

# Join

|              |   |
|--------------|---|
| Block Group: | Table Operations  |
| Icon:        |  |

The Join block returns a new table that joins the rows of two input tables.



## Note

Make sure to rename columns using the **renameColumns** property, if you don't want the columns to be combined.

For information on using dataflow blocks, see [Dataflow](#).

For answers to some common questions about working with tables, see [Tables](#).

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## Input/Output Properties

The following properties of the Join block can take input and give output.

- **input1** (*table*)
- **input2** (*table*)
- **column1** (*string*)
- **column2** (*string*)
- **join** (*enum*)
- **renameColumns** (*string*)

**input1** specifies the left table for the join operation.

**input2** specifies the right table for the join operation.

**column1** specifies the name of the key column from the **input1** table.

**column2** specifies the name of the key column from the **input2** table.

**join** determines the method of joining. The value of the **join** property can be one of the following:

- **Left:** All rows from **input1** are included. Rows from **input2** are included and merged when the **column2** value matches a **column1** value.
- **Right:** All rows from **input2** are included. Rows from **input1** are included and merged when the **column1** value matches a **column2** value.
- **Inner:** Rows are included and merged only when the values in **column1** and **column2** are the

same.

- **Full**: All rows from both tables are included, and the rows are merged if the values of **column1** and **column2** are the same.
- **Union**: All rows from both tables are included in a new table. Rows are not merged.

**renameColumns** determines the names in the output table for columns that come from **input2**. Use this syntax:

```
column1:newName  
column2:newName
```

To edit text in a popup window, click the  **Edit in Window** icon. To create line breaks between columns, press Alt + Enter in the block properties panel, or press Enter in the popup window.

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## Output Property

The following property of the Join block can give output but cannot take input.

- output (*table*)

**output** returns the joined table.

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## Order of Priority for Duplicate Column Names

If column names are the same and are not renamed using the **renameColumns** property, the type of join determines the order of priority, as follows:

- In a left, inner, or full join, the value in the **input1** table overrides the value in the **input2** table.
- In a right join, the value in the **input2** table overrides the value in the **input1** table.
- In a union join, all values are included.

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## Example

The following image shows an example of the Join block. In this example, a left join operation is performed.

The screenshot displays a data flow application interface. At the top, two input tables are shown:

| row | ID | value1 | value2 | value3 |
|-----|----|--------|--------|--------|
| 0   | A  | 31     | 67     | 35     |
| 1   | B  | 39     | 31     | 86     |
| 2   | C  | 36     | 4      | 82     |
| 3   | D  | 2      | 29     | 32     |
| 4   | E  | 44     | 70     | 63     |
| 5   | F  | 62     | 8      | 94     |
| 6   | G  | 76     | 8      | 71     |

| row | ID | value4 | value5 | value6 |
|-----|----|--------|--------|--------|
| 0   | C  | 29     | 14     | 73     |
| 1   | D  | 60     | 50     | 16     |
| 2   | E  | 29     | 9      | 2      |
| 3   | F  | 69     | 3      | 15     |
| 4   | G  | 16     | 55     | 23     |
| 5   | H  | 12     | 89     | 32     |
| 6   | I  | 69     | 77     | 16     |
| 7   | J  | 58     | 25     | 34     |

The 'tableJoin' block configuration is as follows:

- input1: table
- input2: table1
- column1: ID
- column2: ID
- join: left
- renameColumns: value4:a4
- output: Table

The resulting output table is:

| row | ID | value1 | value2 | value3 | a4 | value5 | value6 |
|-----|----|--------|--------|--------|----|--------|--------|
| 0   | A  | 31     | 67     | 35     |    |        |        |
| 1   | B  | 39     | 31     | 86     |    |        |        |
| 2   | C  | 36     | 4      | 82     | 29 | 14     | 73     |
| 3   | D  | 2      | 29     | 32     | 60 | 50     | 16     |
| 4   | E  | 44     | 70     | 63     | 29 | 9      | 2      |
| 5   | F  | 62     | 8      | 94     | 69 | 3      | 15     |
| 6   | G  | 76     | 8      | 71     | 16 | 55     | 23     |

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