Self Join - QUIZ

1. Select the code that would show it is possible to get from Craiglockhart to Haymarket

```
SELECT DISTINCT a.name, b.name
FROM stops a JOIN route z ON a.id=z.stop
JOIN route y ON y.num = z.num
JOIN stops b ON y.stop=b.id
WHERE a.name='Craiglockhart' AND b.name ='Haymarket'
```

2. Select the code that shows the stops that are on route.num '2A' which can be reached with one bus from Haymarket?

```
SELECT S2.id, S2.name, R2.company, R2.num
FROM stops S1, stops S2, route R1, route R2
WHERE S1.name='Haymarket' AND S1.id=R1.stop
AND R1.company=R2.company AND R1.num=R2.num
AND R2.stop=S2.id AND R2.num='2A'
```

3. Select the code that shows the services available from Tollcross?

```
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='Tollcross'
```

SELF Join

1.

How many **stops** are in the database.

```
select count(*) as count from stops
```

2.

Find the **id** value for the stop 'Craiglockhart'

```
select id from stops
where name like 'Craiglockhart'
```

3.

Give the **id** and the **name** for the **stops** on the '4' 'LRT' service.

```
SELECT id, name
FROM stops, route
WHERE stops.id = route.stop
AND num = '4'
AND company = 'LRT';
```

4.

The query shown gives the number of routes that visit either London Road (149) or Craiglockhart (53). Run the query and notice the two services that link these **stops** have a count of 2. Add a HAVING clause to restrict the output to these two routes.

```
SELECT company, num, COUNT()
FROM route WHERE stop=149 OR stop=53
GROUP BY company, num
having count(
)=2
```

5.

Execute the self join shown and observe that b.stop gives all the places you can get to from Craiglockhart, without changing routes. Change the query so that it shows the services from Craiglockhart to London Road.

```
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 = (SELECT id FROM stops WHERE name =
'London Road')
```

6.

The query shown is similar to the previous one, however by joining two copies of the **stops** table we can refer to **stops** by **name** rather than by number. Change the query so that the services between 'Craiglockhart' and 'London Road' are shown. If you are tired of these places try 'Fairmilehead' against 'Tollcross'

```
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'
```

7.

Give a list of all the services which connect stops 115 and 137 ('Haymarket' and 'Leith')

```
SELECT a.company, a.num

FROM route a, route b
WHERE a.num = b.num AND (a.stop = 115 AND b.stop = 137)
GROUP BY num;
```

8.

Give a list of the services which connect the **stops** 'Craiglockhart' and 'Tollcross'

```
SELECT 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 = 'Craiglockhart'
AND
stopb.name = 'Tollcross';
```

9.

Give a distinct list of the **stops** which may be reached from 'Craiglockhart' by taking one bus, including 'Craiglockhart' itself, offered by the LRT company. Include the company and bus no. of the relevant services.

```
SELECT DISTINCT name, a.company, a.num
FROM route a
JOIN route b ON (a.company = b.company AND a.num = b.num)
JOIN stops ON a.stop =
stops.id
WHERE b.stop = 53;
```

10.

Find the routes involving two buses that can go from **Craiglockhart** to **Lochend**.

Show the bus no. and company for the first bus, the name of the stop for the transfer,

and the bus no. and company for the second bus.

```
SELECT x.num, x.company, x.name, y.num, 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 routecJOIN route d
ON (c.company= d.company
ANDc.num=d.num)
JOIN stops stopcON (c.stop= stopc.id)
JOIN stops stopdON (d.stop= stopd.id)
WHERE stopd.name= 'Lochend') y

ON (y.name= x.name)

ORDERBY x.num, name, y.num
```