An novel approach to computerized ration shops equipped with biometric customer card

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ABSTRACT

This paper mainly focuses on computerization of ration shops providing Customer Card or Ration Card having the Biometric Identification. Currently the Ration shops are manually operated like billing, weighting systems which are inaccurate, makes a way for causes for mischiefs and cheating activities. To avoid these problems all the ration shops are to be computerized and all the customer's cards are provided with a digital card with Biometric Identification. By means of implementing the computerized billing and the digital weighting machine to be interfaced to the computer system. The finger print of the customer is used as the biometric Identification, in order to avoid the unauthorized accessibility upon the ration shop. By implementing the system ration shop process become simple and stack details are accurate and easily calculated in terms of grams. The chance for cheating and inaccurate quantity of supply are rare, so the customers can get accurate amount of products. The stack and overall calculations of the ration shop is made fast and simple.

Introduction

Now a day there is a rapid development in technology, but still the Ration system is manually functioning. To make this system simple, easier and automated, the ration shops are to be computerized. To support this system the digital weighing machine to be interfaced to the computer and data transfer from weighing machine to the computer to be made [1]. Due to this novel approach the improper weighing can be eliminated. In many cases the false data are entered by some shop officers and huge amount of ration products are sold in black markets, but in this proposed system the entry of false data are impossible. The finger print of all the customers are to be scanned and stored in the Digital Customer Card, so no other persons rather than in the card cannot able to access the ration shop [2]. Recently the Tamilnadu government has announced that "All people welfare schemes are to be equipped with the help of biometrics" (as per the announcement on June 03-2011, By Governor of TamilNadu). Hence the Digital Customer Card is equipped with Biometric Identification System.

Computerization of Ration shop

Currently ration shops consists of manual billing, calculation, improper measurement. This inconvenient process made the ration system slower and inefficient. This research paper finds a new solution by equipping the computerization to the ration shops, to make the system faster and efficient, all datum are fed into the computer such as amount of stack, delivered stack, balanced stack etc., Current ration system consists of manual billing by which individual purchase are billed by the government employee. At last before closing the shop an employee have to calculate the total bills to tally the total cash and balance stacks. This is a long time process and thereby any error calculation or fake calculations are done by the employee. By implementing this computerized system, it makes the process simple and calculations are done by computer itself

and the results are given within a fraction of seconds [3]. In our proposed system it is mainly focus on the proper measurement of ration products that are delivered to the customers. The digital weighting machine is connected to the computer system, so that the weight of the product delivered is sent to the computer system and it is stored.

Figure 1. Interfacing of Digital Devices with Computer

The system will check whether the weight mentioned in the bill is equal to the weight in the machine's display, both the weights should be equal(+10gms/-10gms)then only the product will be delivered .By mean of the proposed method, the ration shop customers can get the proper quantity of products. Delivery of the products in improper weight can be eliminated and calculations of stacks in terms of grams can be achieved. The computerized billing with all data is same as stored in database which is issued to the customers [4].

Biometric Customer Card

In the present scenario ration cards are misused by both educated and uneducated customers. Many unauthorized persons use another user's ration card for buying products. Most of these ration products are sold in the black markets. This kind of illegal

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activities are happening only due to lack of proper authentication system, this can be avoided by providing proper security to each ration cards which is known as digital customer card [5].

The security for the ration cards are provided by biometric system. In the biometric the finger print security system is one of the familiarized and easiest systems which have to be equipped for providing security in economically and efficiently. The finger print of every user of the customer card is scanned and stored in the digital customer card [6]. The user can use their finger print as their password and they can access the ration shop for buying the products [6]. By using the finger print Identification Technology full security is assured. It reduces the unauthorized access and the black marketing of ration products.
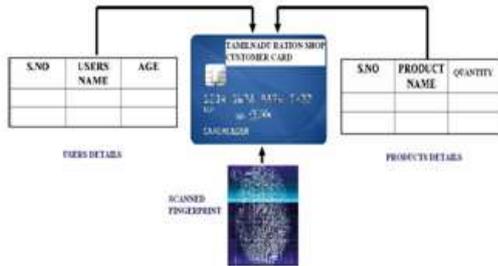

