Advanced SQL Exercises for Online Retail Store

Exercise 1: Ranking and Window Functions

Goal: Use ROW_NUMBER(), RANK(), DENSE_RANK(), OVER(), and PARTITION BY.

Scenario:

Find the top 3 most expensive products in each category using different ranking functions.

Steps:

Use ROW_NUMBER() to assign a unique rank within each category.
 CODE:-

ROW_NUMBER() OVER (PARTITION BY Category ORDER BY Price DESC) OUTPUT:-

(12 rows aft ProductID	fected) ProductName	Price	RowNum	
5	Refrigerator	45000.00	1	
6	Washing Machine	35000.00		
7	Microwave			
8	Blender	15000.00	3	
10	Encyclopedia	5000.00	4	
	Textbook	2500.00	1	
		2500.00	2	
9	Novel	500.00	3	
12	Comics	300.00	4	
1	Laptop			
2	Smartphone	85000.00	1	
3	Tablet	55000.00	2	
		55000.00	3	
4	Headphones	3000.00	4	

Use RANK() and DENSE_RANK() to compare how ties are handled. CODE:-

RANK() OVER (PARTITION BY Category ORDER BY Price DESC) OUTPUT:-

(12 rows aft	fected) ProductName			
		Price	PriceRank	
				_
5	Refrigerator	45000.00		1
6	Washing Machine			
7	Microwave	35000.00		2
	Blender	15000.00		3
		5000.00		4
10	Encyclopedia	2500.00		1
11	Textbook			
9	Novel	2500.00		1
12	Comics	500.00		3
		300.00		4
1	Laptop	85000.00		1
2	Smartphone			
3	Tablet	55000.00		2
и	Headphones	55000.00		2
	riedopiiones	3000.00		4

3. Use PARTITION BY Category and ORDER BY Price DESC.

CODE:-

DENSE_RANK() OVER (PARTITION BY Category ORDER BY Price DESC) OUTPUT:-

(12 rows af ProductID	fected) ProductName	Price	PriceRank
5	Refrigerator		
6	Washing Machine	45000.00	1
		35000.00	2
7	Microwave	15000.00	3
8	Blender		
10	Encyclopedia	5000.00	4
		2500.00	1
11	Textbook	2500.00	1
9	Novel	500.00	3
12	Comics		
1	Laptop	300.00	4
		85000.00	1
2	Smartphone	55000.00	2
3	Tablet		
4	Headphones	55000.00	2
		3000.00	4

4. top 3 most expensive products in each category CODE:WITH RankedProducts AS (
 SELECT *,
 ROW_NUMBER() OVER (PARTITION BY Category ORDER BY Price DESC) AS RowNum
 FROM Products
)
SELECT *
FROM RankedProducts
WHERE RowNum <= 3;
OUTPUT:-</p>

(12 rows aft	fected) ProductName	Price	RowNum	
				-
5	Refrigerator	45000.00		1
6	Washing Machine			
7	Microwave	35000.00	2	2
		15000.00	:	3
10	Encyclopedia	2500.00		1
11	Textbook			
9	Novel	2500.00		2
		500.00	:	3
1	Laptop	85000.00	1	1
2	Smartphone	EE000 00		2
3	Tablet	55000.00	•	2
		55000.00	:	3
(9 rows affe	ected)			