**DINESWIFT DATA DEFINITION DOCUMENT (DATA DICTIONARY)**

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# 









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This document outlines the logical schema for the DineSwift platform, detailing all tables, fields, and relationships across the five core subsystems.

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# SUBSYSTEM 1: CORE USER IDENTITY & RBAC

## Table: users

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| **user\_id** | Unique user identifier | UUID, **PK** |
| **email** | User's primary email | VARCHAR(255), **UNIQUE** |
| **full\_name** | User's full name | VARCHAR(255) |
| **phone\_number** | Contact number | VARCHAR(50) |
| **gps\_location** | Last known GPS coordinates | JSONB |
| **communication\_preferences** | Notification preferences | JSONB |
| **is\_active** | Account status | BOOLEAN |
| **created\_at** | Audit timestamp | TIMESTAMP |
| **updated\_at** | Audit timestamp | TIMESTAMP |
| **last\_login** | Audit timestamp | TIMESTAMP |
| **Relationships** | A user can have multiple roles across different restaurants. A user can place multiple orders. A user can make multiple bookings. A user can provide multiple feedback entries. A user can be a member of multiple communication groups. A user can have multiple payment methods. A user can have loyalty accounts at multiple restaurants. A user can send and receive multiple chat messages. A user can receive multiple notifications. A user can apply multiple reward redemptions. A user can create multiple order item rejections. | |

## Table: roles

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| **role\_id** | Unique role identifier | UUID, **PK** |
| **role\_name** | Role name ('customer', 'manager', 'chef', 'waiter', 'admin') | VARCHAR(50), **UNIQUE** |
| **permissions** | Role permissions configuration | JSONB |
| **description** | Role description | TEXT |
| **created\_at** | Creation timestamp | TIMESTAMP |
| **Relationships** | A role can be assigned to multiple users. Each role assignment is scoped to a specific restaurant. | |

## Table: user\_roles

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| **user\_role\_id** | Unique assignment identifier | UUID, **PK** |
| **user\_id** | The user | UUID, **FK → users** |
| **role\_id** | The role assigned | UUID, **FK → roles** |
| **restaurant\_id** | Restaurant scope (NULL for global roles) | UUID, **FK → restaurants**, NULLABLE |
| **assigned\_by** | Who assigned this role | UUID, **FK → users** |
| **assigned\_at** | Assignment timestamp | TIMESTAMP |
| **is\_active** | Assignment status | BOOLEAN |
| **Relationships** | Each user\_role record belongs to one user and one role. A user\_role can be scoped to one restaurant (optional). A user\_role can be linked to one restaurant\_staff record (if staff member). | |

# SUBSYSTEM 2: CORE OPERATIONS & VENUE MANAGEMENT

## Table: restaurants

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| **restaurant\_id** | Unique restaurant identifier | UUID, **PK** |
| **name** | Restaurant name | VARCHAR(255) |
| **description** | Business description | TEXT |
| **cuisine\_type** | Type of cuisine | VARCHAR(100) |
| **address** | Physical address with coordinates | JSONB |
| **contact\_info** | Contact information | JSONB |
| **operation\_hours** | Business hours by day | JSONB |
| **social\_media\_links** | Social media profiles | JSONB |
| **delivery\_options** | Delivery settings and fees | JSONB |
| **payment\_methods\_accepted** | Accepted payment methods | JSONB |
| **average\_rating** | Aggregated rating | DECIMAL(3,2) |
| **total\_reviews** | Total review count | INTEGER |
| **average\_delivery\_time** | Average delivery time in minutes | INTEGER |
| **status** | Business status | ENUM ('active', 'inactive', 'suspended') |
| **local\_server\_id** | Local server reference | UUID, **FK → local\_servers** |
| **created\_at, updated\_at, deleted\_at** | Audit trail | TIMESTAMP |
| **created\_by, updated\_by, deleted\_by** | User audit | UUID, **FK → users** |
| **Relationships** | A restaurant has one menu and one menu belongs to one restaurant. A restaurant has multiple tables and each table belongs to one restaurant. A restaurant has multiple staff members and each staff member works at one restaurant. A restaurant has multiple customers and a customer can belong to multiple restaurants. A restaurant can have multiple orders and each order belongs to one restaurant. A restaurant can have multiple bookings and each booking belongs to one restaurant. A restaurant can have multiple inventory items and each inventory item belongs to one restaurant. A restaurant can be associated with multiple suppliers and a supplier can serve multiple restaurants. A restaurant can have multiple communication groups and each group belongs to one restaurant. A restaurant can have multiple chat sessions and each chat session belongs to one restaurant. A restaurant can have multiple announcements and each announcement belongs to one restaurant. A restaurant can have multiple daily summaries and each summary belongs to one restaurant. A restaurant can have one local server and each local server belongs to one restaurant. A restaurant can have multiple loyalty rewards. | |

## Table: restaurant\_tables

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| **table\_id** | Unique table identifier | UUID, **PK** |
| **restaurant\_id** | Owning restaurant | UUID, **FK → restaurants** |
| **table\_number** | Table identifier | VARCHAR(20) |
| **qr\_code** | QR code for scanning | VARCHAR(500), **UNIQUE** |
| **capacity** | Maximum guests | INTEGER |
| **table\_status** | Current status | ENUM ('available', 'occupied', 'reserved', 'maintenance') |
| **coordinates** | Layout coordinates for routing | JSONB |
| **created\_at, updated\_at** | Audit timestamps | TIMESTAMP |
| **Relationships** | A table belongs to one restaurant and a restaurant has multiple tables. A table can have multiple bookings and each booking is for one table. A table can be associated with multiple orders and each order can be for one table. A table can have multiple table assignments and each assignment is for one table. | |

