Question:

For each product in the SALES table, determine the month in 2024 when it had its highest sales quantity. If multiple months have the same highest quantity, return the earliest month. The result should include PRODUCT_ID, MAX_SALES_MONTH, and MAX_QUANTITY.

Table: SALES

```
+------------+------------+-------------+--------------+
| SALE_ID    | PRODUCT_ID | SALE_DATE   | QUANTITY     |
+------------+------------+-------------+--------------+
| 1001       | A001       | 2024-01-15  | 50           |
| 1002       | A001       | 2024-02-10  | 75           |
| 1003       | A001       | 2024-02-20  | 75           |
| 1004       | A002       | 2024-03-05  | 30           |
| 1005       | A002       | 2024-05-12  | 45           |
| 1006       | A002       | 2024-05-20  | 45           |
+------------+------------+-------------+--------------+
```

Expected Output:

```
+------------+---------------+-------------+
| PRODUCT_ID | MAX_SALES_MONTH | MAX_QUANTITY |
+------------+---------------+-------------+
| A001       | 2             | 75          |
| A002       | 5             | 45          |
+------------+---------------+-------------+
```

** QUERY:

WITH BASE AS(

SELECT PRODUCT_ID, CAST(EXTRACT(MONTH FROM SALE_DATE) AS INT) AS MONTH_NUM, SUM(QUANTITY) AS TOTAL_QUANTITY

FROM SALES

GROUP BY PRODUCT_ID, MONTH_NUM

)

SELECT PRODUCT_ID, MONTH_NUM AS MAX_SALES_MONTH, TOTAL_QUANTITY AS MAX_SALES_QUANTITY

FROM

(SELECT *,

```
    ROW_NUMBER() OVER (PARTITION BY PRODUCT_ID ORDER BY TOTAL_QUANTITY DESC, MONTH_NUM) AS RN

    FROM BASE

) AS TABLE_BASE2

WHERE RN=1

;
```