

Phase 1 - Preliminary Conceptual Design

Team

Michell Kuang

Brandon Tran

Brandon Le

Connor Kobel

Manuel Beltran

Business Rules

- The All You Can Eat Sensational Suicide Sunday Brunch will have a fixed rate dependent on the age of the customer. Ages 0-2 eat free; 3-13 pay \$13.99; 14+ pay \$19.99.
- Phone or eat-in orders must meet a minimum of \$15 if a customer wishes to pay by debit or credit card.
- An automatic gratuity charge of 18% will be applied to all eat-in orders for parties of 6 or more people.
- Phone or eat-in order payments can be split between at most 3 debit or credit cards.
- A table can be reserved for parties of 8 or more people.

Class Definitions

- Account - A recorded description of a customer on a restaurant's system that keeps track of that customer's basic information and their accrued Miming's Money
- A La Carte - A food item on a menu that is ordered as an individual item rather than as part of a combo
- Buffet - A meal in which people can serve themselves to an endless amount of a variety of foods for a fixed price
- Card - A form of payment that is a card issued by a bank, which can be a debit or credit, that can be split between at most 3 cards, and can only be used on orders of \$15 or more
- Cash - A form of payment that is a physical piece of money
- Chef - A person who works as a cook professionally, typically in a restaurant or as a personal cook for someone
- Corporation - A group of people, usually a company, that is legally seen and acts as a single entity
- Customer - A person or group of people that buys goods and or services from a business, either at a physical shop or online
- Customer Account- a report of a member spending and rewards.
- Customer Order- A history of customers and their orders.

- DishWasher - A person who is employed, typically at a restaurant or other food business, to wash dirty dishes
- Eat-In - Referring to a meal that is ordered and eaten inside of a restaurant rather than ordering it to-go
- Employee - A person who is employed at and paid to work at a business
- HeadChef - A professional cook who oversees all the other professional cooks at a restaurant, and designs recipes that will be used to create dishes that will be served at that restaurant
- Individual - A single person who is a customer
- Job - A position for which someone is paid for the work that they do, either at a business or as a personal hire
- LineCook - A person who works as a cook in a restaurant and is assigned to one or more stations of food preparation, such as frying, grilling, roasting
- Maitre d' - A person who is employed at a restaurant, who welcomes guests and seats them at sections for specific wait staff so that the work load is evenly distributed
- Member- A customer who has chosen to give information to the restaurant to remember for next time, and is part of Miming's repeating customer group that can accrue \$1 of Miming's Money for every \$10 they spend
- Mentorship - A relationship between an experienced person and another less-experienced person in which the former provides guidance and knowledge to the latter
- Menu - A type of meal, such as lunch or buffet, at a restaurant or other food business that is typically represented as a printed list of food items that are served at that business for a certain price
- Menu_MenuItem - An association class that represents the relationship between Menu and MenuItem
- MenuItem - A food item that is sold at a restaurant or food business for a certain price, that can be purchased for eat-in or to-go
- Order - The list of menu items purchased by a customer at a restaurant or food business
- OrderDetail - An association class that represents the relationship between Menu-MenuItem and Orders
- PartTimeStaff - A person who is partially employed at a business (works less than 30 hours per week) that gets paid a set wage per hour of work on a biweekly or monthly basis
- Payment - A form of money in which an order is paid by a customer to the business
- SalaryStaff - A person who is fully employed at a business (works more than 30 hours per week) that gets paid a weekly set rate on a biweekly or monthly basis
- Shift - The specific times during the day which an employee of an establishment work
- SousChef - A person who works as a cook at a restaurant that is second in command in a kitchen, and is an expert at preparing a certain set of menu items

- Table - A piece of furniture at a restaurant that the Maitre'd seats a customer to eat at, that is looked over and served by a WaitStaff
- To-Go - An alternative way of eating food at a restaurant but off the premises
- WaitStaff - A person whose job is to serve customers at their table at a restaurant

Association Definitions

- A member is a customer.
- A member can be an individual member.
- A member can be a corporation member.
- A member can be an individual and a corporation member.
- One member has one and at most one account.
- One account is owned by one and at most one member.
- A customer can be an anonymous customer.
- One job is performed by zero and at most many employees.
- One employee has one and only one job.
- One manager supervises zero and at most many employees.
- One employee is supervised by one and only one manager.
- An employee can be a salary staff.
- An employee can be an hourly staff.
- Hourly Staff can be a Maitre'd, Dishwasher, or WaitStaff.
- Salary Staff can be a chef.
- A chef can be a head chef.
- A chef can be a sous chef.
- A chef can be a line cook.
- One sous chef mentors zero and at most many mentorships.
- One sous chef is mentored in zero and at most many mentorships.
- One shift has one and only one head chef.
- One shift has one and at most many sous chefs.
- One shift has one and at most many line cooks.
- One shift has one and at most many maitre d's.
- One shift has one and at most many dishwashers.
- One shift has one and at most many wait staff.
- A maitre d' is an hourly staff.
- A wait Staff is an hourly staff.
- A dishwasher is an hourly staff.
- A wait staff serves one and at most many tables.
- A table is served by one and only one wait staff.
- One Maitre d' assigns one to many tables.
- One table is assigned by one and only one Maitre d'.

- One mentorship teaches one and only one menu item.
- One menu item is taught in zero at most many mentorships.
- One menu has one and at most many menu items.
- One menu item is in one and at most many menus.
- A Menu_MenuItem describes the menu items in a menu.
- A menu can be a buffet.
- A menu can be a la carte.
- An order can be a To-Go order.
- An order can be an Eat-In order.
- One Eat-In order is sat at one and at most many tables.
- One table seats zero and at most one Eat-In order.
- One customer makes one and at most many orders.
- One order is made by one and only one customer.
- One payment has one and only one order.
- One order has one and only one payment.
- Card is a type of payment.
- Cash is a type of payment.
- A payment can be card or cash.
- One order has one and at most many Menu_MenuItems.
- One Menu_MenuItem is in one and at most many orders.
- An orderdetail describes the Menu_MenuItems in an order.

Denormalization

In more than one case, we normalized our design by eliminating multivalued attributes with multiplicity notation in many of our classes. Such cases include the menu item, which can fall into many categories such as appetizers, soups, etc., and the line cook, who can be assigned to more than one station. We also had a case of normalization in which we didn't include a specialized class for an anonymous customer. Customers can be members, but can also be anonymous. However, anonymous customers only provide a name, which is an attribute of the Customer class, so we normalized and excluded the "AnonymousCustomer" specialized class.

We also had cases of denormalization in our design, such as with the SnailMail and OfficeAddress attributes in Individual and Corporation members. In any given address, the city and state of an address can be determined by the zip code, but we felt it unnecessary to have those explicitly separated because the design is already so big. Another case of denormalization can be seen with our decision to include the empty Chef class as the parent class of the different types of chef. Although it has no additional unique attributes in it apart from SalaryStaff, we wanted it there to show that all the different types of SalaryStaff can be classified as a Chef.