FIGURE 2. Digital Customer Card And Its Contents
Process In Digital Ration Shops
Process 1 (a) Existing System Process in DRS

First of all, the ration shop customers are provided with digital Biometric Customer Card in which the finger print of respective customers are stored. In the ration shop, the computer system is interfaced with digital customer card reader, finger print identification scanner [8]. The customer card reader is similar to the Credit Card or ATM Card Reader it scans the card and reads the data stored in it such as user's name, product brought, finger print, balanced products to be buy etc., are read and feds to the computer.

Figure 3. Process 1: Interfacing Computer With BCC Reader

Process 2:

Now all the data present in the customer card is displayed in the computer screen and ask for the password. Then the users have to enter their password by scanning their finger on the scanner [9]. After that the computer matches the scanned finger print with the already stored finger print in the database [10]. If all the parameters in the finger print matches then the customer card is ready to access. If any mismatch occurs then the user can not able to access the shop and unable to buy the products. By using this existing technique the unauthorized access of the ration shops can be denied.

Figure 4: Process 2:Interfacing Computer With Fingerprint Scanner

Process 3:

Then the user have to specify the required products and their quantity then the officer have to enter the data given by the customer in the product column provided. Then the next column is for auto entry of weight of product delivered to the customer from the Digital Weighting Machine [11]. This column value will auto enters only when the quantity value equals to weight delivered value (+10gms/-10gms are allowed). So the cheating happens on improper delivery of product in sense of weight can be avoided [12]. If all this procedures happened perfectly then the data enters into the database and is ready for billing.
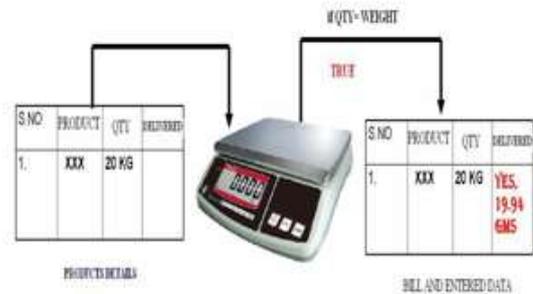

Figure 5: Digital Weighing Machine And Its Output
Process 4:

The data and bills of all the customers right from the first to the last are stored in the database, at last instead of the manual calculation the computerized process will itself calculate data such as amount of products delivered, net cash, and stack balance. After all this calculation output result will be in the form of "Master Datasheet" [13]. Finally this master datasheet is submitted to the head office.

S.NO	PRODUCT	DELIVERED	STACK
1.	XXXXX	123.654 KG	6456.545 KG
2.	YYYYY	342.674 KG	3452.453 KG

NET CASH	RS 5,24,545 ONLY

Figure 6: Process 4 Master Bill Sheet And Its Content
Conclusion:

This is an novel approach towards the development of the government sector in which more or less all peoples can welfare by utilizing the Digital Ration Shop (DRS) for buying food products. The present procedures followed by Ration Shops are time consuming and non-securable one. Hence lot of ration products comes to black markets. These all above ration problems are eliminated if it is implemented. Use of ration cards in the form of booklets is one of the inconvenient because the data are entered manually by referring the details. By providing a Biometric Customer Card (BCC), this problem can be eradicated. The finger print biometric security system i.e. Biometric System will make this process securable and simple. Hence overall result of the DRS with BCC would perform much better than the present system. The real time problem for the government can be solved by spending some amount of money on this project in very short period of time. Finally, this proposed system makes the ration sector to process in an simple and effectively to provide their best service for the people. Real time implementation of proposed system reduces the ration sector process simple and efficient. The system will definitely

find solution and fulfill the expectation of government in short period. It provides the best service for the people and which economical to the nation.

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