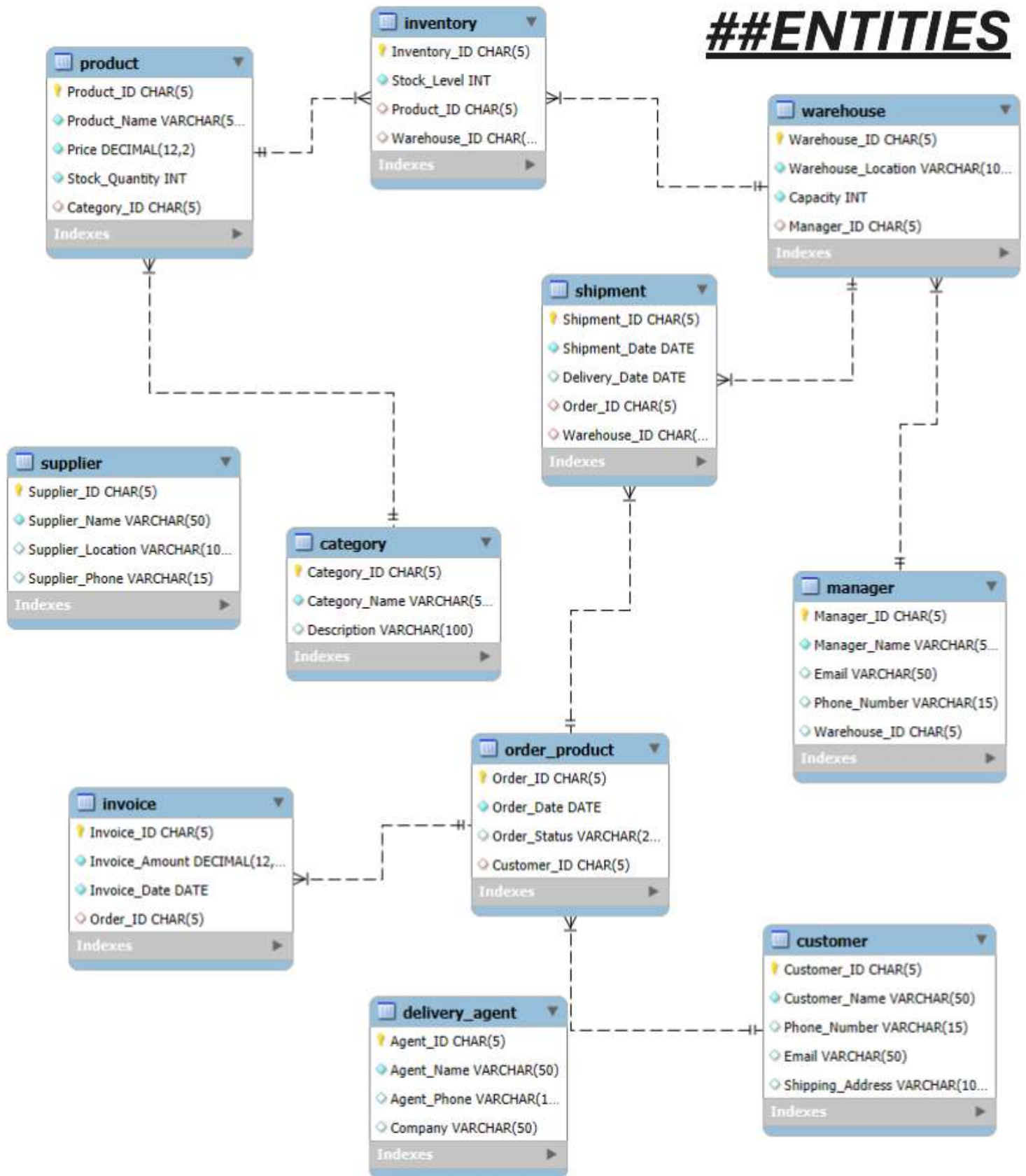


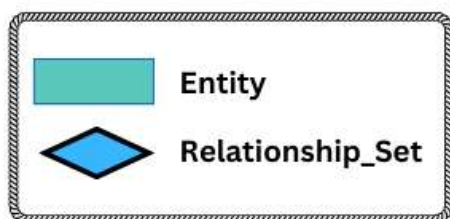
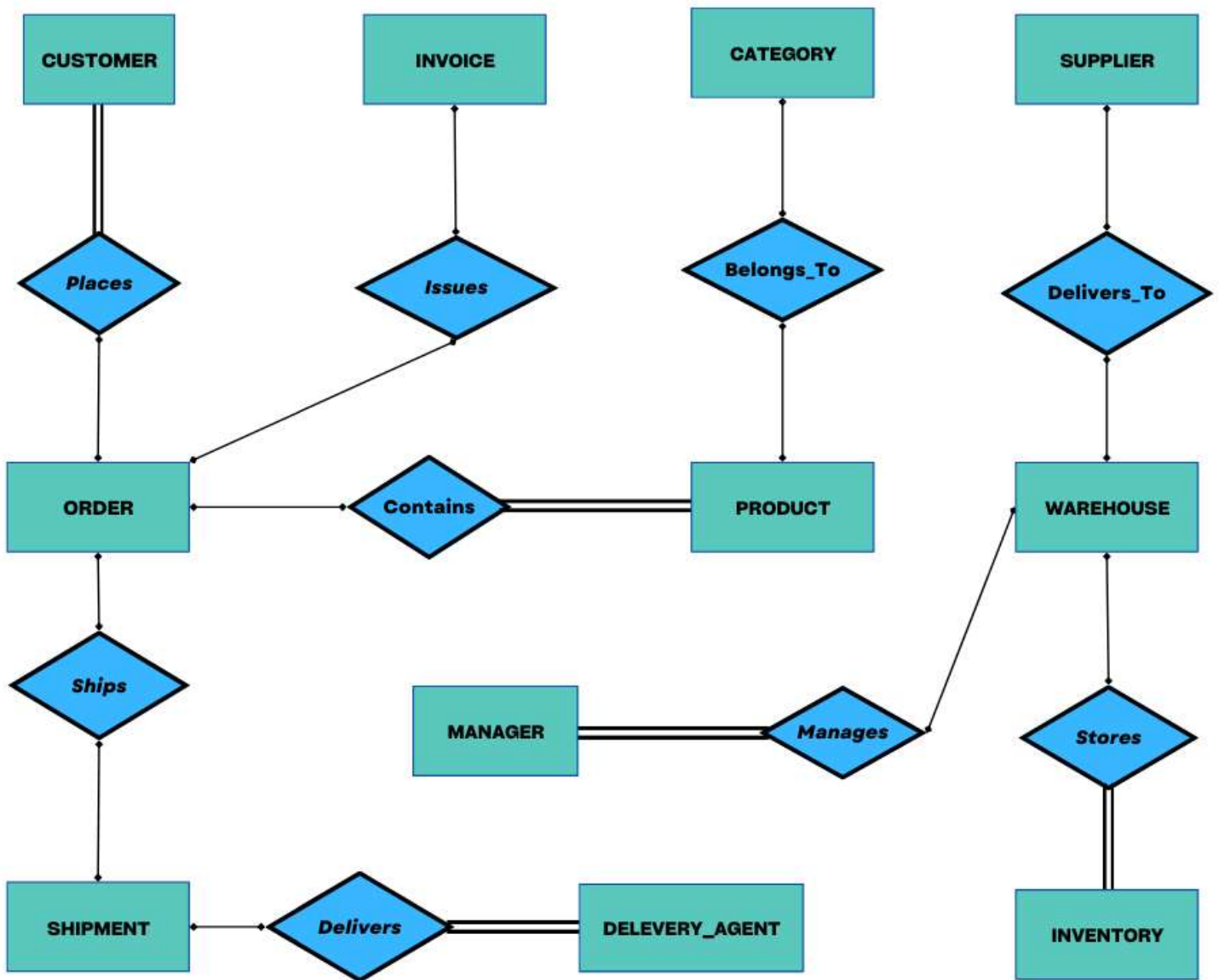
## **ONLINE SUPPLY CHAIN MANAGEMENT SYSTEM**

Group No.	9
Members	1.Ahnaf Shahriar Pias (220042146) 2.Md Sameur Rahman (220042144)
Course Name	Database Management System
Course ID	CSE-4307
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# ##ENTITIES



# ENTITY RELATION DIAGRAM



## **Entities :**

### 1. Customer

- **Primary Key:** Customer\_ID (PK)
  - **Attributes:**
    - Customer\_Name
    - Phone\_Number
    - Email
    - Shipping\_Address
  - **Relationship:** Places (1 to N relationship with Order)
- 

### 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)
-

### 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)
- 

### 4. Category

- **Primary Key:** Category\_ID (PK)
  - **Attributes:**
    - Category\_Name
    - Description
  - **Relationship:** **Belongs\_To** (1 to N relationship with Product)
- 

### 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)
- 

## 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)
- 

## 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)
-

## 8. Manager

- **Primary Key:** Manager\_ID (PK)
  - **Attributes:**
    - Manager\_Name
    - Email
    - Phone\_Number
    - Warehouse\_ID (FK)
  - **Relationship:** Manages (1 to 1 relationship with Warehouse)
- 

## 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)
- 

## 10. Delivery\_Agent

- **Primary Key:** Agent\_ID (PK)
- **Attributes:**
  - Agent\_Name
  - Agent\_Phone

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

## 11. Invoice

- Primary Key: Invoice\_ID (PK)
  - Attributes:
    - Invoice\_Amount
    - Invoice\_Date
    - Order\_ID (FK)
  - Relationship: Issues (N to 1 relationship with Order)
- 
- 

### **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\*\***