

SupplySmart : Streamlining Ration Services for Designated Citizens

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Abstract- In contemporary society, acquiring goods from ration shops often involves enduring long queues and waiting periods. This system offers an innovative solution to address these challenges effectively. It not only empowers ration workers to manage inventories efficiently but also provides customers with real-time updates on item availability via SMS notifications. This proactive approach helps combat fraudulent activities in ration distribution while ensuring convenience for individuals with busy schedules. Moreover, the system modernizes the ration shop experience by introducing an intuitive online platform for ordering essential commodities. Leveraging technologies like HTML, CSS, JavaScript, MySQL, and cloud infrastructure, it streamlines processes and enhances accessibility. The user-friendly interface ensures a seamless experience for all users, promising widespread benefits for numerous individuals. Importantly, while customers are not required to use the website, the system allows administrators to place bookings and facilitate transactions smoothly without any customer involvement. This eliminates the need for customers to exert any effort, further enhancing convenience and efficiency in the ration distribution process.

Keywords: SMS notification, HTML, CSS, JavaScript, MySQL, Cloud Infrastructure.

I. INTRODUCTION

Fair Price shops in India play a crucial role in distributing essential commodities to the population, especially those from economically disadvantaged backgrounds. These shops are part of the Public Distribution System (PDS) established by the Government of India to ensure food security and reduce poverty. Ration shops in India serve as lifelines for millions, embodying the government's commitment to social equity and welfare. At their core, these shops are pivotal in ensuring that no one goes hungry, especially in times of economic hardship or crisis. By offering essential food items at subsidized rates, they act as bulwarks against hunger and malnutrition, particularly among marginalized communities. Thus, ration shops stand as a critical mechanism for addressing food insecurity, poverty, and social exclusion, contributing significantly to the nation's welfare and development.

Nowadays buying products from ration shops has become a tedious process due to inefficient queue management systems result in prolonged wait times. The persistent challenge of long queues at ration shops is exacerbated by limited availability of essential items, leading to frustration and inconvenience for the public. This bottleneck not only consumes valuable time but also undermines the efficiency of the distribution system, particularly for those with busy schedules or limited mobility. Lack of clarity regarding the availability of products, leading to uncertainty and inconvenience during the procurement process. The presence of corruption and malpractice, like favouritism or the or the misappropriation of resources, undermines the equitable nature and integrity of the rationing system, amplifying the struggles faced by those most in need.

To overcome these issues, we propose implementing a cloud-based web application for ration distribution. Integrated with SMS notifications, beneficiaries will receive timely updates on goods availability, reducing wait times significantly. This solution boasts an intuitive interface and stringent security measures to ensure a seamless and secure user experience. With real-time data synchronization across devices, it promises enhanced operational efficiency and transparency in ration distribution processes.

II. METHODOLOGY

Following are the modules of SupplySmart: Streamlining Ration Services for Designated Citizens:

A. ADMIN LOGIN:

The admin login page serves as the gateway to the comprehensive ration booking system, designed to streamline operations and enhance efficiency in ration distribution. With robust security measures in place, authorized administrators can securely access the system to oversee various aspects of ration management. Leveraging the power of cloud infrastructure, this platform ensures seamless scalability and reliability, capable of handling fluctuations in demand with ease. Upon successful authentication, administrators gain access to a centralized dashboard equipped with

insightful analytics and reporting tools, enabling informed decision-making and strategic planning. From managing stock levels to optimizing delivery routes, the admin login page provides the essential interface for administrators to effectively oversee and optimize the entire ration distribution process.

B. STOCK DETAILS:

This system maintains a steady supply of essential goods like grains, pulses, cooking oil, and sugar. Through seamless integration with cloud infrastructure, real-time updates on stock levels for items are provided, guaranteeing customers have access to the necessities they require. Regular updates ensure availability, while transparent communication addresses any fluctuations promptly. Knowledgeable staff assist customers, offering suitable alternatives in the event of items being temporarily out of stock. This commitment to transparency and customer service ensures a seamless and satisfying shopping experience for all users of the system.

C. VIEWING DETAILS:

This system provides a wide range of details that can be selectively filtered based on specific criteria, improving access to pertinent information efficiently. The selection criteria include card types, encompassing both Priority Household (PHH) and Non-Priority Household (NPHH) categories. Notably, the system prioritizes below poverty line (BPL) cardholders, ensuring their precedence in receiving goods. Following the distribution to BPL cardholders, NPHH cardholders become eligible for receiving goods, with visibility of this option granted only after a sufficient number of BPL cardholders have been served. Additionally, users can filter data by area, denoting sub-areas serviced by the ration shop, thereby enabling tailored management and resource allocation. Within the view details table, columns such as ID, name, phone, address, area, and card type are included, providing comprehensive insights into the distribution process.

