

USING CALCULATIONS IN JOIN CLAUSES

There might be some instances when the common or shared fields do not create an automatic join. In those cases, a join is performed by setting up one or more **join clauses**.

The **join clause** tells Tableau which fields are shared between the tables and how to match the corresponding rows. For example, rows with the same ID are aligned in the results table.

USING CALCULATIONS IN JOIN CLAUSES

Join clauses most often use the equality operator (=) which matches rows with the same values. It is also possible to perform non-equi joins, such as less than (<) and not equal (<>).

Join clauses can also contain calculations. For example, the join clause could be the concatenation of the name fields “[First name] + [Last name] = [First name] + [Last name]”. Note that not all data source connections support calculations in join clauses.

DETAILS OF THE DATA SOURCE USED

We will be using a fictitious spreadsheet Use_calculations_in_join_clauses.xlsx having 2 tables viz Statictics1 and Statictics2 for explaining joins

Statistics1 Table

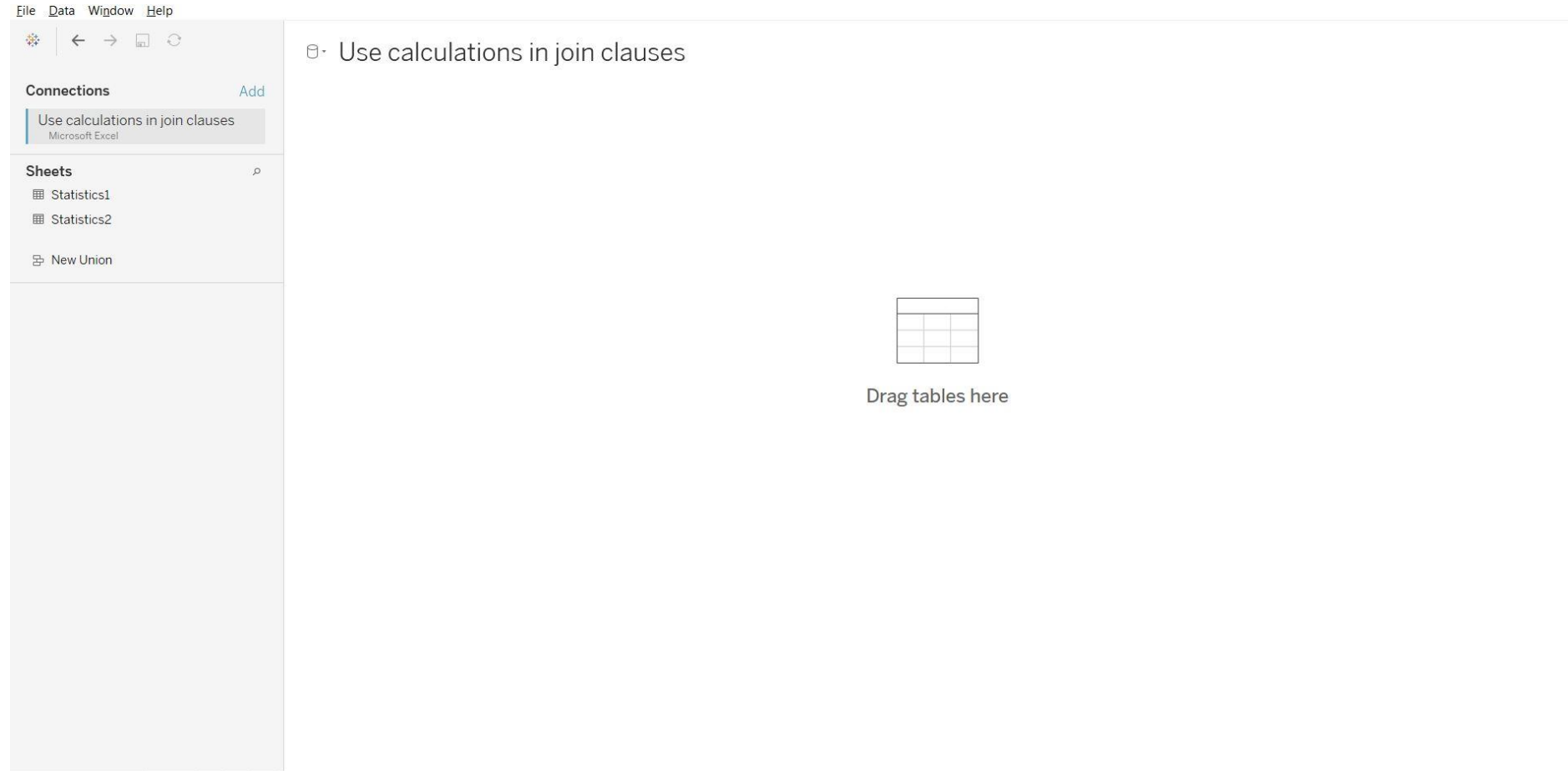
Full Venue	Runs	Sports
Edgbaston, England	2456	Cricket
Old Trafford, England	1900	Cricket
Trent Bridge, England	4000	Cricket
Lords, England	2367	Cricket

