**Functional Requirements**

* The system must track daily sales, expenses, and profits.
* The system must allow inventory management with low-stock alerts and supplier tracking.
* The system must support staff scheduling, performance tracking, and payroll processing.
* The system must provide tools to collect feedback and manage loyalty programs.
* The system must support menu management, including seasonal updates.
* The system must manage table reservations and seating optimization.
* The system should enable staff communication for order processing.
* The system should allow table assignment and reallocation by staff.
* The system should help staff handle customer complaints effectively.
* The system should support cash and card payments with receipt generation.
* The system should deliver real-time updates from management to staff.
* The system should allow staff to update and track task progress.
* Clients can book tables online and receive confirmations or reminders.
* Clients can view the menu digitally with item details and prices.
* Clients can place orders via phone or app with customization options.
* Clients can pay online, split bills, and apply discounts or vouchers.
* Clients can leave feedback and rate their experience.
* Clients can join loyalty programs and redeem rewards.
* Clients can receive notifications for promotions, events, and bookings.
* Clients can contact staff for inquiries or support.

**Non-Functional Requirements**

* The system must comply with health and safety regulations.
* The system must generate reports for audits and internal use.

**Object Identification:**

Owner, Client, Staff, Reservation, Menu, Order, Payment, Inventory, Feedback, Loyalty Program, Notification, Task, Report, Table.

**Object Relationships with Justifications:**

| **Object 1** | **Relation** | **Object 2** | **Justification** |
| --- | --- | --- | --- |
| User | Inherits | Owner, Staff, Client | Owner, Staff, and Client are all types of users with different roles. |
| Owner | Aggregation | Inventory | Owner manages inventory, but inventory exists independently. |
| Owner | Aggregation | Staff | Owner manages staff but staff exist as separate entities. |
| Owner | Aggregation | Menu | Owner updates and controls the menu, which exists on its own. |
| Owner | Aggregation | Feedback | Owner oversees feedback, which is collected from clients. |
| Owner | Aggregation | Loyalty Program | Owner manages loyalty programs, which clients use. |
| Owner | Association | Reservation | Owner oversees table reservations and bookings. |
| Owner | Association | Report | Owner views and generates reports on sales and operations. |
| Staff | Association | Order | Staff take and fulfill orders placed by clients. |
| Staff | Association | Table | Staff manage seating and table assignments. |
| Staff | Association | Payment | Staff process payments made by clients. |
| Staff | Association | Notification | Staff receive notifications and alerts from the system. |
| Staff | Association | Task | Staff receive and complete assigned tasks. |
| Client | Association | Reservation | Clients book tables either online or by phone. |
| Client | Association | Menu | Clients view and select items from the menu. |
| Client | Association | Order | Clients place orders for food and drinks. |
| Client | Association | Payment | Clients make payments, including splitting bills and applying discounts. |
| Client | Association | Feedback | Clients provide feedback and reviews. |
| Client | Association | Loyalty Program | Clients join loyalty programs and redeem rewards. |
| Client | Association | Notification | Clients receive reminders and promotional notifications. |
| Client | Association | Communication | Clients communicate with staff for inquiries and support. |
| Order | Composition | Menu | Orders are made up of selected menu items. |
| Payment | Composition | Receipt | Each payment generates a receipt for record keeping. |
| Feedback | Composition | Loyalty Program | Feedback is part of the loyalty program’s data. |
| Report | Composition | Sales and Expense Data | Reports include sales, expenses, and other financial info. |