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Automated Ration Distribution System Using Aadhar Card

Tahreem Sayyed¹, Shaziya Deshpande², Devesh Sahli³, Abhijit Ingale⁴

U.G. Student, Department of Computer Engineering, Shri Sant Gadge Baba College of Engineering & Technology,
Bhusawal, Maharashtra, India^{1,2,3}

Under the Guide, Assistant Professor, Department of Computer Engineering, Shri Sant Gadge Baba College of
Engineering & Technology, Bhusawal, Maharashtra, India⁴

ABSTRACT: This report proposes automation in the ration distribution system using Aadhaar card and RFID card technology. The government grants each family the possibility of receiving food grains in exchange for the card. But there is a lot of corruption involved in traditional PDS like the black marketing of subsidized food grains because many families do not demand their share of food grains and many families demand the share of other families. As a solution to the above problems, this article proposes a highly scalable ration distribution system based on an integrated system. The main objective of this project was to achieve transparency between the government and clients, and this transparency is provided through the website. Here, the traditional paper ration book is replaced by the RFID-based smart card. When the customer makes a transaction, he will receive a message on his mobile phone after completing the process.

KEYWORDS: Raspberry-pi, RFID card scanner, RFID card, Embedded Web Server, Dispenser.

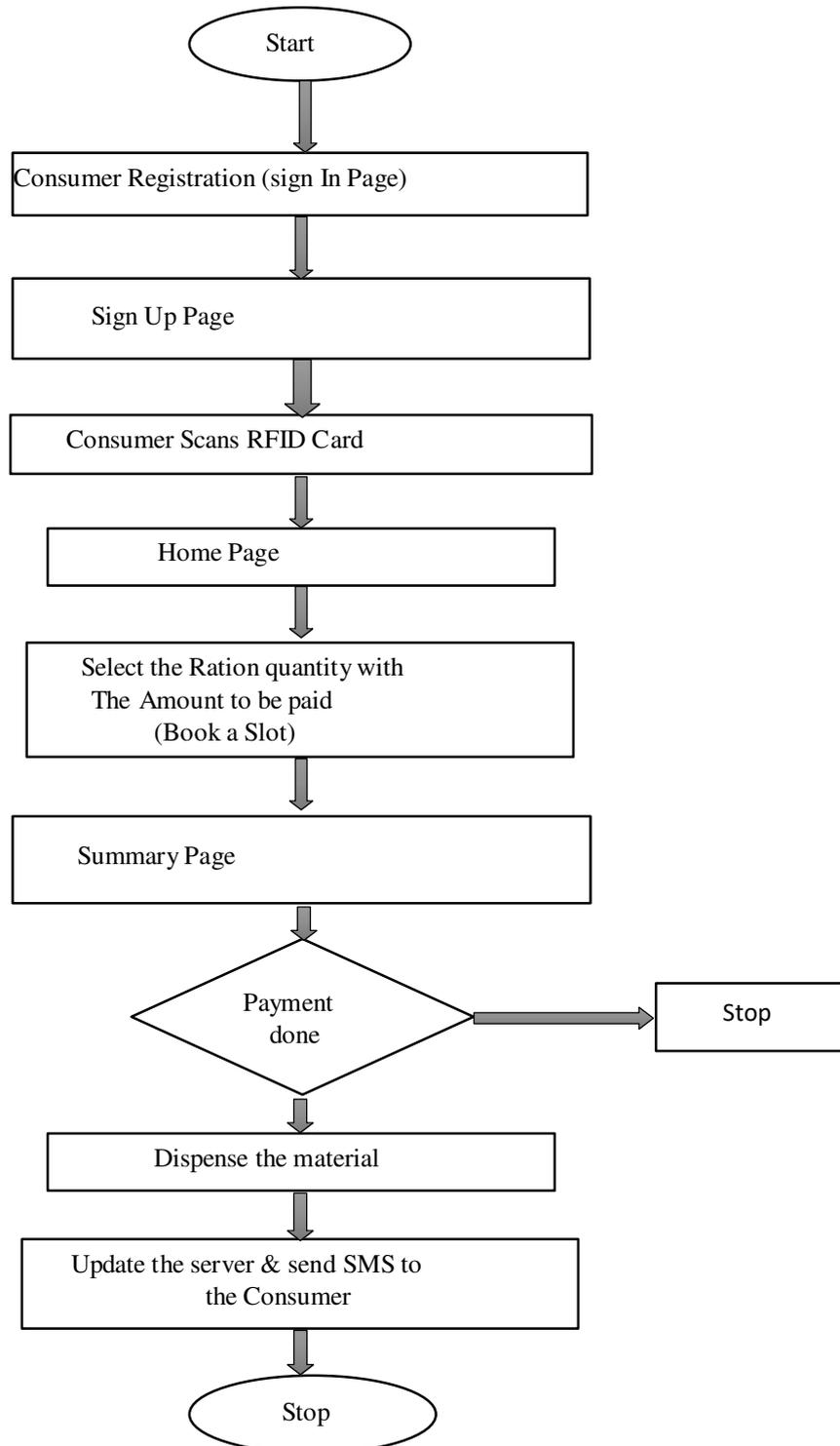
I. INTRODUCTION

- 1.1 FAIR PRICE SHOP:** A public distribution shop, also known as a fair price shop (FPS), is a part of India's public system established by the Government of India that distributes ration to the poor at a discounted price. Locally these are known as ration shops and public distribution shops, and mainly sell wheat, rice and sugar at prices lower than the market price, known as issue prices. Other essential commodities may also be sold. To buy items one must have a ration card. Ration shops are now present in most localities, villages, towns and cities. India has more than 5.5 lakh shops, constituting the largest distribution network in the world. There are various malpractices have been carried out in public distribution system namely distribution of inferior quality goods, under weighing of goods, circulation of ghost cards, circulation of PDS articles in open market. As a result, eligible beneficiaries are unable to obtain goods from public distribution shops. Thus, main goal of Government has not been fulfilled as a result of problems prevailing in PDS.
