Smart Public Distribution System

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Abstract— This paper proposes the advanced Public Distribution System, named as "Smart Public Distribution System". Smart PDS (SPDS), aims to develop PDS delivery system more helpful in terms of achieving food security, reduce subsidy costs, optimizes manual work and decrease the transportation losses at various levels. We can reduce the man power and also avoid the corruption by using this system. SMART PUBLIC DISTRIBUTION SYSTEM is a website to be developed in PHP technology. In this project, we are going to build a website which will perform several tasks that will be used by Rajasthan Public Distribution System. It is a platform where everyone can get information about ration Stores, which in terms reduces the manual work of the System. The main aim of this system is to provide the users with details about the availability of ration in the Fair Price Shops. The users can purchase the items available in the FPS stores online. Simultaneously, bills will be provided to the users for respective purchasing through which they can easily claim for their items at the store. The system also gives details about current status of the stock and dealers.

Key words: Smart Public Distribution, Fair Price Shops, Ration

I. INTRODUCTION

The ration distribution system is one of the largest government's economic policies in India. The main motive is tosupply food grains(sugar, wheat, rice, kerosene etc.) to the public at reasonable price. The network of the ration shops is spread all over in India to supply food grains to the people. The system is controlled and monitored by central government, along with the state government. But it includes a lot of limitations. Most of the ration shopkeepers keep bogus ration cards with them. Due to these bogus ration cards, the dealer receives more ration from higher authority and he sales it into the open market. Due to this, the consumers may not get a sufficient amount of food grains by the dealer. Most of the time people are not aware of the availability of food grains in ration shop. The dealer may sell ration at higher rates than the rates which is recommended by the government or he may do false entries in register. Thus, in the current situation we are facing problem of corruption in public distribution system. There is no such effective system through which government gets real report of consumption of food grains by people. The aim behind this paper is to systematize the ration distribution system. In order to make it centralize and secure system for ration distribution, we have used user interface (UI) MS-SQL Database Management System for a huge database of ration.

II. LITERATURE SURVEY

The existing PDS system is a complex system in which all the reports are maintained in stock registers of Fair Price shops, daily purchase/sales registers. FPS shopkeeper maintains all the things i.e. new stock arrivals, amount of grains, and delivery of ration. On PDS system, all these results in non-monitoring for the government and also corruption can be encountered. To enhance the routine and to decrease the corruption some research have been carried out.

The Public Distribution System (PDS) in the country facilitates the supply of food grains to the poor at a subsidized price. However, doubts have been raised about the efficiency and cost-effectiveness of the PDS, especially in the light of the growing food subsidy and food stocks. The PDS needs to be restructured and there is a need to explore the possibility of introducing innovative ideas such as smart cards, food credit/debit cards, food stamps and decentralized procurement, to eliminate hunger and make food available to the poor wherever they may be in cost-effective manner. To prevent corruption and foster the development of small and medium-sized enterprises, the United Nations Industrial Development Organization (UNIDO) and the United Nations Office on Drugs and Crime (UNODC) have joined forces to carry out this study, which looks at the nature and extent of the problem. This report is based on field-based assessments and a meeting of experts that discussed obstacles for SME development created by public and private sector corruption. The website will help us to remotely monitor the kerosene outlet and the vehicles providing the kerosene and ration material till it reaches the storage areas and also the distribution at local people will be done centralize through a web application which will keep record of user id and password for every people with solenoid valve, Hooper valve to control openings of ration outlet etc. This will gives assure us no involvement of any person directly with distribution system, also whether kerosene disposition is also sensed at web site using proximity sensor through web giving a clear idea about delivery of it. And also all data is stored at time about ration items and the people who receives the ration from that place.

