

Assumptions:**1. Employee**

Manager, Staff and deliver are three subtypes of employee super class and the subtypes are considered disjoint i.e. no employee can be both manager, staff or deliverer.

2. Deliverer - Manager Relationship

Assuming no two managers can supervise the same deliverer and **N** deliverers can be managed by a single manager.

3. Contracts Relationship

Assuming no 2 managers will manage the same shop. Tenure and start date are stored for each contract.

4. Shop

Shop has two specializations, restaurants and supermarkets.

- **Restaurant Has relationship-**

Each restaurant can have Multiple food items in common, in each relationship between restaurant and food item the item id and price per restaurant is stored.

Cardinality assumption: Each food item in the food item entity type will be strictly participated in the has relationship of the restaurant.

- **SuperMarkets Has relationship-**

All the products are stored in the products entity type, the product ID, quantity, price as per each supermarket is captured in the has relationship of the supermarket.

Cardinality assumption: Each product in the product entity type will be strictly participating in the has relationship of the Supermarket.

5. Orders Relationship

Customer ET, Order ET and Shop ET are in a ternary relationship with orders relationship type. Customer places an order from the shop, and is tracked in the Order ET.

Cardinality Assumptions:

- Assuming few customers have not placed any orders.
- Each order has products/items belonging to one shop.
- No two customers can be involved in the same order.

6. Order ET

All the order related details like shop ID, product ID, payment details, payment status are stored. Promo Code given by the customer is stored in Orders ET and verified with the shop promo code, which is stored in Shop ET for any active discounts.

7. Delivered by Relationship

Only orders which have confirmed payment status will be delivered. Assuming no two orders are delivered by the same deliverer at the same instance.

8. Customer ET

All the Customer details i.e. name, ID, address, payment information are stored.

Silver Membership: Customer ET is the identifying ET of weak ET premium membership has the identifying relationship (silver membership). Issue date and validity is stored for these silver members.

9. Premium membership

Has two identifying entity types Customer ET and Employee ET, premium membership ET is connected to Employee ET in a Direct EMP Membership(identifying relationship).