- 1.2 EXISTING SYSTEM:** There are various ration shops in the entire nation where there are employees who give the people various commodities like food grains, oil, kerosene etc. The customer has to go the ration shop and ask the employee to give the commodity and the amount he needs. The employee then manually measures it and gives it to the customer. This transaction also needs to be added in to the ration card. This is the total interaction which takes place. This system faces with various problems. As there are many ration shops and the customers coming to buy from ration shops are normally believed to be below poverty line and illiterate, the customers are fooled to a large extent.
- 1.3 AUTOMATED RATION DISTRIBUTION SYSTEM:** The proposed system consists of an automated ration distribution system. We proposed to design a smart rationing system in which the authentication is based on Aadhaar card. The customers are able to draw the ration material in their convenience rather than standing in long queue. This system provides Ration material automatically to human making it error free and accurate. Also, the problems like corruption and false ration delivery are also solved using this model. Also, the customer will receive a Message via SMS once a process 2 is completed. Instead of conventional paper-based ration card each family is provided with one smart card (electronic ration card) this card is RFID based card containing all information about



the family members such as name, address, type of card, number of family members, family member’s profession, age, gender, Aadhar number, mobile number, bank details. The ration shop is installed with an automated system.

II. METHOD

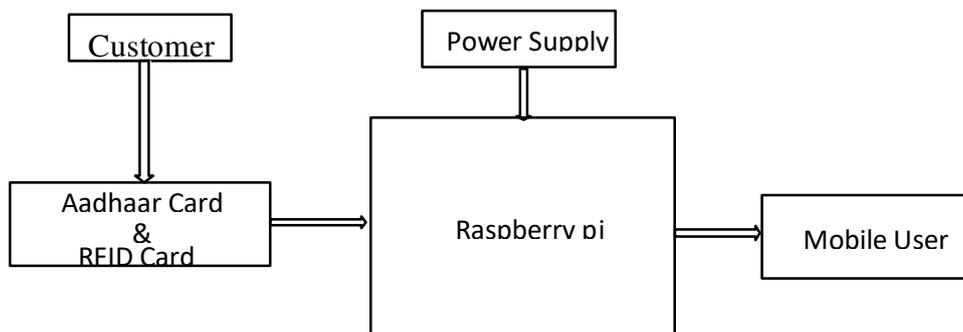




IV. ALGORITHM

- Step 1: Start
- Step 2: Consumer register the government portal and his/her registered information are stored in his/her Aadhaar card. (Sign Page)
- Step3: Sign Up Page
- Step4: Scans the RFID card for verification.
- Step5: Matched the information which are stored in dataset.
- Step6: Home Page
- Step7: Displayed the consumer select the ration quantity with amount to be paid.
- Step8: Summary Page
- Step9: If the payment is done go to step10
else
If the payment is not done
- Endif
- Step10: Dispense the material.
- Step11: Update the server and send SMS to the consumer.
- Step12: Stop.