In "An overview of smart public distribution system" Jaidrahul.A, Kadamchetan.K and Kokareaniket.S [1] bring in RFID based smart card instead of conventional ration card for the purpose of secured material distribution. This system is mainly used to reduce the man power and also to avoid the corruption. Here AVR microcontroller is used to distribute the materials automatically. Ashwini lanjudkar, poojamhalaskar and pallavishinde [2] are planned the "intelligent government rationing system" for the function of dispense materials properly. This system used Aadhar card for authentication. At this time Aadhar card is used to show the user details like name, address and bank details…etc and web camera is used for face identification and security purpose. After that GSM sends message to consumer. In "mechanized government rationing system"

priyankav.mane and uroosahippargi [3] improved the normal ration shop with automatic bill payment process. Here instead of ration card an Aadhar card will be used for security function. If customer scan the Aadhar card means the processor will display the consumer's details and to verify the user with help of fingerprint. Then the user will select quantities and pay the amount. After the material distribution, GSM sends message to consumer phone. M. elizabethsherine and shinusadeyone [4] suggest "NFC based stock maintenance and billing system with auto alert to customers". This method used to maintain the stock details automatically and also intimating the customers on arrival of new stock in the stores. At this time NFC tag is used to communicate with the customers and distribute the materials automatically. Subsequently GSM sends message to customers. S.Deepika.et.al. [5] planned "A prevention and automation of PDS using RFID and facial recognition camera". Here RFID card is given to all the users instead of traditional ration card. This card is to identify the consumer's details easily and facial recognition is used for authentication. After the person enters the shop holding a card the camera identify the image of the person in the database of the PC. If the image matches the necessary goods are delivered. Then stock details send to the government via GSM.

III. PROPOSED SYSTEM

To enhance the current system of the PDS, the following suggestions are furnished:

We introduce a smart public distribution system. It includes a smart system which will be controlled directly through the database.

A system is proposed using adhar card authentication which will reduce the introduction of Bogus cards to a major extent.The web based system will achieve the major work held technically, which will therefore reduce the manual work.To eliminate bogus and duplicate cards regular checks and raids must be conducted, which is again an additional expenditure and not full proof.The Civil Supplies Corporation should open more fair price shops in rural areas.

This system can be implemented at the lowest level of PDS network i.e. at one Fair Price Shop (FPS).Through the registration process, we need to collect the data from all the valid ration card holders. A database is created when all the data has been collected. It contains individual report for each family which includes informations i.e. number of members in the family, name of the members, head of the family, permanent address, present living address, phone number, etc.

Here we will be having two databases for two different categories i.e. one for the card holder information and the other one to store the details of the stock (items) that are being distributed to the consumers by the government.

Smart PDS includes three tier system:

1) Admin site
2) Shop Admin site
3) Customer site

Here, Admin can have following authorities such as-He can Activate/Deactivate the users (Shop Admin/Customers). The Stock Monitoring like adding/editing/deleting Items, their respective rates and Quantity of allocation to each Customer (APL/BPL) will be handled by Admin.

Shop Admin can view stock purchasing done by the active customers at his shop. The inventory system is introduced in order to handle offline purchasing.

Registered Customer can view and purchase Items from the active shopsjust by login into their accounts.

The system includesfollowing Modules:

1) Stock Monitoring
2) Purchasing Module
3) Notification and Feedback Module
4) Inventory(offline Purchasing)

A. Stock Monitoring

The stock monitoring includes the addition of new stock arrivals in different registered Shops. This module will help the admin as well as Customer to get all the details about items available in the respective Fair Price shops. It may include the following activities:

- Add more Items to the available stock.
- Edit the name and Quantity of existing Items.
- Also, view the available stock at each level.

