Brainstorming Project

- Define Scope: Food Ordering System.

- Mandatory Objects: SuperAdmin, Admin, Clients, Restaurants.

- Software Type: Customized Software.

-SuperAdmin:

- registered in the system (Seeding Data)

- can login (Name, Password)

- manage (crud) restaurants

- manage Clients

- manage Drivers

- Can Manage Admins

- Enable/ Disable for the payment method (generally)

- Monitor transaction & fraud

- Process the Refunds

- Manage payout to restaurants

- Manage the Notifications

- see the food

- see the price of food

- track the order current location

- can see the location of user

- can see the location of restaurants

- can see the orders of clients

- can see the chat between client and restaurant

- can see the chat between client and driver

- can see the chat between Driver and restaurant

- can see the rating of the restaurants

- can see the rating of the driver

- can see the rating of food

- can see the rating of client to each restaurant

- can see the discount on food

- can manage Promo Code

- can see the card type

- Can Update His Information

- Can logout

- Admin:

- Signup to the system

- Login System

- Manage his own restaurant

- can see the information of client (name, phone number, location)

- rating of restaurant (not client rating to his restaurant)

- can see the payment method

- can see the details of order (number of food, quantity of item, spicy or not )

- Manage food

- Manage Price (Total Amount of food, Discount if any)

- can see the number of orders for each element

-Client:

-Signup (Full Name, Email, Birth of Date, Phone Number, Set Password).

-Login (Email and password), (via social media).

-Reset Password (Forget Password-->OTP-->Update, then login)

-Save info in remember me check (Email, Password)

-Manage His Account (Name, Email, Phone Number, Password, Address).

--Can see his own location

--Can search for food.

-- Can search for restaurants.

-- Can see the restaurants' ratings.

-- Can select Restaurants

-- Request food

-- Add food to favorites list

-- Choose types of food.

-- See notifications he received from the application.

-- Delete food from the favorites list.

-- See the discount

-- See product description.

-- Specify amount of spicy.

-- Specify the quantity

-- Add to Cart

-- Filter price of the food.

-- Filter the discount.

-- Select on the category

-- Select distance location (1km,5km).

-- Choose the Dish

- View a cart.

- See total price, delivery charge, and discount.

- Delete food from Cart

- Increase, Decrease quantity of food from cart

- Placing the order (Ordering of order)

- See History of his previous food requests

- Delete from the history

- Reorder food from history

-- Put his location

-- Use promo code

-- Choose the payment method.

-- Choose type of visa.

-- Manage the card content

-- Manage card info (Card Name, Card Number, Expire Date, CVC card)

-- Pay the order

-- Track his order

-- See order status (order place (on restaurant, on way), delivered) order id, distance

- See driver information (name, rating, image)

- Chat with the driver.

- Make a call to the driver.

- Watch live track

- See his personal information

- Activate/ Deactivate notifications.

- Cancel notifications.

- Modify personal information.

- Logout

-Restaurant:

- Manage restaurant info (name, logo, contact, description, Location, opening hours).

- Enable/ Disable Status of restaurant.

- Manage Categories of Restaurants (Fast Food, Japanese Food, Sea Food, ….)

- Manage Categories of food (Burgers, Pasta, Drinks)

- Manage Food Items (Image, Name, Price, Description).

- Apply Discount and Promotions

- Enable/ Disable food

- Track number of orders per food

- Updates order status (Pending, Preparing, Ready, Completed, Cancelled).

- Assigns order for delivery (manual/auto-assigned to drivers).

- Views order details (items, quantity, spice level, total price).

- Cancels orders if necessary (e.g., item unavailable, fraudulent request).

- Tracks live status of orders.

- Views **payment methods used** (Cash, Credit Card, Wallet).

- Monitors **successful & failed transactions**.

- Tracks **revenue & payouts** from SuperAdmin.

- Manages **refund requests** (if authorized by SuperAdmin).

- Views client details (name, phone number, delivery address).

- Checks customer order history (for repeat customers).

- Reads customer ratings for the restaurant.

- Responds to customer complaints (if allowed).

- Views restaurant’s overall rating based on customer feedback.

- Receives notifications (new orders, payments, reviews, support messages).

- Chats with clients for order updates/issues.

- Chats with drivers for order pickup coordination.

- Chats with SuperAdmin for support/escalations.

- Logout

- Summarize system objects:

- Shared Attribute: id, createdby, updatedby, isActive, updatedate, creationdate.

- SuperAdmin: FullName, Password.

- Admins: FullName, Email, Password, PhoneNumber.

- Clients: FullName, Email, Password, Birthdate, Address, Location, isVerified

- Restaurants: FullName, Logo, Phone, Email, Description, Location, OpeningHours, Status,   
 Category (fast food, Italian, ….)

- Food Categories: Name (Burger, pasta, Drinks, …)

- FoodItems: Name, Image, Price, Description, Discount (if any), isAvailable, SpicyLevel

- Order: Status, TotalAmount, DiscountApplied, PaymentMethod, DeliveryCharge, isRefunded

- OrderDetails: Quantity, PricePerUnit, TotalPrice, SpicyLevel

- Payment: PaymentMethod, CardType, TransactionStatus

- Driver: Name, PhoneNumber, VehicleInfo, Location, Rating, isAvailable

- Delivery: Status, CurrentLocation, EstimatedArrivalTime

- PromoCode: Code (unique), DiscountValue, ValidFrom, ValidTo, isActive

- Ratings & Reviews: RatingValue.

