Easy Data Transform v1.18.0 for Mac

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Getting started

1 Getting started

1.1 Introduction

Easy Data Transform allows you to quickly transform table and list data into new and more useful forms, without programming. The step-by-step visual transformation is quicker, more interactive, more repeatable and less error prone than other approaches.

Please take a couple of minutes to read the Quick Start Guide.

1.2 System requirements

The suggested requirements for running this software are:

- Operating system: macOS 10.13 or later.
- Screen resolution: 1280x720 pixels or better.

If your operating system is more recent than the above, check our website to find a compatible version of Easy Data Transform.

You may be able to run the software satisfactorily on lower specification systems or more operating systems, but we can't guarantee it. If in doubt, try running an unlicensed trial version before you buy a license.

1.3 Quick start guide

This is a quick tour of some of Easy Data Transform's features. It should only take a few minutes to complete.

Start Easy Data Transform. If the **Free Trial** window appears, click **Continue free trial**. If the Getting Started window appears, click **I got this!** (or you will just end up back on this page). You should now see the main window.

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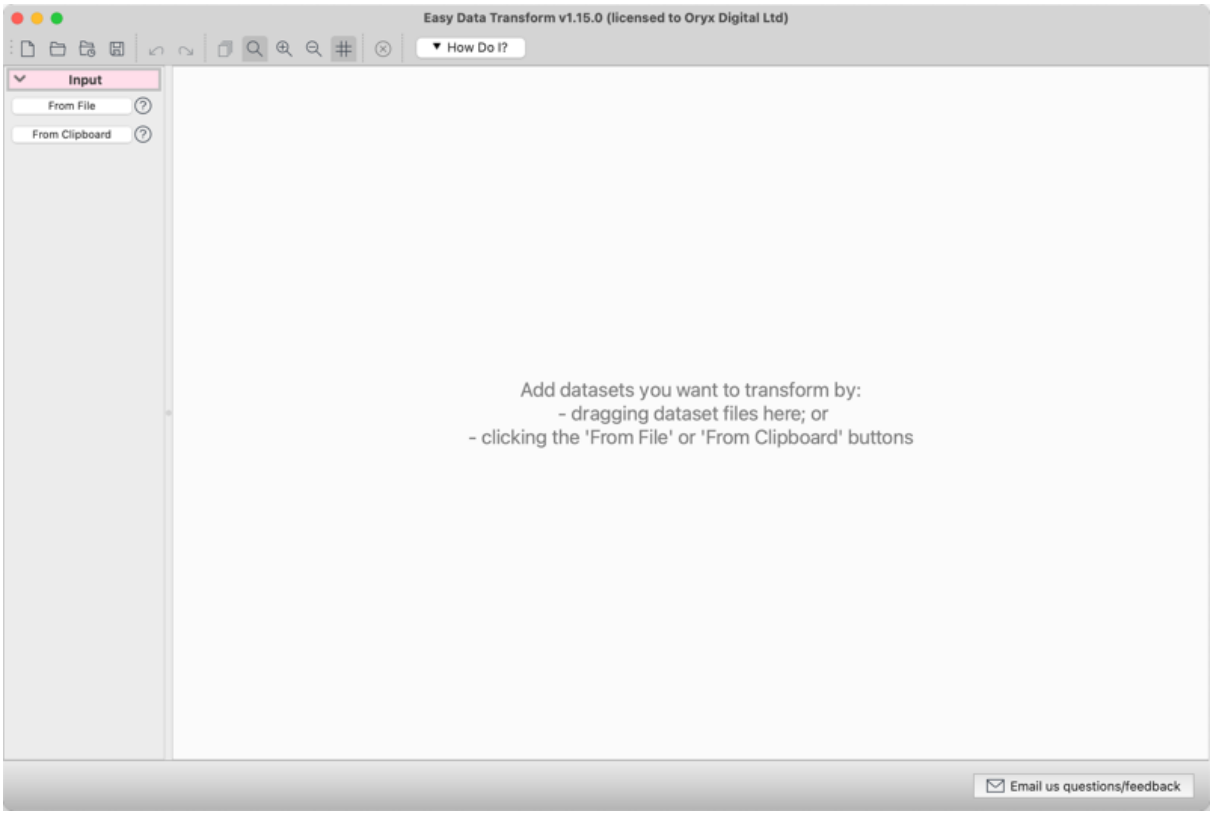

Drag a data file you want to transform onto Easy Data Transform. For example a .csv file or an Excel .xlsx/.xls file. XML, JSON, fixed width and vCard formats are also supported.

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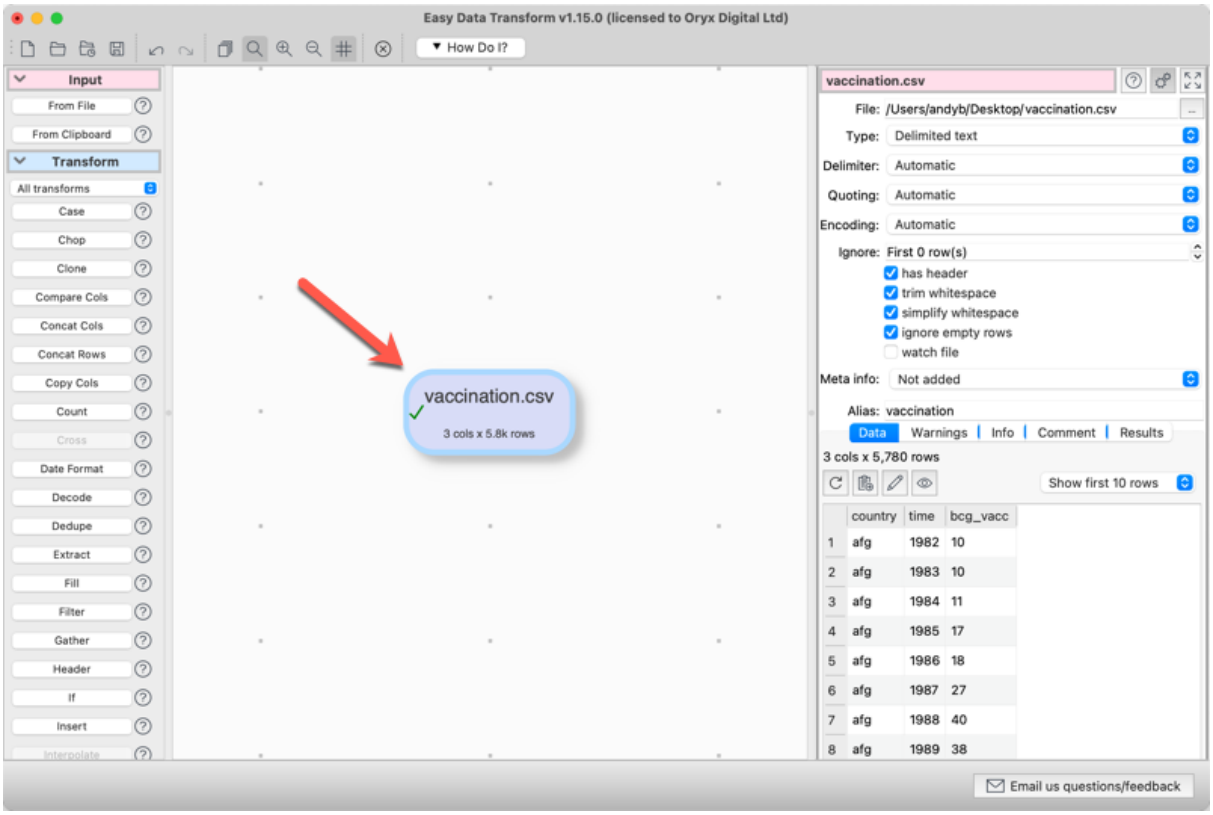

Notice that the available transforms are shown in the **Left** pane and the selected dataset is shown in the **Right** pane.

In the **Right** pane, you can check **has header**, depending on whether you want to treat the first row of the dataset as a header.

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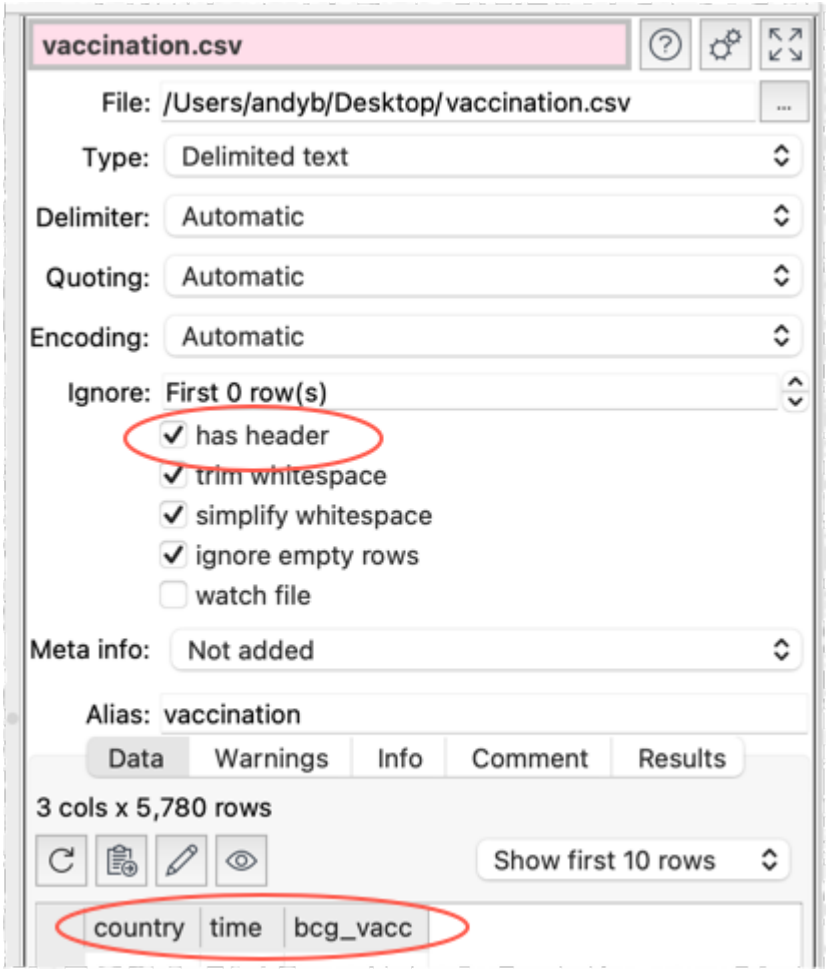

All the transforms available for a single dataset are now enabled in the **Left** pane. Hover over the transforms to see tooltips explaining what they do. Click on the **?** next to a transform button for more details.

Ensure the input item is selected and click on the **Case** transform button to change the case of your data.

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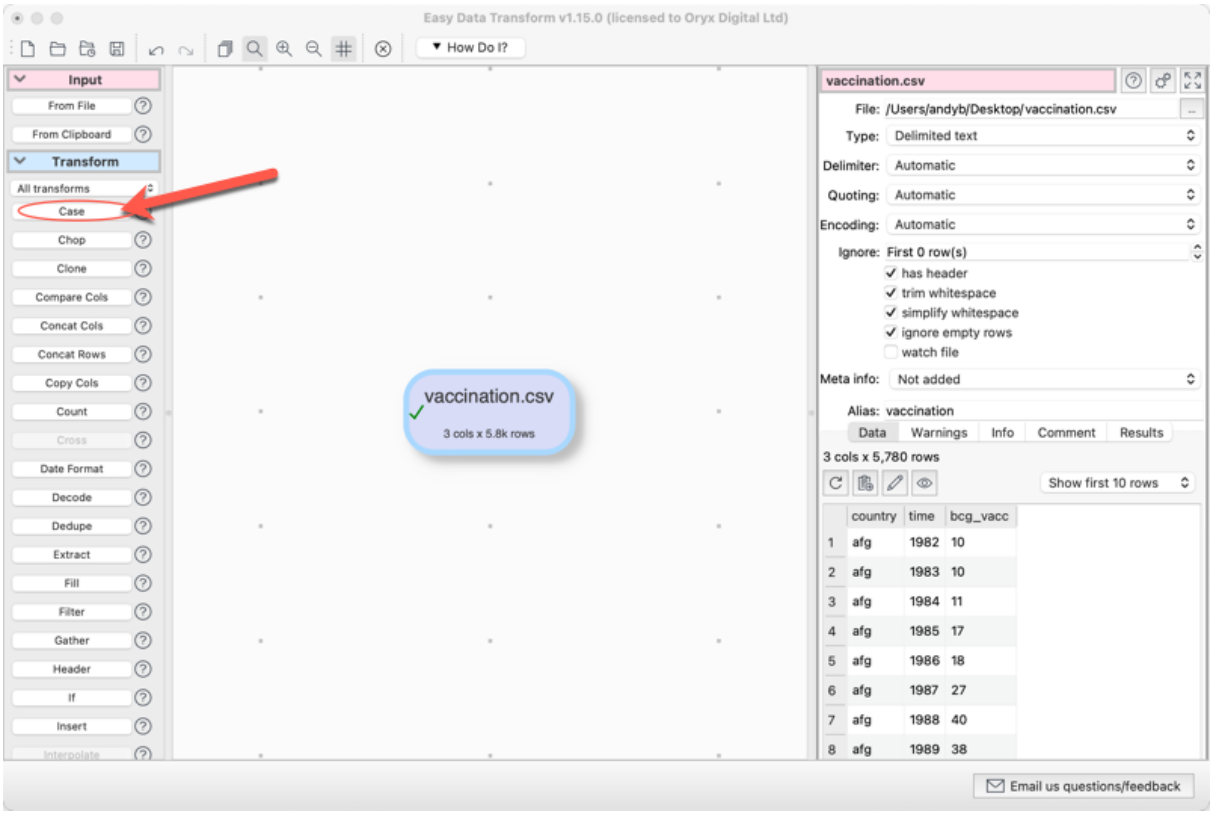

A **Case** transform item will now be added.

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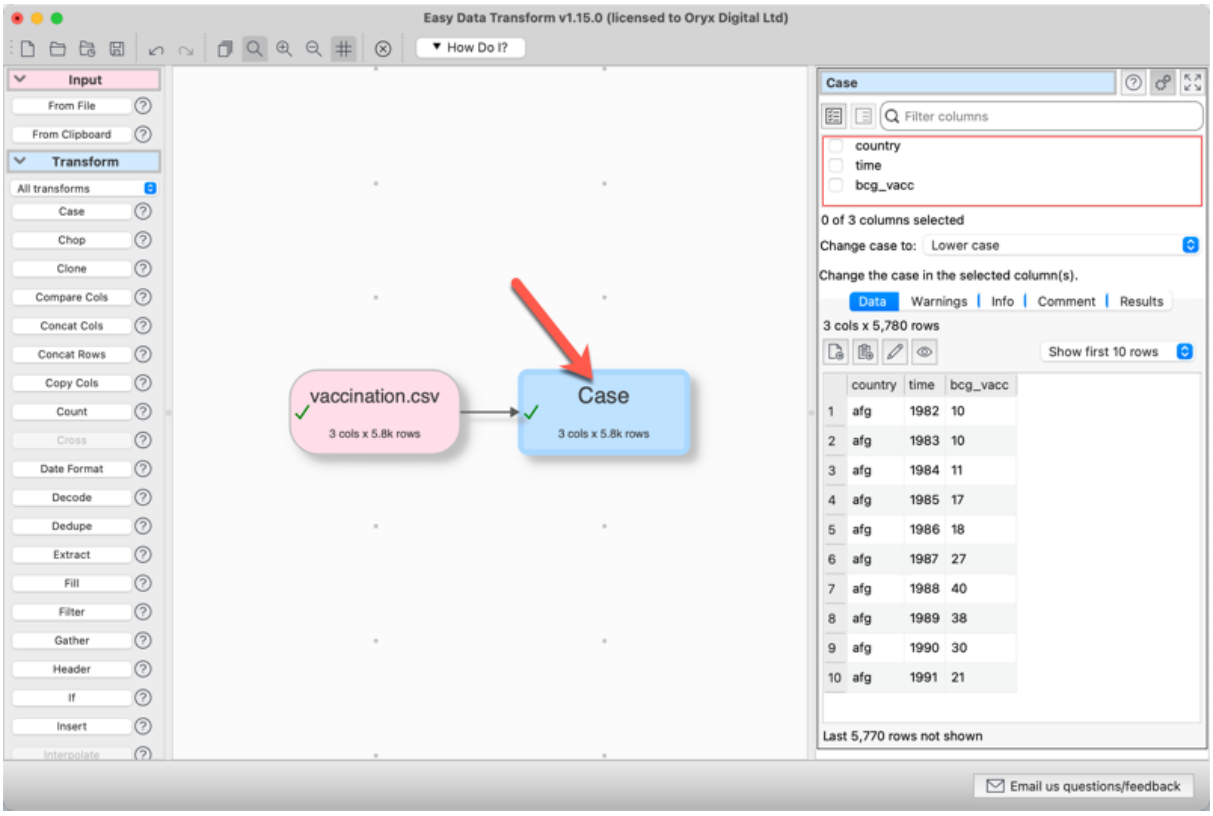

In the **Right** pane, check one of the columns and set **Change case to** to **Upper case**. All the text in that column will now be converted to upper case. You don't have to click a 'run' button.

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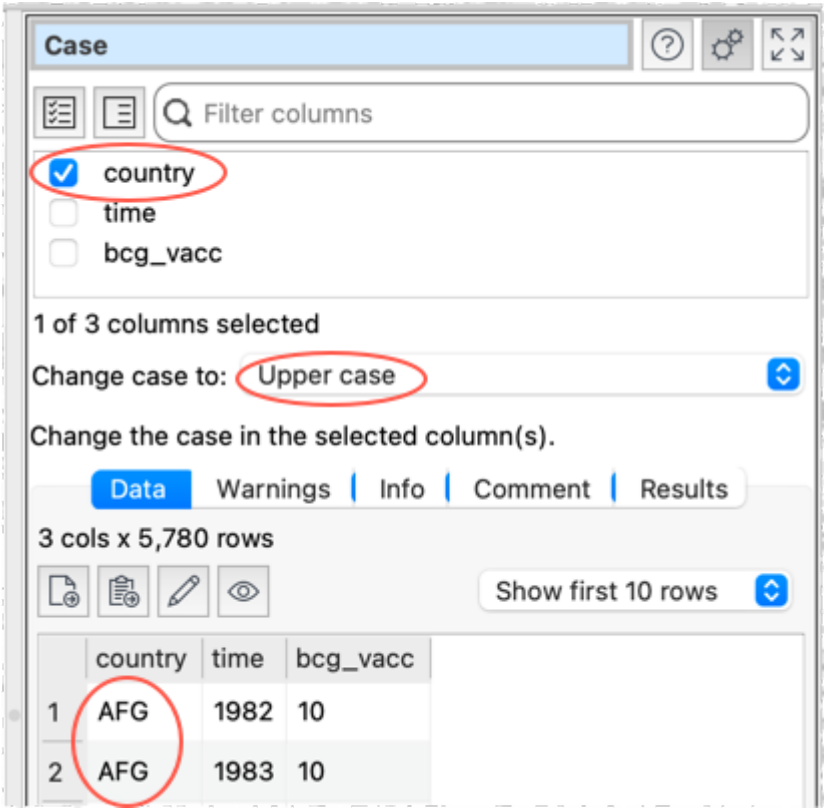

You can create a sequence of transforms to perform complex manipulations.

Some transforms require more than one input dataset. For example, to stack two datasets, one on top of the other:

- Select **File>New** to start again. Don't save the changes.
- Drag two data files onto the **Center** pane.
- Select both input items (by dragging a box around them or using `Cmd`+click).
- Click the **Stack** transform button (you may need to scroll the **Left** pane to see the button).

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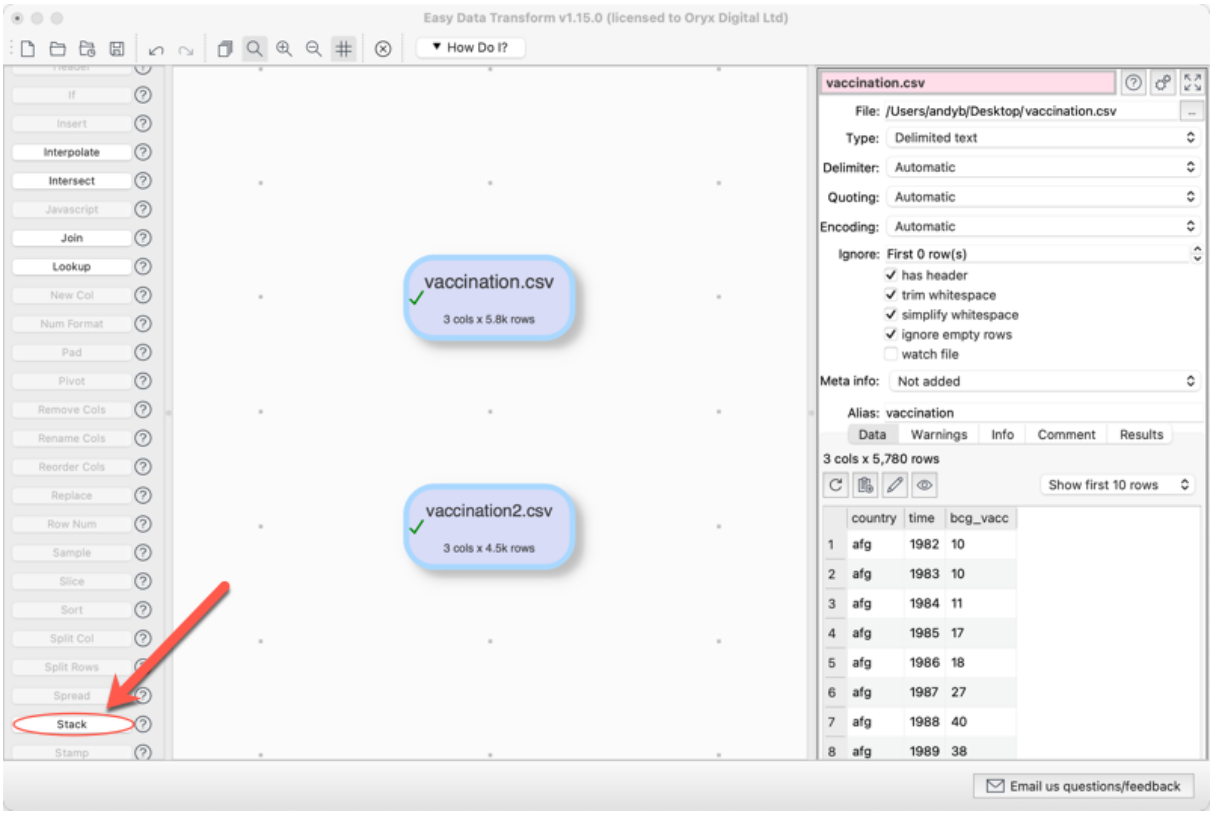

The tables are now stacked one on top of the other in a new dataset item. You can choose to match the columns by **Header name** or **Column number**.

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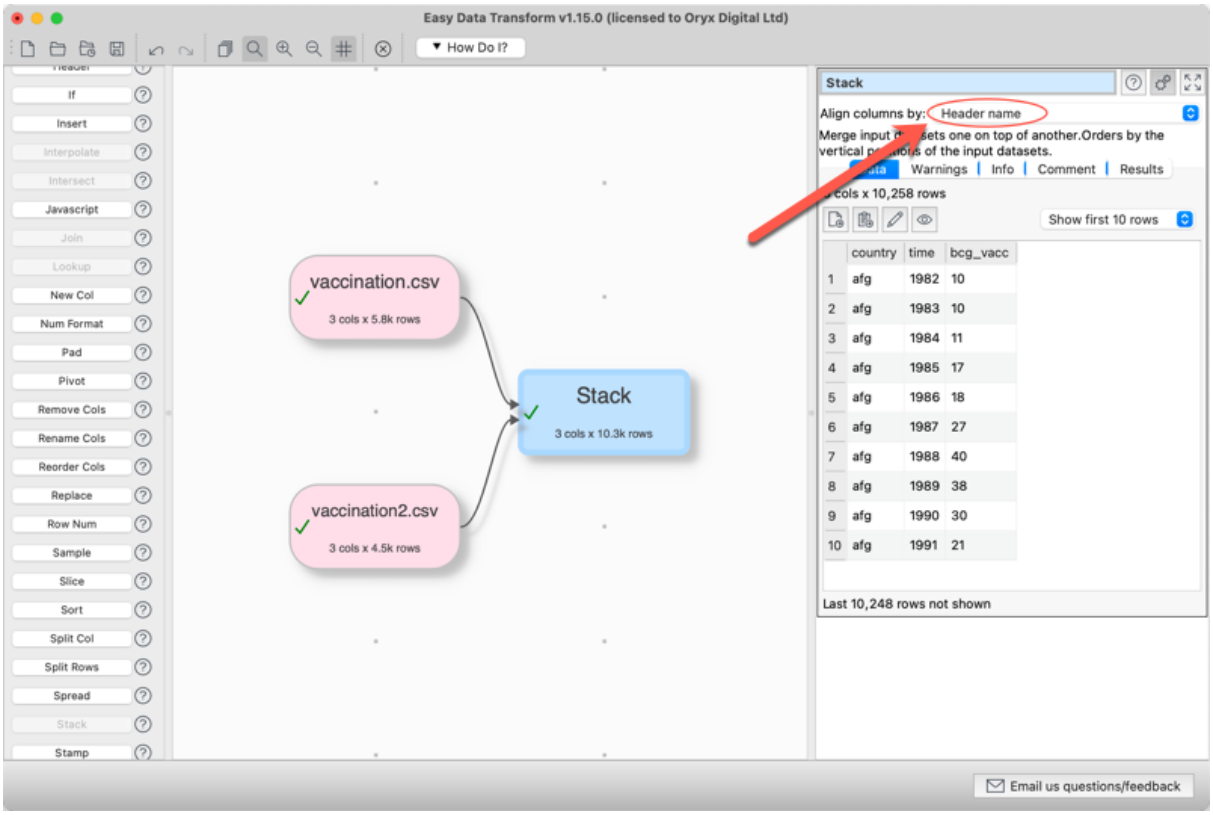
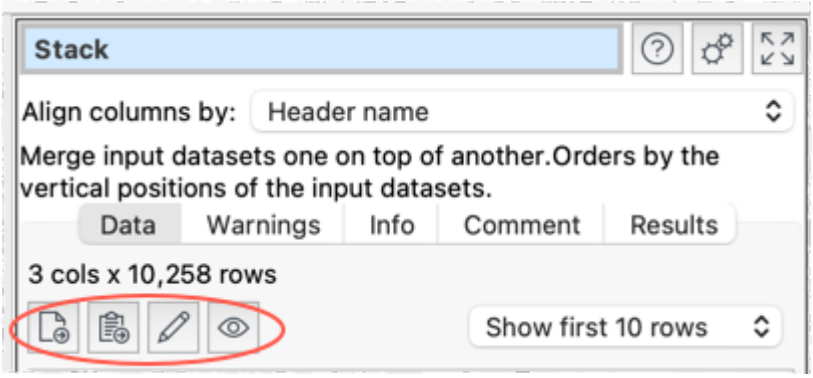


Note that the vertical (Y) position of the inputs affects the order the datasets are stacked. Try swapping the two inputs around and re-select **Stack** to see the affect.

Any changes to input files will be automatically read in. Any changes to input datasets or transform options will be automatically propagated 'downstream'.

To export your transformed dataset to a file or the clipboard, view it in a local editor or see it with whitespace displayed, click on the appropriate button in the **Right** pane.



You can also add an output item to automatically write a dataset to file whenever it changes.

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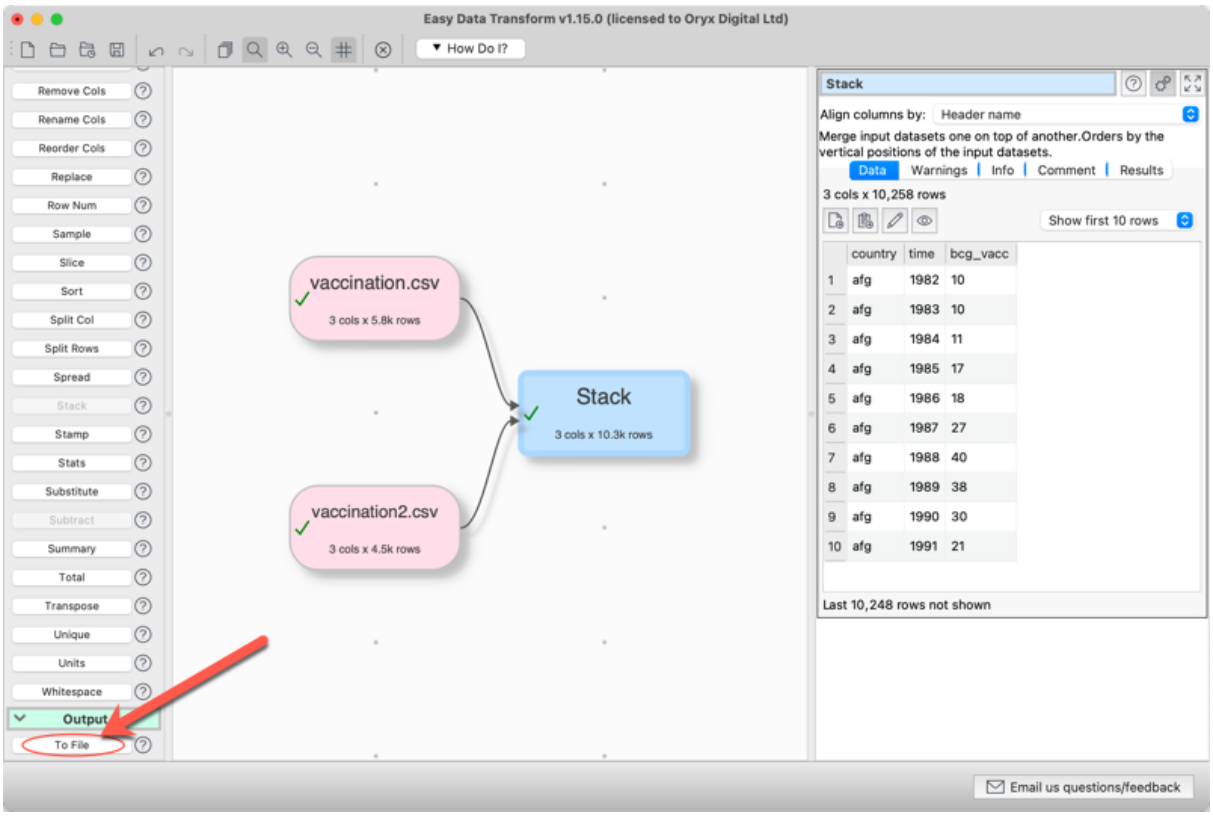
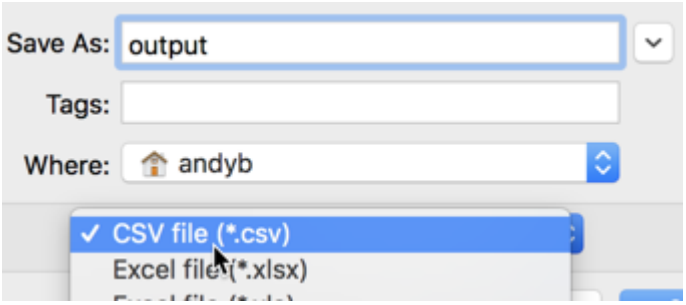


You will be asked for a file to write to. You can choose amongst CSV, Excel, HTML, JSON, Markdown, TSV, vCard, XML and YAML file formats. Select **CSV file**.



Your dataset will then be written to this file every time it changes.

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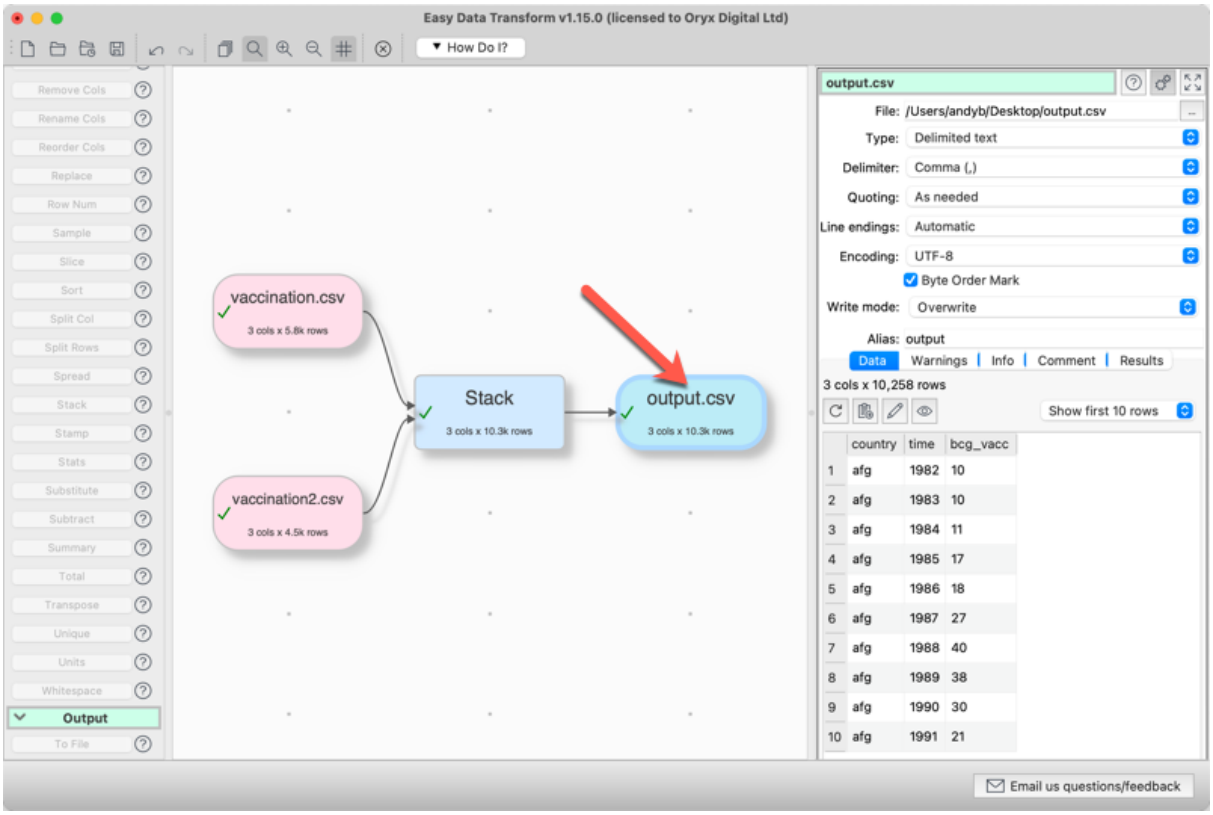
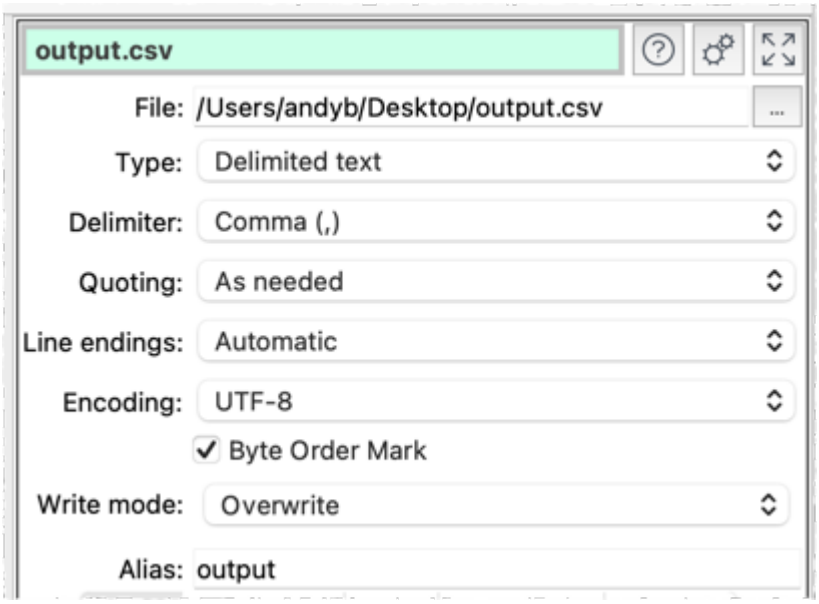


You can also specify the **Delimiter**, **Quoting**, **Encoding, Line endings** etc for your CSV files in the **Right** pane.



You can save your transforms to a transform template document to use again with **File>Save**.

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Have a play!

Tips:

- You can also paste in data from the clipboard (for example, a table from a web page or Word document).
- The **Compare Cols**, **Filter**, **If** and **Sort** transforms take account of dates, numbers and text. You can define what date formats to recognize in the Preferences window.
- New columns are always added to the right of a dataset.
- Comparisons of text are always sensitive to case, unless stated otherwise. E.g. "CASE", "case" and "Case" are treated differently.
- Comparisons of text are always sensitive to whitespace (e.g. spaces and tabs), unless stated otherwise. You can use the **Whitespace** transform to remove leading and trailing whitespace.
- The contents of input and output data files are not saved in Easy Data Transform, only their locations.
- As well as stacking two datasets, you can also Join them, side-by-side, if they have a common ('key') column.
- You can insert a new transform between existing items by selecting the connection between the items and then adding the transform.
- To be more productive with Easy Data Transform see expert tips.

We are interested in your feedback, so please contact us to ask a question, report a bug or request an enhancement.

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Reference

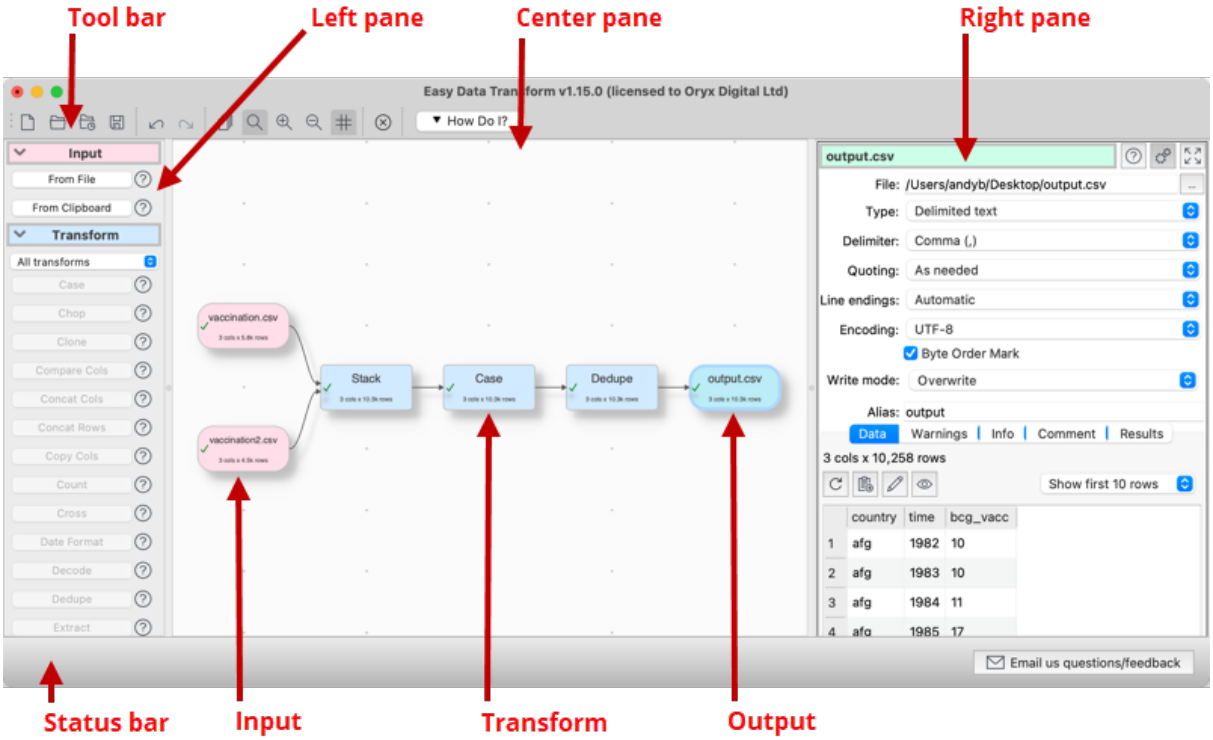
2 Reference

2.1 User Interface

2.1.1 Main window

The Main window comprises:

- **Main** menu
- **Tool** bar
- **Left** pane
- **Center** pane
- **Right** pane
- **Status** bar



You can split the Right pane onto a separate monitor (if available) by selecting **View>Two Screen Mode**.

