FOOD DELIVERY SYSTEM

Team 8					
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1. OVERVIEW

May it be lunch, dinner or your late-night dessert cravings, enjoying your favorite food now is as easy as opening an app, selecting the dishes, placing your order and waiting for it to be delivered at your doorstep in no time!

Online food delivery applications are the need of the hour, not only to satisfy the consumers' long ranging preferences and requirements, but also to significantly boost the businesses of the restaurants while catering a larger customer base.

Any service that enables clients to order food from restaurants or other food establishments and have it delivered to their location is referred to as a food delivery system. The use of technology has increased the effectiveness, accessibility, and convenience of food delivery for customers while giving restaurants the chance to expand their client base. This can be done online through phone, a mobile app, or a website. The following steps are often included in the process:

1. Order placement: The consumer places an order over the phone, over the internet, or via the mobile app.
2. Payment processing: The customer can pay for their order by phone, online, or through a mobile app.
3. Food preparation: The restaurant or other eating facility makes the food in accordance with the orders of the patrons.
4. Food delivery dispatch: The food is picked up from the restaurant or other food establishment and delivered to the customer by a delivery person.
5. Delivery: The food is brought to the consumer by the delivery person, who can be followed in real-time via the website or mobile app.

Food delivery systems have become increasingly popular in recent years due to the convenience they offer and the increasing demand for home delivery services. Some popular food delivery platforms include UberEats, Grubhub, and DoorDash.

2. PROBLEM STATEMENT

Many restaurants deal with inefficiencies in their delivery operations despite the rising demand for meal delivery services. Dissatisfied consumers and lower sales are caused by lengthy waits, wrong orders, lost, or damaged food. The solution should provide real-time updates on the status of food deliveries, streamline the ordering and delivery of food, cut down on customer wait times, boost customer happiness, and lower operational expenses for restaurants by offering a dependable and effective food delivery system. In addition, the system will offer insightful data analytics to support restaurants in making strategic business decisions.

