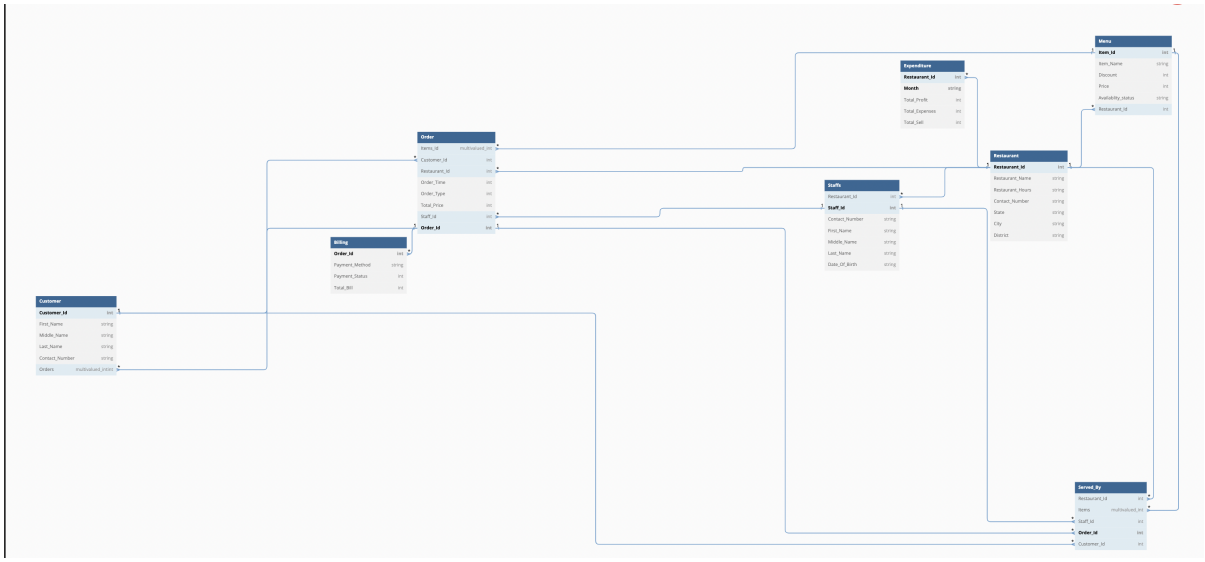
Data And Application

Pranjali Bishnoi (2021101038)
Mohammad Zaid (2021101004)
Vaibhav Agrawal (2021101019)

1. ER to Relational Model

To map ER to Relational Model, we made the following changes :

- Converted all the entities in ER into a unique relation table
- All Binary relations in ER shown by foreign key references
- 4(n>2) degree relation SERVES in ER shown by the table Served_By
- We removed few derived attribute such as age (derived from Date Of Birth) , and Restaurants Visited (derived from Orders made) as it will be computed in run time.

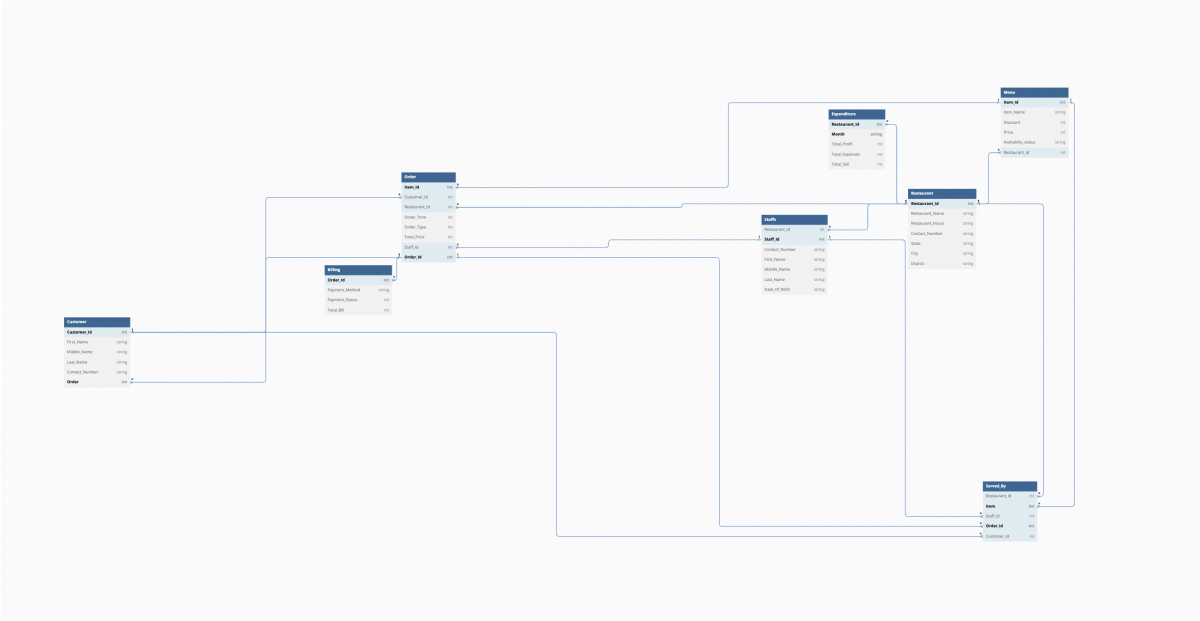


Relational Schema

2. Relational To 1NF

To map Relational to 1NF , we made the following changes :

