



# Functional Requirements Document (FRD)

**Core Philosophy:** The system must manage the "State" of the cafe. Every **table**, every **player**, and every **game box** is a "Resource" that can only be in **one state** at a time.

## A. Entity & Identity Management

- **User Identity & Profile Management:** The system must facilitate secure **registration** and **authentication** using stateless tokens (JWT). Beyond credentials, it must manage a unified "**Gamer Profile**" that aggregates a user's **Reliability Streak**, **Play History**, and **Credit Balance**. This entity serves as the primary anchor for all social and financial interactions within the platform.
- **Internal Game Registry:** To maintain high data quality and a "premium" UI, the system must manage a proprietary catalog of board game entities. Each entry must store curated metadata (accurate player counts, complexity ratings, and high-definition imagery). By serving this from an internal database, we avoid the latency and "broken link" risks associated with third-party API dependencies.
- **Asset Inventory Tracking:** The system must manage the physical inventory as digital entities with real-time status attributes. This includes tracking the **Cafe Library** (rentals) and **Retail Stock**. Each physical box is represented as a unique resource ID to prevent the system from allowing two separate groups to "reserve" the same physical copy of a game simultaneously.

## Session & LFG Logic

- **State Machine for Lobbies:** The system must manage transitions between lobby states: **RECRUITING** (open for joins), **READY** (full, waiting for start time), **ACTIVE** (players checked in), and **COMPLETED**.
- **Concurrency Control:** The system must handle "Race Conditions." If two users attempt to take the last seat simultaneously, the system must utilize a "First-to-Commit" logic to prevent over-filling a table.
- **The "Check-In" Handshake:** The system must provide a mechanism (such as a geolocation check or a QR-scan at the table) to verify that a user who joined a lobby has actually **arrived** at the physical cafe.

## Inventory & Internal Registry

- **Internal Data Consistency:** The system must serve game **metadata** (player counts, images, descriptions) from a curated internal database. This ensures the UI remains consistent and prevents "broken links" from external APIs.

- **Shelf-to-App Sync:** The system must provide a "Staff Toggle" endpoint. When a game is handed to a player, a single click by staff must update the "Live Shelf" status to `CHECKED_OUT` globally.

## Financial Ledger (The Credit Engine)

- **The Atomic Credit Transfer:** The marketplace requires a transaction module where `User_A.Debit(100)` and `User_B.Credit(100)` are wrapped in a single database transaction. If one fails, both must fail.
- **Escrow Logic:** Credits should be "Locked" when a trade is initiated and only "Released" once the Cafe Admin scans the verification code, completing the physical hand-off.