JOINS & UNION IN SQL

I'll write the most common joins here along with a few Venn diagram representations of what is going on. *For example, we'll start with two tables, Registrations and Logins*

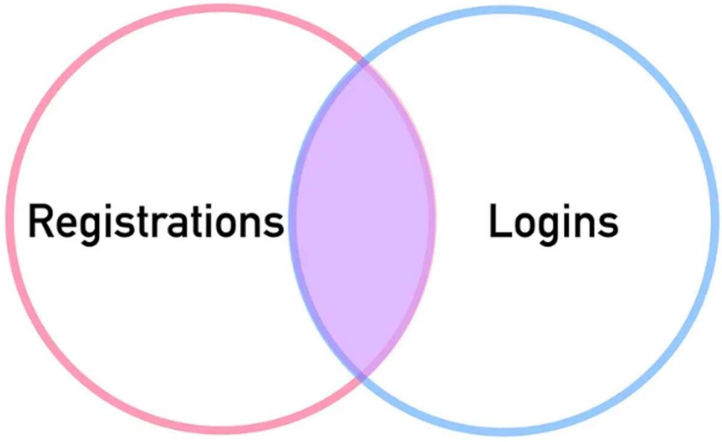
```
Registrations       Logins
id name             id   name
-- ----             --   ----
1  Bobby            1    Yolanda
2  Xavier           2    Bobby
3  Albert           3    William
4  Zack             4    Albert
```

These tables represent a social media website with two tables. Registrations has an event id and then the name of who registered, and Logins has an event id and the name of who logged in.

- **INNER JOIN**

An INNER JOIN will result with the set of records that match in both tables.

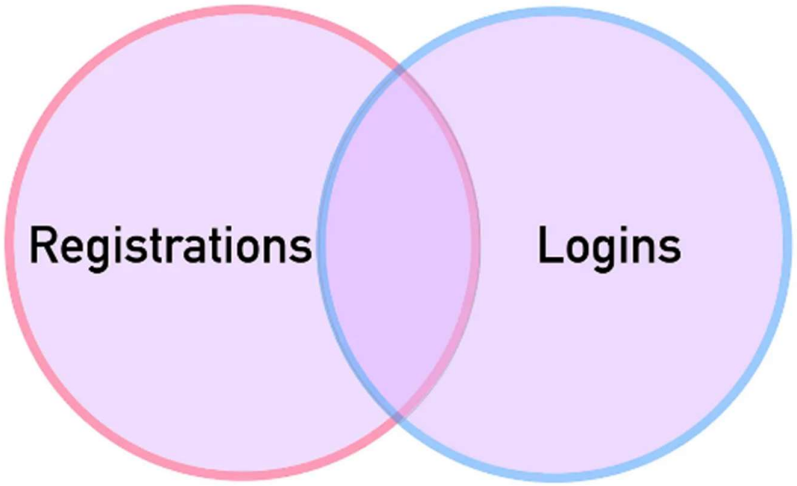
```
SELECT * FROM Registrations
INNER JOIN Logins
ON Registrations.name = Logins.name

id  name       id   name
--  ----       --   ----
1   Albert     2    Albert
3   Bobby      4    Bobby
```



➢ FULL OUTER JOIN

A FULL OUTER JOIN will result in the set of all records in both tables.

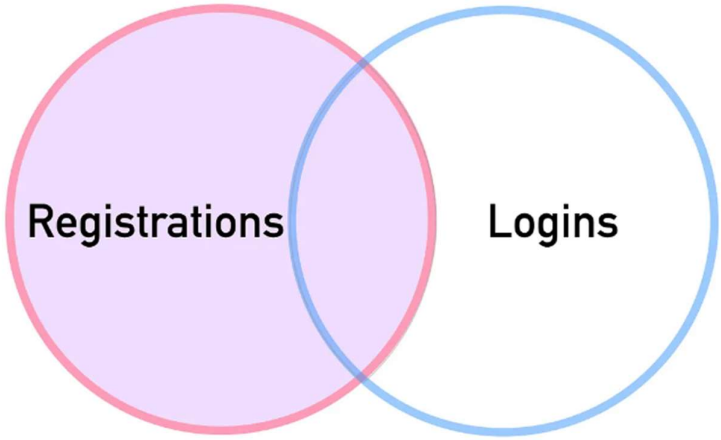
```
SELECT * FROM Registrations
FULL OUTER JOIN Logins
ON Registrations.name = Logins.name

id    name       id    name
--    ----       --    ----
1     Albert     2     Albert
2     Xavier     null  null
3     Bobby      4     Bobby
4     Zack       null  null
null  null       1     Yolanda
null  null       3     William
```