2.1.2 Left pane

The **Left** pane shows all the available actions you can perform. Which actions are visible will depend on what is shown in the **Center** pane. Which actions are enabled depends on what is selected in the **Center** pane.

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2.1.3 Center pane

The **Center** pane show the inputs, transforms and outputs you are using to transform your data.

2.1.4 Right pane

The **Right** pane shows details of an input, transform or output item you have selected in the **Center** pane.

2.1.5 Preferences window

General tab

Check **give option to disable outputs when opening a file** if you want the option to disable any ouputs with write mode overwrite or append when you open a file, preventing accidentally writing over existing files. Note that this check is never made when using the -exit command line argument.

Check **use native file windows** to use the native Mac file open/save windows. There is a known issue with macOS 10.15 that may cause crashes using native windows.

Check **make a sound when processing completed** if you want to make a system sound every time processing is completed.

Set **At start-up** depending on what you want to happen when Easy Data Transform starts.

Set **User interface theme** to **Automatic** follow the theme of the operating system or override it by setting **Light** or **Dark**. This is only available if your operating system supports a dark theme. Changing **User interface theme** does not update the Center pane colors. You can also toggle between themes using a keyboard shortcut.

Set **Tool bar icon size** to the size of the icons you wish to display in the tool bar.

Set **Right pane processing delay** depending on how long you want to wait after changes in the **Right** pane before starting processing. Setting the value to 0 is generally not recommended, as this means that every single click in the **Right** pane will cause processing.

Set **Zoom wheel behavior** according to how you want the mouse wheel to work in the **Center** pane. Hold down the `Option` key while moving the mouse wheel to switch between zoom and scroll. If **Scroll direction: Natural** is checked in your Mac **Settings>Mouse** then the directions will be reversed.

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User interface font shows the font used for the application user interface, apart from data tables (see below). Click **Choose...** to choose a new font. Click **Default** to set it back to the operating system default.

Data table font shows the font used in the data tables in the **Right** pane. Click **Choose...** to choose a new font. You might prefer a monospaced (fixed width) font such as Monaco or Courier New. Click **Default** to set it back to the operating system default.

The **Locale** language and country setting affects how some numbers and dates are displayed. Consequently it may an affect on some transforms. It does not change the language of the user interface, which is English only.

Set **Supported date formats** to the date formats you wish to recognize. List the date formats in order of preference, with the most likely to be used first.

Input Extensions tab

Set the default file types corresponding to input file extensions.

Click in the **Extension** column and type to change an input file extension. The text will be trimmed of whitespace, converted to lower case and any '.' characters removed.

Click in the **Default type** column and change the drop-down list to change the file type to associate with an input file extension.

Click **Add** to add a new input file extension.

Click **Remove** to remove the selected input file extension(s).

Click **Default** to set the input file extensions back to the default setting.

The order in which input file extensions are shown is not significant.

Output Extensions tab

Set the default file types corresponding to output file extensions.

Click in the **Extension** column and type to change an output extension. The text will be trimmed of whitespace, converted to lower case and any '.' characters removed.

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Click in the **Default type** column and change the drop-down list to change the file type to associate with an output file extension.

Click **Add** to add a new output file extension.

Click **Remove** to remove the selected output file extension(s).

Click **Default** to set the output file extensions back to the default setting.

The order in which output file extensions are shown is not significant.

Colors tab

Select a **Color scheme** for the **Center** pane. A **Preview** is shown below. Choose **Custom** to choose your own color scheme.

2.2 Input

2.2.1 Input data

You need to input data before you can transform it. Data can be input by:
- dragging a file onto the **Center** pane; or
- clicking the **From File** or **From Clipboard** button in the **Left** pane

Enter the file location in **File** or click the browse button. For Excel spreadsheets you also need to add a sheet name, e.g. 'MySpreadsheet.xlsx[Sheet1]'.

Easy Data Transform can input data from files in the following formats:
- delimited text file (e.g. CSV or TSV) with various delimiters
- Excel .xlsx or .xls
- fixed width
- Plain text
- JSON
- vCard
- XML

You can select the input item in the **Center** pane and change any related options in the **Right** pane.

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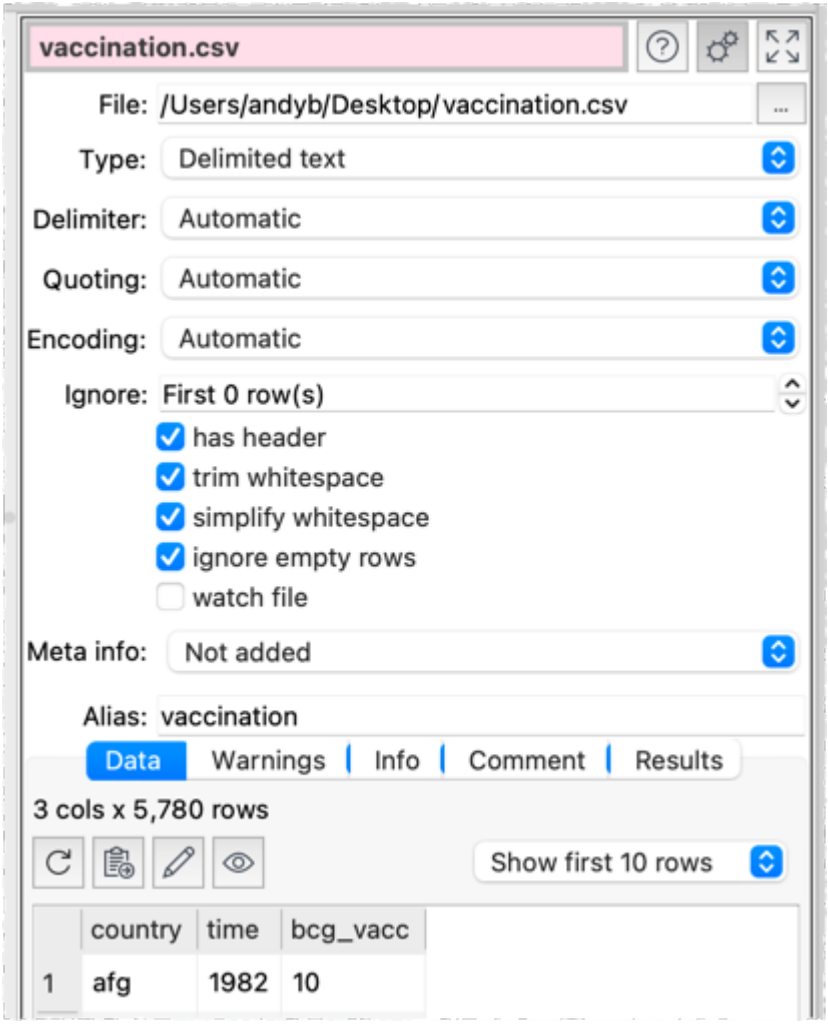

Set **Type** to the file type. The default type will be set according to the file extension and the settings in the **Input Extensions** tab of the **Preferences** window.

For text files Easy Data Transform will treat `CRLF`, `LF` or `CR` control characters as line endings.

Easy Data Transform will make an intelligent guess at the:
- column delimiter and quoting for delimited text files (e.g. comma)
- column widths for fixed width text files
- text encoding for text files (e.g. UTF-8)
- presence of a header row in the data

But you can also do this manually by selecting the input item and changing the **Delimiter, Columns**, **Encoding** and **has header** fields in the **Right** pane.

Data will normally be read from the first non-blank line. Set **Ignore** if you want to ignore a number of rows before you start inputting. Note that empty rows are counted.

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Set **Format** to **Long (more rows)** or **Wide (more columns)** depending on how you want to treat arrays/repeat values in JSON or XML.

Check **trim whitespace** to trim any whitespace (e.g. tabs or spaces) off the start or end of data values.

Check **simplify whitespace** to:
- Replace any tabs or line feeds within data values with spaces.
- Replace non-standard spaces (such as non-breaking space, thin space etc) within data values with spaces.
- Remove carriage returns within data values.

Check **Ignore empty rows** to remove any rows that have only empty values (whitespace is not considered empty).

Check **watch file** if you want the file to be automatically reloaded every time that Easy Data Transform detects that it has been changed (which will then update everything 'downstream').

Use **Meta info** if you wish to add some meta information about the input dataset, e.g. the name of an input file or the date it was created.

Use **Alias** to identify the file for batch processing.

Use **Comment** to record any notes that might be useful to a colleague or your future self.

To change the file being used by an input, select the input item and change the file location in the **Right** pane (e,g, by clicking the '...' browse file button), rather the disconnecting the input and connecting a new one. Otherwise column-related parameters downstream will be reset.

2.3 Transforms

2.3.1 Transform data

Transforms operate on datasets from input data or other transforms. Some transforms only have a single input (e.g. Case), some transforms have two inputs (e.g. Join) and some transforms have two or more inputs (e.g. Stack).

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To create a transform, select one or more input and/or transform items in the **Center** pane and then click the appropriate button in the **Left** pane.

Select from the drop-down list in the **Left** pane to choose which types of transform are displayed, e.g. select **Merge Transforms** to show only transforms related to blending data.

You can select the transform item in the **Center** pane and change any options related to the transform (e.g. which columns it acts on) in the **Right** pane.

The transform will be updated automatically if any input or transform 'upstream' of it changes.

Use **Comment** to record any notes that might be useful to a colleague or your future self.

2.3.2 Calculate

Description

Performs a calculation on 1 or 2 columns and creates a new column.

Examples

Round the 'elo1' column of numbers to the nearest integer:

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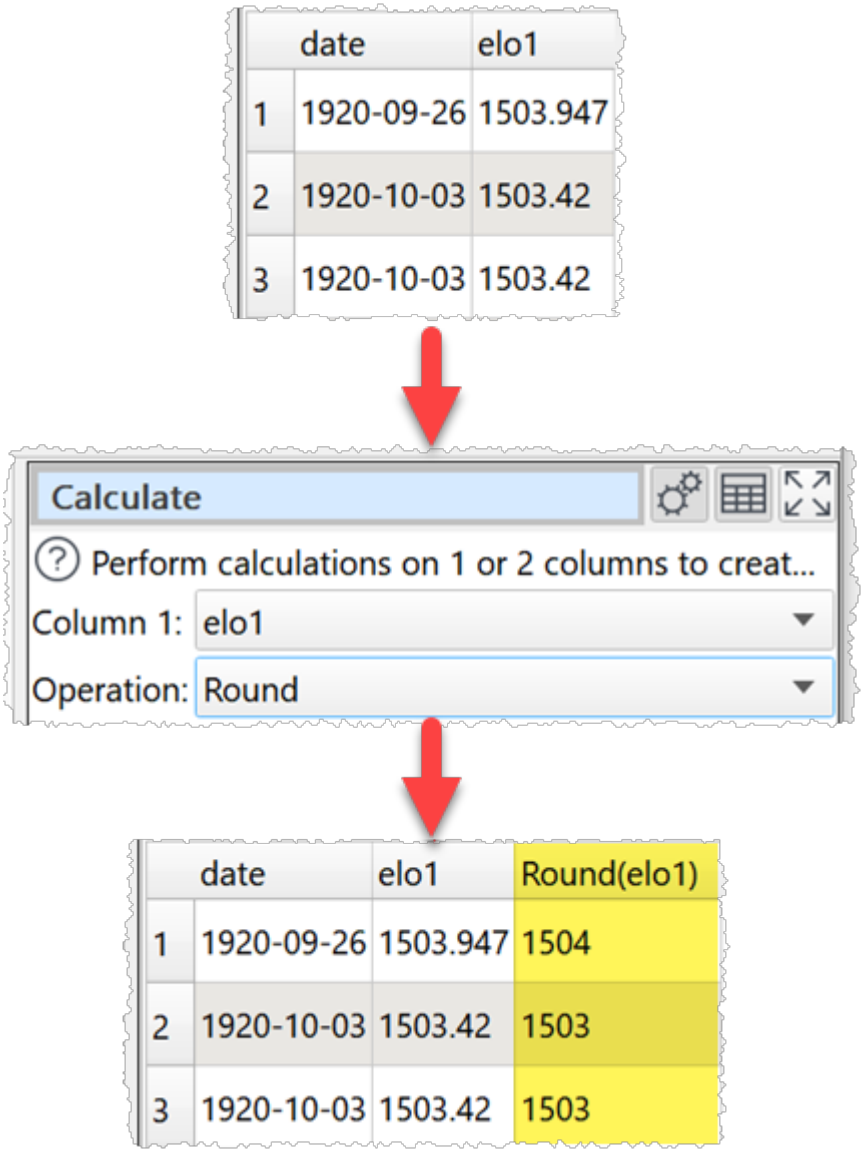

Multiply 2 columns of numeric values:

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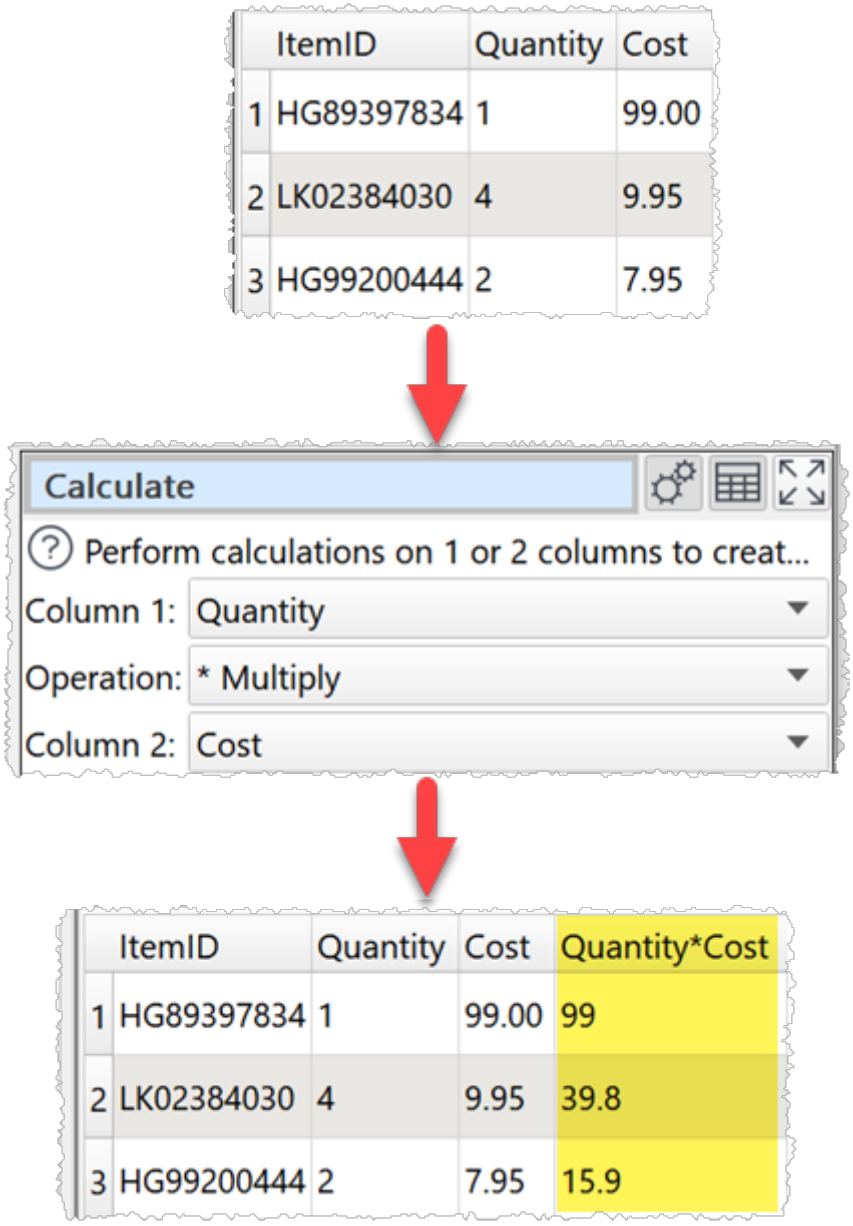

Add a days column to a date column:

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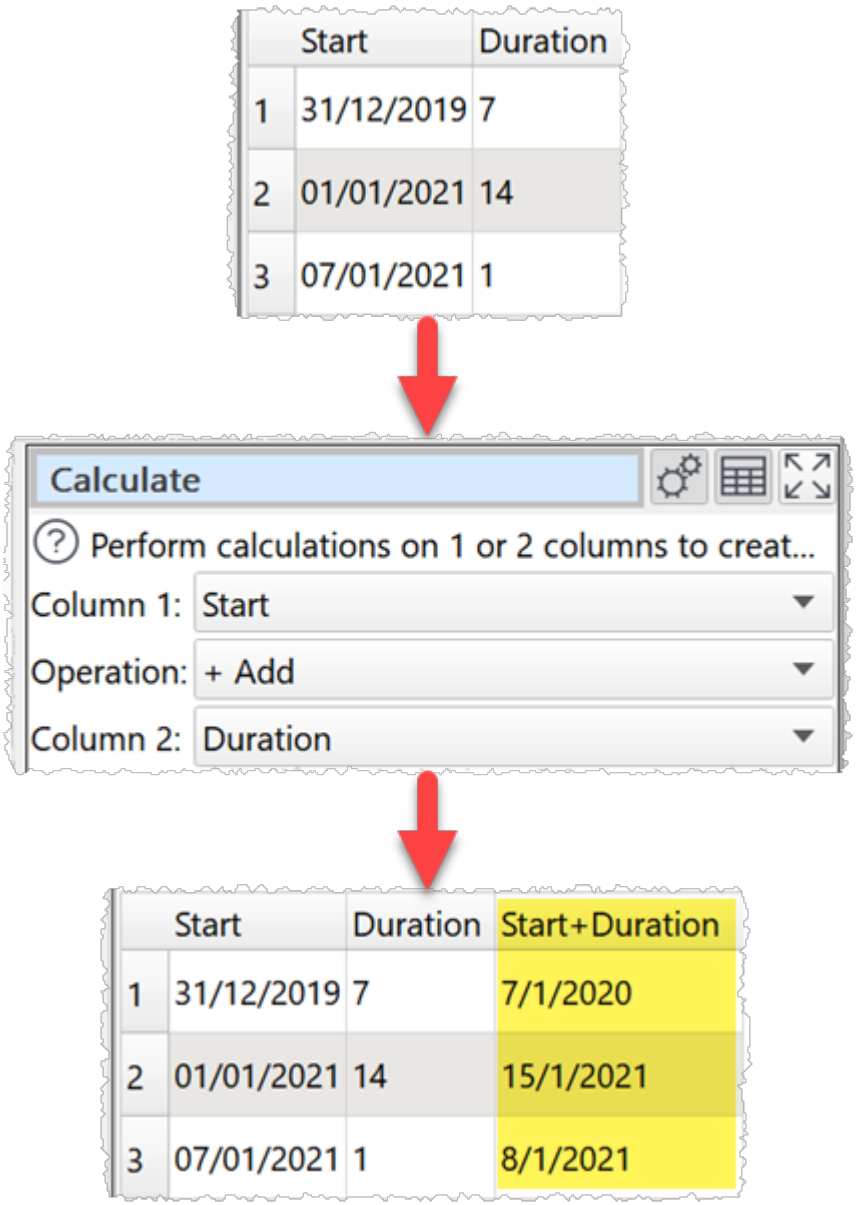

Calculate the difference in days between 2 date columns:

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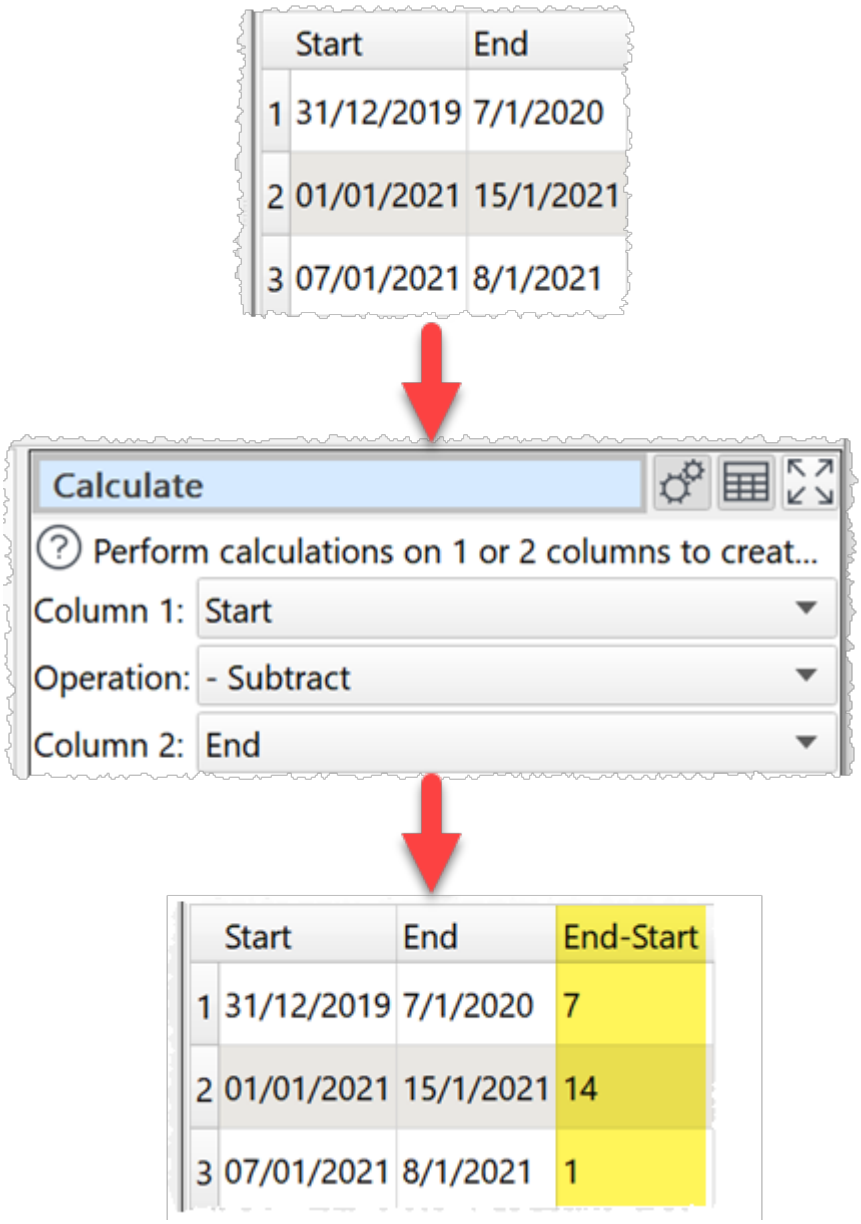

Inputs

One.

Options

- Set **Column 1** to the first column you wish to operate on.
- Set **Operation** to the operation you wish to perform.
- Set **Column 2** the second column you wish to operate on (binary operations only)

Notes

- The following operations are supported.

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Operation	Column 1	Column 2	Notes	Examples
+ Add	Number	Number	Numerical addition.	`1.2 + 3 = 4.2`
	Date	Integer number	Adds days to the date.	`31/01/2021 + 7 = 07/02`
- Subtract	Number	Number	Numerical subtraction.	`1.2 - 3 = -1.8`
	Date	Integer number	Subtracts days from the date.	`31/01/2021 - 7 = 24/01`
	Date	Date	Days the date in **Column 1** is after the date in **Column 2** (negative if before).	`31/01/2021 - 24/01/202` `24/01/2021 - 31/01/202`
*** Multiply**	Number	Number	Numerical multiplication.	`1.2 * 3 = 3.6`
/ Divide	Number	Number	Numerical division.	`1.2 / 3 = 0.4` `1 / 0 = Error`
^ Power	Number	Number	Column 1 to the power Column 2 ($col1^{col2}$).	`1.2 ^ 3 = 1.728` `2 ^ -3 = 0.125`
% Modulus	Integer number	Integer number	Remainder after **Column 1** is divided by **Column 2.**	`7 % 2 = 1` `7 % 0 = Error`
Abs	Number	N/A	The absolute value.	`Abs( 1.2 ) = 1.2` `Abs( -1.2 ) = 1.2`

Ceiling	Number	N/A	The smallest integer that is not less than the value.	`Ceiling( 1 ) = 1`
				`Ceiling( 1.2 ) = 2`
				`Ceiling( -1.2 ) = -1`

DayOfWeek	Date	N/A	Day of the week, from 1 = Monday to 7 = Sunday.	`DayOfWeek( 31/01/2021` `DayOfWeek( 01/02/2021`
DayOfMonth	Date	N/A	Day of the month, from 1 to 31.	`DayOfMonth( 31/01/2021` `DayOfMonth( 01/02/2021`
DayOfYear	Date	N/A	Day of the year, from 1 to 366.	`DayOfYear( 01/02/2021` `DayOfYear( 31/12/2021`

Decrement	Number	N/A	Subtract 1.	`Decrement( 1 ) = 0`
				`Decrement( -1 ) = -2`
				`Decrement( 1.2 ) = 0.2`

	Date	N/A	Subtract 1 day.	`Decrement( 31/01/2021`

Floor	Number	N/A	The largest integer that is not greater than the value.	`Floor( 1 ) = 1`
				`Floor( 1.2 ) = 1`
				`Floor( -1.2 ) = -2`

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- Whether values are interpreted as number, dates or text depends on **Supported date formats** and **Locale** in the Preferences window.
- To concatenate text in different columns use the Concat Cols transform.
- To compare 2 columns use the Compare Cols transform.
- For logical operations use the If transform.
- For operations on rows or columns use the Stats transform.
- For more complex number/date calculations use the JavaScript transform.
- To modify the numerical precision of the results use the Num Format transform.
- To add a new column of values use the New Col transform.

2.3.3 Case

Description

Changes the case of text in one or more columns.

Example

Set names to title case:

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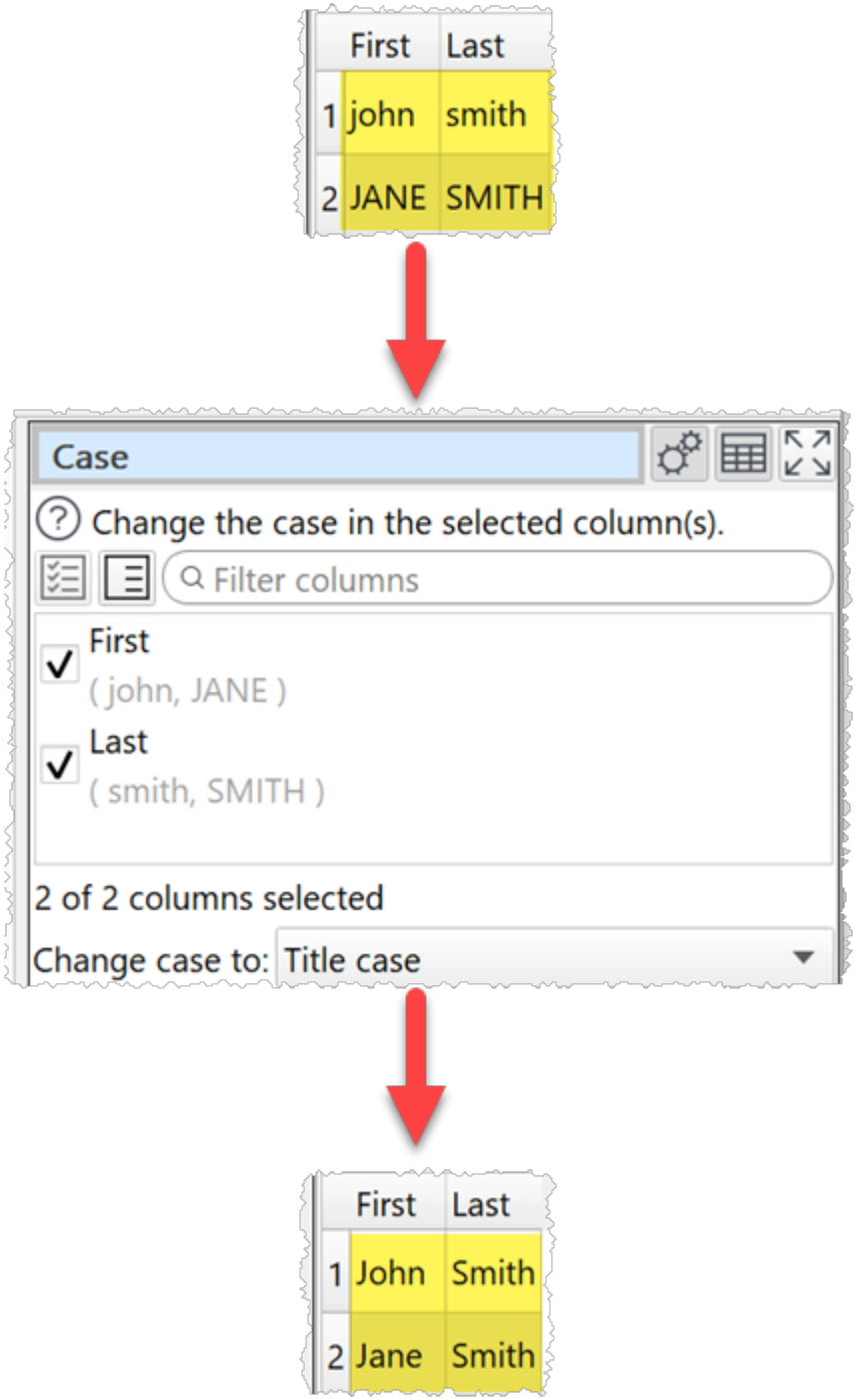

Inputs

One.

Options

- Check the column(s) you wish to transform.

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- Set **Change case to** to **Lower case** (e.g. "text"), **Upper case** (e.g. "TEXT") or **Title case** (e.g. "Text").

See also

- Whitespace

2.3.4 Chop

Description

Remove characters from the start or end in one or more columns.

Example

Remove leading zeros:

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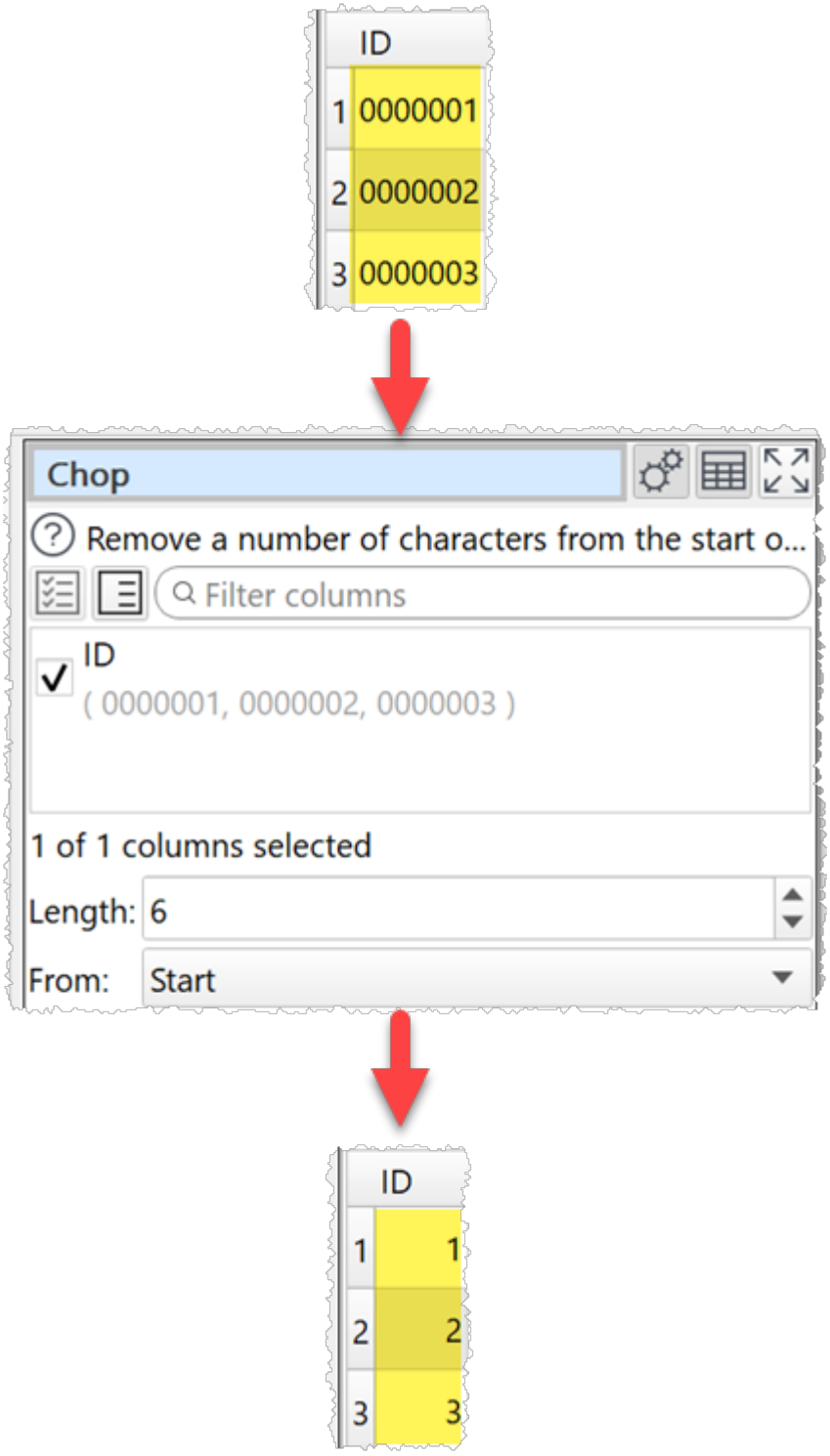

Inputs

One.

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Options

- Check the column(s) you wish to transform.
- Set **Length** to the number of characters you want to remove.
- Set **From** to **Start** or **End** depending on whether you want to remove characters from the start or end.

Notes

- Whitespace is counted when calculating length. You can use Whitespace to remove whitespace before chopping.
- If you want to set a column to a fixed length use Pad and Chop together.

See also

- Extract

2.3.5 Clone

Description

Makes an exact copy of the input dataset.

Inputs

One.

Options

- None.

Notes

- Clone can be useful to simplify complicated layouts.

2.3.6 Compare Cols

Description

Creates a new column with a comparison of two other columns.

Examples

Compare 2 numerical columns:

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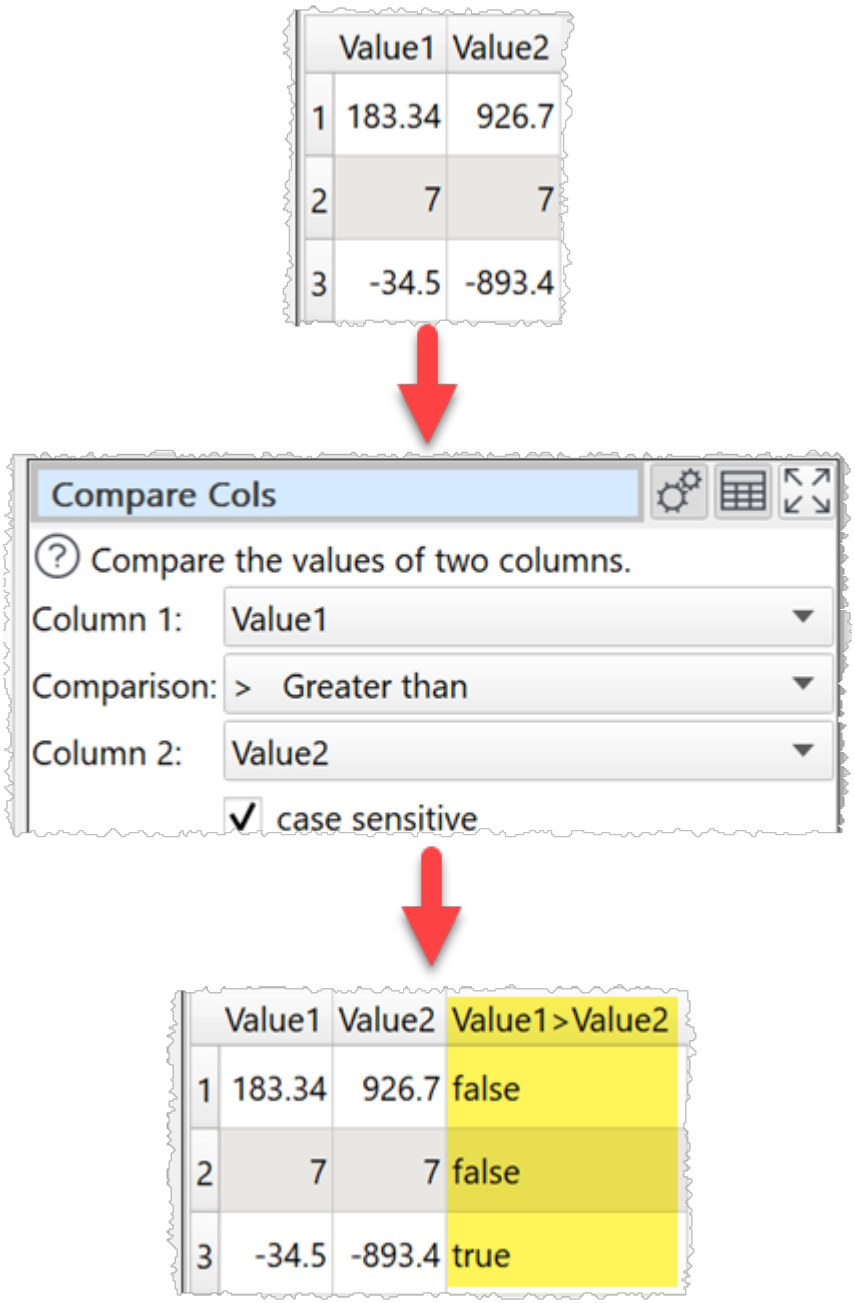

Compare 2 date columns:

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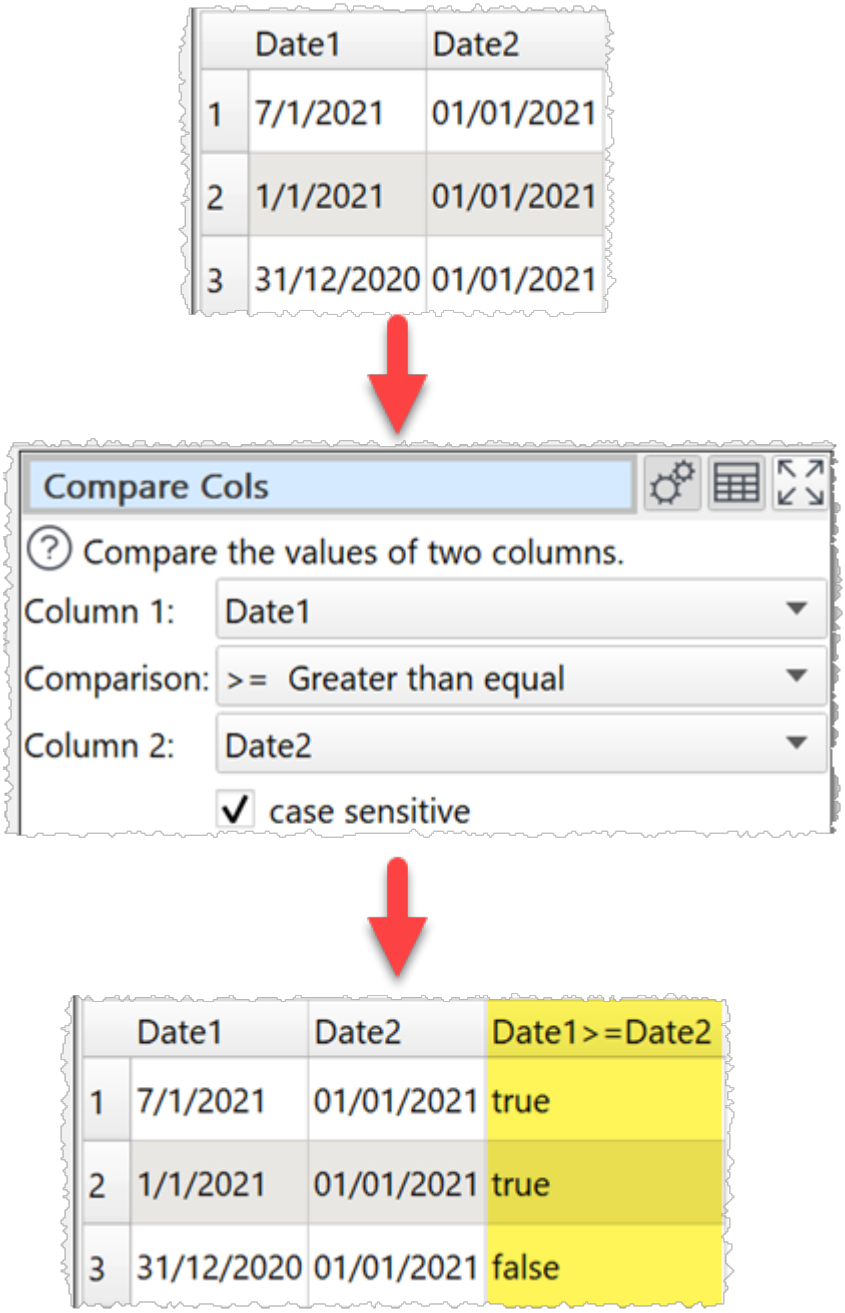

Inputs

One.

