Flux POS & Inventory System

Data Dictionary (Phase 0 + Phase 1)

Applies to:

- **Phase 0:** Walking Skeleton (offline POS proof)
- **Phase 1:** Trimmed MVP / Release 1 (real retail basics)

Primary reference base used here (from your provided files):

- Core ERD (Phase 0 + Phase 1 tables + SQL + constraints)
- Roadmap (Phase definitions and what belongs in Phase 0/1)
- Requirements Catalogue (rules like offline sync flags not in DB, barcode uniqueness, credit rules, etc.)
- Latest Scope (UI field lists; used to mark “missing but required columns”)

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1) Purpose

This Data Dictionary is the **single place** that defines:

- What each **table** is for
- What each **field/column** means
- The **data type** and **format**
- The **rules/constraints** (what is allowed, what is not)
- Simple **example values**

This prevents future confusion like:

- “Is location_id the shop, the warehouse, or both?”
- “Where do we store batch expiry?”
- “Do we store sync flags in DB or only on the device?”

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2) Global rules (apply to ALL tables unless noted)

2.1 Primary keys and offline inserts

- **Every table uses uuid primary keys** so the app can create records **offline**.
- UUIDs are generated on the **client/device** before sync.

2.2 Branch isolation / RLS

- Every business record carries **location_id** to enforce **branch isolation** (Row Level Security).

- A user from Branch A must not read/write Branch B rows.

2.3 Audit fields

Most tables have:

- created_at, updated_at timestamps
- created_by = the authenticated user ID (references auth users)

2.4 Currency and quantities

- Money: **numeric(15,2)** (example: 1250.00)
- Quantities: **numeric(15,3) or numeric(20,3)** (example: 1.500)

2.5 Offline sync flags (critical)

- **Do NOT store synced, sync_status, "pending" flags inside server tables.**
- Keep sync status **only in IndexedDB** (client queue).

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3) Common field meanings (used everywhere)

Field	Type	Meaning	Example
id	uuid	Primary key	7a2f…e21b
location_id	uuid	Branch/shop ID used for isolation	b11c…9d01
created_at	timestamptz	When row was created	2026-01-31 10:15:00+00
updated_at	timestamptz	When row was last changed	2026-01-31 11:40:12+00
created_by	uuid	Who created it (auth user id)	0c77…f3aa

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4) Controlled values (enums / fixed sets)

4.1 Sales invoice business status

sales_invoices.status:

- draft | posted | cancelled | void

4.2 Payment types

payments.method:

- Cash | Card | Credit

4.3 Stock move types (ledger)

stock_moves.move_type:

- Sale | Return | Adjustment | TransferOut | TransferIn | GRN

4.4 GRN status

grns.status:

- draft | posted

4.5 Stock transfer status

stock_transfers.status:

- Pending | InTransit | Received

4.6 Stock adjustment status

stock_adjustments.status:

- draft | posted

5) Table-by-table Data Dictionary

A) Master Data

A1) locations (Branches)

Purpose: Stores branches/shops/warehouses (top-level business locations).
Key rule: locations.name must be **unique** (no duplicate branch names).

Field	Type	Meaning	Rules	Example
id	uuid (PK)	Location ID	Must be UUID	b11c…9d01
name	text	Branch name	**Unique**	Jaffna Branch
address	text	Address text	Optional	No. 10, Main St
created_at	timestamptz	Created time	Auto	…
updated_at	timestamptz	Updated time	Auto	…
created_by	uuid	Created by user	Optional but recommended	…

A2) categories

Purpose: Product categories (scoped per branch).
Note: Your UI scope expects **Category No + Short Code**, but the current ERD only has name.
So below has **(1) Physical fields now** + **(2) Required extension fields**.

(1) Physical DB fields (Core ERD)

Field	Type	Meaning	Rules	Example
id	uuid (PK)	Category ID	UUID	…
name	text	Category name	Required	Medicine
location_id	uuid (FK)	Branch	Must exist in locations	…
created_at	timestamp	Created	Auto	…
updated_at	timestamp	Updated	Auto	…
created_by	uuid	Creator	Optional	…

(2) Required extension fields (from Latest Scope / SRS)

Add these columns (Phase 0/1 master screen expects them):

- category_no (text) — example CAT-0001
- short_code (text) — example MED
- level (int) — example 1 (if you use level hierarchy)
- comment (text) — optional notes

A3) units

Purpose: Units of measure (piece, kg, ml, etc.) per branch.