## Table: local\_servers

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| **local\_server\_id** | Unique server identifier | UUID, **PK** |
| **restaurant\_id** | Associated restaurant | UUID, **FK → restaurants**, **UNIQUE** |
| **server\_name** | Server name | VARCHAR(255) |
| **server\_url** | Server access URL | VARCHAR(500) |
| **status** | Server status | ENUM ('online', 'offline', 'maintenance') |
| **last\_sync** | Last synchronization time | TIMESTAMP |
| **created\_at** | Creation timestamp | TIMESTAMP |
| **Relationships** | A local server belongs to one restaurant and a restaurant has one local server. | |

# SUBSYSTEM 3: MENU & RECIPE MANAGEMENT

## Table: menus

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| **menu\_id** | Unique menu identifier | UUID, **PK** |
| **restaurant\_id** | Owning restaurant | UUID, **FK → restaurants**, **UNIQUE** |
| **name** | Menu name | VARCHAR(255) |
| **description** | Menu description | TEXT |
| **is\_active** | Active status | BOOLEAN |
| **version** | Menu version for updates | INTEGER |
| **created\_at, updated\_at** | Audit timestamps | TIMESTAMP |
| **Relationships** | A menu belongs to one restaurant and a restaurant has one menu. A menu has multiple menu items and each menu item belongs to one menu. | |

## Table: menu\_items

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| **menu\_item\_id** | Unique menu item identifier | UUID, **PK** |
| **menu\_id** | Parent menu | UUID, **FK → menus** |
| **item\_name** | Item name | VARCHAR(255) |
| **description** | Item description | TEXT |
| **sales\_price** | Selling price | DECIMAL(10,2) |
| **preparation\_time** | Preparation time in minutes | INTEGER |
| **department** | Kitchen department | VARCHAR(100) |
| **is\_available** | Availability status | BOOLEAN |
| **display\_order** | Menu display order | INTEGER |
| **created\_at, updated\_at** | Audit timestamps | TIMESTAMP |
| **Relationships** | A menu item belongs to one menu and a menu has multiple menu items. A menu item can have multiple ingredients and an ingredient can be used in multiple menu items. A menu item can be ordered multiple times and each order contains multiple menu items. A menu item can be the most popular item in multiple daily summaries. A menu item can be referenced by multiple loyalty rewards as free items. A menu item can be displayed in multiple kitchen display orders. | |

## Table: inventory\_items

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| **inventory\_item\_id** | Unique inventory item identifier | UUID, **PK** |
| **restaurant\_id** | Owning restaurant | UUID, **FK → restaurants** |
| **item\_name** | Item name | VARCHAR(255) |
| **description** | Item description | TEXT |
| **unit\_of\_measure** | Measurement unit | VARCHAR(50) |
| **cost\_price** | Purchase cost | DECIMAL(10,2) |
| **current\_stock** | Current quantity | DECIMAL(10,3) |
| **min\_stock\_threshold** | Reorder threshold | DECIMAL(10,3) |
| **max\_stock\_capacity** | Maximum capacity | DECIMAL(10,3) |
| **stock\_status** | Computed stock status | ENUM ('in\_stock', 'low\_stock', 'out\_of\_stock') |
| **supplier\_id** | Primary supplier | UUID, **FK → suppliers**, NULLABLE |
| **last\_restocked** | Last restock date | TIMESTAMP |
| **created\_at, updated\_at** | Audit timestamps | TIMESTAMP |
| **Relationships** | An inventory item belongs to one restaurant and a restaurant has multiple inventory items. An inventory item can be supplied by one supplier and a supplier can supply multiple inventory items. An inventory item can be used in multiple menu items and a menu item can use multiple inventory items. An inventory item can be ordered in supply orders and each supply order contains multiple inventory items. | |

## Table: menu\_item\_ingredients

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| **menu\_item\_ingredient\_id** | Unique recipe mapping identifier | UUID, **PK** |
| **menu\_item\_id** | The menu item | UUID, **FK → menu\_items** |
| **inventory\_item\_id** | The ingredient | UUID, **FK → inventory\_items** |
| **quantity\_required** | Quantity needed | DECIMAL(10,3) |
| **unit** | Measurement unit | VARCHAR(50) |
| **created\_at** | Creation timestamp | TIMESTAMP |
| **Relationships** | Each recipe mapping belongs to one menu item and one inventory item. A menu item has multiple ingredients and an ingredient can be used in multiple menu items. | |

# SUBSYSTEM 4: INVENTORY, SUPPLIER & SUPPLY CHAIN

## Table: suppliers

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| **supplier\_id** | Unique supplier identifier | UUID, **PK** |
| **user\_id** | Linked user account | UUID, **FK → users**, NULLABLE |
| **company\_name** | Supplier company name | VARCHAR(255) |
| **contact\_person** | Primary contact | VARCHAR(255) |
| **contact\_info** | Contact details | JSONB |
| **address** | Business address | JSONB |
| **business\_registration** | Legal registration number | VARCHAR(100) |
| **payment\_terms** | Payment conditions | JSONB |
| **rating** | Performance rating | DECIMAL(3,2) |
| **is\_active** | Active status | BOOLEAN |
| **created\_at, updated\_at** | Audit timestamps | TIMESTAMP |
| **Relationships** | A supplier can supply multiple inventory items and an inventory item can be supplied by one supplier. A supplier can have relationships with multiple restaurants and a restaurant can work with multiple suppliers. A supplier can fulfill multiple supply orders and each supply order is from one supplier. A supplier can be linked to one user account (optional). | |

## Table: restaurant\_suppliers

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| **restaurant\_supplier\_id** | Unique relationship identifier | UUID, **PK** |
| **restaurant\_id** | The restaurant | UUID, **FK → restaurants** |
| **supplier\_id** | The supplier | UUID, **FK → suppliers** |
| **relationship\_status** | Relationship status | ENUM ('active', 'suspended', 'inactive') |
| **is\_preferred** | Preferred supplier flag | BOOLEAN |
| **payment\_terms** | Specific payment terms | JSONB |
| **delivery\_lead\_time** | Average delivery time in days | INTEGER |
| **created\_at, updated\_at** | Audit timestamps | TIMESTAMP |
| **Relationships** | Each relationship record belongs to one restaurant and one supplier. A restaurant can have multiple supplier relationships and a supplier can have multiple restaurant relationships. | |

