SQL Zoo Lab - LEFT/RIGHT/SELF JOINS

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DIRECTIONS:

- *Copy your answers from SQLZoo into this document on the next page. If you can't get one right, come see me in office hours or call me over during class to discuss.*

- *Add any notes you need to your google cheatsheet, ie, examples that you may want to review for the proficiency exam.*

- <mark>*To get credit, you will submit the link to this document in BB. Note: You will receive a 0 if you share this file with me incorrectly, which will mean that I cannot open it.   If needed, here's a video on how to correctly share the google doc with me when giving me a link in BB.*</mark>

    <mark>*VIDEO ON HOW TO SHARE A GOOGLE DOC LINK WITH A PROFESSOR*</mark>

SQL Lab: LEFT vs. RIGHT JOIN and Self Joins!

The goal of this lab is to become familiar with:

- LEFT JOIN, RIGHT JOIN
- REVIEW OF IS NULL/IS NOT NULL
- COALESCE FUNCTION -
  - ==You may want to add this to your notes now that you've seen it!==

COALESCE takes any number of arguments and returns the first value that is not null.

```
COALESCE(x,y,z) = x if x is not NULL
COALESCE(x,y,z) = y if x is NULL and y is not NULL
COALESCE(x,y,z) = z if x and y are NULL but z is not NULL
COALESCE(x,y,z) = NULL if x and y and z are all NULL
```

DIRECTIONS:

- Make a copy of this document and replace your name above.
- Go to the link below which takes you to a SQL ZOO Practice area for joins.
- As you complete each problem, paste your answer below.
- Take notes in your notes google doc if needed.
- Paste a shareable link to your copied document in BB by the due date.

LINKS YOU WILL NEED:

- https://sqlzoo.net/wiki/Using_Null
- https://sqlzoo.net/wiki/Using_Null_Quiz
- https://sqlzoo.net/wiki/Self_join
- https://sqlzoo.net/wiki/Self_join_Quiz

WRITE YOUR ANSWERS TO THIS LINK BELOW: https://sqlzoo.net/wiki/Using_Null

- Your answer to #1:

```
SELECT name
FROM teacher
WHERE dept IS NULL;
```

- Your answer to #2:

```
SELECT teacher.name, dept.name
FROM teacher
    INNER JOIN dept
            ON (teacher.dept=dept.id)
```

- Your answer to #3:

```
SELECT teacher.name, dept.name
FROM teacher
    LEFT JOIN dept
            ON (teacher.dept=dept.id)
```

- Your answer to #4:

```
SELECT teacher.name, dept.name
FROM teacher
    RIGHT JOIN dept
            ON (teacher.dept=dept.id)
```

- Your answer to #5:

```
SELECT name,
COALESCE(moblie, '07986 444 2266')
FROM teacher
```

- Your answer to #6:

```
SELECT COALESCE(teacher.name, 'NONE'), COALESCE(dept.name, 'None')
FROM teacher LEFT JOIN dept ON (teacher.dept=dept.id)
```

```
```

● Your answer to #7:

```
SELECT COUNT(name), COUNT(mobile)
FROM teacher
```

● Your answer to #8:

```
SELECT dept.name, COUNT(teacher.name)
FROM teacher RIGHT JOIN dept ON (teacher.dept=dept.id)
GROUP BY dept.name
```

● Your answer to #9:

```
SELECT teacher.name,
    CASE
        WHEN dept.id = 1
        THEN 'Sci'
        WHEN dept.id = 2
        THEN 'Sci'
        ELSE 'Art'
            END
FROM teacher LEFT JOIN dept ON (teacher.dept=dept.id)
```

● Your answer to #10:

```
SELECT teacher.name,
    CASE
        WHEN dept.id = 1
        THEN 'Sci'
```

```
            WHEN dept.id = 2
            THEN 'Sci'
            WHEN dept.id = 3
            THEN 'Art'
            ELSE 'None'
                END
FROM teacher LEFT JOIN dept ON (dept.id=teacher.dept)
```

Complete the quiz that comes up on (possibly the next) page…

Now try the quiz: Did you get them all right? If not, which did you get wrong? Paste them below.