Field	Type	Meaning	Rules	Example
id	uuid (PK)	Unit ID	UUID	…
name	text	Unit name	Required	Kilogram
symbol	text	Unit symbol	Optional	kg
location_id	uuid (FK)	Branch	Required	…
created_at	timestamp	Created	Auto	…
updated_at	timestamp	Updated	Auto	…
created_by	uuid	Creator	Optional	…

Business rule (important): Units must support **decimal quantities** (ex: 1.5 kg).
If you want strict control, add:

- allow_decimal boolean (true/false)
- decimal_places int (ex: 3)

A4) items

Purpose: Sellable inventory items per branch.

(1) Physical DB fields (Core ERD)

Field	Type	Meaning	Rules	Example
id	uuid (PK)	Item ID	UUID	…
name	text	Item name	Required	Paracetamol 500mg
barcode	text	Barcode	**Unique per location when not null**	4791234567890
price	numeric(15,2)	Selling price	Optional (but needed for POS)	120.00
cost	numeric(15,2)	Cost price	Optional	95.00
category_id	uuid (FK)	Category	Required	…
unit_id	uuid (FK)	Unit	Required	…
location_id	uuid (FK)	Branch	Required	…
created_at	timestamptz	Created	Auto	…
updated_at	timestamptz	Updated	Auto	…
created_by	uuid	Creator	Optional	…

(2) Required extension fields (from Latest Scope / SRS)

Your scope UI expects many item attributes. At minimum (Phase 1), you should add:

- item_code (text) — example ITM-000045
- description (text)
- is_batch_tracked (boolean) — **required** because Phase 1 has lots/expiry
- reorder_level (numeric)
- expiry_warning_days (int)
- is_active (boolean)

Optional but shown in UI scope:

- shelf/department fields, max qty, reorder qty, prescription required, etc.

A5) suppliers

Purpose: Supplier master per branch.

(1) Physical DB fields (Core ERD)

Field	Type	Meaning	Rules	Example
id	uuid (PK)	Supplier ID	UUID	…
name	text	Supplier name	Required	ABC Pharma (Pvt) Ltd
contact_info	text	Combined contact text	Optional	Tel: …, Email: …
credit_days	integer	Supplier credit days	Default 0	30
location_id	uuid	Branch	Required	…
created_at	timestamptz	Created	Auto	…
updated_at	timestamptz	Updated	Auto	…
created_by	uuid	Creator	Optional	…

(2) Required extension fields (from Latest Scope UI)

UI shows detailed fields, so prefer splitting contact_info into columns:

- supplier_no (text) — SUP-00012
- address_line1, address_line2, address_line3
- city
- nic_br_no
- telephone, mobile, fax
- email
- remarks
- level

A6) customers

Purpose: Customer master per branch, including credit terms.

Field	Type	Meaning	Rules	Example
id	uuid (PK)	Customer ID	UUID	…
name	text	Customer name	Required	S. Kumar
mobile	text	Mobile	Optional	0771234567
email	text	Email	Optional	kumar@email.com
credit_limit	numeric(15,2)	Credit limit	Default 0	50000.00
credit_days	integer	Credit days	Default 0	30
location_id	uuid	Branch	Required	…
created_at	timestamptz	Created	Auto	…
updated_at	timestamptz	Updated	Auto	…
created_by	uuid	Creator	Optional	…

Required extension fields (from Latest Scope UI):

- customer_no, title, other_name
- address lines + city
- customer area
- NIC/BR No
- telephone
- note

A7) User profile tables (Required for Phase 1 security)

Your Phase 1 requires roles (Super Admin, Store Manager, Cashier) and branch assignment. Supabase Auth stores login identity, but you still need an app table for profile fields.

Recommended: user_profiles

Field	Type	Meaning	Rules	Example
id	uuid (PK, FK auth.users.id)	User ID	1:1 with auth user	…
first_name	text	First name	Required	Nimal
last_name	text	Last name	Required	Perera
mobile	text	Mobile	Optional	07…
email	text	Email (copy)	Optional	…
role	text	Role	Must be one of 3 roles	Cashier
location_id	uuid	Assigned branch	Required for cashier/manager	…
is_active	boolean	Active user	Default true	true
created_at	timestamptz	Created	Auto	…
updated_at	timestamptz	Updated	Auto	…

If Super Admin can access multiple branches, add:

- user_locations (user_id, location_id) mapping table

B) Sales / POS

B1) sales_invoices

Purpose: Sales header (one sale transaction).