Options

- Select the two columns you wish to compare as **Column 1** and **Column 2** and the **Comparison** operator.
- Check **case sensitive** to use case sensitive matching for text.

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Notes

- Number, date and text values are treated differently. Any values that can be converted to a number will be treated as a number. Any values that match the supported date formats in Preferences will be treated as a date. All other values are treated as text.
- Comparisons of text are whitespace sensitive. You can use Whitespace to remove whitespace before filtering and Replace to get of other unwanted characters (e.g. whitespace inside the text).
- The new column is added at the right end. You can change the column order with Reorder Cols and the column name with Rename Cols.

See also

- Split Cols

2.3.7 Concat Cols

Description

Creates a new column by concatenating text from existing columns.

Example

Concatenate 'First' and 'Last' columns with a comma between:

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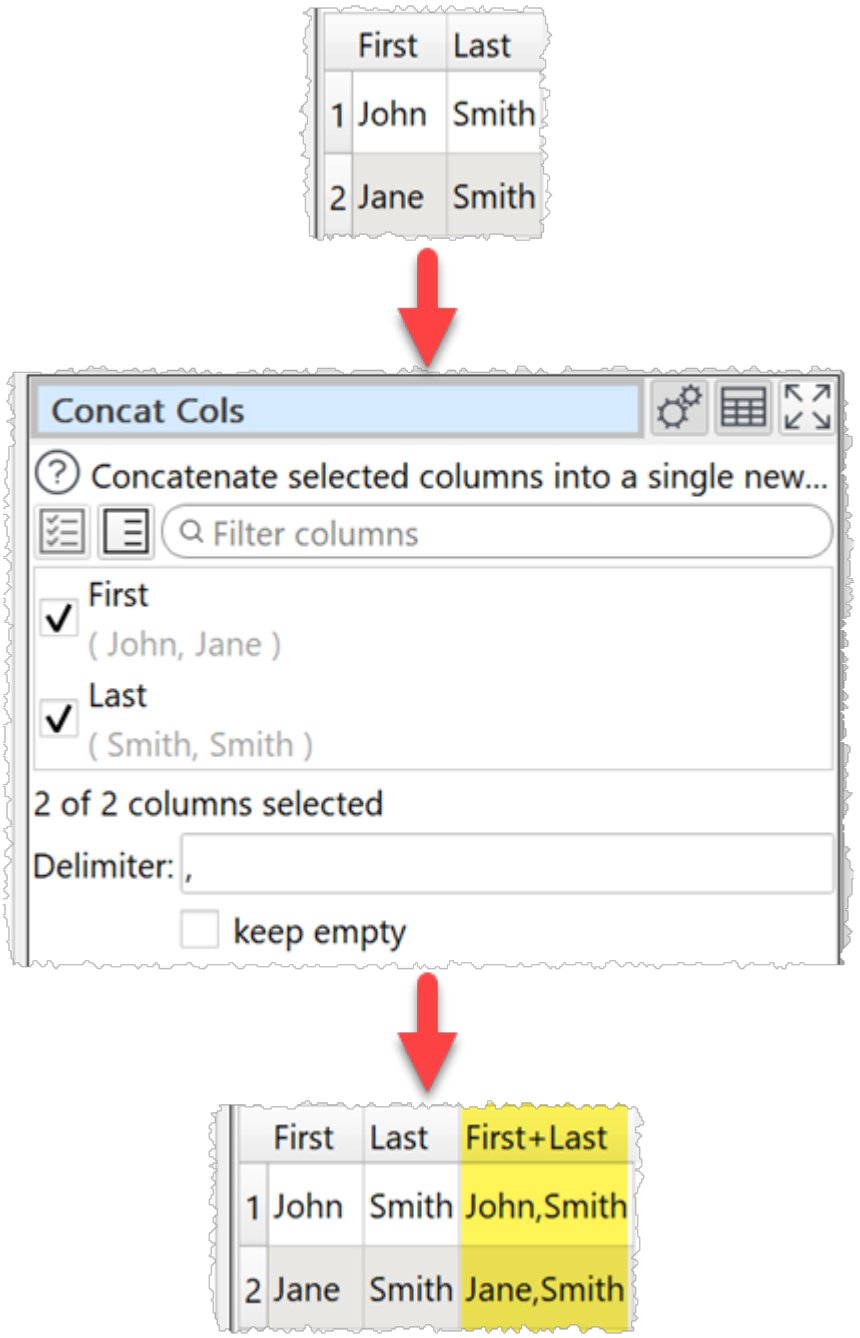

Inputs

One.

Options

- Check the columns you wish to concatenate.
- Supply the **Delimiter** you wish to place between concatenated text (optional). For example ",".

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- Check **keep empty** if you wish to keep the delimiter for empty columns.

Notes

- If there is a header, the header of the new column is formed from the header of the concatenated columns. You can use Rename Cols to change the new column name.
- Concatenating a single column makes a copy of the column.
- The values in the column are in the order of the original columns. You can change the column order before concatenation with Reorder Cols.
- The new column is added at the right end. You can change the column order with Reorder Cols and the column name with Rename Cols.
- The opposite of **Concat Cols** is Split Col.

See also

- Concat Rows
- Substitute

2.3.8 Concat Rows

Description

Concatenate multiple consecutive rows into a single row.

Example

Concatenate every 2 rows to 1:

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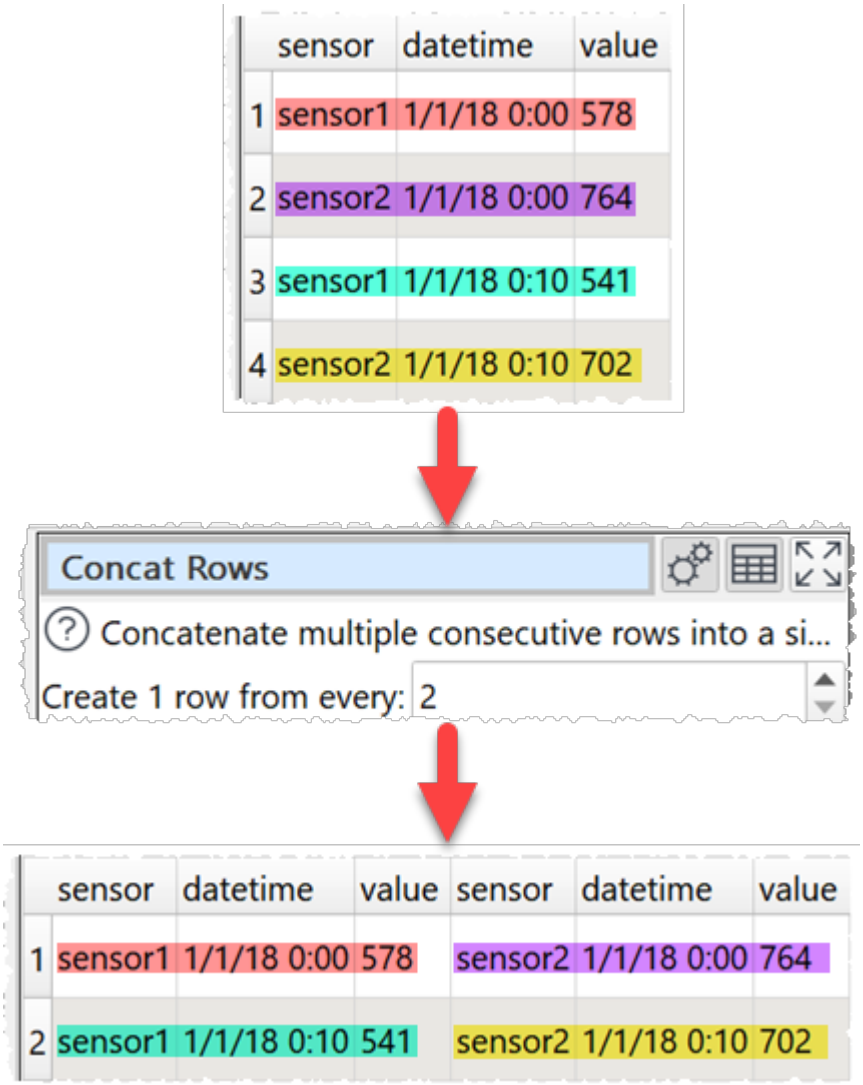

Inputs

One.

Options

- Set **Create 1 row from every** to N to concatenate every N rows into 1 row.

Notes

- Use New Col if you need to add additional columns before concatenating rows.
- Use Filter if you need to remove rows before concatenating row.
- Use Rename Cols if you need to change column names after concatenating rows.
- The opposite of **Concat Rows** is Split Rows.

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See also

- Spread
- Concat Cols

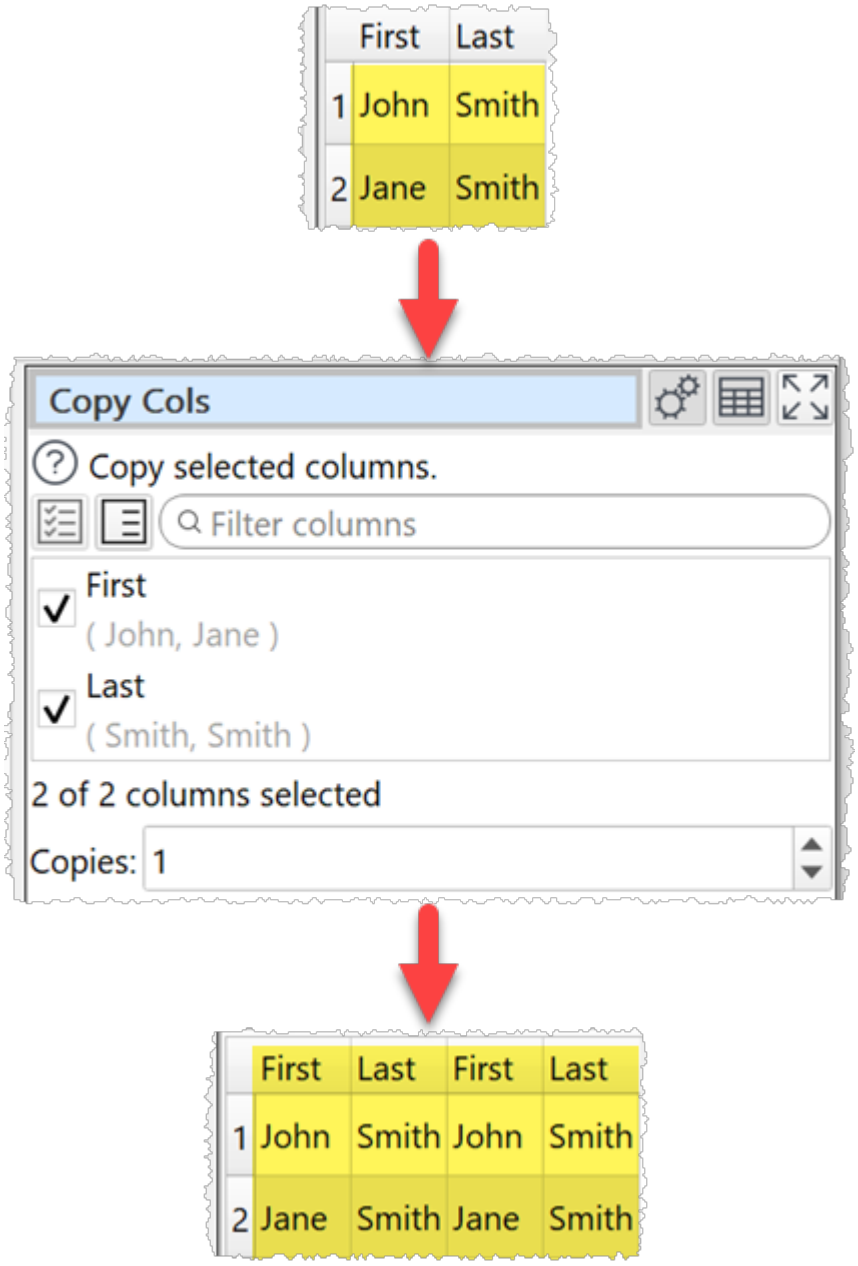
2.3.9 Copy Cols

Description

Creates one or more copies of the selected column(s).

Example

Copy 2 columns, once each:



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Inputs
One.

Options
- Check the columns you wish to copy.
- Set **Copies** to the number of copies you want to make of each checked column.

Notes
- If there is a header, the header of each new column is the original column name. You can rename columns with Rename Cols.
- The new columns are added at the right end. You can change the column order with Reorder Cols.

See also
- New Col

2.3.10 Count

Description
Counts the number of occurrences of each item of text in the selected column.

Example
Count unique values in the 'Response' column.

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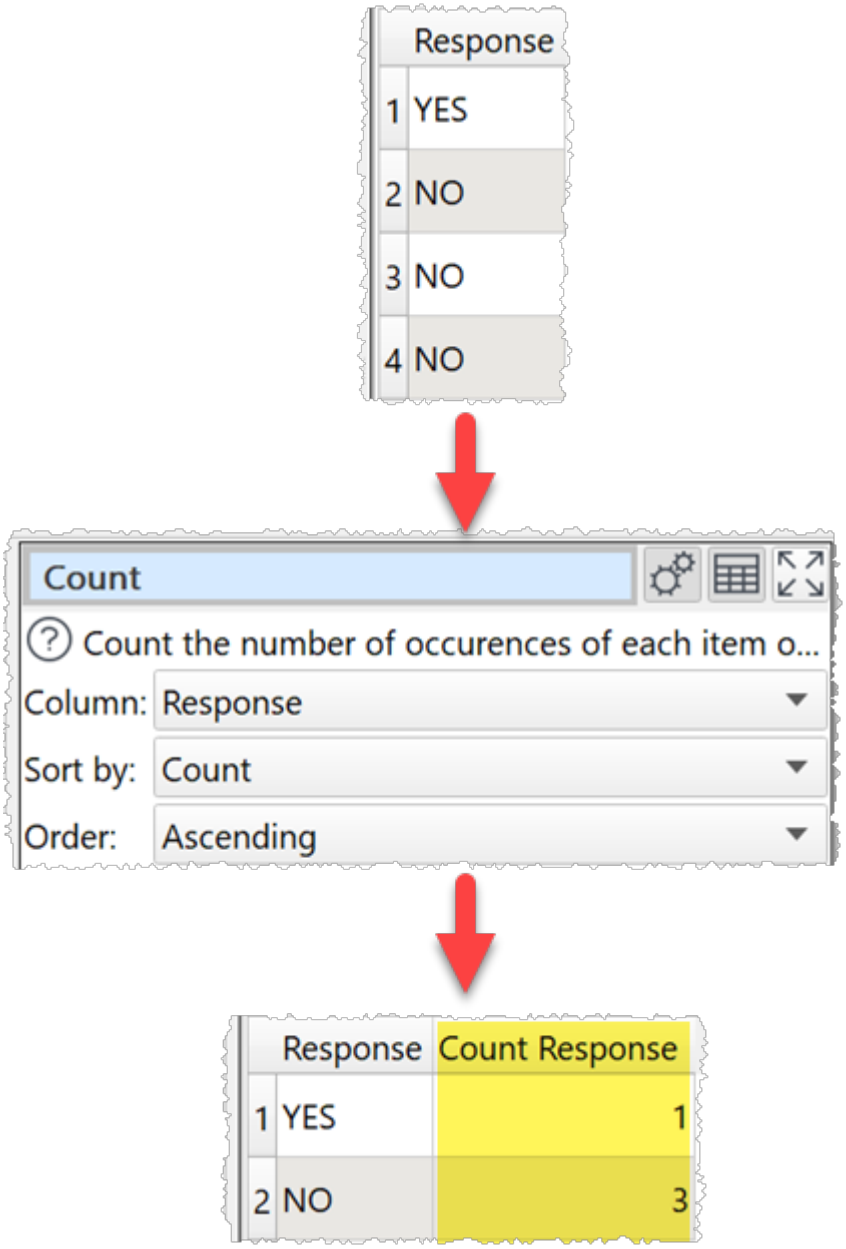

Inputs

One.

Options

- Select the **Column** whose values you wish to count.
- Set **Sort by** depending on whether you wish to sort alphabetically by the **Text** in the left column or numerically by the **Count** in the right column.
- Set **Order** depending on whether you wish to sort **Ascending** or **Descending**.

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Notes

- Date and number values are treated as text.
- You can use Rename Cols to change the new column name.

See also

- Unique
- Total
- Pivot
- Stats
- Summary

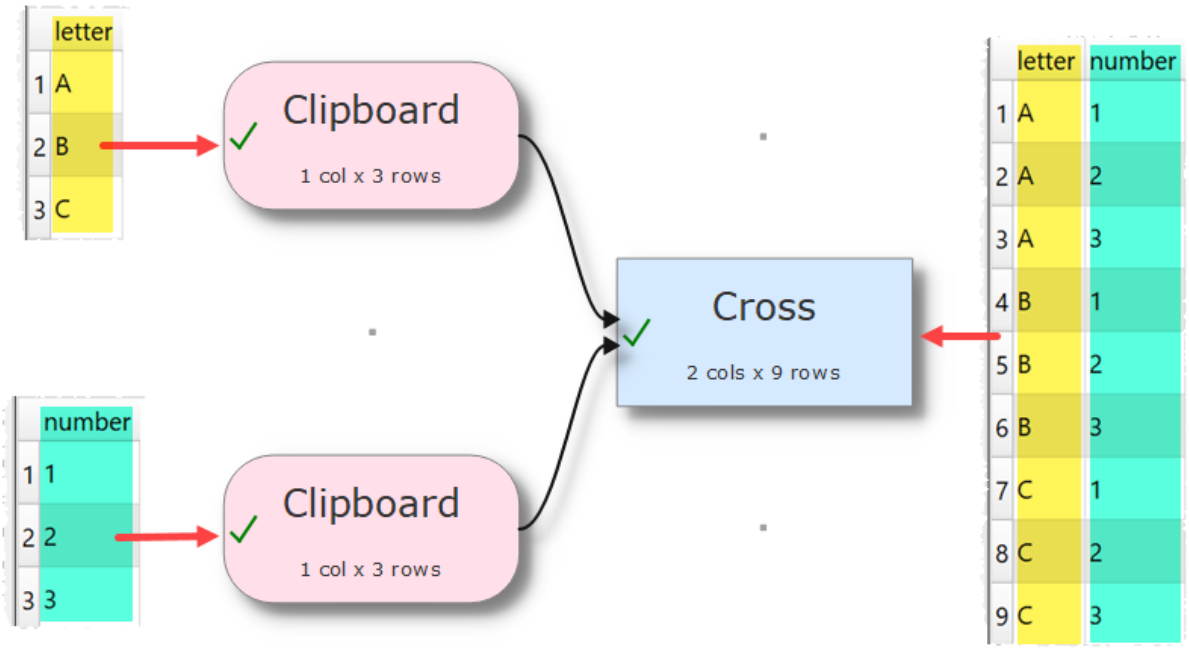
2.3.11 Cross

Description

Creates an output from combining every possible row combination of each input. E.g. if the first input has N1 rows and the second input has N2 rows, then the result will have N1 X N2 rows. Also known as a 'Cartesian product' or 'cross join'.

Example

Cross 2 small datasets:



Inputs

Two or more.

Options

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- The output depends on the vertical (Y-axis) position of the inputs.

Notes

- It can create a very large number of rows!

See also

- Join
- Stack

2.3.12 Date Format

Description

Changes the date format in one or more columns.

Example

Change day/month/year to month-day-year:

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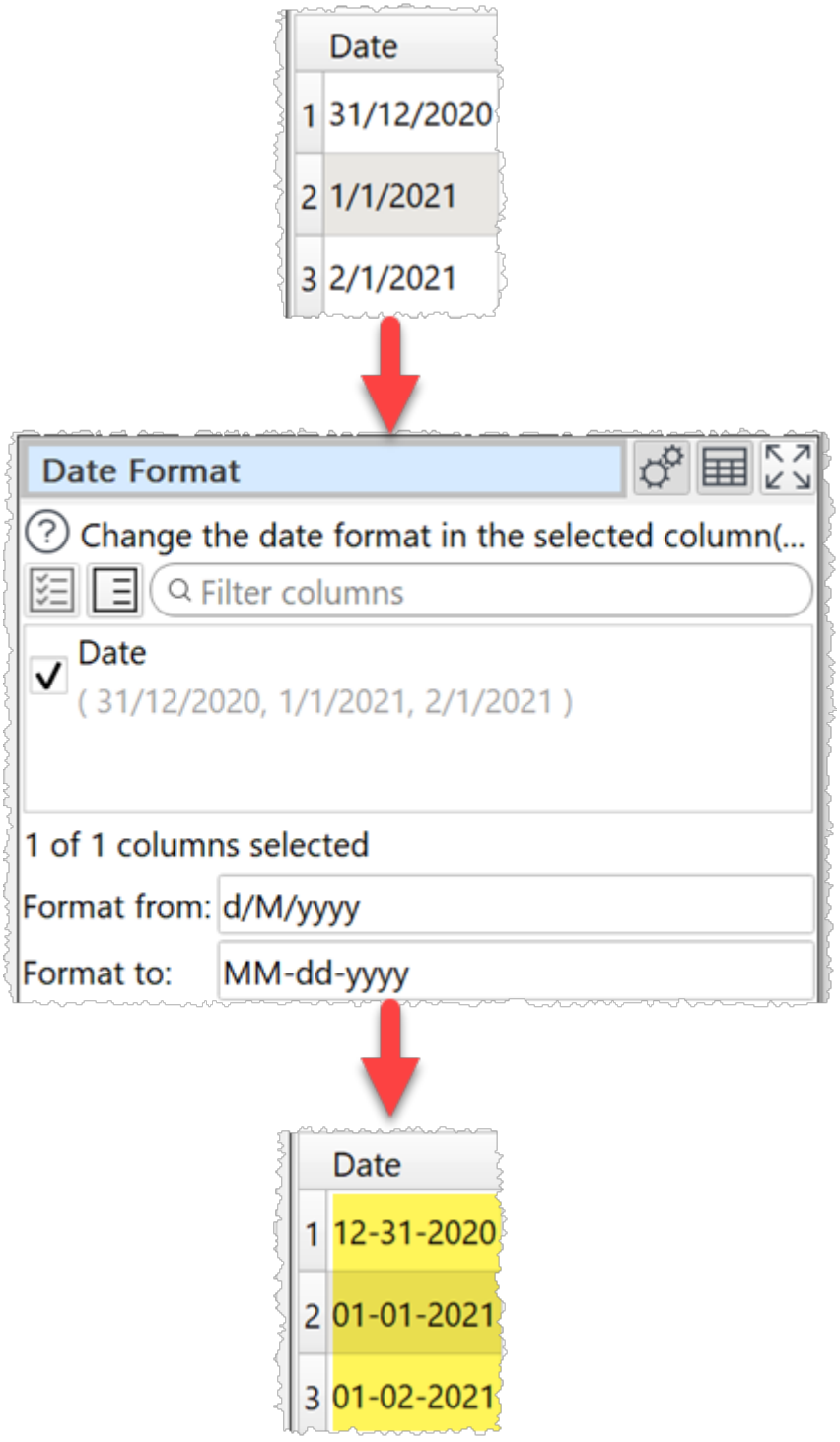

Inputs

One.

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Options

- Check the columns you wish to transform.
- Supply the existing date format in **Format from** (see below).
- Supply the new date format in **Format to** (see below).
- The following date formats are supported for input and output:

Format	Meaning
`d`	The day as number without a leading zero (1 to 31)
`dd`	The day as number with a leading zero (01 to 31)
`ddd`	The abbreviated localized day name (e.g. 'Mon' to 'Sun'). Uses the locale to localize the name.
`dddd`	The long localized day name (e.g. 'Monday' to 'Sunday'). Uses the locale to localize the name.
`M`	The month as number without a leading zero (1 to 12).
`MM`	The month as number with a leading zero (01 to 12)
`MMM`	The abbreviated localized month name (e.g. 'Jan' to 'Dec'). Uses the locale to localize the name.
`MMMM`	The long localized month name (e.g. 'January' to 'December'). Uses the locale to localize the name.
`yy`	The year as a two digit number (00 to 99).
`yyyy`	The year as a four digit number. If the year is negative, a minus sign is prepended in addition.

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Notes

- An exact match is expected for the input date. E.g. **Format from** is yyyy-MM-dd then `2020-12-17` will be converted, but `2020-12-17T14:58` won't. You can extract just the date part here using Split Col with `T` as the delimiter.
- Use the correct case for the format (e.g. yyyy-MM-dd, not YYYY-mm-DD).
- The **Locale** set in the **Preferences** window is used to decide how the date is represented (e.g. names of months and days).
- You can also use Split Col to split a date into its component parts. For example to split "31/1/2019" into day, month and year components using the "/" delimiter.
- If the date to be converted has only two year digits, it is treated as a date between 1900 and 1999. E.g. "31/1/19" is interpreted in d-M-yy format as 31st January 1919.
- Warnings are shown in the **Warnings** tab for values that don't match **Format from**.

See also

- Num Format

2.3.13 Decode

Description

Convert to/from base64 encoding, URL encoding, escaped HTML or escaped XML.

Example

Convert `<'Hello World!'>` to base64 encoding:

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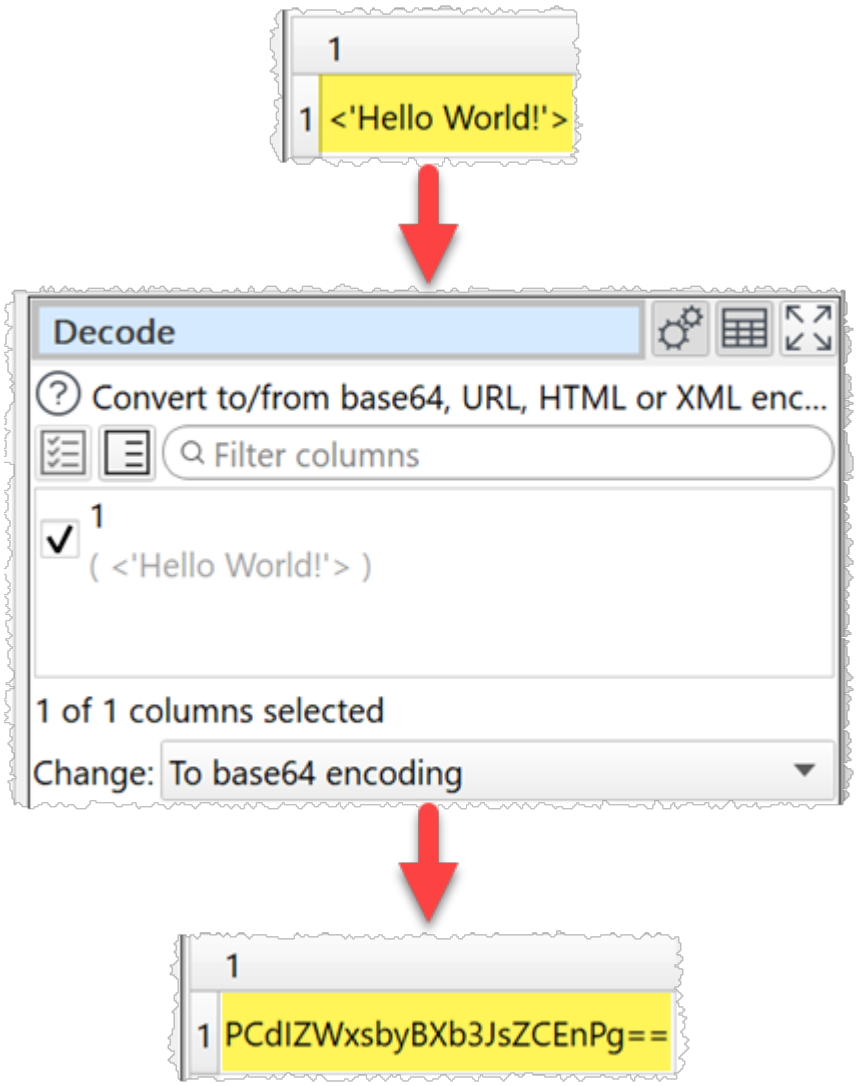

Type	Plaintext	Encoded
based64 encoding	<'Hello World!'>	PCdIZWxsbyBXb3JsZCEnPg==
URL encoding	<'Hello World!'>	%3C%27Hello%20World%21%27%3E
HTML escaping	<'Hello World!'>	<'Hello World!'>
XML escaping	<'Hello World!'>	<'Hello World!'>

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Inputs
One.

Options
- Check the column(s) you wish to transform.
- Set **Change** according to how you want to decode/encode the selected columns.

Notes
- This is disinct from text encoding (e.g. UTF-8 vs UTF-16) which is handled on input and output.
- Use Copy Cols to copy columns before you transform them.
- Data input from XML files and output to HTML and XML files is unescaped/escaped automatically.

2.3.14 Dedupe

Description
Remove duplicate rows.

Example
Keep the first record for each unique 'Customer Id':

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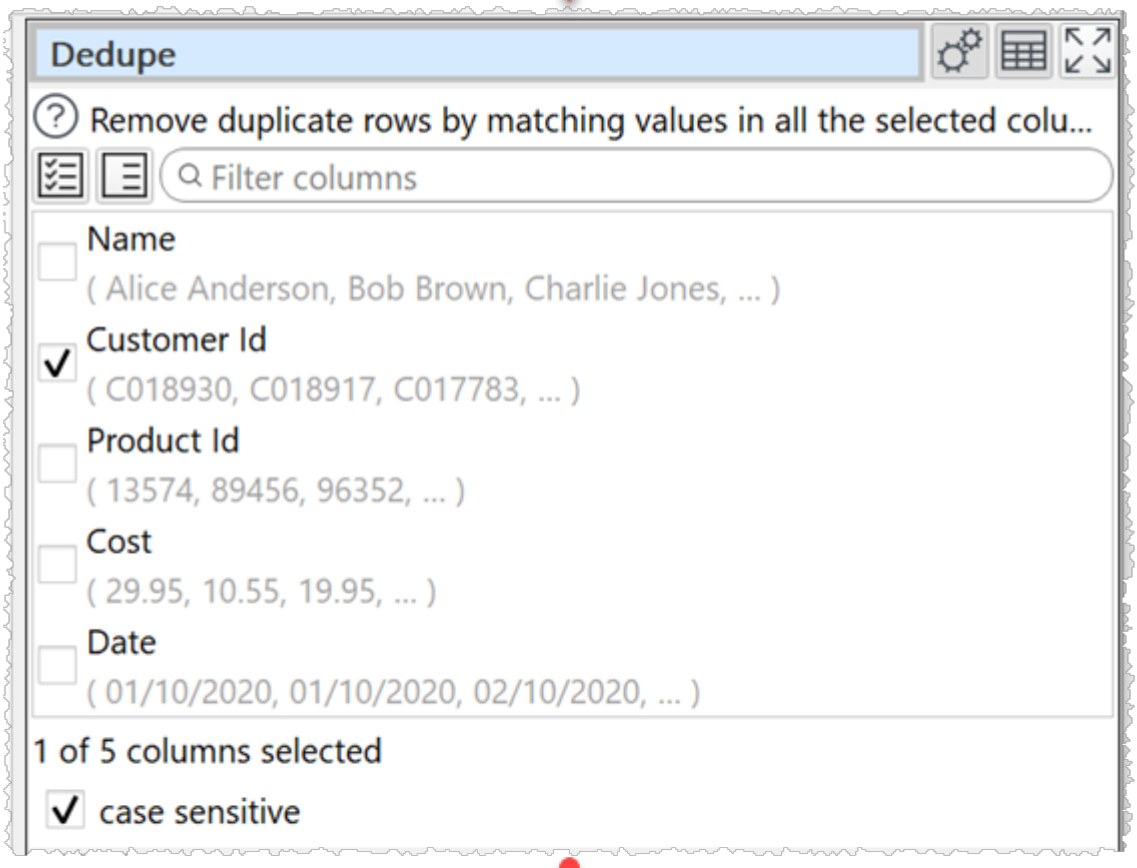
	Name	Customer Id	Product Id	Cost	Date
1	Alice Anderson	C018930	13574	29.95	01/10/2020
2	Bob Brown	C018917	89456	10.55	01/10/2020
3	Charlie Jones	C017783	96352	19.95	02/10/2020
4	Robert Brown	C018917	98526	10.00	02/10/2020
5	Charles Jones	C017783	38746	25.00	03/10/2020



	Name	Customer Id	Product Id	Cost	Date
1	Alice Anderson	C018930	13574	29.95	01/10/2020
2	Bob Brown	C018917	89456	10.55	01/10/2020

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Inputs
One.

Options
- Check the column(s) you wish to look for duplicate values in.
- Check **case sensitive** to use case sensitive matching.

Notes
- Rows are considered duplicates if they have exactly the same value in all the checked columns.
- Comparisons are whitespace sensitive. You can use Whitespace to remove whitespace before deduping and Replace to get of other unwanted characters (e.g. whitespace inside the text).
- When several rows are duplicates, only the top one is retained.
- The Unique transform is a more powerful (but more complex and slower) alternative to Dedupe.

See also
- Dedupe a dataset

2.3.15 Extract

Description
Extract a length of text in one or more columns.

Example
Extract the first 2 digits from the 'Product Id' column:

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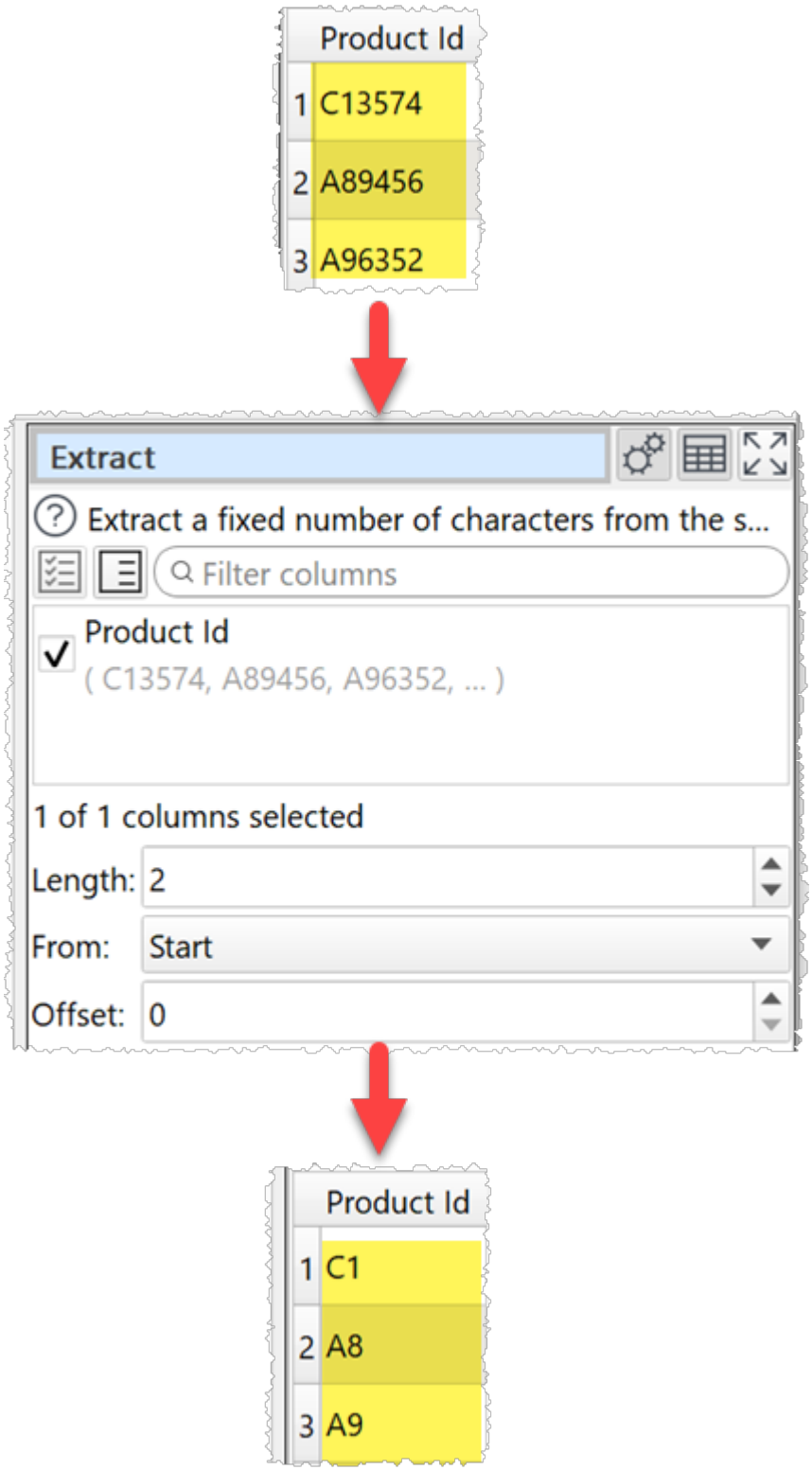

Inputs

One.

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Options

- Check the column(s) you wish to transform.
- Set **Length** to the length you want values in selected columns shortened to.
- Set **From** to **Start** or **End** depending on whether you want to take from the start or end.
- If **From** is **Start** then **Offset** is the offset of the first character from the start (0 to start with the first character). If **From** is **End** then **Offset** is the offset of the last character from the end (0 to start with the last character).

Notes

- Whitespace is counted when calculating length. You can use Whitespace to remove whitespace before extracting.
- If you want to set a column to a fixed length use Pad and Extract together.

See also

- Chop

2.3.16 Fill

Description

Fill empty cells in selected columns with the next adjacent non-empty cells. The direction is the direction to fill to (not from).

