Virtual Queuing System for Ration Centers

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Abstract - *Ration card plays a vital role in supplying food grains, gas connection, etc., to every household. In this project, we have proposed a smart virtual queuing system using web application to prevent the malpractices and corruption in the current system. The conventional ration card will be replaced by web application and will be used by the user to search Ration Shops, check their products availability, prices and also pay the Ration. User will be verified using One Time Password which will be sent to the registered number for Payment. After successful transaction of payment the database will be updated stating that ration content is delivered to the user. It requires very less human efforts and it is secure. Thus by implementing this system government can keep track of ration and note all the distribution of the ration in the country.*

Key words: **Virtual Queue, Ration, Anti-Phishing**

1.INTRODUCTION

Virtual queuing system is a system where customers need to wait in virtual queue, rather than physically waiting in line to get a service. With a virtual queue system, customers can wait remotely as they are not confined to any waiting spot. Virtual queuing system for ration center is about managing consumer journey in the digital space, so they have less interactions with staff and fellow customers physically. Customers check in virtually and wait remotely for ration, and staff can also keep social distance when serving ration items. Specifically for the current situation regarding Covid-19, a virtual queuing system helps to reduce the spread of corona virus, and thus keeping staff and consumers safer from the risk of infection. Ration card is a very important document for everyone and it is used for many purposes such as to get family members details and gas connection, it acts as address proof for various purposes and to buy the groceries like sugar, rice, oil, wheat, kerosene, etc., from the ration centers. But this system has two drawbacks, first one is there can be ration forgery and second one is it is very time consuming.

2.LITERATURE SURVEY

The author C.F. Codella, R. Jalili, L. Koved and J.B. Lewis have proposed a toolkit for developing multi-user, distributed virtual environments. The design and operation of the Virtual Reality Distributed Environment and Construction Kit (VR-DECK) toolkit developed at IBM Research is reviewed. It provides a designer with a development environment while supporting distributed computing, multi-user capability, and a variety of I/O devices. Virtual worlds are built as collections of modules which communicate via events.

The author H. Heffes has proposed Analysis of first-come first-served queuing systems with peaked inputs. This paper treats the problem of analyzing a first-come first-served queuing system, in equilibrium, when subjected to a peaked input (e.g., traffic overflowing a trunk group with Poisson input). The basic GI/M/N (renewal input to N exponential servers) queuing result is used, together with each of two models for representing peaked traffic, the Equivalent Random (E-R) model and the Interrupted Poisson Process (IPP) model. The equilibrium virtual delay distribution is derived and compared with the equilibrium distribution of delays seen by arriving calls.

The Author Golden Bagul Brendon Desouza, Tejaswini Gaikwad and Ankush Panghanti have proposed Smart ration card management system. The goal of this project is to develop a better, efficient ration card system using QR code technology. This system customized the offline system and established transparency.

The author Shashank Shinde, Aishwarya Patil, Amol Pandit, and Aparna More have proposed Automated Ration System with Database Management. This system helps users to know their exact allotted ration of the month. The remaining would be monitored by admin which will get subtracted from allocated ration for next month.

The author Swapnil Kurkute, Damini Bhoye, Kishori Kavare, Priyanka Musale, Dipak Patil and Rashmi Lokhande have proposed E-Rationing system. They introduced biometric device and made this process computerized to overcome the drawbacks of issuing products based on the ration card.

The author Dhanashri Pingale, Sonali Patil, Nishigandha Gadakh, Reena Avhad and Gundal S.S. have proposed Web enabled ration distribution and corruption controlling system. This website can be accessed by user whenever they require ration from respective ration centers. They need to provide required item and quantity using keypad and LCD display. The details of every person is already stored in

database through which they get accurate quantity of required goods.