Field	Type	Meaning	Rules	Example
id	uuid (PK)	Invoice ID	UUID	…
invoice_number	text	Invoice number	**Unique per location**	INV-000102
total_amount	numeric(15,2)	Total	Required	2450.00
payment_status	varchar(20)	Paid state	Recommend: paid/unpaid/partial	paid
status	varchar(20)	Business status	draft/posted/cancelled/void	posted
customer_id	uuid (FK)	Customer	Nullable for cash/card	…

location_id	uuid (FK)	Branch	Required	…
created_at	timestamptz	Created	Auto	…
updated_at	timestamptz	Updated	Auto	…
created_by	uuid	Cashier/user	Recommended required	…

Rules

- For **Credit sales**, customer_id must be **required** (enforced in app logic).
- Invoice number uniqueness prevents duplicates during offline retries.

B2) sales_invoice_lines

Purpose: Invoice items (lines).

Field	**Type**	**Meaning**	**Rules**	**Example**
id	uuid (PK)	Line ID	UUID	…
invoice_id	uuid (FK)	Parent invoice	Required	…
item_id	uuid (FK)	Sold item	Required	…
qty	numeric(15,3)	Quantity	Must be > 0	2.000
unit_price	numeric(15,2)	Unit price	Required	120.00
total	numeric(15,2)	Line total	qty * unit_price - discount	240.00
location_id	uuid	Branch	Required	…
created_at	timestamptz	Created	Auto	…
updated_at	timestamptz	Updated	Auto	…
created_by	uuid	User	Optional	…

Batch rule (Phase 1):

- If item is batch-tracked, you must capture **which lot was sold**.
  Current schema does **not** include lot_id here, so you should add:
- lot_id uuid nullable (FK stock_lots)

B3) payments

Purpose: Payment records for an invoice (supports split tender).

Field	Type	Meaning	Rules	Example
id	uuid (PK)	Payment ID	UUID	…
invoice_id	uuid (FK)	Invoice	Required	…
method	varchar(20)	Payment type	Cash/Card/Credit	Cash
amount	numeric(15,2)	Amount	Must be >= 0	2450.00
location_id	uuid	Branch	Required	…
created_at	timestamptz	Created	Auto	…
updated_at	timestamptz	Updated	Auto	…
created_by	uuid	User	Optional	…

C) Inventory Core (Ledger + Snapshot)

C1) stock_moves (ledger)

Purpose: Append-only stock ledger. Every stock change creates a row here.
Important: This is the **source of truth**.

Field	Type	Meaning	Rules	Example
id	uuid (PK)	Move ID	UUID	…
item_id	uuid (FK)	Item	Required	…
location_id	uuid (FK)	Branch	Required	…
lot_id	uuid (FK)	Batch/lot	Nullable	…
quantity_change	numeric(20,3)	+in / -out	Must not be 0	-2.000
move_type	varchar(20)	Type	See move types list	Sale
reference_id	uuid	Source doc id	Optional	sales_invoices.id
created_at	timestamptz	Created	Auto	…
created_by	uuid	User	Optional	…

Rule examples

- Sale => negative qty, move_type=Sale
- GRN => positive qty, move_type=GRN

- Transfer out => negative at source, TransferOut
- Transfer in => positive at destination, TransferIn

C2) stock_balances (snapshot)

Purpose: Current stock on hand per item per branch (and per lot in Phase 1).
Uniqueness rules prevent duplicates from offline retries.

Field	Type	Meaning	Rules	Example
id	uuid (PK)	Balance row id	UUID	…
item_id	uuid (FK)	Item	Required	…
location_id	uuid (FK)	Branch	Required	…
lot_id	uuid (FK)	Lot	Nullable	…
quantity_on_hand	numeric(20,3)	Current stock	Default 0	125.000
created_at	timestamptz	Created	Auto	…
updated_at	timestamptz	Updated	Auto	…
created_by	uuid	User	Optional	…

Uniqueness rules (must enforce in DB):

- If lot_id IS NULL: unique (location_id, item_id)
- If lot_id IS NOT NULL: unique (location_id, item_id, lot_id)

C3) stock_lots (batches/expiry)

Purpose: Batch tracking for items (batch number + expiry date per branch).

Field	Type	Meaning	Rules	Example
id	uuid (PK)	Lot ID	UUID	…
item_id	uuid (FK)	Item	Required	…
batch_number	text	Batch code	Required for batch items	BATCH-2026-01
expiry_date	date	Expiry date	Required for batch items	2027-06-30
location_id	uuid	Branch	Required	…
created_at	timestamptz	Created	Auto	…
updated_at	timestamptz	Updated	Auto	…

created_by	uuid	User	Optional	…

D) Purchasing (GRN)

D1) grns

Purpose: Goods Received Note header (stock coming in from supplier).

