

Phase II: Business Process Modeling Explanation

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Smart Restaurant Order & Kitchen Management System

1. Process Scope & Objectives

This Business Process Model (BPMN) defines the end-to-end workflow for the **Smart Restaurant Order System**. The scope covers the lifecycle of a dining transaction, from the customer's initial order to the final payment settlement.

The primary objective is to replace manual, error-prone paper ticketing with a database-driven workflow that synchronizes the Front of House (Waiters) with the Back of House (Kitchen). This ensures data accuracy and faster service delivery.

2. Key Actors' & Responsibilities

- **Customer:** The external actor initiating the demand and providing revenue.
- **Waiter:** The primary interface for data entry and customer service.
- **Kitchen Staff:** Operational staff whose workflow is dictated by the system's prioritized queue rather than manual tickets.
- **System (Oracle DB):** The central Management Information System (MIS) actor responsible for data validation, inventory updates, and logic execution.

3. MIS Relevance & Automation

This process demonstrates MIS capabilities through three key automation points handled by PL/SQL logic:

- **Real-time Validation:** The "*Ingredients Available?*" decision node prevents orders for out-of-stock items, solving the business problem of kitchen rejections (Trigger: TRG_VALIDATE_STOCK).
- **Queue Logic:** The system replaces manual ticket shuffling with a digital queue that prioritizes orders based on preparation time and arrival order (Procedure: SP_ADD_TO_QUEUE).
- **Automated Alerts:** The SMS trigger eliminates the need for waiters to check the kitchen status physically, optimizing labor efficiency (Trigger: TRG_SEND_SMS).

4. Analytics Opportunities

By digitizing this flow, the system captures critical timestamps at every handoff (Order Time, Start Cook Time, Ready Time). This enables the calculation of Key Performance Indicators (KPIs) such as **Average Wait Time** and **Kitchen Throughput Rate**, which will be visualized in the Phase VIII BI Dashboard.