

Flux

UX Wireframes & Screen Specifications

Baseline Release: Phase 0 (Walking Skeleton) + Phase 1 (Trimmed MVP)

Version: 1.0

Date: January 31, 2026

Purpose

This document defines the minimum screens needed for Phase 0 and Phase 1, with simple wireframes, field lists, and validation rules. It is designed to match the Baseline SRS and the Core ERD, and to keep the UI aligned with the trimmed MVP scope.

Reference documents used

- Flux - Project Charter New (PWA, offline-first, roles, RLS).
- MVP Definition for Flux (New) - Trimmed MVP boundaries.
- Flux Baseline SRS - Phase 0 + Phase 1 baseline requirements.
- Flux Baseline SRS - Requirements Catalogue (FR/NFR list).
- Database Architecture Design (Core ERD) - tables and data rules.
- Flux latest scope - screen list and field names.
- Roadmap for Flux Development - phase-to-screen mapping.
- Documentations Required in Each Release - required deliverables list.

1. UX principles for Phase 0 + Phase 1

- Offline-first is the default. Screens must still work when the network is down, using cached data and a local queue.
- Branch isolation is strict. Every record is scoped by location_id and enforced by server RLS. The UI must never mix branches.
- Keep the UI fast for POS. Barcode input should be always ready, item search should be instant from local cache.
- Show sync state clearly. Always show Online/Offline and Pending Sync count. Each transaction has a status badge.
- Keep edits simple in baseline. Drafts can be edited; posted documents follow the baseline rules (e.g., no posted GRN edits).

1.1 Common layout

Most screens share the same layout: a top bar (brand + status), a left menu (role-based), and a main content area. The top bar must always show Online/Offline and the number of pending sync items.

Flux	Offline/Online Pending: 3
Menu	Example Screen
<ul style="list-style-type: none"> - POS - Masters - Purchasing - Stock - Reports - Sync Queue 	

1.2 Common validation rules (applies to many screens)

- Required fields: block Save/Post and show a short message near the field.
- Money fields: use 2 decimals (NUMERIC(15,2)); do not allow negative values unless the field is a change/adjustment.
- Quantity fields: allow up to 3 decimals; must be > 0 for sales/GRN/transfer lines.
- Barcode: if provided, must be unique per location.
- Batch-tracked items: GRN posting requires batch number + expiry date; POS posting requires selecting a batch.
- Credit sales: payment method = Credit requires selecting a customer; apply credit limit policy if enabled.
- Document numbers: must be unique per location. Prefer auto-numbering after sync, while UUID is the true identity.

2. Screen inventory (Phase 0 + Phase 1)

Screen ID	Screen	Phase	Primary roles	Offline-ready?
UX-01	Login	Phase 0+1	All users	Yes
UX-02	App Shell (Header + Navigation + Syntactical Status)	Phase 0+1	All users	Yes
UX-03	Categories & Sub-Categories (CRUD)	Phase 0 (minimal)	Super Admin, Store Manager, Category Manager	Yes
UX-04	Units (CRUD)	Phase 0+1	Super Admin, Store Manager	Yes
UX-05	Items (CRUD)	Phase 0 (minimal) + Phase 1	Super Admin, Store Manager	Yes
UX-06	Suppliers (CRUD)	Phase 1	Super Admin, Store Manager	Yes
UX-07	Customers (CRUD)	Phase 1	Super Admin, Store Manager (create), Cashier (search)	Yes
UX-08	Locations / Branches (CRUD)	Phase 1 (minimal in location seeded)	Super Admin	Yes
UX-09	Users & Roles (List + Create/Edit)	Phase 1 (Phase 0 can Super Admin, all)	Store Manager	No (branch users only)
UX-10	POS - Sales Invoice	Phase 0 (minimal) + Phase 1	Cashier (full), Store Manager	Yes
UX-11	Sales - Invoice List & Invoice View	Phase 0 (simple sales)	Cashier (base branch), Store Manager	Yes
UX-12	Returns / Refunds (Simple)	Phase 1	Store Manager, Cashier (policy)	Yes
UX-13	Purchasing - Purchase Order (PO)	Phase 1	Store Manager, Super Admin	Yes
UX-14	Purchasing - Goods Received Note (GRN)	Phase 1	Store Manager, Super Admin	Yes
UX-15	Stock Transfer (Transfer Out + Receive)	Phase 1	Store Manager, Super Admin	Yes
UX-16	Stock Adjustment (Simple)	Phase 1	Store Manager, Super Admin	Yes
UX-17	Report - Sales Summary	Phase 1	Store Manager, Super Admin	Yes
UX-18	Report - Stock Balance & Valuation	Phase 1	Store Manager, Super Admin	Yes
UX-19	Report - Expiry Warnings	Phase 1	Store Manager, Super Admin	Yes
UX-20	Report - Outstanding Credit Summary	Phase 1	Store Manager, Super Admin	Yes
UX-21	Sync Queue (Pending / Failed)	Phase 0+1	All users (view), Admin/Manager	Yes (resolve)

3. Screen specifications

Each screen below includes: purpose, wireframe, data entities, fields with validations, key actions, and offline-sync behavior.

UX-01 - Login

Phase: Phase 0+1

Primary roles: All users

Purpose: Allow users to sign in using Supabase Auth before accessing any business features.

Data entities: auth.users (Supabase Auth)

The wireframe shows a simple login interface. At the top center is the title "Flux Login". Below the title is a rectangular form area. Inside the form, there are two text input fields stacked vertically, one for "Email" and one for "Password". Below these inputs is a large blue rectangular button labeled "Sign in". At the bottom left of the form area, there is a blue link labeled "Forgot password".