Example

Fill down:

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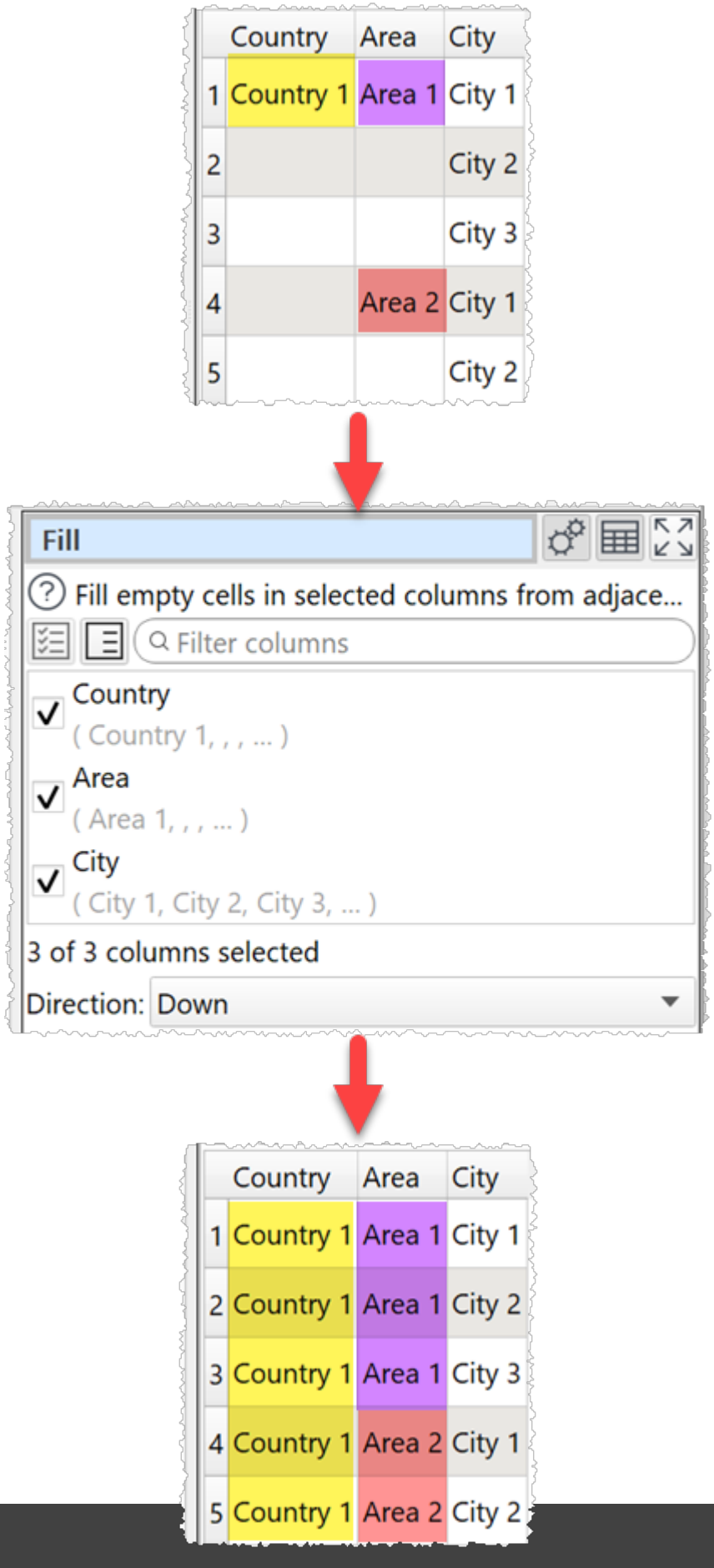

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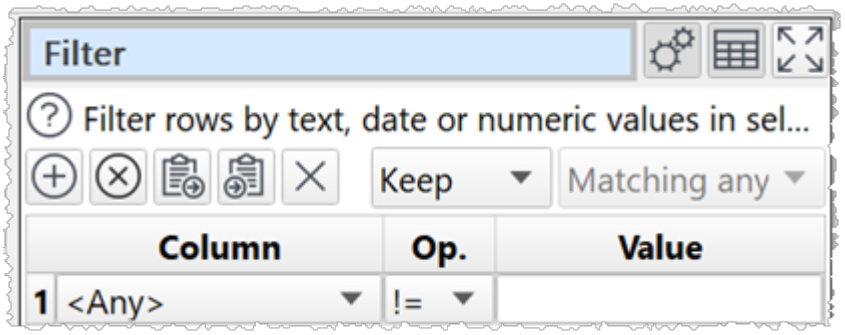
Inputs
One.

Options
- Check the column(s) you wish to fill.
- Select **Direction** depending on the direction you wish to fill to.

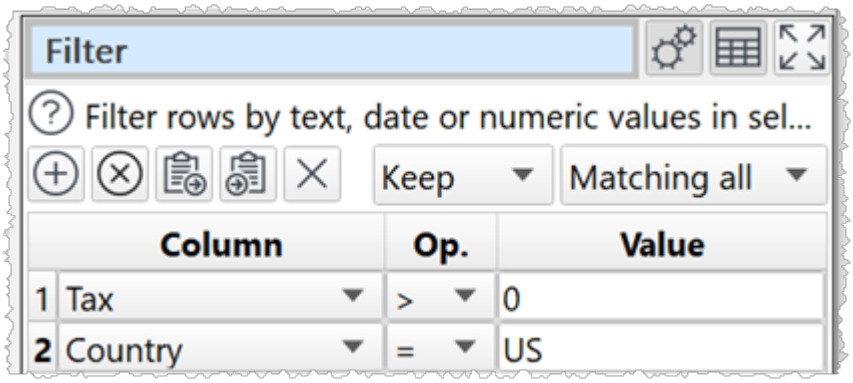
2.3.17 Filter

Description
Removes rows based on number, date and text values in selected columns.

Examples
Remove rows where all values are empty.



Keep only rows where the 'Tax' value is greater than 0 and the 'Country' value is 'US'.



Inputs
One.

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Options

- Click the ⊕ button to add a new filter criteria.
- Click the ⊗ button to delete the selected filter criteria.
- Click the button to copy terms to the clipboard.
- Click the button to paste terms from the clipboard.
- Click the × button to clear all terms.
- Select **Keep** if you want to keep matching rows and **Remove** to remove matching rows.
- Select **Matching all** to match on all criteria (e.g. criteria 1 and criteria 2). Select **Matching any** to require a match on one or more criteria (e.g. criteria 1 or criteria 2).
- Set **Column** to the column you wish to match.
- Set **Op.** to the comparison operator.
- Set **Value** to the value you wish to compare.
- Check **case sensitive** to use case sensitive matching for text.
- Check **disable filtering** to turn off filtering. If sampling is disabled, the transform does nothing.

Notes

- A filter row is ignored if the **Value** column is empty , except when **Op.** is **Equal to**, **Not equal to**, **Matches regex** or **Doesn't match regex.**
- Number, date and text values are treated differently for **Equal to**, **Greater than**, **Less than**, **Greater than equal**, **Less than equal** and **Not equal to** operations. Any values that can be converted to a number will be treated as a number. Any values that match the supported date formats in Preferences will be treated as a date.
- All values are treated as text for **Contains**, **Starts with**, **Ends with**, **Matches regex**, **Is not**, **Doesn't start with, Doesn't end with** and **Doesn't match regex** operations.
- Comparisons of text are whitespace sensitive. You can use Whitespace to remove whitespace before filtering and Replace to get of other unwanted characters (e.g. whitespace inside the text).
- See here for more details on Regular expressions (regex).
- If you are pasting in filter terms, the format expected is comma delimited text with 3 columns.
  - The first column is the 0-based index of the **Column** drop-down list.
  - The second column is the 0-based index of the **Op.** drop-down list.
  - The third column is the **Value**.

For example, pasting in:

```
0,0,YES
```

Will add:

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You can also try copying terms to the clipboard and pasting into a text file to see the format. If you only paste in 1 column of text, it will be assumed to be a list of **Value**. You can, of course, use Easy Data Transform to create the appropriate filter terms and paste them into memory.

See also

- Slice

2.3.18 Gather

Description

Gather multiple columns into new key and value columns. Also called unpivot, long pivot or group by.

Example

Gather 'Q1', 'Q2', 'Q3' and 'Q4' columns into 1 column.

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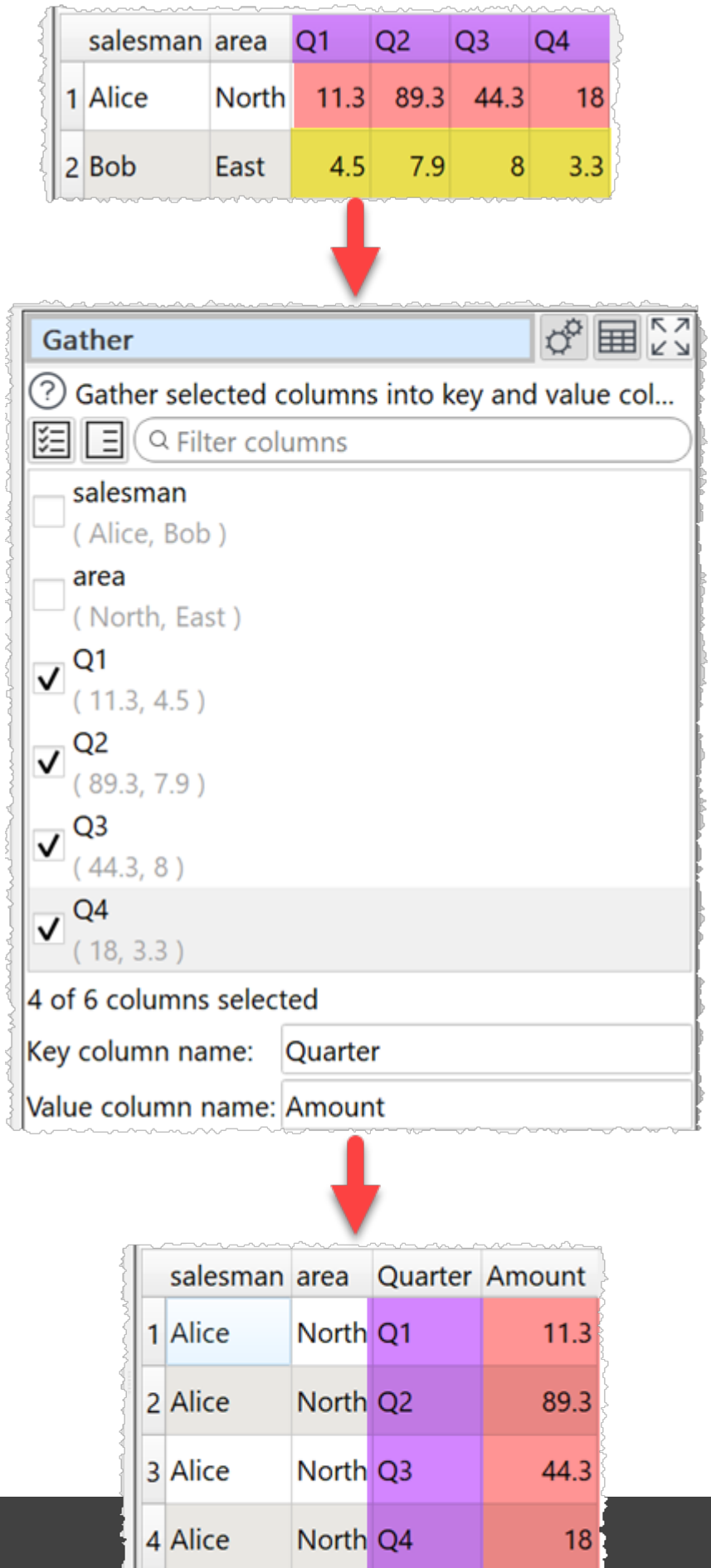

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Inputs
One.

Options
- Select the **Columns** you wish to gather.
- Set **Key column name** to the name of the new key column, which will have values based on the names of the columns selected.
- Set **Value column name** to the name of the new value column, which will have values based on the values in the columns selected.

Notes
- New columns are added at the right end. You can change the column order with Reorder Cols.
- You can merge the value and key columns into a single column with Concat Cols.
- The opposite of Gather is Spread.

See also
- Split Rows

2.3.19 Header

Description
Move rows from the top of the dataset into the header.

Example
Append the first row to the header:

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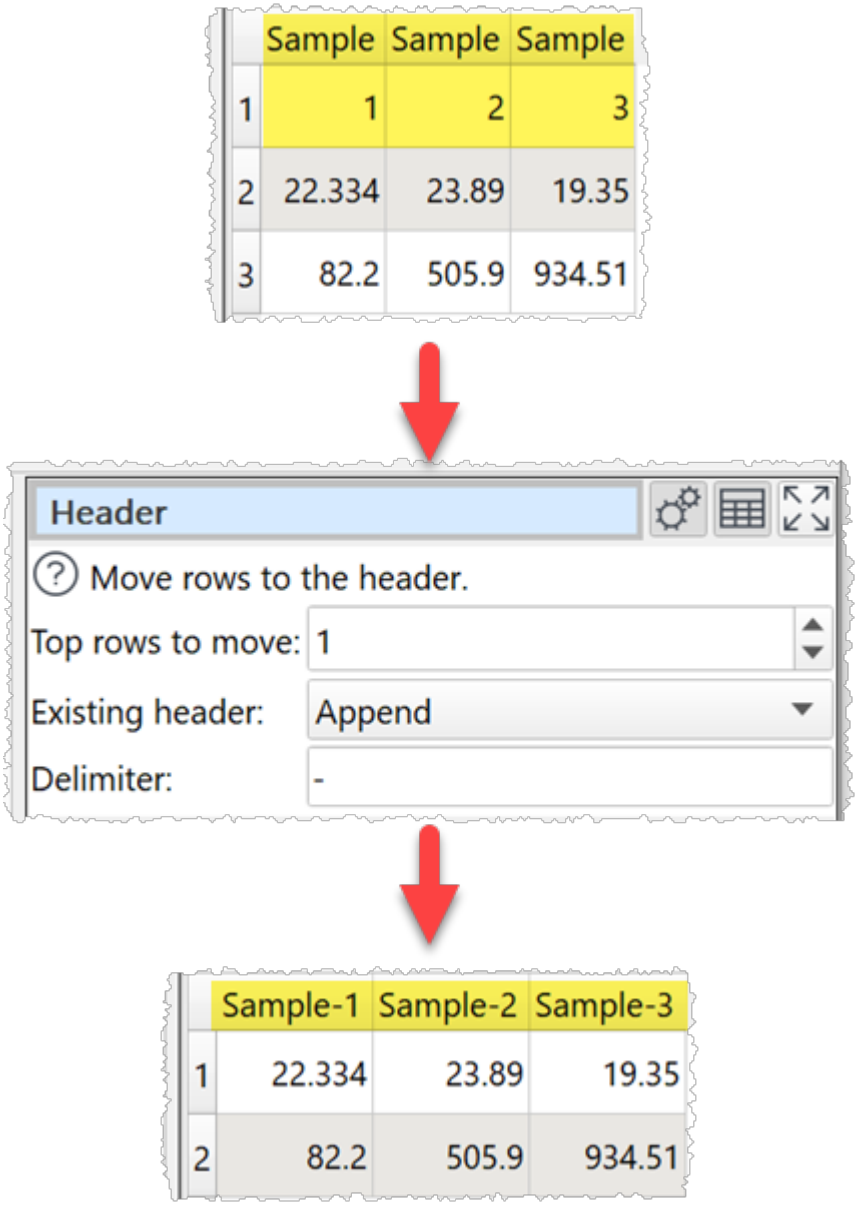

Inputs

One.

Options

- Set **Top rows to move** to the number of rows you want to move from the top dataset into the header. Setting it to 0 means the transform does nothing.
- Set **Existing header** to **Overwrite** to ignore the existing header values and **Append** to add to the existing header values.
- Set **Delimiter** to any text you want to put between column elements. It can be left empty. Ignored if **Existing header** set to **Overwrite** and **Top rows to move** set to **1.**

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Notes

- Empty cells are ignored.
- You can Sort and Filter your dataset to change the top rows.
- You can add the header from one dataset to another dataset using Stack.

See also

- Headers

2.3.20 If

Description

Sets the value of a new column based conditionally on values in one or more other columns.

Example

Add a new column based conditionally on 'Payment' and 'Currency' columns:

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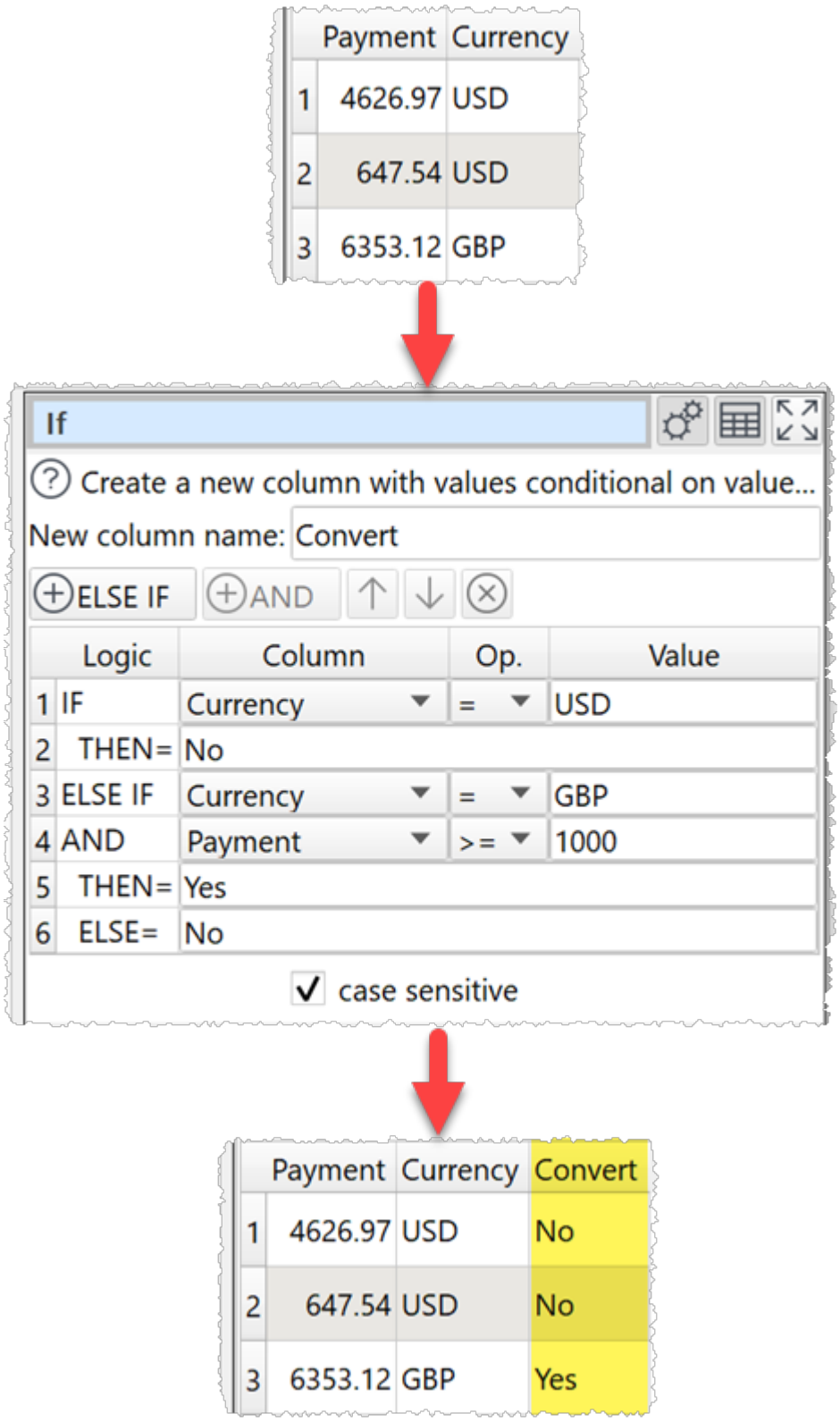

Inputs

One.

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Options

- Click the ⊕**ELSE IF** button to add a new IF/ELSE IF..THEN condition.
- Click the ⊕**AND**'button to add an AND to the selected IF/ELSE IF..THEN.
- Click the ⊗ button to delete the selected IF/ELSE IF..THEN/AND.
- The **Logic** column shows the type of row.
- Set **Column** to the column you wish to match.
- Set **Op.** to the comparison operator.
- Set **Value** to the value you wish to compare.
- Check **case sensitive** to use case sensitive matching for text.

Notes

- The **THEN** and **ELSE** values can use column variables. For example:

```
IF x = 0
   THEN $(1)
ELSE
   $(2)
```

- You can simulate OR with multiple IF statements. For example:

```
IF x = 1 OR y = 2
   THEN 3
```

Is equivalent to:

```
IF x = 1
   THEN 3
ELSE IF y = 2
   THEN 3
```

- Number, date and text values are treated differently for **Equal to**, **Greater than**, **Less than**, **Greater than equal, Less than equal** and **Not equal to** operations. Any values that can be converted to a number will be treated as a number. Any values that match the supported date formats in Preferences will be treated as a date.
- All values are treated as text for **Contains**, **Starts with**, **Ends with**, **Matches regex**, **Is not**, **Doesn't start with, Doesn't end with** and **Doesn't match regex** operations.
- Comparisons of text are whitespace sensitive. You can use Whitespace to remove whitespace before filtering and Replace to get of other unwanted characters (e.g. whitespace inside the text).
- See here for more details on Regular expressions (regex).

See also

- Lookup

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2.3.21 Insert

Description

Append/prepend text to one or more columns.

Example

Add 'ID-' to the front of a column of text:

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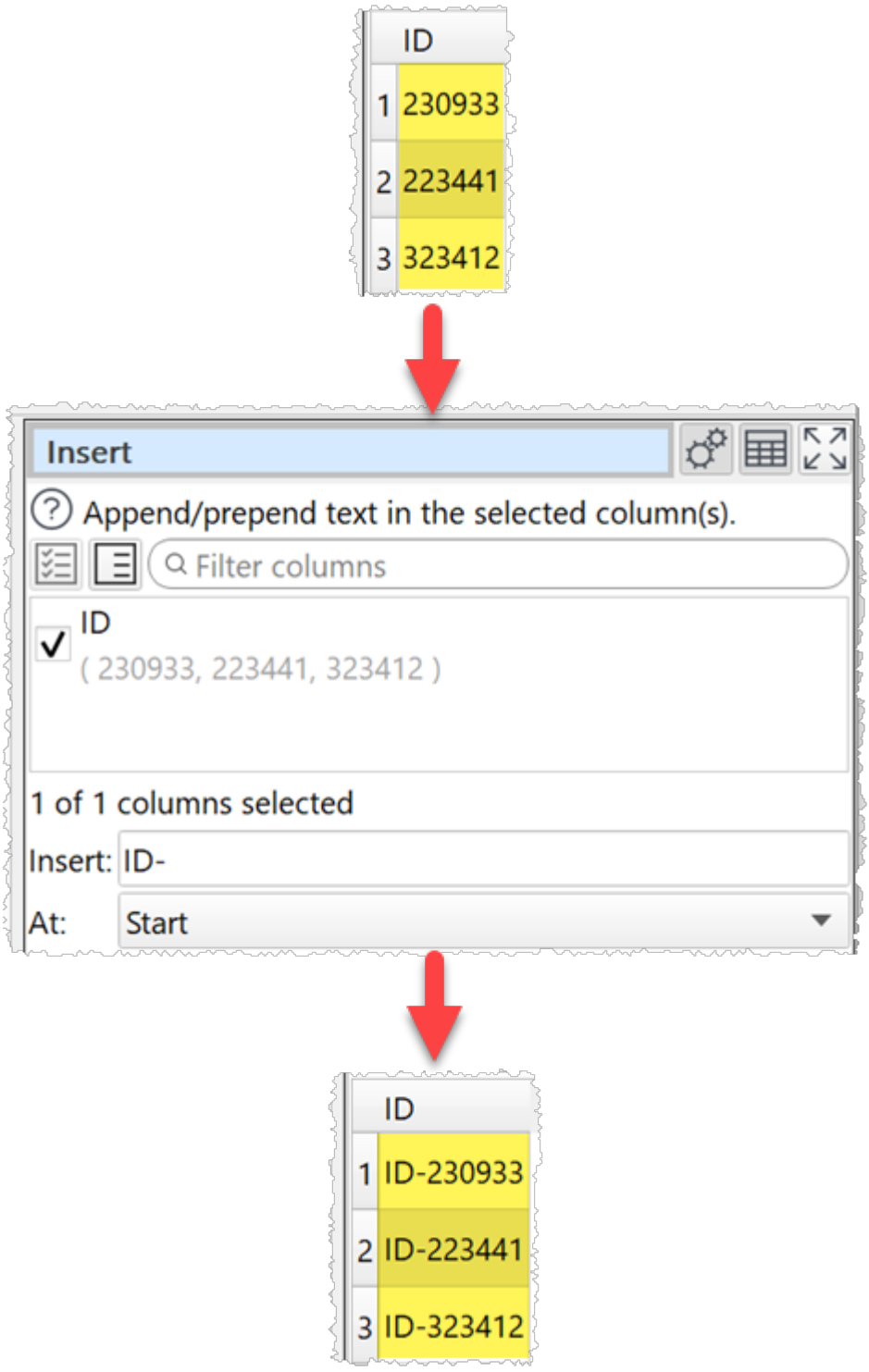

Inputs

One.

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Options

- Check the column(s) you wish to transform.
- In **Insert** put the text you want to insert. You can use a column variable.
- In **At** put the position you want the text inserted.

Notes

- You can use Whitespace to remove whitespace before inserting.

See also

- Pad
- Extract

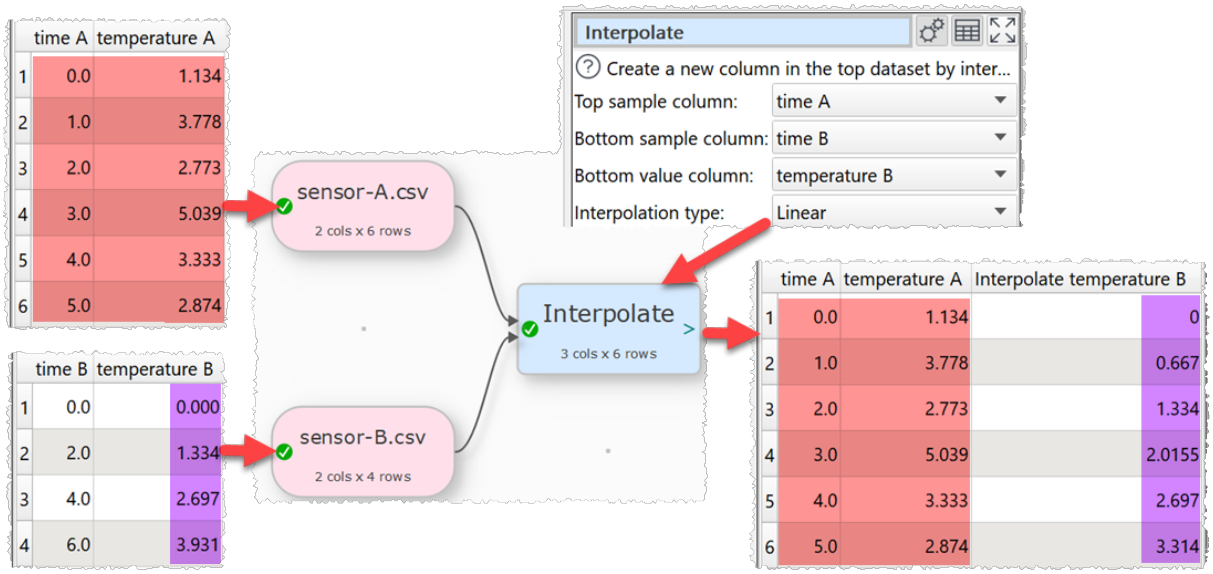
2.3.22 Interpolate

Description

Interpolate values for a dataset based on numerical sample-value pairs in another dataset and puts the result in a new column.

Example

Interpolate time and temperature datasets for sensors A and B with different sampling frequencies:



Inputs

Two.

Options

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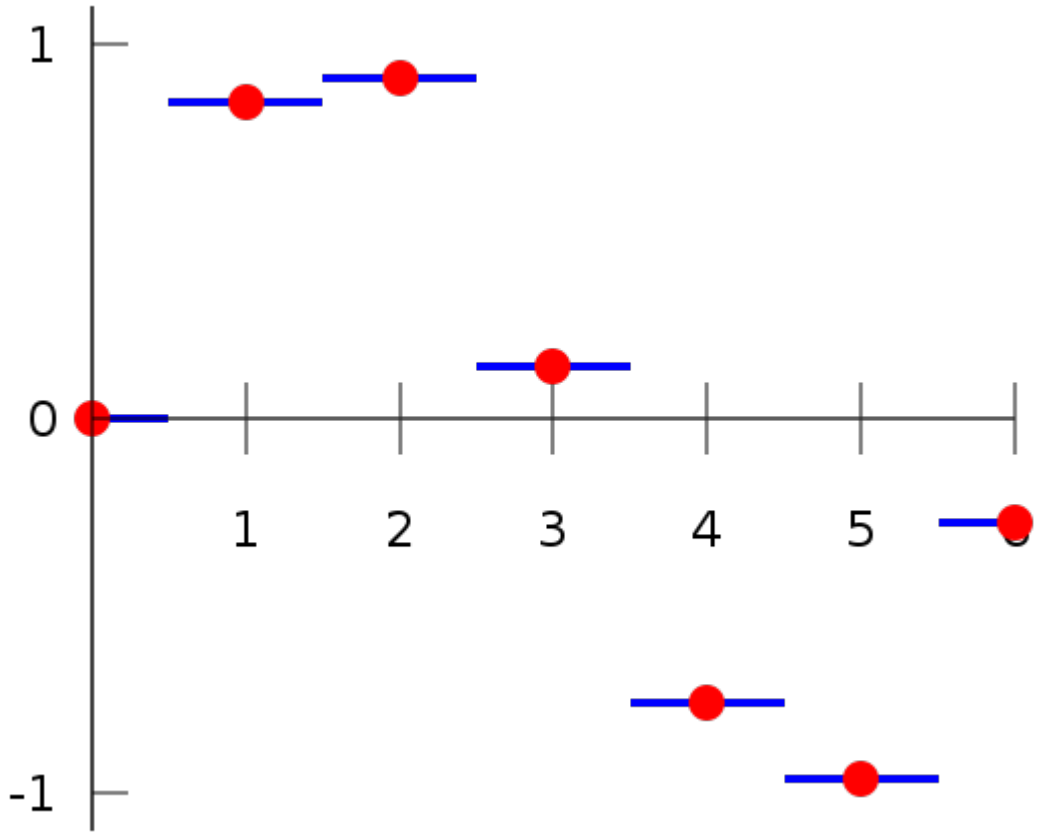
- Place the dataset you want to modify as the top input and the dataset you want to sample values from as the bottom input.
- Select **Top sample column** for the column whose values you wish to sample.
- Select **Bottom sample column** for the column that matches the top sample column in the bottom dataset.
- Select **Bottom value column** for the column that contains the values.
- Set **Interpolation type** to the type of interpolation you wish to use.



Piecewise interpolation (image from Wikipedia)

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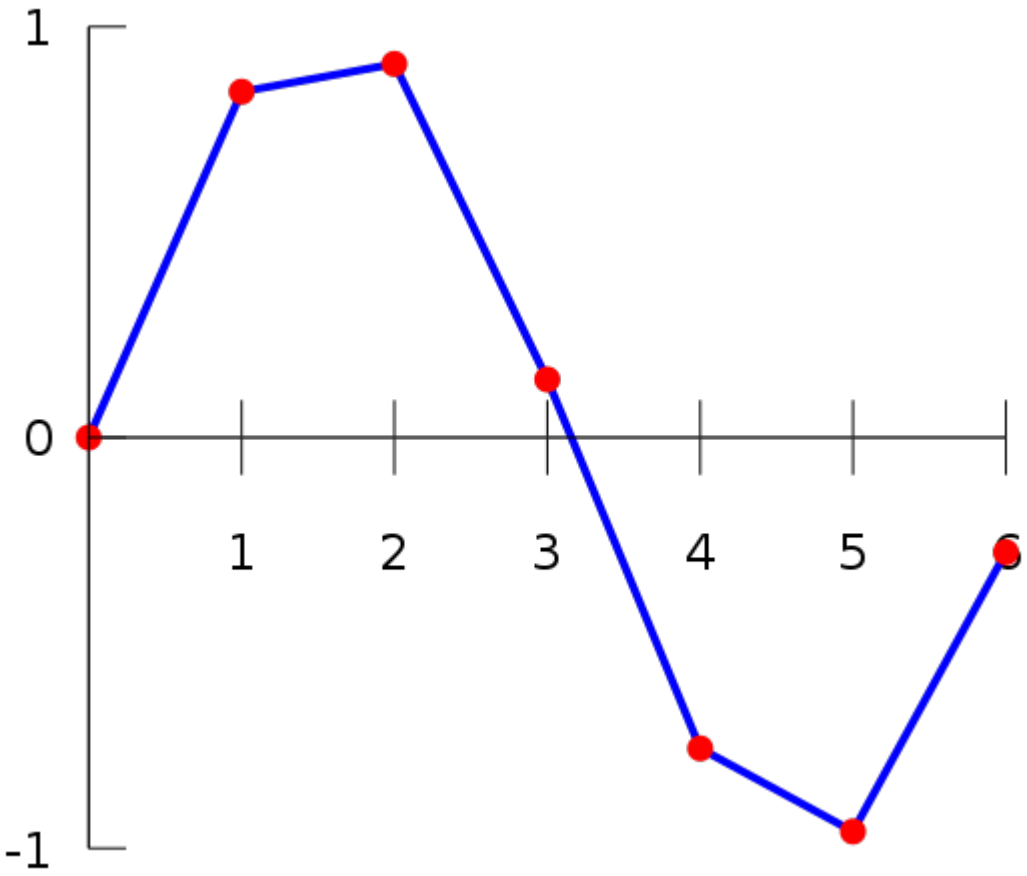

Linear interpolation (image from Wikipedia)

Notes

- If your sample is below the first sample in the bottom dataset, the first value will be returned.
- If your sample is above the last sample in the bottom dataset, the last value will be returned.
- Easy Data Transform will try to guess sensible default values for **Top sample column**, **Bottom sample column** and **Bottom value column** based on column contents.
- If the first input has a header, this will be used for the output.
- The new column is added at the right end. You can change the column order with Reorder Cols and the column name with Rename Cols.
- Use Num Format to change the precision of the results.
- Messages are shown in the **Warnings** tab for non-numeric values in either dataset.
- Messages are shown in the **Info** tab for **Top sample column** outside the range of values in **Bottom sample column** .

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See also

- Lookup
- Join

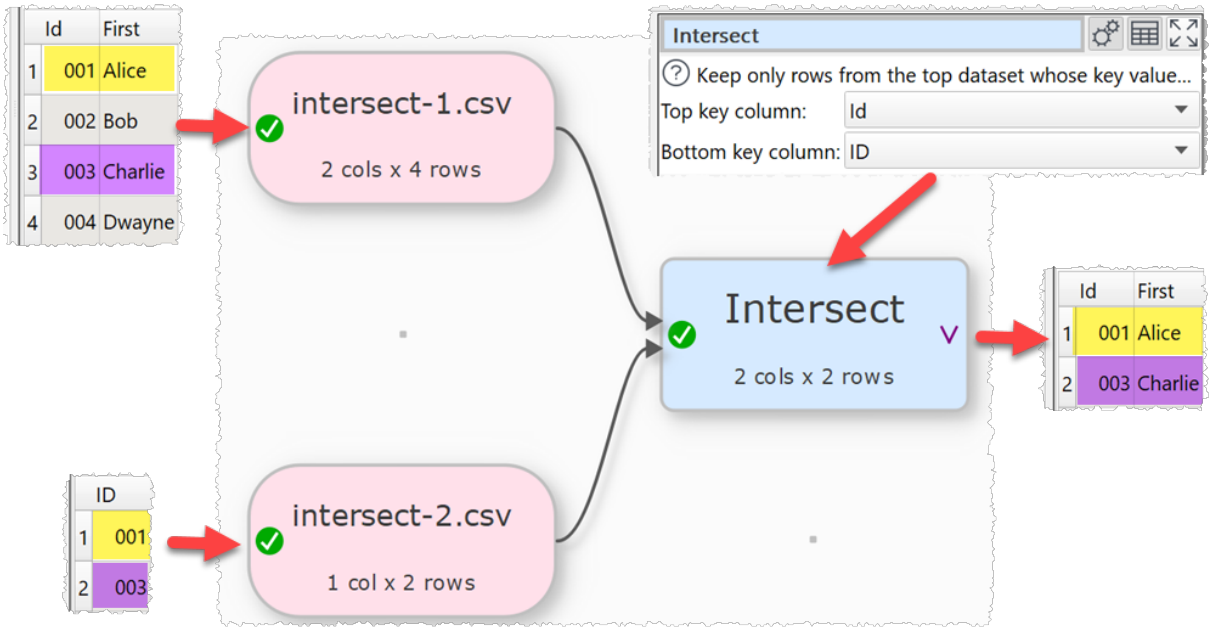
2.3.23 Intersect

Description

Keep only rows from the top dataset with key values that are present in the lower dataset.

Example

Keep rows in the top dataset that also have their ids in the bottom dataset:



Inputs

Two.

Options

- The output depends on the vertical (Y-axis) position of the inputs.
- Select **Top key column** for the column you want to match in the top input dataset.
- Select **Bottom key column** for the column you want to match in the bottom input dataset.

Notes

- If there are 10k rows or less in both datasets, Easy Data Transform will try to guess sensible default values for **Top key column** and **Bottom key column** based on column header names and contents.

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- If the first input has a header, this will be used for the output.
- All values are treated as text and comparisons are case and whitespace sensitive. You can use Case to change the case and Whitespace to remove whitespace before the intersect.
- Does not remove duplicates. You can use Unique to do this.
- You can use Concat Cols to join several columns together (e.g. 'first name' and 'last name' columns) to form a key column.
- You can use Row Num to create a unique key column.

See also

- Subtract

2.3.24 Javascript

Description

Create a custom transform using Javascript (ECMAScript).

Easy Data Transform allows you to carry out a wide range of data transformations without programming. But sometimes you might need a specialist transformation that can't be done with the built-in transforms. For that you can use the **Javascript** transform. It allows you to write the body of a Javascript function, to calculate a value for each row in a new column. Existing column values can be used as variables.

Javascript is a fully-fledged programming language and can perform arbitrarily complex transforms. It can handle numbers, dates and text.

