

Command Prompt - sqlplus

```
SQL> CREATE TABLE product_sales (  
2     sale_id      NUMBER PRIMARY KEY,  
3     product_name VARCHAR2(50),  
4     category     VARCHAR2(30),  
5     region       VARCHAR2(30),  
6     sale_amount  NUMBER(10,2),  
7     sale_date    DATE  
8 );
```

Table created.

SQL>

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```
SQL> INSERT INTO product_sales VALUES (1, 'Notebook',      'Stationery', 'Kigali',      1000, TO_DATE('2023-01-01','YYYY-MM-DD'));
```

1 row created.

```
SQL> INSERT INTO product_sales VALUES (2, 'Pen',           'Stationery', 'Kigali',      300, TO_DATE('2023-01-03','YYYY-MM-DD'));
```

1 row created.

```
SQL> INSERT INTO product_sales VALUES (3, 'Eraser',        'Stationery', 'Huye',        150, TO_DATE('2023-01-10','YYYY-MM-DD'));
```

1 row created.

```
SQL> INSERT INTO product_sales VALUES (4, 'Backpack',      'Accessories', 'Huye',        2500, TO_DATE('2023-02-01','YYYY-MM-DD'));
```

1 row created.

```
SQL> INSERT INTO product_sales VALUES (5, 'Ruler',         'Stationery', 'Musanze',     500, TO_DATE('2023-02-05','YYYY-MM-DD'));
```

1 row created.

```
SQL> INSERT INTO product_sales VALUES (6, 'Water Bottle',  'Accessories', 'Musanze',     1200, TO_DATE('2023-02-10','YYYY-MM-DD'));
```

1 row created.

```
SQL> INSERT INTO product_sales VALUES (7, 'Stapler',       'Office',     'Rubavu',      1800, TO_DATE('2023-03-01','YYYY-MM-DD'));
```

1 row created.

```
SQL> INSERT INTO product_sales VALUES (8, 'Desk Lamp',     'Office',     'Rubavu',      3200, TO_DATE('2023-03-05','YYYY-MM-DD'));
```

1 row created.

```
SQL> INSERT INTO product_sales VALUES (9, 'Folder',        'Office',     'Kigali',      800, TO_DATE('2023-03-10','YYYY-MM-DD'));
```

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```
SQL> INSERT INTO product_sales VALUES (1, 'Notebook', 'Stationery', 'Kigali', 1000, TO_DATE('2023-01-01', 'YYYY-MM-DD'));
1 row created.

SQL> INSERT INTO product_sales VALUES (2, 'Pen', 'Stationery', 'Kigali', 300, TO_DATE('2023-01-03', 'YYYY-MM-DD'));
1 row created.

SQL> INSERT INTO product_sales VALUES (3, 'Eraser', 'Stationery', 'Huye', 150, TO_DATE('2023-01-10', 'YYYY-MM-DD'));
1 row created.

SQL> INSERT INTO product_sales VALUES (4, 'Backpack', 'Accessories', 'Huye', 2500, TO_DATE('2023-02-01', 'YYYY-MM-DD'));
1 row created.

SQL> INSERT INTO product_sales VALUES (5, 'Ruler', 'Stationery', 'Musanze', 500, TO_DATE('2023-02-05', 'YYYY-MM-DD'));
1 row created.

SQL> INSERT INTO product_sales VALUES (6, 'Water Bottle', 'Accessories', 'Musanze', 1200, TO_DATE('2023-02-10', 'YYYY-MM-DD'));
1 row created.

SQL> INSERT INTO product_sales VALUES (7, 'Stapler', 'Office', 'Rubavu', 1800, TO_DATE('2023-03-01', 'YYYY-MM-DD'));
1 row created.

SQL> INSERT INTO product_sales VALUES (8, 'Desk Lamp', 'Office', 'Rubavu', 3200, TO_DATE('2023-03-05', 'YYYY-MM-DD'));
1 row created.

SQL> INSERT INTO product_sales VALUES (9, 'Folder', 'Office', 'Kigali', 800, TO_DATE('2023-03-10', 'YYYY-MM-DD'));
1 row created.

SQL>
```

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```
-----
PREVIOUS_SALE NEXT_SALE COMPAR
-----
      9 Folder                800
      500          1000 HIGHER

      1 Notebook              1000
      800          1200 HIGHER

      6 Water Bottle          1200
      1000         1800 HIGHER

      SALE_ID PRODUCT_NAME                SALE_AMOUNT
      -----
PREVIOUS_SALE NEXT_SALE COMPAR
-----
      7 Stapler                1800
      1200          2500 HIGHER

      4 Backpack              2500
      1800          3200 HIGHER

      8 Desk Lamp              3200
      2500          HIGHER

9 rows selected.