## Table: order\_item\_rejections

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| **rejection\_id** | Unique rejection identifier | UUID, **PK** |
| **order\_item\_id** | Rejected order item | UUID, **FK → order\_items** |
| **rejected\_quantity** | Quantity rejected | DECIMAL(10,3) |
| **rejection\_reason** | Reason for rejection | TEXT |
| **rejection\_proof\_url** | Photographic evidence | VARCHAR(500) |
| **digital\_signature** | Supplier acknowledgment signature | JSONB |
| **created\_by** | User who created rejection | UUID, **FK → users** |
| **created\_at** | Creation timestamp | TIMESTAMP |
| **Relationships** | Each order\_item\_rejection belongs to one order\_item and an order\_item can have multiple order\_item\_rejections. An order\_item\_rejection can be created by one user and a user can create multiple order\_item\_rejections. Supports partial rejections of supply order items with digital signature capability. | |

# SUBSYSTEM 5: ORDERING, KITCHEN & LOGISTICS

## Table: orders (PARTITIONED)

Description: Master order table for all transaction types, partitioned by created\_date.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| order\_id | Unique order identifier | UUID, PK |
| restaurant\_id | Owning restaurant | UUID, FK to restaurants |
| order\_type | Order type | ENUM ('sales', 'supply') |
| status | Order status | ENUM ('pending', 'confirmed', 'preparing', 'ready', 'in\_delivery', 'delivered', 'cancelled') |
| total\_amount | Final gross amount | DECIMAL(12,2) |
| notes | General order notes | TEXT |
| created\_at | Audit timestamp | TIMESTAMP |
| updated\_at | Audit timestamp | TIMESTAMP |
| created\_by | User audit | UUID, FK to users |
| updated\_by | User audit | UUID, FK to users |
| **Relationships** | An order belongs to one restaurant and a restaurant has multiple orders. An order can be one sales order or one supply order (exclusive). An order has multiple order items and each order item belongs to one order. An order can have one billing record and each billing record belongs to one order. An order can be referenced in multiple feedback entries. An order can have multiple delivery tracking records. An order can have multiple kitchen display orders. An order can have multiple reward redemptions. | |

## Table: sales\_orders

Description: Customer-facing sales order details.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| sales\_order\_id | Unique sales order identifier | UUID, PK |
| order\_id | Master order reference | UUID, FK to orders, UNIQUE |
| customer\_user\_id | The customer | UUID, FK to users |
| order\_subtype | Order subtype | ENUM ('dine\_in', 'takeaway', 'delivery') |
| table\_id | Associated table | UUID, FK to restaurant\_tables, NULLABLE |
| assigned\_waiter\_id | Assigned staff | UUID, FK to restaurant\_staff, NULLABLE |
| batch\_id | Delivery batch grouping | UUID |
| delivery\_partner\_id | Delivery service | UUID, FK to delivery\_partners, NULLABLE |
| customer\_coordinates | Delivery location | JSONB |
| estimated\_preparation\_time | Estimated prep time | INTEGER |
| actual\_preparation\_time | Actual prep time | INTEGER |
| estimated\_delivery\_time | Estimated delivery time | INTEGER |
| actual\_delivery\_time | Actual delivery time | INTEGER |
| preparation\_complexity\_score | Kitchen load score | INTEGER |
| otp\_code | Delivery verification code | VARCHAR(6) |
| **Relationships** | A sales order belongs to one order and each order has one sales order. A sales order belongs to one customer and a customer can have multiple sales orders. A sales order can be associated with one table and a table can have multiple sales orders. A sales order can be assigned to one waiter and a waiter can handle multiple sales orders. A sales order can be part of one delivery batch and a delivery batch can contain multiple sales orders. A sales order can use one delivery partner and a delivery partner can handle multiple sales orders. | |

## Table: supply\_orders (ENHANCED)

Description: Procurement order details from suppliers with performance tracking.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| supply\_order\_id | Unique supply order identifier | UUID, PK |
| order\_id | Master order reference | UUID, FK to orders, UNIQUE |
| supplier\_id | The supplier | UUID, FK to suppliers |
| expected\_delivery\_date | Expected delivery date | DATE |
| delivery\_status | Delivery status | ENUM ('pending', 'in\_transit', 'delivered', 'cancelled') |
| invoice\_total | Supplier invoice amount | DECIMAL(12,2) |
| adjusted\_total | Final amount after adjustments | DECIMAL(12,2) |
| quality\_rating | Supplier quality performance rating | DECIMAL(3,2) |
| on\_time\_rating | Supplier on-time delivery rating | DECIMAL(3,2) |
| rejection\_proof\_url | Proof of rejected items | VARCHAR(500) |
| **Relationships** | A supply order belongs to one order and each order has one supply order. A supply order is from one supplier and a supplier can have multiple supply orders. A supply order can have multiple order\_item\_rejections through its order\_items | |

## Table: order\_items

Description: Line items for both sales and supply orders

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| order\_item\_id | Unique order item identifier | UUID, PK |
| order\_id | Parent order | UUID, FK to orders |
| source\_entity\_id | ID of menu item or inventory item | UUID |
| source\_entity\_type | Entity type | ENUM ('menu\_item', 'inventory\_item') |
| quantity | Quantity ordered | DECIMAL(10,3) |
| unit\_price | Price per unit | DECIMAL(10,2) |
| total\_price | Quantity $\times$ Unit Price | DECIMAL(10,2) |
| customization\_options | Customer customization preferences | JSONB |
| chef\_special\_instructions | Kitchen preparation notes | TEXT |
| special\_instructions | Customer instructions (sales orders) | TEXT |
| created\_at | Creation timestamp | TIMESTAMP |
| **Relationships** | An order item belongs to one order and an order has multiple order items. An order item references one source entity (menu item or inventory item). A menu item can be ordered multiple times and each order contains multiple menu items. An inventory item can be ordered multiple times and each supply order contains multiple inventory items. An order item can have multiple order\_item\_rejections for partial rejections. | |