Examples

Multiple the value in column 'items' by the value in column 'item price':

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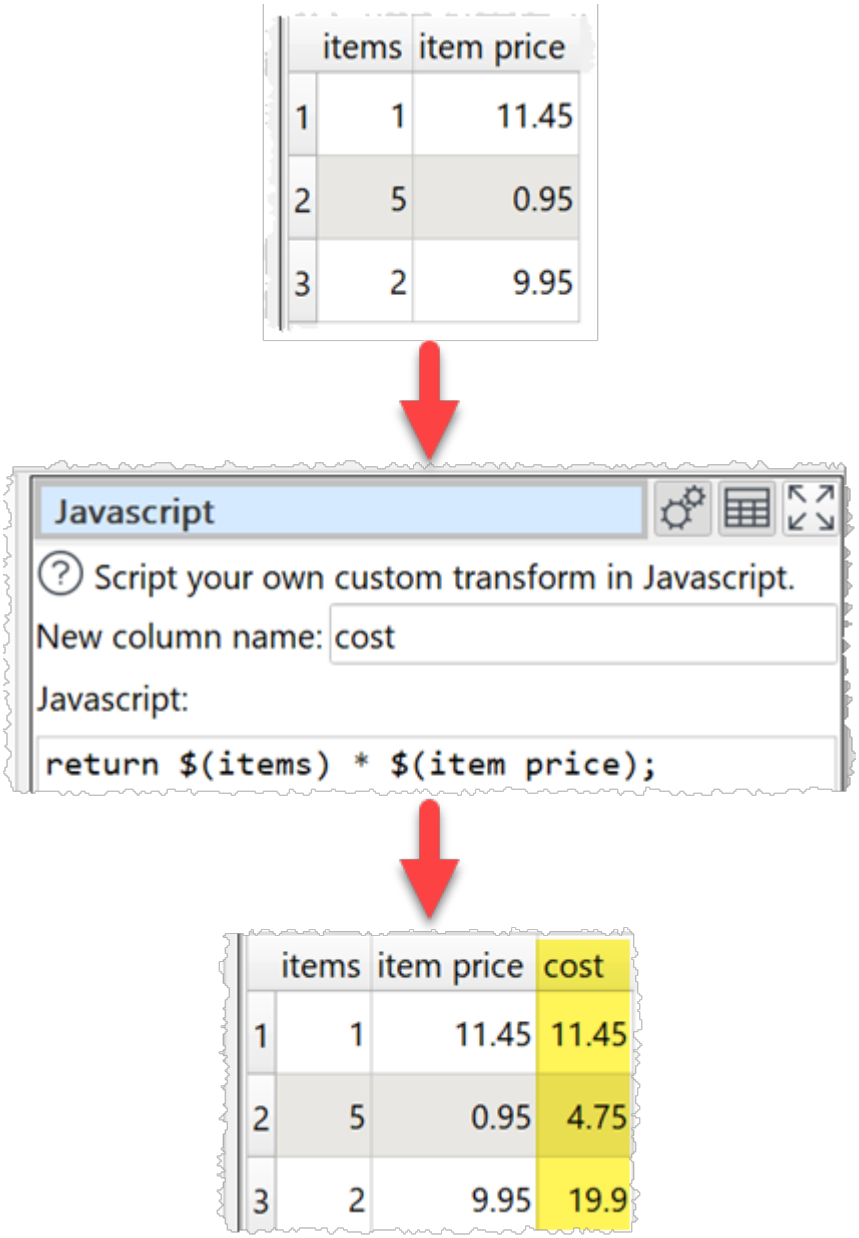

To concatenate 'last' and 'first' columns with a comma and a space:

```
return $(last) + ', ' + $(first);
```

To calculate the biggest of columns 'v1' and 'v2':

```
return Math.max( $(v1), $(v2) );
```

To determine whether phone numbers in the 'phone_num' column are valid using a regular expression:

```
const validPhoneNum = /^[\+]?[(]?[0-9]{3}[)]?[-\s\.]?[0-9]{3}[-\s\.]?[0-9]{4,6}$/;
```


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```
if ( validPhoneNum.test( $(phone_num) ) )
   return "valid";
else
   return "invalid";
```

To replace the last comma in the 'Location' column with a ';' using a regular expression:

```
return $(Location).replace(/(.*),([^ ]*)$/, '$1;$2');
```

To calculate the number of years difference between Javascript compatible dates in column 1 and column 2:

```
return new Date( $(1) ).getFullYear() - new Date( $(2) ).getFullYear();
```

To calculate the number of milliseconds between a datetime in the 'datetime' column and 1st Jan 2000:

```
return new Date( $(date) ) - new Date( "2000-01-01T00:00" );
```

To calculate the number of whole days difference between a date in the 'created' column and today (negative for future dates):

```
return Math.floor( ( new Date() - new Date( $(created) ) ) / ( 1000*60*60*24 ) );
```

To use the value of the 'n' column if it is a number and 0 if it isn't:

```
if ( isNaN( $(n) ) )
   return 0;
else
   return $(n);
```

To reverse the text in the 'key' column:

```
var newString = $(key);
for (var i = a.length - 1; i >= 0; i--) {
   newString += a[i];
}
return newString;
```

To convert meters to feet using a function:

```
function metersToFeet( x )
{
   return 3.28084 * x;
}
return metersToFeet( $(meters) );
```

Inputs

One.

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Options

- Enter your script into the **Javascript** field. The script should be the body of a Javascript function.
- Select a column from **Insert variable** to add that column variable into the **Javascript** field at the current cursor position.
- Click the **Evaluate** button to evaluate your Javascript expression over every row and show any errors.

Notes

- The **Javascript** transform is calculated every time:
  - The **Evaluate** button is pressed.
  - The **Javascript** transform item is unselected in the **Center** pane and script changes have been made without the **Evaluate** button being clicked.
  - An item upstream of it changes.
- Numeric values should use dot ('.') as the decimal separator and have no group separator. E.g. 1234.5 is valid, but 1,234.5 and 1.234,5 are not, regardless of the locale set in the **Preferences** window. You can use the Num Format and Replace transforms to put numeric data in the correct format before processing a **Javascript** transform.
- The new column is added at the right end. You can change the column order with Reorder Cols and the column name with Rename Cols.
- The Javascript Date() object evaluates to the number of milliseconds since 1 January 1970 UTC.
- Date values passed to Javascript Date() objects should be in ISO ('yyyy-mm-dd') format, e.g. '2020-01-31' (not '2020-1-31').
- If you want to carry out your transform across more than one dataset, you should merge them first, e.g. using Join.
- The Javascript transform is very versatile and quite fast. But is not as fast as built-in transforms. So we recommend you use built-in transforms where possible.
- Javascript running in Easy Data Transform is not 'sandboxed' and has the same privileges as the Easy Data Transform executable. However the Javascript does not have access to window(), XMLHttpRequest() or ActiveXObject(). So we aren't aware of any way that a bad actor could damage your system from Javascript sent in a .transform file.
- Javascript is far too big a topic to cover here. However there are many detailed resources online. If you are stuck contact support.
- If you only want to combine text from columns, use the simpler Substitute transform.
- Warnings are shown in the **Warnings** tab for:
  - Javascript syntax errors
  - Ambiguous column references
- For simple arithmetic operations on numbers and dates use the Calculate transform.

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See also

- Find the difference between dates/datetimes

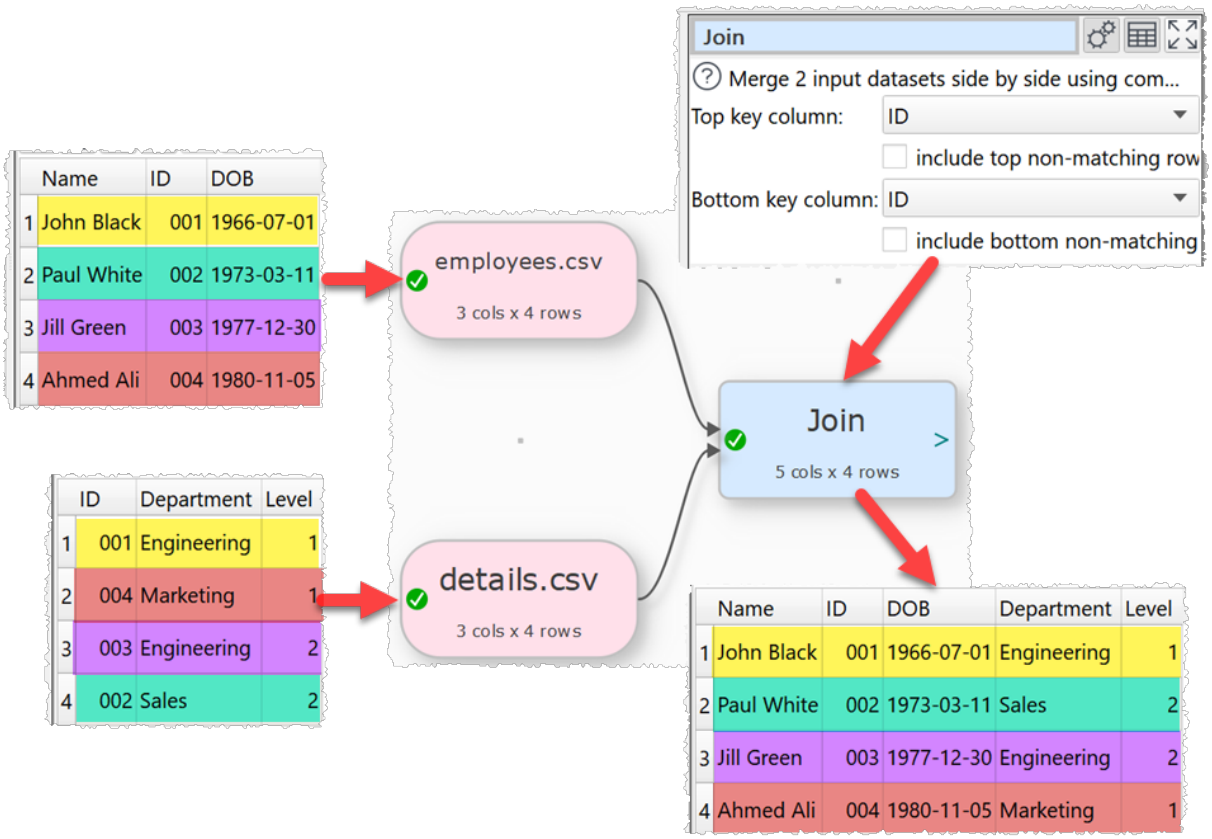
2.3.25 Join

Description

Merge two inputs based on common (key) columns, e.g. on an email address or id column present in both inputs. The bottom dataset (by vertical position) is joined to the right of the top dataset.

Example

Join two datasets side-by-side using the 'ID' columns:



Inputs

Two.

Options

- The output depends on the vertical (Y-axis) position of the inputs.
- Select **Top key column** for the column you want to match in the top input dataset.

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- Select **include top non-matching rows** if you want to include in the output any rows in the top input with no matching value in the bottom input.
- Select **Bottom key column** for the column you want to match in the bottom input dataset.
- Select **include bottom non-matching rows** if you want to include in the output any rows in the bottom input with no matching value in the top input.

include top non-matching rows checked	**include bottom non-matching rows** checked	Also known as:
No	No	Inner join
No	Yes	Right outer join
Yes	No	Left outer join
Yes	Yes	Full outer join

Notes

- Join merges two datasets side-by-side (horizontally). To merge datasets one on top of the other (vertically) use Stack.
- If there are 10k rows or less in both datasets, Easy Data Transform will try to guess sensible default values for **Top key column** and **Bottom key column** based on column header names and contents.
- All values are treated as text and comparisons are case and whitespace sensitive. You can use Case to change the case and Whitespace to remove whitespace before the intersect.
- If a key value occurs M times in the first dataset and N times in the second dataset, you will get M x N rows with this key value. You can use Unique to remove rows with duplicate key values.
- Use Concat Cols to join several columns together (e.g. 'first name' and 'last name' columns) to form a key column.
- Use Row Num to create a unique key column.
- Use Sort to sort the results.
- Use the Cross transform for cross joins.
- Messages are shown in the **Warnings** tab for keys that occur more than once in either dataset (duplicates).
- Messages are shown in the **Info** tab for keys that only occur in 1 of the 2 datasets (misses).
- Cascade multiple joins to join more than 2 datasets.

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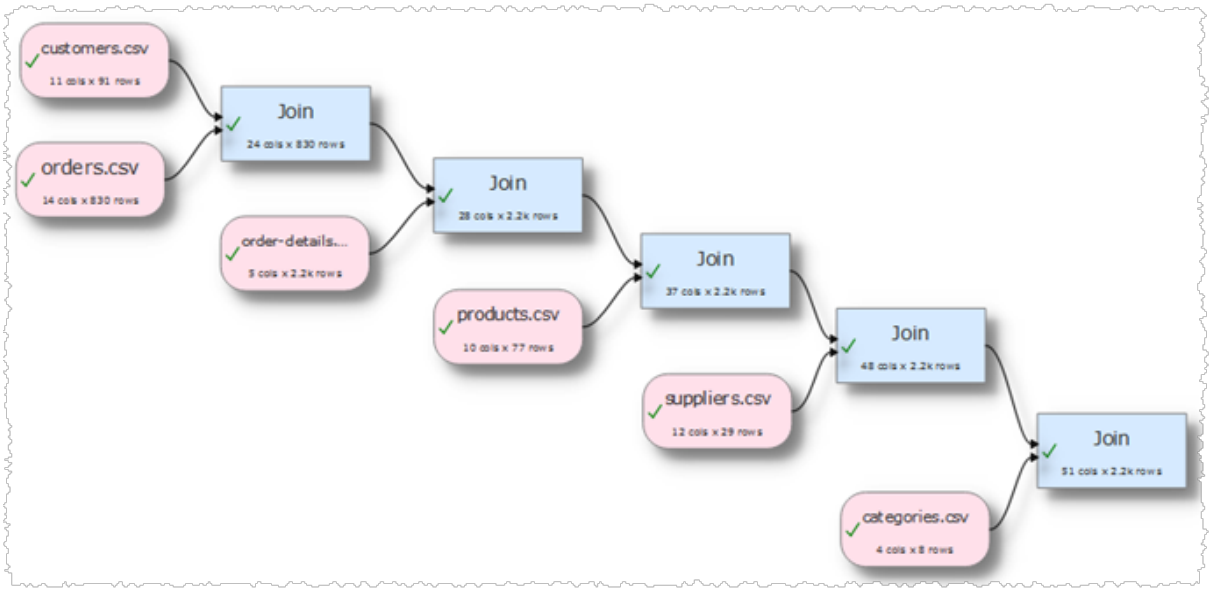

See also

- Video: How to join Excel files
- Cross
- Lookup
- Interpolate
- Merge datasets

2.3.26 Lookup

Description

Looks up the values of a column in the top input dataset in the bottom input dataset and puts the result in a new column.

Example

Lookup category name in a second dataset using 'Category ID':

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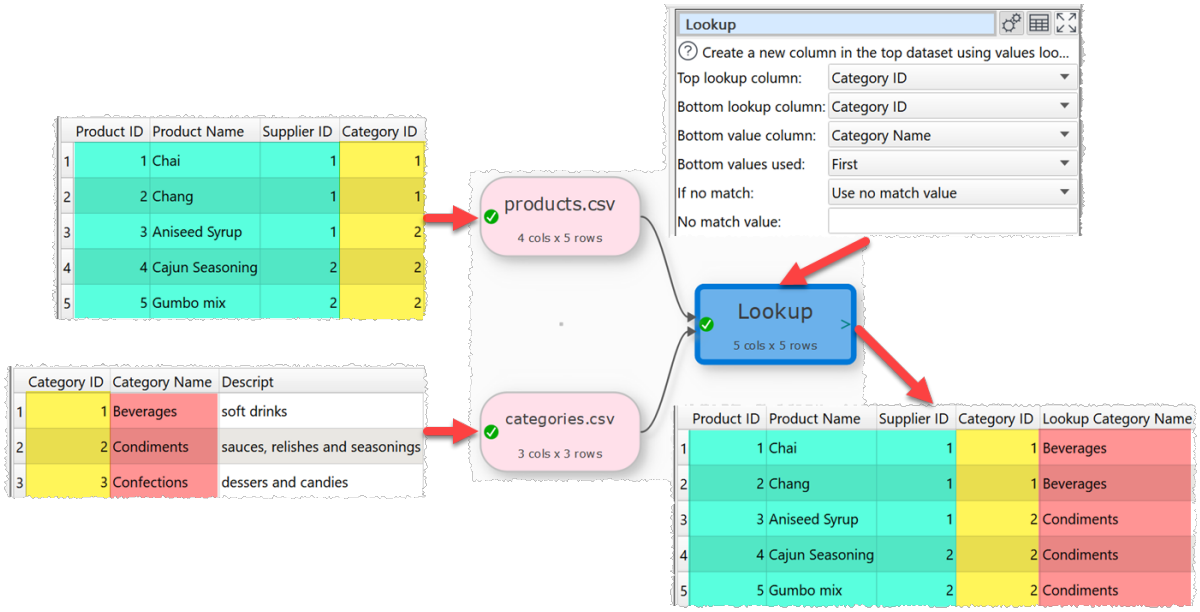

	Product ID	Product Name	Supplier ID	Category ID
1	1	Chai	1	1
2	2	Chang	1	1
3	3	Aniseed Syrup	1	2
4	4	Cajun Seasoning	2	2
5	5	Gumbo mix	2	2

	Category ID	Category Name	Descript
1	1	Beverages	soft drinks
2	2	Condiments	sauces, relishes and seasonings
3	3	Confections	dessers and candies

	Product ID	Product Name	Supplier ID	Category ID	Lookup Category Name
1	1	Chai	1	1	Beverages
2	2	Chang	1	1	Beverages
3	3	Aniseed Syrup	1	2	Condiments
4	4	Cajun Seasoning	2	2	Condiments
5	5	Gumbo mix	2	2	Condiments

Inputs

Two.

Options

- Place the dataset you want to modify as the top input and the dataset you want to lookup values from as the bottom input.
- Select **Top lookup column** for the column whose values you wish to lookup.
- Select **Bottom lookup column** for the column that matches the lookup in the bottom dataset.
- Select **Bottom value column** for the column that contains the values.
- Set **Bottom values used** to **First** if you want use the first match in **Bottom lookup column** and **All** if you want to use all matches.
- Set **If no match** to **Use not match value** or **Leave unchanged** depending on what you want to do for values in **Top lookup column** that do not exist in **Bottom lookup column**.
- Set **No match value** to the value you want to use for values in **Top lookup column** that do not exist in **Bottom lookup column** when **If no match** is set to **Use no match value.**

Notes

- Easy Data Transform will try to guess sensible default values for **Top lookup column, Bottom lookup column** and **Bottom value column**.
- **Bottom values used** is only important if there are duplicate values in the **Bottom lookup column**.
- If the first input has a header, this will be used for the output.

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- All values are treated as text and comparisons are case and whitespace sensitive. You can use Case to change the case and Whitespace to remove whitespace before the intersect.
- If you want to lookup values in multiple columns, use Concat Cols to join several columns together to form new columns.
- The new column is added at the right end. You can change the column order with Reorder Cols and the column name with Rename Cols.
- Warnings are shown in the **Warnings** tab for:
  - Values that cannot be found in the bottom dataset (misses).
  - Values that occur more than once in the bottom dataset (duplicates), if **Bottom values used** is **First**.

See also

- If
- Interpolate
- Join

2.3.27 New Col

Description

Adds a new column, filled with a given value.

Example

Add a new column full of '1' values:

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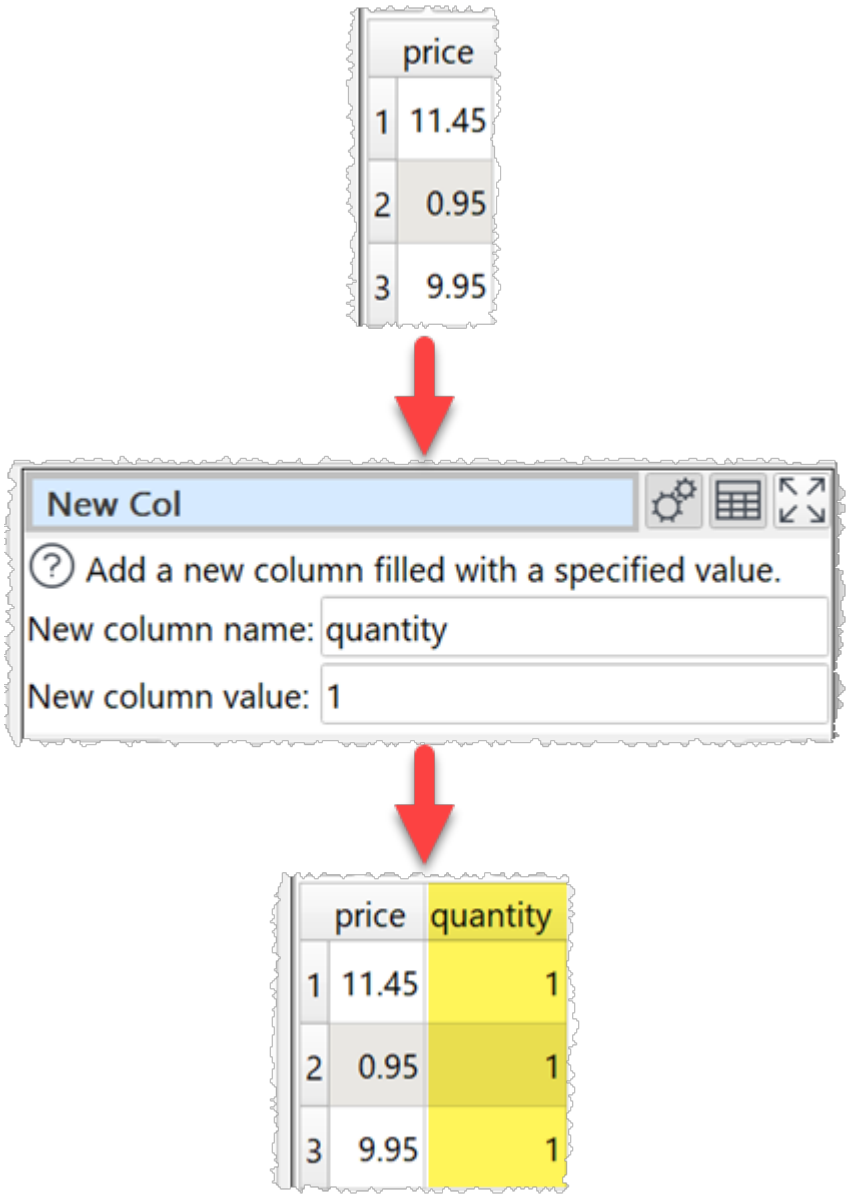

Inputs

One.

Options

- Set **New column value** to the value for every cell of the new column. You can leave it blank for an empty column.

Notes

- New columns are always added at the right end. You can change the column order with Reorder Cols and the column name with Rename Cols.

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See also

- Copy Cols
- Remove Cols

2.3.28 Num Format

Description

Change the number format in one or more columns.

Examples

Set numeric values to 2 decimal places:

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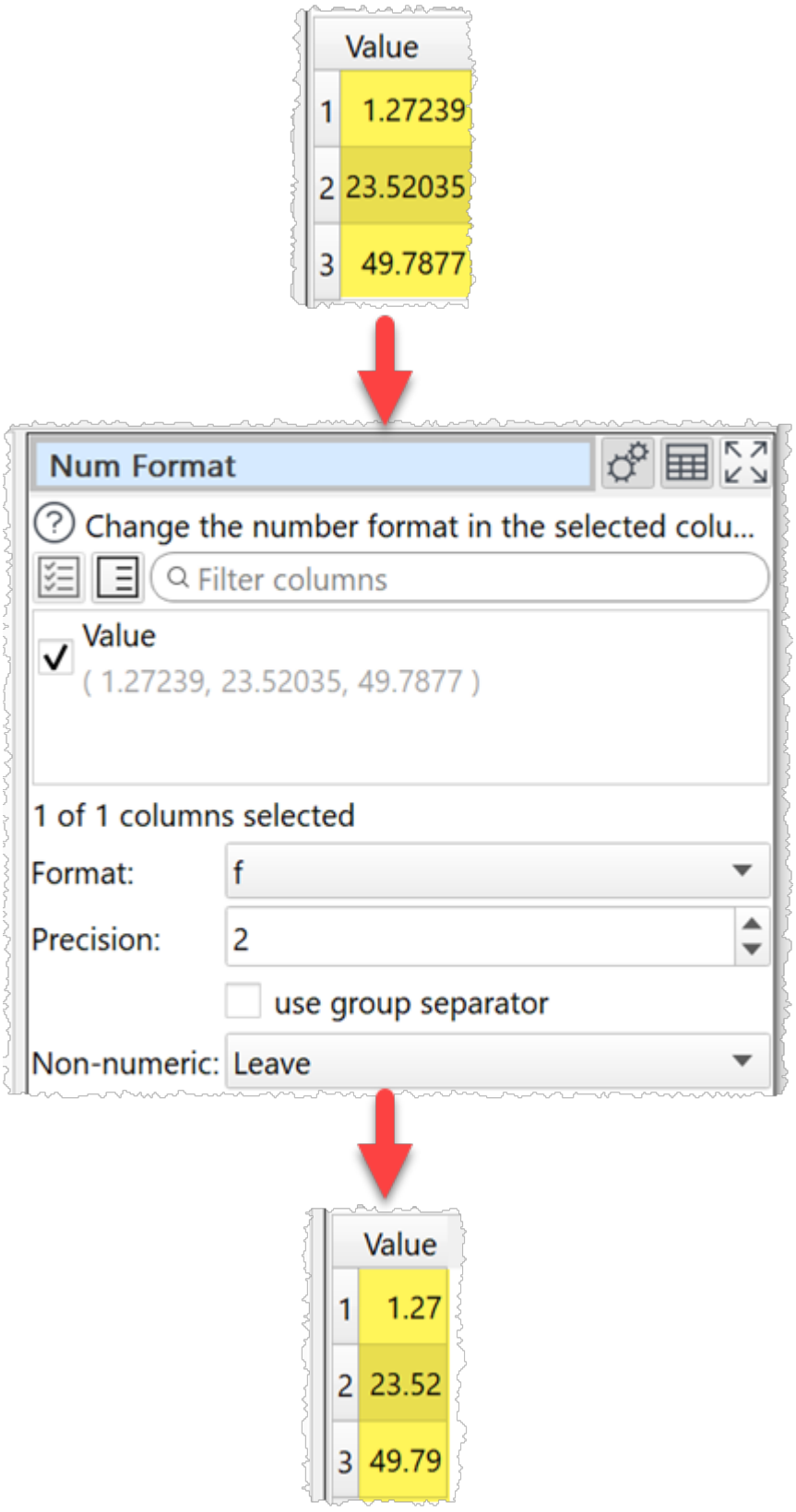

Set numeric to shortest accurate number:

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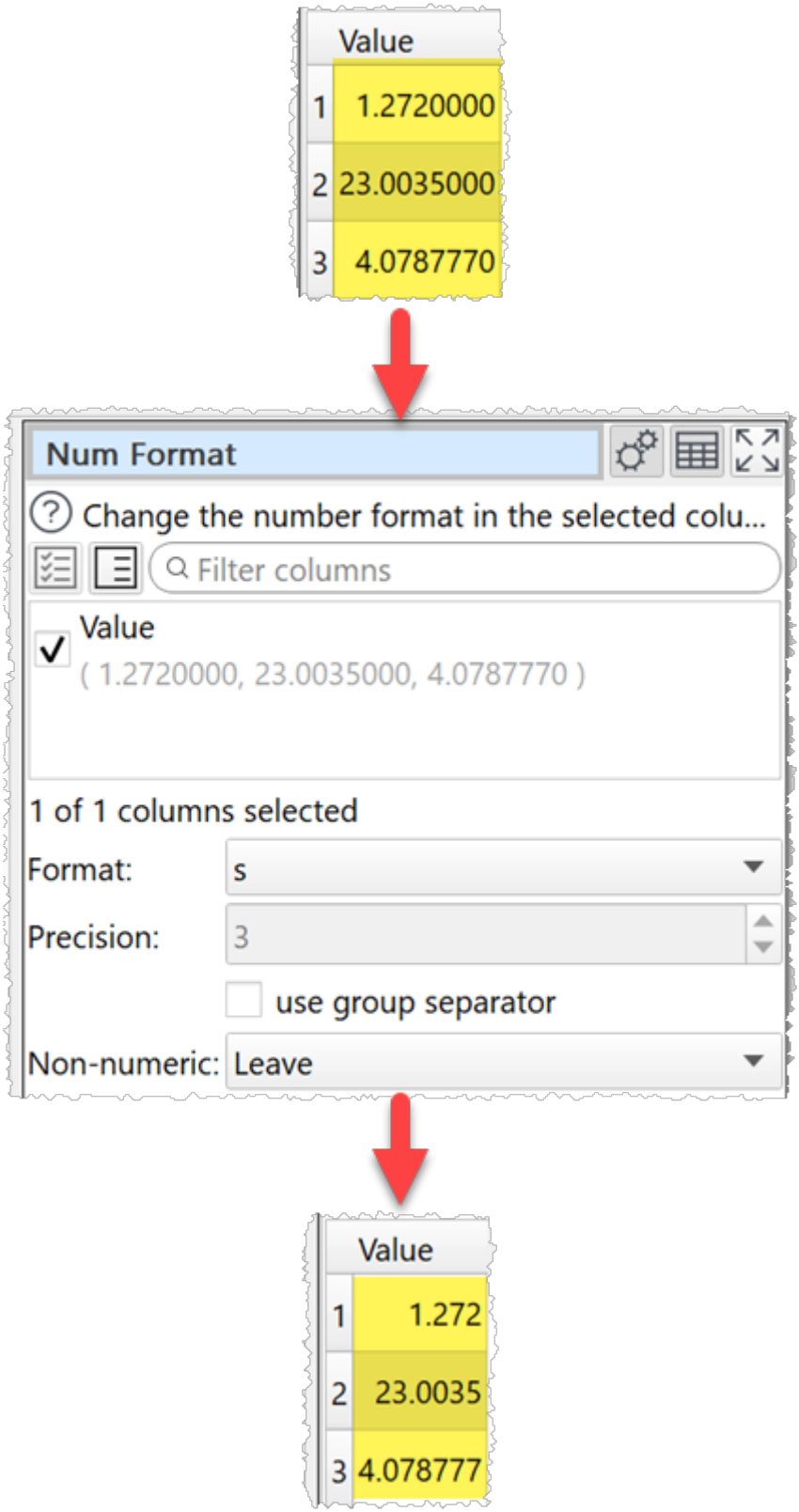

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Inputs

One.

Options

- Check the column(s) you wish to transform.
- Set **Format** to the new number format (see below).
- For the **e**, **E**, and **f** formats, **Precision** represents the number of digits after the decimal point. For the **g** and **G** formats, **Precision** represents the maximum number of significant digits (trailing zeros are omitted). For the **s** format **Precision** is ignored. The following number formats are supported:

Format	Meaning
`e`	Format as [-]9.9e[+|-]999. E.g. `1234567.89` is shown as `1.235e+06`.
`E`	Format as [-]9.9E[+|-]999. E.g. `1234567.89` is shown as `1.235E+06`.
`f`	Format as [-]9.9. E.g. `1234567.89` is shown as `1234567.89`.
`g`	Use e or f format, whichever is the most concise.
`G`	Use E or f format, whichever is the most concise.
`s`	The shortest accurate representation for the given number without exponents. E.g. `1234567.00` is shown as `1234567`.

- Check **use group separators** to include the group separators for your locale. E.g. to turn `1234567` to `1,234,567` for a UK or US locale.
- Set **Non-numeric** according to what you want to do with non-numeric values in transformed columns. NaN means Not a Number.

Notes

- The **Locale** set in the **Preferences** window is used to decide how the number is represented (e.g. group and decimal separators).
- Non-numerical values are ignored.
- You can also use Extract and Pad to change the number of characters.
- Warnings are shown in the **Warnings** tab for non-numeric values.

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See also

- Date Format

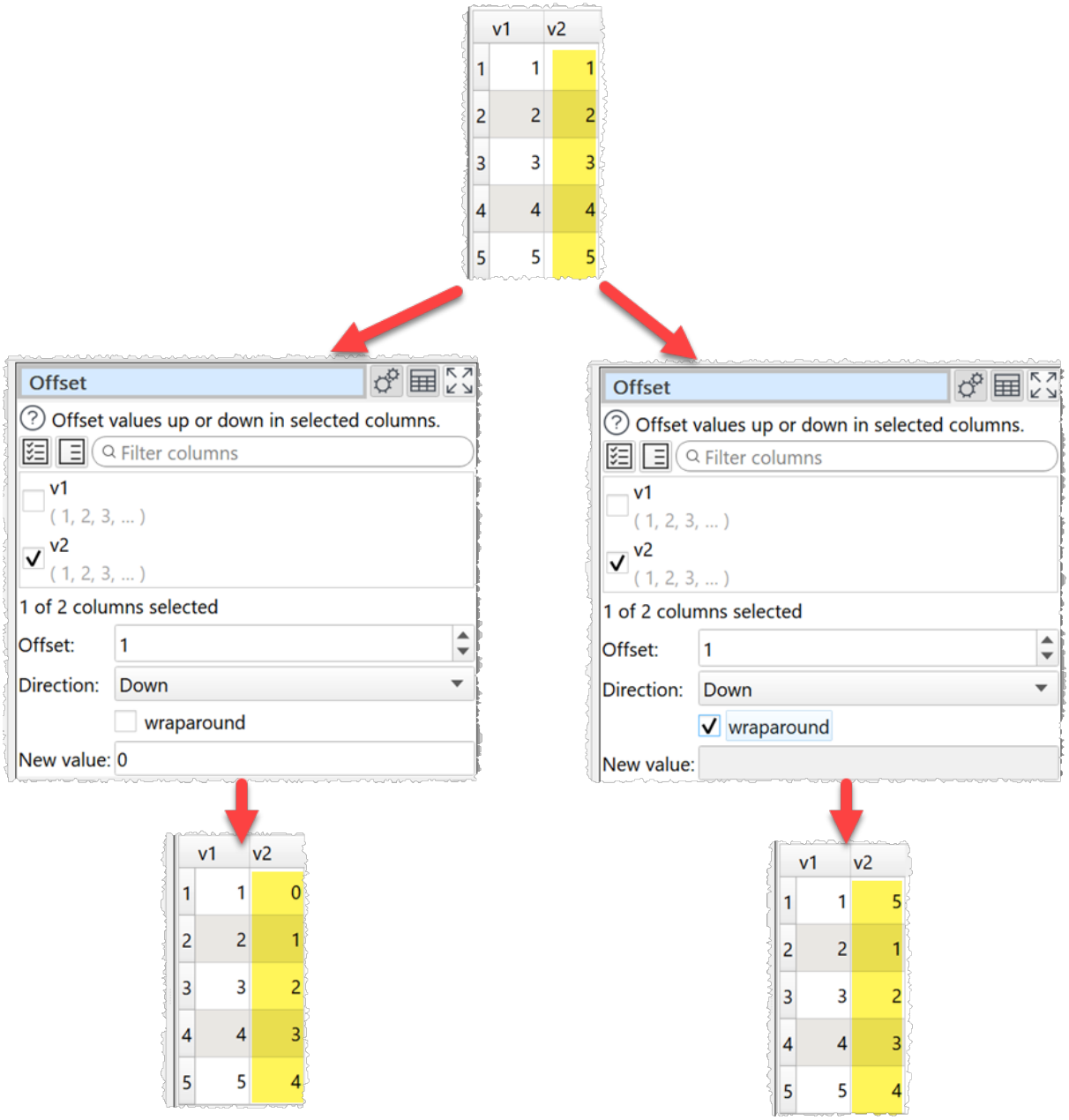
2.3.29 Offset

Description

Moves values in selected columns up or down.

Example

Move the 'v2' values down 1:



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Inputs
One.

Options
- Check the column(s) you wish to transform.
- Set **Offset** to the number of rows you wish to offset values by.
- Set **Direction** to the direction you want to offset in.
- Check **wraparound** if you want values pushed off the bottom of the table to be added to the top or values pushed off the top to be added to the bottom.
- Set **New value** to the value you wish to set for any cells newly created by the offset.

Notes
- You can use Copy Cols to create copies of columns before you offset them.

2.3.30 Pad

Description
Pad text to a minimum length in one or more columns.

Example
Pad the 'Id' column to 10 digits using zeros:

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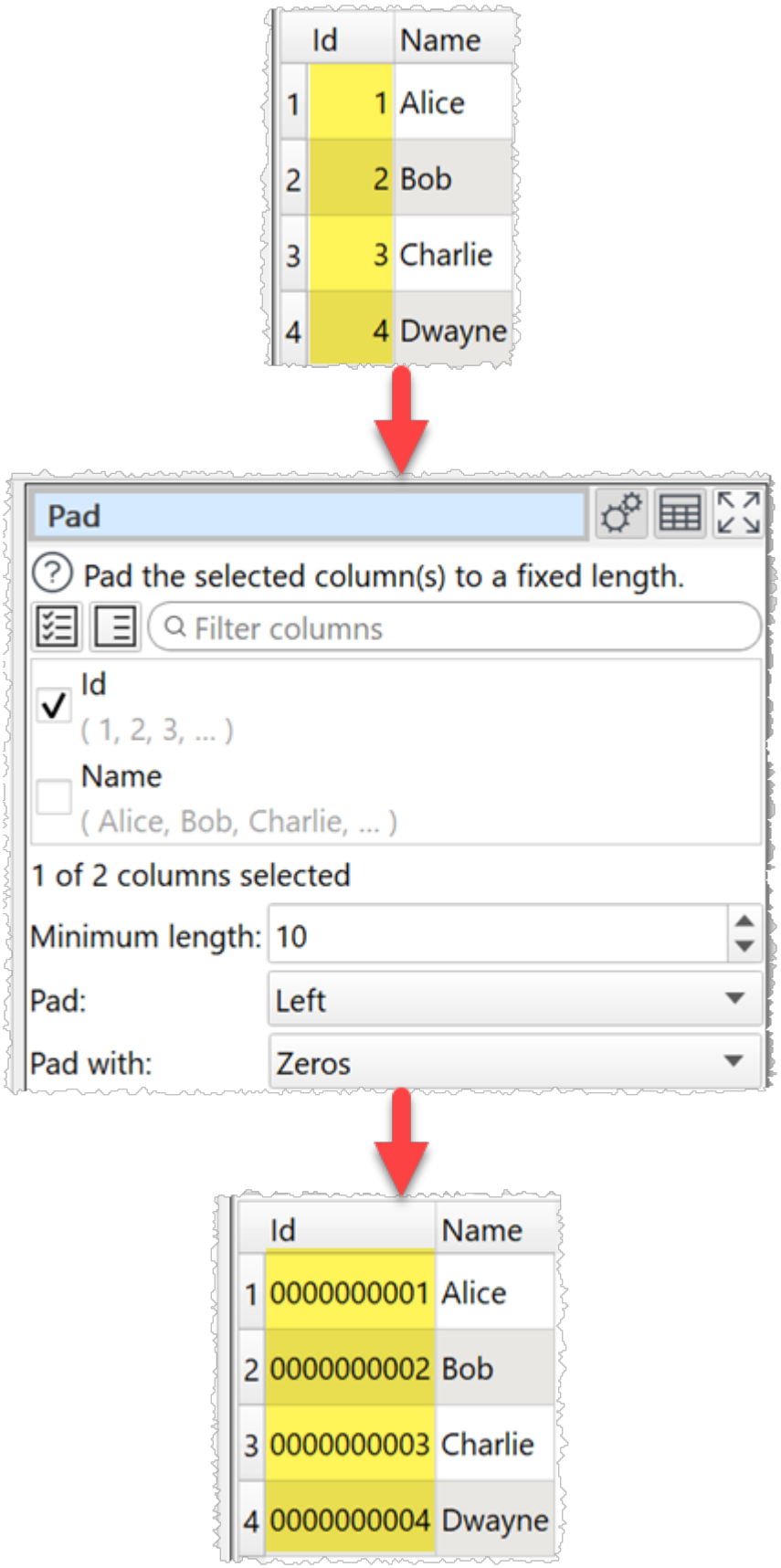

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Inputs
One.

Options
- Check the column(s) you wish to transform.
- Set **Minimum length** to the length you want values in selected columns padded to. Values this length or longer are unaffected.
- Set **Pad** to **Left** or **Right** depending on where you want any padding characters added.
- Set **Pad with** to the character you want to pad with.

Notes
- Whitespace is counted when calculating length. You can use Whitespace to remove whitespace before padding.

2.3.31 Pivot

Description
Creates a pivot table to summarise values for one or two columns.

Example
Pivot to sum 'Amount' by 'Area' and 'Currency':

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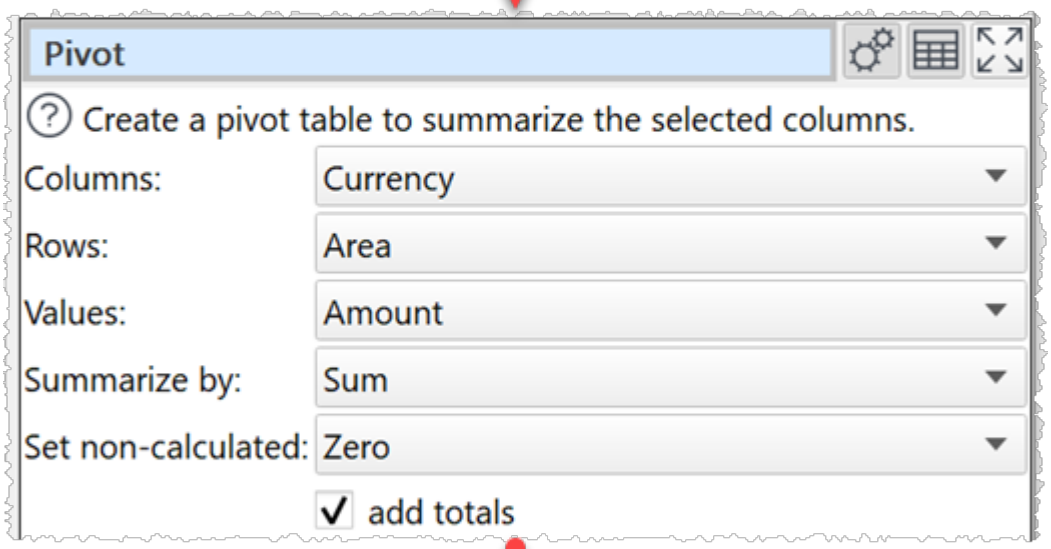
	Area	Currency	Amount
1	Europe	EUR	13937.00
2	North America	USD	22894.90
3	Africa	ZAR	12745.55
4	North America	USD	48356.95
5	Europe	GBP	1100.00
6	Europe	EUR	5905.80



	Sum Amount	EUR	GBP	USD	ZAR	Total
1	Africa	0	0	0	12745.55	12745.55
2	Europe	19842.8	1100	0	0	20942.8
3	North America	0	0	71251.85	0	71251.85
4	Total	19842.8	1100	71251.85	12745.55	104940.2

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Inputs

One.

Options

- Set **Column** to the column values you want to use as columns in your pivot table.
- Set **Rows** to the column values you want to use as rows in your pivot table.
- Set **Values** to the column you wish to summarize.
- Set **Summarize by** to how you wish to summarize the values:
  - **Sum** show the sum of the values. Non-numeric and empty values are ignored.
  - **Minimum** shows the smallest value. Non-numeric and empty values are ignored.
  - **Maximum** shows the largest value. Non-numeric and empty values are ignored.
  - **Average** shows the arithmetic mean of the values. Non-numeric and empty values are ignored.
  - **Median** shows the median of numeric values in the column. Non-numeric and empty values are ignored.
  - **Mode** shows the mode of numeric values in the column. Non-numeric and empty values are ignored.
  - **Standard deviation** is the sample standard deviation (equivalent to Excel function stddev.s). Non-numeric and empty values are ignored.
  - **Count** shows the number of values. Empty values are ignore (a value that contains whitespace is not considered empty).
- Set **Set non-calculated** depending on how you want to set cells not calculated by the pivot.
- Check **add totals** to add row and/or column totals.

Notes

- **Mode** may not work as expected with non-integer values, due to precision issues. You can fix this by using a Num Format transform first.
- Use Num Format to change the precision of the results.

See also

- Count
- Stats
- Summary

2.3.32 Remove Cols

Description

Removes columns.

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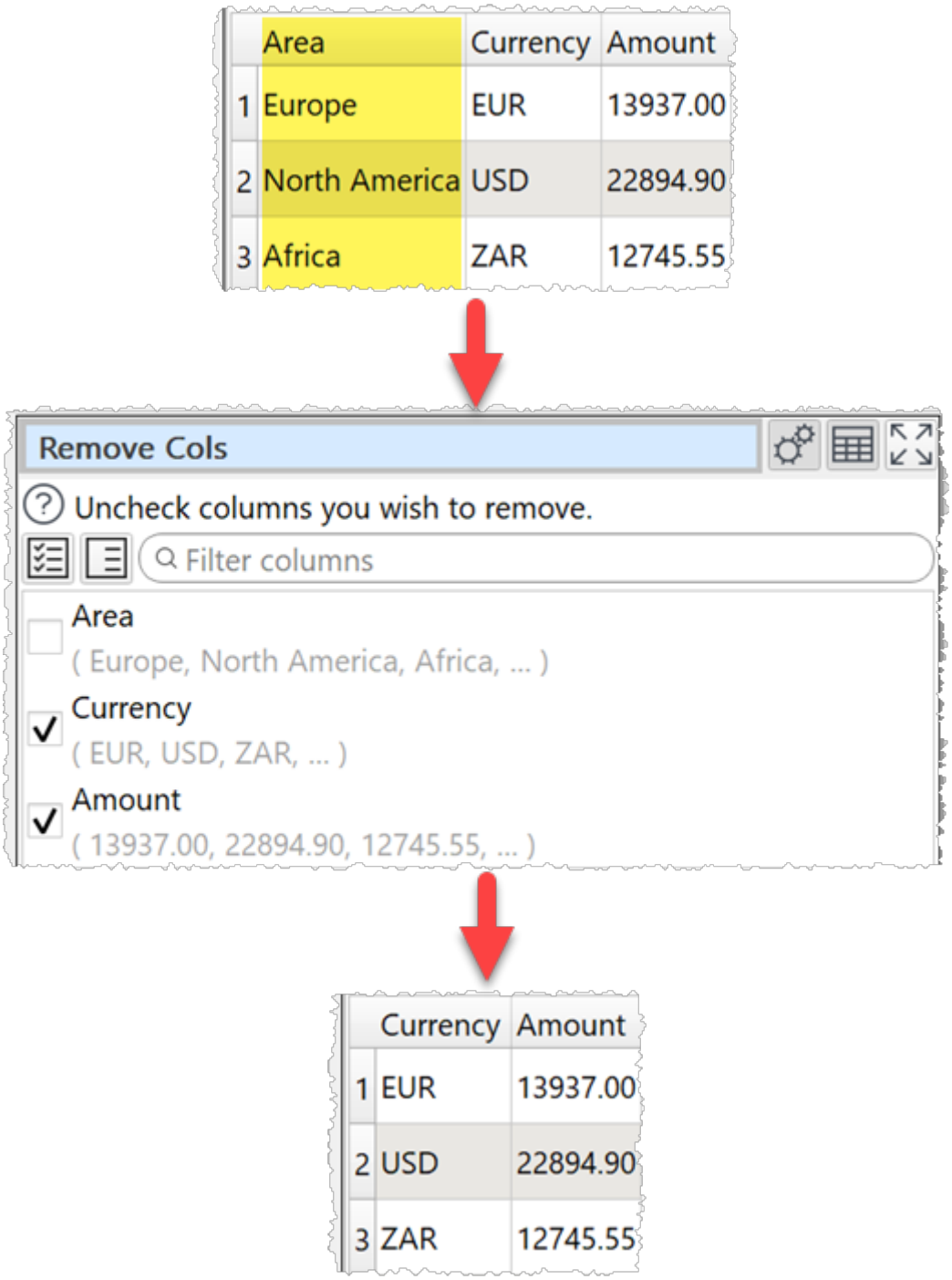
Example

Remove the 'Area' column:



Inputs

One.

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Options
- Uncheck the column(s) you wish to remove.

Notes
- The column will be removed from any dataset 'downstream'.

See also
- New Col

2.3.33 Rename Col (deprecated)

This transform is deprecated. Use Rename Cols instead.

Description
Rename a column header.

Inputs
One.

Options
- Select the column header you wish to rename in **Column**.
- Set **Rename to** to the new column header name.

Notes
- The names of column headers do not have to be unique.

2.3.34 Rename Cols

Description
Rename column headers.

Example
Rename columns 'first' to 'First' and 'Last' to 'last':

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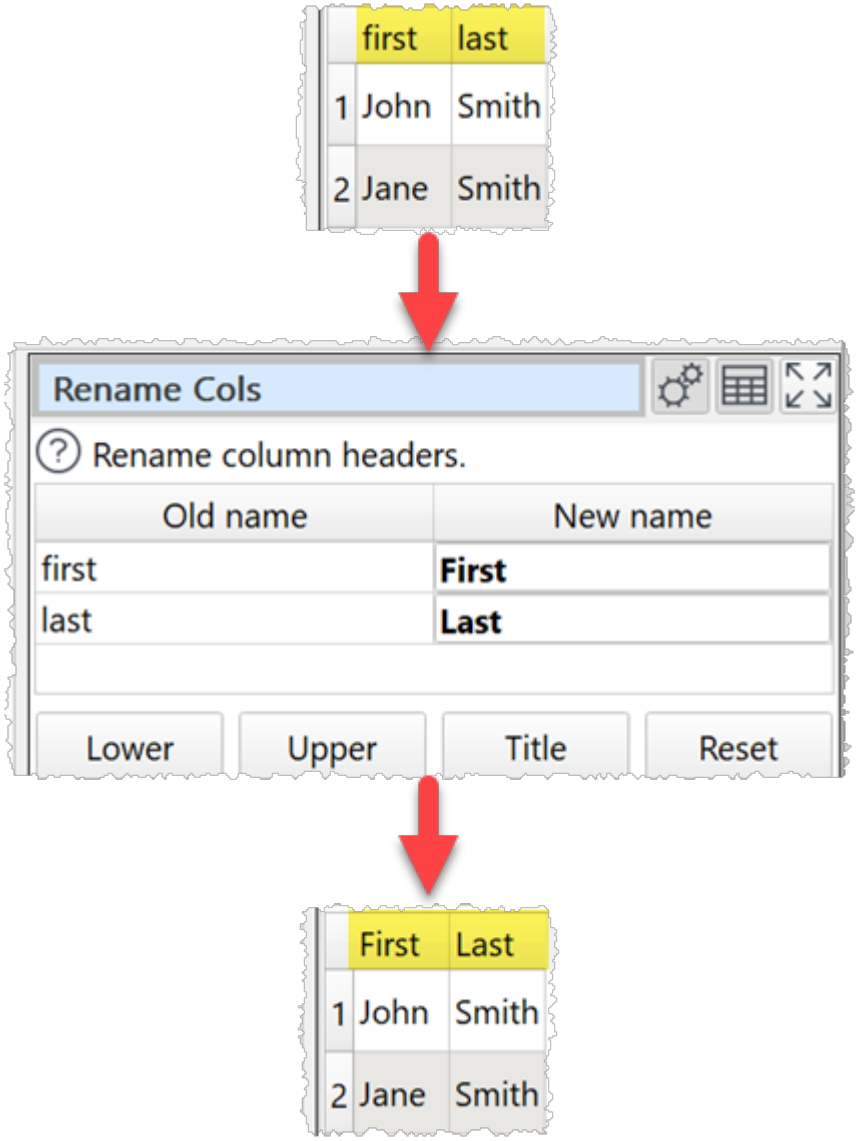

Inputs

One.

Options

- Change the column headers using the **New name** column.
- Click **Lower** to change all the names in the **New name** column to lower case.
- Click **Upper** to change all the names in the **New name** column to upper case.
- Click **Title** to change all the names in the **New name** column to title case.
- Click **Reset** to change all the names in the **New name** column back to their original name.

Notes

- The names of column headers do not have to be unique.

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- Warnings are shown in the **Info** tab for duplicate column names (case sensitive).

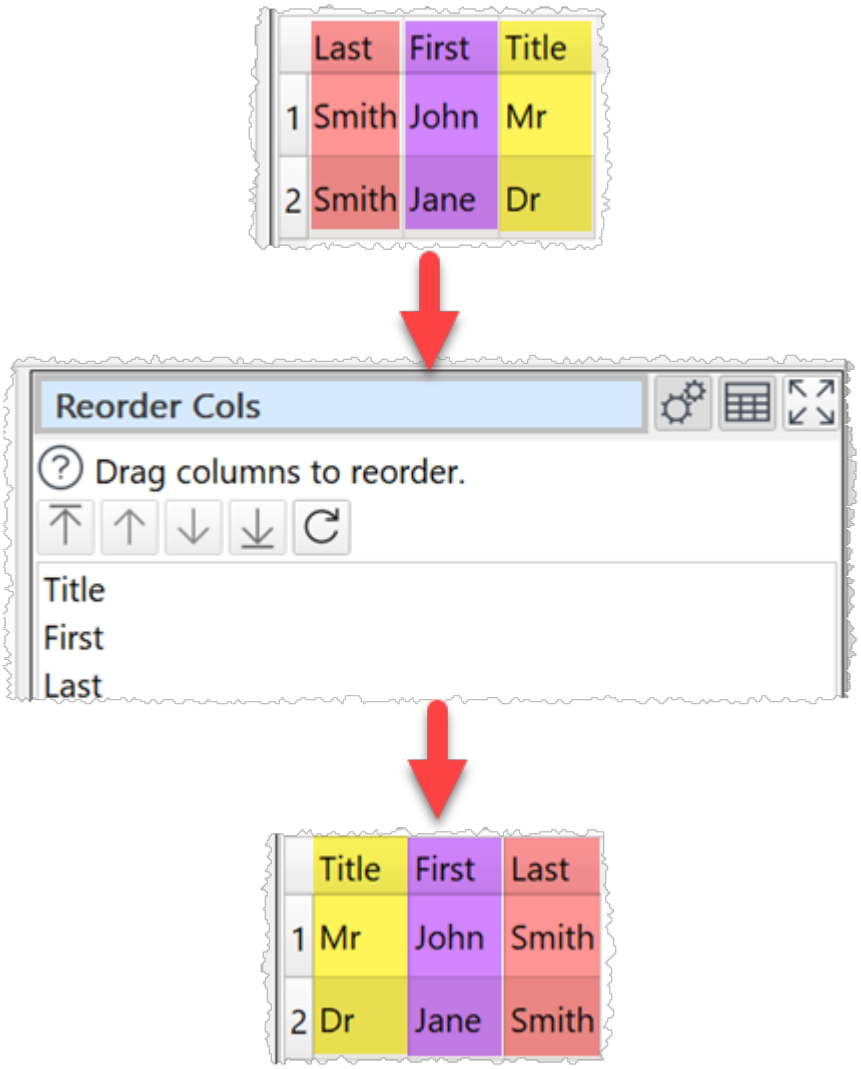
2.3.35 Reorder Cols

Description

Reorder columns.

Example

Reorder 'Last', 'First' and 'Title' columns:



Inputs

One.

Options

Drag the columns into the desired order (left-most at the top).

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Click the **Move first** button to move the selected columns to be first.
Click the **Move up** button to move the selected columns up one place.
Click the **Move down** button to move the selected columns down one place.
Click the **Move last** button to move the selected columns to be last.
Click the **Reset** button to restore the original column order.

Notes

You can also rename columns with Rename Cols and remove unwanted columns with Remove Cols.

2.3.36 Replace (deprecated)

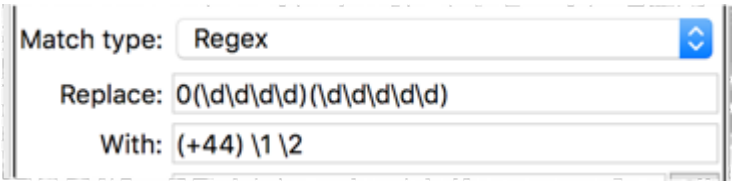
This transform is deprecated. Use Replace instead.

Description

Replace text in one or more columns.

Examples

To turn `0123456789` into `(+44) 1234 56789` using a Regular expression:



Inputs

One.

Options

- Check the column(s) you wish to transform.
- Choose the **Match type** as:
  - **Text** to replace matches contained in the text.
  - **Exact text** to replace the text only if it matches exactly (whitespace sensitive).
  - **Regex** to match using a Regular expression.
  - **Empty** to match empty cells (cells with whitespace are not empty).
- In **Replace** put the text you want to replace for **Text**, **Exact text** or **Regex** matching. You can use a column variable.
- In **With** put the text you want to replace it with. You can use a column variable.
- Check **case sensitive** to use case sensitive matching for **Text**, **Exact text** or **Regex** matching.

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Notes

- Comparisons are whitespace sensitive. You can use Whitespace to remove whitespace before replacing.

See also

- Insert
- Substitute

2.3.37 Replace

Description

Replace text in one or more columns.

Examples

Replace US state initials in the 'Address' column:

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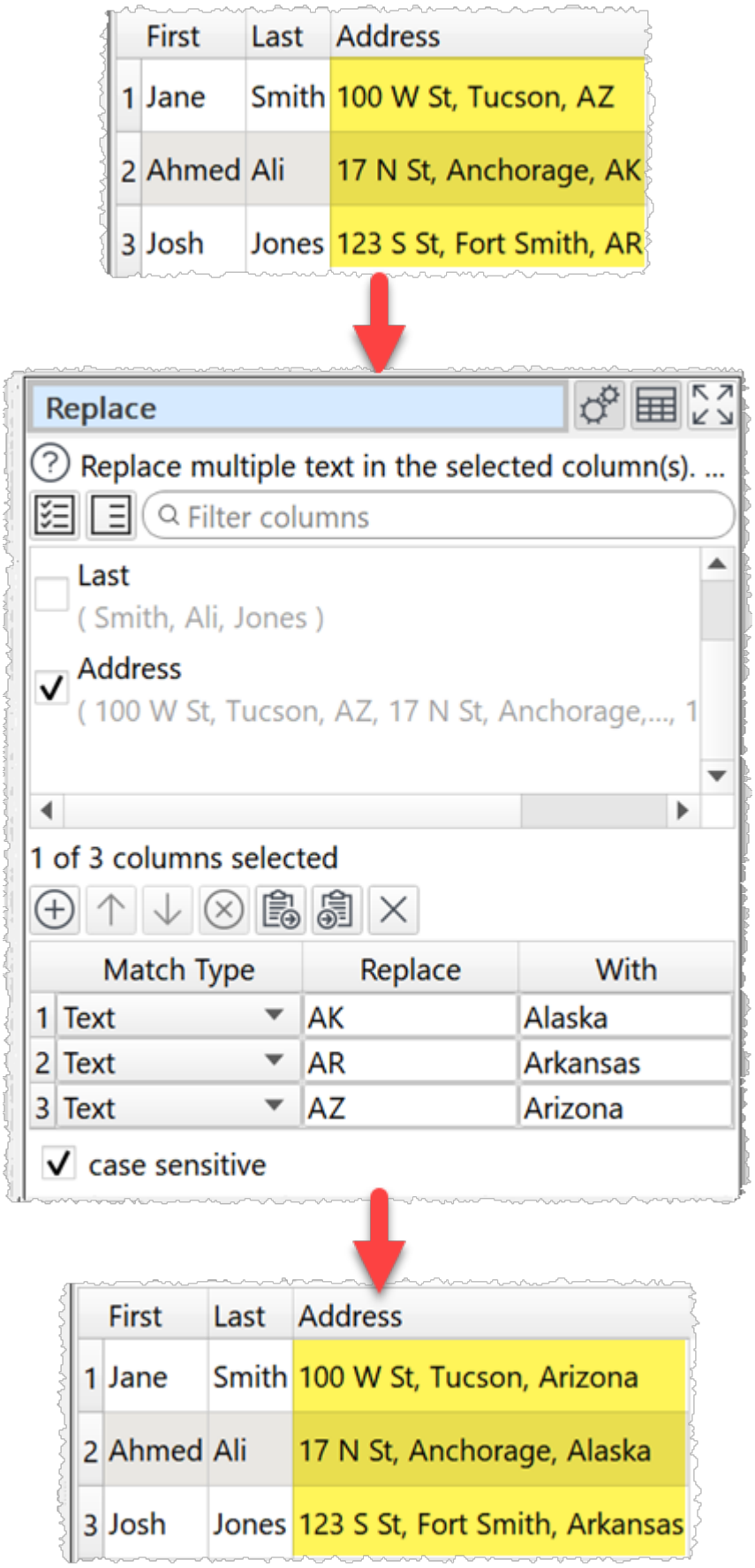

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Reformat phone numbers using a regular expression:

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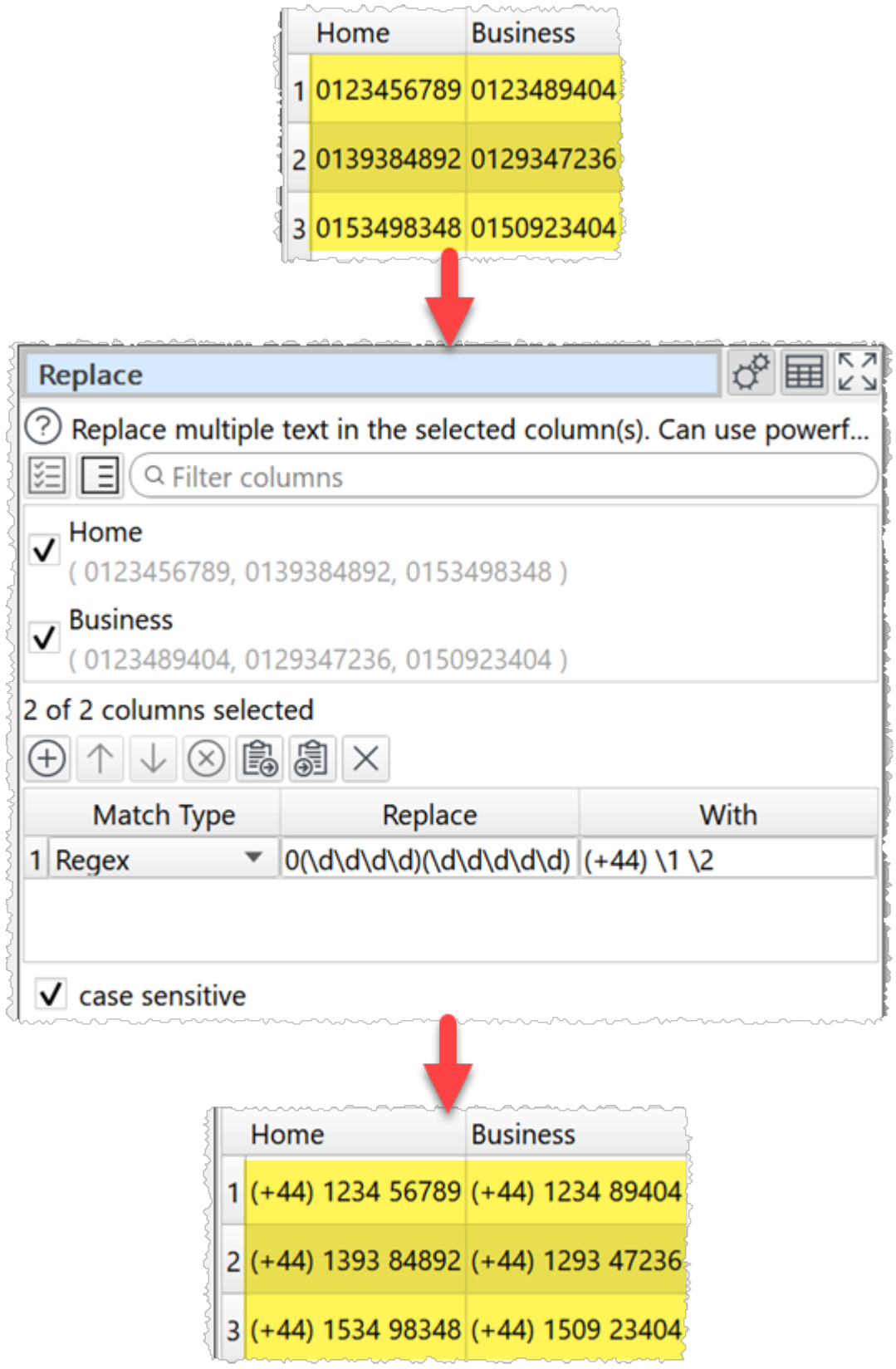

Replace empty values:

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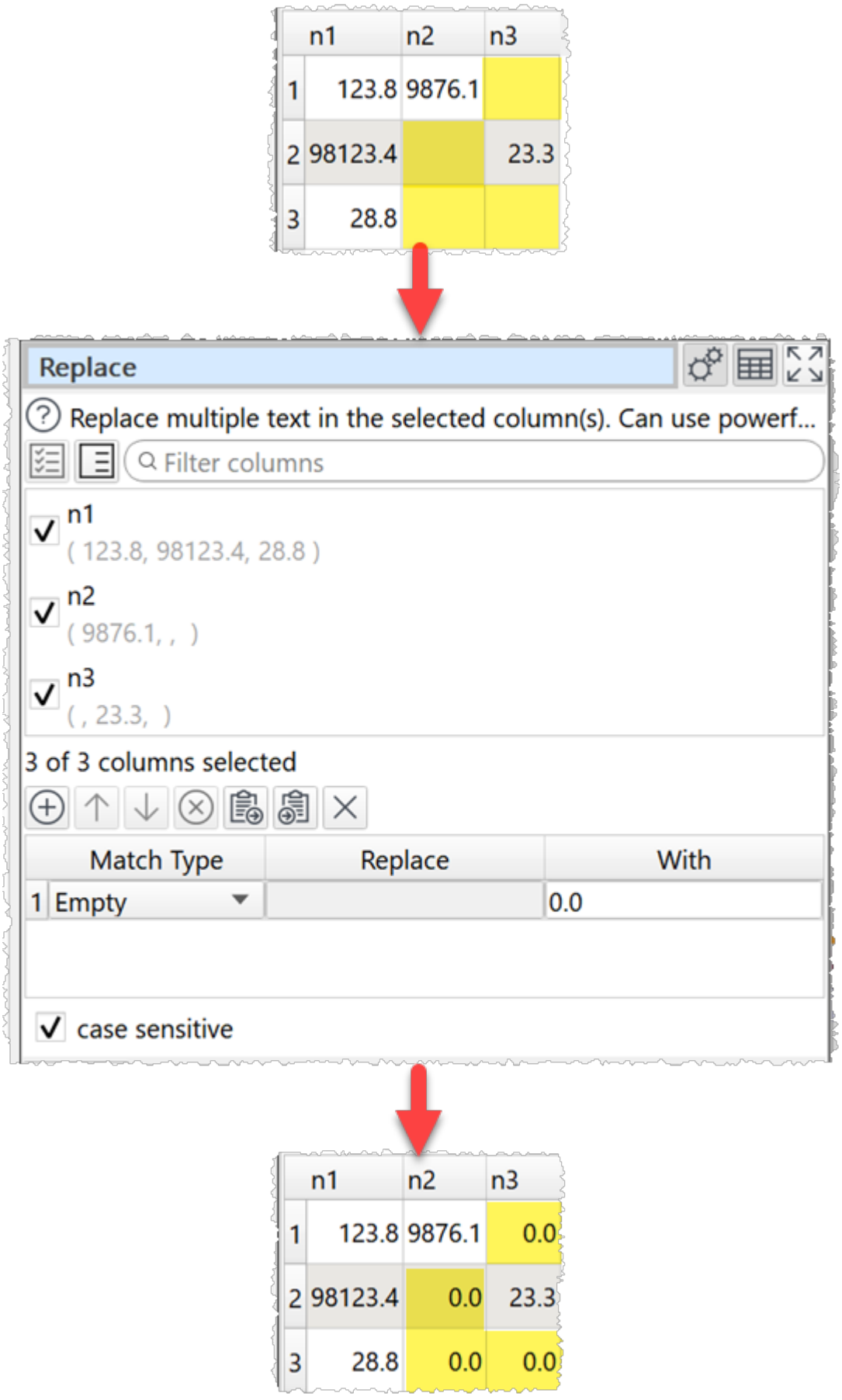

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Inputs

One.

Options

- Check the column(s) you wish to transform.
- Click the ⊕ button to add a new filter criteria.
- Click the ↑ button to move the selected terms up.
- Click the ↓ button to move the selected terms down.
- Click the ⊗ button to delete the selected filter terms.
- Click the button to copy all terms to the clipboard.
- Click the button to paste terms from the clipboard.
- Click the × button to clear all terms.
- Add the terms you wish to replace and how you wish to replace them.
  - Choose the **Match type** as:
    - **Text** to replace matches contained in the text.
    - **Exact text** to replace the text only if it matches exactly (whitespace sensitive).
    - **Regex** to match using a Regular expression.
    - **Empty** to match empty cells (cells with whitespace are not empty).
  - In **Replace** put the text you want to replace for **Text**, **Exact text** or **Regex** matching. You can use a column variable.
  - In **With** put the text you want to replace it with. You can use a column variable.
- Check **case sensitive** to use case sensitive matching for **Text**, **Exact text** or **Regex** matching.

Notes

- Comparisons are whitespace sensitive. You can use Whitespace to remove whitespace before replacing.
- If you are pasting in replacement terms, the format expected is comma delimited text with 3 columns.
  - The first column is the 0-based index of the **Match Type** drop-down list.
  - The second column is the text **Replace**.
  - The third column is the text **With**.

For example, pasting in:

```
0,YES,1
2,^Y$,1
```

Will add:

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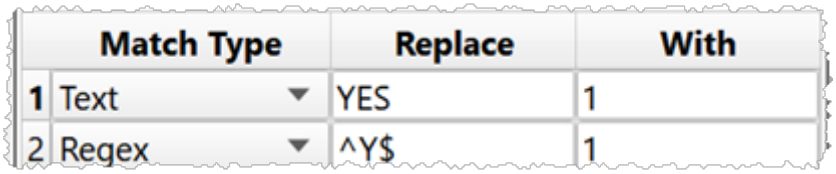

	Match Type	Replace	With
1	Text	YES	1
2	Regex	^Y$	1

You can also try copying terms to the clipboard and pasting into a text file to see the format. If you only paste in 1 column of text, it will be assumed to be a list of **Replace**. You can, of course, use Easy Data Transform to create the appropriate filter terms and paste them into memory.

See also

- Insert
- Substitute

2.3.38 Row Num

Description

Add a new column that contains the row number.

Example

Add a row number starting at 1:

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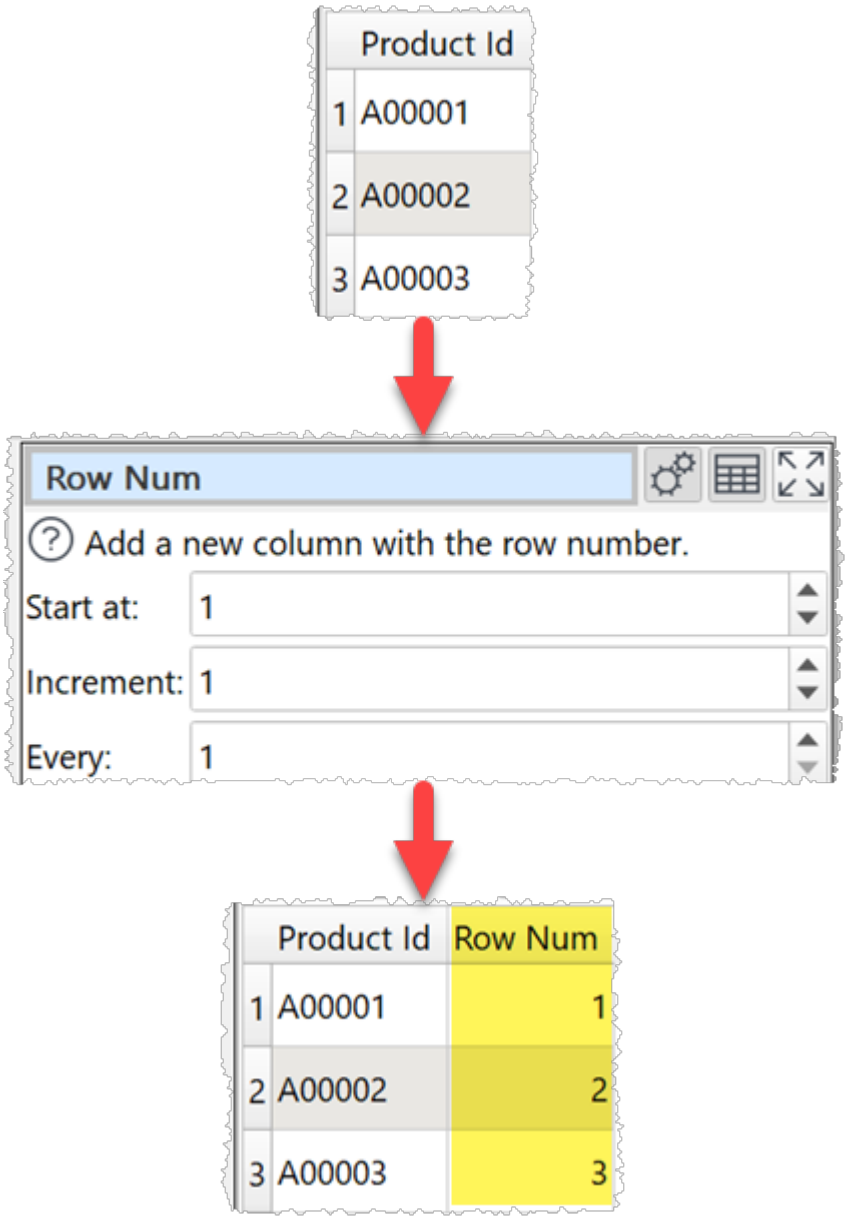

Inputs

One.

Options

- Set **Start at** to the number you want to use for the first row.
- Set **Increment** to the amount you wish to increment by.
- set **Every** to how often to apply the increment (e.g. set to 5 to increment once every 5 rows).

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Notes

- The new column is added at the right end. You can change the column order with Reorder Cols and the column name with Rename Cols.
- You can Pad the row number with zeros to turn it into a column of unique Ids with a fixed length.

2.3.39 Sample

Description

Selects a subset of rows from the input.

Example

Sample 3 rows from 5:

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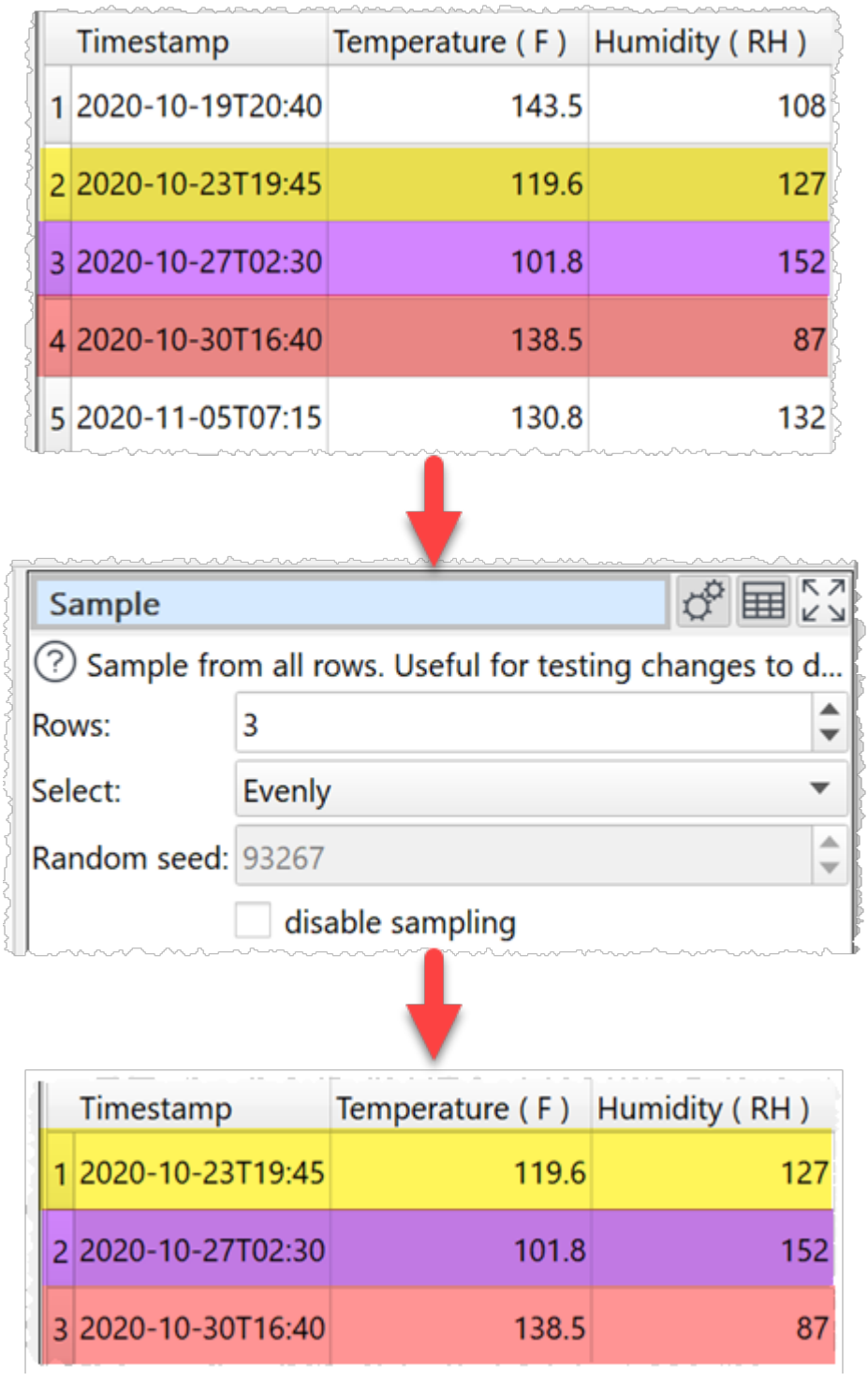

Inputs

One.

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Options

- Set **Rows** to the number of rows you want to output. If it is the same or greater than the number of rows in the input, then the input will be unaffected.
- Set **Select** depending on how you want the rows sampled.
- Check **disable sampling** to turn off sampling. If sampling is disabled, the transform does nothing.

Notes

- If you set **Select** to **Randomly (for quality)** or **Randomly (for speed)**, rows will be selected using a pseudo-random number generator, initialized with **Random seed**. Changing the seed will change the rows sampled.
- With the same **Random seed** and the same **Select** value you should get the same random sampling, even across Windows and Mac versions of Easy Data Transform.
- **Random (for speed)** is significantly faster than **Randomly (for quality)**, but the results may be less random.
- If you are transforming a large dataset, then you can use **Sample** to test a small subset.
- If you need to do something more complex than **Sample** can handle (e.g. keep only rows 500 to 1000) then use Slice or Row Num followed by a Filter. For the most complex cases use **Row Num**, followed by Javascript, followed by a **Filter**. E.g. this **Javascript** function returns 1 for every 10th row between 1000 and 2000 and 0 otherwise:

```
return $(Row Num) >= 1000 & $(Row Num) <= 2000 & $(Row Num) % 10 == 0;
```

2.3.40 Slice

Description

Keep or remove a continuous section of rows.

Example

Keep only the records between the 'YEAR' rows:

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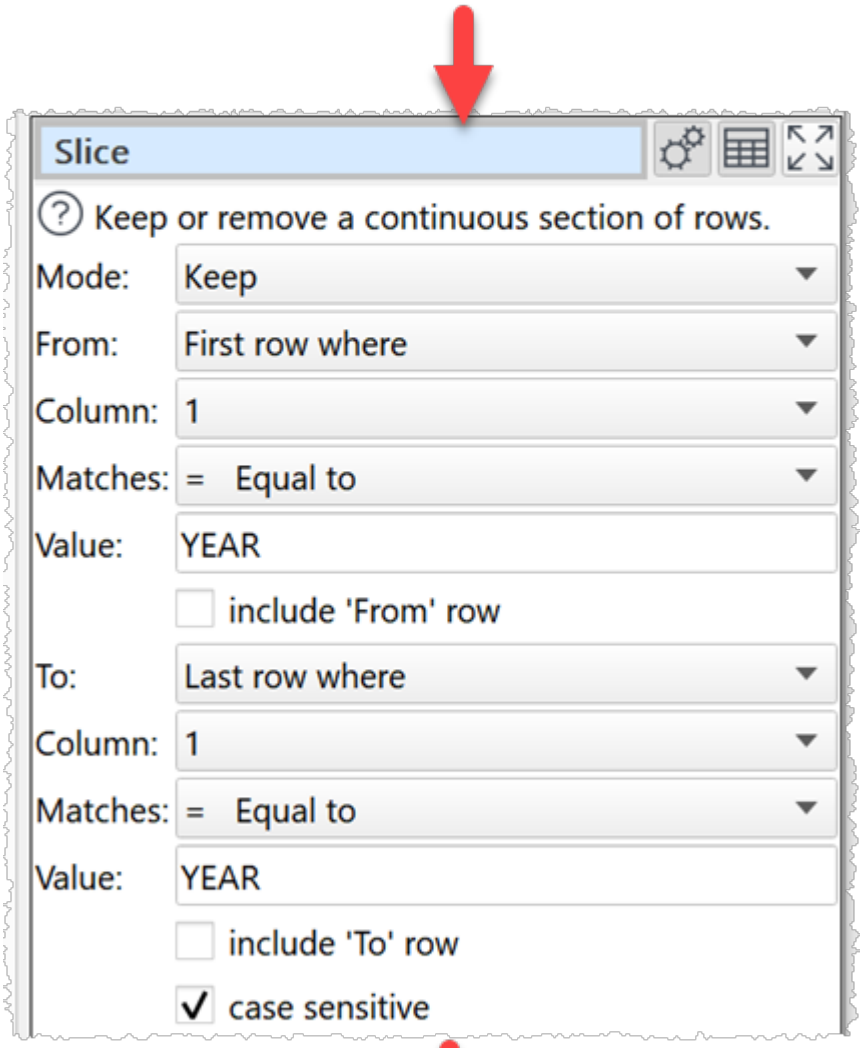
	1	2	3	4
1	YEAR	JAN	FEB	MAR
2	1980	256.9	238.5	275.4
3	1981	248.9	224.9	259.1
4	YEAR	JAN	FEB	MAR
5	1982	258.6	230.0	280.4
6	1983	275.9	234.9	251.9



	1	2	3	4
1	1980	256.9	238.5	275.4

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Inputs
One.

Options
- Set **Mode** depending on whether you want to keep or remove the slice.
- Set **From** according to how you want to choose the first row of the slice.
- Set **Column**, **Matches** and **Value** to match the first row.
- Uncheck **Include 'From' row** if you don't want to include the first row in the slice.
- Set **To** according to how you want to choose the last row of the slice.
- Set **Column**, **Matches** and **Value** to match the last row.
- Uncheck **Include 'To' row** if you don't want to include the last row in the slice.
- Check **case sensitive** to use case sensitive matching for text.

Notes
- Number, date and text values are treated differently for **Equal to**, **Greater than**, **Less than**, **Greater than equal**, **Less than equal** and **Not equal to** operations. Any values that can be converted to a number will be treated as a number. Any values that match the supported date formats in Preferences will be treated as a date.
- All values are treated as text for **Contains**, **Starts with**, **Ends with**, **Matches regex**, **Is not**, **Doesn't start with, Doesn't end with** and **Doesn't match regex** operations.
- Comparisons of text are whitespace sensitive. You can use Whitespace to remove whitespace before filtering and Replace to get of other unwanted characters (e.g. whitespace inside the text).
- See here for more details on Regular expressions (regex).
- If you want to keep or remove a selection of rows by row number, use a Row Num transform followed by a Filter transform.

2.3.41 Sort

Description
Sorts rows by one or more columns.

Example
Sort by 'First' and then 'Last 'columns:

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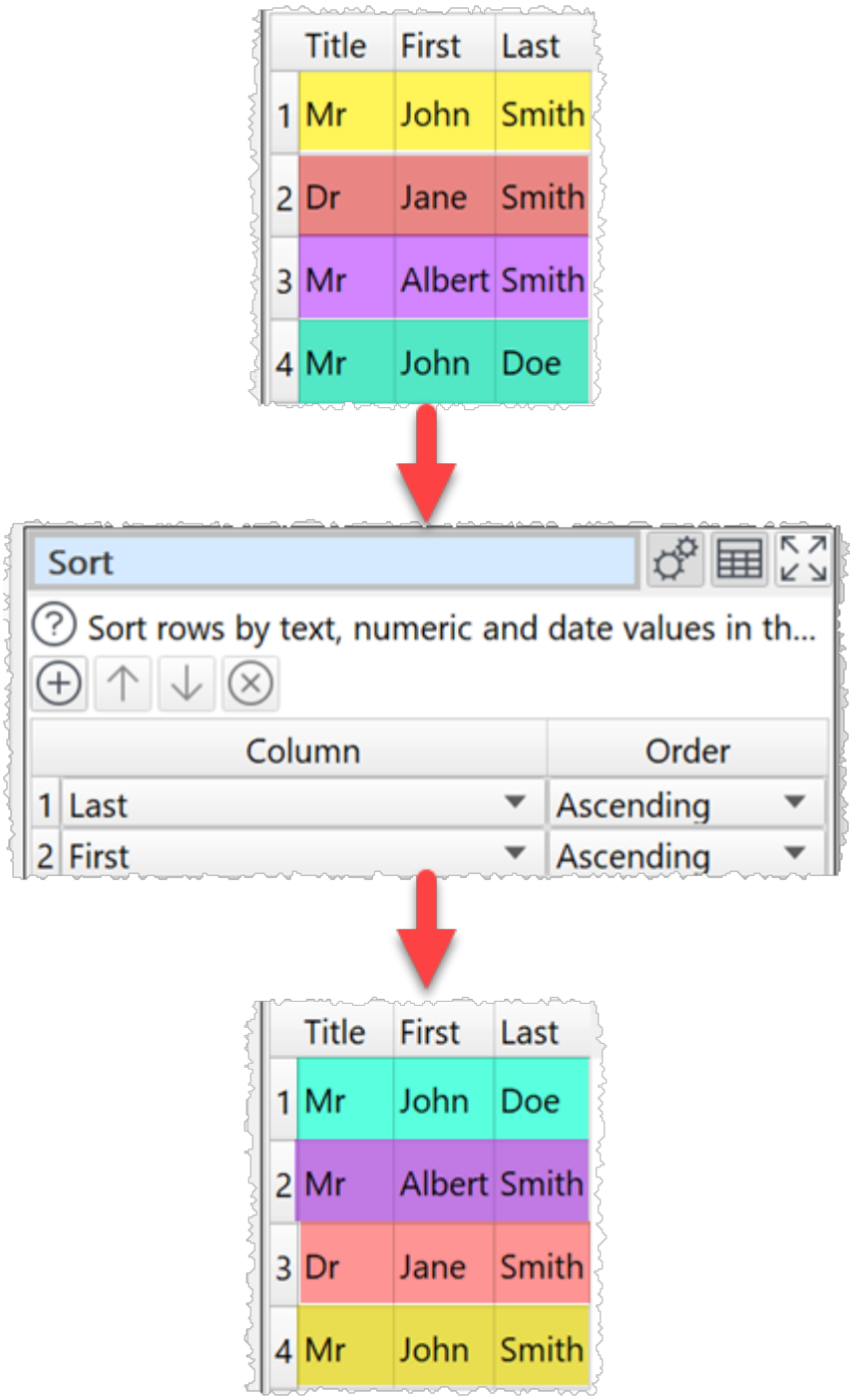

Inputs

One.

Options

- Click the ⊕ button to add a new sort level.
- Click the ↑ button to move the selected sort levels up.

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- Click the ↓ button to move the selected sort levels down.
- Click the ⊗ button to delete the selected sort level(s).
- Set **Column** to the column you want to sort by.
- Set **Order** depending on whether you want to sort this column **Ascending** or **Descending**.

Notes

- If you add multiple levels, it will sort by level 1 then level 1 values that are the same will be sorted by level 2 etc.
- Number, date and text values are treated differently for comparison purposes.
- Any values that can be converted to numbers will be treated as numbers.
- Any values that match the supported date formats in Preferences will be treated as dates.
- Comparisons of text are case and whitespace sensitive. You can use Case to change the case and Whitespace to remove whitespace before sorting.

2.3.42 Split Col

Description

Split text at delimiters in a selected column to create multiple columns or rows.

Example

Split the 'Courses' column into multiple columns or rows:

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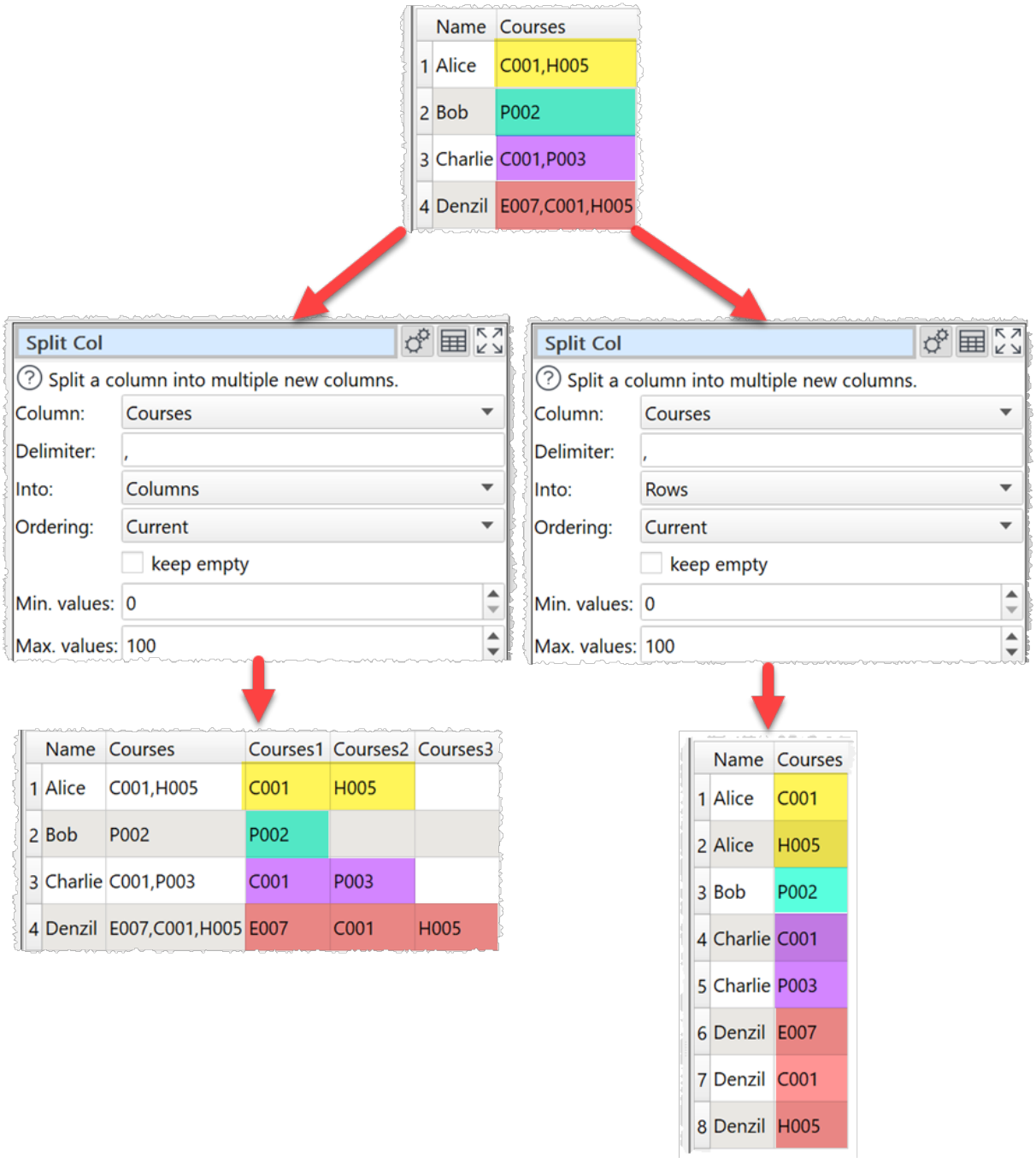

Inputs

One.

Options

- Select the **Column** you wish to split.
- Supply the **Delimiter** for splitting the column (e.g. comma).
- Set **Into** to:

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  - **Columns** to create a new column for each split value.
  - **Rows** to create a new row for each split value (the original row is removed).
- Set **Ordering** depending on how you want to order values after splitting.
- Check **keep empty** if you wish to keep empty values (e.g. honor delimiters with nothing in between).
- set **Min. values** to the minimum number of columns/rows you wish to split each value into.
- set **Max. values** to the maximum number of columns/rows you wish to split each value into (ignored if less than minimum).

Notes

- If no **Delimiter** is supplied then no new columns are created.
- If **Into** is **Columns**, new columns are added at the right end. You can change the column order with Reorder Cols.
- If there is a header, the header of the new column is based on the original header. You can change the column name with Rename Cols.
- The opposite of **Split Col** with **Into** as **Columns** is Concat Cols.

See also

- Split Rows

2.3.43 Split Rows

Description

Split each row into multiple rows.

Example

Split rows before each column containing 'title':

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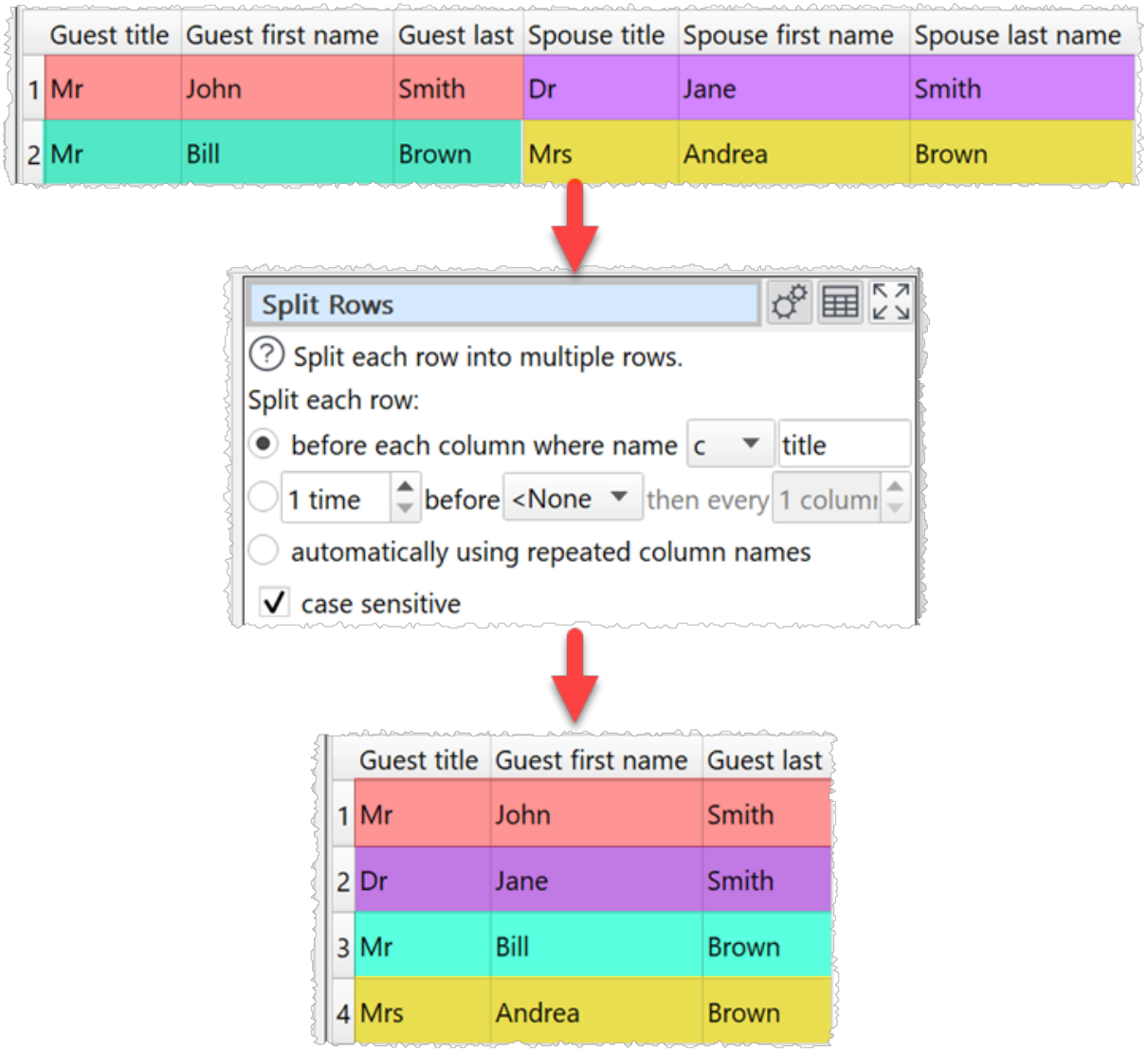

Inputs

One.

Options

- Split by column name:
  - Each row will be split before each column that matches the criteria.
- Split a fixed number of times:
  - Define the number of **times** you want to split each row, **starting before** which column and **then every** N columns.
  - The split is added before the designated columns.
  - Splits after the last column are ignored. So you can set **times** to a large number if you don't know how many columns there will be.
- Split automatically:

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  - Find the first column name that appears more than once and split each row before each column with that name.
- Check **case sensitive** to use case sensitive matching for column names.

Notes

- Comparisons of column names are whitespace sensitive.
- Splits added before the first column are ignored, as there is already a split there.
- Use New Col or Rename Cols if you need to add additional columns or rename columns before splitting rows.
- The opposite of **Split Rows** is Concat Rows.

See also

- Gather
- Split Col

2.3.44 Spread

Description

Spread a column into multiple new columns. Also called wide pivot or crosstab.

Example

Spread 'Quarter' and 'Amount' columns to multiple columns:

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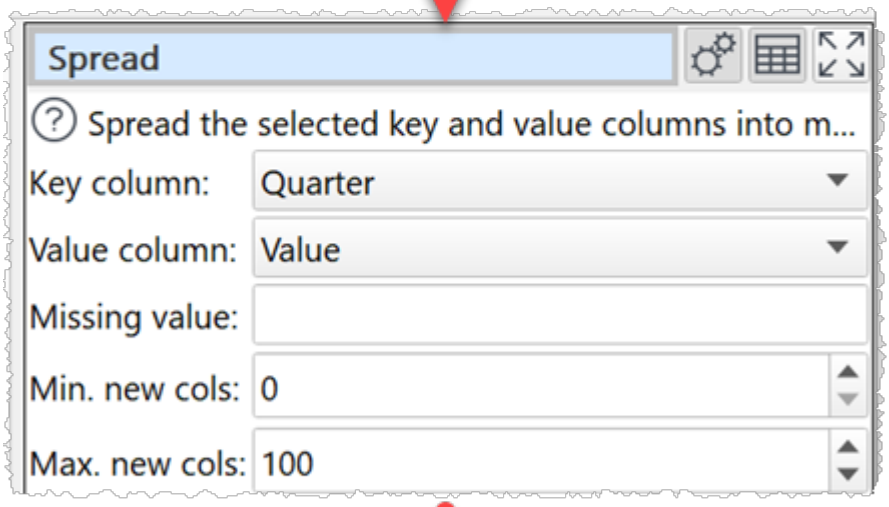
	salesman	area	Quarter	Value
1	Alice	North	Q1	11.3
2	Alice	North	Q2	89.3
3	Alice	North	Q3	44.3
4	Alice	North	Q4	18
5	Bob	East	Q1	4.5
6	Bob	East	Q2	7.9
7	Bob	East	Q3	8
8	Bob	East	Q4	3.3



	salesman	area	Q1	Q2	Q3	Q4
1	Alice	North	11.3	89.3	44.3	18
2	Bob	East	4.5	7.9	8	3.3

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Inputs
One.

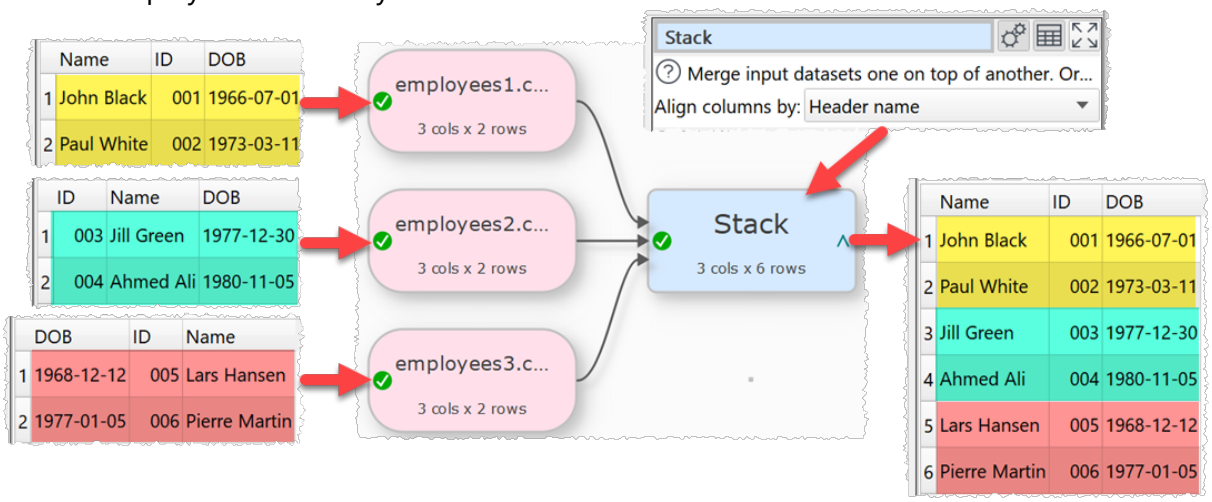
Options
- Select the **Key column** and **Value column** you wish to spread.
- **Missing values** is used for values missing from the input dataset.
- set **Min. new cols** to the minimum number of new columns you wish to add.
- set **Max. new cols** to the maximum number of new columns you wish to add (ignored if less than minimum).

Notes
- If there are rows that are duplicates, apart from the value column, this will cause errors.
- New columns are added at the right end. You can change the column order with Reorder Cols.
- You can merge the new columns into a single column with Concat Cols.
- The opposite of Spread is Gather.

2.3.45 Stack

Description
Merge rows from inputs, one on top of the other.

Examples
Stack 3 employee datasets by header name:



Stack 2 employee datasets by column number:

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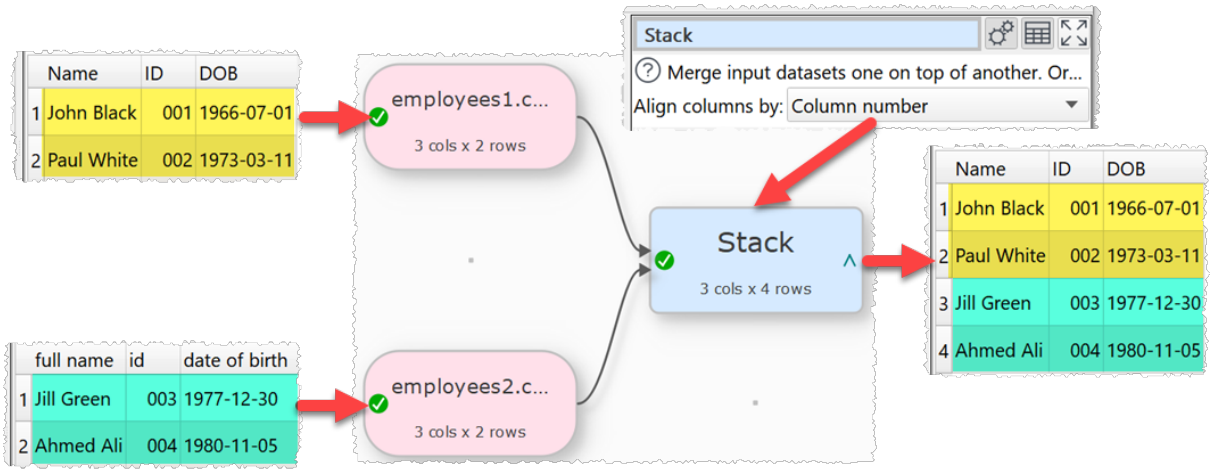

Inputs

One or more.

Options

- Select **Align columns by** to **Header name** if you want line up column values by header name (e.g. the 'id' column in input 1 with the 'id' column in input 2) and **Column number** to align by the column number (e.g. the first column of input 1 with the first column of input 2). The headers will be matched in order:
  - case and whitespace sensitive (e.g. 'ID' to 'ID'); then
  - case insensitive and whitespace sensitive (e.g. 'Id' to 'ID'); then
  - case sensitive and whitespace insensitive (e.g. 'ID' to ' ID '); then
  - case and whitespace insensitive (e.g. 'Id' to ' ID ')
- The stacking order depends on the vertical (Y-axis) position of the inputs.

Notes

- Stack merges two datasets one on top of the other (vertically). To merge datasets side-by-side (horizontally) use Join.
- If you align by **Column number** the header of the first input is used.
- Messages are shown in the **Warnings** tab for duplicated column names within an input dataset when **Align columns by** is set to **Header name**.

See also

- Cross
- Join
- Merge datasets

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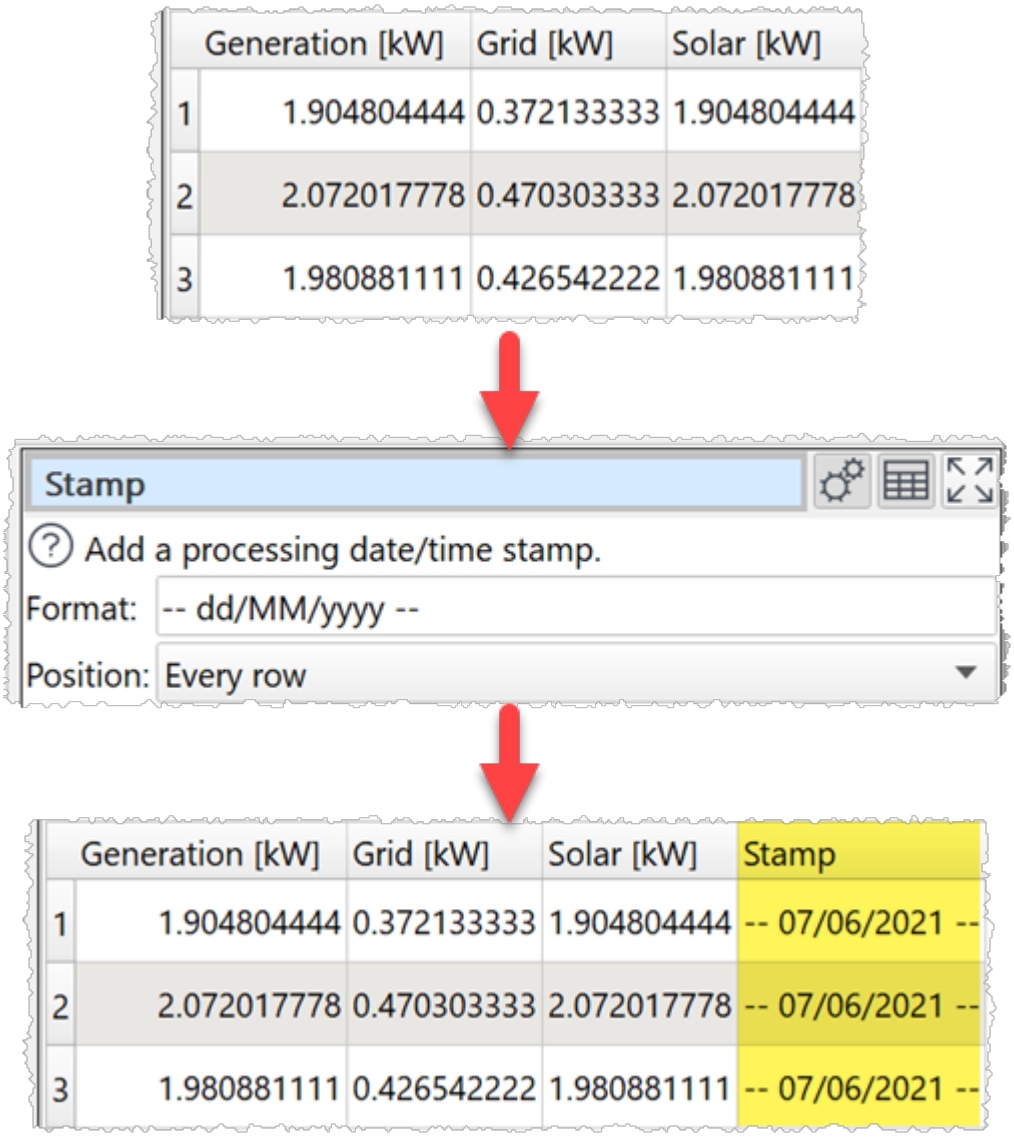
2.3.46 Stamp

Description

Adds a time/date stamp as a new row or a new column.

Example

Add the current date to the end of each row:



Inputs

One.

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Options

- Supply the processing date/time format in **Format** (see below).

Format	Meaning
d	The day as number without a leading zero (1 to 31)
dd	The day as number with a leading zero (01 to 31)
ddd	The abbreviated localized day name (e.g. 'Mon' to 'Sun'). Uses the system locale to localize the name.
dddd	The long localized day name (e.g. 'Monday' to 'Sunday'). Uses the system locale to localize the name.
M	The month as number without a leading zero (1 to 12).
MM	The month as number with a leading zero (01 to 12)
MMM	The abbreviated localized month name (e.g. 'Jan' to 'Dec'). Uses the system locale to localize the name.
MMMM	The long localized month name (e.g. 'January' to 'December'). Uses the system locale to localize the name.
yy	The year as two digit number (00 to 99).
yyyy	The year as four digit number. If the year is negative, a minus sign is prepended in addition.
h	The hour without a leading zero (0 to 23 or 1 to 12 if AM/PM display).
hh	The hour with a leading zero (00 to 23 or 01 to 12 if AM/PM display).

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Format	Meaning
`H`	The hour without a leading zero (0 to 23, even with AM/PM display).
`HH`	The hour with a leading zero (00 to 23, even with AM/PM display).
`m`	The minute without a leading zero (0 to 59).
`mm`	The minute with a leading zero (00 to 59).
`s`	The whole second without a leading zero (0 to 59).
`ss`	The whole second with a leading zero where applicable (00 to 59).
`z`	The fractional part of the second, to go after a decimal point, without trailing zeroes (0 to 999). Thus "s.z" reports the seconds to full available (millisecond) precision without trailing zeroes.
`AP or A`	The fractional part of the second, to millisecond precision, including trailing.
`ap or a`	Use am/pm display. a/ap will be replaced by either "am" or "pm".
`t`	The timezone (for example "CEST").

- Select from **Position** whether you want the stamp row added to the start or end of the dataset or to every row in a new column.

Notes

- If you add the stamp to **Every Row** you can move the column using Reorder Cols.

See also

- Meta information

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2.3.47 Stats

Description

Calculates the sum, minimum, maximum, average, median, standard deviation or mode of numeric values by column or row in one or more selected columns.

Example

Calculate column and row averages:

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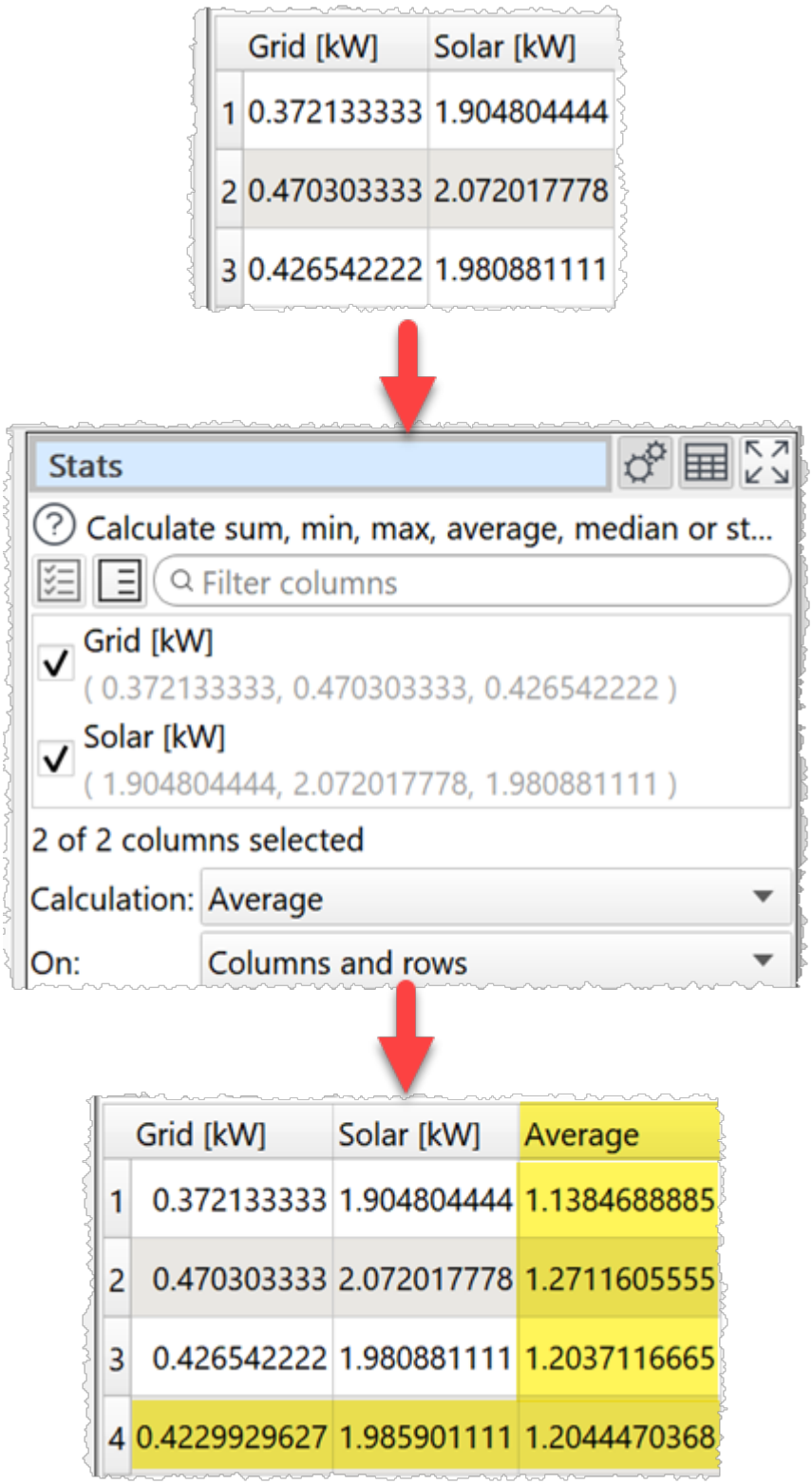

Inputs

One.

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Options

- Check the column(s) you wish to calculate stats for.
- Set **Calculation** to the statistic you want to calculate:
  - **Sum** show the sum of the values.
  - **Minimum** shows the smallest value.
  - **Maximum** shows the largest value.
  - **Average** shows the arithmetic mean of the values.
  - **Median** shows the median of numeric values in the column.
  - **Mode** shows the mode of numeric values in the column.
  - **Standard deviation** is the sample standard deviation (equivalent to Excel function stddev.s).
- Set **On** depending on whether you wish to calculate the statistics for columns, rows or both.
  - If **On** is set to **Columns** an extra row with the results is added to the bottom.
  - If **On** is set to **Rows** an extra column with the results is added to the right.
  - If **On** is set to **Columns and rows** an extra row with the results is added to the bottom and extra column with the results is added to the right. The bottom right cell contains the calculation across all values.

Notes

- Non-numerical and empty values are ignored.
- **Mode** may not work as expected with non-integer values, due to precision issues. You can fix this by using a Num Format transform first.
- Use Num Format to change the precision of the results.

See also

- Count
- Pivot
- Summary

2.3.48 Substitute

Description

Substitute column values into text.

Example

Create an SQL statement to insert 'date', 'cases', 'deaths' and 'country' values into 'mytable':

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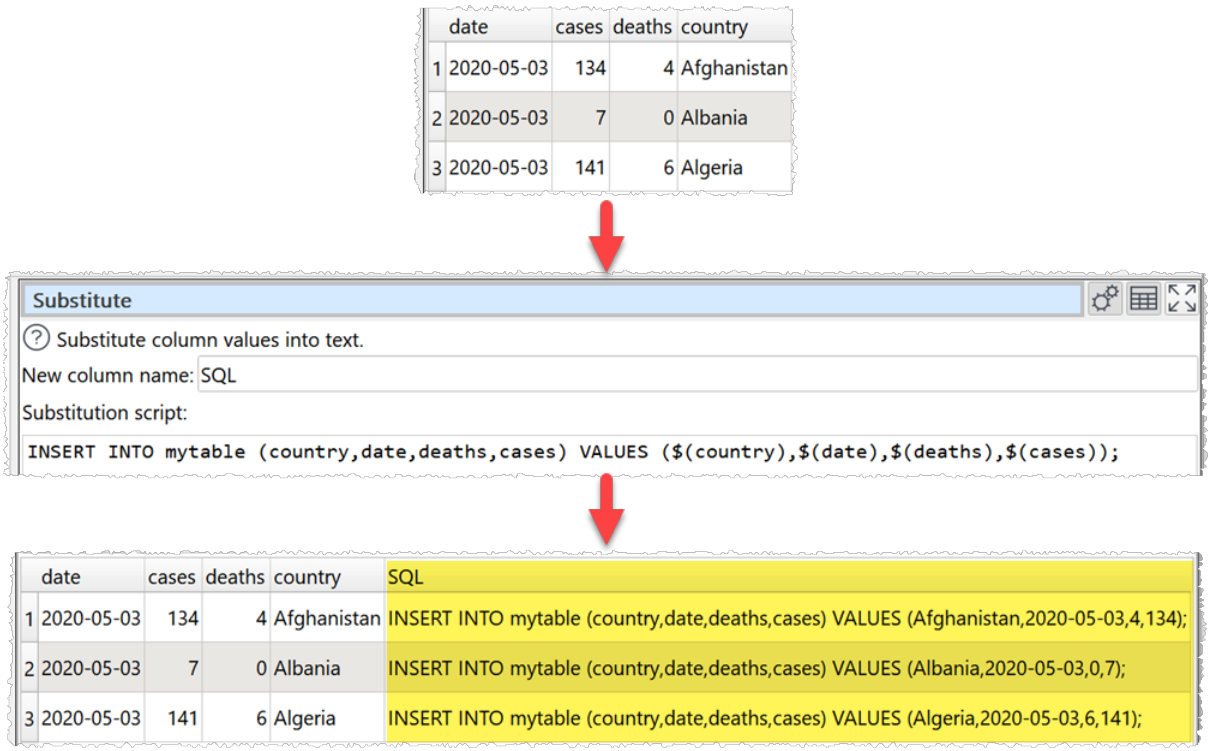

	date	cases	deaths	country
1	2020-05-03	134	4	Afghanistan
2	2020-05-03	7	0	Albania
3	2020-05-03	141	6	Algeria

	date	cases	deaths	country	SQL
1	2020-05-03	134	4	Afghanistan	INSERT INTO mytable (country,date,deaths,cases) VALUES (Afghanistan,2020-05-03,4,134);
2	2020-05-03	7	0	Albania	INSERT INTO mytable (country,date,deaths,cases) VALUES (Albania,2020-05-03,0,7);
3	2020-05-03	141	6	Algeria	INSERT INTO mytable (country,date,deaths,cases) VALUES (Algeria,2020-05-03,6,141);

Inputs

One.

Options

- Enter your substitution script into the **Substitution script** field.
- Select a column from **Insert variable** to add that column variable into the **Substitution script** field at the current cursor position.
- Click the **Evaluate** button to evaluate your script over every row.

Notes

- The transform is calculated every time:
  - The **Evaluate** button is pressed.
  - The **Substitute** transform item is unselected in the **Center** pane and script changes have been made without the **Evaluate** button being clicked.
  - The item upstream of it changes.
- The new column is added at the right end. You can change the column order with Reorder Cols and the column name with Rename Cols.
- If you want to carry out your transform across more than one dataset, you should Join them first.
- If you need to do something more complex than this transform allows, try the Javascript transform.
- Warnings are shown in the **Warnings** tab for ambiguous column references.

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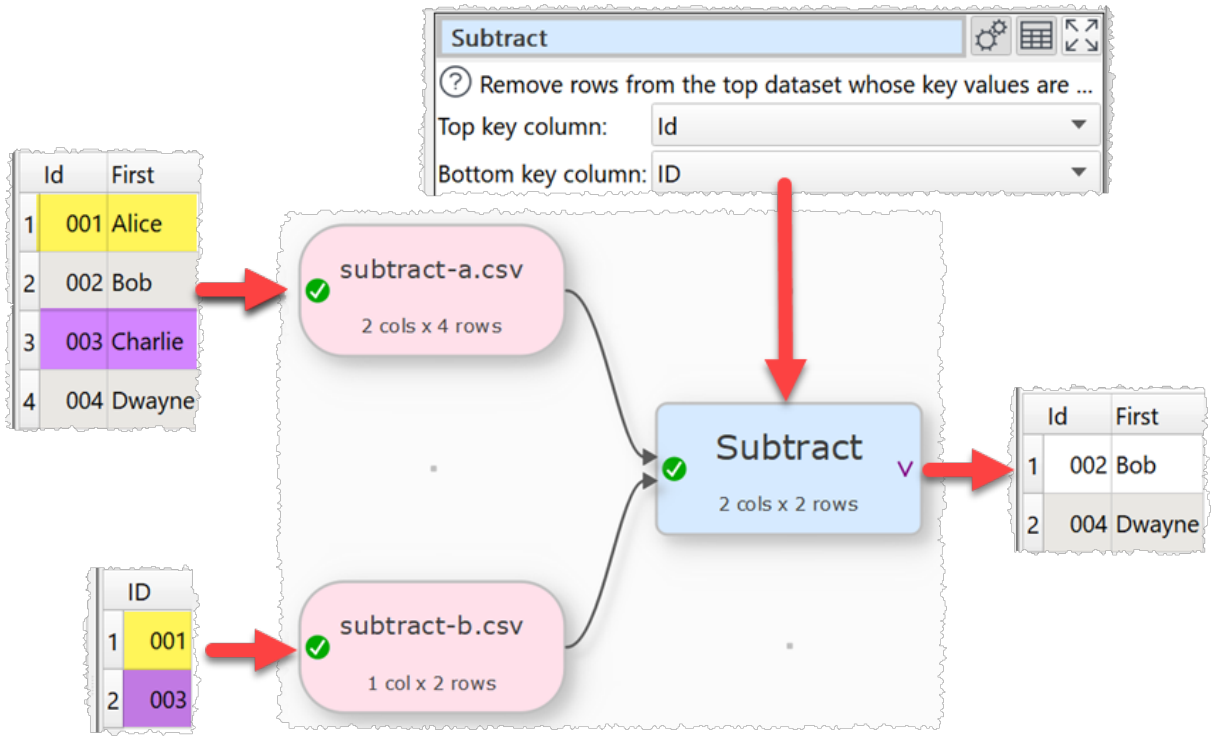
2.3.49 Subtract

Description

Remove rows from the top dataset with key values that are present in the lower dataset.

Example

Subtract from the top dataset all the records with ids in the bottom dataset:



Inputs

Two.

Options

- The output depends on the vertical (Y-axis) position of the inputs.
- Select **Top key column** for the column you want to match in the top input dataset.
- Select **Bottom key column** for the column you want to match in the bottom input dataset.

Notes

- If there are 10k rows or less in both datasets, Easy Data Transform will try to guess sensible default values for **Top key column** and **Bottom key column** based on column header names and contents.
- If the first input has a header, this will be used for the output.

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- All values are treated as text and comparisons are case and whitespace sensitive. You can use Case to change the case and Whitespace to remove whitespace before the subtract.
- All rows in the top dataset with a given key value are removed if that key value occurs 1 or more times in the bottom dataset.
- You can use Concat Cols to join several columns together (e.g. 'first name' and 'last name' columns) to form a key column.
- You can use Row Num to create a unique key column.

See also

- Intersect

2.3.50 Summary

Description

Summarise the values in the selected columns.

Example

Create a summary, including dates and statistics:

