### 13 - Offline Mode Strategy

\*\*13.1 Local Transaction Queue\*\*

- POS and booking devices store transactions locally when offline.

- Queued data includes:

- Sales

- Stock updates

- Loyalty point actions

\*\*13.2 Resume Sync Detection\*\*

- Background heartbeat checks HQ availability.

- When HQ is reachable again:

- Resume queued sync

- Show status update on POS terminal

\*\*13.3 Data Validity Timestamps\*\*

- Each record includes timestamp of creation/modification.

- Used for conflict detection when syncing after reconnect.

\*\*13.4 Offline Limits and Rules\*\*

- Daily transaction cap while offline (e.g., max 300 transactions).

- Optional setting to block discounts/returns while disconnected.

\*\*13.5 Sync Audit Trail\*\*

- All locally queued data carries offline sync flag.

- HQ logs identify if data was synced in real-time or delayed.

\*\*13.6 Offline Stock Locking\*\*

- Stock is locked locally when added to cart.

- Prevents over-selling while offline.

- Conflicts reconciled during resync.

\*\*13.7 POS Alerts and Sync Status\*\*

- Visual cue on POS when operating in offline mode.

- Sync history and pending count viewable from UI.

\*\*13.8 Offline Testing Tools\*\*

- Developer toggle to simulate offline mode.

- Useful for QA and training on sync scenarios.