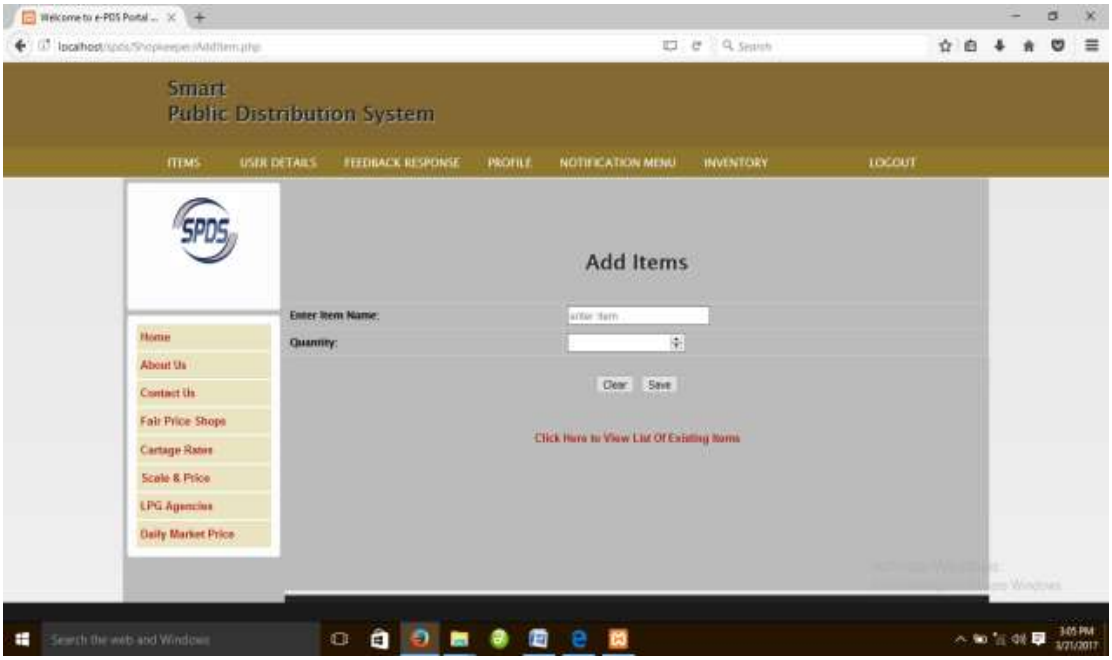

Fig. 1: Add Items (Shopkeeper)

In this, the Shop admin can add items by entering the name of items. Their quantity and respective price will be fixed by the Govt. and given to each user. The items will be saved at the time he clicks on the save button

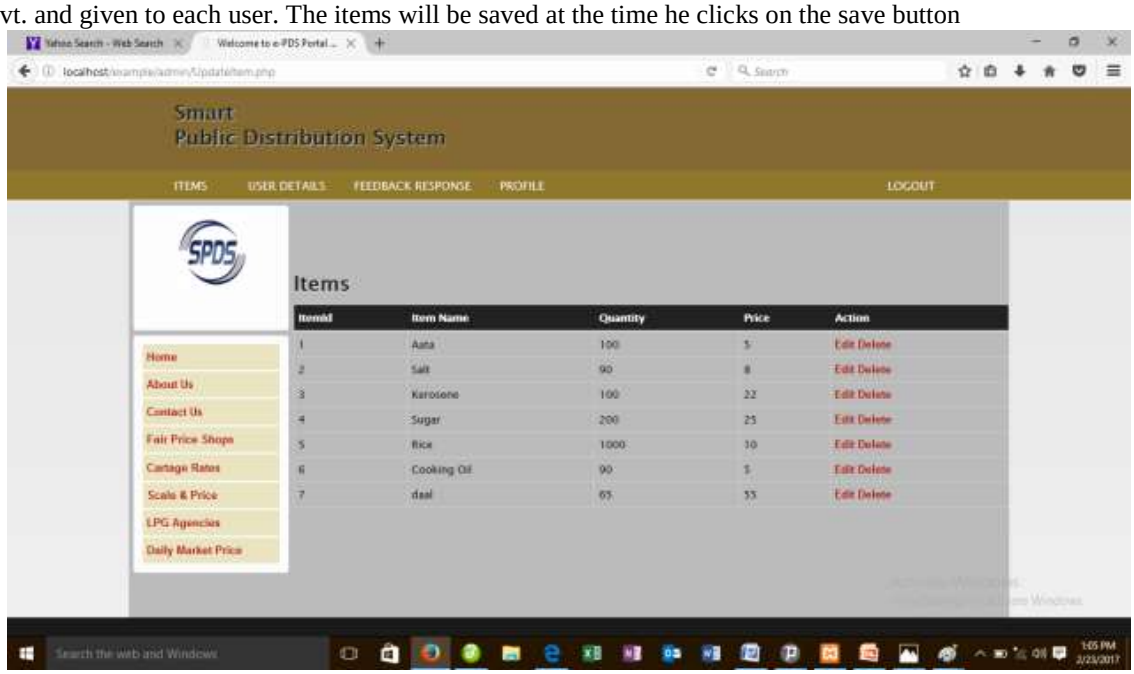

Fig. 2: View and Update Items

In this, the Shop admin can view the availability of every item with its respective price and quantity. The admin can update details about items. For e.g. he can edit quantity, price and name of the item. The admin can delete the items which are not in the stock.

IV. PURCHASING MODULE

This module includes all the activities related to purchasing of stocks. These includes online and offline purchasing details.

