

Problem 1459: Rectangles Area

Problem Information

Difficulty: **Medium**

Acceptance Rate: 0.00%

Paid Only: No

Problem Description

Table:

Points

+-----+-----+ | Column Name | Type | +-----+-----+ | id | int | | x_value | int |
| y_value | int | +-----+-----+ id is the column with unique values for this table. Each
point is represented as a 2D coordinate (x_value, y_value).

Write a solution to report all possible

axis-aligned

rectangles with a

non-zero area

that can be formed by any two points from the

Points

table.

Each row in the result should contain three columns

(p1, p2, area)

where:

p1

and

p2

are the

id

's of the two points that determine the opposite corners of a rectangle.

area

is the area of the rectangle and must be

non-zero

.

Return the result table

ordered

by

area

in descending order

. If there is a tie, order them by

p1

in ascending order

. If there is still a tie, order them by

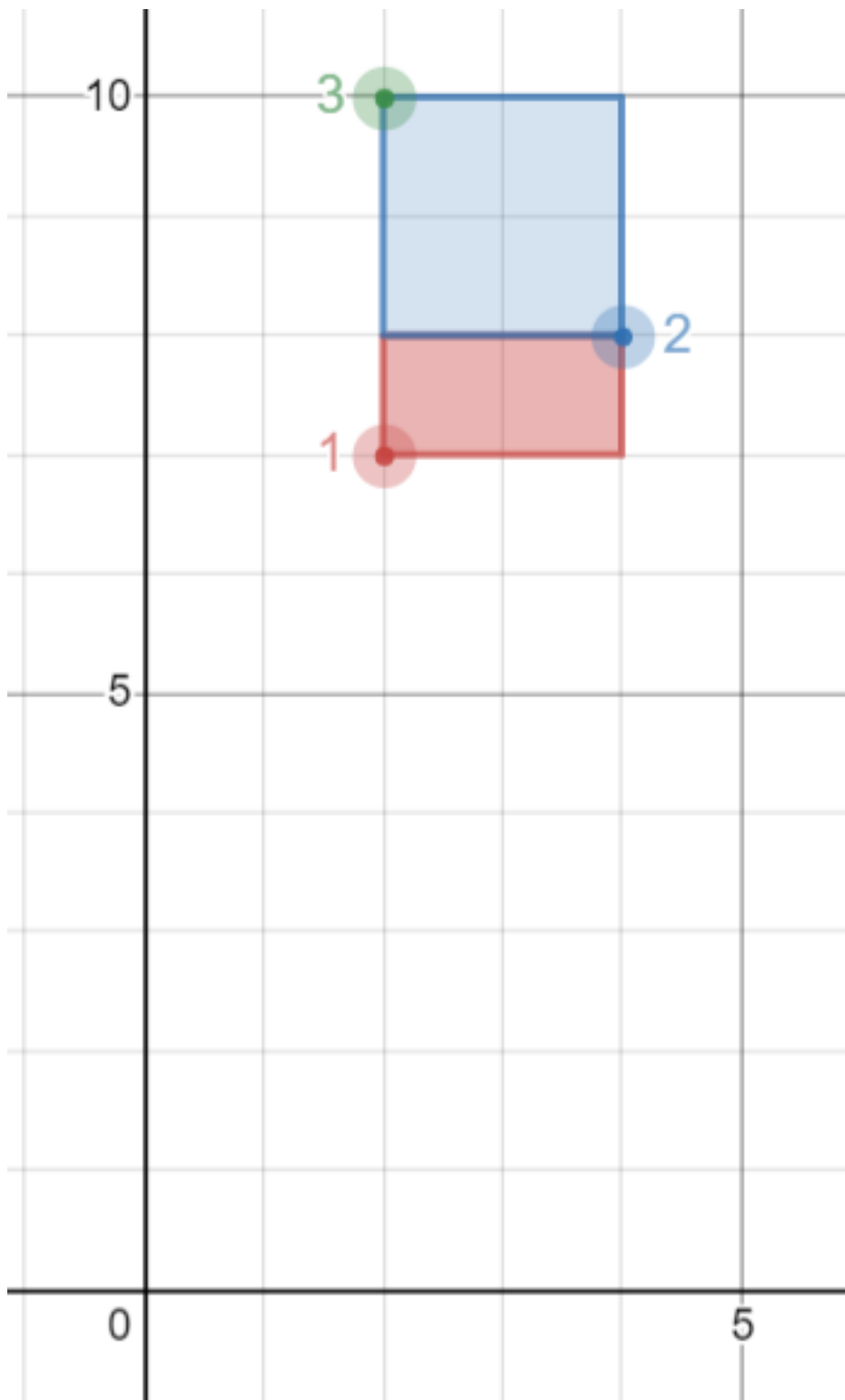
p2

in ascending order

.

The result format is in the following table.

Example 1:



Input:

Points table: +-----+-----+-----+ | id | x_value | y_value |
+-----+-----+-----+ | 1 | 2 | 7 | | 2 | 4 | 8 | | 3 | 2 | 10 |
+-----+-----+-----+

Output:

```
+-----+-----+-----+ | p1 | p2 | area | +-----+-----+-----+ | 2 | 3 | 4 | |
1 | 2 | 2 | +-----+-----+-----+
```

Explanation:

The rectangle formed by $p1 = 2$ and $p2 = 3$ has an area equal to $|4-2| * |8-10| = 4$. The rectangle formed by $p1 = 1$ and $p2 = 2$ has an area equal to $|2-4| * |7-8| = 2$. Note that the rectangle formed by $p1 = 1$ and $p2 = 3$ is invalid because the area is 0.

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
```

Oracle:

```
/* Write your PL/SQL query statement below */
```

Pandas:

```
import pandas as pd

def rectangles_area(points: pd.DataFrame) -> pd.DataFrame:
```

Solutions

MySQL Solution:

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