## Table: kitchen\_display\_orders

Description: Kitchen workflow management by menu item.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| display\_order\_id | Unique display identifier | UUID, PK |
| order\_id | Parent order | UUID, FK to orders |
| menu\_item\_id | Menu item to prepare | UUID, FK to menu\_items |
| station\_assignment | Kitchen station | VARCHAR(100) |
| priority\_level | Preparation priority | ENUM ('low', 'normal', 'high', 'rush') |
| quantity | Quantity to prepare | INTEGER |
| start\_time | Preparation start time | TIMESTAMP |
| completion\_time | Preparation completion time | TIMESTAMP |
| status | Preparation status | ENUM ('pending', 'preparing', 'ready', 'served') |
| preparation\_notes | Station-specific instructions | TEXT |
| created\_at | Audit timestamp | TIMESTAMP |
| updated\_at | Audit timestamp | TIMESTAMP |
| **Relationships** | Each kitchen\_display\_order belongs to one order and one menu\_item. An order can have multiple kitchen\_display\_orders and a menu\_item can be displayed in multiple kitchen\_display\_orders. Supports station assignment and priority management for kitchen workflow. | |

## Table: delivery\_batches (ENHANCED)

Description: Grouping of orders for delivery optimization with efficiency metrics.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| batch\_id | Unique batch identifier | UUID, PK |
| restaurant\_id | Owning restaurant | UUID, FK to restaurants |
| assigned\_waiter\_id | Assigned staff | UUID, FK to restaurant\_staff |
| batch\_status | Batch status | ENUM ('pending', 'in\_progress', 'completed') |
| optimized\_route | Delivery route coordinates | JSONB |
| total\_distance | Total route distance in km | DECIMAL(8,2) |
| batch\_efficiency\_score | Route optimization score | DECIMAL(4,2) |
| fuel\_cost\_estimate | Estimated fuel cost | DECIMAL(8,2) |
| created\_at | Creation timestamp | TIMESTAMP |
| completed\_at | Completion timestamp | TIMESTAMP |
| **Relationships** | A delivery batch belongs to one restaurant and a restaurant has multiple delivery batches. A delivery batch is assigned to one waiter and a waiter can handle multiple delivery batches. A delivery batch contains multiple sales orders and a sales order can be part of one delivery batch. Tracks efficiency metrics for delivery optimization. | |

## Table: delivery\_partners

Description: External delivery service providers.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| delivery\_partner\_id | Unique partner identifier | UUID, PK |
| partner\_name | Partner company name | VARCHAR(255) |
| partner\_type | Partner type | ENUM ('internal', 'uber\_eats', 'glovo') |
| contact\_info | Contact information | JSONB |
| is\_active | Active status | BOOLEAN |
| average\_rating | Performance rating | DECIMAL(3,2) |
| created\_at | Creation timestamp | TIMESTAMP |
| **Relationships** | A delivery partner can handle multiple sales orders and a sales order can use one delivery partner. A delivery partner can have multiple delivery tracking records. | |

## Table: delivery\_tracking

Description: Real-time delivery location and status tracking.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| tracking\_id | Unique tracking identifier | UUID, PK |
| order\_id | Tracked order | UUID, FK to orders |
| delivery\_partner\_id | Delivery partner | UUID, FK to delivery\_partners |
| current\_location | Current GPS coordinates | JSONB |
| status | Delivery status | ENUM ('accepted', 'picked\_up', 'in\_transit', 'delivered') |
| estimated\_arrival | Estimated delivery time | TIMESTAMP |
| actual\_arrival | Actual delivery time | TIMESTAMP |
| created\_at | Audit timestamp | TIMESTAMP |
| updated\_at | Audit timestamp | TIMESTAMP |
| **Relationships** | A delivery tracking record belongs to one order and an order can have multiple tracking records. A delivery tracking record belongs to one delivery partner and a delivery partner can have multiple tracking records. | |

# SUBSYSTEM 6: FINANCIAL & ACCOUNTING LEDGER

## Table: billing\_records

Description: Final billing and invoice records.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| billing\_id | Unique billing identifier | UUID, PK |
| order\_id | Associated order | UUID, FK to orders, UNIQUE |
| subtotal\_amount | Amount before tax/fees | DECIMAL(12,2) |
| tax\_amount | Tax charged | DECIMAL(12,2) |
| service\_charge | Service/delivery fee | DECIMAL(12,2) |
| discount\_amount | Discount applied | DECIMAL(12,2) |
| total\_amount | Final amount due | DECIMAL(12,2) |
| billing\_status | Billing status | ENUM ('pending', 'paid', 'partially\_paid', 'refunded') |
| created\_at | Audit timestamp | TIMESTAMP |
| updated\_at | Audit timestamp | TIMESTAMP |
| **Relationships** | A billing record belongs to one order and each order has one billing record. A billing record can be referenced in multiple transactions. | |

## Table: transactions (PARTITIONED)

Description: Immutable ledger of all financial transactions, partitioned by transaction\_date.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| transaction\_id | Unique transaction identifier | UUID, PK |
| restaurant\_id | Owning restaurant | UUID, FK to restaurants |
| source\_entity\_id | ID of source entity | UUID |
| source\_entity\_type | Entity type | ENUM ('order', 'booking', 'account\_deposit', 'supplier\_payment', 'refund') |
| amount | Transaction amount | DECIMAL(12,2) |
| transaction\_type | Transaction type | ENUM ('debit', 'credit') |
| category | Transaction category | VARCHAR(100) |
| payment\_method\_id | Payment method used | UUID, FK to payment\_methods, NULLABLE |
| gateway\_transaction\_id | External processor ID | VARCHAR(255) |
| status | Transaction status | ENUM ('pending', 'completed', 'failed', 'refunded') |
| transaction\_date | Transaction timestamp | TIMESTAMP |
| created\_at | Creation timestamp | TIMESTAMP |
| notes | Internal notes | TEXT |
| **Relationships** | A transaction belongs to one restaurant and a restaurant has multiple transactions. A transaction can use one payment method and a payment method can be used in multiple transactions. A transaction references one source entity (order, booking, etc.). | |

