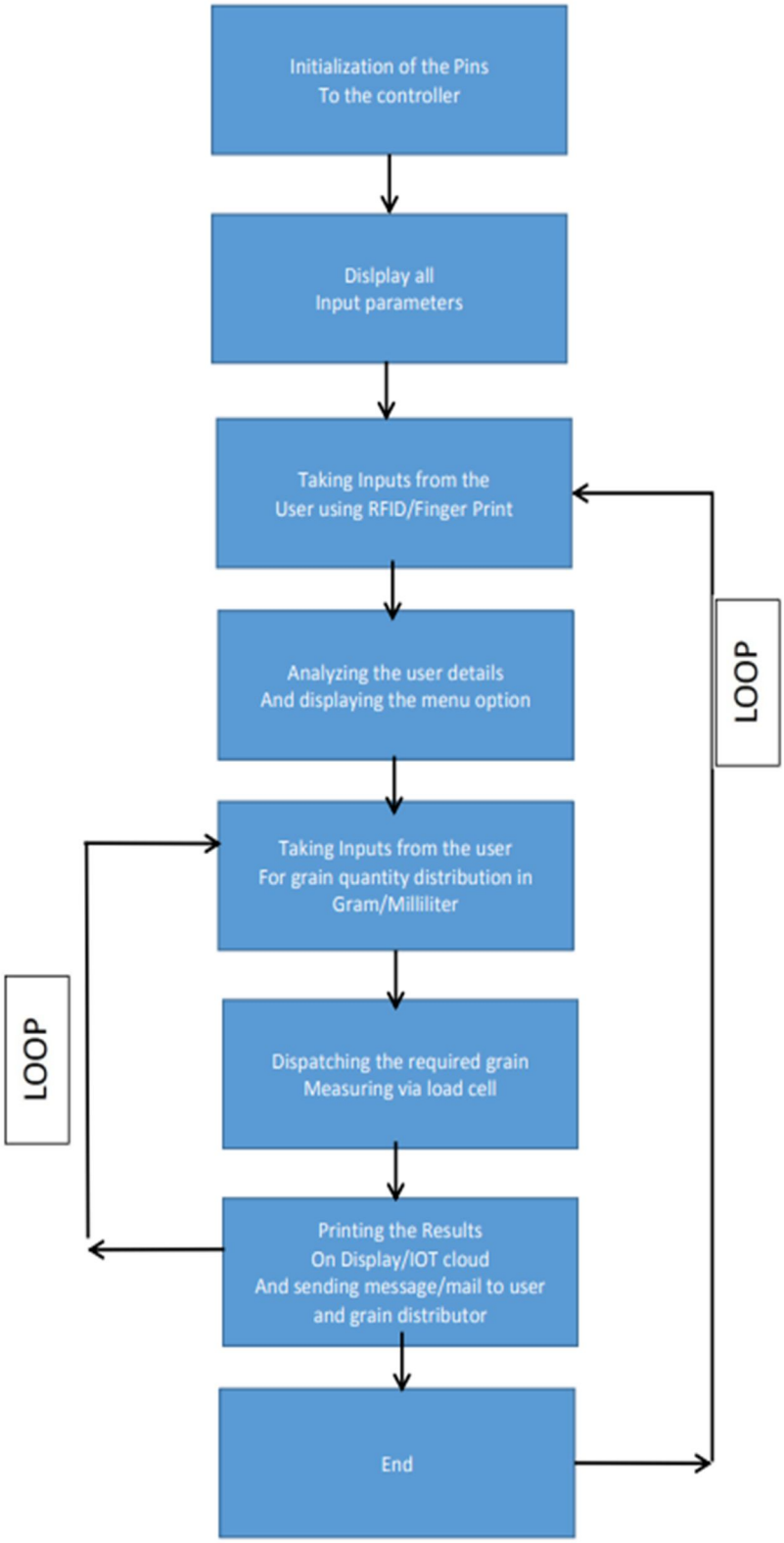


Fig.4

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V. CIRCUIT DIAGRAM

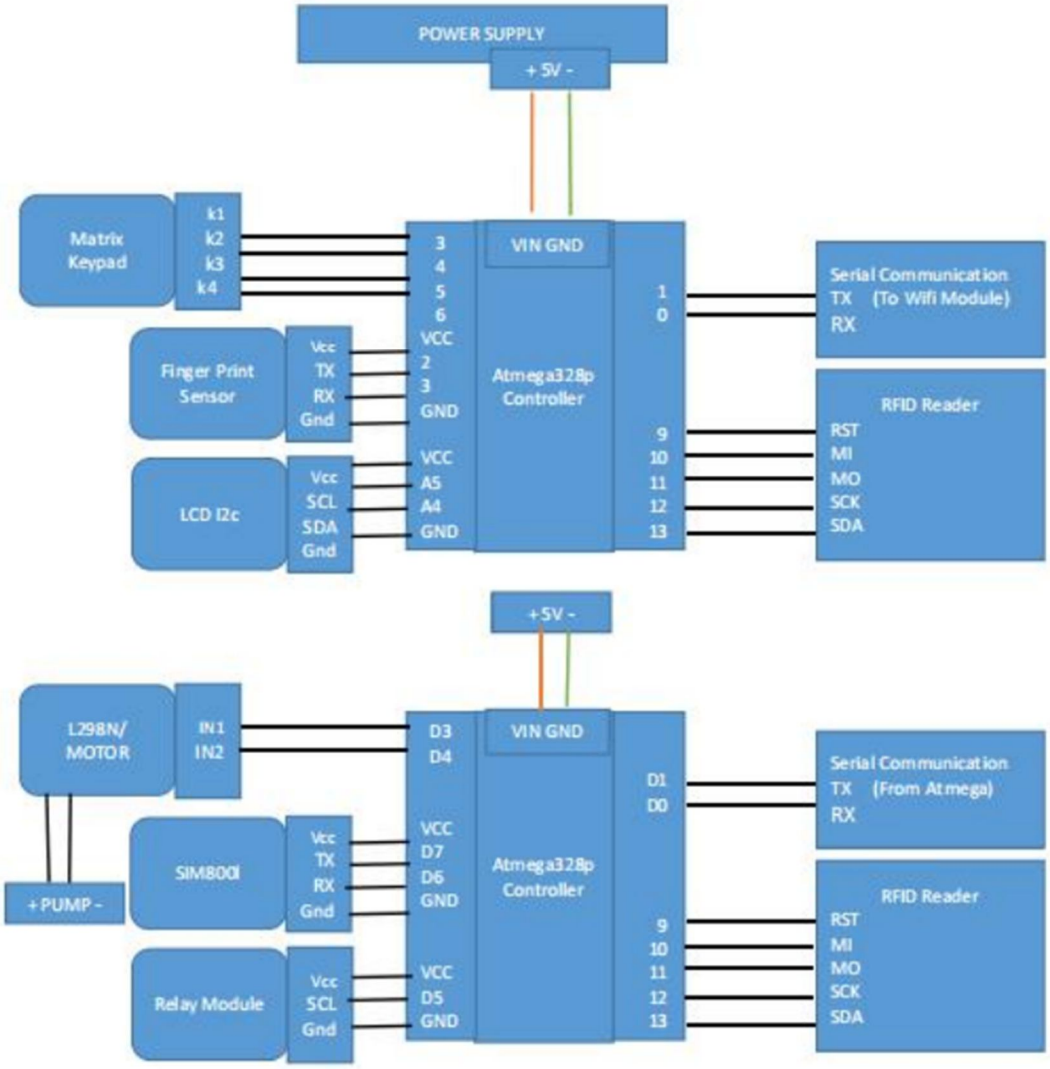


Fig.6

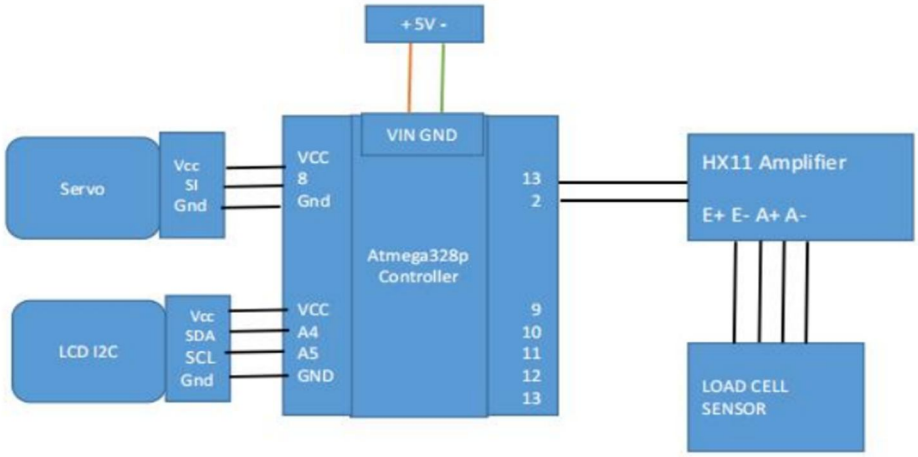


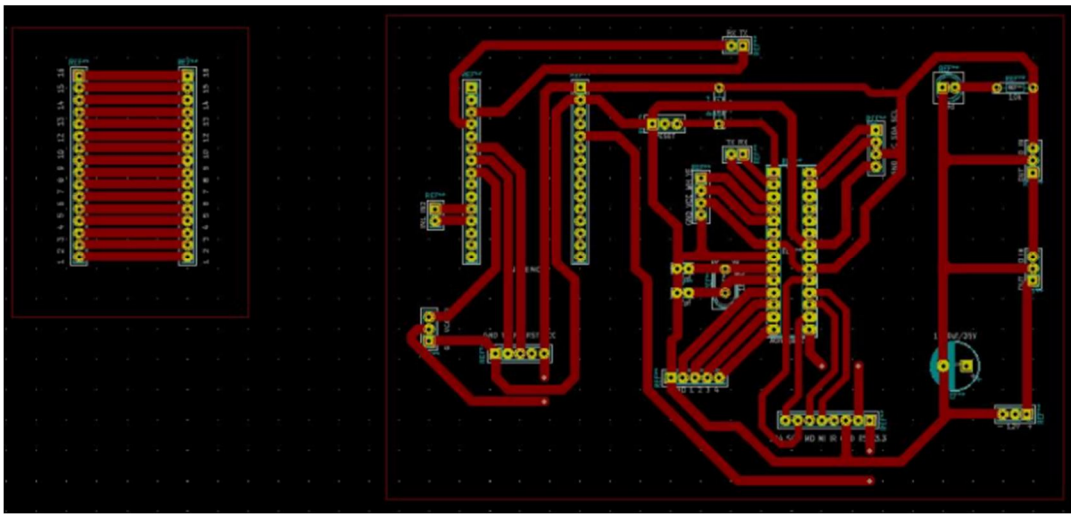
Fig.7

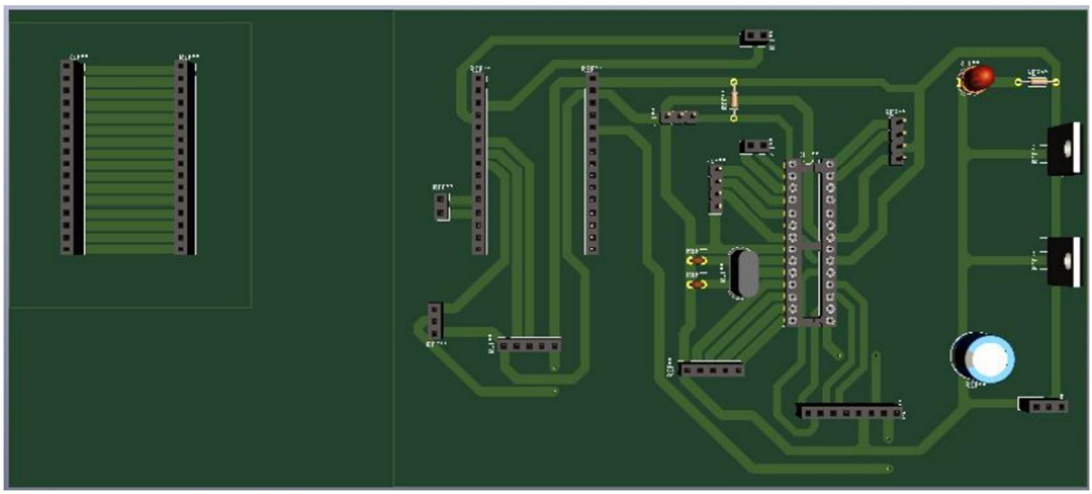
VI. WORKING

Circuit 1 (Fig 6): Initially we need to power the SMPS power supply to turn on the Circuit. SMPS (Switch Mode Power Supply) used to convert the 230VAC mains supply to 12V DC 3Amps Supply. In this SMPS is used for AC to DC conversion we have transformer (step