- Converted multivalued attributes Orders of the table Customer into single valued attribute Order. Primary key changed to {Customer_Id,Order}
- Converted multivalued attribute Items of Order into single valued Items_Id.Primary key changed to {Items_Id,Order_Id}
- Converted multivalued attributed Items of table Served_By into single valued Items_Id.Primary key changed to {Items_Id,Order_Id}



Relational Schema

3. Relational to 2NF

To map 1NF to 2NF, we made the following changes :

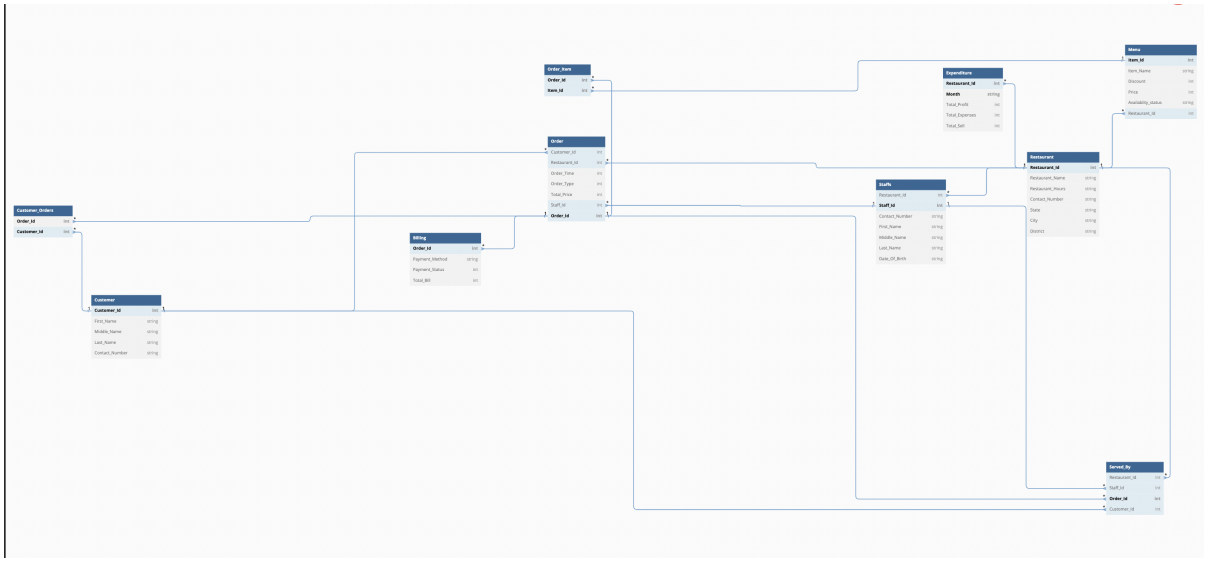
- Removed partial dependency in the Order table , we made another table Order_Item

  Primary Key : {Order_id,Item_Id}

Order_Item	
Order_Id	int
Item_Id	int

- Removed partial dependency in the Customer table , we made another table Customer_Orders ,Primary Key : {Order_Id,Customer_Id}

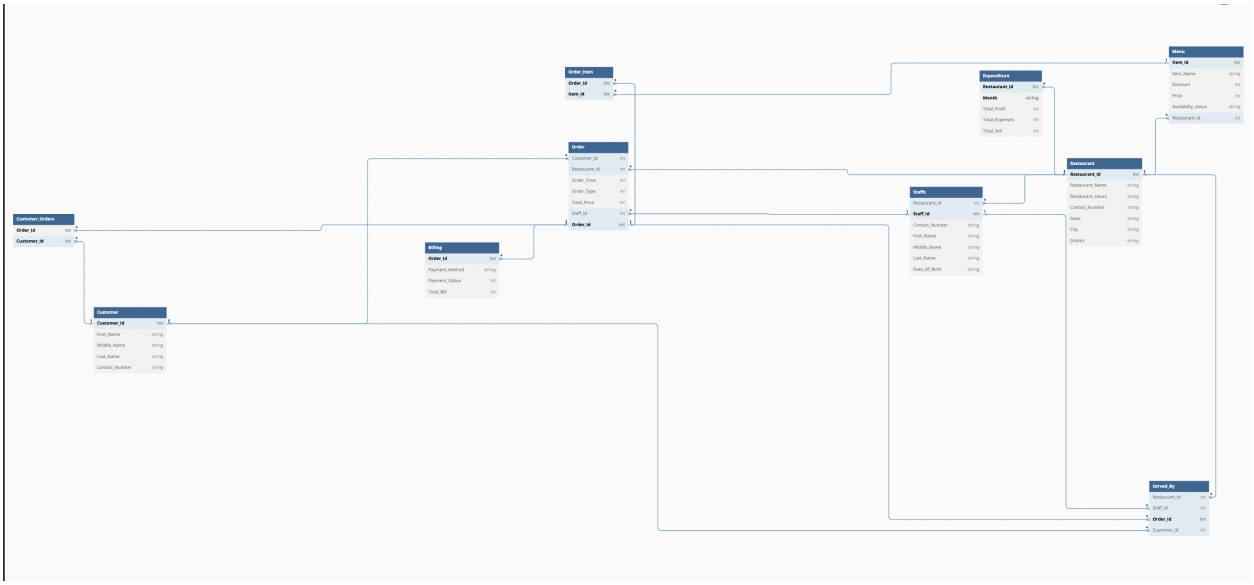
Customer_Orders	
Order_Id	int
Customer_Id	int



Relational Schema

4. Relational to 3NF

To map 2NF to 3NF , we made no change as no restrictions of 3NF like transitive dependency were violated



Relational Schema