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**RATION SHOP METADOWN APPROACH USING LARGE SCALE
HIERARCHIAL CLASSIFICATION**

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Abstract

This work is an attempt to reduce illegal activities taking place in Ration shops in Tamilnadu. Initially three logins are created for the shopkeeper, customer and Government agent. Main admin can allocate goods to every customer by segregating them into divisions and each customers have their own login so that no one elase can easily order others' allocated goods and also shopkeeper has a login id so that that person can view how many customers ordered and how much they have ordered how much they have for this shop. Since this application is using cloud storage there will not be any storage related issues. Since all data will be storing in a cloud with high security the privacy will be preserved. So that every user will get benefit and they will not miss their own products when the time comes every month to collect from Ration Shop. The application also provides the users an option to apply online during transfer for new ration card and it also facilitates the online status tracking of new ration card or modification request. Using this system the user will be able to see how much goods allocated for him/her from their home. It reduces unnecessary waiting periods in long queues. The system provides an easy interface so that person of little computer knowledge can also use it easily and efficiently. The proposed system provides improved functionalities and efficient Ration shop access.

Keywords: Cloud storage, Clustering, Filtering, Ration card, Searching, etc.,

1. Introduction

Government of India provides Ration card for all the citizens of India. This Ration Card contains the details of a family headed by the adult male member of the family. According to the income of the family, some list of products namely food and groceries are given free of cost and some are given in a rationalised rate. It is a difficult process for the State

Government [1] to ensure that eligible persons are getting their properly allotted supplies. In the current scenario, any of the family member has to go to the ration shop with the ration card during the first week of every month without knowing whether the shop is having stock or not [2]. Sometimes there will be a big queue waiting outside. Even after standing for a whole day, the person has to go back with nothing. Because of all these practical difficulties, many of us are not at all buying supplies in ration shop. Taking all these as advantages some of the ration shop workers are misusing these goods and selling them outside illegally at market price and sometimes even more [3].

In the shop, they keep all records in big paper file records. Government provides several books namely one for maintaining the details of all the enrollees in a particular locality, another for storing the details of the issue of supplies and another one for maintaining the bill [4]. The shop proprietors must keep and maintain these three logs with proper entries with date and time. These books must be submitted to the supply office to be verified by the Ration Inspector. The RI will check the entries of all the books and calculate the closing stock. The wholesale agent gives only the quantity approved from the RI. Wholesaler calculates the bill amount of the permitted quantity. Because of the manual entry through paper work in these three logs, there are chances of duplicate entry in the existing manual entry system. This will result in Time and resource wastage.

2. Related Work

In a previous attempt, SQL server and ASP.NET were used to automate the Public Distribution System (Ration Shop) [5]. SQL server applies a different language when compared with existing other databases. The system where the application has to be hosted should have an upgraded SQL server and .NET installed separately. The automatic ration shop using RFID [6] for Public Distribution System is based on Radio Frequency Identification (RFID) technology that replaces the traditional ration cards. The RFID tags are provided to the public instead of the cards. Customer's database is stored in a programmed microcontroller provided by the State Government. But in this system if the RFID tag gets lost or damaged, then re issue of tags leads to money wastage. In [7], digital ration cards are proposed. And also proposals were made to track the trucks using GPS. This is impossible in the rural places of North India. The proposed technique makes use of the Cloud storage and an easy to use GUI is created. This will be easier on the user side as well as the admin side. Between the GUIs and cloud, three modules of codes are written to keep track of the three types of records namely register log, issue log and bill log. Descriptions about the proposed methodology is given in next section.

3. System Design

The proposed technique provides features for online application of new ration card due to transfer or marriage. Through this application we provide the option for status tracking. Any one who is having a ration card can view the allocation details. By sitting at home anyone can easily view the status of the availability of goods. It reduces unnecessary waiting time. Any such public system should be designed in such a way so that any person without much computer literacy [8] can also easily use it. The proposed system provides such a simple interface and design with high efficiency [9].

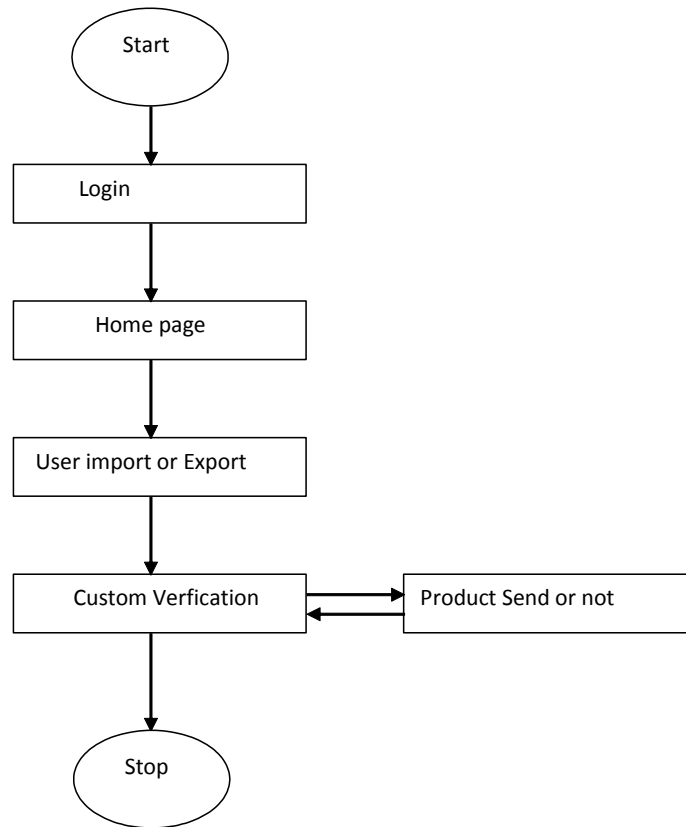


Fig.1. Data Flow using the proposed methodology.