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Email	Email	Yes	Must be a valid email format.	Used as username.
Password	Password	Yes	Min 8 chars (or your policy).	Never stored in IndexedDB
Remember me (optional)	Checkbox	No	If enabled, use secure session refresh or token rotation.	Avoid long-lived tokens in IndexedDB

Key actions

- Sign in
- Forgot password
- Show network status (Online/Offline)
- Error message for invalid login

Offline & sync behavior

- Login requires internet (Supabase Auth). If offline, show a clear message: 'No internet - cannot sign in now'.
- After successful login, cache minimal user context (role, location_id) needed for offline mode.

Common errors

- Invalid credentials
- Account disabled

- Network error / timeout

UX-02 - App Shell (Header + Navigation + Sync Status)

Phase: Phase 0+1

Primary roles: All users

Purpose: Provide a consistent layout with navigation, online/offline indicator, and a pending sync counter.

Data entities: IndexedDB cache, Sync Queue (client-side)

Flux		Offline/Online Pending: 3
<p>Menu</p> <ul style="list-style-type: none"> - POS - Masters - Purchasing - Stock - Reports - Sync Queue 	App Shell	

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Online/Offline indicator	Status	Yes	Updates when connectivity changes.	Always visible (FR-017).
Pending sync count	Badge	Yes	Shows number of unsynced queue items	Always visible (FR-017).
Role-based menu	Navigation	Yes	Hide/disable modules not allowed for role	cashier sees POS + sales

Key actions

- Navigate to module screens
- Open Sync Queue drawer/page
- Logout

Offline & sync behavior

- When offline, screens must use cached data and allow allowed transactions to be created as 'Pending Sync'.
- Local data must be namespaced by location_id to prevent cross-branch leakage.

Common errors

- No permission to access screen
- Cache missing (prompt to sync when online)

UX-03 - Categories & Sub-Categories (CRUD)

Phase: Phase 0 (minimal Category) + Phase 1 (Category + Sub-Category)

Primary roles: Super Admin, Store Manager

Purpose: Create and maintain product categories used for item grouping and reporting.

Data entities: categories, sub_categories (if implemented)

Flux		Offline/Online Pending: 3																			
Menu - POS - Masters - Purchasing - Stock - Reports - Sync Queue	Categories <input type="text" value="Search..."/>	New																			
	<table border="1"> <thead> <tr> <th>Code</th> <th>Name</th> <th>Actions</th> </tr> </thead> <tbody> <tr> <td>C001</td> <td>Example Row 1</td> <td>View Edit</td> </tr> <tr> <td>C002</td> <td>Example Row 2</td> <td>View Edit</td> </tr> <tr> <td>C003</td> <td>Example Row 3</td> <td>View Edit</td> </tr> <tr> <td>C004</td> <td>Example Row 4</td> <td>View Edit</td> </tr> <tr> <td colspan="3"></td> </tr> </tbody> </table>			Code	Name	Actions	C001	Example Row 1	View Edit	C002	Example Row 2	View Edit	C003	Example Row 3	View Edit	C004	Example Row 4	View Edit			
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Fields & validations

Field	Type	Required	Rules / Validations	Notes
Category No	Text	Yes	Unique per location. 1-20 chars. Letters/Numbers/	From baseline spec.
Category Name	Text	Yes	1-60 chars.	Shown in item forms and
Short Code	Text	Yes	1-10 chars. Uppercase recommended.	Fast entry / reporting.
Level	Number	No	If used, 0-9. Default 0.	Optional; can be deferred
Comment	Text	No	Max 200 chars.	Optional note.
Sub Category No	Text	No	Required if creating a sub-category. Unique per location.	Phase 1 (FR-022).
Sub Category Name	Text	No	Required if creating a sub-category.	Phase 1 (FR-022).
Sub Category -> Category link	Lookup	No	Must reference an existing Category.	Phase 1 (FR-022).

Key actions

- List categories with search
- Create new
- Edit
- Deactivate/Delete (policy)
- Create sub-category under a category

Offline & sync behavior

- Must work offline: create/edit stored in local cache and queued to sync later.
- When online, changes sync and become visible to allowed users by location_id.

Common errors

- Duplicate Category No or Short Code
- Missing required fields

- Permission denied

UX-04 - Units (CRUD)

Phase: Phase 0+1

Primary roles: Super Admin, Store Manager

Purpose: Maintain units of measure (piece, kg) and whether decimals are allowed.

Data entities: units

Flux		Offline/Online Pending: 3
Menu - POS - Masters - Purchasing - Stock - Reports - Sync Queue	Unit Form <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> Field 1 Field 2 Field 3 Field 4 Field 5 </div> <div style="text-align: right; margin-top: 10px;"> <input type="button" value="Save"/> <input type="button" value="Cancel"/> </div>	

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Unit Name	Text	Yes	1-30 chars.	Example: Kilogram
Symbol	Text	No	1-10 chars.	Example: kg
Allow decimals	Toggle	Yes	If enabled, qty supports up to 3 decimal digits	Supports FR-028.
Decimal places	Number	No	0-3. Required if Allow decimals = Yes.	Default 3.
Rounding rule	Dropdown	No	Round half up (default).	Keep simple in MVP.

Key actions

- Create/Edit unit
- Use unit in Item form
- Prevent deleting if used by items

Offline & sync behavior

- Cached for offline POS and calculations.
- If unit changes, re-sync masters to devices.

Common errors

- Cannot delete unit used by items
- Invalid decimals configuration

UX-05 - Items (CRUD)

Phase: Phase 0 (minimal) + Phase 1 (full MVP fields)

Primary roles: Super Admin, Store Manager

Purpose: Create and maintain items for selling and stock tracking, including barcode and batch/expiry settings.

