**DBMS LAB PROJECT**

**KEY MILESTONE # 01**

 **Spring 2025**

**CSE-403L**

**Database Management System Lab**

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“Honesty is the Best Policy ”

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**Conceptual Schema for E-Commerce Platform**

# 1. Entity Description (Tabular Form)

|  |  |  |  |
| --- | --- | --- | --- |
| Entity | Attributes | Primary Key (PK) | Foreign Key (FK) |
| Customer | customer\_id, first\_name, last\_name, email, password, address, phone\_number | customer\_id | - |
| Product | product\_id, SKU, description, price, stock, category\_id | product\_id | category\_id |
| Category | category\_id, name | category\_id | - |
| Order | order\_id, order\_date, total\_price, customer\_id | order\_id | customer\_id |
| Order\_Item | order\_item\_id, order\_id, product\_id, quantity, price | order\_item\_id | order\_id, product\_id |
| Payment | payment\_id, payment\_date, payment\_method, amount, customer\_id | payment\_id | customer\_id |
| Shipment | shipment\_id, shipment\_date, address, city, state, country, zip\_code, customer\_id | shipment\_id | customer\_id |
| Cart | cart\_id, quantity, customer\_id | cart\_id | customer\_id |
| Wishlist | wishlist\_id, customer\_id | wishlist\_id | customer\_id |

# 2. Detailed Business Rules

1. Each customer must register with unique email and password.

2. A customer can place multiple orders, but each order belongs to only one customer.

3. An order can include multiple products, and a product can appear in many orders (many-to-many).

4. Each order must have one or more order items.

5. Each payment is linked to a single customer and order.

6. Products belong to specific categories, and each category can have many products.

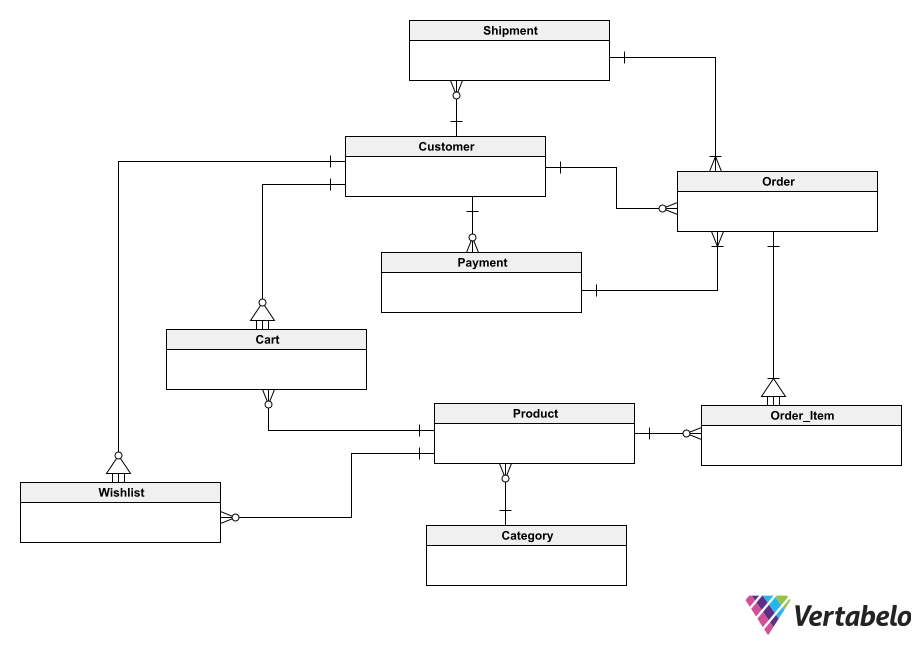
7. Customers can maintain a cart and wishlist for multiple products.

8. Shipment details are linked to each customer’s order.

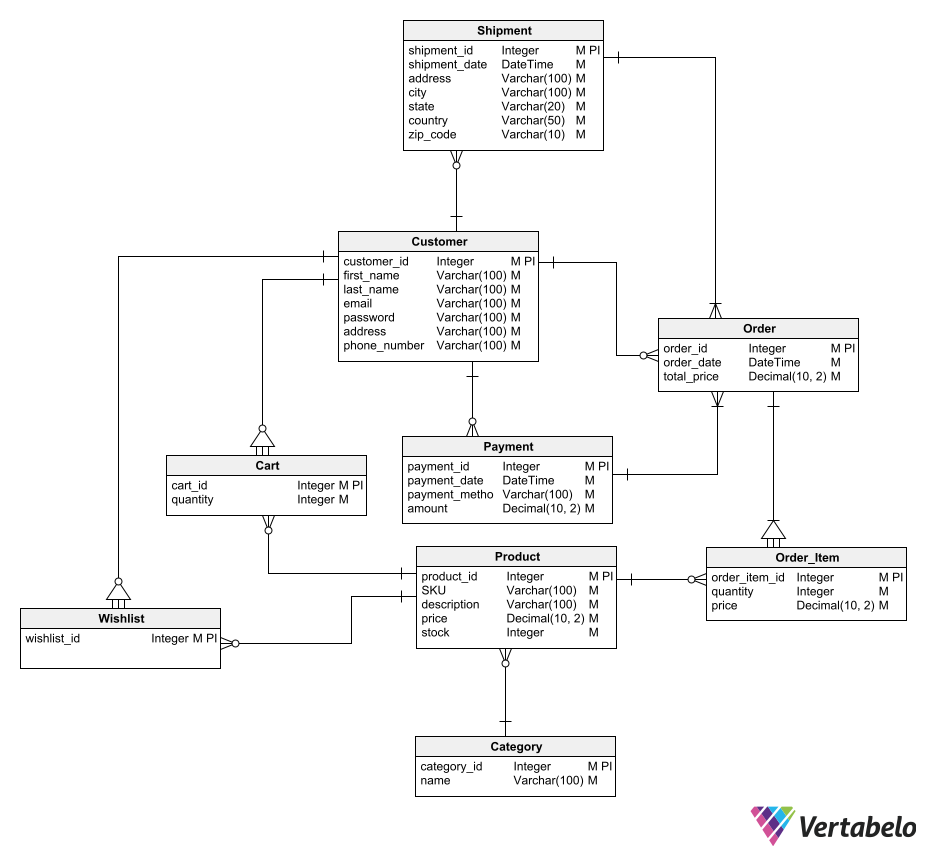
9. A product's stock quantity must be updated after an order is placed.

10. Each product must have a unique SKU.

# 3. Entity Relationship Diagram (ERD)



# 4. Enhanced Entity Relationship Diagram (EERD)

Enhanced ERD includes specialization/generalization, multivalued attributes, and more   
  


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# 5. References

1. ChatGPT by OpenAI (used for content creation and explanation)  
2. Vertabelo (used for ERD/EERD diagram creation) = https://vertabelo.com/blog/er-diagram-for-online-shop/  
3. Lecture Slides: Lecture 2b, Slide#3 and Slide#4  
4. W3Schools SQL and DBMS Tutorials  
5. draw.io (for diagram refinement )  
6. Course Materials and Class Notes