**Artifact 1.2 Holistic Analysis**

**1. Stakeholders**

* **Customers**: End users who interact with the system to book tables and experience dining.
* **Staff**: Waitstaff and kitchen staff who use the system for order management and inventory updates.
* **Management**: Responsible for scheduling staff, overseeing reservations and inventory, and create/delete/modify staff accounts.
* **System Administrators**: Oversee technical operation, including user access and troubleshooting.

**2. Stakeholder Goals**

* **Customers**:
  + Easily book, modify, or cancel reservations online.
  + Receive real-time table availability updates, confirmation notifications and reminders for upcoming reservations.
* **Waitstaff**:
  + Input and update customer orders seamlessly.
  + Access real-time order statuses to serve customers efficiently.
* **Kitchen Staff**:
  + View and manage incoming orders in real-time.
  + Update inventory levels and order statuses quickly.
* **Managers**:
  + Monitor reservations and seating arrangements.
  + Manage inventory, schedule staff, and handle time-off requests effectively.
  + Create/delete/modify staff accounts
* **System Administrators**:
  + Ensure secure user access and minimal system downtime.

**3. Interdependencies**

* **Reservations Module**:
  + Customers depend on accurate availability data provided by the system.
  + Staff rely on reservation data to manage customer flow effectively.
* **Order Management Module**:
  + Waitstaff need real-time communication with kitchen staff for accurate order updates.
  + Customers expect timely service based on the system’s efficiency.
* **Inventory Management Module**:
  + Kitchen staff use inventory data for meal preparation.
  + Managers use inventory reports to plan reorders and reduce waste.
* **Staff Scheduling Module**:
  + Staff depend on a accurate and updated work schedule.
  + Managers depend on accurate scheduling to maintain workforce efficiency.
* **User Module**:
  + All users must log in securely to access system features tailored to their role.
* **Account Management Module**:
  + Allows all users to update personal information, ensuring accurate contact details for communication.
  + Facilitates management-level tasks like creating staff accounts and assigning roles.

**4. Challenges**

* **Integration**:
* Ensuring smooth communication between modules like reservations, orders, and inventory.
* Linking user accounts with role-specific access across modules.
* **Security**:
  + Safeguarding customer and staff data, including login credentials and sensitive order details.
  + Ensuring role-based access to sensitive features like inventory and staff management.
* **Reliability**:
  + Providing uninterrupted service, especially during peak hours.
* **Scalability**:
  + Allowing the system to handle increasing numbers of reservations and orders as the restaurant grows.

**5. System View**

The restaurant management system will integrate six core modules:

* **User Module**:
  + Provides secure login functionality.
  + Categorizes users into staff (waitstaff, kitchen staff) or customer roles.
* **Account Module:**
  + Allows users to update personal details and manage accounts.
  + Enables management to create accounts and assign roles.
* **Reservations Module**:
  + Supports online bookings with real-time table availability.
  + Enables staff to manage reservations and notify customers with reminders.
* **Order Management Module**:
  + Allows waitstaff to input and track orders, while kitchen staff manage statuses.
* **Inventory Management Module**:
  + Tracks inventory in real-time, alerts staff on low stock, and facilitates reordering.
* **Staff Scheduling Module**:
  + Helps managers create and manage schedules while accommodating staff requests.