# System Sync Project - DFD Documentation

## Level 0 - Context Diagram Summary

The Level 0 Data Flow Diagram represents the Small Business Inventory Management & Sales Record System as a single process interacting with external entities such as the Store Owner/Admin, Cashier, Data Migration Source, and Reporting User. The main data exchanges involve product management, sales entry, reporting, and inventory tracking.

## Level 1 - Detailed DFD Overview

This level expands the system into seven core processes, connected to six main data stores and several external entities. Each process manages a functional part of the system, ensuring automated sales tracking, inventory control, product and supplier management, and reporting.

### Processes

* P1 — Auth & Role Management: Handles user logins and access levels.
* P2 — POS Sales Process: Records and validates sale transactions.
* P3 — Finalize & Record Sale: Commits sale to database and generate audit trail.
* P4 — Inventory Control: Adjusts stock levels and provides low-stock indications.
* P5 — Reporting & Dashboard: Generates real-time or requested reports.
* P6 — Product & Supplier Management: CRUD operations for products and suppliers.
* P7 — Data Import: Imports legacy data from spreadsheets.

### Data Stores

* D1 — Users DB
* D2 — Products DB
* D3 — Sales DB
* D4 — Inventory DB
* D5 — Suppliers DB
* D6 — Reporting Views

### External Entities

* Store Owner/Admin
* Cashier
* Data Migration Source
* Reporting User

### Key Data Flows

* Cashier → P2: Sale input
* P2 → P3: Sale confirmation
* P3 → D3: Record sale & audit
* P3 → P4: Adjust inventory
* Admin → P6: Product & supplier management
* P5 ← D3/D4/D2: Reporting queries
* Data Migration Source → P7: Upload and validate legacy data

### Notes & Design Decisions

* Payment gateway integration excluded (manual entry only).
* Low-stock indication implemented as in-system visual flag.
* Each sale includes a timestamp and cashier ID for audit.
* Reports can query live data or pre-aggregated views.

## Compact DFD Summary

Processes: P1 Auth & Role Mgmt; P2 POS Sales Process; P3 Finalize & Record Sale; P4 Inventory Control; P6 Product & Supplier Mgmt; P5 Reporting & Dashboard; P7 Data Import.  
  
Data Stores: D1 Users; D2 Products; D3 Sales; D4 Inventory; D5 Suppliers; D6 Reporting Views.  
  
External Entities: Cashier, Store Owner/Admin, Data Migration Source, Reporting User.

