Problem 3564: Seasonal Sales Analysis

Problem Information

Difficulty: Medium
Acceptance Rate: 60.84%
Paid Only: No
Tags: Database

Problem Description

Table: `sales`

+---------------+---------+ | Column Name | Type | +---------------+---------+ | sale_id | int | | product_id | int | | sale_date | date | | quantity | int | | price | decimal | +---------------+---------+ sale_id is the unique identifier for this table. Each row contains information about a product sale including the product_id, date of sale, quantity sold, and price per unit.

Table: `products`

+---------------+---------+ | Column Name | Type | +---------------+---------+ | product_id | int | | product_name | varchar | | category | varchar | +---------------+---------+ product_id is the unique identifier for this table. Each row contains information about a product including its name and category.

Write a solution to find the most popular product category for each season. The seasons are defined as:

* **Winter** : December, January, February * **Spring** : March, April, May * **Summer** : June, July, August * **Fall** : September, October, November

The **popularity** of a **category** is determined by the **total quantity sold** in that **season**. If there is a **tie** , select the category with the highest **total revenue** (`quantity × price`).

Return _the result table ordered by season in**ascending** order_.

The result format is in the following example.

Example:

Input:

sales table:

+---------+------------+------------+----------+-------+ | sale_id | product_id | sale_date | quantity | price | +---------+------------+------------+----------+-------+ | 1 | 1 | 2023-01-15 | 5 | 10.00 | | 2 | 2 | 2023-01-20 | 4 | 15.00 | | 3 | 3 | 2023-03-10 | 3 | 18.00 | | 4 | 4 | 2023-04-05 | 1 | 20.00 | | 5 | 1 | 2023-05-20 | 2 | 10.00 | | 6 | 2 | 2023-06-12 | 4 | 15.00 | | 7 | 5 | 2023-06-15 | 5 | 12.00 | | 8 | 3 | 2023-07-24 | 2 | 18.00 | | 9 | 4 | 2023-08-01 | 5 | 20.00 | | 10 | 5 | 2023-09-03 | 3 | 12.00 | | 11 | 1 | 2023-09-25 | 6 | 10.00 | | 12 | 2 | 2023-11-10 | 4 | 15.00 | | 13 | 3 | 2023-12-05 | 6 | 18.00 | | 14 | 4 | 2023-12-22 | 3 | 20.00 | | 15 | 5 | 2024-02-14 | 2 | 12.00 | +---------+------------+------------+----------+-------+

products table:

+------------+-----------------+----------+ | product_id | product_name | category | +------------+-----------------+----------+ | 1 | Warm Jacket | Apparel | | 2 | Designer Jeans | Apparel | | 3 | Cutting Board | Kitchen | | 4 | Smart Speaker | Tech | | 5 | Yoga Mat | Fitness | +------------+-----------------+----------+

Output:

+---------+----------+----------------+---------------+ | season | category | total_quantity | total_revenue | +---------+----------+----------------+---------------+ | Fall | Apparel | 10 | 120.00 | | Spring | Kitchen | 3 | 54.00 | | Summer | Tech | 5 | 100.00 | | Winter | Apparel | 9 | 110.00 | +---------+----------+----------------+---------------+

Explanation:

* **Fall (Sep, Oct, Nov):** * Apparel: 10 items sold (6 Jackets in Sep, 4 Jeans in Nov), revenue $120.00 (6×$10.00 + 4×$15.00) * Fitness: 3 Yoga Mats sold in Sep, revenue $36.00 * Most popular: Apparel with highest total quantity (10) * **Spring (Mar, Apr, May):** * Kitchen: 3 Cutting Boards sold in Mar, revenue $54.00 * Tech: 1 Smart Speaker sold in Apr, revenue $20.00 * Apparel: 2 Warm Jackets sold in May, revenue $20.00 * Most popular: Kitchen with highest total quantity (3) and highest revenue ($54.00) * **Summer (Jun, Jul, Aug):** * Apparel: 4 Designer Jeans sold in Jun, revenue $60.00 * Fitness: 5 Yoga Mats sold in Jun, revenue $60.00 * Kitchen: 2 Cutting Boards sold in Jul, revenue $36.00 * Tech: 5 Smart

Speakers sold in Aug, revenue $100.00 * Most popular: Tech and Fitness both have 5 items, but Tech has higher revenue ($100.00 vs $60.00) * **Winter (Dec, Jan, Feb):** * Apparel: 9 items sold (5 Jackets in Jan, 4 Jeans in Jan), revenue $110.00 * Kitchen: 6 Cutting Boards sold in Dec, revenue $108.00 * Tech: 3 Smart Speakers sold in Dec, revenue $60.00 * Fitness: 2 Yoga Mats sold in Feb, revenue $24.00 * Most popular: Apparel with highest total quantity (9) and highest revenue ($110.00)

The result table is ordered by season in ascending order.

Code Snippets

MySQL:

```
# Write your MySQL query statement below
```

MS SQL Server:

```
/* Write your T-SQL query statement below */
```

PostgreSQL:

```
-- Write your PostgreSQL query statement below
```