3. OBJECTIVES

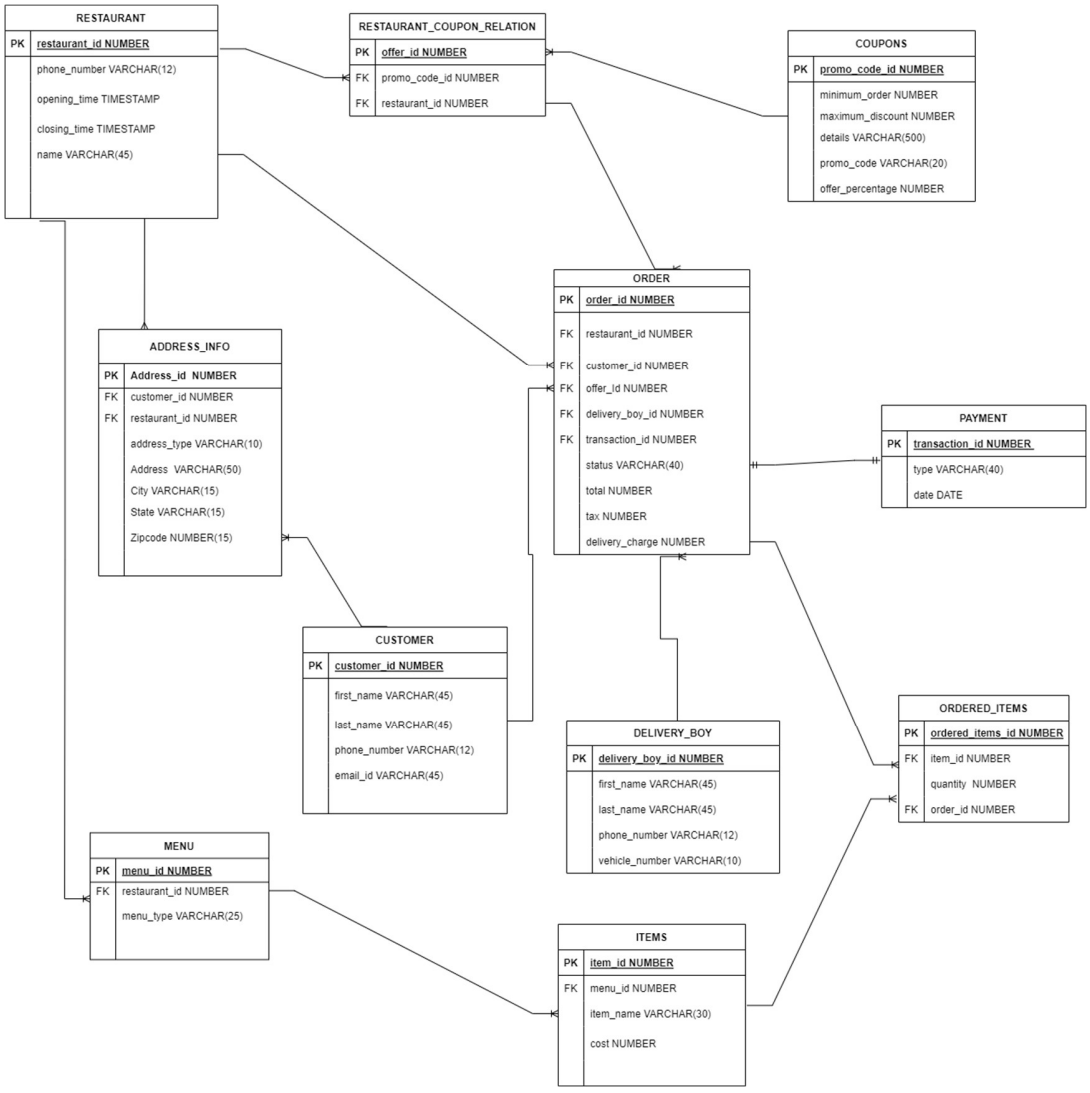
1. To build a robust system for food delivery
2. To manage real-time orders and apply necessary coupons if required
3. To streamline the entire flow from order placement to delivery
4. To analyze and derive insights on the popularity of food items, cuisines, and/or popular restaurants.
5. To find interesting avenues in terms of restaurant sales and customer acquisition
6. To implement secure payment processing and cater multiple payment methods

4. ENTITY RELATIONSHIP DIAGRAM

When it comes to designing a database, Entity Relationship (ER) diagrams play a big role.

An Entity Relationship Diagram (ERD) is a graphical representation of entities and their relationships to each other, used in database design to illustrate an organization's data requirements. It typically includes entities, attributes of entities, and relationships between entities. ERDs are used to model and design relational databases, providing a visual representation of data and the relationships between tables in a database.

Based on the business idea, we have drafted a representation of the ER model containing tables with relations.



5. BUSINESS RULES (Draft Version for Project_1)

What are the users for our Project and what all tasks they can perform(draft):

With the help of this database management system, the ……

1. Admin can do all the operations.
2. Customers can view the menu, order the items and make payment for that order and track the status.. They can also view offers for any restaurant and apply promo code.
3. Restaurant operators can see the orders placed by customers, can add offers available for their restaurant, can update their menu and can check if the payment is made.
4. Delivery boys can see the status of the orders, name and address of the restaurant and customers.

6. TABLES

Based on the business, we have created an idea of how many tables this system will consist of. These tables will define the database through column name, data type, constraints, and the description of those entities.

i. RESTAURANT:

This table will store the details of all the restaurants. Each restaurant will have a specific id, which will act as the primary key.

Column Name	Data Type	Constraints	Description
restaurant_id	NUMBER	PK	
name	VARCHAR	NOT NULL	name of the restaurant
phone number	VARCHAR	NOT NULL	contact number of the
opening_time	TIMESTAMP		opening time of restaurant
closing_time	TIMESTAMP		closing time of the restaurant

ii. MENU:

Each restaurant will have a different menu with custom made with the food items being offered. The menu table will store this information.

Column Name	Data Type	Constraints	Description
menu_id	NUMBER	PK	
restaurant_id	NUMBER	FK, NOT NULL	
menu_type	VARCHAR(45)	NOT NULL	type of menus

iii. ITEMS:
A generic table which contains all the details regarding the food items that have been created on the system. Each restaurant has a tailored list of food items offered in their menu.

