SuperPOS System

Complete Demo & Tutorial Guide

Comprehensive Point-of-Sale Solution

with Inventory Management, Reporting & Multi-Store Support

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Table of Contents

1. Introduction & System Overview

SuperPOS is a comprehensive, full-featured Point-of-Sale system designed for supermarkets and retail stores. Built with Next.js 14, TypeScript, and PostgreSQL, it offers both web-based and desktop application support with full offline capabilities.

Key Features:

✓ Complete POS system with barcode scanning

✓ Real-time inventory management

✓ Comprehensive reporting (Sales, Inventory, Financial, Products, Cashier)

✓ Multi-store support with centralized management

✓ Role-based access control (ADMIN, MANAGER, CASHIER, INVENTORY_CLERK)

✓ Excel import/export for bulk operations

✓ PDF receipt generation and printing

✓ Offline-first Progressive Web App (PWA)

✓ Multi-currency support (KSh, USD, EUR, etc.)

✓ Customer & supplier management

✓ Purchase order tracking

✓ Returns processing

✓ Stock adjustment and transfer workflows

Technology Stack:

• Frontend: Next.js 14, React, TypeScript, Tailwind CSS

• Backend: Next.js API Routes, NextAuth.js

• Database: PostgreSQL with Prisma ORM

• UI Components: shadcn/ui, Radix UI

• Reports: XLSX (Excel), jsPDF (PDF)

• Desktop: Electron with electron-builder

• Deployment: Abacus.AI platform, GitHub Actions CI/CD

2. Authentication & Login

The system uses secure session-based authentication with NextAuth.js. Users must log in with their credentials to access the application. Different roles have different permissions and access levels.

Default User Accounts:

Role	Email	Password	Permissions
ADMIN	admin@pos.com	admin123	Full system access
MANAGER	manager@pos.com	manager123	All operations except user management
CASHIER	cashier@pos.com	cashier123	POS, sales, customer management
INVENTORY_CLERK	clerk@pos.com	clerk123	Inventory & stock management

3. Point of Sale (POS) System

The POS system is the core of SuperPOS, designed for fast and efficient transaction processing. It supports barcode scanning, quick product search, and multiple payment methods.

3.1 Product Search & Cart Management

• Search products by name or barcode

• Add/remove items from cart

• Adjust quantities with +/- buttons

• Real-time price calculation

• View product images and details

• Filter by category

• Cart summary with item count and total

• Clear cart option

3.2 Payment Processing

• Cash payment with automatic change calculation

• Card payment support

• Quick amount buttons for common denominations

• Custom amount entry

• Real-time change display

• Payment validation

• Transaction confirmation

3.3 Receipt Generation

After successful payment, the system automatically generates a receipt with: • Unique receipt number • Transaction date and time • Store information • Cashier details • Itemized purchase list with quantities and prices • Payment method and amount paid • Change given • Subtotal, tax (if applicable), and total • Option to print or download as PDF

4. Dashboard & Analytics

The dashboard provides a comprehensive overview of your business performance with real-time metrics, sales trends, and critical alerts.

4.1 Key Performance Metrics

• Total Sales (Today/Week/Month)

• Transaction Count

• Average Transaction Value

• Low Stock Item Count

• Revenue trends over time

• Period comparison (day-over-day, week-over-week)

4.2 Sales Trends

Interactive chart showing sales trends over the selected time period. Visualize daily, weekly, or monthly sales patterns to identify peak periods and make informed business decisions.

4.3 Top Products & Low Stock Alerts

• Top Selling Products: View your best-performing products with sales quantity and revenue • Low Stock Alerts: Immediate visibility of products that need reordering • Minimum stock level indicators • Quick access to restock functionality

5. Product Management

Comprehensive product management with support for individual product creation, bulk import via Excel, and detailed product tracking.

5.1 Product Features

• Product images (upload or URL)

• Automatic barcode generation (EAN-13 format)

• Category assignment

• Cost and selling price tracking

• Stock quantity management

• Minimum stock level alerts

• SKU/barcode management

• Product descriptions

• Store-specific inventory

• Product search and filtering

5.2 Excel Import Feature

Bulk import products or restock inventory using Excel files: **Import Modes:** • New Products: Create multiple products at once • Restock: Update quantities for existing products by barcode **Required Fields:** • Barcode (unique identifier) • Product Name • Category • Cost Price • Selling Price • Stock Quantity • Minimum Stock Level The system automatically creates categories if they don't exist and validates all data before import.

6. Inventory Management

Complete inventory control with stock adjustments, transfers between stores, and detailed history tracking.

