

Problem 3052: Maximize Items

Problem Information

Difficulty: Hard

Acceptance Rate: 74.21%

Paid Only: Yes

Tags: Database

Problem Description

Table: `Inventory`

Column Name	Type
item_id	int
item_type	varchar
item_category	varchar
square_footage	decimal

item_id is the column of unique values for this table. Each row includes item id, item type, item category and square footage.

Leetcode warehouse wants to maximize the number of items it can stock in a `500,000` square feet warehouse. It wants to stock as many **prime** items as possible, and afterwards use the **remaining** square footage to stock the most number of **non-prime** items.

Write a solution to find the number of **prime** and **non-prime** items that can be **stored** in the `500,000` square feet warehouse. Output the item type with `prime_eligible` followed by `not_prime` and the maximum number of items that can be stocked.

****Note:****

* Item **count** must be a whole number (integer). * If the count for the **not_prime** category is `0`, you should **output** `0` for that particular category.

Return _the result table ordered by item count in**descending order**_.

The result format is in the following example.

****Example 1:****

****Input:**** Inventory table:

item_id	item_type	item_category	square_footage
1374	prime_eligible	Watches	68.00
4245	not_prime	Art	26.40
5743	prime_eligible	Software	325.00
8543	not_prime	Clothing	64.50
2556	not_prime	Shoes	15.00
2452	prime_eligible	Scientific	85.00
3255	not_prime	Furniture	22.60
1672	prime_eligible	Beauty	8.50
4256	prime_eligible	Furniture	55.50
6325	prime_eligible	Food	13.20

****Output:****

item_type	item_count
prime_eligible	5400
not_prime	8

****Explanation:**** - The prime-eligible category comprises a total of 6 items, amounting to a combined square footage of 555.20 (68 + 325 + 85 + 8.50 + 55.50 + 13.20). It is possible to store 900 combinations of these 6 items, totaling 5400 items and occupying 499,680 square footage. - In the not_prime category, there are a total of 4 items with a combined square footage of 128.50. After deducting the storage used by prime-eligible items (500,000 - 499,680 = 320), there is room for 2 combinations of non-prime items, accommodating a total of 8 non-prime items within the available 320 square footage. Output table is ordered by item count in descending 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
```