Down), capacitors(filter), diodes(rectifiers) and Regulator Ic's . Now for controller which works on 5v dc we have step down the 12v Power Supply using Regulator IC as 7809 and 7805 respectively. In this project we have used two controllers ATMEGA328P and ESP8266WiFi Module. The connections of the both the controllers are show in the above-mentioned circuit diagram. Initially the user has to Login the system vial Fingerprint or RFID Tag. Once the user is valid the system will show you the Ration which can be dispatched to you via LCD. Now the LCD will Show Enter" 1=Auto Ration,2=Rice,3=Oil". So, the user needs to select the options according to his choice as in Auto ration the user will get both Rice and OIL. User has to select using 1x4 matrix keypad. If the user selects 1=Auto Ration then the Atmega328p controller will display. "Providing Auto Ration"," Rice 1kg and Oil 1L" .Then the Atmega controller will serially communicate with the Wi-Fi module and the Wi-Fi module which is connected to the internet and then SMS and Mail will be sent to the user and the Owner of the shop. And then the OIL and the Rice will be dispatched to the user using DC pump for Oil and Servo Motor for Rice. And the weight of that grain can be measured by the Weight Gauged signed in our project.

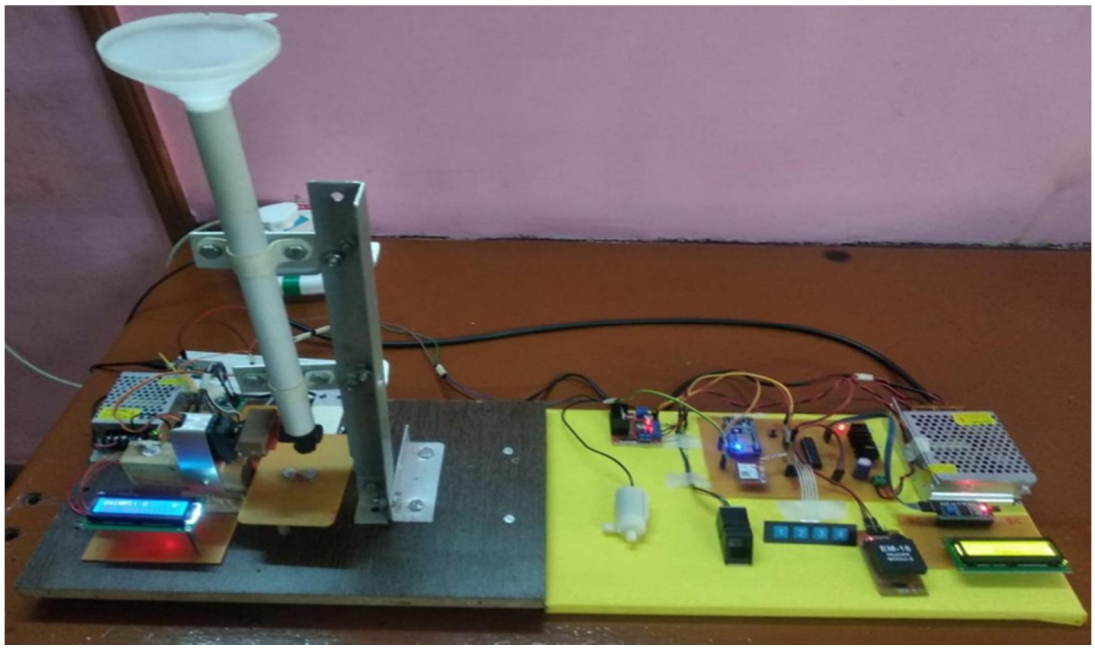
Circuit 2 (Fig.7) Initially we need to power the SMPS power supply to turn on the Circuit. Then the LCD will display "Weight Gauge" then it will display the real time weight measured on the platform. For the measurement of the weight, we have used 3kg Load cell which is mounted with mechanical structure. And this Load cell output cannot be directly applied to the controller so HX11 Amplifier is used to interface Load cell and Controller as shown in the diagram Above.