## Table: customer\_accounts

Description: Pre-paid accounts and meal plans.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| account\_id | Unique account identifier | UUID, PK |
| user\_id | Account holder | UUID, FK to users |
| restaurant\_id | Account scope | UUID, FK to restaurants |
| balance | Current balance | DECIMAL(12,2) |
| account\_type | Account type | ENUM ('fiat', 'crypto') |
| is\_refundable | Refundable status | BOOLEAN |
| crypto\_details | Crypto wallet details | JSONB |
| created\_at | Audit timestamp | TIMESTAMP |
| updated\_at | Audit timestamp | TIMESTAMP |
| **Relationships** | A customer account belongs to one user and one restaurant. A user can have multiple accounts at different restaurants. A restaurant can have multiple customer accounts. A customer account can be used in multiple transactions. | |

## Table: payment\_methods

Description: Stored customer payment methods.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| payment\_method\_id | Unique payment method identifier | UUID, PK |
| user\_id | Payment method owner | UUID, FK to users |
| method\_type | Method type | ENUM ('card', 'mobile\_money', 'crypto\_wallet', 'account') |
| provider | Provider name | VARCHAR(100) |
| last\_four\_digits | Masked identifier | VARCHAR(4) |
| is\_default | Default method flag | BOOLEAN |
| is\_active | Active status | BOOLEAN |
| created\_at | Creation timestamp | TIMESTAMP |
| **Relationships** | A payment method belongs to one user and a user can have multiple payment methods. A payment method can be used in multiple transactions. | |

# SUBSYSTEM 7: COMMUNICATION & HR MANAGEMENT

## Table: restaurant\_staff (ENHANCED)

Description: Staff operational profiles and employment data with performance metrics.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| staff\_id | Unique staff identifier | UUID, PK |
| user\_role\_id | Linked user role | UUID, FK to user\_roles, UNIQUE |
| employee\_id | Internal HR identifier | VARCHAR(50) |
| hire\_date | Employment start date | DATE |
| termination\_date | Employment end date | DATE |
| salary | Compensation amount | DECIMAL(10,2) |
| efficiency\_score | Performance score | DECIMAL(4,2) |
| total\_orders\_served | Total orders handled | INTEGER |
| average\_order\_time | Average order processing time | INTEGER |
| customer\_rating\_avg | Average customer rating | DECIMAL(3,2) |
| current\_status | Operational status | ENUM ('available', 'busy', 'on\_break', 'offline') |
| managed\_by\_id | Manager reference | UUID, FK to restaurant\_staff, NULLABLE |
| created\_at | Audit timestamp | TIMESTAMP |
| updated\_at | Audit timestamp | TIMESTAMP |
| **Relationships** | A staff member is linked to one user\_role and each user\_role can be linked to one staff member. A staff member works at one restaurant and a restaurant has multiple staff members. A staff member can manage multiple other staff members and can be managed by one staff member. A staff member can be assigned to multiple shift assignments, multiple table assignments, multiple sales orders as assigned waiter, multiple delivery batches, multiple chat sessions, and multiple kitchen\_display\_orders through order assignments. | |

## Table: staff\_shifts

Description: Shift templates and scheduling patterns.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| shift\_id | Unique shift identifier | UUID, PK |
| restaurant\_id | Owning restaurant | UUID, FK to restaurants |
| shift\_name | Shift name | VARCHAR(100) |
| shift\_type | Shift type | ENUM ('morning', 'afternoon', 'evening', 'night') |
| shift\_start | Scheduled start time | TIME |
| shift\_end | Scheduled end time | TIME |
| max\_staff\_count | Maximum staff capacity | INTEGER |
| is\_active | Active status | BOOLEAN |
| created\_at | Audit timestamp | TIMESTAMP |
| updated\_at | Audit timestamp | TIMESTAMP |
| **Relationships** | A staff shift belongs to one restaurant and a restaurant has multiple staff shifts. A staff shift can have multiple shift assignments. | |

## Table: staff\_shift\_assignments

Description: Daily staff assignments to shifts.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| assignment\_id | Unique assignment identifier | UUID, PK |
| staff\_id | Assigned staff member | UUID, FK to restaurant\_staff |
| shift\_id | Assigned shift | UUID, FK to staff\_shifts |
| assignment\_date | Assignment date | DATE |
| actual\_start\_time | Actual clock-in time | TIMESTAMP |
| actual\_end\_time | Actual clock-out time | TIMESTAMP |
| status | Assignment status | ENUM ('scheduled', 'checked\_in', 'checked\_out', 'cancelled') |
| created\_at | Creation timestamp | TIMESTAMP |
| **Relationships** | A shift assignment belongs to one staff member and one shift. A staff member can have multiple shift assignments on different dates. A shift can have multiple assignments on different dates. A shift assignment can have multiple table assignments. | |

## Table: table\_assignments

Description: Waiter-to-table assignments during shifts.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| assignment\_id | Unique assignment identifier | UUID, PK |
| staff\_id | Assigned waiter | UUID, FK to restaurant\_staff |
| table\_id | Assigned table | UUID, FK to restaurant\_tables |
| shift\_assignment\_id | Parent shift assignment | UUID, FK to staff\_shift\_assignments |
| assignment\_start | Assignment start time | TIMESTAMP |
| assignment\_end | Assignment end time | TIMESTAMP |
| status | Assignment status | ENUM ('active', 'completed') |
| created\_at | Creation timestamp | TIMESTAMP |
| **Relationships** | A table assignment belongs to one staff member, one table, and one shift assignment. A waiter can have multiple table assignments during a shift. A table can be assigned to multiple waiters over time. A shift assignment can include multiple table assignments. | |

