

83_Product Sales Analysis III

Medium - Solution

Source - <https://leetcode.com/problems/product-sales-analysis-iii/description/>

Running Notes:

- Write a solution to select the **product id**, **year**, **quantity**, and **price** for the **first year** of every product sold.
- So basically if I had to confirm my thought process, what I need to find is the year, quantity and price for every product (SOLD) (the first of every product sold)
- Since it is for every product SOLD I don't really need the Product table because the details of every product sold is going to be there in the sales table

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

```
WITH main_CTE AS (  
    SELECT product_id,  
    MIN(year) OVER(  
        PARTITION BY product_id  
    ) as first_year, year,  
    quantity, price  
    FROM Sales)  
  
SELECT product_id, first_year, quantity, price  
FROM main_CTE  
WHERE first_year = year
```

I found the earliest year (first year) for each product using a window function while retaining all rows. Then, I filtered the results to include only those where the first year matches the year, giving me the final output.

- **Finding the First Year:**

- I used `MIN(year) OVER (PARTITION BY product_id)` to determine the first year each product was sold.
- The **window function** ensures that I retain all rows while computing the minimum year for each product.
- **Filtering for First-Year Sales:**
 - I selected only the rows where `first_year = year`, ensuring that I get the quantity and price for the product's first sale year as needed by the question

Written By,
Harshee Pitroda