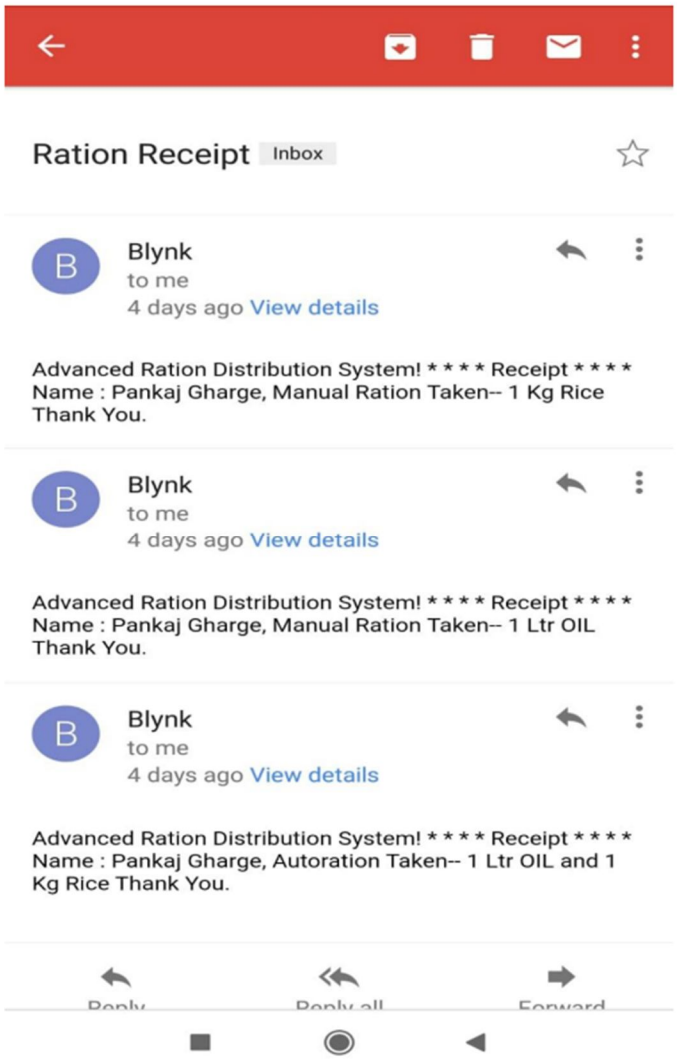
VII. RESULT

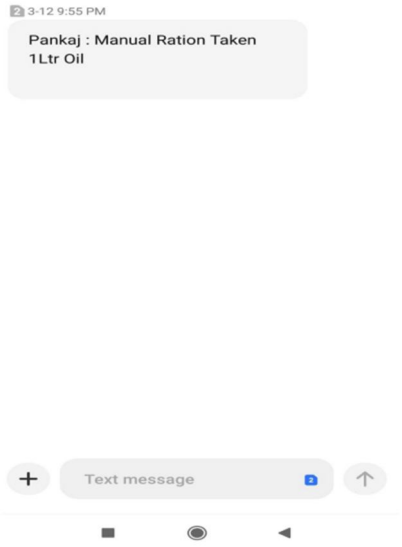




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Ration Receipt
Inbox
Blynk
to me
4 days ago View details
Advanced Ration Distribution System! * * * * Receipt * * * *
Name : Pankaj Gharge, Manual Ration Taken-- 1 Kg Rice
Thank You.
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Advanced Ration Distribution System! * * * * Receipt * * * *
Name : Pankaj Gharge, Manual Ration Taken-- 1 Ltr OIL
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VIII. CONCLUSION

