

ONLINE SUPPLY CHAIN MANAGEMENT SYSTEM

Group No.	9
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Course Name	Database Management System
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Entities :

1. Customer

- **Primary Key:** Customer_ID (PK)
 - **Attributes:**
 - Customer_Name
 - Phone_Number
 - Email
 - Shipping_Address
 - **Relationship:** Places (1 to N relationship with Order)
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2. Order_Product

- **Primary Key:** Order_ID (PK)
 - **Attributes:**
 - Order_Date
 - Order_Status
 - Customer_ID (FK)
 - **Relationship:**
 - **Places** (N to 1 relationship with Customer)
 - **Contains** (N to M relationship with Product)
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3. Product

- **Primary Key:** Product_ID (PK)
 - **Attributes:**
 - Product_Name
 - Price
 - Stock_Quantity
 - Category_ID (FK)
 - **Relationship:**
 - **Contains** (N to M relationship with Order)
 - **Belongs_To** (1 to N relationship with Category)
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4. Category

- **Primary Key:** Category_ID (PK)
 - **Attributes:**
 - Category_Name
 - Description
 - **Relationship:** **Belongs_To** (1 to N relationship with Product)
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5. Supplier

- **Primary Key:** Supplier_ID (PK)
- **Attributes:**
 - Supplier_Name
 - Supplier_Location

- Supplier_Phone
 - Relationship:
 - Supplies (1 to N relationship with Product)
 - Delivers_To (1 to N relationship with Warehouse)
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6. Warehouse

- Primary Key: Warehouse_ID (PK)
 - Attributes:
 - Warehouse_Location
 - Capacity
 - Manager_ID (FK)
 - Relationship:
 - Delivers_To (N to 1 relationship with Supplier)
 - Stores (1 to N relationship with Inventory)
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7. Inventory

- Primary Key: Inventory_ID (PK)
 - Attributes:
 - Stock_Level
 - Product_ID (FK)
 - Warehouse_ID (FK)
 - Relationship:
 - Stores (N to 1 relationship with Warehouse)
 - Tracks (1 to N relationship with Product)
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8. Manager

- **Primary Key:** Manager_ID (PK)
 - **Attributes:**
 - Manager_Name
 - Email
 - Phone_Number
 - Warehouse_ID (FK)
 - **Relationship:** **Manages** (1 to 1 relationship with Warehouse)
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9. Shipment

- **Primary Key:** Shipment_ID (PK)
 - **Attributes:**
 - Shipment_Date
 - Delivery_Date
 - Order_ID (FK)
 - Warehouse_ID (FK)
 - **Relationship:**
 - **Ships** (N to 1 relationship with Order)
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10. Delivery_Agent

- **Primary Key:** Agent_ID (PK)
- **Attributes:**
 - Agent_Name
 - Agent_Phone

- Company
 - Relationship: Delivers (1 to N relationship with Shipment)
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11. Invoice

- Primary Key: Invoice_ID (PK)
 - Attributes:
 - Invoice_Amount
 - Invoice_Date
 - Order_ID (FK)
 - Relationship: Issues (N to 1 relationship with Order)
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Total Participation:

- Customer – Order : A customer must have at least one
- Order – Product : An order must contain one or more products
- Supplier – Product : A supplier must supply at least one product
- Warehouse – Inventory : A warehouse must store inventory items
- Manager – Warehouse : A warehouse must have a manager
- Shipment – Delivery_Agent : A shipment must be done by a delivery agent

Partial Participation:

- Product – Category : Not every product belongs to a category
- Supplier – Warehouse : Not every supplier delivers products to a warehouse

- Inventory – Product : Not every product is tracked in inventory
- Order – Shipment : Not every order has a shipment
- Delivery Agent – Shipment : Not every shipment is delivered by a delivery agent

****All Entities present in here are STRONG entities****