The Design and Implementation of Takeout Order System

Database Purpose

This system implements the function of food take-out. Review, customer, order and restaurant are four major modules. This system will help to collect data of customer consumption habit, reviews, favorite dishes, restaurant, location and other factors. It can be used by restaurants, marketing and sales.

Business Problems

- Implement a system for take out order.
- Provide restaurants, marketing team and sales with data and help to
- This system will help collection and have a briefing statistic about restaurant, dishes, locations and then it can help them manage more efficiently.
- For customers, since the system has already collected the information in a scientific way, it's an easy for customer to search their daily favorite dish.
- This system has the mission to collect data like customer's favorite dishes and what time of a day they want to order food most and so on. This is meaningful for future research.

Business Rules

- Each restaurant may have zero or more reviews
- Each restaurant may have zero or more reviews
- Each restaurant may have zero or more dishes
- Each restaurant may have zero or more employees
- Each customer will give one or more reviews
- Each customer may have zero or more payments
- Each customer may have zero or more Orders
- Each payment will be made by one customer
- Each payment will correspond to one order
- Each order will correspond to one customer
- Each order will have one payment
- Each order may have one or more order Item
- Each order Item will correspond to one order
- Each order Item will correspond to one dish
- Each dish may correspond to zero or more order Item
- Each dish will belong to one restaurant
- Each promotion will belong to one restaurant
- Each employee will work for one restaurant
- Each employee may correspond to one or more employee weekly schedules
- Each employee may appear in zero or more deliver record
- Each employee weekly schedule may have zero or more shifts
- Each shift may correspond to zero or more employee weekly schedules
- Each deliver record will correspond to one employee
- Each deliver record will correspond to one order
- Each review will be made by one customer
- Each review will be made to one restaurant

Design Decisions

Entity Name	Why Entity Included	How Entity is Related to Entities
Restaurant	This is key module of a food take-out system. I will include the information like location, style hours and so on. They are very important factors to evaluate a business.	It is related to review, promotion, employee and dish. A restaurant should have employee and dishes to be called restaurant. If one wants to promote itself it may have some promotions. Reviews are very important rate for a restaurant.
Customer	This is a key module in our take-out system. It will include customer informations. Besides basic information, I added gender to get more information for consumption habits of customer.	It is related to review, payment, order. The customer
Employee	This entity is used for better management of a restaurant.	It is related to restaurant, employee schedule and deliver record.
Review	This entity is very important in the design. People can search and view reviews of dishes and restaurants. Data collection for this entity will provide effective prediction of people's view of food and restaurant.	It is related to customer and restaurant. It will help both restaurant and customers to get to know each group.
Payment	This is a record of payment method, amount. This will help investigators to know the fact like what kind of payment method is popular and so on.	It is related to customer and order. Customers can make payments and complete orders.
Order	Order is a key module. It will include order dishes, customers and restaurant information, order time and status. This will help us to get better knowledge of what kind order is the most and so on.	It is related to payment, order item and customer.

Promotion	This entity is belong to restaurants. With collection of data, we will know what kind of promo was used more and if the promotion really brings more business.	It is related to restaurant. Cause each promo will be unique for each restaurant.
Dish	This entity provides basic information of a dish. The category, price and ingredient attribute will have researchers get better investigation about dishes.	It is related to restaurant and order item.
Deliver Record	This entity keep the record of delivery, deliver staff and customer information. Will help further investigation of habit of order and distribution or deliveries.	It is related to employee and order.
Shift	This is an entity to describe working time of an employee. It is for better management. It will give a clear guide for shifts.	It is directly related to employee weekly schedule
Order Item	This entity is a bridge table between dish and order. Will avoid many to many data redundant problem.	It is related to order and dish
Employee Weekly Schedule	This entity is for better restaurant management.	It is related to shif and employee