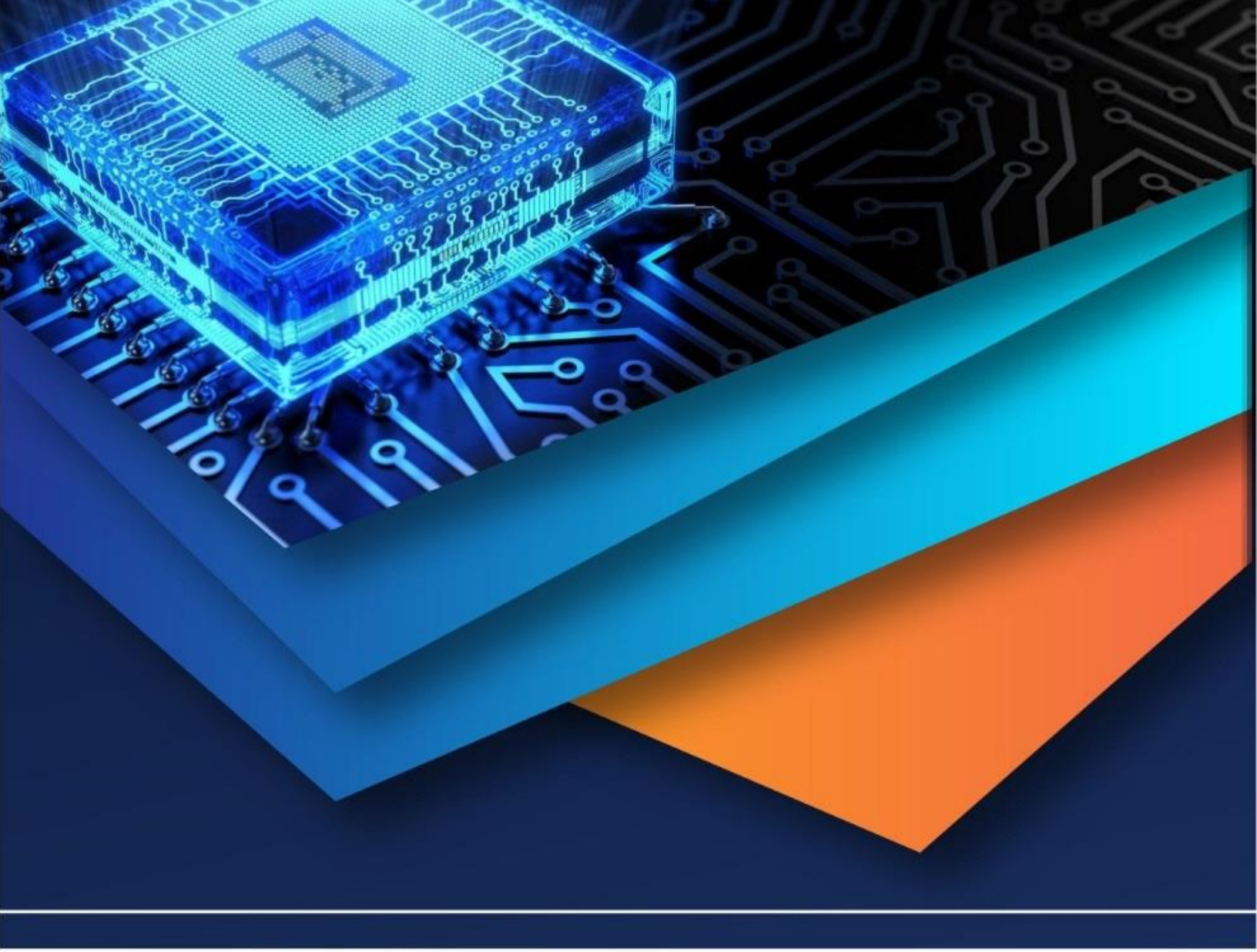
In this project we are going to determine, implement and introduce the latest technology in Current Manual based Ration Distribution System. We are developing a system Automatic Ration Distributor System which will be easy to access/operate by the user and which will also be able to stop the malpractice and corruption at a greater extent. We are designing a working model of Ration Distribution and making use if Actual grains and liquids for demonstration/working of the project. So this project can be converted into product after completion. By this we are going to minimize the problems faced by the users in the Ration Collection and going limit the Increase malpractice and Corruption in this field of area.

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