**Group Members:**

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**Project Proposal:**

Project Name: Online Restaurant Management System

**Case Study:**

A restaurant management system needs a robust database to streamline its operations. The system involves various entities: ingredients, food items, chefs, sellers, delivery personnel, customers, and billing. Each food item is made using multiple ingredients and is crafted by skilled chefs. Food items are sent to sellers, who collaborate with delivery personnel to supply orders to customers. Delivery personnel are responsible for ensuring orders reach customers efficiently. The customers reside at specific addresses and place orders that generate bills. The database will maintain relationships such as many-to-many (e.g., ingredients to food items and delivery personnel to customers) and one-to-many (e.g., food items made by chefs). This system ensures proper tracking of resources, transactions, and interactions within the restaurant's workflow.

A diagram of a company

Description automatically generated

**Food**

Attributes:

* F\_id (Primary Key)
* F\_Name
* F\_Price
* F\_Rating

**Seller**

Attributes:

* S\_id (Primary Key)
* S\_Name
* S\_Phone
* S\_StartingDate

**Chef**

Attributes:

* C\_id (Primary Key)
* C\_Name
* C\_Email

**Delivery Man**

Attributes:

* Dm\_id (Primary Key)
* Dm\_Name
* Transport\_num

**Customer**

Attributes:

* C\_ID (Primary Key)
* C\_Name
* C\_Address (Composite: Area, Street, House\_No)

**NORMALIZATION**

**Table: (Food – Seller)**

**UNF**: F\_ID,F\_name,F\_rating,F\_price,S\_ID,S\_name, S\_Phone,S\_startingdate

S\_Phone = multivalued attribute

**1NF**: F\_ID,F\_name,F\_rating,F\_price,S\_ID,S\_name,S\_startingdate

**2NF:** F\_ID,F\_name,F\_rating,F\_price

S\_ID,S\_Phone

S\_ID,S\_name,S\_startingdate

**3NF**: F\_ID,F\_name,F\_rating,F\_price

S\_ID,S\_Phone

S\_ID,S\_name,S\_startingdate

S\_ID,F\_ID

Foreign key: S\_ID, primary key : F\_ID

**Table: (Seller – Deliveryman)**

**UNF**: S\_ID,S\_name,S\_phone,S\_startingdate,DM\_ID,DM\_name,Transportnum

S\_Phone = Multivalued Attribute

**1NF**: S\_ID,S\_name,S\_statringdate

DM\_ID,DM\_name,Transportnum

**2NF**: S\_ID,S\_phone

S\_ID,S\_name,S\_startingdate

DM\_ID,DM\_name,Transportnum

**3NF**: S\_ID,S\_phone

S\_ID,S\_name,S\_startingdate

DM\_ID,DM\_name,Transportnum

Foreign key: S\_ID Primary Key: D\_ID

**Table: (Deliveryman – Customer)**

**UNF**: DM\_ID,DM\_name,Transportnum,C\_ID,C\_name,C\_address

**1NF**: DM\_ID,DM\_name,Transportnum,C\_ID,C\_name

**2NF**: C\_ID,C\_name,Area,Street,House

DM\_ID,DM\_name,Transportnum

DM\_ID,C\_ID

**3NF**: C\_ID,C\_name,Area,Street,House

DM\_ID,DM\_name,Transportnum

DM\_ID,C\_ID

Foreign key: C\_ID Primary Key: DM\_ID

**Table: (Food-Chef)**

**UNF**: F\_ID,F\_name,F\_rating,F\_price,CH\_ID,CH\_name,CH\_email

CH\_email = Multivalued Attribute

**1NF**: F\_ID,F\_name,F\_rating,F\_price,CH\_ID,CH\_name

**2NF**: F\_ID,F\_name,F\_rating,F\_price,CH\_ID,CH\_name

CH\_ID,CH\_email

**3NF**: F\_ID,F\_name,F\_rating,F\_price

CH\_ID,CH\_name,CH\_email

F\_ID,CH\_ID

Foreign key: F\_ID Primary Key : CH\_ID

**Table: (Customer-Bill)**

**UNF**: C\_ID,C\_name,C\_Address,B\_ID,Amount

**1NF**: C\_ID,C\_name,Area,street,house,B\_ID,Amount

**2NF**: C\_ID,C\_name

C\_ID,Area,street,House

B\_ID,C\_ID,Amount

**3NF**: C\_ID,C\_name

C\_ID,Area,street,House

B\_ID,C\_ID,Amount

Foreign key: B\_ID Primary Key: C\_ID

Table: (Food-Ingredient)

UNF: F\_ID,F\_name,F\_rating,F\_price,I\_ID,I\_name

1NF: F\_ID,F\_name,F\_rating,F\_price,I\_ID,I\_name

2NF: F\_ID,F\_name,F\_rating,F\_price

F\_ID,I\_ID,I\_name

Foreign key: F\_ID Primary Key: I\_ID

**FINALIZATION**

F\_ID,F\_name,F\_rating,F\_price

S\_ID,S\_Phone

S\_ID,S\_name,S\_startingdate

S\_ID,F\_ID

DM\_ID,DM\_name,Transportnum

C\_ID,C\_name,Area,Street,House

DM\_ID,C\_ID

CH\_ID,CH\_name,CH\_email

F\_ID,CH\_ID

I\_ID,I\_name

F\_ID,I\_ID

B\_ID,C\_ID,Amount