Outer Joins

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Cody Henrichsen

Keywords

- LEFT
- RIGHT
- OUTER JOIN
- FULL
- +

Why

- In a standard JOIN we need to to only get the elements from the specified tables that match exactly on the PRIMARY KEY / FOREIGN KEY path.
- Sometimes we need to get the ones from the other table that don't have a corresponding match.
- We are creating gaps in the resulting data
- These gaps can help us identify patterns in our data because of the inconsistencies.

LOJ

- We generally do these as LEFT OUTER JOIN simply because the first table specified or derived resultset is the one that has ALL the matching conditions and you are performing the JOIN to get what matches in the next table as well as explicitly identify what is NOT included.

How

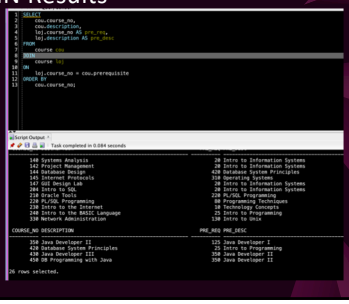
- Same basic JOIN structure just adding the directionality then the OUTER keyword to the JOIN clause
  - SELECT … table_a LEFT OUTER JOIN table_b …
  - SELECT … table_a RIGHT OUTER JOIN table_b …

Demo Query

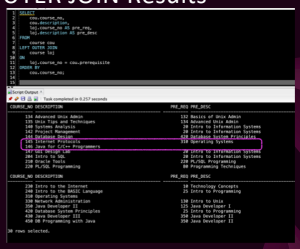
```
SELECT
    cou.course_no,
    cou.description,
    loj.course_no AS pre_req,
    loj.description AS pre_desc
FROM
    course cou
LEFT OUTER JOIN
    course loj
ON
    loj.course_no = cou.prerequisite
ORDER BY
    cou.course_no;
```

```
SELECT
    stu.first_name,
    stu.last_name,
    zip.city
FROM
    student stu
RIGHT OUTER JOIN
    zipcode zip
ON
    stu.zip = zip.zip;
```

JOIN Results



LEFT OUTER JOIN Results



Alternatives to LOJ

- The results of an OUTER JOIN can also be achieved by using the less wieldy method of doing separate queries (one with a correlated subquery), and then performing a UNION ALL on the results
- This can make the resulting query more confusing to read by humans because of the combination of inner/outer across multiple values

FULL OUTER

- Say you want to get all the matching rows AND all the incomplete matches from both the left and right tables
- This calls for the FULL OUTER JOIN

Oracle Special 🤮🤮

- Oracle has a special operator just for OUTER JOIN
- You use the + sign in the WHERE clause on the side that will have the non matching values
- This is instead of the LEFT or RIGHT keyword
- You also do not use the JOIN keyword 🤮
  - This means no ON clause either!!