10) Analyze Sales Performance Using Aggregate Functions Create a Sales table with columns: SaleID, ProductID, ProductName, Quantity, Discount, SaleAmount, and SalesPerson.) a) Calculate the total quantity of products sold across all transactions in the Sales table. b) Find the average sale amount for transactions made in March 2025. c) Identify the product with the minimum sale quantity from the Sales table. d) Determine the maximum discount offered in February 2025. e) Count how many sales were made by each salesperson using GROUP BY SalesPerson.

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(255),

Quantity INT,

Discount DECIMAL(5,2),

SaleAmount DECIMAL(10,2),

SaleDate DATE,

SalesPerson VARCHAR(100)

);

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

(1, 101, 'Laptop', 5, 10.00, 250000.00, '2025-03-05', 'Amit'),

(2, 102, 'Smartphone', 10, 5.00, 50000.00, '2025-03-10', 'Priya'),

(3, 103, 'Tablet', 2, 15.00, 30000.00, '2025-02-15', 'Amit'),

(4, 104, 'Printer', 1, 20.00, 15000.00, '2025-02-20', 'Suresh'),

(5, 105, 'Headphones', 8, 8.00, 16000.00, '2025-03-15', 'Priya');

SELECT SUM(Quantity) AS TotalQuantitySold

FROM Sales;

SELECT AVG(SaleAmount) AS AverageSaleAmountMarch

FROM Sales

WHERE SaleDate BETWEEN '2025-03-01' AND '2025-03-31';

SELECT ProductName, Quantity

FROM Sales

WHERE Quantity = (SELECT MIN(Quantity) FROM Sales);

SELECT MAX(Discount) AS MaxDiscountFeb

FROM Sales

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

SELECT SalesPerson, COUNT(\*) AS NumberOfSales

FROM Sales

GROUP BY SalesPerson;

✅ **Key Features:**

* **Managed SQL Server:** Cloud version of Microsoft SQL Server, fully managed by Azure.
* **Built-in High Availability:** No downtime for maintenance, backups, or updates.
* **Scalability:** Instantly scale up or down compute and storage independently.
* **Advanced Security:** Threat detection, auditing, TDE (Transparent Data Encryption).
* **AI-Powered Optimization:** Automatically tunes indexes, queries, and performance.
* **Multi-Model Support:** Native support for relational, JSON, graph, and spatial data.

✅ **Why it's used in Industry:**

* Ideal for **cloud-native applications**, especially in enterprises that already use Microsoft ecosystems.
* Reduces DBA effort on **maintenance** and **infrastructure management**.
* Provides **enterprise-grade reliability**, **security**, and **global scalability**.