D. SCHEDULING:

The scheduling page of this system offers a user interface for administrators to allocate specific timeframes within designated dates for a particular area and card type, adhering to priority guidelines. Additionally, the system is equipped with automation capabilities to optimize scheduling procedures. In instances where customers are unable to attend their allotted time slot, they are encouraged to complete a form via the provided website URL. This form serves as a means for customers to indicate their unavailability during the allotted time and to request alternative time slots. Failure to fill out this form will result in a pending status until the purchase is completed. Customers receive periodic notifications reminding them to respond and fill out the form until the end of the month. Unclaimed stock is then reallocated to other deserving individuals to prevent wastage.

E. SMS NOTIFICATION:

The SMS notification page empowers administrators with the flexibility to craft and customize messages according to specific needs. Through intuitive controls, administrators can easily edit message content, ensuring relevance and clarity for recipients. Moreover, the system provides advanced filtering options, enabling administrators to target specific groups or individuals for message dissemination. Whether its notifying users about upcoming ration distribution events, providing reminders for scheduled appointments, or sharing important updates regarding stock availability, administrators can effortlessly tailor messages to meet diverse requirements. Additionally, the system offers automation capabilities, allowing predefined messages to be automatically sent at scheduled intervals or triggered by specific events. This functionality streamlines communication processes, ensuring timely and consistent delivery of information to recipients. With the SMS notification page, administrators can effectively manage communication channels, fostering efficient and transparent interactions with users.

F. BIOMETRIC INTEGRATION:

The integration of a biometric system ensures robust identity verification and authentication processes. By capturing distinct biometric data, including fingerprints, the system ensures precise identification of beneficiaries. This biometric authentication mechanism serves to confirm whether the customer has indeed availed the rationed goods, enhancing accountability and transparency within the distribution process. Furthermore, the integration of such a system helps prevent fraudulent activities and unauthorized access, thereby safeguarding the integrity of the ration distribution system and ensuring equitable access to essential commodities for all eligible individuals.

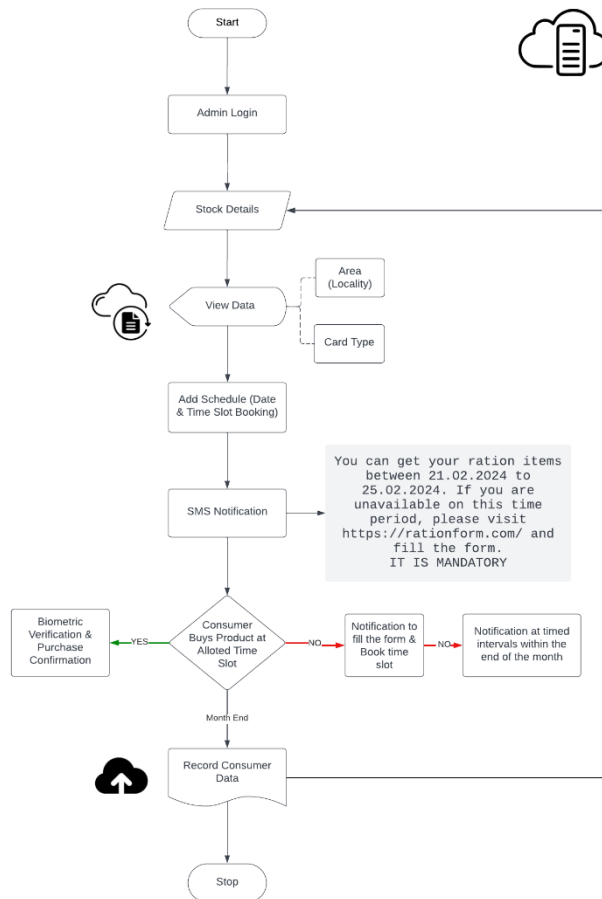
G. PRODUCT STATUS:

The product status serves as a pivotal tool for ensuring accurate inventory management and seamless transaction tracking. Upon the completion of each transaction, the system promptly updates the status to reflect whether the customer has purchased the product. This real-time update mechanism ensures that inventory records remain current and precise, facilitating efficient management of stock levels. By promptly updating the product status, the system enables shop administrators to make informed decisions regarding restocking and inventory replenishment, thereby optimizing resource allocation and ensuring uninterrupted availability of essential goods to customers. This proactive

approach to inventory management enhances operational efficiency and reinforces the reliability of the ration distribution process.