➢ LEFT OUTER JOIN

A LEFT OUTER JOIN results in the set of records that are in the left table, if there is no match with the right table, the results are null.

```
SELECT * FROM Registrations
LEFT OUTER JOIN Logins
ON Registrations.name = Logins.name

id  name       id    name
--  ----       --    ----
1   Albert     2     Albert
2   Xavier     null  null
3   Bobby      4     Bobby
4   Zack       null  null
```



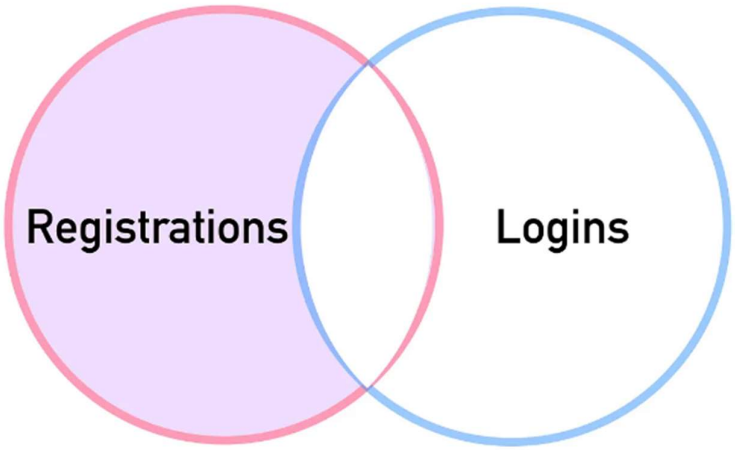
Similar to this, we can also use RIGHT OUTER JOIN.

➢ Using WHERE Clause for Exclusions

We can use the OUTER JOINS with some WHERE clauses to exclude records we don't want. Since we know some JOIN statements will result in null values, we can use this to our advantage.

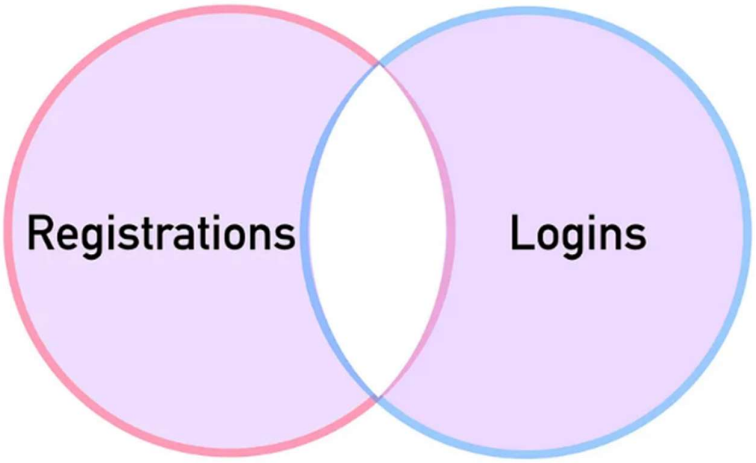
For example, if we wanted to produce a set of records that only appear in the Registration table, we can specify to:

```
SELECT * FROM Registrations
LEFT OUTER JOIN Logins
ON Registrations.name = Logins.name
WHERE Logins.id IS null

id  name       id     name
--  ----       --     ----
2   Xavier     -      -
4   Zack       -      -
```



Another example of this is trying to produce a set of records that is unique to the Left Table and the Right Table.

```
SELECT * FROM Registrations
FULL OUTER JOIN Logins
ON Registrations.name = Logins.name
WHERE Registrations.id IS null
OR Logins.id IS null

id    name       id    name
--    ----       --    ----
2     Xavier     --    ---
4     Zack       --    ---
--    ---        1     Yolanda
--    ---        3     William
```



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