

System Analysis and Design Documentation

Project Title: Small Business Sales Management System (Integrated with Daraja API)

1. Introduction

The Small Business Sales Management System is designed to help small-scale business owners automate daily sales, manage inventory, and process payments through M-Pesa using the Daraja API. The system provides a user-friendly interface to record transactions, generate receipts, and track customer payments in real-time.

2. Problem Statement

Most small business owners in Kenya still rely on manual record-keeping and cash transactions. This results in data loss, poor inventory control, and difficulties in reconciling payments. The system aims to provide a digital solution that enhances accuracy, transparency, and efficiency.

3. System Objectives

- To automate sales and inventory management.
- To integrate mobile payment processing through Daraja API.
- To generate financial reports for decision-making.
- To maintain accurate customer and product records.

4. Scope of the System

The system will be web-based and accessible via both mobile and desktop browsers. It will manage products, customers, sales transactions, and M-Pesa payments. Admins can view reports, track revenue, and manage users.

5. System Users

- Admin: Manages users, products, and system settings.
- Cashier: Records sales and processes payments.
- Customer: Makes payments via M-Pesa.

6. Functional Requirements

- User login and authentication.
- Add, update, and delete products.
- Record and view sales transactions.
- Process payments via Daraja API (STK Push).
- Generate daily, weekly, and monthly sales reports.

7. Non-Functional Requirements

- Usability: Simple and intuitive interface.
- Security: Secure payment integration via HTTPS and tokenized access.
- Performance: System should process transactions in under 5 seconds.
- Availability: 24/7 online access with minimal downtime.

8. System Design

Placeholder for Context Diagram (Level 0 DFD)

Placeholder for Level 1 Data Flow Diagram

9. System Entities

- User: user_id, name, email, password, role
- Product: product_id, name, price, stock_quantity
- Sale: sale_id, product_id, user_id, date, total_amount
- Payment: payment_id, sale_id, amount, transaction_code, status

10. Conclusion

The Small Business Sales Management System aims to streamline operations and enable businesses to handle M-Pesa payments efficiently through the Daraja API. It supports decision-making by providing accurate and timely reports while reducing human error in daily transactions.