

CONSTRUCTPOS: AN INTEGRATED B2B CONSTRUCTION RETAIL SYSTEM WITH AUTOMATED UNIT CONVERSION AND PREDICTIVE INVENTORY ANALYTICS

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INTRODUCTION

ConstructPOS is a point-of-sale and inventory management system designed for single-store construction supply businesses. Unlike standard retail systems, construction suppliers handle bulk items that are sold in different units such as bags, boxes, or pallets, making inventory tracking more complex. Manual recording often leads to inaccurate stock counts and unexpected shortages of essential materials.

On the admin side, ConstructPOS allows store owners to view inventory and sales, manage unit conversions, identify items that need restocking, and receive notifications when stock levels are nearing depletion. On the customer side, the system enables customers to order construction materials in bulk, choose preferred unit conversions, receive order updates, and place preorders. This ensures better stock control, smoother transactions, and more reliable service for both store owners and customers.



OBJECTIVES

- Inventory and Sales Monitoring: To provide store owners with the ability to view real-time inventory levels and track all sales transactions.
- Unit Conversion Management: To implement a system that supports unit conversions for construction materials, allowing items to be sold and tracked by bags, boxes, or pallets.
- Restocking and Stock Alerts: To identify items that need restocking and notify administrators when stock levels are nearing depletion.
- Bulk Ordering and Preorders: To allow customers to order construction materials in bulk and place preorders for items that are not immediately available.
- Order Status Notifications: To provide customers with notifications and updates regarding the status of their orders.

MICROSERVICES ADHERANCE

- Authentication Service: Handles B2B client logins.
- User Profile Service: Stores business permits, credit limits, and delivery locations.
- Post Service: Every product restock or new material arrival is treated as a post.
- Feed Service: A marketplace feed for contractors where they see a stream of available bulk materials (e.g., “New Batch of Type 1 Cement Arrived”).
- Reaction Service: Used for price watching or pre-order interest. Contractors can “react” to a product post to receive notifications about price drops or stock availability.
- Order Method (Admin to Supplier): Allows administrators to directly place purchase orders to suppliers within the system for restocking materials.
- Live Tracking System: Provides real-time tracking of orders and deliveries, accessible to both administrators and customers.