6) Aggregate Functions (on a single table: Create a Sales table with columns: SaleID, ProductID, ProductName, Quantity, Discount, SaleAmount, and SaleDate.) a) From the Sales table, calculate the total sales amount (SUM) generated in the month of February 2025. b) Find the average (AVG) billing amount from the Sales table to assess customer spending behavior. c) Identify the minimum (MIN) quantity of products sold in any transaction using the Sales table. d) Determine the highest (MAX) discount applied on any sale using the Sales table. e) Use the COUNT function to find how many transactions were recorded in the Sales table for the product “Laptop”.

Which recent tool or technology have you studied for database management, and can you briefly explain its key features and why it is used in the industry?

CREATE TABLE Sales (

SaleID INT PRIMARY KEY,

ProductID INT,

ProductName VARCHAR(100),

Quantity INT,

Discount DECIMAL(5,2),

SaleAmount DECIMAL(10,2),

SaleDate DATE

);

INSERT INTO Sales (SaleID, ProductID, ProductName, Quantity, Discount, SaleAmount, SaleDate) VALUES

(1, 101, 'Laptop', 2, 5.00, 95000.00, '2025-02-05'),

(2, 102, 'Tablet', 1, 10.00, 15000.00, '2025-02-15'),

(3, 103, 'Smartphone', 3, 7.50, 75000.00, '2025-01-25'),

(4, 104, 'Laptop', 1, 8.00, 45000.00, '2025-02-20'),

(5, 105, 'Headphones', 5, 2.00, 10000.00, '2025-03-01');

SELECT SUM(SaleAmount) AS TotalSalesFebruary

FROM Sales

WHERE SaleDate BETWEEN '2025-02-01' AND '2025-02-28';

SELECT AVG(SaleAmount) AS AverageBillingAmount

FROM Sales;

SELECT AVG(SaleAmount) AS AverageBillingAmount

FROM Sales;

SELECT MIN(Quantity) AS MinimumQuantitySold

FROM Sales;

SELECT MAX(Discount) AS MaximumDiscountApplied

FROM Sales;

SELECT COUNT(\*) AS LaptopTransactions

FROM Sales

WHERE ProductName = 'Laptop';

**📚 Recently Studied Database Management Tool: Azure SQL Database**

✅ **Key Features:**

* **Fully Managed Database:** Handles updates, backups, and maintenance automatically.
* **Built-in High Availability:** 99.99% uptime SLA with automatic failover.
* **Scalability:** Easy to scale compute resources based on demand (manual or auto-scaling).
* **Advanced Security:** Offers encryption, threat detection, and auditing.
* **Intelligent Performance:** AI-driven optimizations for query tuning and performance insights.
* **Hybrid Integration:** Can easily connect on-premises and cloud environments.

✅ **Why it’s used in Industry:**

* Great for businesses moving toward **cloud-first strategies**.
* Reduces operational cost and complexity compared to traditional on-premise SQL Servers.
* Enables **fast app development**, **analytics**, and **global scalability**.