## Table: staff\_performance\_history

Description: Time-series performance metrics tracking.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| performance\_id | Unique performance record identifier | UUID, PK |
| staff\_id | Rated staff member | UUID, FK to restaurant\_staff |
| metric\_type | Metric type | ENUM ('delivery\_time', 'customer\_rating', 'order\_accuracy', 'efficiency', 'sales') |
| metric\_value | Recorded value | DECIMAL(8,2) |
| target\_value | Goal value | DECIMAL(8,2) |
| measured\_at | Measurement timestamp | TIMESTAMP |
| period\_type | Period type | ENUM ('instant', 'daily', 'weekly', 'monthly') |
| notes | Contextual notes | TEXT |
| created\_at | Creation timestamp | TIMESTAMP |
| **Relationships** | A performance record belongs to one staff member and a staff member has multiple performance records. | |

## Table: communication\_groups

Description: Chat groups for internal and external communication.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| group\_id | Unique group identifier | UUID, PK |
| restaurant\_id | Owning restaurant | UUID, FK to restaurants |
| group\_type | Group type | ENUM ('internal\_staff', 'public\_community', 'customer\_support') |
| name | Group name | VARCHAR(255) |
| description | Group description | TEXT |
| is\_active | Active status | BOOLEAN |
| created\_by | Creator | UUID, FK to users, NULLABLE |
| created\_at | Audit timestamp | TIMESTAMP |
| updated\_at | Audit timestamp | TIMESTAMP |
| **Relationships** | A communication group belongs to one restaurant and a restaurant has multiple communication groups. A communication group has multiple members and a user can be member of multiple groups. A communication group can receive multiple chat messages. | |

## Table: group\_members

Description: User membership in communication groups.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| member\_id | Unique membership identifier | UUID, PK |
| group\_id | The group | UUID, FK to communication\_groups |
| user\_id | The member | UUID, FK to users |
| member\_role | Member role | ENUM ('member', 'admin', 'moderator') |
| joined\_at | Join timestamp | TIMESTAMP |
| left\_at | Leave timestamp | TIMESTAMP |
| **Relationships** | A group membership belongs to one group and one user. A group has multiple members and a user can be member of multiple groups | |

## Table: chat\_sessions

Description: Customer support and service chat sessions.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| session\_id | Unique session identifier | UUID, PK |
| restaurant\_id | Owning restaurant | UUID, FK to restaurants |
| customer\_user\_id | Customer user | UUID, FK to users |
| assigned\_staff\_id | Assigned support agent | UUID, FK to restaurant\_staff, NULLABLE |
| session\_type | Session type | ENUM ('customer\_service', 'order\_support', 'complaint', 'general') |
| title | Session title | VARCHAR(255) |
| status | Session status | ENUM ('active', 'waiting', 'resolved', 'closed') |
| priority | Priority level | ENUM ('low', 'normal', 'high', 'urgent') |
| first\_response\_time | First response time in seconds | INTEGER |
| resolution\_time | Resolution time in seconds | INTEGER |
| customer\_satisfaction\_rating | Customer rating (1-5) | INTEGER |
| created\_at | Creation timestamp | TIMESTAMP |
| resolved\_at | Resolution timestamp | TIMESTAMP |
| closed\_at | Closure timestamp | TIMESTAMP |
| **Relationships** | A chat session belongs to one restaurant and one customer user. A chat session can be assigned to one staff member and a staff member can handle multiple chat sessions. A chat session contains multiple chat messages. | |

## Table: chat\_messages (PARTITIONED)

Description: Unified messaging across all communication channels, partitioned by created\_at.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| message\_id | Unique message identifier | UUID, PK |
| session\_id | Parent chat session | UUID, FK to chat\_sessions, NULLABLE |
| sender\_id | Message sender | UUID, FK to users |
| recipient\_entity\_type | Recipient type | ENUM ('user', 'group', 'restaurant') |
| recipient\_entity\_id | Recipient ID | UUID |
| message\_content | Message text content | TEXT |
| message\_type | Message type | ENUM ('text', 'image', 'video', 'system', 'order\_update') |
| priority | Message priority | ENUM ('normal', 'high', 'urgent') |
| is\_edited | Edit status | BOOLEAN |
| edited\_at | Edit timestamp | TIMESTAMP |
| read\_receipts | Read status tracking | JSONB |
| delivered\_at | Delivery timestamp | TIMESTAMP |
| sentiment\_score | AI sentiment analysis score | DECIMAL(3,2) |
| like\_count | Number of likes | INTEGER |
| reply\_count | Number of replies | INTEGER |
| share\_count | Number of shares | INTEGER |
| is\_active | Active status | BOOLEAN |
| created\_at | Creation timestamp | TIMESTAMP |
| **Relationships** | A chat message can belong to one chat session and a chat session has multiple messages. A chat message is sent by one user and a user can send multiple messages. A chat message can have multiple likes, comments, and shares. | |

## Table: notifications

Description: System-wide notification and alert system.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| notification\_id | Unique notification identifier | UUID, PK |
| recipient\_id | Notification recipient | UUID, FK to users |
| source\_entity\_id | Source entity ID | UUID |
| source\_entity\_type | Source type | ENUM ('order', 'message', 'booking', 'batch', 'feedback', 'promotion') |
| notification\_type | Notification type | VARCHAR(100) |
| message | Notification message | TEXT |
| is\_read | Read status | BOOLEAN |
| action\_url | Deep link URL | VARCHAR(500) |
| sent\_at | Send timestamp | TIMESTAMP |
| read\_at | Read timestamp | TIMESTAMP |
| **Relationships** | A notification is sent to one user and a user can receive multiple notifications. | |