The author Jinali Goradia and Sarthak Doshi have proposed Automated Ration Distributed System. In this system employee asks for customer to enter required quantity of weight in the application running on the computer. Once the customer hits the start button, the grains will be collected in container automatically and the weight is displayed on both weighing apparatus and on the computer. Once the required amount of grains entered by customer is collected, same will updated on database maintained at shop through application running on computer. This system has helped reducing fallacies involved in fooling of customers.

3.PROPOSED SYSTEM

By using Virtual queuing system application, one can send request to get ration and get a details on what day they need to visit ration center for taking respective ration by virtually generating token number. User can also access status of ration like whether their request is approved, denied or still pending. People can register to get ration every month. It will generate a virtual queue for ration distribution according to requests.

A new customer gets a download captcha option once he register to system. Customer need to upload this captcha during requesting certain amount of ration from ration center. Once he uploads, system will check whether it is valid and original or not. If it is not a fake one then the request is placed.

Ration center have to approve the request. As soon as request is approved, customer's registered mail id and contact number will get a message with One Time Password(OTP),scheduled time and date. Customer need this OTP when he visit ration center to receive ration. He will be given ration only when he give the correct OTP to ration center staff. This serves as a transition from manual to automated system.

3.1 MODULES

Administrator Modules Description

- **Ration Center Management:** This module supports the administrator to manage the ration center details and administrator having rights to create ration center account and administrator can also block and unblock the account.
- **Item Management:** This module supports the administrator to create items by providing item name, description & rate these items will be displayed for ration center & consumer.

- **Stock Management:** This module supports the administrator to manage stock details of the item and we have provided option to import the product by providing item details, quantity, supplier & forwarded details.
- **Manage Supplier:** In this module supports administrator to manage the item supplier details of the company and it supports to manage the contact person of the manufacturing company.
- **Manage Forwarded:** The forwarded one who deliver the items to administrator to ration center & ration center to consumer this module supports to manage the detail of the item transportation.
- **Item Request:** This module supports to maintain the item request details raised by the ration center and it supports to transfer the items from administrator to ration center if the stock it available.

- **Ration Distribute Condition:** The Ration Distribute Condition plays a very import role in distributing the ration to the consumer. In this module administrator have right to manage the quantity of items to be delivered to individual and family.
- **Consumer management:** In this module administrator can also create the consumer account and administrator will have rights to block and unblock the consumer account and consumer family members.
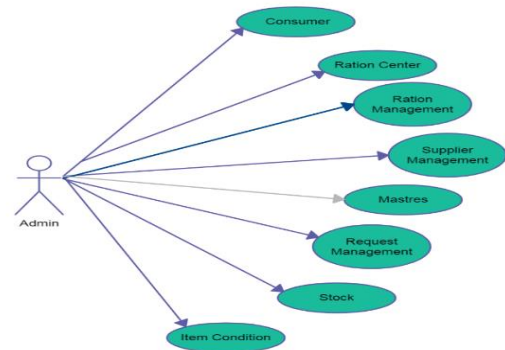

Fig – 1: Use case diagram for Admin

Ration Center Module Description

Consumer Item Request: This module supports to maintain the item request details raised by the Consumer and it supports to transfer the items from ration center to Consumer if the stock it available.

Consumer Management: This module supports to ration center to manage the Consumer details and manager can create a company account for the Consumer.

Export Statement: This module supports ration center to export the sales details to file format and it supports to send email to administrator regarding sales.
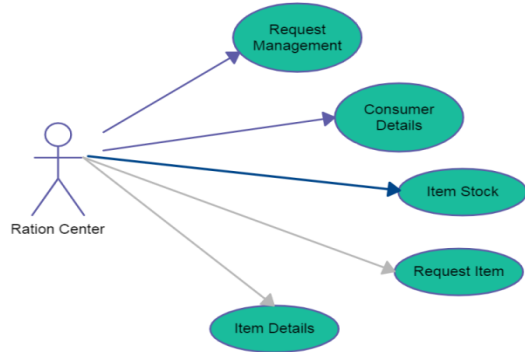