III. IMPLEMENTATION

A. PROCESS WORKFLOW:



IV. EXPERIMENTAL SETUP

Various Technologies used in implementation of the system are as follows:

HTML: HTML (Hypertext Markup Language) is the standard language for creating web pages, defining the structure and content of a webpage using tags and elements. **CSS:** CSS (Cascading Style Sheets) is used to style the HTML content, controlling layout, design, and presentation aspects such as colors, fonts, and spacing.

JavaScript: JavaScript is a versatile programming language commonly used for web development, enabling dynamic behavior and interactivity within web pages.

MySQL: MySQL is an open-source relational database management system (RDBMS).It supports various data types and features powerful SQL queries for efficient data manipulation and retrieval.

PHP: PHP (Hypertext Preprocessor) is a server-side scripting language primarily used for web development.

CLOUD: The process of adopting cloud computing technologies and services within an organization or for a specific project.

V. EXPERIMENTAL RESULTS

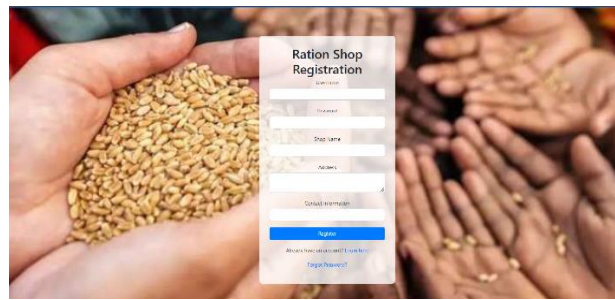


Figure 1. Register Page



Figure 2. Login Page

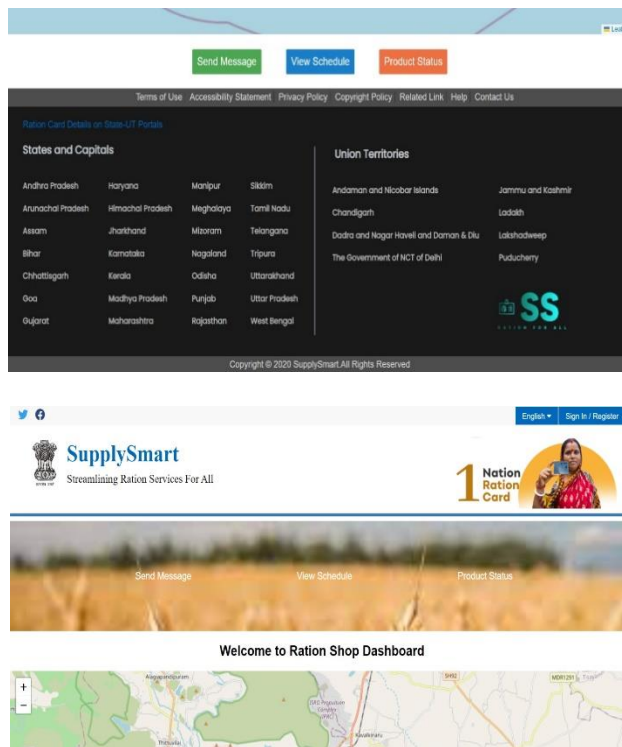


Figure 3. Dashboard Page

The screenshot shows the phpMyAdmin interface with a table containing user information. The table has columns for user ID, name, email, address, and role. The data is as follows:

ID	Name	Email	Address	Role
1	Admin	admin@supplysmart.gov.in	Ministry of Consumer Affairs	Admin
2	Super Admin	superadmin@supplysmart.gov.in	Ministry of Consumer Affairs	Super Admin
3	Super Admin	superadmin@supplysmart.gov.in	Ministry of Consumer Affairs	Super Admin
4	Super Admin	superadmin@supplysmart.gov.in	Ministry of Consumer Affairs	Super Admin
5	Super Admin	superadmin@supplysmart.gov.in	Ministry of Consumer Affairs	Super Admin
6	Super Admin	superadmin@supplysmart.gov.in	Ministry of Consumer Affairs	Super Admin
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50	Super Admin	superadmin@supplysmart.gov.in	Ministry of Consumer Affairs	Super Admin

