QUESTION

Product Sales by Month

Medium

10 Points

Given a table containing data for monthly sales, write a query to find the total amount of each product sold for each month, with each product as its own column in the output table.

Output Schema:

Column	Type
month	DATE
product_1	INT
product_2	INT
product_3	INT
product_4	INT

TABLE SCHEMA

```sql
CREATE TABLE monthly_sales (
month DATE,
product_id INTEGER,
amount_sold INTEGER
);

INSERT INTO monthly_sales (month, product_id, amount_sold) VALUES
('2021-01-01', 1, 100),
('2021-01-01', 2, 300),
('2021-02-01', 1, 150),
('2021-02-01', 1, 50),
('2021-02-01', 2, 250),
('2021-03-01', 1, 120),
('2021-03-01', 4, 250),
('2021-04-01', 2, -30),
('2021-04-01', 3, 200),
('2021-05-01', 3, 175),
('2021-06-01', 1, 0),
('2021-06-01', 2, 100);
```

SOLUTION

OUTPUT

month	product_1	product_2	product_3	product_4
2021-01-01	100	300	0	0
2021-02-01	200	250	0	0
2021-03-01	120	0	0	250
2021-04-01	0	-30	200	0
2021-05-01	0	0	175	0
2021-06-01	0	100	0	0

My Thought Process:

When I saw the structure, I immediately thought of a pivot-style transformation. Since SQL doesn't have a built-in pivot in all engines, I used CASE WHEN inside SUM() for each product. I grouped by month to get totals and carefully checked for duplicate product entries (like two entries for product 1 in one month). The tricky part was making sure all products were represented even if their sales were zero in certain months.