Fig – 2: Use case diagram for Ration center

Consumer

Item Request: This module supports the Consumer to send request for the items to selected ration center and he can keep track of the request sent to the ration center.
Registration: This module supports Consumer to register with the application.
Purchase details: This module provides the history of the item purchased by the Consumer.
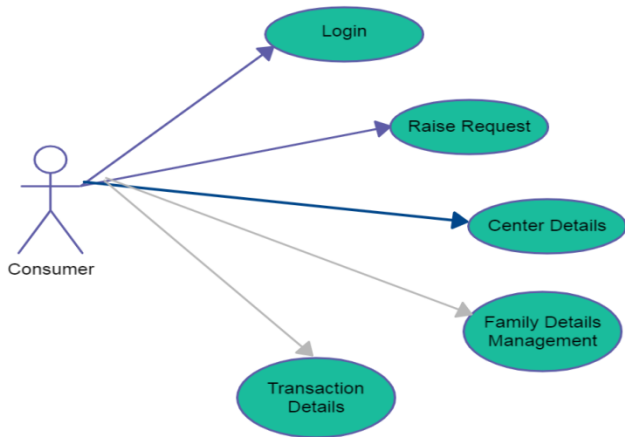
Fig-3: Use case diagram for Consumer

3.2 Anti-Phishing

All those intentions to prevent spam attacks via internet can be termed as anti-phishing. Phishing is a false approach employed by an attacker to get sensitive or private information from the users who are unaware of phishing attacks. Applications based on captcha approach to phishing provides more security against attacks.

The use of images is used to preserve the privacy of captcha by decomposing the original captcha into two shares which is

stored in separate database such that the original captcha image is revealed only when both shares are available simultaneously. Once the original one is given to the user it can be used as the password. Several solutions have been proposed to seize phishing attacks.

In this project once registration of user is completed, user will be given a captcha image. User can download this captcha. When user need to book his ration he need to upload this captcha so that it will be verified by virtual queuing system application by comparing it with the original captcha stored in system and confirms the booking if both the captchas are same else it will be considered as invalid captcha. Generating the captcha dynamically by the system is major advantage of the queuing system.
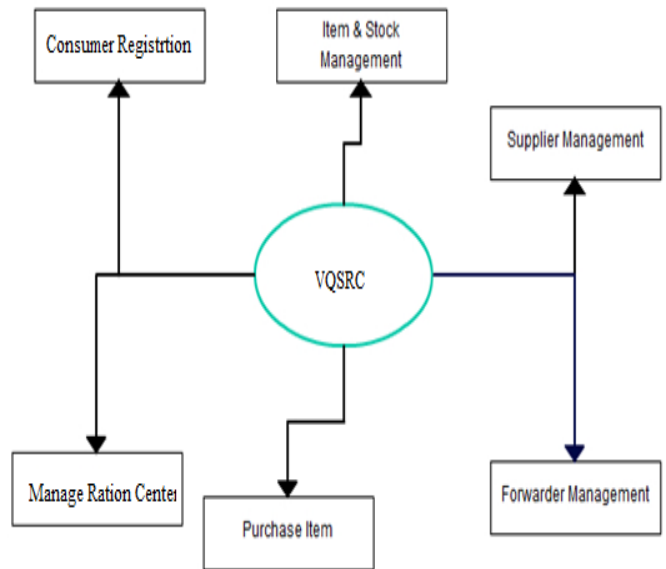
3.3 Architecture

Fig – 4: Architecture Diagram of Virtual Queuing System for Ration Centers.