# SUBSYSTEM 8: CUSTOMER ENGAGEMENT & ANALYTICS

## Table: customer\_loyalty

Description: Customer loyalty programs and tier management.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| loyalty\_id | Unique loyalty record identifier | UUID, PK |
| customer\_user\_id | Customer user | UUID, FK to users |
| restaurant\_id | Restaurant scope | UUID, FK to restaurants |
| loyalty\_tier | Loyalty tier | ENUM ('bronze', 'silver', 'gold') |
| points\_balance | Current points balance | INTEGER |
| lifetime\_spend | Total lifetime spending | DECIMAL(12,2) |
| total\_orders | Total orders placed | INTEGER |
| visit\_count | Total visits | INTEGER |
| first\_visit\_date | First visit timestamp | TIMESTAMP |
| last\_visit\_date | Last visit timestamp | TIMESTAMP |
| created\_at | Audit timestamp | TIMESTAMP |
| updated\_at | Audit timestamp | TIMESTAMP |
| **Relationships** | A loyalty record belongs to one customer user and one restaurant. A customer can have loyalty accounts at multiple restaurants. A restaurant can have multiple loyalty program members. A customer\_loyalty can have multiple reward\_redemptions | |

## Table: loyalty\_rewards

Description: Reward definitions and redemption rules.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| reward\_id | Unique reward identifier | UUID, PK |
| restaurant\_id | Owning restaurant | UUID, FK to restaurants |
| reward\_name | Reward name | VARCHAR(255) |
| reward\_type | Reward type | ENUM ('points', 'tier', 'promotional') |
| points\_required | Points needed for redemption | INTEGER |
| free\_menu\_item\_id | Free menu item reward | UUID, FK to menu\_items, NULLABLE |
| discount\_percentage | Discount percentage | DECIMAL(5,2) |
| min\_tier\_required | Minimum tier required | ENUM ('bronze', 'silver', 'gold') |
| is\_active | Active status | BOOLEAN |
| start\_date | Reward start date | TIMESTAMP |
| end\_date | Reward end date | TIMESTAMP |
| created\_at | Audit timestamp | TIMESTAMP |
| updated\_at | Audit timestamp | TIMESTAMP |
| **Relationships** | Each loyalty\_reward belongs to one restaurant and a restaurant can have multiple loyalty\_rewards. A loyalty\_reward can reference one free\_menu\_item and a menu\_item can be referenced by multiple loyalty\_rewards. A loyalty\_reward can have multiple reward\_redemptions and each reward\_redemption belongs to one loyalty\_reward. | |

## Table: reward\_redemptions

Description: Tracked reward redemptions and applications.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| redemption\_id | Unique redemption identifier | UUID, PK |
| loyalty\_id | Customer loyalty account | UUID, FK to customer\_loyalty |
| reward\_id | Redeemed reward | UUID, FK to loyalty\_rewards |
| order\_id | Associated order | UUID, FK to orders, NULLABLE |
| applied\_by\_user\_id | User who applied redemption | UUID, FK to users |
| points\_used | Points deducted | INTEGER |
| discount\_amount | Discount value applied | DECIMAL(10,2) |
| redemption\_status | Redemption status | ENUM ('pending', 'applied', 'expired', 'cancelled') |
| redemption\_date | Redemption timestamp | TIMESTAMP |
| created\_at | Creation timestamp | TIMESTAMP |
| **Relationships** | Each reward\_redemption belongs to one customer\_loyalty and one loyalty\_reward. A reward\_redemption can be associated with one order and an order can have multiple reward\_redemptions. A reward\_redemption can be applied by one user and a user can apply multiple reward\_redemptions. Links loyalty programs to actual order redemptions with staff application tracking. | |

## Table: bookings

Description: Table reservations and event bookings.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| booking\_id | Unique booking identifier | UUID, PK |
| customer\_user\_id | Booking customer | UUID, FK to users |
| restaurant\_id | Restaurant | UUID, FK to restaurants |
| table\_id | Reserved table | UUID, FK to restaurant\_tables |
| booking\_date | Booking date | DATE |
| start\_time | Start time | TIME |
| end\_time | End time | TIME |
| party\_size | Number of guests | INTEGER |
| status | Booking status | ENUM ('pending', 'confirmed', 'checked\_in', 'completed', 'cancelled', 'no\_show') |
| deposit\_amount | Deposit amount | DECIMAL(10,2) |
| deposit\_status | Deposit status | ENUM ('pending', 'paid', 'refunded', 'forfeited') |
| special\_requests | Customer requests | TEXT |
| created\_at | Audit timestamp | TIMESTAMP |
| updated\_at | Audit timestamp | TIMESTAMP |
| **Relationships** | A booking belongs to one customer, one restaurant, and one table. A customer can make multiple bookings. A restaurant can have multiple bookings. A table can have multiple bookings over time. | |

## Table: feedback

Description: Customer feedback and review system.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| feedback\_id | Unique feedback identifier | UUID, PK |
| restaurant\_id | Rated restaurant | UUID, FK to restaurants |
| customer\_user\_id | Feedback author | UUID, FK to users |
| target\_type | Feedback target | ENUM ('restaurant', 'waiter', 'food', 'app') |
| target\_id | Specific target ID | UUID, NULLABLE |
| order\_id | Associated order | UUID, FK to orders, NULLABLE |
| rating | Rating score (1-5) | INTEGER |
| title | Feedback title | VARCHAR(255) |
| comments | Detailed comments | TEXT |
| keyword\_tags | Automated sentiment tags | TEXT[] |
| is\_verified | Verified purchase status | BOOLEAN |
| helpful\_count | Helpful votes count | INTEGER |
| status | Feedback status | ENUM ('active', 'flagged', 'removed') |
| created\_at | Audit timestamp | TIMESTAMP |
| updated\_at | Audit timestamp | TIMESTAMP |
| **Relationships** | A feedback entry belongs to one restaurant and one customer user. A feedback entry can be associated with one order. A feedback entry can target specific entities (restaurant, staff, menu items). | |