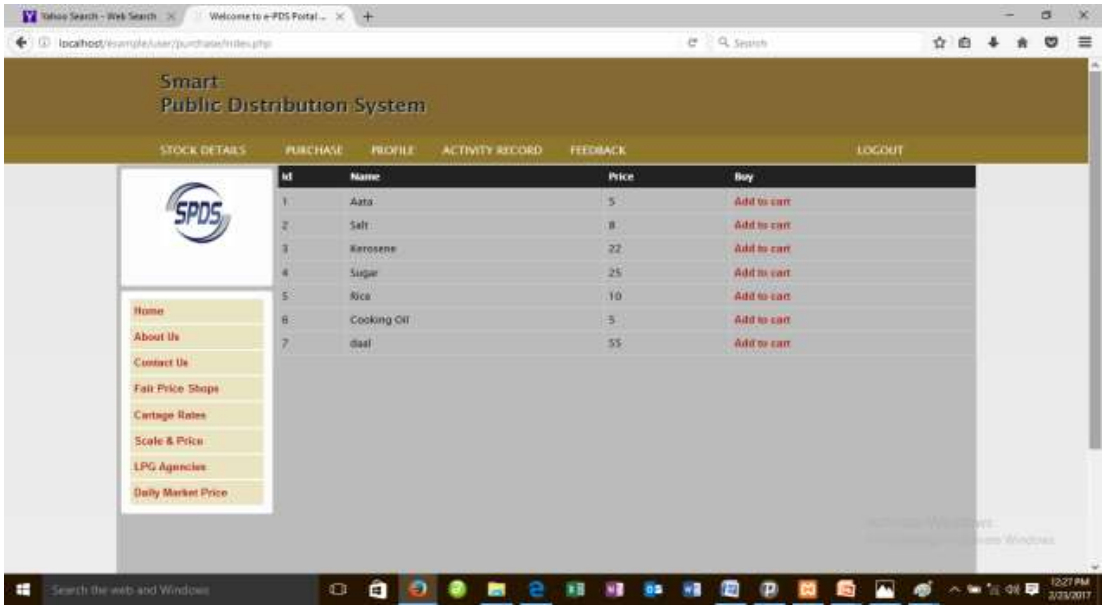

Fig. 3: Purchase Items (User)

The user can purchase the items he want with required quantity for the quoted price by clicking on the "add to cart" button. The add to cart button will redirect the user to final purchasing page, where he can edit the items to be purchased, the quantity of the items and for that respective purchase the bill will be generated.

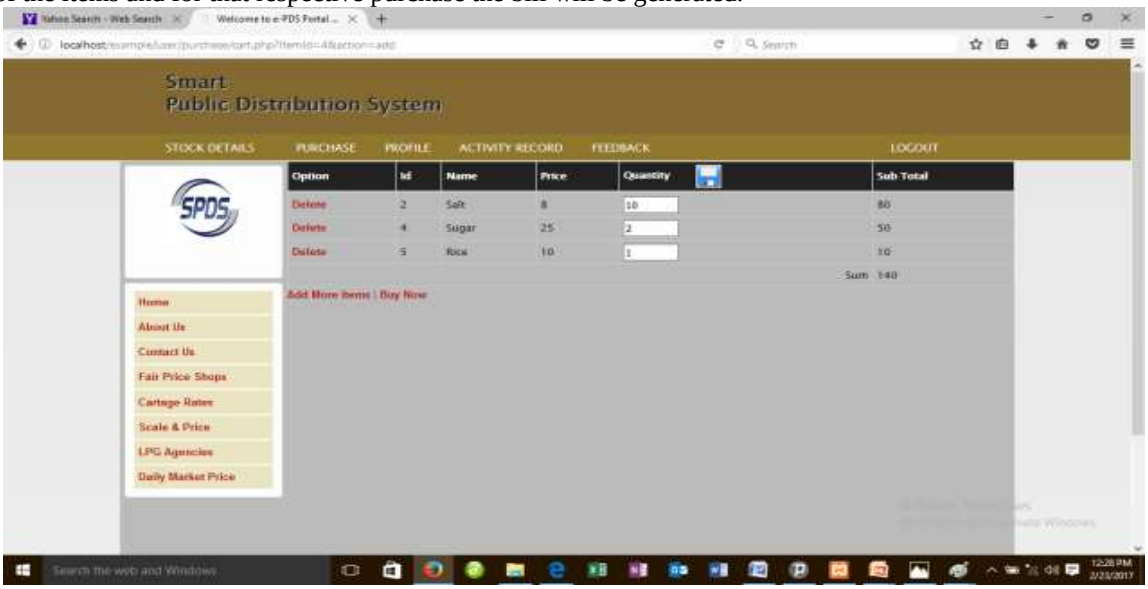

Fig. 4: Update Cart (User)

Here, user can update the quantity of items present in his cart and also, he can add more items to his cart.

