

Problem 3126: Server Utilization Time

Problem Information

Difficulty: **Medium**

Acceptance Rate: 0.00%

Paid Only: No

Problem Description

Table:

Servers

+-----+-----+ | Column Name | Type | +-----+-----+ | server_id | int | | status_time | datetime | | session_status | enum | +-----+-----+ (server_id, status_time, session_status) is the primary key (combination of columns with unique values) for this table. session_status is an ENUM (category) type of ('start', 'stop'). Each row of this table contains server_id, status_time, and session_status.

Write a solution to find the

total time

when servers were

running

. The output should be rounded down to the nearest number of

full days

.

Return

the result table in

any

order.

The result format is in the following example.

Example:

Input:

Servers table:

```
+-----+-----+-----+ | server_id | status_time | session_status |
+-----+-----+-----+ | 3 | 2023-11-04 16:29:47 | start | | 3 | 2023-11-05
01:49:47 | stop | | 3 | 2023-11-25 01:37:08 | start | | 3 | 2023-11-25 03:50:08 | stop | | 1 |
2023-11-13 03:05:31 | start | | 1 | 2023-11-13 11:10:31 | stop | | 4 | 2023-11-29 15:11:17 | start
| | 4 | 2023-11-29 15:42:17 | stop | | 4 | 2023-11-20 00:31:44 | start | | 4 | 2023-11-20 07:03:44 |
stop | | 1 | 2023-11-20 00:27:11 | start | | 1 | 2023-11-20 01:41:11 | stop | | 3 | 2023-11-04
23:16:48 | start | | 3 | 2023-11-05 01:15:48 | stop | | 4 | 2023-11-30 15:09:18 | start | | 4 |
2023-11-30 20:48:18 | stop | | 4 | 2023-11-25 21:09:06 | start | | 4 | 2023-11-26 04:58:06 | stop
| | 5 | 2023-11-16 19:42:22 | start | | 5 | 2023-11-16 21:08:22 | stop |
+-----+-----+-----+
```

Output:

```
+-----+ | total_uptime_days | +-----+ | 1 | +-----+
```

Explanation:

For server ID 3:

From 2023-11-04 16:29:47 to 2023-11-05 01:49:47: ~9.3 hours

From 2023-11-25 01:37:08 to 2023-11-25 03:50:08: ~2.2 hours

From 2023-11-04 23:16:48 to 2023-11-05 01:15:48: ~1.98 hours

Total for server 3: ~13.48 hours

For server ID 1:

From 2023-11-13 03:05:31 to 2023-11-13 11:10:31: ~8 hours

From 2023-11-20 00:27:11 to 2023-11-20 01:41:11: ~1.23 hours

Total for server 1: ~9.23 hours

For server ID 4:

From 2023-11-29 15:11:17 to 2023-11-29 15:42:17: ~0.52 hours

From 2023-11-20 00:31:44 to 2023-11-20 07:03:44: ~6.53 hours

From 2023-11-30 15:09:18 to 2023-11-30 20:48:18: ~5.65 hours

From 2023-11-25 21:09:06 to 2023-11-26 04:58:06: ~7.82 hours

Total for server 4: ~20.52 hours

For server ID 5:

From 2023-11-16 19:42:22 to 2023-11-16 21:08:22: ~1.43 hours

Total for server 5: ~1.43 hours

The accumulated runtime for all servers totals approximately 44.46 hours, equivalent to one full day plus some additional hours. However, since we consider only full days, the final output is rounded to 1 full day.

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 server_utilization_time(servers: pd.DataFrame) -> pd.DataFrame:
```

Solutions

MySQL Solution:

```
# Write your MySQL query statement below
```

MS SQL Server Solution:

```
/* Write your T-SQL query statement below */
```

PostgreSQL Solution:

```
-- Write your PostgreSQL query statement below
```

Oracle Solution:

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

Pandas Solution:

```
import pandas as pd

def server_utilization_time(servers: pd.DataFrame) -> pd.DataFrame:
```