V. BLOCK DIAGRAM



IV.I. Block Diagram of Purpose System

In proposed system Raspberry pi works as main controlling unit, camera is input to the controller and motor. Data is stored in Raspberry pi. Camera is used to scan QR code of the Aadhar card, QR code of each and every customer's



Aadhar card is already stored in database. When Aadhar card is scan in front of camera, system opens data of that particular person which contains quantity of goods particular customer has to give. The main objective of this work is to develop a solution using Aadhar card with IOT based to proper management of ration distribution material. In this system the shopkeeper will scan the Aadhar card and the scanner will check the Aadhar whether it is duplicate or original. If the Aadhar card is original then the system will check information of particular person and also it will check whether the information is match with stored information or not. Once the information matched with stored information then and then machine will provide the grain like sugar, rice etc. Whatever grains are allotted to customer is displayed on the screen and shopkeeper cannot change this data as he uses to do when it was stored manually. After all the transaction is finished then that message will be received by customer on his mobile number, similarly same data will be updated on embedded web server which can be used by government servant and customer so that customer will have all the backup of his ration account and shopkeeper cannot lie to the customer. Every time when a customer dispenses some ration, the system conveys this info to customer via SMS.

V. IMPLEMENTATION

V.I CONVENTIONAL CARD REPLACED BY AADHAAR CARD:



V.I Figure Ration book to Aadhaar Card

The conventional ration card which was in the form of book is now in the form of RFID based Aadhaar card and each customer will have his unique number of cards which will be scanned by RFID receiver when he goes to ration shop.

V.II How to Link Aadhaar Card with Ration Card:

Every state in India is having the option to link Aadhaar with a ration card online. Below is the procedure to link Aadhaar with ration card to get ration.

- To link Aadhaar with ration card online visit the official website of government PDS.
- Click on the “Login” on the home page.

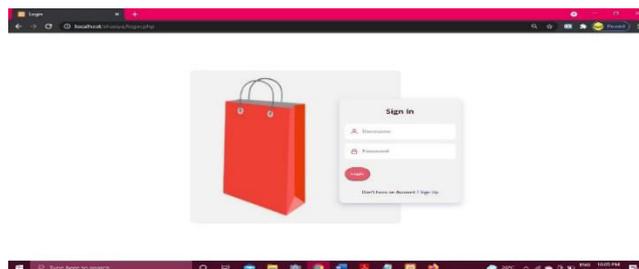


Figure V.II Home Page of The Website

V.II SIGN UP PAGE:

- Now click on the “Sign up”, now a new page appears.
- A new page opens, fill the correct “information”.
- And enter the username, full name, email ID, mobile number, password, address, Aadhaar card number, total family members and pin code click on the “submit” option.

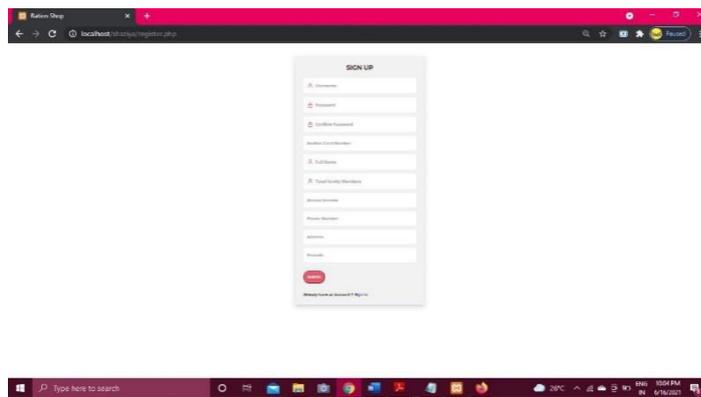


Figure V.II Sign Up Page

V.I.III Document Required to Link Aadhaar with RFID Card Online:

- Ration Card photocopy along with original card
- All the family members Aadhaar card photocopies
- Head of the family photocopy
- Head of the family passport photo
- Bank passbook photocopy, if the bank account not linked with Aadhaar Card.

V.II SCAN RFID CARD FOR VERIFICATION:

In this system the shopkeeper will scan the RFID card and the scanner will check the store information of RFID card is correct or not.



Figure V.II Verifying RFID Card



V.III USER LOGIN:

- Go to Sign Up Page.
- Now enter the Username and the Password.
- Click on the “login” on the Login Page.

