

DNA PROJECT– PHASE I

TEAM 34

Talib Siddiqui: 2021101078

Vanshita Mahajan: 2021101102

Khushi Wadhwa: 2021101104

INTRODUCTION TO THE MINI WORLD

Our mini world / Universe of Discourse revolves around a food delivery app management that facilitates the delivery of meals from local restaurants to customers' doorstep. The database is managed by the employees of the food delivery brand which assists them in consolidating all the information about various restaurants connected to the delivery brand, its customers, their food preferences, the restaurant menu etc.

PURPOSE OF THE DATABASE

The database contains relevant information about all aspects of the food delivery app – details about the customers and their orders, the restaurants they order from that are in collaboration with the delivery company, and delivery personnel working for the company. The employees of the food delivery app can use the data to improve their algorithms for food recommendations, setting prices based on demand, providing enticing deals and offers on various occasions etc. based on trends in orders. They can also send feedback to the restaurants.

USERS OF THE DATABASE

The chief users of this database are the employees at the working unit of the food delivery company. They can analyse the trend in the food orders of customers like preferred cuisine, restaurants, etc., and use the same to provide personalised recommendations to the users and increase the delivery company's revenue.

APPLICATIONS

1. This database can be used by employees of the food delivery company to analyse each user's order history, to provide better recommendations for them

2. The Company can analyse the avg number of orders, and the ratings to decide on offers and discounts

ASSUMPTIONS

1. A customer can have different addresses for delivery – generally home location and work location
2. A delivery person can be assigned at most 1 customer ID at a time
3. There is a managerial hierarchy among the employees at the food delivery brand
4. Each rating (for restaurant, order or delivery staff) follows the 5 star rating pattern
5. Min – Max constraints essentially denotes the maximum number of occurrences of a particular entity in the database.
6. Each order is unique.

STRONG ENTITY TYPES (Attributes mentioned below each)

1. Restaurant (Entity with two key values)
 - a. Name
 - b. Outlet (Location)
 - c. Employees
 - d. Chefs
 - e. Rating
 - f. Total Number of orders
 - g. Timing for delivery
2. Customer (Entity with two key values)
 - a. Name
 - b. Cust ID
 - c. Location (Address) *multivalued*
 - d. Order History (weak entity)
 - e. Coupons *multivalued attribute*
 - f. Contact information *Composite attribute: email id, phone no*
 - g. Favourite cuisine *Derived attribute*
 - h. Most Frequent order
3. Food Delivery Company Employee
 - a. Name

- b. Employee ID – *primary key*
- c. Salary
- d. Position
- e. Contact Details

4. Delivery Staff

- a. Name
- b. ID – *primary key*
- c. Cust ID (of the customer that has been assigned to a particular guy) – *foreign key*
- d. Current Location
- e. Salary
- f. Rating
- g. Experience
- h. Contact Details
- i. Status (Free/Currently delivering)

WEAK ENTITY TYPES (Attributes mentioned below each)

1. Order

- a. Order ID – *partial key*
- b. Cust ID
- c. Items
- d. Cost
- e. Status (Delivered / On its way / Cancelled)
- f. Rating
- g. Delivery Personnel assigned
- h. Restaurant outlet

2. Reservation

- a. Reservation ID – *partial key*
- b. Restaurant outlet
- c. Cust_ID
- d. Timings
- e. The number of people

RELATIONSHIP TYPES

1. Places

- Relationship b/w Customer and Order
- Degree 2
- Min – Max constraints: Customer (0,N) , Order(1,1)
- A Customer can have 0 to N orders at a time. An order can belong to exactly one customer.

2. Prepares

- Relationship b/w Restaurant and Order
- Degree 2
- Min – Max constraints: Restaurant(0,N), Order(1,1)
- A Restaurant can have 0 to N orders at a time. An order can belong to exactly one customer.

3. Delivery

- Relationship that includes Customer, Restaurant, Delivery Staff and Order
- Degree 4
- Min – Max constraints: Customer(1,N), Restaurant(1,N), Order(1,1), Delivery Staff(1,1)

4. Books

- Relationship that includes Customer, Restaurant and Reservation
- Degree 3
- Min – Max constraints: Customer(1,N), Restaurant (1,N) Reservation (1,N)

5. Rates

- Relationship b/w Customer and Delivery Person
- Degree 2
- Min – Max Constraints : Customer (1,N) , Delivery Person (1,N)
- A customer can rate 1 to N Delivery Persons. A Delivery Person can be rated by 1 to N customers.

6. Gives Rating

- Relationship b/w Customer and Order
- Degree 2
- Min – Max Constraints : Customer (1,1) , Order (1,1)

7. Supervises

- Relationship b/w Delivery Company Employee (as Supervisor) and Delivery Company Employee (as Supervisee)
- Degree 2 (Employees participate as 2 different roles – Supervisor and Supervisee)

- Min – Max Constraints : Supervisor(1,N), Supervisee(1,1)
- A supervisor can supervise 1 to N employees. An employee can be supervised by exactly 1 supervisor.

FUNCTIONAL REQUIREMENTS

1. Retrieval

❖ Selection

- a. Retrieve data of top 10 restaurants that the Customers order most frequently from
- b. Retrieve details of all restaurants affiliated with the food delivery company

❖ Projection

- a. Show names of all Delivery Staff at a particular location.
- b. Show names of all restaurants that can take orders at a given time.

❖ Aggregate

- a. Find a Customers Favourite Restaurant based on His Order History (Ordered maximum number of times)
- b. Find avg Number of customers that have food delivered to any area .
- c. Find the delivery person who has delivered maximum orders in the past month, which in turn can be used to judge work performance.

❖ Search

- a. Search for all Customers that have “Gachibowli” in their address.
- b. Search all previous food items where the customer orders a particular food item

2. Analysis

- a. Number of restaurants that had a rating of greater than 4 in the last month.
- b. The locality that has the maximum number of active customers.

3. Modification

❖ Insert

- a. Whenever a Customer places a new order, insert the order with its attributes in the Order table

- b. Insert a new entry in the Customer table when a person signs up with the food delivery app –
- c. If a new restaurant collaborates with the delivery app, insert its tuple into the Restaurant table
- d. When a Customer books a table at a restaurant, update it in the Reservation table

❖ Update

- a. If a Delivery Company Employee is promoted/demoted, update his/her position in the Delivery Company Employee table
- b. Update the status of the order placed in the Order Table from the point it is prepared to being delivered at the customer's doorstep

❖ Delete

- a. When a restaurant is not operational anymore, delete its tuple from the Restaurant table
- b. When a delivery person quits his job, delete his details from the Delivery Staff table
- c. Delete reservation details from the Reservation table after the Customer has left the restaurant

SUMMARY

To Summarise, this database describes the entity types and relationships that exist in a food delivery company, their employees, customers and the restaurants the company is affiliated with. The company employees can use it to analyse their customers choices and orders in order to provide a better experience for the customer and rake in more subscribers for their app. They can analyse the popular food orders to decide on offers and discounts.