The above diagram in fig.1 shows the overall working model of this proposed methodology. Initially the user has to login through the login. After the successful login (If the user is an already registered user), the user can view his/her status. If the user wants to buy the products, then again custom verification is made. Based on the allotted amount of goods or supplies, approved by the RI, the sale is made or sanctioned.

3.1. Architecture Description

To overcome the problems faced in the current scenario of Public Distribution System (PDS), a proposal has been made for automating the ration shop. Normally in the traditional system, the supplies are stored in reservoir tanks and they are

measured and given to the ration card holders during each month. So when goods are supplied to the ration shop, then that quantity is updated in the web server. So that whenever the user requires the supply, he/she can access web site and check the status.

Everytime when the sale is made, quantities of goods in ration shop are updated dynamically in the web server.

The spiral model of software development [10] is made which combines the iterative nature of prototyping with the controlled and systematic aspects of the waterfall model. The entire work is designed using 6 task regions [11].

1. The User communication task – the GUI to establish communication link between developer and User.
2. The planning task – the resources required and timeline were set.
3. The risk analysis task – to list the technical risks and then the management risks and also the analysing them.
4. The engineering task – to prototype the actual project.
5. The construction and release task– to fully build all the modules, test and install.
6. The User evaluation task – to get feedback from the supervisors who witnessed the working based on the evaluation of the application.

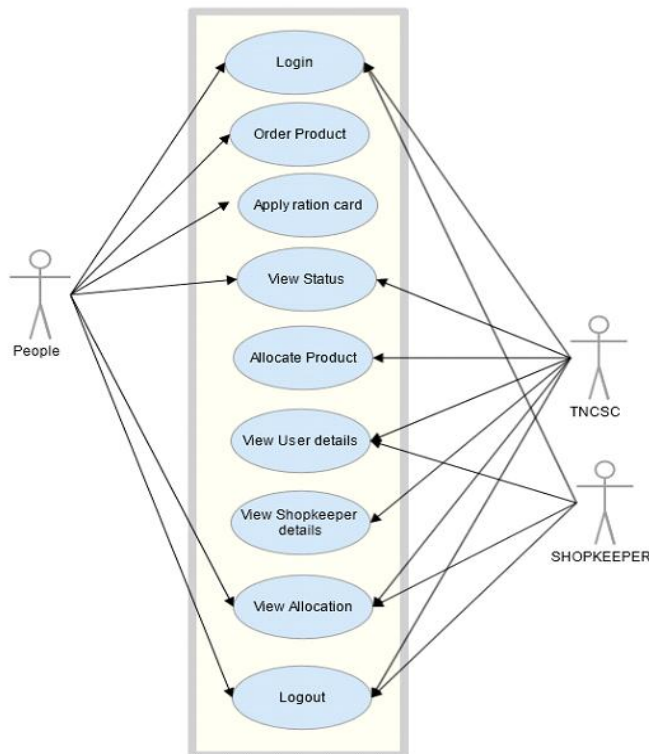


Fig.2. Architecture

Above figure (fig.2) is the use case diagram representing the architecture.

Login: The user, TNCSC (Govt. Representative) and Shopkeeper have separate login pages [12]. After verification they will be given access.

TNCSC Module: TNCSC is a govt. Representative who controls all the process in this applicatuion. Similar to a Ration Inspector he/she can only allocate goods for all the districts. The status will be updated by admin. TNCSC module can add a new Ration shop as well as new user [13].

Purchase Module: Purchasing refers to the ration shop or the shop keeper [14,15]. If any user attempts to acquire goods, or if the TNCSC module allocates new set of supplies or add a new shop, this module will get activated.

3.2. Algorithms

- **Search** - A Search algorithm called A* algorithm is used for record search in the cloud storage.
- **Filtering** – A proper filtering technique should be used for removing the unwanted characters and spaces while the user gives input. It also removes the portions of text that cannot possibly find a match.
- **Clustering** – A Hierarchical Clustering technique is used since bulk amount of records are stored and need to be accessed dynamically by the user’s login id and RI login. It comes under the unsupervised learning category.

4. Conclusion

The conventional method of Public Distribution System (PDS) have lot of practical difficulties like waiting in long queues, malpractices by ration shop keepers and intermediate agencies. The proposed methodology helps the general public in easily accessing the ration shops using the ration cards. The security provided by cloud storage helps in avoiding the overheads posed by traditional book keeping techniques. Using this Digitized Public Distribution System we can gretly reduce the time delay and other related issues namely malpractices and illicit activities by ration shop owners and supportive Government agencies.

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