

Table Schema: Product Inventory Table

Let's create a new table called **ProductInventory** to practice various SQL operations.

ProductInventory Table Structure:

ProductID (PK)	ProductName	Category	Quantity	UnitPrice	Supplier	LastRestocked
1	Laptop	Electronics	20	70000	TechMart	2025-04-20
2	Office Chair	Furniture	50	5000	HomeComfort	2025-04-18
3	Smartwatch	Electronics	30	15000	GadgetHub	2025-04-22
4	Desk Lamp	Lighting	80	1200	BrightLife	2025-04-25
5	Wireless Mouse	Electronics	100	1500	GadgetHub	2025-04-30

Tasks:

1. CRUD Operations:

- Add a new product:**
 - Insert a product named **"Gaming Keyboard"**, Category **Electronics**, Quantity **40**, UnitPrice **3500**, Supplier **TechMart**, LastRestocked **2025-05-01**.
 - Update stock quantity:**
 - Increase the **Quantity** of **Desk Lamp** by **20**.
 - Delete a discontinued product:**
 - Remove the product with **ProductID = 2** (Office Chair).
 - Read all products:**
 - Display all products sorted by **ProductName** in **ascending order**.
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2. Sorting and Filtering:

- Sort by Quantity:**
 - List products sorted by **Quantity** in **descending order**.
 - Filter by Category:**
 - Display all **Electronics** products.
 - Filter with AND condition:**
 - List all **Electronics** products with **Quantity > 20**.
 - Filter with OR condition:**
 - Retrieve all products that belong to **Electronics** or have a **UnitPrice** below **2000**.
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3. Aggregation and Grouping:

- Total stock value calculation:**

- o Calculate the **total value** of all products (Quantity * UnitPrice).
 - 10. **Average price by category:**
 - o Find the **average price** of products grouped by **Category**.
 - 11. **Count products by supplier:**
 - o Display the **number of products** supplied by **GadgetHub**.
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4. Conditional and Pattern Matching:

- 12. **Find products by name prefix:**
 - List all products whose **ProductName** starts with 'W'.
 - 13. **Filter by supplier and price:**
 - Display all products supplied by **GadgetHub** with a **UnitPrice** above 10000.
 - 14. **Filter using BETWEEN operator:**
 - List all products with **UnitPrice** between 1000 and 20000.
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5. Advanced Queries:

- 15. **Top 3 most expensive products:**
 - o Display the **top 3 products** with the **highest UnitPrice**.
 - 16. **Products restocked recently:**
 - o Find all products restocked **in the last 10 days**.
 - 17. **Group by Supplier:**
 - o Calculate the **total quantity** of products from each **Supplier**.
 - 18. **Check for low stock:**
 - o List all products with **Quantity** less than 30.
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6. Join and Subqueries (if related tables are present):

- 19. **Supplier with most products:**
 - o Find the **supplier** who provides the **maximum number of products**.
- 20. **Product with highest stock value:**
 - o Find the **product** with the **highest total stock value** (Quantity * UnitPrice).