Feasibility Study
&
Requirements Gathering

Feasibility Report: E-RATION SHOP

MINI PROJECT: E-Ration Shop Requirement Analysis

1. Project Overview:

The E-Ration Shop project aims to create an autonomous system for ration shops, particularly in developing countries like India. This system is designed to efficiently dispense the correct quantity of ration to cardholders based on their card type and family size, while also maintaining transaction details in a database.

2. To what extent is the system proposed for?

The E-Ration Shop project aims to provide a comprehensive solution for improving the ration distribution process. It covers aspects such as cardholder convenience, record-keeping, and accessibility. The system caters to the needs of cardholders, shop employees, and administrators.

3. Specify the Viewers/Public which are to be involved in the System:

The E-Ration Shop will involve the following categories of viewers and users:

- Registered Cardholders

- Ration Shop Owners/Employees

- Administrators/Support Staff

4. List the Modules included in your System:

The E-Ration Shop will consist of the following modules:

- Cardholder Functionality

  - Registration and Login

  - Ration Collection

  - Transaction History

- Ration Shop Owner Functionality

  - Shop Registration

  - Stock Management

- User Management

- Ration Distribution

- Admin Functionality

- Login and Logout

- Shop Owner Accounts Management

- Stock Details Management

5. Identify the users in your project:

Users in the E-Ration Shop project include:

- Registered Cardholders

- Ration Shop Owners/Employees

- Administrators/Support Staff

6. Who owns the system:

The ownership of the E-Ration Shop system can be attributed to the organization or entity that develops, maintains, and operates the platform. This entity is responsible for its design, development, deployment, updates, security, and overall management.

7. System is related to which firm/industry/organization:

The E-Ration Shop system is related to the government's initiative to provide essential commodities to economically disadvantaged families. It aims to improve the efficiency and transparency of this process.

8. Details of the person you have contacted for data collection:

Ration shops

PDS (civilsupplieskerala.gov.in)

Mera Ration (umang.gov.in)

NFSA

9. Questionnaire to collect details about the project (minimum 10 questions):

1. What motivated the development of the E-Ration Shop project?

- The development of the E-Ration Shop project was motivated by the need to improve the efficiency of the ration distribution system and enhance the overall experience for cardholders.

2. Can you explain the key features and functionalities of the platform in more detail?

   - Certainly, the platform offers features like automated ration quantity calculation, user-friendly registration and login, convenient browsing of available products, and secure transactions. It also includes administrative functions for managing shop owners, stock, and support.

3. How does the system determine the correct quantity of ration for cardholders?

   - The system calculates the ration quantity based on the type of card and the number of members in the cardholder's family. It ensures that the distribution aligns with the entitlements specified for each card type.

4. What technologies are being used for the frontend and backend development of the project?

   - The project utilizes modern web development technologies, with React for the frontend and Node.js for the backend.

5. How do you plan to ensure cardholder convenience and accessibility through the system?

   - Cardholders can access the system anytime, eliminating the need to wait in long queues. The user interface is designed to be user-friendly and accessible, making it easy for cardholders to register, browse, and place orders.

6. What administrative functions are available for managing shop owners, stock, and support?

- Admins can manage shop owner accounts, access permissions, stock details, and provide support as needed. They play a crucial role in ensuring the system's smooth operation.

7. Can you describe the user registration and login process?

- Users register by providing necessary details, and the login process requires a username and password for authentication.

8. How are transactions recorded and stored in the database?

- Transactions are automatically recorded and stored in the database, creating a digital record of all ration distribution activities for future reference and analysis.

9. How does the system support shop owners in managing their stock?

- Shop owners have the ability to manage their stock, add new items, update existing ones, and remove items that are no longer available. This feature ensures that the stock is always up-to-date and accurate.

10. What measures are in place to ensure data security and privacy for cardholders' information?

- The system implements robust security measures, including encryption and access controls, to protect cardholders' information and ensure data privacy. Regular security audits are conducted to identify and address vulnerabilities.

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Technical, Economical & Operational Feasibility Study

How would the organization cope if this system was not implemented?

Without the E-Ration Shop system, the organization would continue to face several challenges, including:

- Cardholders wasting time waiting in long queues for ration collection.

- Cumbersome maintenance of hard copy records.

- Delays in updating personal information on ration cards.

- Lack of awareness about ration distribution schedules.

- Difficulty for physically challenged individuals to access ration shops.

- Inefficiencies, fraud, and revenue loss in the ration distribution process.

What are the problems with current processes and how would a new system help alleviate these problems?

The current manual ration distribution system faces multiple issues:

- Inefficient queue-based distribution leading to cardholders' time wastage.

- Tedious record-keeping through physical documentation.

- Time-consuming updates to ration card information.

- Lack of communication on distribution schedules.

- Accessibility challenges for physically challenged individuals.

- Potential for fraud and inefficiencies.

The proposed E-Ration Shop system addresses these problems by automating the process, enabling cardholders to access their ration anytime, maintaining digital records, ensuring timely updates, providing information on distribution schedules, and enhancing accessibility.

What direct contribution will the system make to the business objectives and requirements?

The E-Ration Shop system directly contributes to business objectives by:

- Increasing cardholder satisfaction and convenience.

- Reducing operational costs through automation.

- Enhancing transparency and reducing fraud.

- Improving overall efficiency in the ration distribution process.

- Providing data insights for better resource management.

Can information be transferred to and from other organizational systems?

Yes, the E-Ration Shop system will be designed to facilitate data exchange with other organizational systems. For example, it can integrate with government databases for cardholder information and financial systems for payment processing.

Does the system require technology that has not previously been used in the organization?

No, the E-Ration Shop system primarily utilizes established technologies, such as web-based platforms and databases. This ensures compatibility with existing systems and minimizes the learning curve for users.

What must be supported by the system and what need not be supported?

The system must support essential features such as cardholder registration, ration distribution, digital record-keeping, and accessibility enhancements for physically challenged individuals. Non-essential features, such as social media integration, may be considered as optional enhancements but are not critical to the system's core functionality.