Database design of FreshCo

(Case study on Retail store)

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1. Introduction:

In today's retail world, being quick and efficient is super important. Imagine you're running a bunch of FreshCo stores in Calgary. You need to make sure all the stores have the same info and can work together smoothly. That's where a centralized database comes in handy. It's like having one big brain where all the important info is stored, and all the stores can tap into it whenever they need. This makes things run a lot smoother and helps make sure customers have a great shopping experience no matter which FreshCo they visit.

2. Mission:

Mission is to create a system where all the stores can share and access the same information easily. This way, if one store runs low on a product, they can quickly see if another store has extra to spare. It's like making sure everyone in the family knows what's going on so they can all pitch in and help each other out.

3. The Need for Centralization (Mission):

Now, each of these stores keeps its own set of important information, like what products they have, how many they sold, and stuff like that. But here's the problem: these stores don't talk to each other very well. It's like each sibling has their own secret diary and doesn't share it with the others.

This causes some issues. For example, if one store runs out of something, the others might not know about it, so they can't help. Also, if they want to plan something big, like a sale, it's hard to coordinate because they're not sharing their plans with each other.

So, FreshCo realizes this isn't the best way to do things. They want all their stores to work together smoothly, like a well-oiled machine. To make this happen, they decide to create one big diary that everyone can write in and read. This way, all the stores have access to the same information, and they can help each other out and plan things together. It's like bringing the whole family together around one big table to share what they know and make things better for everyone.

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4. OBJECTIVE:

1. **Centralize data from multiple FreshCo stores to improve data accessibility:** This means gathering all the important information from every FreshCo store and putting it in one place where everyone can easily find it. So, instead of each store keeping their own separate records, they'll all share one big set of data.

2. **Ensure consistent inventory management across all stores:** This objective is about making sure that every store keeps track of their products in the same way. It's like making sure all the siblings in a family use the same system to organize their toys, so they know where everything is always.

3. **Maintain an up-to-date customer database for all stores:** Here, the goal is to keep track of all the customers who shop at FreshCo. This helps the stores understand their customers better and provide personalized service. It's like making a list of all the friends who come to visit so you can remember their names and what they like.

4. **Streamline order processing and fulfillment across locations:** This means making the process of ordering products and getting them to the stores as smooth as possible. It's like making sure all the siblings in a family can easily ask for things they need, and the parents can quickly get those things for them.

5. **Facilitate efficient supplier coordination for all stores:** This objective is about working closely with the people who supply FreshCo with products. It's like making sure all the siblings in a family can talk to the same people when they need something, so they don't have to go looking for help on their own.

5. List of subjects:

A "list of subjects" in database design refers to a structured breakdown of the main entities or topics that the database will manage. Each subject represents a distinct aspect of the organization's operations, such as customers, products, transactions, employees, etc. These subjects serve as the foundation for organizing and storing data within the database.

1. **Inventory Management:**

- Tracking what products are available in the store and how much of each item is left.
- Managing inventory levels to ensure products are neither too low nor too high in stocsk.

2. **Supplier Management:**

- Keeping track of information about the companies that supply products to the store.
- Managing relationships with suppliers to ensure timely deliveries and good quality products.

3. **Stockouts:**

- Notifying when the store runs out of a product, so it can be restocked promptly.
- Monitoring stock levels to prevent situations where customers cannot find the products they want to buy.

4. **Overstocking:**

- Monitoring inventory levels to avoid ordering too much of a product.
- Managing excess inventory to prevent waste and loss of profits.

5. **Customer Satisfaction:**

- Gathering feedback from customers to understand their needs and preferences.
- Implementing strategies to improve customer service and ensure a positive shopping experience.

6. **Employee Management:**

- Managing schedules and shifts for store staff to ensure adequate coverage.
- Providing training and support to employees to help them perform their duties effectively.

6. Possible relationship:

1. **Stores - Customers:**
    - A store can have lots of customers, but each customer usually sticks to shopping at one store.
    - It's like how you might have many friends, but you usually hang out with one group more often.
2. **Stores - Orders:**
    - Each store gets orders from customers, but each order is placed at just one store.
    - It's like how you might order pizza from different places, but each time you order, it's from one specific pizza shop.
3. **Customers - Orders:**
    - Customers can place many orders, but each order belongs to one customer.
    - It's like how you might buy lots of things, but each shopping trip is your own.
4. **Orders - OrderDetails:**
    - An order can have lots of details, like what items were bought, but each detail is part of just one order.
    - It's like how a recipe lists all the ingredients you need, but each ingredient goes into making just one dish.
5. **Products - OrderDetails:**
    - Products can be listed in many order details, but each detail is about one specific product.
    - It's like how your favorite snack can be part of different meals, but each time you eat it, it's just that one snack.
6. **Suppliers - Products:**
    - Suppliers provide lots of products, but each product comes from just one supplier.
    - It's like how a farmer grows different crops, but each crop comes from one farm.
7. **Products - Inventory:**
    - Products can be in stock at different stores, but each product has its own inventory record at each store.
    - It's like how your favorite cereal can be in different cupboards, but each box in each cupboard is still just one box.
8. **Stores - Inventory:**
    - Each store has its own inventory, but each inventory record belongs to just one store.
    - It's like how each room in your house has its own stuff, and you keep track of what's in each room separately.
9. **Stores - Employees:**
    - Stores have lots of employees, but each employee usually works at just one store.
    - It's like how a big company has different offices, and each employee works in one specific office.

7. List of tables and attributes:

1. **Customers**
   - CustomerID (Primary Key)
   - FirstName
   - LastName
   - Email
   - Phone
   - Address
   - City
   - State

2. **Stores**
   - StoreID (Primary Key)
   - StoreName
   - Address
   - City
   - State

   ZipCode

4. **Products**
   - ProductID (Primary Key)
   - ProductName
   - Category
   - Price
   - SupplierID (Foreign Key)

3. **Orders**
   - OrderID (Primary Key)
   - CustomerID (Foreign Key)
   - OrderDate
   - ShipDate
   - Status
   - TotalAmount

6. **Suppliers**
   - SupplierID (Primary Key)
   - SupplierName
   - ContactName
   - ContactEmail
   - ContactPhone
   - Address
   - City
   - State

5. **Inventory**
   - InventoryID (Primary Key)
   - ProductID (Foreign Key)
   - StoreID (Foreign Key)
   - QuantityInStock

7. **Employees**
    - EmployeeID (Primary Key)
    - FirstName
    - LastName
    - Position
    - Email
    - Phone
    - HireDate
    - StoreID

8. Conclusion: Empowering the Future of Retail:

In simple terms, setting up a centralized database system is a big deal for FreshCo. It's like they've just taken a huge step forward in how they run their stores. By putting all their important information in one place, they're making things a lot smoother for themselves and for their customers.

This isn't just about organizing data better. It's about making sure FreshCo can do a really great job of serving their customers. With all their stores sharing the same info, they can make sure they always have what customers want and need, whether it's their favorite products or the latest deals.

And it's not just for now. FreshCo is showing that they're leaders in the retail world. They're using technology in a smart way and always putting customers first. By doing this, they're not just setting an example for other stores in Calgary, but for the whole industry. It's all about making things better and better, so FreshCo can keep being a favorite place to shop for a long time to come.

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Thank You

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