Problem 3061: Calculate Trapping Rain Water

Problem Information

Difficulty: Hard
Acceptance Rate: 81.53%
Paid Only: Yes
Tags: Database

Problem Description

Table: Heights

+-------------+------+ | Column Name | Type | +-------------+------+ | id | int | | height | int | +-------------+------+ id is the primary key (column with unique values) for this table, and it is guaranteed to be in sequential order. Each row of this table contains an id and height.

Write a solution to calculate the amount of rainwater can be **trapped between the bars** in the landscape, considering that each bar has a **width** of `1` unit.

Return _the result table in_**any** _order._

The result format is in the following example.

Example 1:

Input: Heights table: +-----+--------+ | id | height | +-----+--------+ | 1 | 0 | | 2 | 1 | | 3 | 0 | | 4 | 2 | | 5 | 1 | | 6 | 0 | | 7 | 1 | | 8 | 3 | | 9 | 2 | | 10 | 1 | | 11 | 2 | | 12 | 1 | +-----+--------+ **Output:** +--------------------+ | total_trapped_water | +--------------------+ | 6 | +--------------------+ **Explanation:** The elevation map depicted above (in the black section) is graphically represented with the x-axis denoting the id and the y-axis representing the heights [0,1,0,2,1,0,1,3,2,1,2,1]. In this scenario, 6 units of rainwater are trapped within the blue section.

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
```