Deployment Plan - Online Restaurant Management System

1. Introduction

1.1 Purpose

This document presents a detailed design for the Online Restaurant Management System. It provides an in-depth overview of the system architecture, including database design, API structure, scalability considerations, and security aspects. Additionally, it outlines the system components and the tables used in the database.

1.2 Scope

This system covers customer operations (such as order creation, management, and evaluation), staff operations (for order management, verification, and preparation), and administrative operations (including status analysis and reporting). The system will be accessible both via mobile devices and web browsers, providing a comprehensive solution for all restaurant management needs.

1.3 Target Audience

- DevOps Engineers
- System Administrators
- Developers
- QA Engineers

2. System Overview

2.1 High-Level Architecture

The system follows a three-tier architecture:

• Presentation Layer: Web and mobile applications.

• Business Logic Layer: RESTful API service.

• Data Layer: Relational database (PostgreSQL).

Technology Stack:

• Frontend: React.js / Vue.js (Web), React Native (Mobile)

• Backend: Node.js / Express.js or Django / Flask

• Database: PostgreSQL

3. System Components

3.1 Customer Management Module

- Display customer information
- Account creation
- Includes placing reservations

3.2 Reservation Management Module

- Displays order date information
- Shows the order preparation status
- Allows customers to write notes regarding their order

3.3 Notifications Module

- Allows managers to see customer feedback

3.4 Payment Module

- Includes payment amount information
- Allows us to choose a payment method
- Includes payment date
- Shows payment status

3.5 Review Module

- Contains comments
- Has a scoring system for food, staff, and the restaurant

3.6 Menu

- Contains information such as the name and price of dishes
- Categorizes items
- Provides information about allergenic products

3.7 Staff

- Entering staff information
- Determining staff roles

4. Database Design

Customer Table

Column	Type	Description
id	INT (PK)	Unique customer identifier
name	VARCHAR(50)	Customer's first name
surname	VARCHAR(50)	Customer's last name
email	VARCHAR(100)	Unique email address
phone_number	VARCHAR(15)	Customer's phone number
password	VARCHAR(255)	Hashed password

Tables Table

Column	Type	Description
id	INT (PK)	Unique table identifier
capacity	INT	Maximum seating capacity
status	ENUM	(‘reserved’, ‘empty’)

Reservation Table

Column	Type	Description
id	INT (PK)	Unique reservation identifier
customer_id	INT (FK)	Reference to Customer (customer_id)
date	DATE	Reservation date
time	TIME	Reservation time
order_status	TEXT	('pending', 'confirmed', 'canceled')
status	TEXT	('active', 'completed', 'canceled')
call_waiter	BOOLEAN	Request waiter assistance
advance_payment	BOOLEAN	Indicates advance payment status
in_restaurant	BOOLEAN	Is customer in restaurant

Roles Table

Column	Type	Description
id	INT (PK)	Unique role identifier
roleName	TEXT	Role name (e.g., Manager, Chef,Waiter)

Staff Table

Column	Type	Description
id	INT (PK)	Unique staff identifier
name	VARCHAR(50)	Staff member's first name
surname	VARCHAR(50)	Staff member's last name
phone_number	VARCHAR(15)	Staff member's phone number
email	VARCHAR(100)	Staff member's email
role_id	INT (FK)	Reference to Roles (id)
password	VARCHAR(255)	Hashed password

Menu Table

Column	Type	Description
id	INT (PK)	Unique menu item identifier
category_id	INT (FK)	Reference to Category (id)
itemName	VARCHAR(100)	Menu item name
price	DECIMAL(10,2)	Price of the menu item
allergens	TEXT	Allergenic information

Category Table

Column	Type	Description
id	INT (PK)	Unique category identifier
category_name	TEXT	Name of the category(‘food’, ’drinks’, ‘desserts’)

Order Table

Column	Type	Description
id	INT (PK)	Unique order identifier
reservation_id	INT (FK)	Reference to Reservation (id)
item_name	VARCHAR(100)	Ordered item name
quantity	INT	Quantity of ordered item

Review Table

Column	Type	Description
id	INT (PK)	Unique review identifier
reservation_id	INT (FK)	Reference to Reservation (id)
comment	TEXT	Review comment
food_rate	INT (1-5)	Food rating (1 to 5)
staff_rate	INT (1-5)	Staff service rating (1 to 5)
restaurant_rate	INT (1-5)	Restaurant ambiance rating (1 to 5)

Notifications Table

Column	Type	Description
id	INT (PK)	Unique notification identifier
reservation_id	INT (FK)	Reference to Reservations(id)
notification_type	**TEXT**	('call waiter', reservation update)
text	TEXT	Notification content

Payment Table

Column	Type	Description
id	INT (PK)	Unique payment identifier
reservation_id	INT (FK)	Reference to Reservation (id)
amount	DECIMAL(10,2)	Total payment amount
payment_method	VARCHAR(50)	Payment method (e.g., Cash, Card)
status	**TEXT**	('pending', 'completed', 'failed')
payment_date	DATETIME	Date and time of payment

Conculusion

This document outlines the design and development phases of the online restaurant ordering system's data management. It details the system architecture, including system data management (database), API structure, security, and scalability considerations. The system will be developed iteratively, following Agile methodologies.