SQL>
```

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```
-----  
PREVIOUS_SALE NEXT_SALE COMPAR  
-----  
          9 Folder          800  
          500      1000 HIGHER  
  
          1 Notebook        1000  
          800      1200 HIGHER  
  
          6 Water Bottle    1200  
          1000     1800 HIGHER  
  
          SALE_ID PRODUCT_NAME          SALE_AMOUNT  
-----  
PREVIOUS_SALE NEXT_SALE COMPAR  
-----  
          7 Stapler          1800  
          1200     2500 HIGHER  
  
          4 Backpack        2500  
          1800     3200 HIGHER  
  
          8 Desk Lamp        3200  
          2500           HIGHER  
  
9 rows selected.  
  
SQL> _
```

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```
SQL> SELECT  
2     sale_id,  
3     product_name,  
4     category,  
5     sale_amount,  
6     RANK() OVER (PARTITION BY category ORDER BY sale_amount DESC) AS rank_amount,  
7     DENSE_RANK() OVER (PARTITION BY category ORDER BY sale_amount DESC) AS dense_rank_amount  
8 FROM product_sales;
```

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CATEGORY	SALE_AMOUNT	RANK_AMOUNT	DENSE_RANK_AMOUNT
4 Backpack Accessories	2500	1	1
6 Water Bottle Accessories	1200	2	2
8 Desk Lamp Office	3200	1	1

SALE_ID PRODUCT_NAME

CATEGORY	SALE_AMOUNT	RANK_AMOUNT	DENSE_RANK_AMOUNT
7 Stapler Office	1800	2	2
9 Folder Office	800	3	3
1 Notebook Stationery	1000	1	1

SALE_ID PRODUCT_NAME

CATEGORY	SALE_AMOUNT	RANK_AMOUNT	DENSE_RANK_AMOUNT
5 Ruler Stationery	500	2	2
2 Pen Stationery	300	3	3
3 Eraser Stationery	150	4	4

9 rows selected.

SQL>

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```
SQL> SELECT *
2 FROM (
3   SELECT
4     sale_id,
5     product_name,
6     category,
7     sale_amount,
8     RANK() OVER (PARTITION BY category ORDER BY sale_amount DESC) AS rank_amount
9   FROM product_sales
10 )
11 WHERE rank_amount <= 3;
```

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```
-----
SALE_ID PRODUCT_NAME
-----
CATEGORY          SALE_AMOUNT RANK_AMOUNT
-----
      4 Backpack
Accessories             2500          1
      6 Water Bottle
Accessories             1200          2
      8 Desk Lamp
Office                  3200          1

      7 Stapler
Office                  1800          2
      9 Folder
Office                   800          3
      1 Notebook
Stationery              1000          1

      5 Ruler
Stationery               500          2
      2 Pen
Stationery               300          3

8 rows selected.

SQL>
```

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```
SQL> SELECT *
2 FROM (
3   SELECT
4     sale_id,
5     product_name,
6     region,
7     sale_date,
8     ROW_NUMBER() OVER (PARTITION BY region ORDER BY sale_date) AS row_num
9   FROM product_sales
10 )
11 WHERE row_num <= 2;
```

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```
-----  
SALE_ID PRODUCT_NAME  
-----  
REGION          SALE_DATE  ROW_NUM  
-----  
Huye             3 Eraser      10-JAN-23      1  
Huye             4 Backpack    01-FEB-23      2  
Kigali           1 Notebook    01-JAN-23      1  
  
-----  
SALE_ID PRODUCT_NAME  
-----  
REGION          SALE_DATE  ROW_NUM  
-----  
Kigali           2 Pen         03-JAN-23      2  
Musanze          5 Ruler       05-FEB-23      1  
Musanze          6 Water Bottle 10-FEB-23      2  
  
-----  
SALE_ID PRODUCT_NAME  
-----  
REGION          SALE_DATE  ROW_NUM  
-----  
Rubavu           7 Stapler     01-MAR-23      1  
Rubavu           8 Desk Lamp   05-MAR-23      2  
  
8 rows selected.  
SQL>
```

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```
SQL> SELECT  
2     sale_id,  
3     product_name,  
4     category,  
5     sale_amount,  
6     MAX(sale_amount) OVER (PARTITION BY category) AS max_in_category,  
7     MAX(sale_amount) OVER () AS overall_max  
8 FROM product_sales;
```

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```
-----  
CATEGORY          SALE_AMOUNT MAX_IN_CATEGORY OVERALL_MAX  
-----  
6 Water Bottle  
Accessories          1200           2500           3200  
4 Backpack  
Accessories          2500           2500           3200  
8 Desk Lamp  
Office              3200           3200           3200
```

```
SALE_ID PRODUCT_NAME  
-----  
CATEGORY          SALE_AMOUNT MAX_IN_CATEGORY OVERALL_MAX  
-----  
7 Stapler  
Office              1800           3200           3200  
9 Folder  
Office              800            3200           3200  
3 Eraser  
Stationery          150            1000           3200
```

```
SALE_ID PRODUCT_NAME  
-----  
CATEGORY          SALE_AMOUNT MAX_IN_CATEGORY OVERALL_MAX  
-----  
2 Pen  
Stationery           300            1000           3200  
1 Notebook  
Stationery          1000           1000           3200  
5 Ruler  
Stationery           500            1000           3200
```

9 rows selected.

SQL> _