Data entities: items, categories, units, stock_lots (Phase 1)

Flux		Offline/Online Pending: 3																
Menu <ul style="list-style-type: none"> - POS - Masters - Purchasing - Stock - Reports - Sync Queue 	Item Form <div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 15%;">Field 1</td><td><input type="text"/></td></tr> <tr><td>Field 2</td><td><input type="text"/></td></tr> <tr><td>Field 3</td><td><input type="text"/></td></tr> <tr><td>Field 4</td><td><input type="text"/></td></tr> <tr><td>Field 5</td><td><input type="text"/></td></tr> <tr><td>Field 6</td><td><input type="text"/></td></tr> <tr><td>Field 7</td><td><input type="text"/></td></tr> <tr><td>Field 8</td><td><input type="text"/></td></tr> </table> </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <input type="button" value="Save"/> <input type="button" value="Cancel"/> </div>	Field 1	<input type="text"/>	Field 2	<input type="text"/>	Field 3	<input type="text"/>	Field 4	<input type="text"/>	Field 5	<input type="text"/>	Field 6	<input type="text"/>	Field 7	<input type="text"/>	Field 8	<input type="text"/>	
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Field 5	<input type="text"/>																	
Field 6	<input type="text"/>																	
Field 7	<input type="text"/>																	
Field 8	<input type="text"/>																	

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Item No / SKU	Text	Yes	Unique per location. 1-30 chars.	If you do not use SKU no
Item Name	Text	Yes	1-100 chars.	Used in POS search.
Barcode	Text	No	If provided, must be unique per location	KEYBOARD + SCANNER
Category	Lookup	Yes	Must reference existing category.	Required for reporting.
Unit	Lookup	Yes	Must reference existing unit.	Controls decimal qty.
Selling Price	Money	Yes	>= 0.00; max 9999999999.99	NUMERIC(15,2).
Cost (optional)	Money	No	>= 0.00	Used for valuation. Keep
Batch-tracked	Toggle	Yes	If Yes: GRN must capture batch+expiry; POS must select batch (POS
Reorder level (optional)	Number	No	>= 0	Can be deferred.
Active	Toggle	Yes	Inactive items not shown in POS.	Soft delete.

Key actions

- Create/Edit item
- Print barcode (deferred - Phase 2)
- Deactivate item
- View stock by location

Offline & sync behavior

- Must be available offline: cache item list to IndexedDB for POS search (FR-011, FR-036).
- Item changes sync when online; handle conflicts using LWW (FR-016).

Common errors

- Duplicate barcode
- Missing category/unit
- Price invalid

UX-06 - Suppliers (CRUD)

Phase: Phase 1

Primary roles: Super Admin, Store Manager

Purpose: Maintain suppliers for purchasing (GRN/PO) and basic credit terms.

Data entities: suppliers

Flux		Offline/Online Pending: 3														
Menu <ul style="list-style-type: none"> - POS - Masters - Purchasing - Stock - Reports - Sync Queue 	Supplier Form <div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 15%;">Field 1</td><td><input type="text"/></td></tr> <tr><td>Field 2</td><td><input type="text"/></td></tr> <tr><td>Field 3</td><td><input type="text"/></td></tr> <tr><td>Field 4</td><td><input type="text"/></td></tr> <tr><td>Field 5</td><td><input type="text"/></td></tr> <tr><td>Field 6</td><td><input type="text"/></td></tr> <tr><td>Field 7</td><td><input type="text"/></td></tr> </table> </div> <div style="text-align: right; margin-top: 10px;"> <input type="button" value="Save"/> <input type="button" value="Cancel"/> </div>	Field 1	<input type="text"/>	Field 2	<input type="text"/>	Field 3	<input type="text"/>	Field 4	<input type="text"/>	Field 5	<input type="text"/>	Field 6	<input type="text"/>	Field 7	<input type="text"/>	
Field 1	<input type="text"/>															
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Field 3	<input type="text"/>															
Field 4	<input type="text"/>															
Field 5	<input type="text"/>															
Field 6	<input type="text"/>															
Field 7	<input type="text"/>															

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Supplier No	Text	Yes	Unique per location. 1-30 chars.	From latest scope.
Supplier Name	Text	Yes	1-100 chars.	Shown on GRN.
Contact Person	Text	No	Max 60 chars.	
Address	Text	No	Max 200 chars.	
Telephone / Mobile	Text	No	Digits + symbols only; max 20 chars.	Support multiple numbers
Email	Email	No	Valid email format.	
Credit Days	Number	No	0-365.	Optional in MVP.
Control Account (deferred link)	Text	No	Free text in MVP; link to ledger account	Stays here besides this field.

Key actions

- Create/Edit supplier
- Select supplier in PO/GRN
- Deactivate supplier

Offline & sync behavior

- Supplier list cached for offline GRN creation.
- Any new supplier created offline syncs later.

Common errors

- Duplicate Supplier No
- Missing Supplier Name

UX-07 - Customers (CRUD)

Phase: Phase 1

Primary roles: Super Admin, Store Manager (create), Cashier (search/select)

Purpose: Maintain customer records and credit terms used for credit sales.

Data entities: customers

Flux		Offline/Online Pending: 3
Menu - POS - Masters - Purchasing - Stock - Reports - Sync Queue	Customer Form <div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;"> Field 1 Field 2 Field 3 Field 4 Field 5 Field 6 Field 7 Field 8 </div> <div style="display: flex; justify-content: space-around; align-items: center;"> Save Cancel </div>	

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Customer No	Text	Yes	Unique per location. 1-30 chars.	From latest scope.
Customer Name	Text	Yes	1-100 chars.	Shown on invoices.
NIC (optional)	Text	No	Max 20 chars.	Optional.
Mobile	Text	No	Digits + symbols only; max 20 chars.	
Email	Email	No	Valid email format.	
Address	Text	No	Max 200 chars.	
Credit Limit	Money	No	≥ 0.00	Required if you enable credit sales.
Credit Days	Number	No	0-365	FR-025.
Control Account (deferred link)	Text	No	Free text in MVP; link later.	Scope includes this field.