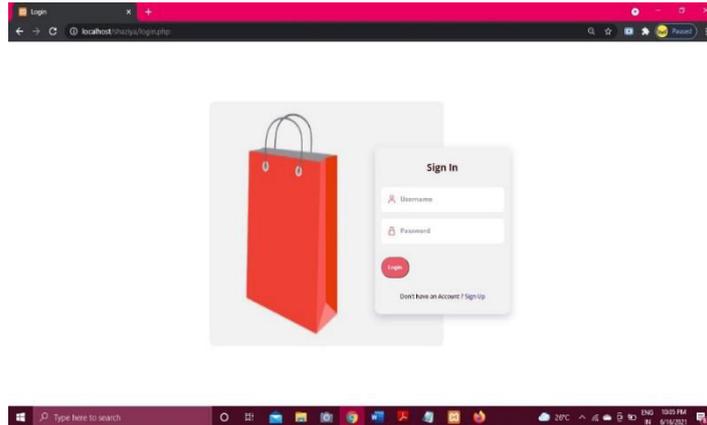


Figure V.III User Login Page

V.IV WELCOME PAGE:

- Go to Welcome Page
- Click the book now button.
 - If you need help click the phone option or mail option.
 - If you not interested in booking click the logout button.

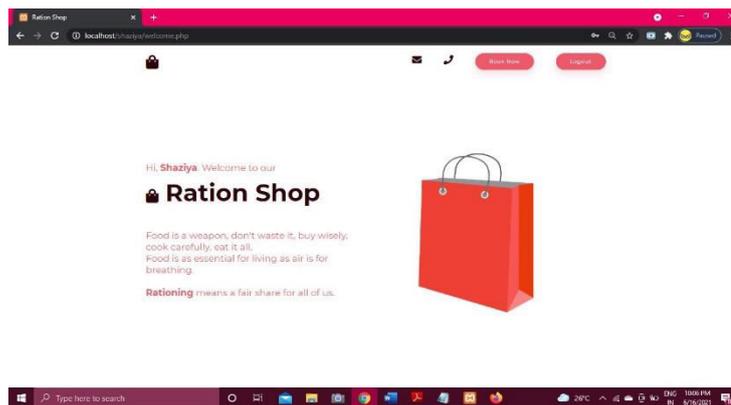


Figure V. IVCustomer Welcome Page

V.V BOOKING PAGE:

- Go to “Booking Page”
- Book your slot
- Choose the date
- Select the ration quantity.
- Click the “calculate total amount” button.
- The total amount is shown in the box.
- Click the “save & continue” button.

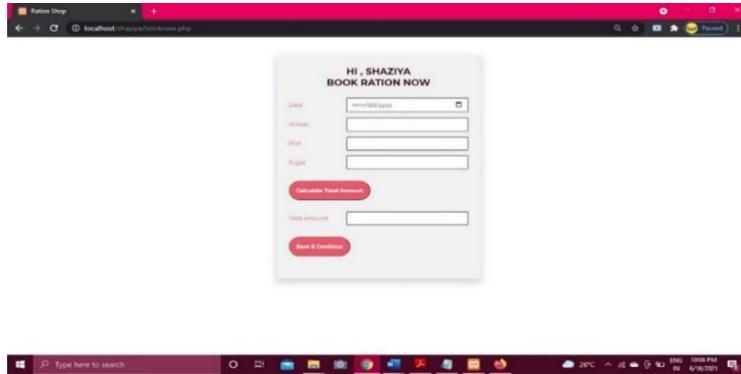


Figure V.V booking page

V.VI BOOKING SUMMARY PAGE:

- After the clicking the save & “continue” button. The next page shown (booking summary page)
- It’s shows your summary like date, Selected ration quantity, amount, Aadhar number, fullname, total family member, phonenumber, address and pin code for your future information.

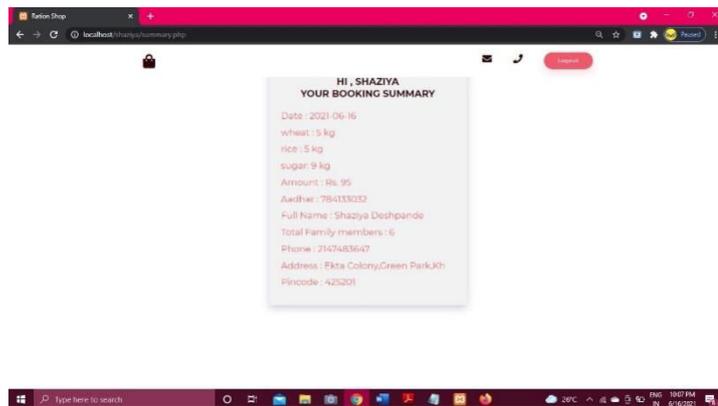


Figure V.VI booking summary page

V.VII CONSUMER’S INFORMATION (DATA SET):

If the Aadhar card is original and login successfully then the system will check information of particular person and also it will check whether the information is match with stored information or not.

