Description | Editorial | Solutions (738) | Submissions

1661. Average Time of Process per Machine

Easy · 👍 612 · 👎 57 · ☆ · ↻

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SQL Schema >

Table: `Activity`

```
+----------------+---------+
| Column Name    | Type    |
+----------------+---------+
| machine_id     | int     |
| process_id     | int     |
| activity_type  | enum    |
| timestamp      | float   |
+----------------+---------+
The table shows the user activities for a factory website.
(machine_id, process_id, activity_type) is the primary key (combination of columns with
unique values) of this table.
machine_id is the ID of a machine.
process_id is the ID of a process running on the machine with ID machine_id.
activity_type is an ENUM (category) of type ('start', 'end').
timestamp is a float representing the current time in seconds.
'start' means the machine starts the process at the given timestamp and 'end' means the
machine ends the process at the given timestamp.
The 'start' timestamp will always be before the 'end' timestamp for every (machine_id,
process_id) pair.
```

There is a factory website that has several machines each running the **same number of processes**. Write a solution to find the **average time** each machine takes to complete a process.

The time to complete a process is the `'end' timestamp` minus the `'start' timestamp`. The average time is calculated by the total time to complete every process on the machine divided by the number of processes that were run.

The resulting table should have the `machine_id` along with the **average time** as `processing_time`, which should be **rounded to 3 decimal places**.

Return the result table in **any order**.

The result format is in the following example.

Example 1:

```
Input:
Activity table:
+------------+------------+---------------+-----------+
| machine_id | process_id | activity_type | timestamp |
+------------+------------+---------------+-----------+
| 0          | 0          | start         | 0.712     |
| 0          | 0          | end           | 1.520     |
| 0          | 1          | start         | 3.140     |
| 0          | 1          | end           | 4.120     |
| 1          | 0          | start         | 0.550     |
| 1          | 0          | end           | 1.550     |
| 1          | 1          | start         | 0.430     |
| 1          | 1          | end           | 1.420     |
| 2          | 0          | start         | 4.100     |
| 2          | 0          | end           | 4.512     |
| 2          | 1          | start         | 2.500     |
| 2          | 1          | end           | 5.000     |
+------------+------------+---------------+-----------+

Output:
+------------+-----------------+
| machine_id | processing_time |
+------------+-----------------+
| 0          | 0.894           |
| 1          | 0.995           |
| 2          | 1.456           |
+------------+-----------------+

Explanation:
There are 3 machines running 2 processes each.
Machine 0's average time is ((1.520 - 0.712) + (4.120 - 3.140)) / 2 = 0.894
Machine 1's average time is ((1.550 - 0.550) + (1.420 - 0.430)) / 2 = 0.995
Machine 2's average time is ((4.512 - 4.100) + (5.000 - 2.500)) / 2 = 1.456
```

Accepted **67.8K** | Submissions **97.8K** | Acceptance Rate **69.3%**

Seen this question in a real interview before? 1/4

Yes No

Discussion (22) ⌄

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i MySQL ⌄ · 🔒 Auto

```sql
1  # Write your MySQL query statement below
2  SELECT
3    a1.machine_id,
4    ROUND(AVG(a2.timestamp - a1.timestamp),3) AS processing_time
5  FROM Activity a1
6  JOIN Activity a2
7  ON a1.machine_id = a2.machine_id
8  AND a1.activity_type ='start' and a2.activity_type='end'
9  WHERE
10   a1.process_id = a2.process_id
11 GROUP BY a1.machine_id
```

Ln 1, Col 1

Console ⌃   Run   Submit