Key actions

- Create/Edit customer
- Search customer in POS
- Deactivate customer

Offline & sync behavior

- Customer search must work offline for credit sales by using cached customers.
- If customer is missing offline, cashier can switch payment to cash/card or save sale as draft.

Common errors

- Duplicate Customer No

- Credit sale without customer (blocked)
- Credit limit exceeded (policy)

UX-08 - Locations / Branches (CRUD)

Phase: Phase 1 (minimal in Phase 0: one location seeded)

Primary roles: Super Admin

Purpose: Create branches/locations. Every transaction is scoped by location_id for RLS isolation.

Data entities: locations

Flux		Offline/Online Pending: 3
Menu - POS - Masters - Purchasing - Stock - Reports - Sync Queue	Location Form <div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;"> Field 1 <input type="text"/> Field 2 <input type="text"/> Field 3 <input type="text"/> Field 4 <input type="text"/> Field 5 <input type="text"/> </div> <div style="display: flex; justify-content: space-around;"> Save Cancel </div>	

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Location Name	Text	Yes	Unique name (or unique per tenant). 1-80 characters recommended.	
Address	Text	No	Max 200 chars.	
Active	Toggle	Yes	Inactive locations cannot be selected.	
Negative stock policy	Dropdown	Yes	WARN (default) or BLOCK.	From baseline SRS (sale)
Expiry warning threshold (days)	Number	No	0-365. Default 30.	For expiry report filters.

Key actions

- Create/Edit location
- Assign users to location
- Set branch settings (minimal)

Offline & sync behavior

- Location data is mostly online-only (admin task). Devices cache only assigned location data.

Common errors

- Duplicate location name
- Cannot deactivate location with active users (policy)

UX-09 - Users & Roles (List + Create/Edit)

Phase: Phase 1 (Phase 0 can be single user)

Primary roles: Super Admin (all), Store Manager (branch users only)

Purpose: Create users, assign role (Super Admin / Store Manager / Cashier) and assign branch/location for RLS.

Data entities: Supabase Auth users + app user profile table (recommended)

Flux		Offline/Online Pending: 3															
<p>Menu</p> <ul style="list-style-type: none"> - POS - Masters - Purchasing - Stock - Reports - Sync Queue 	<p>Users</p> <p>Search...</p> <table border="1"> <thead> <tr> <th>Code</th> <th>Name</th> <th>Actions</th> </tr> </thead> <tbody> <tr> <td>C001</td> <td>Example Row 1</td> <td>View Edit</td> </tr> <tr> <td>C002</td> <td>Example Row 2</td> <td>View Edit</td> </tr> <tr> <td>C003</td> <td>Example Row 3</td> <td>View Edit</td> </tr> <tr> <td>C004</td> <td>Example Row 4</td> <td>View Edit</td> </tr> </tbody> </table>	Code	Name	Actions	C001	Example Row 1	View Edit	C002	Example Row 2	View Edit	C003	Example Row 3	View Edit	C004	Example Row 4	View Edit	<p>New</p>
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C001	Example Row 1	View Edit															
C002	Example Row 2	View Edit															
C003	Example Row 3	View Edit															
C004	Example Row 4	View Edit															

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Name	Text	Yes	1-80 chars.	
Email	Email	Yes	Valid email, unique.	Used for Supabase Auth
Role	Dropdown	Yes	One of: Super Admin, Store Manager, Cashier.	Role 005.
Assigned Location	Lookup	Yes	Required for Store Manager and Cashier.	Role 006. Required for Super Admin.
Status	Dropdown	Yes	Active/Disabled.	Disabled users cannot log in.

Key actions

- Create user
- Reset password (send email)
- Disable user
- Change role/location

Offline & sync behavior

- Admin actions generally require online connectivity.
- When offline, user management screens should be read-only or hidden.

Common errors

- Email already exists
- Cannot remove last Super Admin
- Permission denied

UX-10 - POS - Sales Invoice

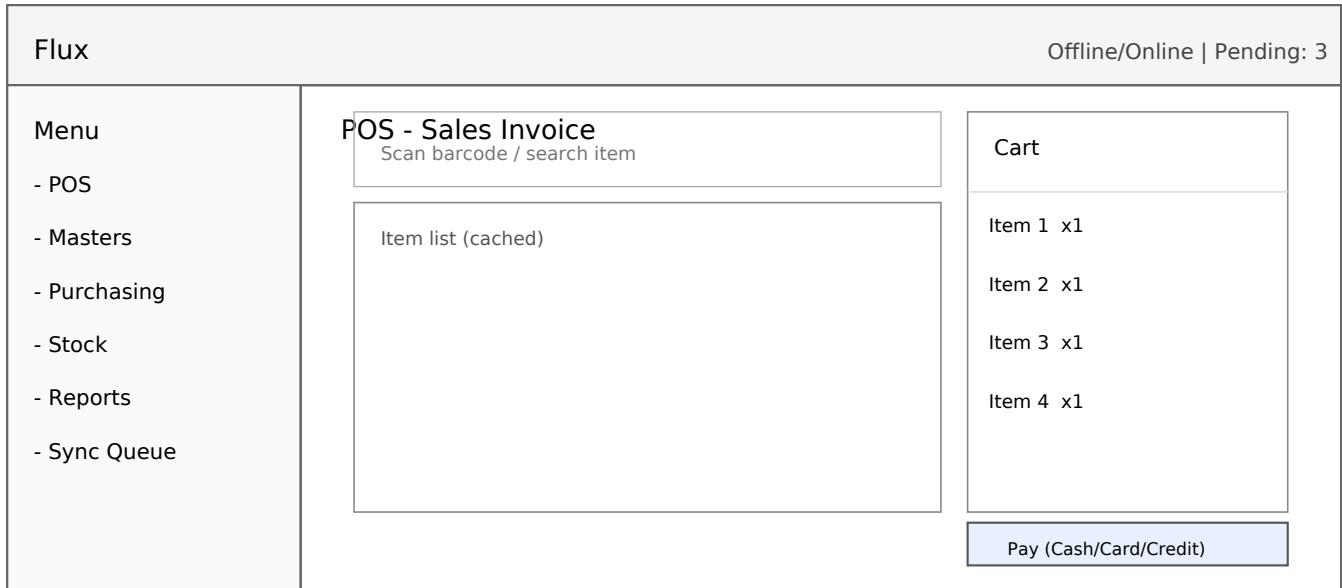
Phase: Phase 0 (minimal) + Phase 1 (full)

Primary roles: Cashier (primary), Store Manager, Super Admin

Purpose: Fast selling flow: scan/search items, add to cart, discount, payment, print receipt.

