

# Automation in Rationing System Using QR code

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**Abstract:** “corruption has been around for a very long time and will remain in the future unless government can figure out effective ways to eradicate it” (mauro 1997). Ration Distribution means Distribution of Essential Commodities to a large number of people, hence it involves smuggling and corruption of goods. All this happen because of every job done is entered manually. The main aspect of this project is to avoid corruption and to Properly Distribute Goods. In this Paper, we propose a system in which customer will be given a QR code according to their information. The Customer will scan its QR code and will get the Rationing Goods. The Customer will be acknowledged after he/she has received the goods.

**Keywords:** Automation in rationing system, QR code, MD5.

## I. Introduction

Public Ration Distribution in India is one of the largest government’s economic policy. Its main Aim is to provide food grains to the People at Affordable rates. Ration shops are available all over india to provide the food at Cheap Rates. The Public Distribution is managed by the Central Government of India but it has so many Limitations. Most of the Shopkeeper have fake Ration card with them and they Demand Ration Accordingly. In this way we are facing Corruption in the Current System which is a major problem that is affecting the Indian Economy.

Automation in Rationing System in this project is an Advanced System useful for an efficient way of ration Distribution. This System has been designed to minimize the Human Intervention in the Ration Distribution. Hence our System mostly focus on Implementing Automation in The Current Rationing System. The Consumers are classified into categories Yellow Ration card, Saffron (APL), White, Annapurna and are provided with a QR code on backend of a ration card which has the consumer details encoded in it using MD5 Encryption and Decryption Algorithm. The Shopkeeper Scans the QR code on the Customer Ration Card through a web application. Once the Customer code is Scanned, The Details of the Respective Customer appears on the Shopkeeper Application. The Shopkeeper than provide the Customer with What and Rice which. As an Acknowledgement the consumer is provided with list of items taken to the registered Mail Id.

## II. System Design and Proposed Work

System Architecture of any Project gives the Complete Insight of the Project. It alludes to the high level structure of a Software and the Control of making such Logical and Systematic Structures of Framework. System Architecture of this project is given below.

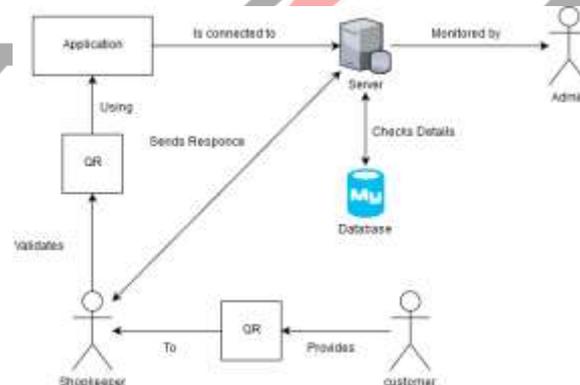


Figure.1 System Architecture

### Admin

The Admin can be the Central Government or The State Government who monitors the activity of each and every shops. All the Operations such as adding a Shopkeeper as well as a Customer, Updating, Deleting etc., are controlled by the Admin. The Admin makes sure that the goods are being distributed among the Ration shops evenly.

### Server

The Operations performed between the Shopkeeper and the Admin are Performed through the Server. The Database is checked by the Admin through the Server.

### Application

It is an Web based Application, developed on Android Studio, where a particular Shopkeeper has to login with its credentials and Scan the QR code of a individual Customer, Distribute ration to the Customer.

### Database

Our database is having sets of Data stored. Here all the data manipulation, data definition, data control operation can be performed on various data sets.

### Shopkeeper

It is one of the main component of the architecture as the shopkeeper is performing the main operations in the Rationing System.



Figure.2 Ration Card

### Ration card

Ration card is used as an identity proof by the consumer which will have the QR code attached to it. It was used to maintain all the Logs of the Customer.

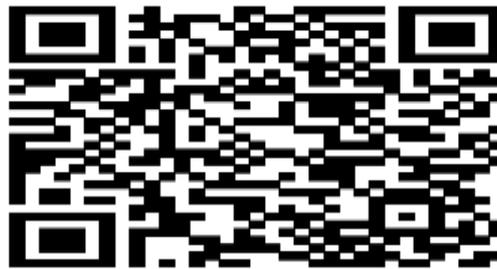


Figure.3 Quick Response code

### Quick Response Code:

QR code is the trademark name for the two dimensional barcode system. it was originally invented in 1994, as a way to track vehicles as they were assembled, to scan components at high speed

QR is short form for quick response. they are used to take a piece of information from a transitory media and put it in on to your cell phone. the other key feature of QR codes is that instead requiring chunky hand-held scanner to scan them.

Its a Quick Response code Generated when a User register for the first time. It has information of the Customer encoded in it using MD5 algorithm.

### MD5:

The MD5 message-digest algorithm is a widely used hash function producing a 128-bit hash value. Although MD5 was initially designed to be used as a cryptographic hash function, it has been found to suffer from extensive vulnerabilities.

### III. Algorithm

1. Customer visits the shop and presents the qr code
2. Shopkeeper scans the qr code through app
3. If(QR Code == valid)
  - a. Read data and send it to server for verification
4. Server checks data and send a response to application
5. Shopkeeper check if the response is valid
6. Shopkeeper provides ration to customer
7. Centralised database update request is sent by shopkeeper app
8. SET quantity = (quantity) – (ration given to consumer)
9. Update Centralised database
10. Send response to the shopkeeper about the update
11. Display the inventory result to admin

### IV. Result.

The system minimizes the risk of corruption from the current system and makes the system feasible for the Customer. Message will be sent to the government about the dispensing after each item being dispensed. OTP from the GSM module provide two step verification which ensures security. After implementing the system we get the below output.

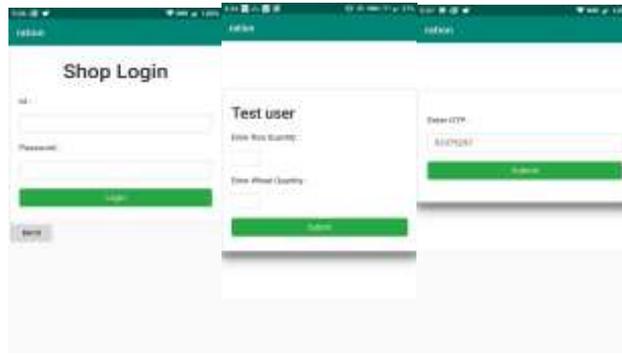


Figure 4 output

#### IV. Conclusion.

The Current System can provide Safe and Automatic Distribution of Ration in the Current Indian Rationing System. Many Drawback has been overcome by this System. After Validating the User goods are being provided to the customer. Proposed system can avoid corruption and solves many such problems including tampering of the system and from natural disaster.

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