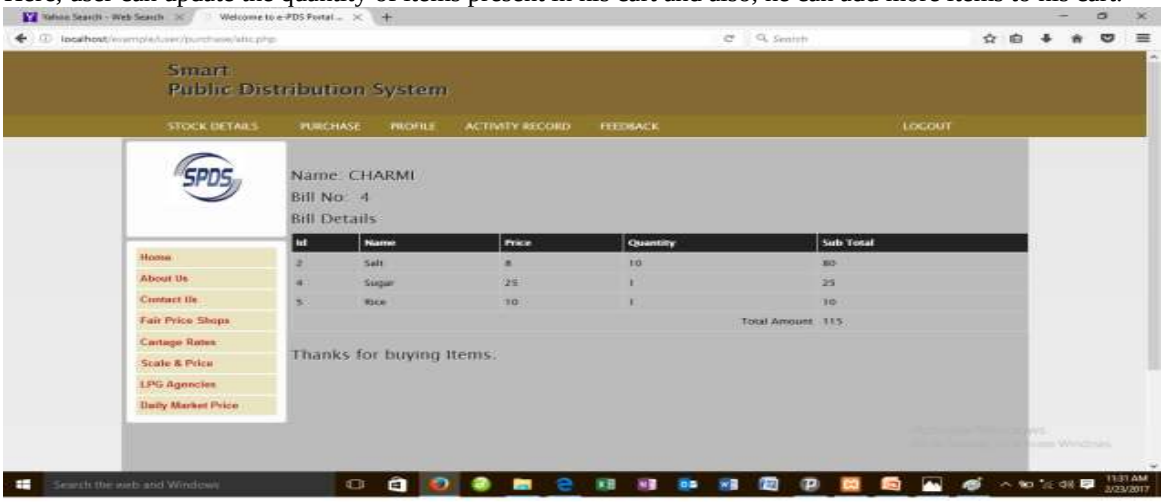

Fig. 5: Bill Details (User)

This is a rough bill detail which will be shown to the shopkeeper at the time of collecting items from the shop.

V. NOTIFICATION AND FEEDBACK MODULE

The notification will be provided to each user related to their purchasing and new stock arrivals.

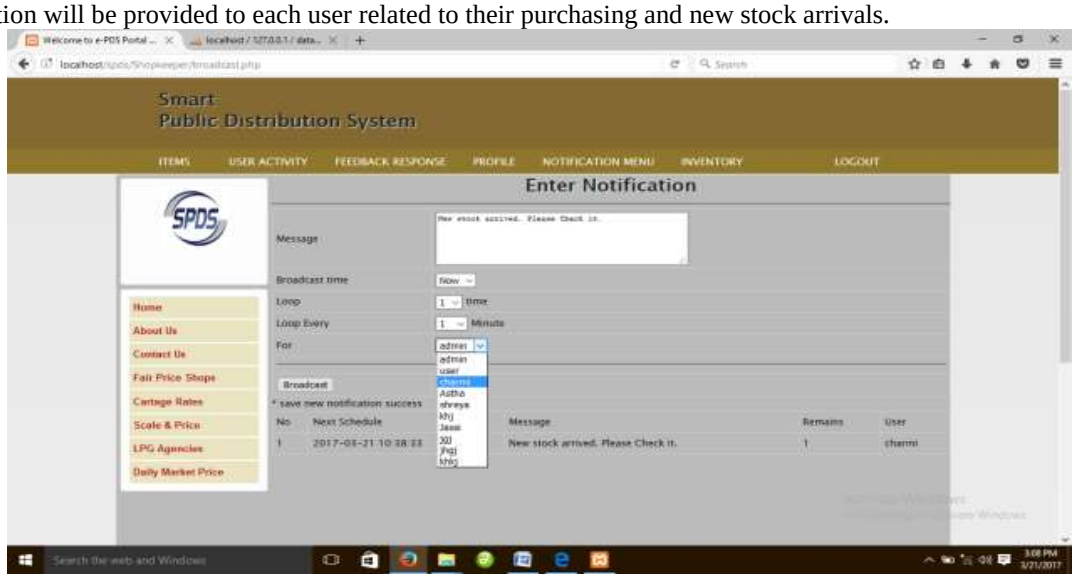

Fig. 6: Notification (Shop Admin)

Here, Shop Admin can Notify each user for any information regarding the stock details/ Purchase.