Statistics2 Table

Venue	Wickets	Entered By
Edgbaston	3000	Bill
Lords	1500	Charles
Edgbaston	2678	David
Lords	1567	Tory

STEPS TO CREATE A JOIN USING CALCULATIONS IN JOIN CLAUSE

Step 1: Connect to the relevant data source or sources e.g.:
Use_calculations_in_join_clauses.xlsx



STEPS TO CREATE A JOIN USING CALCULATIONS IN JOIN CLAUSE

Step 2: Drag the first table **Statistics1** to the canvas

File Data Window Help

Statistics1 (Use calculations in join clauses) Filters 0 | Add

Connections Add

Use calculations in join clauses
Microsoft Excel

Sheets p

- Statistics1
- Statistics2
- New Union

Statistics1

Need more data?
Drag tables here to relate them. [Learn more](#)

Statistics1 → rows ⚙️

Name
Statistics1

Fields

Type	Field Name	Physical Table	Remote Field Name
Abc	Full Venue	Statistics1	Full Venue
#	Runs	Statistics1	Runs
Abc	Sports	Statistics1	Sports

Abc Statistics1 Full Venue
Statistics1 Runs
Abc Statistics1 Sports

Update Now

Update Automatically

Data Source Sheet 1

STEPS TO CREATE A JOIN USING CALCULATIONS IN JOIN CLAUSE

Step 3: Select **Open** from the menu or **double-click** the first table to open the join canvas (**physical layer**)

File Data Window Help

Statistics1 (Use calculations in join clauses) Filters 0 Add

Connections Add

Use calculations in join clauses Microsoft Excel

Statistics1

- Open...
- Rename
- Remove
- Field names are in first row
- Generate field names automatically
- Convert to Union...

Need more data? Drag tables here to relate them. [Learn more](#)

Statistics1

rows

Name Statistics1

Type	Field Name	Physical Table	Remote Field Name
Abc	Full Venue	Statistics1	Full Venue
#	Runs	Statistics1	Runs
Abc	Sports	Statistics1	Sports

Update Now

Update Automatically

STEPS TO CREATE A JOIN USING CALCULATIONS IN JOIN CLAUSE

Step 4: Double-click or drag the **Statistics2** table to the join canvas

The screenshot displays a data tool interface with a sidebar on the left and a main workspace. The sidebar contains a 'Connections' section with 'Use calculations in join clauses' (Microsoft Excel) and an 'Add' button. Below it is a 'Sheets' section listing 'Statistics1', 'Statistics2', and 'New Union'. The main workspace shows a diagram where 'Statistics1' is connected to 'Statistics2' via a join icon. A 'Join' dialog box is open, showing four join types: 'Inner', 'Left', 'Right', and 'Full Outer'. The 'Data Source' field is set to 'Statistics2'. A search dropdown is visible, listing 'Full Venue', 'Runs', 'Sports', and 'Create Join Calculatio...'. The top right corner of the workspace shows 'Filters 0 | Add'.

Statistics1+ (Use calculations in join clauses)

Statistics1 is made of 2 tables. ⓘ

Statistics1 — Join — Statistics2

Join

Inner Left Right Full Outer

Data Source Statistics2

Search

Full Venue

Runs

Sports

Create Join Calculatio...

Filters 0 | Add

STEPS TO CREATE A JOIN USING CALCULATIONS IN JOIN CLAUSE

Step 5: Select the **Create Join Calculation** from the drop-down of Left side table

Statistics1+ (Use calculations in join clauses)

Filters
0 | Add

Statistics1 is made of 2 tables. ⓘ

Statistics1 — [Venn Diagram with Red Exclamation Mark] — Statistics2

Join

 Inner

 Left

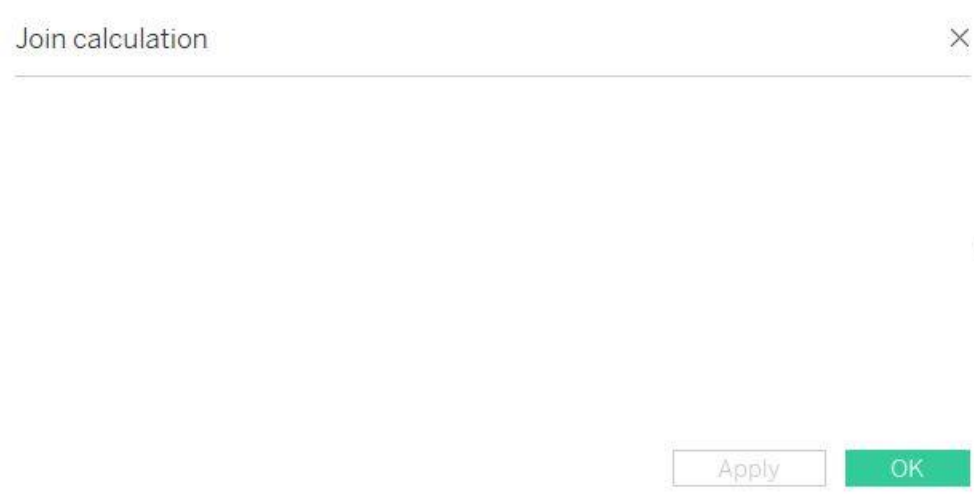
 Right

 Full Outer

Data Source		Statistics2
Search		
Full Venue		
Runs		
Sports		
Create Join Calculation...		

STEPS TO CREATE A JOIN USING CALCULATIONS IN JOIN CLAUSE

Step 6: Join Calculation dialog box appears



STEPS TO CREATE A JOIN USING CALCULATIONS IN JOIN CLAUSE

Step 7: Enter the formula as per the requirement

For this example, the formula is

`SPLIT([Full Venue],",", 1)`

Confirm that a **"The calculation is valid"** message is seen

When finished, Click **OK**

Join calculation ×

`SPLIT([Full Venue],",", 1)`

SPLIT(string, delimiter, token number)

▶

The calculation is valid.


Apply

OK


Statistics1+ (Use calculations in join clauses)


Filters
0 | Add


Statistics1 is made of 2 tables. ⓘ


Statistics1  Statistics2

Join ×

 Inner

 Left

 Right

 Full Outer

Data Source		Statistics2
SPLIT([Full Venue],...	=	

STEPS TO CREATE A JOIN USING CALCULATIONS IN JOIN CLAUSE

Step 8: Select the connecting field i.e., **Venue** from the drop-down of Right-side table

Statistics1+ (Use calculations in join clauses)

Filters
0 | Add

Statistics1 is made of 2 tables. ⓘ

Statistics1 — [Venn Diagram] — Statistics2

Join

Inner

Left

Right

Full Outer

Data Source

SPLIT([Full Venue],...

Statistics2

Search

Entered By

Venue

Wickets

Create Join C...

STEPS TO CREATE A JOIN USING CALCULATIONS IN JOIN CLAUSE

Step 9: When finished, close the join dialog and join canvas.

Statistics1+ (Use calculations in join clauses)

Filters
0 | Add

Statistics1 is made of 2 tables. ⓘ

Statistics1

Statistics2

Join

Inner

Left

Right

Full Outer

Data Source		Statistics2
SPLIT([Full Venue],...	=	Venue
Add new join clause		

Statistics1

6 fields 4 rows

4

→ rows

Name

Statistics1

Fields

Type	Field Name	Physical Table	Remote Field Name
Abc	Full Venue	Statistics1	Full Venue
#	Runs	Statistics1	Runs
Abc	Sports	Statistics1	Sports

Abc Statistics1	# Statistics1	Abc Statistics1	Abc Statistics2	# Statistics2	Abc Statistics2	
Full Venue	Runs	Sports	Venue	Wickets	Entered By	
Edgbaston, England	2,456	Cricket	Edgbaston	2,678	David	
Edgbaston, England	2,456	Cricket	Edgbaston	3,000	Bill	
Lords, England	2,367	Cricket	Lords	1,567	Tory	
Lords, England	2,367	Cricket	Lords	1,500	Charles	


STEPS TO CREATE A JOIN USING CALCULATIONS IN JOIN CLAUSE

Step 10: Now we see the final join created via a Join Calculation Clause





Statistics1+ (Use calculations in join clauses)

Filters
0 | Add

Statistics1 is made of 2 tables. ⓘ

Statistics1  Statistics2

Join

 Inner  Left  Right  Full Outer

Data Source		Statistics2
SPLIT([Full Venue],...	=	Venue
Add new join clause		

Statistics1							6 fields 4 rows	4	→	rows	⚙	✓
Table Details	Abc Statistics1	# Statistics1	Abc Statistics1	Abc Statistics2	# Statistics2	Abc Statistics2						
	Full Venue	Runs	Sports	Venue	Wickets	Entered By						
	Edgbaston, England	2,456	Cricket	Edgbaston	2,678	David						
	Edgbaston, England	2,456	Cricket	Edgbaston	3,000	Bill						
	Lords, England	2,367	Cricket	Lords	1,567	Tory						
	Lords, England	2,367	Cricket	Lords	1,500	Charles						