Must work offline.

Data entities: sales_invoices, sales_invoice_lines, payments, items (cached), stock_lots (for batch items)



Fields & validations

Field	Type	Required	Rules / Validations	Notes
Customer (optional)	Lookup	No	Required if payment method = Credit (FR-030). Card can be walk-in.	
Scan/Search input	Text	Yes	Auto-focus for scanner. Search cached items offline.	FR-036
Line: Item	Lookup	Yes	Must be a valid item.	
Line: Qty	Number	Yes	> 0. Use unit decimal settings (FR-028). Up to 3 decimals.	
Line: Batch (if batch-tracked)	Lookup	No	Required for batch items (FR-033).	Show expiry in selection.
Line: Discount	Number/Money	No	0-100% or 0 to line total. Default 0.	Keep simple.
Invoice: Discount	Money	No	0 to invoice subtotal.	
Payment Method	Dropdown	Yes	Cash / Card / Credit.	FR-038.
Payment Amount	Money	Yes	>= 0. For cash/card: must cover total up to 3 decimal places.	FR-039

Key actions

- New sale (draft)
- Add/remove line
- Change qty
- Apply discount
- Post sale (creates invoice, lines, payments)
- Print receipt
- Void draft

Offline & sync behavior

- Offline: posting creates a local invoice with status 'Pending Sync' and queues it (FR-012..015).
- Negative stock policy (WARN/BLOCK) is applied at post time using cached stock if available; final server truth after sync (FR-042).
- Sync: when online, send invoice payload to Supabase; server triggers update stock_moves and stock_balances.

Common errors

- Credit sale without customer
- Insufficient stock (BLOCK)
- Batch not selected
- Sync failed (show reason)

UX-11 - Sales - Invoice List & Invoice View

Phase: Phase 0 (simple sales list) + Phase 1

Primary roles: Cashier (own branch), Store Manager, Super Admin

Purpose: View sales history with status (Draft/Pending Sync/Synced/Failed) and open an invoice for printing or refund.

Data entities: sales_invoices, payments

Flux		Offline/Online Pending: 3															
<p>Menu</p> <ul style="list-style-type: none"> - POS - Masters - Purchasing - Stock - Reports - Sync Queue 	<p>Sales Invoices</p> <p>Search...</p> <table border="1"> <thead> <tr> <th>Code</th> <th>Name</th> <th>Actions</th> </tr> </thead> <tbody> <tr> <td>C001</td> <td>Example Row 1</td> <td>View Edit</td> </tr> <tr> <td>C002</td> <td>Example Row 2</td> <td>View Edit</td> </tr> <tr> <td>C003</td> <td>Example Row 3</td> <td>View Edit</td> </tr> <tr> <td>C004</td> <td>Example Row 4</td> <td>View Edit</td> </tr> </tbody> </table>	Code	Name	Actions	C001	Example Row 1	View Edit	C002	Example Row 2	View Edit	C003	Example Row 3	View Edit	C004	Example Row 4	View Edit	<p>New</p>
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C004	Example Row 4	View Edit															

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Filters (date range)	Date	No	Default: today.	Basic filtering.
Filters (status)	Dropdown	No	Draft / Pending Sync / Synced / Failed.	FR-018.
Invoice row	Row	Yes	Shows invoice no, total, payment method	Status badge must be visible.

Key actions

- Open invoice
- Reprint receipt
- Retry sync (for failed)
- Start refund flow (Phase 1)

Offline & sync behavior

- Must show offline-created invoices even when offline (from IndexedDB).
- When online, reconcile local + server lists; do not duplicate.

Common errors

- Invoice not found
- Permission denied

UX-12 - Returns / Refunds (Simple)

Phase: Phase 1

Primary roles: Store Manager, Cashier (policy), Super Admin

Purpose: Process a simple return/refund against an existing invoice. Keep it minimal (no full credit note accounting in baseline).

Data entities: sales_invoices, sales_invoice_lines, stock_moves

Flux		Offline/Online Pending: 3
Menu - POS - Masters - Purchasing - Stock - Reports - Sync Queue	Return/Refund <div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;"> Field 1 <input type="text"/> Field 2 <input type="text"/> Field 3 <input type="text"/> Field 4 <input type="text"/> Field 5 <input type="text"/> Field 6 <input type="text"/> </div> <div style="display: flex; justify-content: space-around;"> Save Cancel </div>	

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Find Invoice	Lookup/Text	Yes	Must reference an existing posted invoice	Search by invoice no or s
Return lines	Grid	Yes	Qty to return must be \leq sold qty; \geq 0	Allow partial returns.
Refund method	Dropdown	Yes	Cash or Card (same-day) or store credit	Keepable.
Reason	Text	No	Max 200 chars.	Optional.

Key actions

- Load invoice
- Select return quantities
- Confirm refund
- Print refund receipt

Offline & sync behavior

- Offline: allow saving return as Pending Sync; clearly warn user about stock changes finalizing on sync.
- On sync: create stock-in move (Return) and adjust balances.