6.1 Stock Adjustments

• **Restock:** Add inventory from purchase orders or supplier deliveries

• **Correction:** Fix discrepancies found during inventory counts

• **Damaged:** Record damaged goods that cannot be sold

• **Expired:** Remove expired products from inventory

• **Lost/Shrinkage:** Account for theft, loss, or unexplained shrinkage

• **Returned:** Add back items returned by customers

6.2 Stock Transfers

Transfer inventory between stores in your chain: • Select source and destination stores • Choose products and quantities to transfer • Track transfer status (Pending, In Transit, Completed, Cancelled) • Automatic inventory adjustment on completion • Transfer history and audit trail

6.3 Inventory History

Complete audit trail of all inventory movements: • Date and time stamps • User attribution (who made the change) • Adjustment type • Before and after quantities • Reference numbers for tracking • Reason/notes for adjustments • Search and filter capabilities • Export to Excel for analysis

7. Reports & Analytics

Comprehensive reporting suite with 5 report types, all exportable to Excel and PDF formats.

7.1 Sales Reports

• Total revenue by period • Transaction count and averages • Payment method breakdown (Cash vs Card) • Recent transactions with receipt numbers • Cashier attribution • Date range filtering • Group by Day/Week/Month

7.2 Inventory Reports

• Total products in inventory • Total stock value • Low stock items (highlighted) • Out of stock items • Stock by category • Reorder level alerts • Product valuation

7.3 Product Performance Reports

• Best-selling products • Revenue by product • Quantity sold • Profit margins • Category analysis • Sales velocity • Inventory turnover rates

7.4 Financial Reports

• Revenue vs Cost analysis • Profit margins by product • Total profit calculations • Payment method revenue • Tax calculations (if applicable) • Period-over-period comparison • Financial summaries

7.5 Cashier Performance Reports

• Sales by cashier • Transaction count per user • Average transaction values • Working hours analysis • Performance metrics • Error rates (if tracked) • Productivity indicators

7.6 Excel & PDF Export

All reports can be exported in two formats: • **Excel (.xlsx):** For further analysis, pivot tables, and data manipulation • **PDF:** For printing, sharing, and formal documentation Exports include all visible data, applied filters, and summary statistics.

8. User Management

Role-based access control (RBAC) system with four distinct roles and granular permissions.

8.1 User Roles & Permissions

Role	Key Permissions
ADMIN	Full system access, user management, settings, all reports
MANAGER	All operations, reports, inventory, cannot manage users
CASHIER	POS transactions, customer management, view sales
INVENTORY_CLERK	Stock management, inventory adjustments, transfers

8.2 User Administration (ADMIN Only)

• Add new users with email and password

• Assign roles and permissions

• Store-specific or multi-store access

• Enable/disable user accounts

• Reset passwords

• View user activity logs

• Track user creation dates

• Manage user status (Active/Inactive)

9. Settings & Configuration

9.1 Database Settings

The system supports two database configuration modes: **Cloud Database (Default):** •
Hosted on Abacus.AI infrastructure • Automatic backups and maintenance • Optimized for
web deployment • Multi-store synchronization • Connection status monitoring **Local Database
(Desktop App):** • PostgreSQL running on local machine • Full offline capability • Complete
data ownership • Manual backup responsibility • Setup instructions provided in the interface •
Connection testing tools

9.2 Multi-Store Setup

For businesses with multiple locations: • Create stores with unique names and identifiers •
Assign users to specific stores or all stores • Store-specific inventory tracking • Inter-store
transfers • Consolidated reporting across all stores • Store selection dropdown in header •
Store-filtered dashboards and reports

10. Advanced Features

10.1 Offline Support (PWA)

SuperPOS is a Progressive Web App (PWA) with full offline capabilities: • **Install on Desktop:** One-click installation from browser • **Offline Transactions:** Continue selling even without internet • **IndexedDB Storage:** Local data persistence • **Background Sync:** Automatic sync when connection restored • **Service Worker:** Caches assets for fast offline access • **Sync Status Indicator:** Shows connection and sync state • **Queue Management:** Queues offline transactions for later sync • **Conflict Resolution:** Handles sync conflicts intelligently

10.2 Barcode Scanning

Built-in barcode scanning support with multiple format recognition: **Supported Formats:** • EAN-13 (European Article Number) • EAN-8 • UPC-A (Universal Product Code) • UPC-E • Code 128 • Code 39 • Code 93 • Codabar • ITF (Interleaved 2 of 5) • QR Code • Data Matrix • Aztec • PDF417 **Features:** • Camera-based scanning (desktop and mobile) • USB barcode scanner support • Manual barcode entry • Barcode validation • Automatic product lookup • Print barcode labels (60x40mm thermal format)