Fig. 7: Notification (User)

Thus, user will get notification at the time he logins into their account.

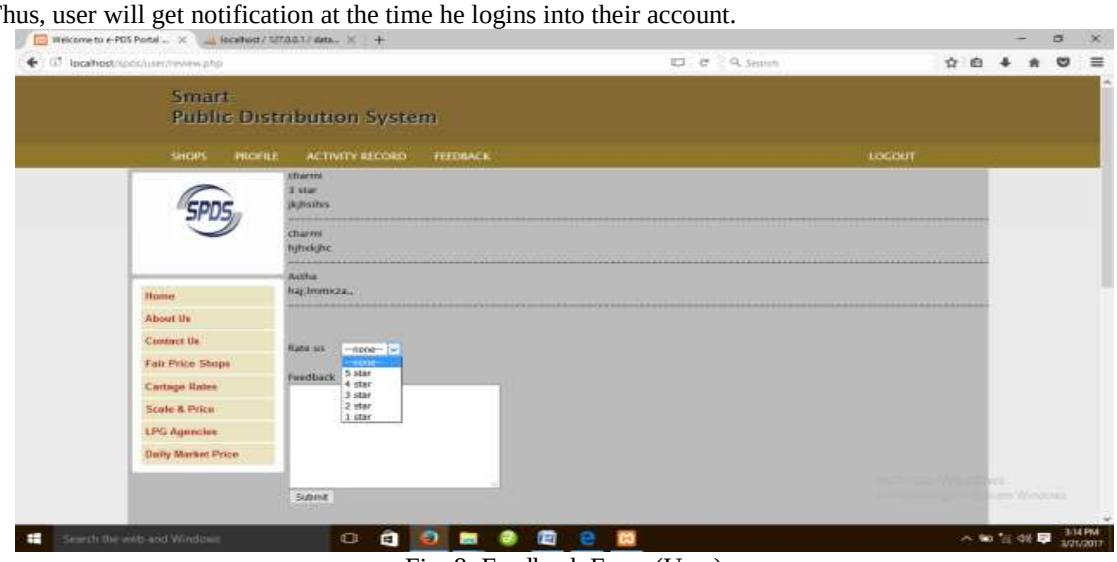

Fig. 8: Feedback Form (User)

Any user can give their feedback and put their queries (if any) to the respective shop owner.

VI. INVENTORY (OFFLINE PURCHASING)

- This module basically includes those activities (purchasing) which are done offline manually.
- Here, the Shop Admin will enter those purchasing details (including name of buyer and his Ration Card No.) which are done by the customers offline.
- The purchasing will undergo with the same process.
- Offline purchasing bill details will be given to the customer manually.