4. RESULT ANALYSIS

Home Page

Fig - 5: Home page of Virtual Queuing System for Ration Centers
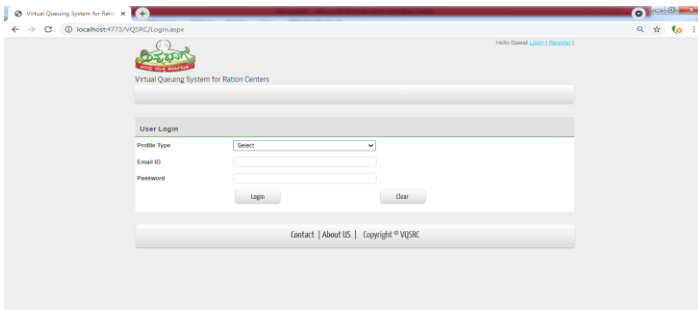
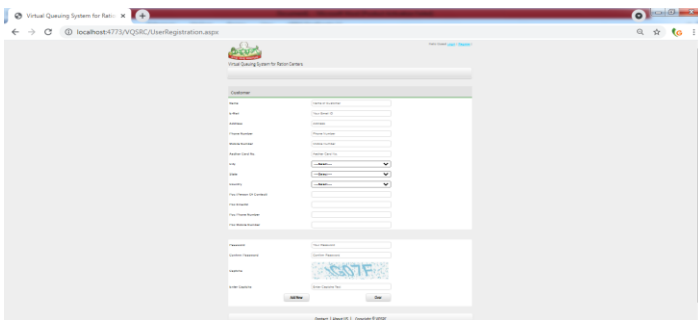### Login and Registration Page

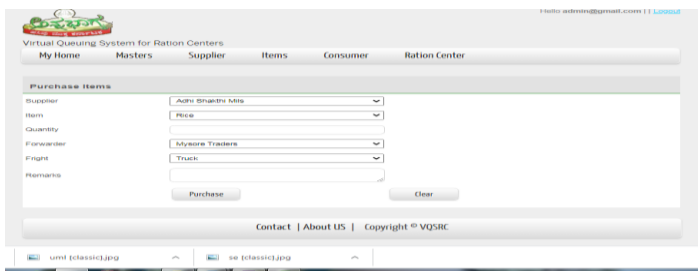**Fig – 6:** Login Page

Fig – 7: Registration Page

Admin

Fig - 8: Purchase Food Item
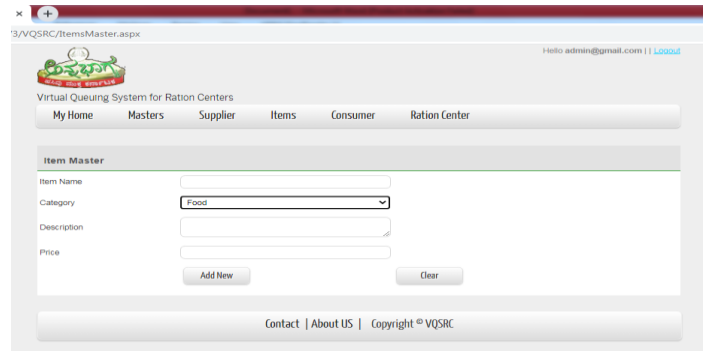

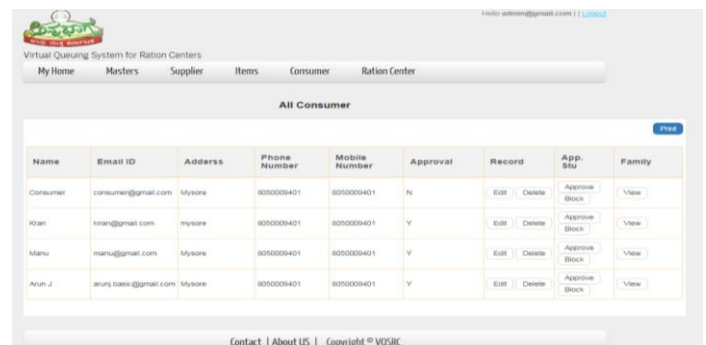**Fig – 9**: Create new items
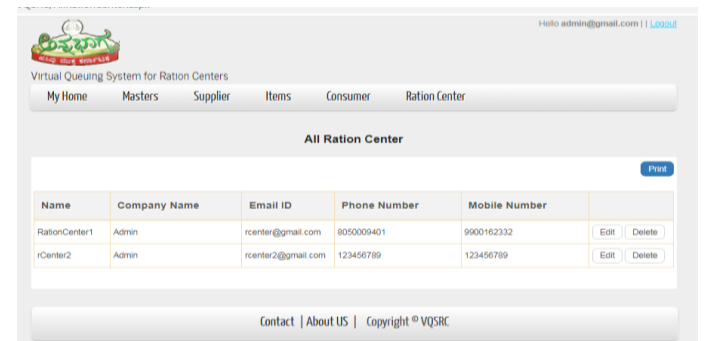

