

## Highest-Grossing Items [Amazon SQL Interview Question]

Assume you are given the table containing information on Amazon customers and their spending on products in various categories.

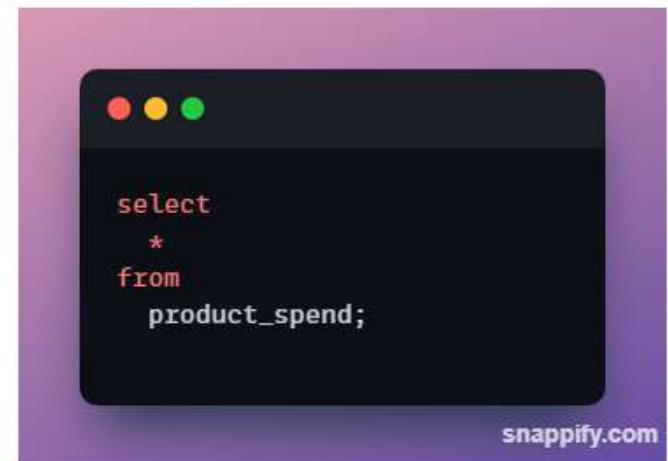
Identify the top two highest-grossing products within each category in 2022. Output the category, product, and total spend.

product\_spend Table:

| Column Name      | Type      |
|------------------|-----------|
| category         | string    |
| product          | string    |
| user_id          | integer   |
| spend            | decimal   |
| transaction_date | timestamp |

### STEP 1

| category    | product          | user_id | spend  | transaction_date    |
|-------------|------------------|---------|--------|---------------------|
| appliance   | washing machine  | 123     | 219.8  | 03/02/2022 11:00:00 |
| electronics | vacuum           | 178     | 152    | 04/05/2022 10:00:00 |
| electronics | wireless headset | 156     | 249.9  | 07/08/2022 10:00:00 |
| electronics | vacuum           | 145     | 189    | 07/15/2022 10:00:00 |
| electronics | computer mouse   | 195     | 45     | 07/01/2022 11:00:00 |
| appliance   | refrigerator     | 165     | 246    | 12/26/2021 12:00:00 |
| appliance   | refrigerator     | 123     | 299.99 | 03/02/2022 11:00:00 |
| appliance   | washing machine  | 123     | 220    | 07/27/2022 4:00:00  |
| electronics | vacuum           | 156     | 145.66 | 08/10/2022 4:00:00  |
| electronics | wireless headset | 145     | 198    | 08/04/2022 4:00:00  |



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**STEP 2**

| category    | product          | total_spend |
|-------------|------------------|-------------|
| appliance   | washing machine  | 439.8       |
| appliance   | refrigerator     | 299.99      |
| electronics | vacuum           | 486.66      |
| electronics | wireless headset | 447.9       |
| electronics | computer mouse   | 45          |

```
select
  category,
  product,
  sum(Spend) as Total_spend
from
  product_spend
WHERE
  EXTRACT(year from transaction_date) = 2022
group by
  1,2
order by
  1,3 desc;
```

**STEP 3**

| category    | product          | total_spend | rank_ |
|-------------|------------------|-------------|-------|
| appliance   | washing machine  | 439.8       | 1     |
| appliance   | refrigerator     | 299.99      | 2     |
| electronics | vacuum           | 486.66      | 1     |
| electronics | wireless headset | 447.9       | 2     |
| electronics | computer mouse   | 45          | 3     |

```
with total as (
  select
    category,
    product,
    sum(Spend) as Total_spend
  from
    product_spend
  WHERE
    EXTRACT( year from transaction_date) = 2022
  group by
    1,2
  order by
    1,3 desc
)
select
  category,
  product,
  Total_spend,
  Row_number()
    over(partition by category order by total_spend desc) as rank_
from
  total;
```

Continue--&gt;

#### Final Output

| category    | product          | total_spend |
|-------------|------------------|-------------|
| appliance   | washing machine  | 439.8       |
| appliance   | refrigerator     | 299.99      |
| electronics | vacuum           | 486.66      |
| electronics | wireless headset | 447.9       |

```
with total as (  
  select  
    category,  
    product,  
    sum(Spend) as Total_spend  
  from  
    product_spend  
  WHERE  
    EXTRACT(year from transaction_date) = 2022  
  group by  
    1,2  
  order by  
    1,3 desc  
)  
select  
  category,  
  product,  
  Total_spend  
from  
  (  
    select  
      category,  
      product,  
      Total_spend,  
      Row_number() over(partition by category order by total_spend desc) as rank_  
    from  
      total  
  ) sub  
where  
  rank_ <= 2;
```