

# Database Schema for Food Ordering Website

## Introduction:

The database schema for a food ordering website plays a crucial role in organizing and storing the data required for the system's functionalities. This document outlines the proposed database schema for the food ordering website, including the entities, relationships, and attributes.

### 1. Entities and Relationships:

The database schema for the food ordering website consists of several entities that capture different aspects of the system. The primary entities and their relationships are as follows:

#### - User:

- Stores information about registered users of the website.
- Has a one-to-many relationship with Orders (one user can place multiple orders).
- Attributes: UserID (Primary Key), Name, Email, Password, Address, Phone.

#### - Restaurant:

- Represents individual restaurants available for food orders.
- Has a one-to-many relationship with MenuItems (each restaurant can have multiple menu items).
- Attributes: RestaurantID (Primary Key), Name, Address, OpeningTime, ClosingTime.

#### - MenuItem:

- Represents individual food items offered by restaurants.
- Belongs to a specific restaurant (one-to-many relationship with Restaurant).
- Attributes: MenuItemID (Primary Key), RestaurantID (Foreign Key), Name, Price, Description, Quantity, PictureURL.

#### - Order:

- Represents individual food orders placed by users.
- Belongs to a specific user (one-to-many relationship with User).
- Has a many-to-many relationship with MenuItems (an order can contain multiple menu items, and a menu item can be part of multiple orders).

- Attributes: OrderID (Primary Key), UserID (Foreign Key), OrderDate, TotalAmount.

## 2. Database Schema:

The proposed database schema for the food ordering website can be represented using the following tables:

### - User Table:

- Columns: UserID (Primary Key), Name, Email, Password, Address, Phone.

### - Restaurant Table:

- Columns: RestaurantID (Primary Key), Name, Address, OpeningTime, ClosingTime.

### - MenuItem Table:

- Columns: MenuItemID (Primary Key), RestaurantID (Foreign Key), Name, Price, Description, Quantity, PictureURL.

### - Order Table:

- Columns: OrderID (Primary Key), UserID (Foreign Key), OrderDate, TotalAmount.

### - OrderMenuItem Table (to represent the many-to-many relationship between Order and MenuItem):

- Columns: OrderID (Foreign Key), MenuItemID (Foreign Key), Quantity.

## 3. Relationships and Constraints:

- The User and Order tables have a one-to-many relationship, where a user can have multiple orders.
- The Restaurant and MenuItem tables have a one-to-many relationship, where a restaurant can have multiple menu items.
- The Order and MenuItem tables have a many-to-many relationship, facilitated by the OrderMenuItem junction table.
- Foreign key constraints ensure referential integrity and maintain data consistency across tables.

## Conclusion:

The proposed database schema for the food ordering website provides a structured and efficient way to store and manage user information, restaurant details, menu items, and orders. The defined entities and relationships capture the core functionalities of the system, facilitating seamless data retrieval and manipulation. This schema serves as a foundation for building the database and supporting the overall functionality of the food ordering website.