584. Find Customer Referee ⧉

June 5, 2017 | 14.5K views

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Given a table `customer` holding customers information and the referee.

```
+------+------+-----------+
| id   | name | referee_id|
+------+------+-----------+
|    1 | Will |      NULL |
|    2 | Jane |      NULL |
|    3 | Alex |         2 |
|    4 | Bill |      NULL |
|    5 | Zack |         1 |
|    6 | Mark |         2 |
+------+------+-----------+
```

Write a query to return the list of customers **NOT** referred by the person with id '2'.

For the sample data above, the result is:

```
+------+
| name |
+------+
| Will |
| Jane |
| Bill |
| Zack |
+------+
```

Solution

Approach: Using `<>`(`!=`) and `IS NULL` [Accepted]

Intuition

Some people come out the following solution by intuition.

```
SELECT name FROM customer WHERE referee_Id <> 2;
```

However, this query will only return one result:Zack although there are 4 customers not referred by Jane (including Jane herself). All the customers who were referred by nobody at all (`NULL` value in the referee_id column) don't show up. But why?

Algorithm

MySQL uses three-valued logic -- TRUE, FALSE and UNKNOWN. Anything compared to NULL evaluates to the third value: UNKNOWN. That "anything" includes NULL itself! That's why MySQL provides the `IS NULL` and `IS NOT NULL` operators to specifically check for NULL.

Thus, one more condition 'referee_id IS NULL' should be added to the WHERE clause as below.
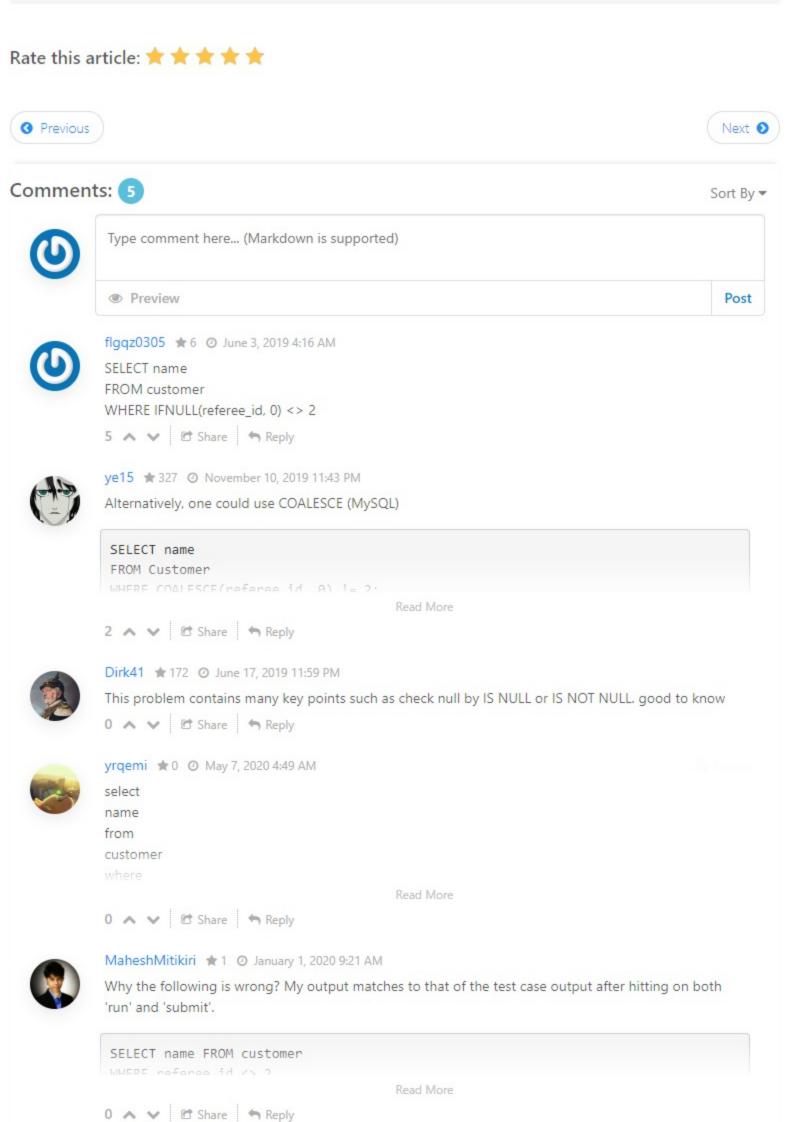
MySQL

```
SELECT name FROM customer WHERE referee_id <> 2 OR referee_id IS NULL;
```

or

```
SELECT name FROM customer WHERE referee_id != 2 OR referee_id IS NULL;
```

Tips

The following solution is also wrong for the same reason as mentioned above. The key is to always use `IS NULL` or `IS NOT NULL` operators to specifically check for NULL value.

```
SELECT name FROM customer WHERE referee_id = NULL OR referee_id <> 2;
```

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flgqz0305 ★ 6 ⏲ June 3, 2019 4:16 AM
SELECT name
FROM customer
WHERE IFNULL(referee_id, 0) <> 2
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ye15 ★ 327 ⏲ November 10, 2019 11:43 PM
Alternatively, one could use COALESCE (MySQL)

```
SELECT name
FROM Customer
```
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Dirk41 ★ 172 ⏲ June 17, 2019 11:59 PM
This problem contains many key points such as check null by IS NULL or IS NOT NULL. good to know
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yrqemi ★ 0 ⏲ May 7, 2020 4:49 AM
select
name
from
customer
where
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MaheshMitikiri ★ 1 ⏲ January 1, 2020 9:21 AM
Why the following is wrong? My output matches that of the test case output after hitting on both 'run' and 'submit'.

```
SELECT name FROM customer
```
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