-

Table-D

Spiregrain	Other
Cutflower	Other
Deadyawn	Other

Table-E

Shrivell	1
Throd	1
Splint	1
Spiregrain	0
Cutflower	0
Deadyawn	0

Score the test

Your score is: 6 out of 6

WRITE YOUR ANSWERS TO THIS LINK BELOW: https://sqlzoo.net/wiki/Self_join

- Your answer to #1:

```
SELECT COUNT(*)
FROM stops;
```

```
```

● Your answer to #2:

```
SELECT id
FROM stops
WHERE name = 'Craiglockhart'
```

● Your answer to #3:

```
SELECT id, name
FROM stops JOIN route on stops.id=route.stop
WHERE num = '4'
```

● Your answer to #4:

```
SELECT company, num, COUNT(*)
FROM route
WHERE stop = 140 OR stop = 53
GROUP BY company, num
HAVING COUNT(*) = 2
```

● Your answer to #5:

```
SELECT a.company, a.num, a.stop, b.stop
FROM route a JOIN route b ON
   (a.company=b.company AND a.num=b.num)
WHERE a.stop = 53 AND b.stop = 149
```

● Your answer to #6:

```
SELECT a.company, a.num, stopa.name, stopb.name
FROM route a JOIN route b ON
   (a.company=b.company AND a.num=b.num)
   JOIN stops stopa ON (a.stop=stopa.id)
   JOIN stops stopb ON (b.stop=stopb.id
WHERE stopa.name='Craiglockhart' AND stopb.name = 'London Road'
```

● Your answer to #7:

```
SELECT DISTINCT(a.company, a.num)
FROM route a JOIN route b ON
   (a.company=b.company AND a.num=b.num)
   JOIN stops stopa ON (a.stop=stopa.id)
   JOIN stops stopb ON (b.stop-stopb.id)
WHERE stopa.name='Haymarket' AND stopb.name='Leith'
```

● Your answer to #8:

```
SELECT DISTINCT(a.company, a.num)
FROM route A
   JOIN route b ON (a.num=b.num AND a.company=b.company)
   JOIN stops stopa ON (a.stop=stopa.id)
   JOIN stops stopb ON (b.stop=stopb.id)
WHERE stopa.name = 'Craiglockhart' AND stopb.name = 'Tollcross'
```

● Your answer to #9:

```
SELECT stopa.name, a.company, a.num
FROM route b
   JOIN route b ON (a.num=b.num AND a.company=b.company)
   JOIN stops stopa ON (a.stop=stopa.id)
   JOIN stops stopb ON (b.stop=stopb.id)
WHERE stopb.name = 'Craiglockhart'
```

- Your answer to #10:

```
SELECT x.num, x.company, x.name, y.name, y.company
  FROM
     (SELECT DISTINCT stopb.name, b.company, b.num
      FROM route a
      JOIN route b
         ON (a.company=b.company
            AND a.num=b.num)
      JOIN stops stopa
         ON (a.stop=stopa.id)
      JOIN stops stopb
         ON (b.stop=stopb.id)
   WHERE stopa.name = 'Craiglockhart') x

   JOIN

     (SELECT DISTINCT stopc.name, c.company, c.num
      FROM route c
         JOIN route d
            ON (c.company=d.company
               AND c.num=d.num)
         JOIN stops stopc
            ON (c.stop=stopc.id)
         JOIN stops stopd
            ON (d.stop=stopd.id)
      WHERE stopd.name = 'Lochend') y

   ON (y.name = x.name)

ORDER BY x.num, name, y.num
```

Complete the quiz that comes up on (possibly the next) page…

Now try the quiz: Did you get them all right? If not, which did you get wrong? Paste them below.

- https://sqlzoo.net/wiki/Self_join_Quiz

Table-D

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