Problem List

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3050. Pizza Toppings Cost Analysis

Premium

Solved

Medium | Topics | Companies

SQL Schema > Pandas Schema >

Table: Toppings

```
+--------------+---------+
| Column Name  | Type    |
+--------------+---------+
| topping_name | varchar |
| cost         | decimal |
+--------------+---------+
topping_name is the primary key for this table.
Each row of this table contains topping name and the cost of
the topping.
```

Write a solution to calculate the **total cost** of **all possible** 3 **-topping** pizza combinations from a given list of toppings. The total cost of toppings must be **rounded** to 2 **decimal** places.

Note:

- **Do not** include the pizzas where a topping is **repeated**. For example, 'Pepperoni, Pepperoni, Onion Pizza'.
- Toppings **must be** listed in **alphabetical order**. For example, 'Chicken, Onions, Sausage'. 'Onion, Sausage, Chicken' is not acceptable.

Return *the result table ordered by total cost in **descending** order and combination of toppings in **ascending** order.*

The result format is in the following example.

Example 1:

Input:
Toppings table:

```
+--------------+------+
| topping_name | cost |
+--------------+------+
| Pepperoni    | 0.50 |
| Sausage      | 0.70 |
| Chicken      | 0.55 |
| Extra Cheese | 0.40 |
+--------------+------+
```

Output:

```
+---------------------------------+------------+
| pizza                           | total_cost |
+---------------------------------+------------+
| Chicken,Pepperoni,Sausage       | 1.75       |
| Chicken,Extra Cheese,Sausage    | 1.65       |
| Extra Cheese,Pepperoni,Sausage  | 1.60       |
| Chicken,Extra Cheese,Pepperoni  | 1.45       |
+---------------------------------+------------+
```

Explanation:
There are only four different combinations possible with the three topings:
- Chicken, Pepperoni, Sausage: Total cost is $1.75 (Chicken $0.55, Pepperoni $0.50, Sausage $0.70).
- Chicken, Extra Cheese, Sausage: Total cost is $1.65 (Chicken $0.55, Extra Cheese $0.40, Sausage $0.70).
- Extra Cheese, Pepperoni, Sausage: Total cost is $1.60 (Extra Cheese $0.40, Pepperoni $0.50, Sausage $0.70).
- Chicken, Extra Cheese, Pepperoni: Total cost is $1.45 (Chicken $0.55, Extra Cheese $0.40, Pepperoni $0.50).

Output table is ordered by the total cost in descending order.

Seen this question in a real interview before? 1/5

Yes No

Accepted 3,259 /4.8K | Acceptance Rate 67.9 %

Topics

Companies

Discussion (1)

Submit

Code

Pandas • Auto

```python
import pandas as pd

def cost_analysis(toppings: pd.DataFrame) -> pd.DataFrame:

    # Cross join to get all combinations of 3 toppings
    df = toppings.merge(toppings, how='cross', suffixes=('_1', '_2'))
    df = df.merge(toppings, how='cross')

    # Rename columns from third join
    df = df.rename(columns={
        'topping_name': 'topping_name_3',
        'cost': 'cost_3'
    })

    # Ensure no repeated toppings and alphabetical order
    df = df[
        (df['topping_name_1'] < df['topping_name_2']) &
        (df['topping_name_2'] < df['topping_name_3'])
    ]

    # Create pizza combination string
    df['pizza'] = (
        df['topping_name_1'] + ',' +
        df['topping_name_2'] + ',' +
```

Saved

Ln 16, Col 13

Testcase | Test Result

Accepted Runtime: 257 ms

Case 1

Input

Toppings =

```
| topping_name | cost |
| ------------ | ---- |
| Pepperoni    | 0.5  |
| Sausage      | 0.7  |
| Chicken      | 0.55 |
| Extra Cheese | 0.4  |
```

15 | 1 | 0 Online