Column Name	Data Type	Constraints	Description
menu_id	NUMBER	PK	
restaurant_id	NUMBER	FK, NOT NULL	
menu_type	VARCHAR(45)	NOT NULL	type of menus

iv. CUSTOMER:
The customer table has details of the customers who use the system to order food.

Column Name	Data Type	Constraints	Description
customer_id	NUMBER	PK	
first_name	VARCHAR(45)	NOT NULL	first name of customer
last_name	VARCHAR(45)	NOT NULL	last name of customer
phone_number	VARCHAR(12)	NOT NULL	contact number of
email_id	VARCHAR(45)		email id of customer

v. ADDRESS_INFO:
The addres_info table will cater to the need of having multiple addresses for each customer and restaurants.

Column Name	Data Type	Constraints	Description
address_id	NUMBER	PK	
customer_id	NUMBER	FK, NOT NULL	
restaurant_id	NUMBER	FK, NOT NULL	
address	VARCHAR(50)	NOT NULL	address line 1
city	VARCHAR(15)	NOT NULL	city name
state	VARCHAR(15)	NOT NULL	state name
zipcode	NUMBER	NOT NULL	pincode number
address_type	VARCHAR(10)	NOT NULL	customer or restaurant

vi. DELIVERY_BOY:

The table has the information of the delivery boy who will pick up the order from the restaurant and deliver it to the customer.

Column Name	Data Type	Constraints	Description
delivery_boy_id	NUMBER	PK	Id of delivery boy
first_name	VARCHAR(45)	NOT NULL	first name of delivery boy
last_name	VARCHAR(45)	NOT NULL	last name of delivery boy
phone_number	VARCHAR(12)	NOT NULL	contact number of the delivery
vehicle_number	VARCHAR(10)	NOT NULL	vehicle number of delivery boy

vii. COUPONS:

The coupons table contains details of all the available offers or discounts which the restaurants select and apply.

Column Name	Data Type	Constraints	Description
promo_code_id	NUMBER	PK	
promo_code	VARCHAR(20)	NOT NULL	promo code for any coupon
offer_percentage	NUMBER		
minimum_order	NUMBER	NOT NULL	minimum order required to avail
maximum_discount	NUMBER		maximum discount on any
details	VARCHAR(500)	NOT NULL	details of the offer

viii. RESTAURANT_COUPON_RELATION:

The table relates the restaurants table to the offers table.

Column Name	Data Type	Constraints	Description
offer_id	NUMBER	PK	
restaurant_id	NUMBER	FK, NOT NULL	
promo_code_ic	NUMBER	FK, NOT NULL	

ix. ORDER:

The order table fetches all the necessary data regarding the orders placed by a customer and adds upon the details required for final payment and order placement and status.

Column Name	Data Type	Constraints	Description
order_id	NUMBER	PK	
restaurant_id	NUMBER	FK, NOT NULL	
customer_id	NUMBER	FK, NOT NULL	
offer_id	NUMBER	FK, NOT NULL	
delivery_boy_ic	NUMBER	FK, NOT NULL	
transaction_id	NUMBER	FK, NOT NULL	
status	VARCHAR(40)	NOT NULL	status of order
total	NUMBER	NOT NULL	total cost of order
tax	NUMBER	NOT NULL	tax on the order
delivery_charge	NUMBER	NOT NULL	delivery charge on

x. ORDERED_ITEMS:

The table gives information about the quantity of the food items ordered.

Column Name	Data Type	Constraints	Description
OI_Id	NUMBER	PK	ID of Ordered Item
order_id	NUMBER	FK, NOT NULL	Id of Order
item_id	NUMBER	FK, NOT NULL	Id of Item
quantity	NUMBER	NOT NULL	quantity of ordered items

xi. PAYMENTS:

The payments table will record the payment transactions for each order placed.

Column Name	Data Type	Constraints	Description
transaction_id	NUMBER	PK	
type	VARCHAR(40)	NOT NULL	type of payment
date	DATE	NOT NULL	date when the payment was