Problem List

Description | Accepted | Editorial | Solutions | Submissions

3061. Calculate Trapping Rain Water

Solved

Premium

Hard | Topics

SQL Schema | Pandas Schema

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.

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

Yes | No

Accepted 1,564/1.9K | Acceptance Rate 81.5%

Topics

Discussion (6)

14 | 6 | 0 Online

Code

Pandas • Auto

```python
import pandas as pd

def calculate_trapped_rain_water(heights: pd.DataFrame) -> pd.DataFrame:

    df = heights.assign(ones = heights["height"].apply(lambda x: x*[1]))["ones"].apply(pd.Series)
    df2 = (df.ffill() == 1) & (df.bfill() == 1)
    return pd.DataFrame({"total_trapped_water": [((df == 1)^(df2 == 1)).sum().sum()]})
```

Saved

Ln 7, Col 87

Testcase | Test Result

Accepted Runtime: 229 ms

Case 1

Input

Heights =

id	height
1	0
2	1
3	0
4	2
5	1
6	0