Online E-Ration System

INTRODUCTION

1) Problem Statement

- Public Distribution System (PDS) is an Indian food security system. It is established by the Government of India under Ministry of Consumer Affairs, Food & Public Distribution &managed jointly with state governments in India.

- The traditional PDS is used to distribute grocery items to India's poor who are valid ration card holders. The validity and the allocation of the ration cards is monitored by the state governments.

- A ration card holder should be given 35 kg of food grain as per the norms of PDS.However, there are concerns about the efficiency of the distribution process and fraud and stock availability social distancing.

2) Purpose System :

1. In order to make it efficient and improve the current system of PDS we are implementing e-Ration System. In this we are going to purpose a android app for customer and shopkeeper and web application PDS system.

2. In this we have developed **Web Portal (Admin)** where whenever **PDS** department will supply the food item stock to the shopkeeper that time they will update the stock on web portal as well so that we they can easily track the supply quantity of food and with this we can remove the chances for fraud.

3. Then is one **Android App (User)** for shopkeepers where they will get immediate notification when PSD department supply the food and they can easy tack the Inventory and validate to food quantity and size.

4. There is one more **Android App (End User)** which is for the customer there the customer can easily check food stock available at ration shop or and also able to check the price of food and available quantity of food at ration shop and with this app customer will able to see its previously buy food transaction details and family details and they will also have one QR code in this app.

Existing system Drawbacks.

Stock Availability

- There is very big issue with existing system where we can't able to check live stock at ration shop for this problem to checking live availability of food at ration shop whether the food are there are not for this we are planing to build a system where whenever PDS will send stock to shopkeeper that time our system will update the food stock quantity so that the customer are capable to check whether stock available or not at shop on the customer app and shopkeeper will also able to track the inventory of stock.

Publish Rush & they will not maintain the Social Distancing

- At every first week of month there will be huge rush of peoples in front of ration shop and they will not maintain any social distancing and it cause to spread the corona virus for overcoming this problem statement we are going to build an our own algorithm for this purpose which is responsible to perform following things.
- This algorithm send sms and app notification to the customer
- It will send sms and notification to only 50 customer for per day and also allocate the time slot to take the food
- So with this approach we can maintain the social distancing.

3. Existing Finger Biometric Authentication Device

- Current in PDS system they used a Finger Biometric Authentication Device to get and validate the customer ration stock and family details in this system something device got failed to get the customer finger print because of contiguously using of system and in this system shopkeeper has to physically touch the customer finger which responsible spread the covid type viruses.

- And this Biometric Authentication Device is too slow and very time consuming.

- To overcome this exiting problem we replace this system with the **QR Code** so that shopkeeper don't have to touch the customer finger and this QR code system have higher speed of execution for authentication the customer as compare to the biometric device.

- Each customer has their own QR code which consist the ration id.

- Each time whenever customer visit to shop for buying food that time they has to show their QR code to shopkeeper then shopkeeper will scan that QR code and once it get scanned successfully the shopkeeper will get immediate details of customer family and food stock.

- Once the customer take the food stock then the shopkeeper inventory will anticlimactically update the algorithm will anticlimactically reduce the quantity of available stock in shop so that next customer can easily check whether the stock available or not.

MODULE

1. Public Distribution System (Admin Portal) Module

In this module there will be one web application where PDS system can give stock to shopkeeper and also able to track the inventory.

- **Dashboad**
- **Add Shopkeeper Shop**
- **Check List of Shops**
- **Add New Ration Holder**
- **List Ration Holder**
- **Track Ration Inventory**
- **Check History**

2. Shopkeeper Module

In this module there will be one android application and this app will used by shopkeeper and used for tracking , allocation, scanning customer QR code.

1. **Login Module** - Shopkeeper can login

2. **Track Inventory Module** - Shopkeeper can track the food stock and what quantity is available at there shop and history of previous stock as well.

3. **Scan QR code** - This module will use to scan the customer qr code. and can view appointment details such as Ration Holder details & Ration Holder Ration .

4. **Transaction History** - Customer can view all the previous appointments and completed transaction history

5. **Calculate Bill -** Once QR code scan shopkeeper can generate the bill and also accept the payment in cash or online payment.

3. Ration Holder Module

In this module there will be one android application and this app will used by ration holders and used for tracking , allocation, showing appointment QR code and view profile details.

1. **Login Module** - Ration Holders can login

2. **Track Inventory Module** - Ration Holder can track the food stock and what quantity is available at there shop and history of previous stock as well.

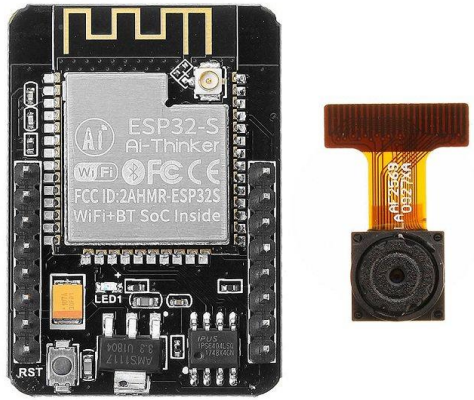
3. **View Appointment** - In this module ration holdes can view their booked appointment with nearest ration shop

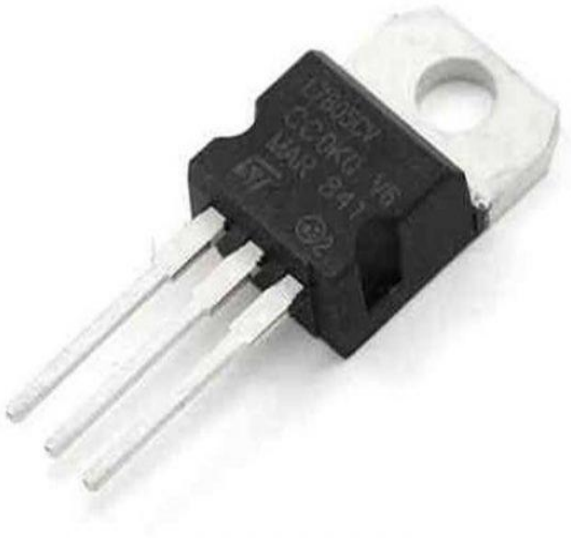
4. **Transaction History** - Ration holders can view all the previous appointments and completed transaction history

5. **Profile -** Rotion holders can view his family and stock details .

4. IOT Device Module

In this module, there will be an IoT kit responsible to scan the QR code of the customer and once the scan is completed it will connect with our cloud database and fetch the ration holder ration details, and show them to the shopkeepers.





1. ESP CAM 32 **2. WiFi Module** **3.12 V Adapter** **4. IC 7085**

5. Jumper Wires

6. LED

7. Solder Iron

Advantages

- Stock availability will be visible to both public and shopkeeper.
- The public rush will decrease, and social distance will be maintained because we will automate our system to give notification to 30 peoples daily to claim their ration.
- We are upgrading the bio-matric system by QR code, which boost the speed of working without any interruption.
- The fraud of public will be finished using the digitalized Ration System.

Algorithm Steps

1. Start
2. Take Input
   (Shop Name, Month, Sock Quantity)
3. Select all holder from database of shop
4. Calculate per day customer handling capacity
   (All Ration Holders / Days)
5. Select details of ration holder from database
6. Book Appointment of ration Holder
7. Send Notification to ration holder mobile app
8. Update status as appointment book
9. Stop

Technology

- Language : Python, Java
- Front End : Html, Css, Android
- Framework : Flask
- Database : MySql
- Protocol : API
- Domain : Image Processing & Smart City