## Table: content\_media

Description: Marketing content and media assets with performance tracking.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| media\_id | Unique media identifier | UUID, PK |
| restaurant\_id | Owning restaurant | UUID, FK to restaurants, NULLABLE |
| media\_type | Media type | ENUM ('image', 'video', 'banner', 'promo\_card') |
| title | Media title | VARCHAR(255) |
| description | Media description | TEXT |
| media\_url | Media storage URL | VARCHAR(500) |
| target\_audience | Target audience | ENUM ('all', 'new\_customers', 'loyalty\_members') |
| conversion\_rate | Conversion performance | DECIMAL(5,2) |
| engagement\_rate | Engagement performance | DECIMAL(5,2) |
| click\_through\_rate | Click-through performance | DECIMAL(5,2) |
| is\_active | Active status | BOOLEAN |
| start\_date | Display start date | TIMESTAMP |
| end\_date | Display end date | TIMESTAMP |
| created\_by | Creator | UUID, FK to users, NULLABLE |
| created\_at | Audit timestamp | TIMESTAMP |
| updated\_at | Audit timestamp | TIMESTAMP |
| **Relationships** | A content\_media item can belong to one restaurant (optional for platform-wide content). A content\_media item has multiple media\_performance\_daily records for historical tracking. Tracks performance metrics for media optimization. | |

## Table: media\_performance\_daily

Description: Daily performance analytics for media content.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| performance\_id | Unique performance identifier | UUID, PK |
| media\_id | Tracked media item | UUID, FK to content\_media |
| performance\_date | Analytics date | DATE |
| view\_count | Daily views | INTEGER |
| engagement\_count | Daily engagements | INTEGER |
| conversion\_count | Daily conversions | INTEGER |
| click\_count | Daily clicks | INTEGER |
| total\_revenue | Revenue generated | DECIMAL(12,2) |
| created\_at | Creation timestamp | TIMESTAMP |
| **Relationships** | Each media\_performance\_daily record belongs to one content\_media and a content\_media has multiple media\_performance\_daily records (one per day). Enables daily trend analysis for media engagement and conversion tracking. | |

## Table: announcements

Description: Marketing announcements and promotional content.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| announcement\_id | Unique announcement identifier | UUID, PK |
| restaurant\_id | Owning restaurant | UUID, FK to restaurants, NULLABLE |
| title | Announcement title | VARCHAR(255) |
| body | Announcement content | TEXT |
| announcement\_type | Announcement type | ENUM ('promotion', 'event', 'update', 'maintenance') |
| target\_audience | Target audience | ENUM ('all', 'loyalty\_tier', 'specific\_group') |
| audience\_parameters | Audience filters | JSONB |
| start\_date | Display start date | TIMESTAMP |
| end\_date | Display end date | TIMESTAMP |
| is\_public | Public visibility | BOOLEAN |
| view\_count | Total views | INTEGER |
| engagement\_count | Total engagements | INTEGER |
| created\_by | Creator | UUID, FK to users, NULLABLE |
| created\_at | Audit timestamp | TIMESTAMP |
| updated\_at | Audit timestamp | TIMESTAMP |
| **Relationships** | An announcement can belong to one restaurant (optional for platform-wide announcements). An announcement is created by one user. | |

## Table: restaurant\_daily\_summary

Description: Denormalized daily performance analytics.

|  |  |  |
| --- | --- | --- |
| **Field** | **Definition** | **Constraints & Type** |
| summary\_id | Unique summary identifier | UUID, PK |
| restaurant\_id | Restaurant | UUID, FK to restaurants |
| summary\_date | Summary date | DATE |
| total\_orders | Daily order count | INTEGER |
| total\_revenue | Daily revenue | DECIMAL(12,2) |
| average\_order\_value | Average order value | DECIMAL(10,2) |
| customer\_count | Unique customer count | INTEGER |
| peak\_hour | Busiest hour (0-23) | INTEGER |
| most\_popular\_item | Best-selling item | UUID, FK to menu\_items, NULLABLE |
| customer\_satisfaction\_score | Average satisfaction score | DECIMAL(3,2) |
| created\_at | Creation timestamp | TIMESTAMP |
| **Relationships** | A daily summary belongs to one restaurant and one date. A restaurant has multiple daily summaries. A daily summary can reference one menu item as most popular. | |

# SUMMARY OF KEY RELATIONSHIPS

## Core Business Relationships:

A restaurant has one menu and a menu belongs to one restaurant A restaurant has multiple tables and a table belongs to one restaurant A restaurant has multiple staff members and a staff member works at one restaurant A restaurant has multiple customers and a customer can belong to multiple restaurants A restaurant can work with multiple suppliers and a supplier can work with multiple restaurants A restaurant can have multiple loyalty rewards

## Order & Inventory Relationships:

An order contains multiple order items and an order item belongs to one order A menu item can be ordered multiple times and an order can contain multiple menu items An inventory item is used in multiple menu items and a menu item uses multiple inventory items An order item can have multiple order\_item\_rejections for partial rejections An order can have multiple kitchen\_display\_orders for kitchen workflow management

## User & Role Relationships:

A user can have multiple roles across different restaurants through user\_roles Each role assignment is scoped to a specific restaurant (optional for global roles)

## Loyalty & Rewards Relationships:

A customer has loyalty relationships with multiple restaurants A loyalty\_reward belongs to one restaurant and can offer free menu\_items Reward\_redemptions link loyalty programs to actual orders with staff application tracking Complete funnel from earning (customer\_loyalty) to redemption (reward\_redemptions)

## Communication Relationships:

A communication group has multiple members and a user can be member of multiple groups A chat session involves one customer and one restaurant, optionally assigned to staff Chat messages can be sent to users, groups, or restaurants through polymorphic recipients

## Analytics Relationships:

Daily summaries aggregate performance data per restaurant per day Feedback can target multiple entity types (restaurant, staff, food, app) Media performance is tracked daily for trend analysis and A/B testing Enhanced staff performance metrics enable detailed workforce analytics

## Performance & Partitioning:

**orders**, **transactions**, and **chat\_messages** are partitioned for optimal performance Large-volume tables use partitioning by date for efficient querying and archiving