Common errors

- Return qty exceeds sold qty
- Refund amount mismatch

UX-13 - Purchasing - Purchase Order (PO)

Phase: Phase 1

Primary roles: Store Manager, Super Admin

Purpose: Create purchase orders to plan incoming stock; track status (open/partial/closed).

Data entities: `purchase_orders` (Phase 1), suppliers, items

Flux		Offline/Online Pending: 3														
Menu - POS - Masters - Purchasing - Stock - Reports - Sync Queue	Purchase Order <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Field 1</td><td></td></tr> <tr><td>Field 2</td><td></td></tr> <tr><td>Field 3</td><td></td></tr> <tr><td>Field 4</td><td></td></tr> <tr><td>Field 5</td><td></td></tr> <tr><td>Field 6</td><td></td></tr> <tr><td>Field 7</td><td></td></tr> </table> <div style="text-align: right; margin-top: 10px;"> <input type="button" value="Save"/> <input type="button" value="Cancel"/> </div>		Field 1		Field 2		Field 3		Field 4		Field 5		Field 6		Field 7	
Field 1																
Field 2																
Field 3																
Field 4																
Field 5																
Field 6																
Field 7																

Fields & validations

Field	Type	Required	Rules / Validations	Notes
PO Number	Text	Yes	Unique per location. Auto-number recommended.	Number not ready
Supplier	Lookup	Yes	Must be an existing supplier.	
PO Date	Date	Yes	Default: today.	
Lines: Item	Lookup	Yes	Must be valid item.	
Lines: Qty	Number	Yes	> 0	
Expected Cost (optional)	Money	No	>= 0	Optional in MVP.
Status	Status	Yes	Draft/Open/Partial/Closed.	PO updates on GRN.

Key actions

- Create/Edit PO (draft)
- Send/Print PO (optional)
- Mark closed

Offline & sync behavior

- Offline: allow PO draft creation if suppliers/items cached. Sync later.

Common errors

- Missing supplier
- Duplicate PO number

UX-14 - Purchasing - Goods Received Note (GRN)

Phase: Phase 1

Primary roles: Store Manager, Super Admin

Purpose: Receive stock from suppliers. Capture batch and expiry for batch-tracked items.

Posting updates stock.

Data entities: grns, grn_lines, suppliers, stock_lots, stock_moves, stock_balances

Flux		Offline/Online Pending: 3
Menu - POS - Masters - Purchasing - Stock - Reports - Sync Queue	GRN <div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;"> Field 1 Field 2 Field 3 Field 4 Field 5 Field 6 Field 7 </div> <div style="display: flex; justify-content: space-between;"> <div style="flex: 1;"> Field 8 </div> <div style="flex: 1; text-align: right;"> Save Cancel </div> </div>	

Fields & validations

Field	Type	Required	Rules / Validations	Notes
GRN Number	Text	Yes	Unique per location. Auto-number recommended.	
Supplier	Lookup	Yes	Required (FR-043).	
GRN Date	Date	Yes	Default: today.	
Lines: Item	Lookup	Yes	Valid item.	
Lines: Qty	Number	Yes	> 0	Up to 3 decimals.
Lines: Unit Cost	Money	Yes	>= 0	FR-044.
Lines: Batch Number (if batch-tracked)	Text	No	Required on post for batch-tracked item	CR (FR-032) select existing
Lines: Expiry Date (if batch-tracked)	Date	No	Required on post for batch-tracked item	MD (FR-032) future date (or
Status	Status	Yes	Draft / Posted. Posted cannot be edited	FR-046

Key actions

- Create/Edit GRN draft
- Post GRN
- Print GRN (optional)
- Create GRN from PO (optional)

Offline & sync behavior

- Offline: create GRN as draft/pending; posting offline queues stock-in to apply after sync.
- After posting and sync, server inserts stock_moves (GRN) and updates balances (FR-045).

Common errors

- Missing batch/expiry on batch item
- Duplicate GRN number
- Cannot edit posted GRN

UX-15 - Stock Transfer (Transfer Out + Receive)

Phase: Phase 1

Primary roles: Store Manager, Super Admin

Purpose: Move stock between locations with a two-step process: source sends, destination receives.

Data entities: stock_transfers, stock_transfer_lines, stock_moves, stock_balances

Flux		Offline/Online Pending: 3
Menu - POS - Masters - Purchasing - Stock - Reports - Sync Queue	S Transfer Out (Source) To Location _____ Items + Qty + Batch _____ <input type="button" value="Post Out"/>	Receive (Destination) From Transfer# _____ Confirm received qty _____ <input type="button" value="Post In"/>

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Transfer Number	Text	Yes	Unique per source location.	Auto-number recommended.
From Location	Lookup	Yes	Default to current location; cannot change if location is in a transfer.	Location must be from source.
To Location	Lookup	Yes	Must be different from From Location.	
Lines: Item	Lookup	Yes	Valid item; must exist in source.	
Lines: Batch (if batch-tracked)	Lookup	No	Required for batch items (FR-048).	Show expiry.
Lines: Qty	Number	Yes	> 0; must respect negative stock policy at source.	
Receive: Qty received	Number	Yes	0 to sent qty; allow partial receive.	Destination confirms.
Status	Status	Yes	Pending/InTransit/Received.	FR-047.

Key actions

- Create Transfer Out (draft)
- Post Out
- Destination search Transfer#
- Post Receive

Offline & sync behavior

- Offline: source can create transfer and queue; destination can receive after it syncs or by manually referencing transfer id when both offline (optional).
- On receive sync, create stock-out at source and stock-in at destination (FR-049).

Common errors

- To location missing

- Qty exceeds available stock (BLOCK)
- Transfer not found at destination

UX-16 - Stock Adjustment (Simple)

Phase: Phase 1

Primary roles: Store Manager, Super Admin

Purpose: Adjust stock up/down with a reason note (cycle counts are deferred).