Field	Type	Meaning	Rules	Example
id	uuid (PK)	GRN ID	UUID	…
grn_number	text	GRN number	**Unique per location**	GRN-00077
supplier_id	uuid (FK)	Supplier	Required	…
total_amount	numeric(15,2)	Total cost	Required	155000.00
status	varchar(20)	Status	draft/posted	posted
location_id	uuid	Branch	Required	…
created_at	timestamptz	Created	Auto	…
updated_at	timestamptz	Updated	Auto	…
created_by	uuid	User	Optional	…

Rule

- Once posted, GRN should not be edited (baseline rule).

D2) grn_lines

Purpose: GRN item lines (with lot support).

Field	Type	Meaning	Rules	Example
id	uuid (PK)	Line ID	UUID	…
grn_id	uuid (FK)	Parent GRN	Required	…
item_id	uuid (FK)	Item	Required	…
lot_id	uuid (FK)	Lot	Required for batch-tracked items	…
qty	numeric(20,3)	Received qty	Must be > 0	50.000
unit_cost	numeric(15,2)	Unit cost	Required	95.00
total_cost	numeric(15,2)	Total cost	qty * unit_cost	4750.00

location_id	uuid	Branch	Required	…
created_at	timestamptz	Created	Auto	…
updated_at	timestamptz	Updated	Auto	…
created_by	uuid	User	Optional	…

E) Stock Transfers

E1) stock_transfers

Purpose: Stock transfer header (from branch A to branch B).
RLS rule: stock_transfers.location_id should equal the **source** branch (from_location_id).

Field	**Type**	**Meaning**	**Rules**	**Example**
id	uuid (PK)	Transfer ID	UUID	…
transfer_number	text	Transfer number	**Unique per location**	TR-00031
from_location_id	uuid	Source branch	Required	…
to_location_id	uuid	Destination branch	Required	…
location_id	uuid	Owning branch	Must = from_location_id	…
status	varchar(20)	Transfer status	Pending/InTransit/Received	Pending
created_at	timestamptz	Created	Auto	…
updated_at	timestamptz	Updated	Auto	…
created_by	uuid	User	Optional	…

E2) stock_transfer_lines

Purpose: Transfer item lines.

Field	**Type**	**Meaning**	**Rules**	**Example**
id	uuid (PK)	Line ID	UUID	…
transfer_id	uuid (FK)	Parent transfer	Required	…
item_id	uuid (FK)	Item	Required	…
lot_id	uuid (FK)	Lot	Required for batch items	…
qty	numeric(20,3)	Quantity moved	Must be > 0	10.000

location_id	uuid	Source branch	Must be source branch	…
created_at	timestamptz	Created	Auto	…
updated_at	timestamptz	Updated	Auto	…
created_by	uuid	User	Optional	…

F) Stock Adjustments

F1) stock_adjustments

Purpose: Adjustment header (simple increase/decrease with reason).

Field	Type	Meaning	Rules	Example
id	uuid (PK)	Adjustment ID	UUID	…
reason	text	Reason note	Required	Damaged items
status	varchar(20)	Status	draft/posted	posted
location_id	uuid	Branch	Required	…
created_at	timestamptz	Created	Auto	…
updated_at	timestamptz	Updated	Auto	…
created_by	uuid	User	Optional	…

F2) stock_adjustment_lines

Purpose: Adjustment lines (positive or negative qty change).

Field	Type	Meaning	Rules	Example
id	uuid (PK)	Line ID	UUID	…
adjustment_id	uuid (FK)	Parent adjustment	Required	…
item_id	uuid (FK)	Item	Required	…
lot_id	uuid (FK)	Lot	Nullable	…
qty_change	numeric(20,3)	Change amount	Can be + or -	-3.000
location_id	uuid	Branch	Required	…
created_at	timestamptz	Created	Auto	…
updated_at	timestamptz	Updated	Auto	…

created_by	uuid	User	Optional	…

6) Cross-table rules (the “real meaning” rules)

6.1 Barcode uniqueness (offline-safe)

- Barcode must be unique **per location** (so offline retries can’t create duplicates).

6.2 Invoice uniqueness (offline-safe)

- (location_id, invoice_number) must be unique.

6.3 Ledger + Snapshot logic

- stock_moves is the history (append-only).
- stock_balances is the current snapshot.
- Posting a document creates ledger rows and updates snapshot.

6.4 Batch/Expiry rules (Phase 1)

- Batch-tracked items must:
  - Create/choose stock_lots on GRN
  - Sell/transfer by selecting the correct lot

Appendix A — Deferred (not in Phase 0/1 baseline)

These are intentionally pushed to later phases:

- Barcode printing, label printing
- Cycle counts / reconciliation workflows
- Full accounting (GL, journals, bank reconciliation, cheques)
- Advanced post-adjustments (invoice/GRN adjustments beyond baseline)