***2.6 Entity-Relationship Diagram (ERD)*** (qahtan)  
In designing the Entity-Relationship Diagram (ERD) for the new online shopping system, we will first identify the entities involved, define their attributes, and then model the relationships between these entities.   
  
 **Entity Identification**:

1. Customer: – Attributes: Customer ID (PK), Name, Email, Phone, Address, Date Of Birth

2. Supplier: – Attributes: Supplier ID (PK), Name, Contact Email, Phone, Address

3. Product: – Attributes: Product ID (PK), Name, Description, Price, Stock Quantity, Supplier ID (FK)

4. Order: – Attributes: Order ID (PK), Order Date, Customer ID (FK), Total Amount, Status

5. Order Item: – Attributes: Order Item ID (PK), Order ID (FK), Product ID (FK), Quantity, Item Total

6. Payment: – Attributes: Payment ID (PK), Order ID (FK), Payment Date, Amount, Payment Status

7. Delivery: – Attributes: Delivery ID (PK), Order ID (FK), Delivery Date, Delivery Status, Delivery Address, Delivery Company

8. Admin: – Attributes: Admin ID (PK), Username, Password, Role  
**Relationship Modeling** : Now, we will model the relationships between these entities using cardinality and modality:  
1. Customer to Order:    • A customer can place multiple orders, but an order is placed by one customer.    • Relationship: One-to-Many (1:N)  
2. Order to Product:    • An order can contain multiple products, and a product can be part of multiple orders. • Relationship: Many-to-Many (M:N)    • This relationship requires a junction table, which we can call Order Product with attributes:      • Order ID (FK)    • Product ID (FK)      • Quantity  
3. Order to Payment:  
   • An order can have one payment associated with it, but a payment is linked to one specific order.   • Relationship: One-to-One (1:1)  
4. Order to Delivery Company:  
   • An order is delivered by one delivery company, but a delivery company can handle multiple orders.    • Relationship: One-to-Many (1:N)  
5. Supplier to Product:  
   • A supplier can supply multiple products, but a product is supplied by one supplier.  
   • Relationship: One-to-Many (1:N)  
  
**ERD Diagram Representation** : Below is a text-based representation of the ERD:

