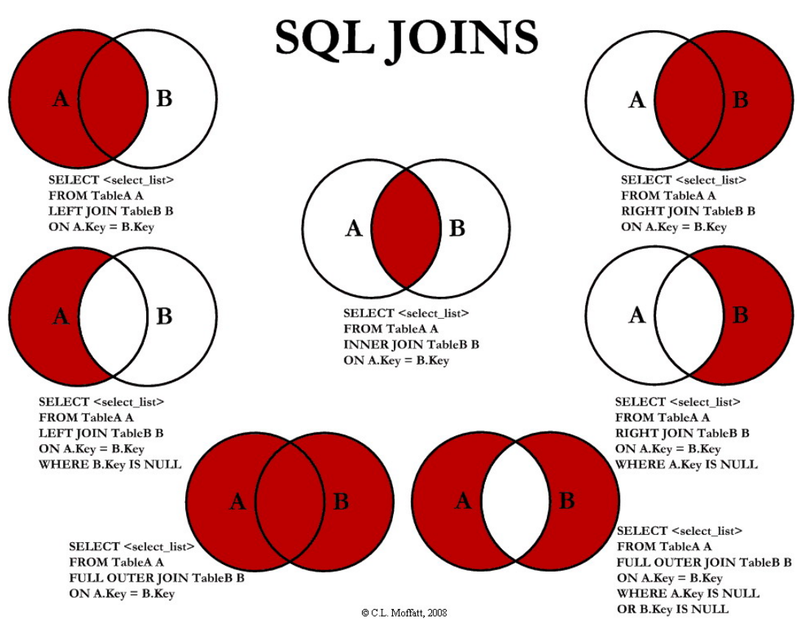
Connecting SQL Joins and Set Theory Concepts

Hi there. There is this interesting infographic which relates set theory to table joins in SQL.



One can treat a database table as a set with elements being information within a table.

The set A refers to table A and the set B refers to table B.

Left Join

A left join selects everything from A including the intersection $A \cap B$. If the null part is TRUE then the intersection removed and the A only part would be selected which is like $A - B = A \cap B^c$.

Right Join

It would be similar with the right join with B where the intersection $A \cap B$ is selected as well. If the null part is TRUE then the intersection removed and the A only part would be selected which is like $B - A = B \cap A^c$.

Inner Join

The SQL INNER JOIN portion of a query combined with select outputs the intersection $A \cap B$ of tables A and B.

Full Outer Join

The FULL OUTER JOIN portion of the query take everything from table A, table B and the intersection $A \cap B$. If the key in table A and the key in table B IS NULL then the intersection $A \cap B$ is removed.

References

The featured image/infographic is from https://www.codeproject.com/Articles/33052/Visual-Representation-of-SQL-Joins.