Problem 2: SQL (related to Problem 1)

JAGANNATH V V

With the above data, write SQL queries for the following:

1. **Retrieve the top 5 customers who have made the highest average order amounts in the last 6 months. The average order amount should be calculated for each customer, and the result should be sorted in descending order.**

```
SELECT customer_id, AVG(total_amount) AS average_order_amount
FROM orders
WHERE order_date >= DATEADD(MONTH, -6, GETDATE()) -- Last 6 months
GROUP BY customer_id
ORDER BY average_order_amount DESC
LIMIT 5;
```

2. **Retrieve the list of customer whose order value is lower this year as compared to previous year**

```
SELECT
   customer_id,
   SUM(CASE WHEN YEAR(order_date) = YEAR(GETDATE()) THEN total_amount
ELSE 0 END) AS current_year_order_value,
   SUM(CASE WHEN YEAR(order_date) = YEAR(GETDATE()) - 1 THEN total_amount
ELSE 0 END) AS previous_year_order_value
FROM orders
GROUP BY customer_id
HAVING current_year_order_value < previous_year_order_value;
```

3. **Create a table showing cumulative purchase by a particular customer. Show the breakup of cumulative purchases by product category**

```
CREATE TABLE cumulative_purchase_by_category AS
```

```
SELECT
    o.customer_id,
    p.category,
    SUM(o.total_amount) AS cumulative_purchase
FROM orders o
JOIN products p ON o.product_id = p.id
GROUP BY o.customer_id, p.category;
```

4. **Retrieve the list of top 5 selling products. Further bifurcate the sales by product variants**

```
SELECT
    p.name AS product_name,
    v.size,
    v.color,
    COUNT(oi.id) AS total_sales
FROM products p
LEFT JOIN variants v ON p.id = v.product_id
LEFT JOIN order_items oi ON v.id = oi.variant_id
GROUP BY p.name, v.size, v.color
ORDER BY total_sales DESC
LIMIT 5;
```