Free Training Transcript:
Join Types with Union

Welcome to this video on Join Types.

Join Types

Depending on your data source, Tableau Desktop offers several options for joins, including Inner, Left, Right, and Full Outer Joins. But what do the various join types mean?

Joining tables is a way of combining information (that is, new fields or columns) from multiple tables based on a field they share. Joins are always made ON a specific field (or fields). Here at the top we have two tables we want to combine. The table on the left contains sibling information, and the table on the right contains eye color information. We'll join these tables on the field they share, "name".

Inner Joins

An inner join preserves only the rows that have the same key field, in our case name, between both tables. We only get information for names that are listed in both tables—and there are no nulls.

Left Joins

A left join brings in all the information for the rows from the table on the left (siblings) and any information from table on the right (eye color) for rows with the same name as the sibling table. Therefore we get all the information from the left siblings table, and for the names that are also listed in the right eye color table, Taylor and Alex, we get their eye color. If a name from the siblings table is not present in the eye color table, we get a null, such as for Shannon and Tracy.

Let's see what this looks like in Tableau. As you can see, a left join pulls in all the rows for the table on the left and fills in from the table on the right when it can, with null if that name is not present in the table on the right.

Right Joins

In a right join, it's the reverse. We have all the names from the right (eye color) table, and for those rows we get the sibling (left table) information if it exists. As you can see, the output list of names varies between a left and right join because we're changing which

table comes in first. Shannon and Tracy do not exist in the eye color table, so they show up in the left join only. Morgan doesn't exist in the left table, so she only shows up in the right join.

Outer Joins

An outer join brings in all names listed in all tables, and fills in nulls wherever there isn't information for a given column for that row.

That's a quick primer on join types. As a reminder, not all joins are supported by all data sources.

Union

Although unions are not technically joins, it's worth mentioning them in this video. Unions are another way of bringing together two or more tables. While joins can be thought of as horizontal, adding columns to an existing table, union can be thought of as vertical, adding rows to an existing table.

Note that Union can be performed on specific files brought into the data source page, or by a wildcard search through a directory.

Tableau follows the behavior of a UNION ALL, that is, all rows will be returned in the union, even if there are duplicate values for some rows (such as Kai). In Tableau, new fields are generated with the Table Name, which indicates metadata about the union's source.

Finally, it's worth noting that if the field names don't match across the unioned data sources, Tableau will function similarly to an Outer Join, appending the new rows AND new columns, with nulls as needed. If the new columns should be considered the same field, the columns can be merged in the data grid.

Conclusion

For more information on data connections in Tableau, check out the other videos in in the Connecting to Data series.