Figure 4. Database

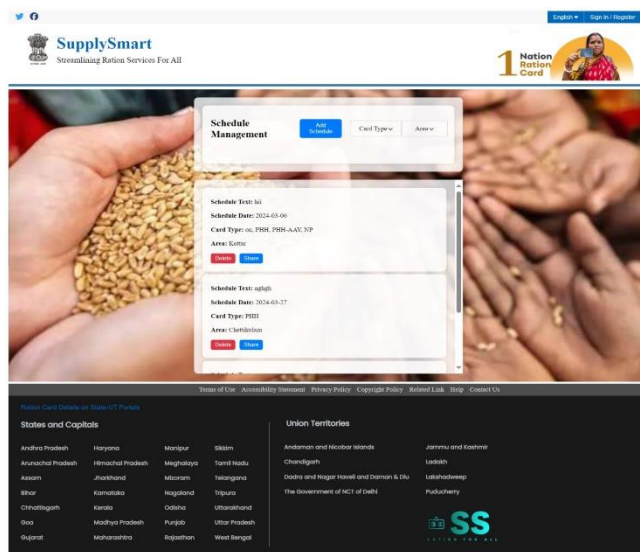


Figure 5. Schedule Page

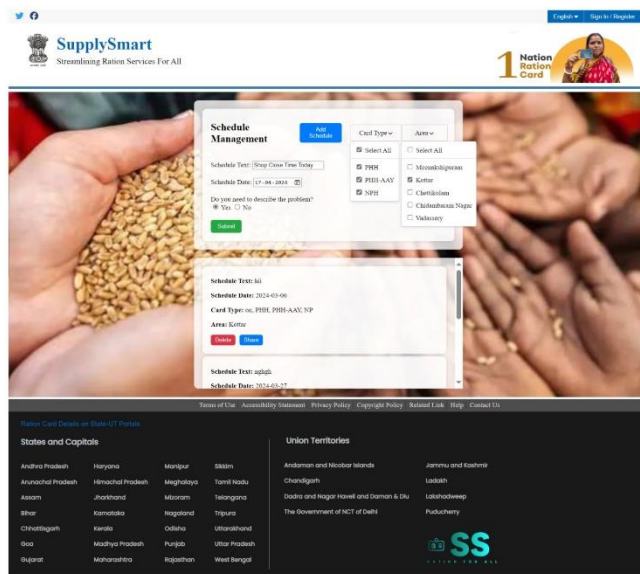


Figure 6. Scheduling page-2

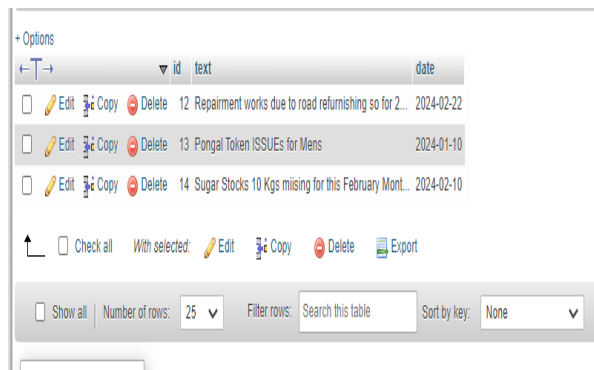


Figure 7. Database

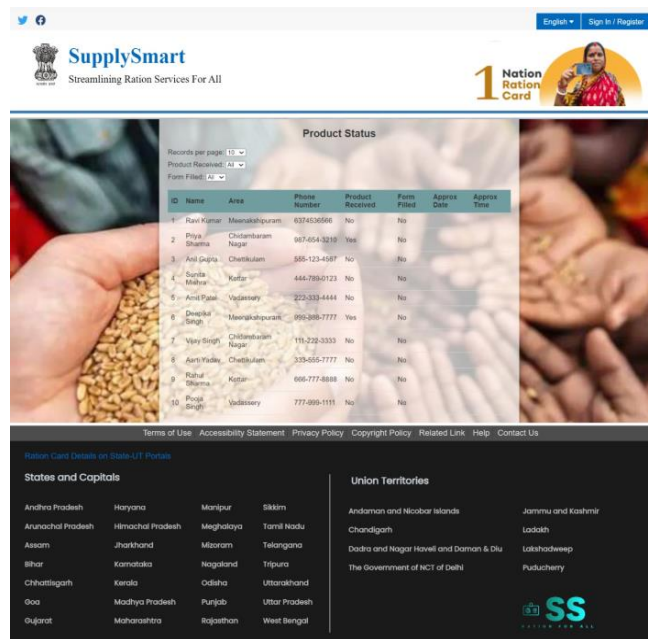


Figure 8. Product Status

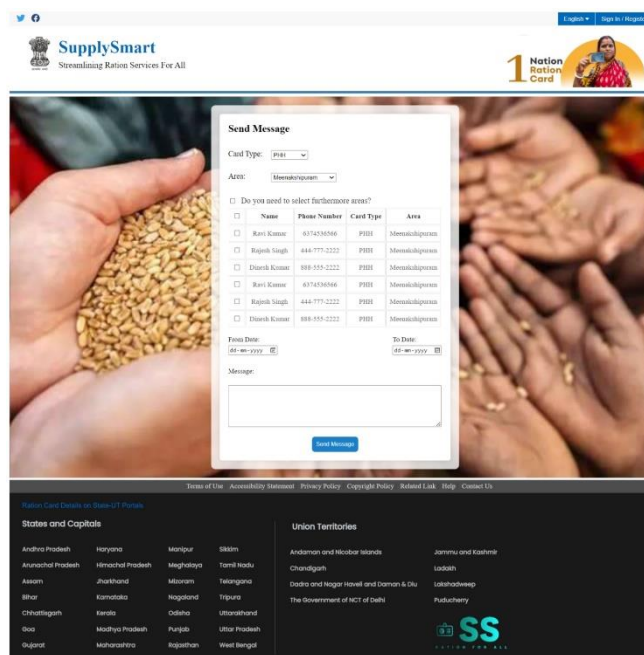


Figure 9. Sending Message

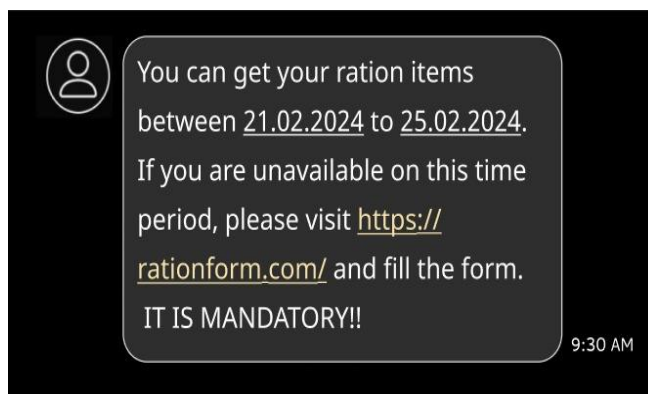


Figure 10. SMS Notification

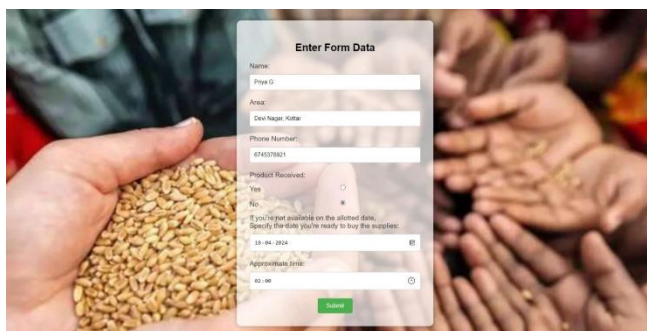


Figure 11. Form

VI. CONCLUSION AND FUTURE SCOPE

In contemporary society, the acquisition of goods from ration shops has become an arduous and time-consuming task, characterized by lengthy queues and substantial waiting periods. This innovative system proposes a practical and efficient solution to mitigate these challenges. Furthermore, it empowers ration workers in maintaining up-to-date inventories of government-supplied goods within the shops, while customers can conveniently ascertain the real-time availability of items through timely SMS notifications. This proactive monitoring helps prevent fraudulent activities associated with ration distribution. Additionally, individuals with demanding schedules often encounter challenges in regularly purchasing essential goods. Through this application, accessibility and procurement of necessities are made convenient for everyone. Leveraging HTML, CSS, and JavaScript for frontend development, alongside MySQL for database management and cloud infrastructure, the system modernizes ration shops by offering an intuitive online platform for ordering essential commodities, streamlining processes, and enhancing accessibility. The user-friendly interface ensures a seamless experience for all users. Overall, this application promises widespread benefits for numerous individuals. Importantly, customers need not use this website; only the admin requires access to place bookings and ensure smooth transactions without any involvement from the customer's side, eliminating the need for them to exert any effort.

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