SQL Interview Question

pwc

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Problem Statement

You have two tables, TableA and TableB. Each table contains a column id which is the primary key.

1. Return all records from TableA that do not have a corresponding match in TableB.
2. Return all records from TableB that do not have a corresponding match in TableA.
3. Return unmatched records from both tables.

Write an SQL query to achieve this using **JOIN** operations.

TableA

ID
1
2
3
4
5

TableB

ID
1
3
5
7
9

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Return all records from TableA that do not have a corresponding match in TableB.

```
select A.ID
From TableA as A left join TableB as B
on A.ID=B.ID
where B.ID is null
```

Output :

ID
2
4

Explanation :

- The LEFT JOIN ensures all records from TableA are included.
- For records in TableA that do not have a matching record in TableB, the TableB columns will be NULL.
- The WHERE TableB.id IS NULL condition filters these records, thus returning only the non-matching records from TableA.

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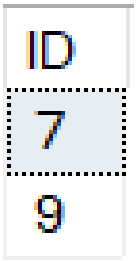
Return all records from TableB that do not have a corresponding match in TableA.

```
select B.ID
From TableA as A right join TableB as B
on A.ID=B.ID
where A.ID is null
```

Output :



ID
7
9

Explanation :

- The Right join ensures all records from TableB are included.
- For records in TableB that do not have a matching record in TableA, the TableA columns will be NULL.
- The WHERE TableA.id IS NULL condition filters these records, thus returning only the non-matching records from TableB.

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Return unmatched records from both tables.

```
select COALESCE (A.ID ,B.ID) as ID
From TableA as A full outer join TableB as B
on A.ID=B.ID
where B.ID is null or A.ID is null
```

Output :

ID
2
4
7
9

Explanation :

- SELECT COALESCE(A.ID, B.ID) AS ID: This selects the first non-null value between A.ID and B.ID for each row. If A.ID is null, it returns B.ID, and vice versa.The resulting value is aliased as ID.

- FROM TableA AS A FULL OUTER JOIN TableB AS B: This performs a FULL OUTER JOIN between TableA and TableB. A FULL OUTER JOIN includes all rows from both tables, matching rows where A.ID = B.ID. If there is no match, the result set will still include rows from both tables, with nulls in the columns of the table that does not have the match.

- WHERE B.ID IS NULL OR A.ID IS NULL:This filters the results of the FULL OUTER JOIN to include only the rows where there is no match. Specifically, it keeps rows where B.ID is null (indicating that the row exists in TableA but not in TableB) or where A.ID is null (indicating that the row exists in TableB but not in TableA).

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