Fig – 10: Consumer details

Fig – 11: Ration Center Detail

Ration Center
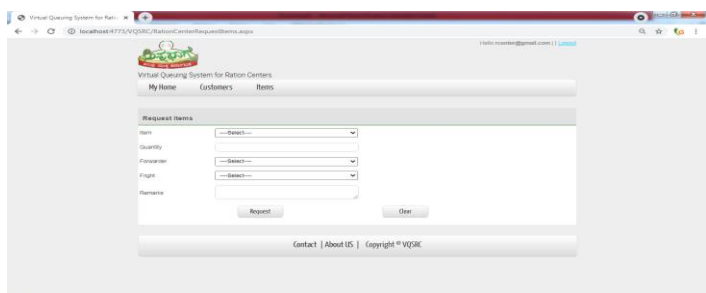
Fig - 12: Request food from admin

Consumer
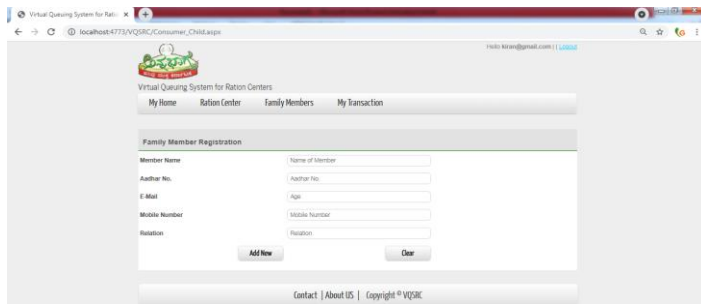
Fig – 13: Family Member Registration Page
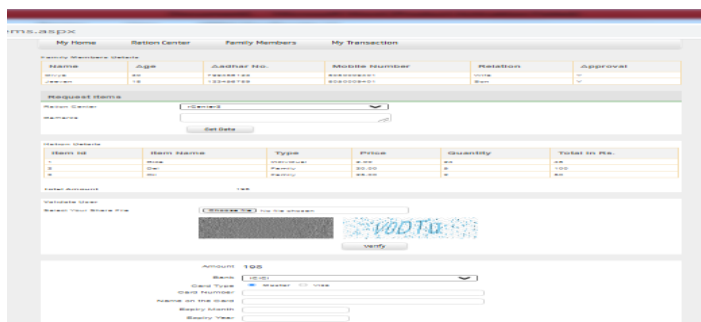

Fig – 14: Food Item Request Page

ACKNOWLEDGEMENT

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5. CONCLUSION

In our Approach, we proposed a new method to digitalize the Public Distribution System. Virtual queuing system for ration center website is developed to overcome the uncertainties in ration centers. This system will avoid the corruption in ration system to a larger extent by providing transparency to users at each level. As there will be no manual entry and everything will be central database, it becomes easy for respective authorities to cross check the data entries at any point of time.

This system can be successfully implemented in environment

where crowd management is difficult and thus help in the elimination of physical lines and waiting time all over the country in service based institutions and organizations. Finally, we hope that the work done by us for "Virtual queuing system for ration centers" will be best and also this project is user friendly. Government can make use of it to check details of illegal activities going on and also keep track on the Ration items that are in high demand in a particular region.

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