- Chat: MessageText, MessageType

- Notification: Title, Message, NotificationType, isRead

- Generalization:

- Payment: Card, Wallet, Cash

- Specialization:

- Payment: **Card Payment, Wallet Payment (Payment Parent, Card ,Wallet Children)**

**- Chat: (Client-Admin Chat, Client-Driver Chat, Client-Restaurant Chat, Driver-Restaurant Chat)**

**So, Chat Table Only.**

- Define Relationships:

Inheritance:

Relation between Shared Properties as Parent and the parent entities as children.

(Id, CreationBy, CreationDate, UpdatedBy, UpdatedDate, isActive)

SuperAdmin

Admins

Clients

Restaurants

Food Categories

FoodItems

Order

OrderDetails

Payment

Driver

Delivery

PromoCode

Ratings

Chat

Notification

Composition:

SuperAdmin - Admins ---> (1: M)

SuperAdmin can manage Admins

Admin - Restaurant ---> (1: M)

Admin can manage one or more Restaurants.

Restaurants - Food Categories ---> (1: M)

Restaurants can have many Food Categories.

Food Categories - FoodItems ---> (1: M)

Food Categories can have multiple Food Items.

Food Item belongs to one Food Category.

Restaurants - FoodItems ---> (1: M)

Restaurants can manage many Food Items.

Clients - Orders ---> (1: M)

Clients can place multiple Orders.

Each Order belongs to a single Client.

Orders - OrderDetails ---> (1: M)

Orders can have multiple OrderDetails.

Each OrderDetails belongs to a single Order.

OrderDetails - FoodItems ---> (M: 1)

Many Order Details can refer to a single Food Item.

Orders - Payment ---> (1: 1)

Each Order has one associated Payment.

One Payment corresponds to a single Order.

Drivers - Orders ---> (1: M)

Drivers are deliver Orders.

One Order can have a single Driver assigned.

One Driver can handle multiple Orders.

Orders - Delivery ---> (1: 1)

One Order has one Delivery status

PromoCode - Orders ---> (1: M)

A PromoCode can be used in multiple Orders.

Each Order can use one PromoCode

Restaurants - Ratings ---> (1: M)

Restaurant receive Ratings from Clients.

One Restaurant can have many Ratings.

FoodItems - Ratings ---> (1: M)

One FoodItems can have multiple Ratings.

Clients - Ratings ---> (1: M)

One Client can leave many Ratings

Clients - Notifications ---> (1: M) \*

Clients can receive multiple Notifications.

Each Notification is linked to one Client.

Chat - Clients ---> (1: M)

Chats between Clients and Admins, Drivers, or Restaurants.

One Client can have multiple Chat

A Chat can contain multiple messages exchanged.

Chat- Drivers, Admins, Restaurants

Chats between Clients and Drivers (for delivery updates), Admins (for queries), or

Restaurants (for order-related communication).

Multiple Chats can be linked to a Client and others (Admins, Restaurants, or Drivers).

Chat (M) ---> (1) Drivers/Restaurants/Admins

Association, Composition, Aggregation:

Restaurants + Food Categories = Composition

Food Categories + FoodItems = Composition

Clients + Orders = Association

Orders + OrderDetails = Composition

Orders + Payment = Composition

Drivers + Orders = Association

Orders + Delivery = Composition

Delivery is part of an Order, If the Order is deleted,

the Delivery is also deleted, as it doesn’t make sense to have a Delivery without an Order.

PromoCode + Orders = Association

Restaurants + Ratings = Association

FoodItems + Ratings = Association

Clients + Ratings = Association

Clients can provide Ratings, but the Ratings can exist independently of the Client (a rating can still exist if the client is deleted).

This is an association relationship.

Clients + Notifications = Aggregation

Notifications are sent to Clients, but Notifications do not depend on the Client for their existence. If a Client is deleted,

the Notifications might still exist

\* Lookups:

**OrderStatus** (Tracks order progress throughout its lifecycle)

StatusID (PK)

StatusName (Pending, Preparing, Ready, On the Way, Delivered, Cancelled)

**PaymentMethods** (Defines accepted payment options)

PaymentMethodID (PK)

PaymentMethodName (Credit Card, Debit Card, Wallet, Cash on Delivery, Apple Pay, Google Pay)

**DeliveryStatus** (Tracks the real-time progress of a delivery)

DeliveryStatusID (PK)

DeliveryStatusName (Assigned, Picked Up, On the Way, Delivered, Failed, Cancelled)

**RatingTypes** (Defines what type of rating is being given: restaurant, driver, food, etc.)

RatingTypeID (PK)

RatingTypeName (Restaurant, Food, Driver, Client)

**PromoCodeTypes** (Defines different types of promo codes available)

PromoCodeTypeID (PK)

PromoCodeTypeName (Percentage Discount, Fixed Amount Discount, Free Delivery)

**Lookup Tables for Categorization & Filtering**

**RestaurantCategories** (Defines the type of restaurant)

CategoryID (PK)

CategoryName (Fast Food, Seafood, Italian, Japanese, Vegan, etc.)

**FoodCategories** (Defines food grouping within restaurants)

FoodCategoryID (PK)

CategoryName (Burgers, Pasta, Salads, Desserts, Beverages)

**NotificationTypes** (Defines the types of notifications sent to users)

NotificationTypeID (PK)

NotificationTypeName (Order Update, Promo Offer, Payment Issue, New Message, System Alert)

**Lookup Tables for System Configuration**

**CardTypes** (Defines the type of payment cards allowed)

CardTypeID (PK)

CardTypeName (Visa, MasterCard, American Express, Discover)

**SpiceLevels** (Defines options for selecting spiciness of food items)

SpiceLevelID (PK)

SpiceLevelName (Mild, Medium, Spicy, Extra Spicy)

**DistanceRanges** (Defines selectable distance filters in the app)

DistanceID (PK)

DistanceRange (1 km, 5 km, 10 km)