10.3 Multi-Currency Support

The system supports multiple currencies with real-time selection: **Supported Currencies:** • KSh (Kenyan Shilling) - Default • USD (US Dollar) • EUR (Euro) • GBP (British Pound) • And more... **Features:** • Currency selector in header • Real-time price conversion display • Receipt currency formatting • Report currency consistency • Per-transaction currency locking

Best Practices & Usage Tips

Daily Operations:

• Start each day by reviewing low stock alerts on the Dashboard

• Ensure all cashiers log in with their own credentials for accountability

• Use the POS keyboard shortcuts (F1-F5) for faster transactions

• Print or download end-of-day reports for record-keeping

Inventory Management:

• Conduct regular inventory counts and use 'Correction' adjustments

• Set appropriate minimum stock levels to avoid stockouts

• Use Excel import for bulk restocking from supplier deliveries

• Document all adjustments with clear reasons in the notes field

Reporting:

• Generate reports weekly for trend analysis

• Export reports to Excel for deeper analysis and sharing

• Compare period-over-period to identify growth opportunities

• Review cashier performance reports for training needs

Security:

• Change default passwords immediately after first login

• Disable user accounts when employees leave

• Regularly review user activity logs (ADMIN)

• Use strong passwords and enable two-factor authentication if available

Data Management:

• Regularly backup your database (especially for local setups)

• Archive old transaction data periodically

- Monitor database connection status (shown in header)

- Test cloud sync regularly if using offline mode

Troubleshooting Common Issues

Issue: Cannot log in

Solution: Verify credentials match default accounts. Check if account is active. Clear browser cache and cookies.

Issue: Products not showing in POS

Solution: Ensure products have stock > 0. Check store filter - products must belong to selected store. Verify product is not archived.

Issue: Barcode scanner not working

Solution: Grant camera permissions in browser. For USB scanners, ensure proper driver installation. Verify barcode format is supported.

Issue: Reports showing incorrect data

Solution: Check date range filters. Verify store selection. Ensure transactions completed successfully. Clear cache and regenerate report.

Issue: Excel import failing

Solution: Verify Excel file format (.xlsx). Check required columns exist. Ensure barcode uniqueness. Review error messages for specific issues.

Issue: Offline sync not working

Solution: Check internet connection. Verify sync status indicator. Clear service worker cache. Manually trigger sync from settings.

Issue: Payment processing stuck

Solution: Verify cart is not empty. Check payment amount >= total. Ensure payment method selected. Refresh page if modal unresponsive.

Issue: Database connection error

Solution: For cloud: Check internet connection. For local: Verify PostgreSQL running. Test connection in Settings > Database. Review connection string.

Support & Additional Resources

Documentation & Guides:

• Desktop Build Guide: DESKTOP_BUILD_GUIDE.md (in project root)

• GitHub Repository: https://github.com/GodfreyNjoro/supermarket-pos-system

• Live Demo: https://superpos.abacusai.app

• API Documentation: /api endpoints documented in code

• Database Schema: prisma/schema.prisma

Technical Support:

For technical issues, feature requests, or bug reports: • GitHub Issues: Create an issue on the repository • Email: support@superpos.example.com • Documentation: Refer to README.md and inline code comments

System Requirements:

Web Version:

• Modern web browser (Chrome, Firefox, Safari, Edge)

• JavaScript enabled

• Minimum 1024x768 screen resolution

• Stable internet connection (for cloud mode)

Desktop Version:

• Windows 10/11 (64-bit)

• macOS 10.15+ (Catalina or later)

• Linux (Ubuntu 20.04+ or equivalent)

• 4GB RAM minimum (8GB recommended)

• 500MB available disk space

• PostgreSQL 12+ (for local database mode)

Mobile:

- iOS 13+ or Android 8+

- Modern mobile browser

- Camera (for barcode scanning)

- Progressive Web App support

Conclusion

SuperPOS provides a comprehensive, modern solution for retail point-of-sale operations with advanced inventory management, reporting, and multi-store capabilities. Its offline-first architecture ensures business continuity even without internet connectivity, while the intuitive interface minimizes training time and maximizes productivity.

Key Takeaways:

✓ Full-featured POS with fast transaction processing

✓ Comprehensive inventory control with audit trails

✓ Five report types with Excel/PDF export

✓ Role-based security for team accountability

✓ Offline capability for uninterrupted operations

✓ Multi-store support for growing businesses

✓ Modern web technologies with desktop deployment option

✓ Automatic barcode generation and scanning

✓ Multi-currency support for diverse markets

✓ Extensible architecture for custom integrations

Thank you for choosing SuperPOS. We hope this comprehensive guide helps you maximize the value of the system for your business operations.