Data entities: stock_adjustments, stock_adjustment_lines, stock_moves, stock_balances

Flux		Offline/Online Pending: 3														
Menu <ul style="list-style-type: none"> - POS - Masters - Purchasing - Stock - Reports - Sync Queue 	Stock Adjustment <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 15%;">Field 1</td><td><input type="text"/></td></tr> <tr><td>Field 2</td><td><input type="text"/></td></tr> <tr><td>Field 3</td><td><input type="text"/></td></tr> <tr><td>Field 4</td><td><input type="text"/></td></tr> <tr><td>Field 5</td><td><input type="text"/></td></tr> <tr><td>Field 6</td><td><input type="text"/></td></tr> <tr><td>Field 7</td><td><input type="text"/></td></tr> </table> <div style="text-align: right; margin-top: 10px;"> <input type="button" value="Save"/> <input type="button" value="Cancel"/> </div> </div>	Field 1	<input type="text"/>	Field 2	<input type="text"/>	Field 3	<input type="text"/>	Field 4	<input type="text"/>	Field 5	<input type="text"/>	Field 6	<input type="text"/>	Field 7	<input type="text"/>	
Field 1	<input type="text"/>															
Field 2	<input type="text"/>															
Field 3	<input type="text"/>															
Field 4	<input type="text"/>															
Field 5	<input type="text"/>															
Field 6	<input type="text"/>															
Field 7	<input type="text"/>															

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Adjustment Number (optional)	Text	No	Auto-number recommended.	Keep optional if not needed.
Reason	Text	Yes	1-200 chars.	Simple reason note in MVE.
Lines: Item	Lookup	Yes	Valid item.	
Lines: Batch (if batch-tracked)	Lookup	No	Required if adjusting a batch item.	
Lines: Qty change	Number	Yes	Non-zero. Positive for increase, negative for decrease.	
Status	Status	Yes	Draft / Posted.	Posted creates stock_move.

Key actions

- Create/Edit draft
- Post adjustment
- Print (optional)

Offline & sync behavior

- Offline: allow draft and posting into queue; apply on sync as stock move 'Adjustment'.

Common errors

- Zero qty change
- Missing reason
- Batch missing for batch item

UX-17 - Report - Sales Summary

Phase: Phase 1

Primary roles: Store Manager, Super Admin

Purpose: Show total sales with breakdown by date range, user, and location.

Data entities: sales_invoices, payments

Flux		Offline/Online Pending: 3															
<p>Menu</p> <ul style="list-style-type: none"> - POS - Masters - Purchasing - Stock - Reports - Sync Queue 	<p>Sales Summary Report</p> <p>Search...</p> <table border="1"> <thead> <tr> <th>Code</th> <th>Name</th> <th>Actions</th> </tr> </thead> <tbody> <tr> <td>C001</td> <td>Example Row 1</td> <td>View Edit</td> </tr> <tr> <td>C002</td> <td>Example Row 2</td> <td>View Edit</td> </tr> <tr> <td>C003</td> <td>Example Row 3</td> <td>View Edit</td> </tr> <tr> <td>C004</td> <td>Example Row 4</td> <td>View Edit</td> </tr> </tbody> </table>	Code	Name	Actions	C001	Example Row 1	View Edit	C002	Example Row 2	View Edit	C003	Example Row 3	View Edit	C004	Example Row 4	View Edit	New
Code	Name	Actions															
C001	Example Row 1	View Edit															
C002	Example Row 2	View Edit															
C003	Example Row 3	View Edit															
C004	Example Row 4	View Edit															

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Date range	Date range	Yes	Default: Today.	
Location filter	Lookup	Yes	Default: current location; Admin can switch.	IE050.
User filter	Lookup	No	Optional.	
Totals	Computed	Yes	Sum of posted sales only; show cash/cash/credit totals.	IE051.

Key actions

- Run report
- Export CSV (optional)
- Open invoice list

Offline & sync behavior

- When offline, show last synced report snapshot or local computed totals with a label 'Offline estimate'.

Common errors

- No data for range

UX-18 - Report - Stock Balance & Valuation

Phase: Phase 1

Primary roles: Store Manager, Super Admin

Purpose: Show stock on hand per item (and per batch for batch items) and valuation using cost.

Data entities: stock_balances, items, stock_lots

Flux		Offline/Online Pending: 3															
Menu - POS - Masters - Purchasing - Stock - Reports - Sync Queue	Stock Balance Search... <table border="1"> <thead> <tr> <th>Code</th> <th>Name</th> <th>Actions</th> </tr> </thead> <tbody> <tr> <td>C001</td> <td>Example Row 1</td> <td>View Edit</td> </tr> <tr> <td>C002</td> <td>Example Row 2</td> <td>View Edit</td> </tr> <tr> <td>C003</td> <td>Example Row 3</td> <td>View Edit</td> </tr> <tr> <td>C004</td> <td>Example Row 4</td> <td>View Edit</td> </tr> </tbody> </table>	Code	Name	Actions	C001	Example Row 1	View Edit	C002	Example Row 2	View Edit	C003	Example Row 3	View Edit	C004	Example Row 4	View Edit	New
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C001	Example Row 1	View Edit															
C002	Example Row 2	View Edit															
C003	Example Row 3	View Edit															
C004	Example Row 4	View Edit															

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Location	Lookup	Yes	Default: current location.	FR-051.
Search item	Text	No	Search by name/barcode/SKU.	
Show batches	Toggle	No	If on, display lots with expiry for batch items.	
Valuation method	Label	Yes	Use latest cost (MVP) unless you define Key example example.	

Key actions

- View item details
- View lot list
- Open expiry report

Offline & sync behavior

- Offline: use cached stock balances if available; else hide valuation with message 'Sync required'.

Common errors

- Stock cache missing

UX-19 - Report - Expiry Warnings

Phase: Phase 1

Primary roles: Store Manager, Super Admin

Purpose: List batch items expiring within N days.

