SMART RATION SHOP MANAGEMENT SYSTEM FOR BETTER INVENTORY MANAGEMENT AND ACCOUNTABILITY USING BARCODE BASED SYSTEM

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ABSTRACT

The traditional Public Distribution System (PDS) often suffers from critical issues such as stock mismanagement, theft, lack of transparency, and violations of FIFO (First-In-First-Out) principles. Manual record-keeping further compounds these problems by introducing human error and enabling unauthorized stock movements. To address these challenges, this project presents a Smart Ration Shop Management System, a centralized, web-based solution designed to automate and modernize ration distribution.

Our system integrates barcode-based system with FIFO inventory to ensure accurate and efficient stock handling. By enforcing FIFO-based inventory management, the system minimizes wastage and deters pilferage. Digital transaction records, coupled with alert mechanisms, enable prompt detection of irregularities and enhance overall accountability.

The user-friendly web application empowers ration shop administrators with real-time dashboards, shop-wise analytics, and role-based access to streamline operations. This intelligent solution not only improves inventory accuracy but also reinforces transparency and trust in the PDS. By leveraging technology-driven automation, the proposed system ensures equitable, efficient, and

corruption-free distribution of essential commodities to the beneficiaries.