

-- Sales Table Creation and Data Insertion

CREATE TABLE Sales (

SaleID INT PRIMARY KEY,

Salesperson VARCHAR(50),

Region VARCHAR(50),

Product VARCHAR(50),

Quantity INT,

SaleAmount DECIMAL(10,2)

);

INSERT INTO Sales (SaleID, Salesperson, Region, Product, Quantity, SaleAmount) VALUES

(1, 'Alice', 'North', 'Laptop', 1, 1000.00),

(2, 'Bob', 'South', 'Mouse', 3, 75.00),

(3, 'Alice', 'North', 'Monitor', 2, 300.00),

(4, 'Charlie', 'East', 'Keyboard', 1, 50.00),

(5, 'Bob', 'South', 'Monitor', 1, 150.00),

(6, 'Alice', 'North', 'Mouse', 2, 50.00),

(7, 'Charlie', 'East', 'Laptop', 2, 2000.00),

(8, 'David', 'West', 'Laptop', 1, 1100.00),

(9, 'David', 'West', 'Mouse', 4, 100.00),

(10, 'Eve', 'South', 'Monitor', 3, 450.00),

(11, 'Eve', 'South', 'Keyboard', 2, 100.00),

(12, 'Eve', 'South', 'Mouse', 1, 25.00),

(13, 'Alice', 'North', 'Keyboard', 1, 60.00),

(14, 'Bob', 'South', 'Laptop', 1, 1200.00),

(15, 'Charlie', 'East', 'Mouse', 2, 50.00);

-- =====

-- QUERY SOLUTIONS

-- =====

-- 1. Find total quantity sold by each salesperson

```
SELECT Salesperson, SUM(Quantity) AS TotalQuantity  
FROM Sales  
GROUP BY Salesperson  
ORDER BY TotalQuantity DESC;
```

-- 2. Find salespersons who sold more than 5 items in total

```
SELECT Salesperson, SUM(Quantity) AS TotalQuantity  
FROM Sales  
GROUP BY Salesperson  
HAVING SUM(Quantity) > 5  
ORDER BY TotalQuantity DESC;
```

-- 3. Find number of products sold by each salesperson

```
SELECT Salesperson, COUNT(DISTINCT Product) AS NumberOfProducts  
FROM Sales  
GROUP BY Salesperson  
ORDER BY NumberOfProducts DESC;
```

-- 4. List regions where total sale amount exceeded \$1000

```
SELECT Region, SUM(SaleAmount) AS TotalSaleAmount  
FROM Sales  
GROUP BY Region  
HAVING SUM(SaleAmount) > 1000  
ORDER BY TotalSaleAmount DESC;
```

-- 5. Show salespersons who made more than 2 sales transactions

```
SELECT Salesperson, COUNT(*) AS TransactionCount  
FROM Sales  
GROUP BY Salesperson  
HAVING COUNT(*) > 2
```

ORDER BY TransactionCount DESC;

-- 6. Find total sale amount by product, and show only products that made over \$500 in sales

SELECT Product, SUM(SaleAmount) AS TotalSaleAmount

FROM Sales

GROUP BY Product

HAVING SUM(SaleAmount) > 500

ORDER BY TotalSaleAmount DESC;

-- 7. Show the total quantity sold of each product in each region

SELECT Region, Product, SUM(Quantity) AS TotalQuantity

FROM Sales

GROUP BY Region, Product

ORDER BY Region, Product;

-- 8. Find salespersons who sold more than 1 type of product

SELECT Salesperson, COUNT(DISTINCT Product) AS ProductTypes

FROM Sales

GROUP BY Salesperson

HAVING COUNT(DISTINCT Product) > 1

ORDER BY ProductTypes DESC;

-- 9. Find the average quantity per product sold per region, where the average is greater than 1

SELECT Region, Product, AVG(CAST(Quantity AS DECIMAL(10,2))) AS AvgQuantity

FROM Sales

GROUP BY Region, Product

HAVING AVG(CAST(Quantity AS DECIMAL(10,2))) > 1

ORDER BY Region, Product;

-- 10. Show salespersons whose total sale amount is between \$500 and \$1500

SELECT Salesperson, SUM(SaleAmount) AS TotalSaleAmount

```
FROM Sales

GROUP BY Salesperson

HAVING SUM(SaleAmount) BETWEEN 500 AND 1500

ORDER BY TotalSaleAmount DESC;
```

-- 11. List top-performing products (more than 3 units sold in total)

```
SELECT Product, SUM(Quantity) AS TotalQuantity

FROM Sales

GROUP BY Product

HAVING SUM(Quantity) > 3

ORDER BY TotalQuantity DESC;
```

-- 12. List salespersons who sold laptops

```
SELECT DISTINCT Salesperson

FROM Sales

WHERE Product = 'Laptop'

ORDER BY Salesperson;
```

-- 13. Find total sale amount per salesperson per region, only where it exceeds \$500

```
SELECT Salesperson, Region, SUM(SaleAmount) AS TotalSaleAmount

FROM Sales

GROUP BY Salesperson, Region

HAVING SUM(SaleAmount) > 500

ORDER BY TotalSaleAmount DESC;
```

-- 14. Find salespersons who sold at least 2 different products in a single region

```
SELECT Salesperson, Region, COUNT(DISTINCT Product) AS ProductCount

FROM Sales

GROUP BY Salesperson, Region

HAVING COUNT(DISTINCT Product) >= 2

ORDER BY Salesperson, Region;
```

-- 15. Find products that were sold in more than one region

```
SELECT Product, COUNT(DISTINCT Region) AS RegionCount
FROM Sales
GROUP BY Product
HAVING COUNT(DISTINCT Region) > 1
ORDER BY RegionCount DESC;
```

-- 16. Show total number of sales per product and hide products with fewer than 2 sales

```
SELECT Product, COUNT(*) AS SalesCount
FROM Sales
GROUP BY Product
HAVING COUNT(*) >= 2
ORDER BY SalesCount DESC;
```

-- 17. Find region-wise total quantity sold by each salesperson

```
SELECT Region, Salesperson, SUM(Quantity) AS TotalQuantity
FROM Sales
GROUP BY Region, Salesperson
ORDER BY Region, TotalQuantity DESC;
```

-- 18. Find salespersons who made more than 3 transactions and total sales amount is over \$1000

```
SELECT Salesperson, COUNT(*) AS TransactionCount, SUM(SaleAmount) AS TotalSaleAmount
FROM Sales
GROUP BY Salesperson
HAVING COUNT(*) > 3 AND SUM(SaleAmount) > 1000
ORDER BY TotalSaleAmount DESC;
```

-- 19. Find average sale amount per region and show only regions with average above \$200

```
SELECT Region, AVG(SaleAmount) AS AvgSaleAmount
FROM Sales
```

GROUP BY Region

HAVING AVG(SaleAmount) > 200

ORDER BY AvgSaleAmount DESC;

-- 20. List regions and products where more than 3 units were sold

SELECT Region, Product, SUM(Quantity) AS TotalQuantity

FROM Sales

GROUP BY Region, Product

HAVING SUM(Quantity) > 3

ORDER BY Region, Product;