Data entities: stock_lots, stock_balances, items

Flux		Offline/Online Pending: 3															
Menu - POS - Masters - Purchasing - Stock - Reports - Sync Queue	Expiry Warnings Search... <table border="1"> <thead> <tr> <th>Code</th> <th>Name</th> <th>Actions</th> </tr> </thead> <tbody> <tr> <td>C001</td> <td>Example Row 1</td> <td>View Edit</td> </tr> <tr> <td>C002</td> <td>Example Row 2</td> <td>View Edit</td> </tr> <tr> <td>C003</td> <td>Example Row 3</td> <td>View Edit</td> </tr> <tr> <td>C004</td> <td>Example Row 4</td> <td>View Edit</td> </tr> </tbody> </table>	Code	Name	Actions	C001	Example Row 1	View Edit	C002	Example Row 2	View Edit	C003	Example Row 3	View Edit	C004	Example Row 4	View Edit	New
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C001	Example Row 1	View Edit															
C002	Example Row 2	View Edit															
C003	Example Row 3	View Edit															
C004	Example Row 4	View Edit															

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Location	Lookup	Yes	Default current location.	FR-052.
Threshold (days)	Number	Yes	0-365. Default from location setting.	
Results grid	Grid	Yes	Show item, batch, expiry date, qty on hand.	

Key actions

- Run report
- Open item detail
- Export CSV (optional)

Offline & sync behavior

- Offline: use cached lots/balances; show warning if data may be stale.

Common errors

- No expiring batches in range

UX-20 - Report - Outstanding Credit Summary

Phase: Phase 1

Primary roles: Store Manager, Super Admin

Purpose: List customers with outstanding credit totals (simple, no full ageing pack in baseline).

Data entities: customers, sales_invoices (credit)

Flux		Offline/Online Pending: 3															
<p>Menu</p> <ul style="list-style-type: none"> - POS - Masters - Purchasing - Stock - Reports - Sync Queue 	<p>Outstanding Credit</p> <p>Search...</p> <table border="1"> <thead> <tr> <th>Code</th> <th>Name</th> <th>Actions</th> </tr> </thead> <tbody> <tr> <td>C001</td> <td>Example Row 1</td> <td>View Edit</td> </tr> <tr> <td>C002</td> <td>Example Row 2</td> <td>View Edit</td> </tr> <tr> <td>C003</td> <td>Example Row 3</td> <td>View Edit</td> </tr> <tr> <td>C004</td> <td>Example Row 4</td> <td>View Edit</td> </tr> </tbody> </table>	Code	Name	Actions	C001	Example Row 1	View Edit	C002	Example Row 2	View Edit	C003	Example Row 3	View Edit	C004	Example Row 4	View Edit	New
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C001	Example Row 1	View Edit															
C002	Example Row 2	View Edit															
C003	Example Row 3	View Edit															
C004	Example Row 4	View Edit															

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Location	Lookup	Yes	Default current location.	FR-053 (SHOULD).
Customer search	Text	No	Search by name/number/mobile.	
Outstanding amount	Computed	Yes	Sum of unpaid credit invoices.	Exact logic depends on y

Key actions

- View customer detail
- Export CSV (optional)

Offline & sync behavior

- Offline: show last synced snapshot only (credit totals must be consistent).

Common errors

- No credit balances

UX-21 - Sync Queue (Pending / Failed)

Phase: Phase 0+1

Primary roles: All users (view), Admin/Manager (resolve)

Purpose: Show all unsynced transactions with retry and error view.

Data entities: IndexedDB sync_queue (client)

Flux		Offline/Online Pending: 3															
<p>Menu</p> <ul style="list-style-type: none"> - POS - Masters - Purchasing - Stock - Reports - Sync Queue 	<p>Sync Queue</p> <p>Search...</p> <table border="1"> <thead> <tr> <th>Code</th> <th>Name</th> <th>Actions</th> </tr> </thead> <tbody> <tr> <td>C001</td> <td>Example Row 1</td> <td>View Edit</td> </tr> <tr> <td>C002</td> <td>Example Row 2</td> <td>View Edit</td> </tr> <tr> <td>C003</td> <td>Example Row 3</td> <td>View Edit</td> </tr> <tr> <td>C004</td> <td>Example Row 4</td> <td>View Edit</td> </tr> </tbody> </table>	Code	Name	Actions	C001	Example Row 1	View Edit	C002	Example Row 2	View Edit	C003	Example Row 3	View Edit	C004	Example Row 4	View Edit	<p>New</p>
Code	Name	Actions															
C001	Example Row 1	View Edit															
C002	Example Row 2	View Edit															
C003	Example Row 3	View Edit															
C004	Example Row 4	View Edit															

Fields & validations

Field	Type	Required	Rules / Validations	Notes
Queue item	Row	Yes	Shows entity_type, created_at, status, retry_at , error .	FR-018, FR-018.
Status	Badge	Yes	Pending / Synced / Failed.	Synced items may auto-link.
Error details	Panel	No	For failed items show last error from server.	

Key actions

- Retry now
- View payload (read-only)
- Discard (admin only, with warning)

Offline & sync behavior

- This screen is fully offline because it reads from client queue.
- Backoff retry and manual retry should be supported (FR-020).

Appendix A - Transaction statuses (baseline)

- Draft: saved but not posted. Can be edited or deleted.
- Pending Sync: posted while offline (or not yet synced). Must appear in Sync Queue and in lists.
- Synced: successfully committed to Supabase. Stock moves and balances are updated server-side.
- Failed: sync attempt failed. Show a clear error and allow retry.

Appendix B - Notes on numbering and UUIDs

All records use UUIDs as the true stable identity (safe for offline creation). Human-friendly document numbers (Invoice No, GRN No, Transfer No) should be unique per location. If you later move to server-side auto-numbering, keep UUIDs unchanged and map the final number after sync.