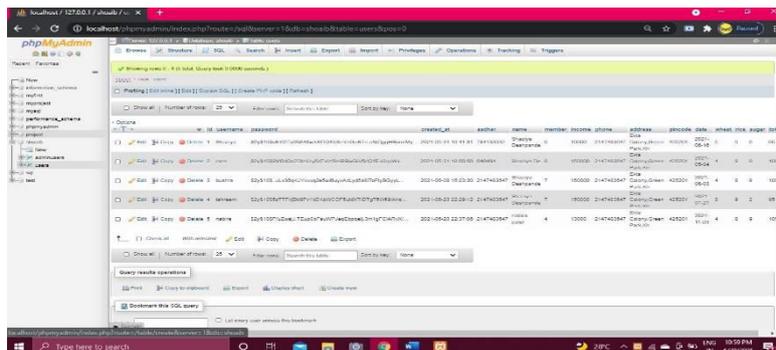


Figure V.VII Embedded Dataset

V.VIII DISPENSING MATERIAL:

Once the information matched with stored information then and then machine will provide the grain like sugar, rice etc. Whatever grains are allotted to customer is displayed on the screen and shopkeeper cannot change this data as he uses to do when it was stored manually.



Figure V.VIII Dispensing the goods

V.IX PAYMENT:

After all the transaction is finished then that message will be received by customer on his mobile number, similarly same data will be updated on embedded web server which can be used by government servant and customer so that customer will have all the backup of his ration account and shopkeeper cannot lie to the customer. Every time when a customer dispenses some ration, the system conveys this info to customer via SMS.

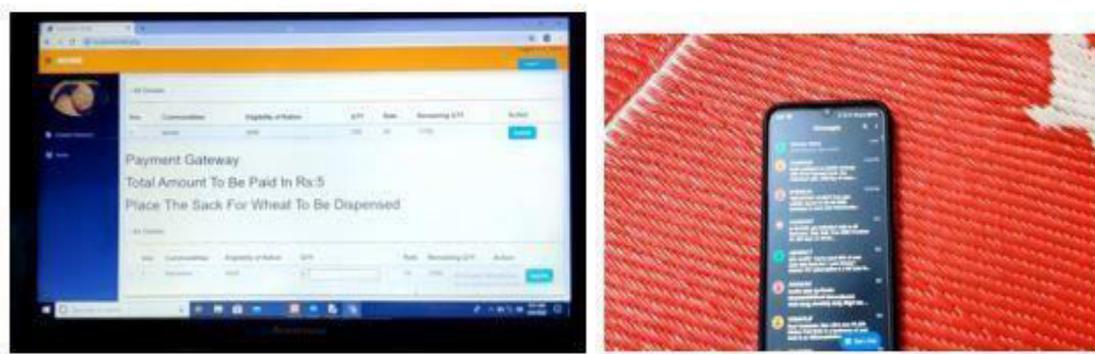


Figure V.IX Payment Done

VII. CONCLUSION

This proposed framework can provide a safe, secure and efficient way of ration distribution. It acts as an anticorruption tool as it reduces corruption to a great extent, which was one of the primary reasons we thought of, while coming up with the Idea. Client can be validated utilizing the Aadhaar card filter through web camera and get apportioned proportion after scanner tag verification. The buyer will get the affirmation SMS and database will be refreshed continuously. Ration forgery is one of the most difficult challenges faced by the food distribution department. There may be chances where ration is delivered to the beneficiaries and false records are noted down, regarding the delivery by commission agent. And there is probability of him (commission agent) selling the commodities in open market with extra profit etc. Therefore, the proposed system is more secure and transparent than the normal existing system. Entry of fallacious data in the ration database can be avoided with the use of smart cards and additional security is provided



by the biometric authentication. The commission agent is only responsible for entering the quantity of the commodities, whereas updating and deducting is solely handled by the server (food department). Maintaining the database is also helpful for sending messages to the beneficiaries about the ration delivery. It is anticipated that the proposed project will create transparency in public distribution system as the work becomes automatic and also it makes the system free from irregularities.

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