

Food Delivery Management System

For our project, we have decided to develop a food delivery management system.

This system, as the name implies, will manage different aspects of various food deliveries.

To effectively manage food deliveries, the system will implement the following entities:

- **Order:** This class will store various information about the order that has been placed. This information includes:
 - A unique order ID to identify the specific order.
 - The contents of the order (food and drinks) as well as the cost for each item.
 - The time and date of the order that was placed.
 - The address where the order was placed.
 - The customer who placed the order.
 - The person who delivered the order.
- **Customer:** This class will store various information about the customer. This information includes:
 - The customer's full name.
 - The customer's contact information (phone number, email address).
 - A unique customer ID to help more easily find the customer within the system.
 - The customer's order history.
 - The customer's current address or addresses. Multiple addresses may be associated with one customer as they may place an order at another location that is separate from their home address (i.e. their workplace).
- **Delivery Person (Employee):** This class will store various information about the employee delivering the food. This information includes:
 - The employee's full name.
 - The employee's contact information.
 - An employee ID to identify the specific employee who delivered the order.
 - The employee's delivery history.
 - The vehicle associated with the employee.

- Restaurant: This class will store various information about the restaurant. This information includes:
 - The restaurant's full name
 - The restaurant's locations
 - The restaurant's phone number
 - The restaurant's email
 - The restaurant's open hours
- Menu: This class will store various information about the menu. This information includes:
 - The dishes name
 - The components of the dish
 - A dish ID to identify the specific dish
 - The sides that are allowed with each dish
 - The price of each dish
- Payment: This class will store various information about the payment. This information includes:
 - The available payment methods
 - The payment method used
 - The tax that will be applied to the order
 - The total cost of the order

Some additional entities will be implemented as well to ensure that all necessary components are a part of the management system. These additional entities include:

- Delivery Vehicle: This class will store the necessary information about the delivery person's vehicle. This is to ensure that the vehicles used to deliver food are monitored and accounted for while the delivery person is delivering food. This information includes:
 - The vehicle's year, make, and model.
 - Physical information about the vehicle, such as its color, body style.
 - The vehicle's license plate number.
 - A unique vehicle ID number to identify the vehicle associated with an employee. (Note: This is not the same as the VIN number issued by the manufacturer).
 - The employee's ID number.
- Address: This class will store basic information about the customer's delivery address. This information will include:
 - Address lines 1 and 2
 - City, state, and zip code
 - The customer that the address is associated with.

- Whether or not the address is primary. This will be stored in a Boolean variable.
- Inventory: This class will store basic information about the current inventory of the restaurant. This information includes:
 - The start of day inventory
 - The loss in inventory after each order
 - The new total inventory
 - The accumulated loss of inventory that will need to be purchased before the next day