**Aggregation practice problems:**

**Sample Data**

| **sale\_id** | **product\_id** | **quantity** | **unit\_price** | **sale\_date** | **customer\_region** |
| --- | --- | --- | --- | --- | --- |
| 1 | 103 | 5 | 14.68851 | 30-09-2023 | West |
| 2 | 103 | 8 | 46.85674 | 24-08-2023 | North |
| 3 | 100 | 2 | 36.62423 | 12-09-2023 | North |
| 4 | 102 | 2 | 10.52815 | 12-07-2023 | West |
| 5 | 104 | 3 | 37.25123 | 04-10-2023 | East |

1. **Total Amount and Average Sale Value:**

Calculate the total amount and the average value of a sale transaction across all sales.

1. **Highest and Lowest Sale Value by Product:**

For each product, find the highest and lowest sale values (where sale value is **quantity \* unit\_price**).

1. **Count of Sales and Average Quantity per Region:**

Count the number of sales and calculate the average quantity sold per transaction in each customer region.

1. **Monthly Sales Summary:**

For each month, calculate the total number of sales, the total revenue, and the average sale value.

1. **Product Performance Analysis:**

For each product, calculate the total revenue, the average unit price, and the count of sales transactions.

1. **Yearly Sales Overview:**

Calculate the total revenue, average sale value, and total number of sales for the entire year.

1. **Regional Maximum and Minimum Sale Values:**

Determine the maximum and minimum sale values in each customer region.

1. **Quarterly Sales Aggregation:**

For each quarter of the year, calculate the total revenue and the average quantity sold.

1. **Product Popularity by Region:**

For each region, find the most sold product (based on quantity) and its total revenue.

1. **Annual Sales Distribution:**

Analyze the distribution of sales by calculating the sum, average, and count of sales for the first half of the year (January to June) compared to the second half (July to December).