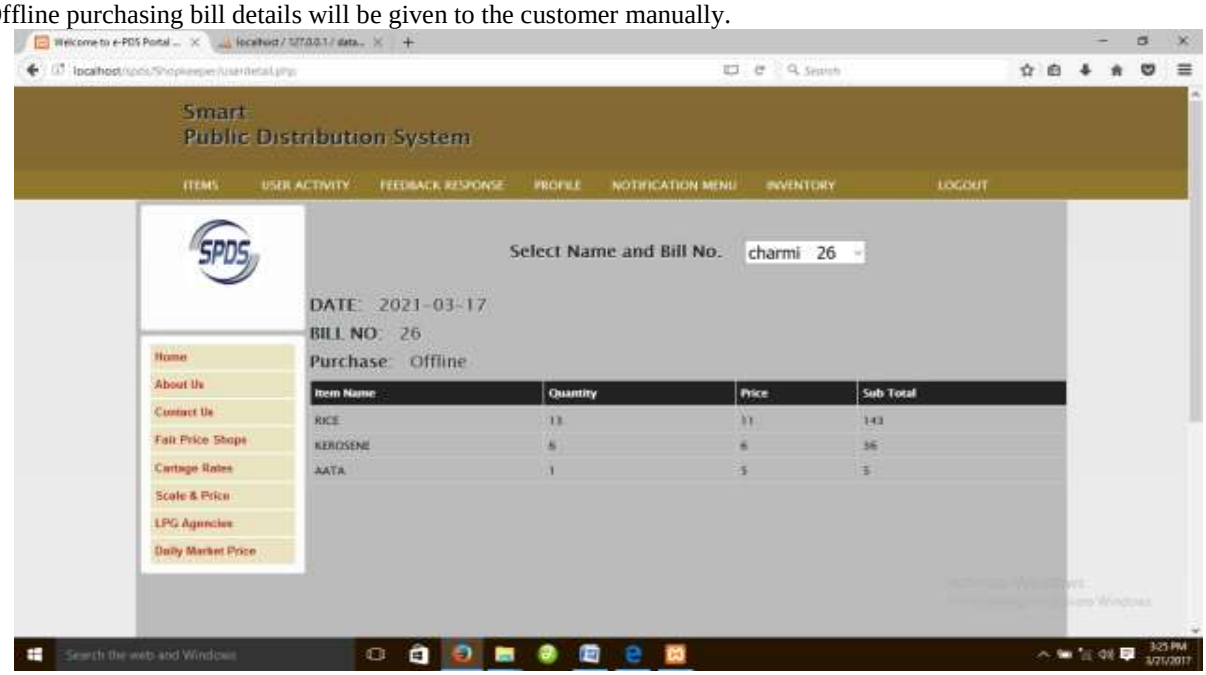

Fig. 9: Online Purchase

VII. CONCLUSION

Using this proposed system we can avoid the corruption in ration distribution system to a great extent by providing transparency at each level.As there is no manual data stored in books or register, all the data is stored in database hence it is easy for higher authority to cross check the data at any point. Thus, implementing this system will be really helpful to the targeted people.
The entire process includes three different users namely-

- End user (looking for service),
- Distributor (public service distributor), and
- The governmental organization (accountable for public).

The system thus gives the users reliability for checking the stock status and updates. It also reduces the manual work of purchasing the items from the FPS shops. Also, regular check and maintenance can beconducted by the admin.

FUTURE SCOPE

The proposed system is for secure, transparent, efficient, and privacy protecting technique which has beenexecuted successfully. The given system considers the issues of the public distribution and resource management. Additionally, the attentions are made on providing the security and transparency during data storage and access during the different levels of users. The given system is efficient and secure for different purpose of use and that can be extended for the following area of applications.

1) The proposed system is only enabled for the web based and application based usages that can also be enhanced by the electronic card based distribution model.
2) The proposed system incorporates only three access rolesi.e. User, Distributor, Governmental Organisationfor the system that can also be extended by including functionality like live status in which the customer can view the current crowd status at any FPS shop.

Efforts are put together from our side to combat corruption and to have better management of public distribution system.

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REFERENCES

[1] Jaid Rahul A, Kadam Chetan K, KokareAniket S, DeoreMinal, "An Overview of Automatic Rationing System", International Journal of Informative & Futuristic Research, ISSN 2347-1697, Volume 2 Issue 6 ,February 2015.
[2] B R Thawali, Ashwini Lanjudkar, Pooja Mhalaskar, PallaviShinde, "Intelligent Government Rationing System", International Journal of Advanced Technology in Engineering and Science, ISSN 2348 – 7550, Volume 3, Issue 1, January 2015.
[3] Priyanka V.Mane and Uroosa Hippargi, "Mechanized Government Rationing System", International Journal of Electrical, Electronics and Computer Systems, ISSN 2347-2820, Volume 3, Issue 4, 2015.
[4] M.elizabethSherine, ShinuSadeyone, "NFC based stock maintenance and billing system with auto alert to customers", International Journal of Research in Engineering and Technology, ISSN 2321-7308, Volume 3, Issue 6, June 2014.
[5] Mr. P. Karthik, S. Deepika, N. Haritha, S. Punitha," A Prevention and Automation of Public Distribution System using RFID and Facial Recognition Camera", IOSR Journal of Engineering, ISSN 2278-8719, Volume 4, Issue 2, February 2014.