**DATABASE OF AN ONLINE DAIRY PRODUCT COMPANY - “MILKY WHEELS”**

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**Scope of the project:**

Milky Wheels is an end-to-end database application for managing dairy product inventory, sales, and distribution. It digitalizes operations for dairy stores, handling products like milk, ghee, curd, and paneer.

**Key Features:**

**●** Customers can browse catalogs, place orders, track deliveries, manage accounts, and access customer support.

● Suppliers can manage product inventory, add/remove categories and products, and handle order fulfillment.

● Delivery partners can view, accept, or cancel delivery orders, update delivery status, and manage payments.

● Admins can oversee operations, verify products, manage inventory, handle customer support, and analyze profit/loss.

**Stakeholders:**

**○** Customers

○ Suppliers

○ Delivery Partners

○ Administrators (Managers)

**Entities:**

**1**. Person (PersonID, Name, ContactInfo, Address)

- Base entity for Customers, Suppliers, Delivery Partners, and Admins

2. Customer (CustomerID, PersonID, MembershipStatus, JoinDate)

- Inherits from Person

3. Supplier (SupplierID, PersonID, CompanyName, SupplierRating)

- Inherits from Person

4. DeliveryPartner (PartnerID, PersonID, VehicleType, AvailabilityStatus)

- Inherits from Person

5. Admin (AdminID, PersonID, Role, AccessLevel)

- Inherits from Person

6. Product (ProductID, Name, Category, Description, BasePrice)

7. Inventory (InventoryID, ProductID, Quantity, ExpiryDate, SupplierID)

8. Order (OrderID, CustomerID, OrderDate, TotalAmount, Status)

9. OrderItem (OrderItemID, OrderID, ProductID, Quantity, Price)

10. Delivery (DeliveryID, OrderID, PartnerID, Status, EstimatedDeliveryTime)

11. Payment (PaymentID, OrderID, Amount, PaymentMethod, Status)

12. Coupon (CouponID, Code, DiscountPercentage, ValidFrom, ValidTo)

**Relationships:**

1. Customer places Order (1:N)

2. Order contains OrderItem (1:N)

3. OrderItem references Product (N:1)

4. Supplier manages Product (1:N)

5. Product has Inventory (1:1)

6. Order has Delivery (1:1)

7. DeliveryPartner handles Delivery (1:N)

8. Order has Payment (1:1)

9. Customer can use Coupon (N:M)

10. Admin verifies Product (N:M)

**Weak Entities:**

1. Inventory (InventoryID, ProductID, Quantity, ExpiryDate, SupplierID)

Reason: Identifying Entity is Product. The inventory exists only in relation to a specific product. The ProductID is required to uniquely identify an Inventory entry.

2. OrderItem (OrderItemID, OrderID, ProductID, Quantity, Price)

Reason: Identifying Entities are Order and Product. An OrderItem exists only in the context of a specific Order and for a specific Product.

**Key Constraints:**

1. PersonID is unique across all person types (Customer, Supplier, DeliveryPartner, Admin)

2. ProductID is unique for each product

3. OrderID is unique for each order

4. DeliveryID is unique for each delivery

5. CouponID and Coupon Code are unique