

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
```