Module 4) DA- Introduction SQL (Assessments)

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-- Step 1: Create Database
CREATE DATABASE IF NOT EXISTS SalesDB;

-- Step 2: Use the Database
USE SalesDB;

-- Step 3: Create Sales Table
CREATE TABLE IF NOT EXISTS sales (
    sale_id INT PRIMARY KEY,
    product_name VARCHAR(50),
    category VARCHAR(50),
    sale_amount DECIMAL(10, 2),
    sale_date DATE
);

-- Step 4: Insert 30 rows of sample data
INSERT INTO sales VALUES
(1, 'Laptop', 'Electronics', 1500.50, '2023-01-05'),
(2, 'T-Shirt', 'Clothing', 20.20, '2023-01-08'),
(3, 'Smartphone', 'Electronics', 800.75, '2023-01-12'),
(4, 'Jeans', 'Clothing', 55.40, '2023-01-18'),
(5, 'Headphones', 'Electronics', 90.90, '2023-02-05'),
(6, 'Sweater', 'Clothing', 35.60, '2023-02-08'),
(7, 'Tablet', 'Electronics', 300.45, '2023-03-10'),
(8, 'Shoes', 'Clothing', 65.30, '2023-03-15'),
(9, 'Digital Camera', 'Electronics', 450.20, '2023-04-02'),
(10, 'Watch', 'Clothing', 120.90, '2023-04-05'),
(11, 'Printer', 'Electronics', 250.00, '2023-05-01'),
(12, 'Backpack', 'Clothing', 45.20, '2023-05-05'),
(13, 'Digital Watch', 'Electronics', 120.60, '2023-05-10'),
(14, 'Sunglasses', 'Clothing', 30.30, '2023-06-02'),
(15, 'External Hard Drive', 'Electronics', 80.90, '2023-06-08'),
(16, 'Dress', 'Clothing', 65.60, '2023-06-15'),
(17, 'Fitness Tracker', 'Electronics', 90.25, '2023-07-01'),
(18, 'Handbag', 'Clothing', 55.40, '2023-07-05'),
(19, 'Wireless Mouse', 'Electronics', 25.60, '2023-07-10'),
(20, 'Hat', 'Clothing', 15.30, '2023-08-02'),
(21, 'Desktop Computer', 'Electronics', 1200.75, '2023-08-10'),
(22, 'Jacket', 'Clothing', 75.20, '2023-09-05'),
(23, 'Bluetooth Speaker', 'Electronics', 70.80, '2023-09-10'),
(24, 'Shorts', 'Clothing', 35.90, '2023-09-15'),
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(25, 'E-reader', 'Electronics', 110.60, '2023-10-01'),
(26, 'Scarf', 'Clothing', 22.40, '2023-10-05'),
(27, 'Gaming Mouse', 'Electronics', 45.25, '2023-10-10'),
(28, 'Polo Shirt', 'Clothing', 28.40, '2023-11-01'),
(29, 'Wireless Keyboard', 'Electronics', 60.20, '2023-11-05'),
(30, 'Socks', 'Clothing', 8.90, '2023-11-10');

-- Step 6: Insert 30 more rows of sample data
INSERT INTO sales VALUES
(31, 'Smart TV', 'Electronics', 800.00, '2023-12-01'),
(32, 'Winter Boots', 'Clothing', 95.20, '2023-12-05'),
(33, 'Coffee Maker', 'Electronics', 60.60, '2023-12-10'),
(34, 'Gloves', 'Clothing', 18.30, '2024-01-02'),
(35, 'Digital Scale', 'Electronics', 35.90, '2024-01-08'),
(36, 'Hoodie', 'Clothing', 50.60, '2024-01-15'),
(37, 'Wireless Earbuds', 'Electronics', 75.25, '2024-02-01'),
(38, 'Umbrella', 'Clothing', 12.40, '2024-02-05'),
(39, 'Blender', 'Electronics', 120.60, '2024-02-10'),
(40, 'Belt', 'Clothing', 22.90, '2024-03-02'),
(41, 'Air Purifier', 'Electronics', 200.75, '2024-03-08'),
(42, 'Denim Jacket', 'Clothing', 65.20, '2024-03-15'),
(43, 'Fitness Watch', 'Electronics', 90.80, '2024-04-01'),
(44, 'Baseball Cap', 'Clothing', 18.90, '2024-04-05'),
(45, 'Electric Toothbrush', 'Electronics', 50.60, '2024-04-10'),
(46, 'Pajamas', 'Clothing', 40.40, '2024-05-01'),
(47, 'Portable Charger', 'Electronics', 30.25, '2024-05-05'),
(48, 'Sun Hat', 'Clothing', 15.40, '2024-05-10'),
(49, 'Robot Vacuum', 'Electronics', 300.60, '2024-06-02'),
(50, 'Swim Trunks', 'Clothing', 28.90, '2024-06-08'),
(51, 'Projector', 'Electronics', 400.75, '2024-06-15'),
(52, 'Summer Dress', 'Clothing', 45.20, '2024-07-01'),
(53, 'Wireless Headphones', 'Electronics', 120.80, '2024-07-05'),
(54, 'Sunglasses', 'Clothing', 22.90, '2024-07-10'),
(55, 'Digital Camera', 'Electronics', 150.60, '2024-08-02'),
(56, 'Casual Shoes', 'Clothing', 55.40, '2024-08-10'),
(57, 'Air Fryer', 'Electronics', 90.25, '2024-09-01'),
(58, 'Tennis Shoes', 'Clothing', 75.20, '2024-09-05'),
(59, 'Smart Thermostat', 'Electronics', 120.60, '2024-09-10'),
(60, 'Sweatpants', 'Clothing', 35.90, '2024-09-15');

1) What is the total sales amount for each category?
2) Which categories have more than 10 sales?
3) What is the maximum sale amount in each category?
4) Which categories have an average sale amount below 50?
5) How many sales does each product have?
6) Which products have more than 5 sales?
7) What is the average sale amount for products with more than 2 sales?
8) Which products have the highest sale amount above 100?
9) Which product has the highest total sales amount?
10) Which categories have a total sales amount above 800?
11) What is the average sale amount for each month?
12) What are the products with the highest sale amount in each category?
13) How many sales occurred for each month?
14) In which months are there more than 5 sales?
15) What is the average sale amount for each product category in months with more than 3 sales?
16) Which products have more than 1 sale in every recorded month?
17) What is the month with the lowest total sales amount?
18) Which products have sale amounts that never go below 50?
19) Which category has the highest total sales amount in each month?
20) Which products have sale amounts above the average sale amount across all products?
21) Which products have sale amounts below the average sale amount across all products?
22) Which categories have at least one sale above 200?
23) Which products have more than 3 consecutive months of sales?
24) Which categories have an increasing total sales amount across months?
25) In which months is there a 20% increase in total sales amount compared to the previous month?
26) Which products have more than 2 sales below 30 in any month?
27) Which categories have sales in every recorded month?
28) Which products have sales in every category?
29) Which categories have more than 2 sales below 50 and more than 1 sale above 100?
30) Which products have the same sale amount in different categories?