



# Café & Karaoke Management System (CKMS): Master Specification

## 1. Executive Vision & Multi-Outlet Strategy

The CKMS is an enterprise-grade, multi-tenant platform designed to manage independent hospitality outlets (e.g., **CHILLO** and **CHILLO KAY**).

- **Independent Outlets:** Every transaction, employee, room, and expense is tied to a specific Outlet ID.
- **Data Isolation:** Staff at Outlet A cannot see Outlet B's data. Admins enjoy a "Global Dashboard" for consolidated views.
- **The "Loyverse+" POS:** A UI that mimics the simplicity of Loyverse but adds deep integration with Karaoke room sessions and real-time inventory.

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## 2. The POS Ecosystem: "Loyverse, but Better"

The Point-of-Sale is the heartbeat of the system. It is designed for speed, touch-interaction, and visual clarity.

### Key POS Features:

- **Interactive Product Grid:** Large, color-coded buttons for products (e.g., "Lavazza Intenso") arranged by category.
- **Live Order Ticket:** A sidebar showing the current cart, with real-time price updates.
- **Split Billing:** Capability to split a single bill between room charges (Karaoke) and F&B (Café).
- **Real-Time Sync:** Uses **Django Channels** to push orders to the Kitchen Display System (KDS) instantly.

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## 3. Karaoke & Room Management Module

Specifically engineered for the unique lifecycle of a Karaoke venue, managing time as a billable commodity.

- **Room Lifecycle:** Status transitions: Available → Booked → Active → Cleaning → Available.
- **Manage Session (`manage_session.html`):** A dashboard to start/pause time, add "Extra

Time," and track consumption per room.

- **Tablet Interface (tablet\_order.html):** A customer-facing UI inside the room for browsing the menu and placing orders without calling staff.
- **Session Monitoring:** Real-time progress bars showing time remaining for every active room.

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## 4. Supply Chain & Inventory Intelligence

Total control over stock levels across different outlets.

- **Real-Time Deduction (F-06):** Stock is deducted the moment a sale is finalized.
- **Low Stock Alerts:** A predictive report (low\_stock.html) highlighting items below their min\_stock\_level.
- **Multi-Outlet Stock:** Independent inventory counts for **CHILLO** vs. **CHILLO KAY**.

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## 5. HR & Automated Payroll (E.M.-07)

A complex HR engine that handles diverse staff payment structures based on specific codes.

Staff Code	Type	Calculation Logic
P	Permanent	Fixed Monthly Salary.
C	Contract	$\$Total \setminus Hours \setminus \times Hourly \setminus Rate \$$
D	Daily Hire	$\$Total \setminus Days \setminus Present \setminus \times Daily \setminus Rate \$$

- **Attendance Monitoring:** Real-time clock-in/out logs with GPS/Outlet tagging.

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## 6. Financial Intelligence & Reporting (F-05)

Professional-grade reporting for owners to track the health of the business.

- **Profit/Loss Summary:** Real-time calculation of Revenue (Sales + Room Fees) minus Expenses (Utilities + Payroll + Stock).
- **Expense Auditing:** Every expense supports receipt uploads for digital record-keeping.
- **Outlet Performance:** Compare which outlet is performing better in real-time.

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## 7. Technical Stack & Implementation (For AI Agents/Developers)

### Backend Architecture:

- **Language/Framework:** Python 3.12+ / Django 5.x.
- **Real-Time Layer:** Django Channels (WebSockets) for consumers.py logic.
- **Database:** PostgreSQL (Production) or SQLite (Development), using a **Multi-Tenant Filter** on all queries.

### Directory Structure Key Files:

- `core/`: Handles Finance, HR, and Base POS logic.
- `karaoke/`: Handles Room Sessions, Bookings, and Tablet Orders.
- `templates/`: High-fidelity HTML using Django Template Language (DTL) and HTMX for a "No-Reload" app feel.

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## 8. Requirements for "Independent Outlet" Management

To ensure the system scales to new outlets effortlessly:

1. **Global Outlet Registry:** A central table where new outlets (Chillo 3, Chillo 4) can be added.
2. **Middleware Filtering:** Every request is automatically filtered by the `outlet_id` associated with the logged-in user.
3. **Cross-Outlet Transfers:** Logic to "Transfer Stock" from one outlet to another.

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### Final Verdict

This document defines a world-class, integrated hospitality solution. It takes the simplicity of Loyverse and powers it with the complexity of a Karaoke booking engine and a high-level financial auditor.