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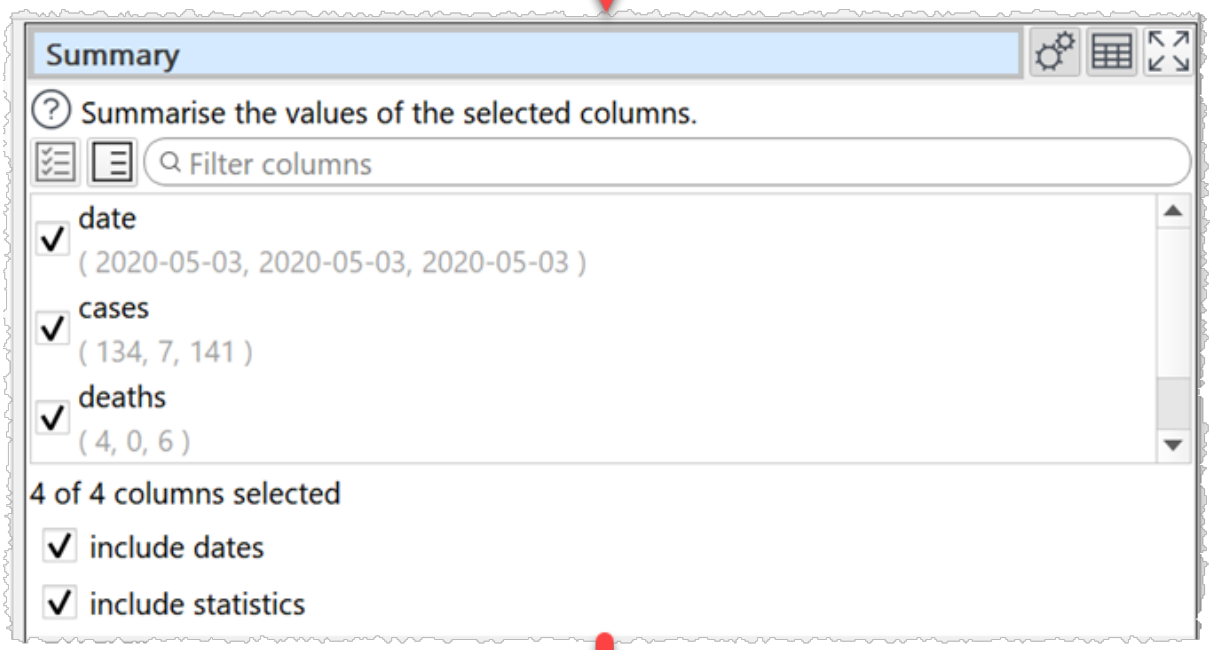
	date	cases	deaths	country
1	2020-05-03	134	4	Afghanistan
2	2020-05-03	7	0	Albania
3	2020-05-03	141	6	Algeria



	Metric	date	cases	deaths	country
1	Empty values	0	0	0	0
2	Non-empty values	3	3	3	3
3	Numeric values	0	3	3	0
4	Integer values	0	3	3	0
5	Date values	3	0	0	0
6	Text values	0	0	0	3
7	Distinct values	1	3	3	3
8	Unique values	0	3	3	3
9	Duplicated values	1	0	0	0
10	Min length	10	1	1	7

Inputs

One.

Options

- Select the **Columns** you wish to summarise.
- Check **include dates** if you wish to check for date values using supported date formats. This can be slow for large datasets.
- Check **include statistics** if you wish to add the sum, average, median and standard deviation for numeric values.

Notes

- Whether values are interpreted as number or dates depends on **Supported date formats** and **Locale** in the Preferences window.
- **Empty values** is the number of values in the column that are completely empty. Values with whitespace do not count as empty.
- **Non-empty values** is the number of values in the column that are not completely empty. Values with whitespace do not count as empty.
- **Numeric values** is the number of numeric of values in the column that can be interpreted as a number.
- **Integer values** is number of numeric of values in the column that can be interpreted as integers (whole numbers). "1.0" (depending on your **Locale**), "0", "-1" and "1e3" are considered integers.
- **Date values** is the number of values in the column that can be interpreted as a date. Only shown if **check for dates** is checked.
- **Text values** is the number of values in the column that cannot be interpreted as empty, numeric or date.
- **Distinct values** is the number of different values in the column. Date and numeric values are treated as text (e.g. '7' is treated as different to '7.0' and '1/1/2020' is treated as different to '01/01/2020'). Comparison between values is sensitive to case and whitespace. Empty values are not counted.
- **Unique values** is the number of values that only occur once in the column. Date and numeric values are treated as text. Comparison between values is sensitive to case and whitespace. Empty values are not counted.
- **Duplicated values** is the number of values that only more than once in the column. Date and numeric values are treated as text. Comparison between values is sensitive to case and whitespace. Empty values are not counted.
- **Min length** is the minimum number of characters of a value in the column. Whitespace is counted. Date and numeric values are treated as text.
- **Max length** is the maximum number of characters of a value in the column. Whitespace is counted. Date and numeric values are treated as text.

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- **Min numeric** is the minimum numeric value in the column. Non-numeric and empty values are ignored.
- **Max numeric** is the maximum numeric value in the column. Non-numeric and empty values are ignored.
- **Range numeric** is **Max numeric - Min numeric.**
- **Sum numeric** is the sum of numeric values in the column. Non-numeric and empty values are ignored. Only shown if **include statistics** is checked.
- **Average numeric** is the arithmetic mean of numeric values in the column. Non-numeric and empty values are ignored. Only shown if **include statistics** is checked.
- **Median numeric** is the median of numeric values in the column. Non-numeric and empty values are ignored. Only shown if **include statistics** is checked.
- **Mode numeric** is the mode of numeric values in the column. Non-numeric and empty values are ignored. Only shown if **include statistics** is checked.
- **Stddev numeric** is the sample standard deviation (equivalent to Excel function stddev.s) of numeric values in the column. Non-numeric and empty values are ignored. Only shown if **include statistics** is checked.
- **Variance numeric** is the square of the sample standard deviation. Only shown if **include statistics** is checked.
- **Q1 numeric** is the first quartile (calculated using Method 1 here). Only shown if **include statistics** is checked.
- **Q3 numeric** is the third quartile (calculated using Method 1 here). Only shown if **include statistics** is checked.
- **IQR numeric** is the Inter Quartile Range. Only shown if **include statistics** is checked.
- **Skew numeric** is the alternative Pearson Mode Skewness (3 * (Mean – Median) / Standard Deviation). Only shown if **include statistics** is checked.
- **Min date** is the minimum date value in the column. Only shown if **include dates** is checked.
- **Max date** is the maximum date value in the column. Only shown if **include dates** is checked.
- **Most frequent** lists the most common text in the column. Empty values are not counted. Date and numeric values are treated as text. Comparison between values is sensitive to case and whitespace.

Notes

- **Mode** may not work as expected with non-integer values, due to precision issues. You can fix this by using a Num Format transform first.
- Use Num Format to change the precision of numerical results.
- You can use Whitespace to remove any whitespace at the start or end of values before **Summary**.
- If you wish to have a row displayed per column you can Transpose the table first.

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See also

- Count
- Pivot
- Stats

2.3.51 Total

Description

Add a new column with a running (cumulative) total of the selected column.

Examples

Total the 'transaction' column:

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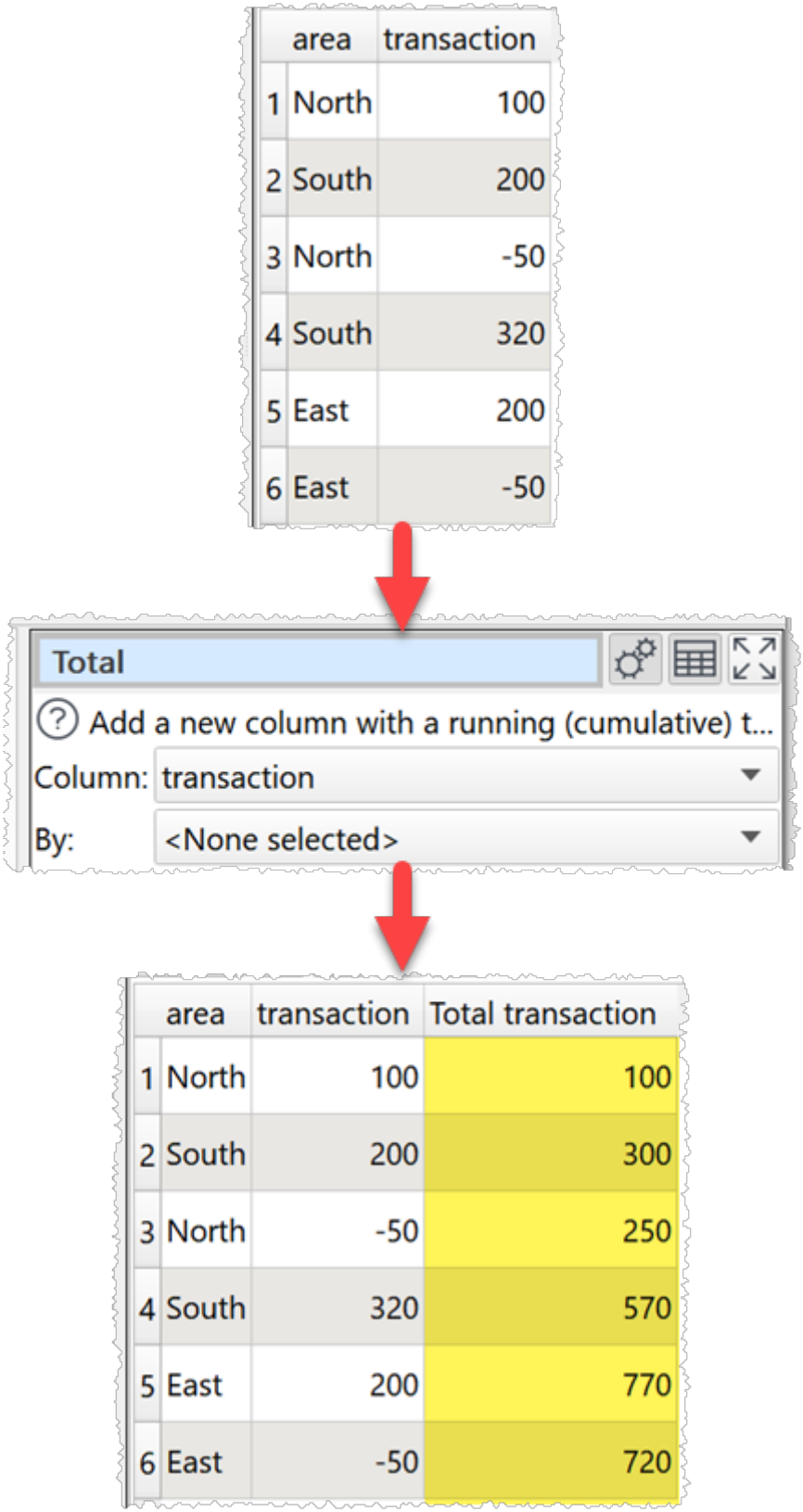

Total the 'transaction' column separately for each 'area' value:

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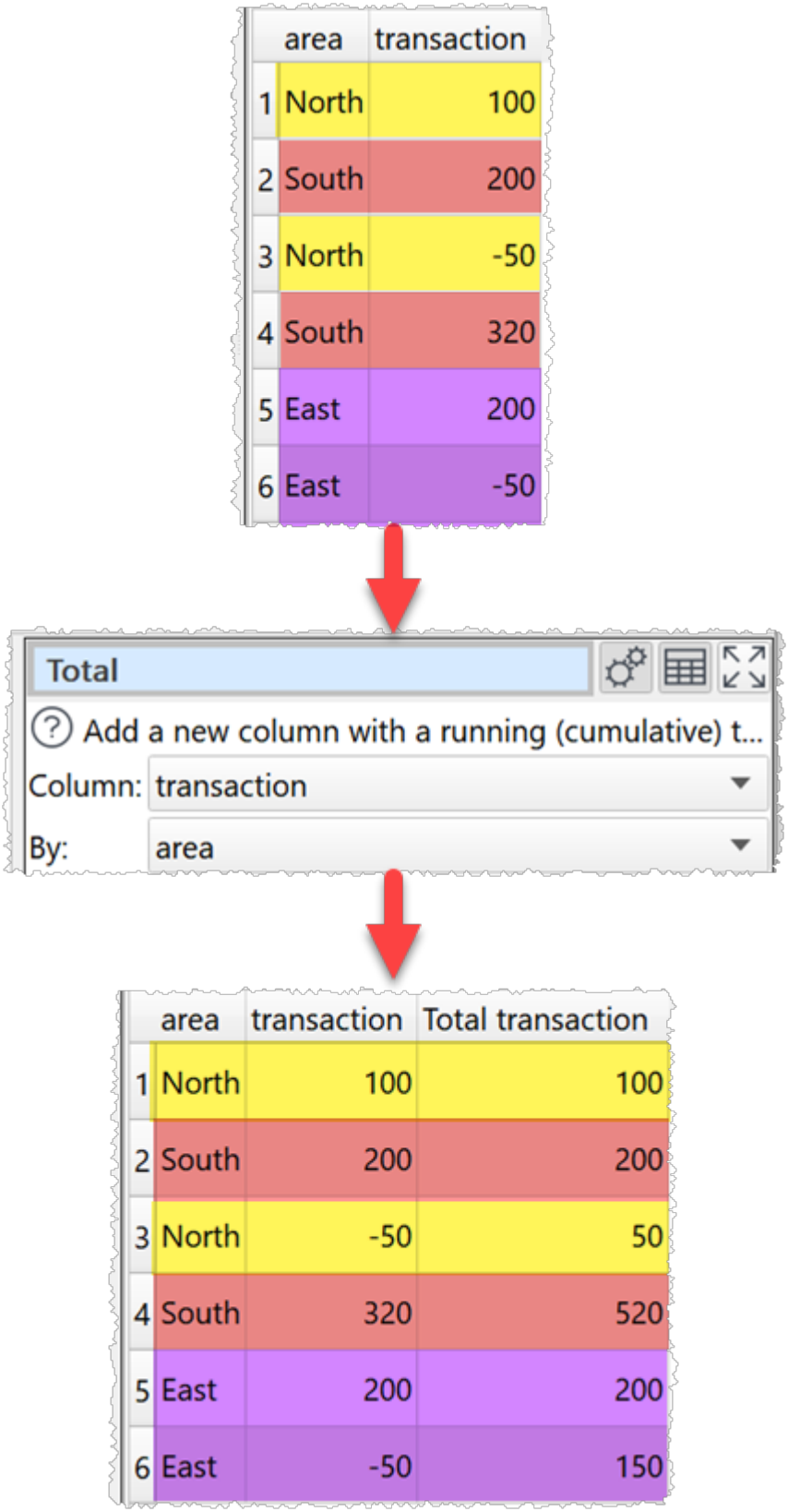

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Inputs

One.

Options

- Set **Column** to the column you want to total.
- Set **By** to a column if you want a separate running total per value in that column. Leave as **<None selected>** if you only want a single running total.

Notes

- Non-numerical values are ignored.
- The **By** column takes account of case and whitespace in values.
- The new column is added at the right end. You can change the column order with Reorder Cols and the column name with Rename Cols.

See also

- Count
- Pivot
- Stats

2.3.52 Transpose

Description

Swap (rotate) rows and columns, so that each row becomes a column and each column becomes a row.

Example

Swap rows and columns:

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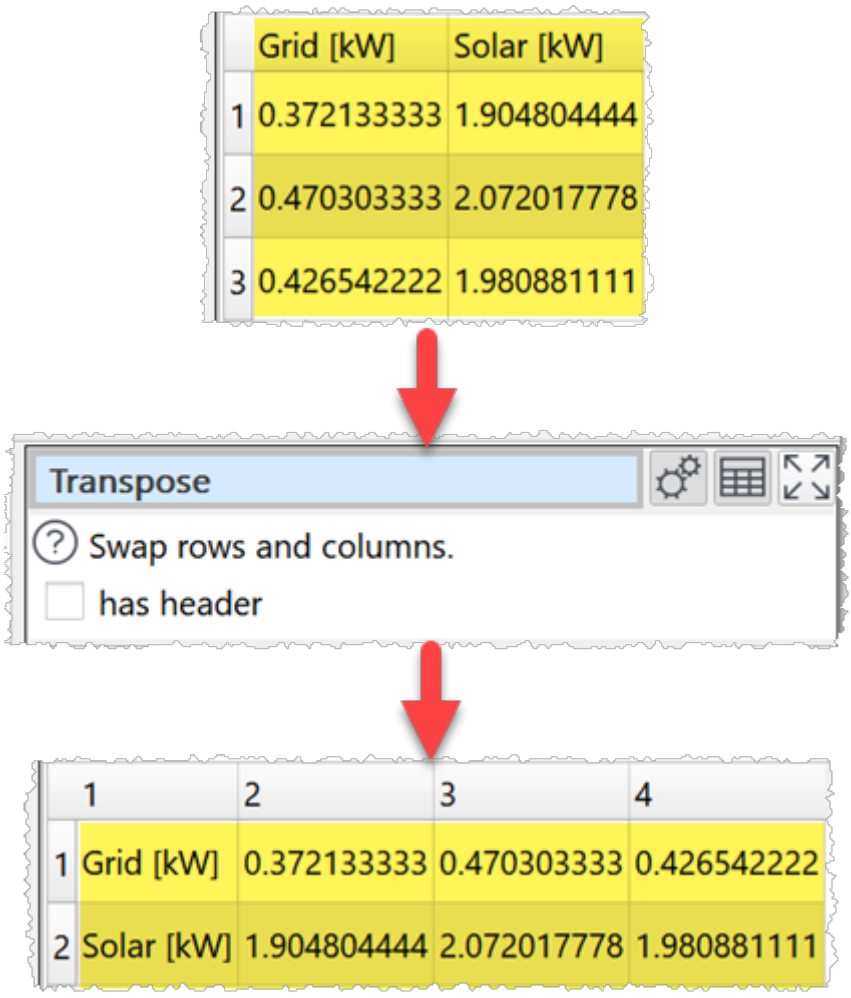

Inputs

One.

Options

- Check **has header** to make the new first row into a header (requires >1 row).

Notes

- If the input dataset has a header, it will become the new first column. Use Remove Cols to remove it.
- Datasets with very large numbers of columns can be slow to display.

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2.3.53 Trim (deprecated)

This transform is deprecated. Use Whitespace instead.

Description

Removes leading and trailing whitespace from one or more columns.

Inputs

One.

Options

- Check the column(s) you wish to transform.

2.3.54 Unique

Description

Remove duplicate rows based on keeping only unique values in selected columns

Example

If you have a dataset of orders and you want to:

- keep one row per unique Customer Id
- keep the first listed Name for each Customer Id
- concatenate Product Ids for each Customer Id, delimited by a comma
- sum the Costs for each Customer Id
- keep the latest Date for each Customer Id
- add a Count column showing how many rows in the input correspond to each row in the output

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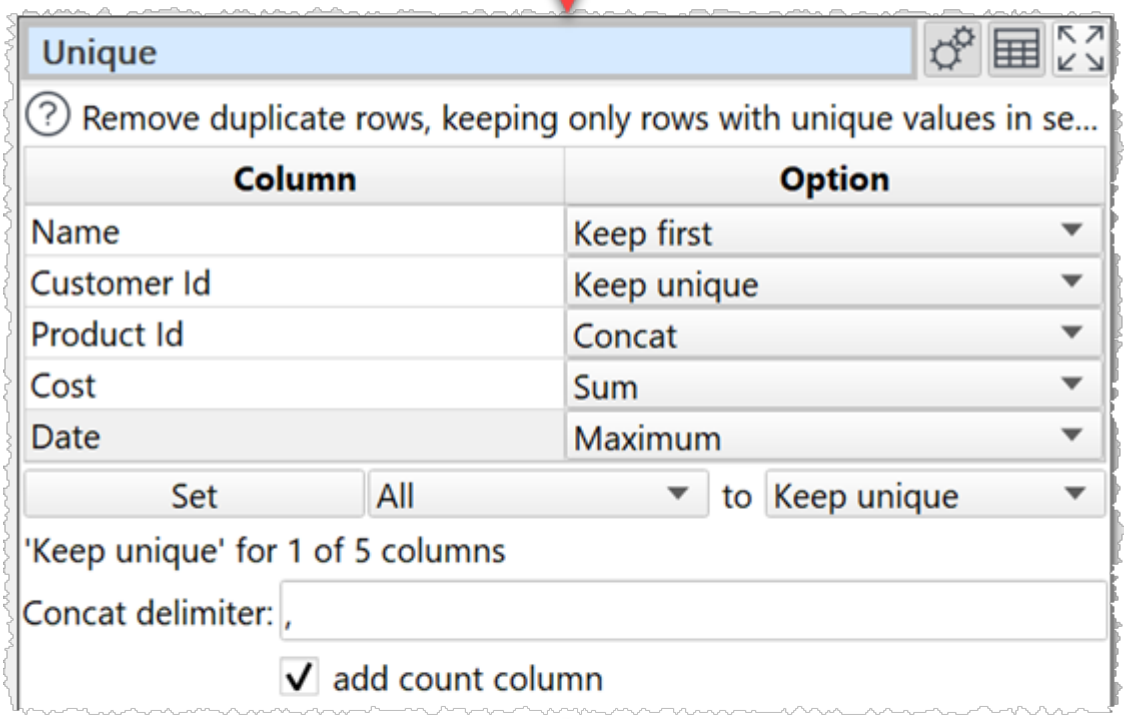
	Name	Customer Id	Product Id	Cost	Date
1	Alice Anderson	C018930	13574	29.95	01/10/2020
2	Bob Brown	C018917	89456	10.55	01/10/2020
3	Charlie Jones	C017783	96352	19.95	02/10/2020
4	Robert Brown	C018917	98526	10.00	02/10/2020
5	Charles Jones	C017783	38746	25.00	03/10/2020



	Name	Customer Id	Product Id	Cost	Date	Count
1	Alice Anderson	C018930	13574	29.95	01/10/2020	1
2	Bob Brown	C018917	89456,98526	20.55	02/10/2020	2
3	Charlie Jones	C017783	96352,38746	44.95	03/10/2020	2

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Inputs

One.

Options

- Set an **Option** for each column:
  - Only 1 row is kept where all the **Keep unique** columns have the same value.
  - **Keep first** keeps first value in the current sort order.
  - **Keep last** keeps the last value in the current sort order.
  - **Sum** sums any numerical values. Blank values are ignored.
  - **Maximum** keeps the maximum numerical or date value.
  - **Minimum** keeps the minimum numerical or date value.
  - **Average** takes the average (mean) of any numerical values. Blank values are ignored.
  - **Concat** to concatenate values. Duplicate values are kept. All values are treated as text.
  - **Concat unique** to concatenate values. Duplicate values are ignored. All values are treated as text.
- Use the **Set** button to quickly set the option value for multiple columns.
- Set **Concat delimiter** if you want to add a delimiter between **Concat** or **Concat unique** values
- Check **add count column** to add a column showing how many rows in the input dataset created each unique row.

Notes

- Rows are considered duplicates if they have exactly the same value in all the columns set to **Keep unique**. Comparisons are case and whitespace sensitive. You can use Case and Whitespace to change case and whitespace before deduping.
- If no columns are set to **Keep unique** the transform won't do anything.
- If you are using **Keep first** or **Keep last** the sort order is important. You can use Sort to change the sort order before deduping.
- The Dedupe transform is a less powerful (but simpler and faster) alternative to Unique.

See also

- Dedupe a dataset

2.3.55 Units

Description

Change units of time, length, temperature etc.

Example

Convert the 'Temperature' column from Celsius to Fahrenheit:

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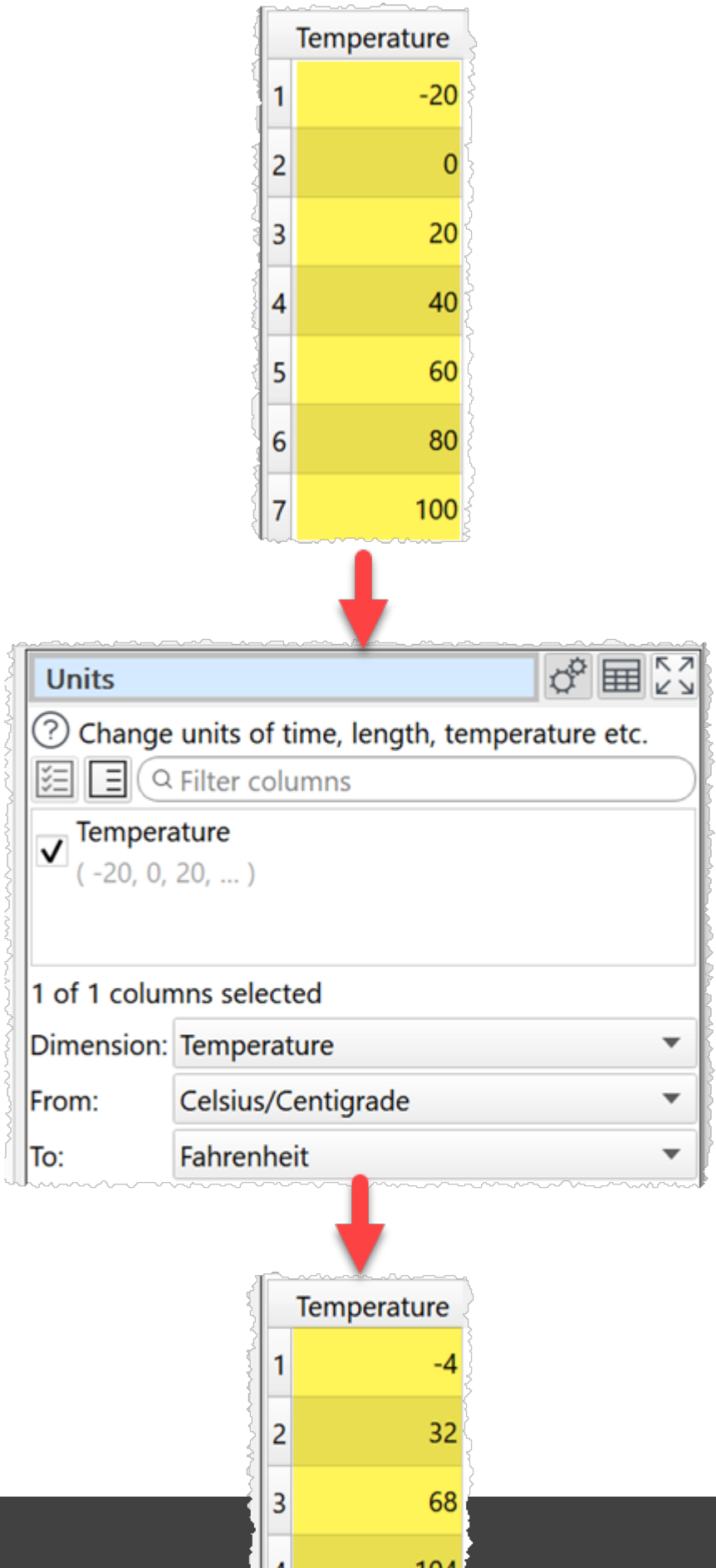

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Inputs
One.

Options
- Check the column(s) you wish to transform.
- Set **Dimension** to the dimensions of the units you wish to convert.
- Set **From** to the units you wish to convert from.
- Set **To** to the units you wish to convert to.

Notes
- The **Locale** set in the **Preferences** window is used to decide how the number is represented (e.g. decimal separators).
- Unit disambiguation:
  - **Years** are 365.25 days.
  - **Calories** are thermal/small/gram (not nutritional) Calories.
  - **Miles** are International/Statute Miles.
  - **Nautical miles** are International Nautical Miles.
  - **Gallons (US)** are liquid gallons.
  - **Pints (US)** are liquid pints.
- Warnings are shown in the **Warnings** tab for non-numeric values.
- Non-numerical and empty values are not changed.
- Use Copy Cols to copy columns before you transform them.
- Use Num Format to change the number format of the results.
- Use Extract or Split Col to remove any unit symbols from the value before conversion, e.g. to change "0.0 Kg" to "0.0".
- If you want to convert units not covered here you can do it using the Javascript transform.

2.3.56 Whitespace

Description
Tidy whitespace (spaces, tabs, carriage returns etc) in the selected column(s).

Example
Tidy tabs, carriage returns and repeated spaces:

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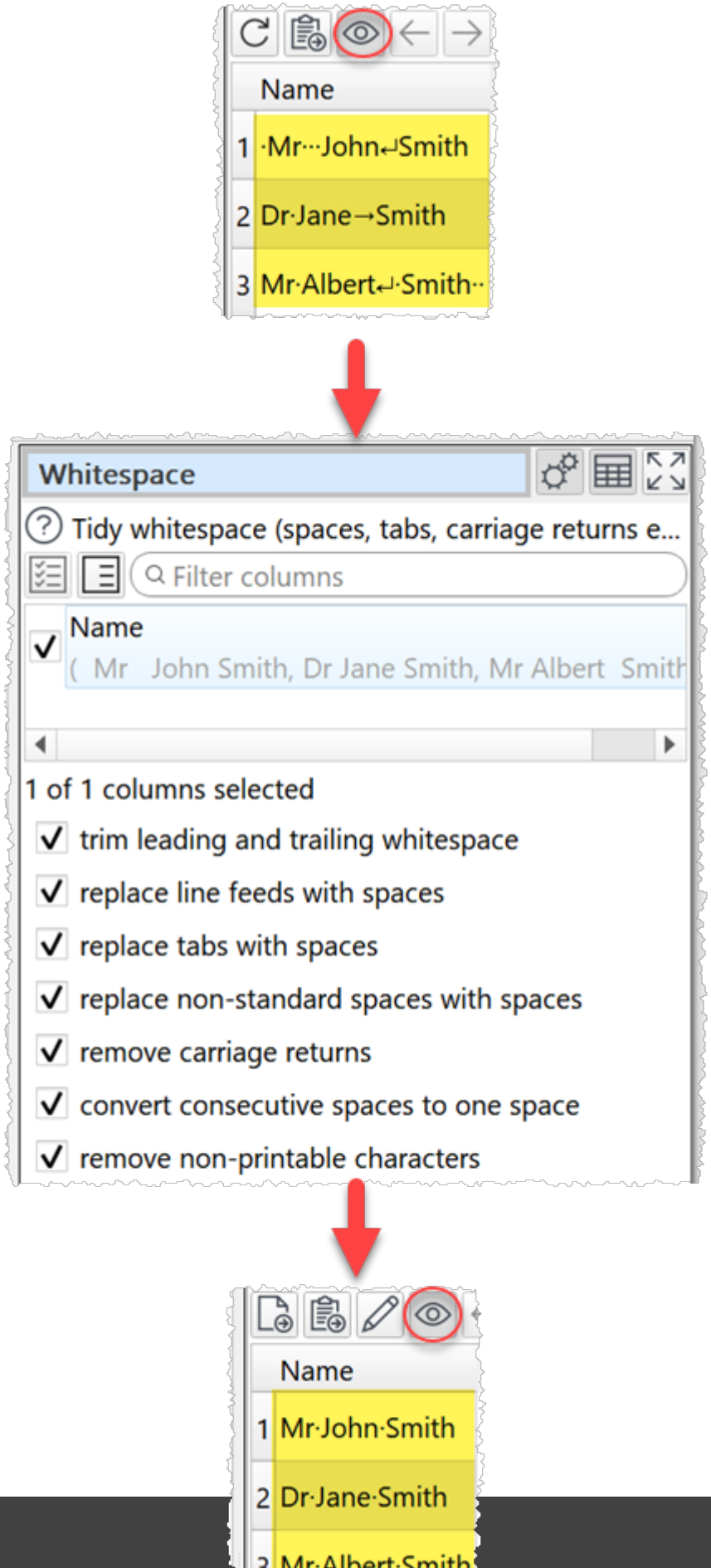

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Inputs

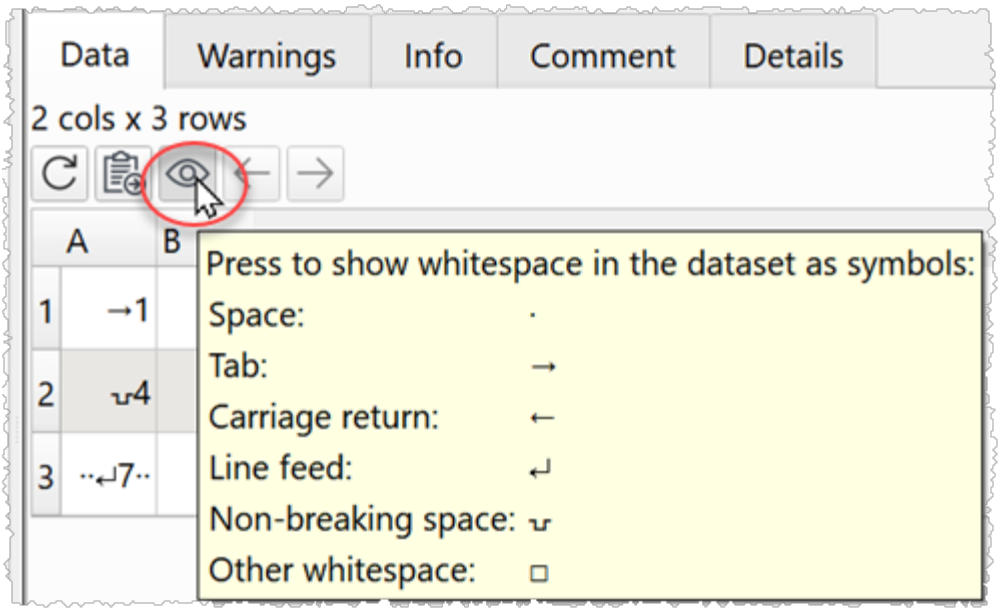
One.

Options

- Check the column(s) you wish to transform.
- Check **trim leading and trailing whitespace** to remove whitespace characters, such as space and tab.
- Check **replace line feeds with spaces** to replace LF (\n) characters with spaces.
- Check **replace tabs with spaces** to replace tab (\t) characters with spaces.
- Check **replace non-standard spaces with spaces** to replace non-standard spaces (such as non-breaking space, thin space etc) with spaces.
- Check **remove carriage returns** to remove CR (\r) characters.
- Check **convert consecutive spaces to one space** to replace 2 or more consecutive spaces with a single space.
- Check **remove non-printable characters** to remove characters of Unicode type Other_*. This include ASCII codes 0 to 31, such as tab, line feed, carriage return, bell and backspace. It does not remove spaces.

Notes

- The operations are carried out in top to bottom order, e.g. **Replace line feeds with spaces** is carried out before **Convert consecutive spaces to one space**.
- Click the eye icon in the **Right** pane to show whitespace in the data.



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See also

- Case

2.4 Output

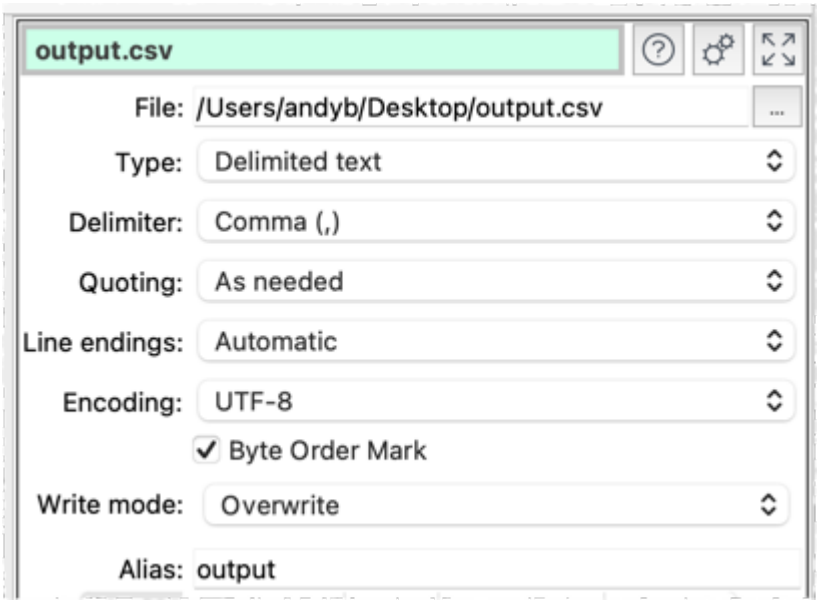
2.4.1 Output data

Once you have finished transforming your data you can output it in the following formats:

- CSV
- Excel
- JSON
- HTML
- Markdown
- TSV
- vCard
- XML
- YAML

To create an output, select 1 input and/or transform item in the **Center** pane and then click the **To File** button at the bottom of the **Left** pane. You can choose the file type in the file type drop-down list of the **Output** window.

You can select the output item in the **Center** pane and change any options related to the output in the **Right** pane.



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Set **File** to the location of the file you want to output. If you are writing to a .xls or .xlsx file the output will be written to a sheet called 'Easy Data Transform' by default. You can change this by adding the sheet name inside [], e.g. `myfile.xlsx[mysheet]`.

Set **Type** to the file type. The default type will be set according to the file extension and the settings in the **Output Extensions** tab of the **Preferences** window.

Set **Value types** depending on how you want to set JSON types (only available for JSON files).

- **Automatic** to let Easy Data Transform decide the JSON type depending on the contents of each column.
- **String** to set the JSON type for all columns to String
- **Manual** to choose the JSON type of each column as:
  - Automatic (based on column contents).
  - Boolean.
  - Number.
  - String.

If you output a column as Boolean or Number any values not of that type will be output as null.

Set **Delimiter** to the delimiter you wish to use (only available for delimited text files, such as CSV and TSV).

Set **Quoting** depending how you want to use quoting in the output (only available for delimited text files, such as CSV and TSV).

- **As needed** to add " quotes around values that contain the delimiter character, " characters or carriage returns.
- **Always** to add " quotes around every value.
- **Never** to never add " quotes around values (delimiters and carriage returns with values are replaced with spaces).

Set **Line endings** to the control characters you wish to use to denote line endings (only available for text files).

- **Automatic** to choose the standard line ending for the current operating system.
- **Windows (CRLF)** to choose the standard Windows line ending, carriage return+line feed (`\r\n`).
- **Mac\Unix (LF)** to choose the standard macOS/Unix line ending, line feed (`\n`).
- **Old Mac (CR)** to choose the standard classic (pre mac OS X) Mac line ending, carriage return (`\n`).

Set **Encoding** to the text encoding you wish to use (only available for text files).

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Set **Formatting** depending on how you want to set the Excel cell formatting (only available for Excel files).

- **Automatic** to let Easy Data Transform decide cell formatting depending on the contents of each column.
- **General** to set the cell format for all columns to 'General'.
- **Manual** to choose the cell format of each column as:
  - Automatic (based on column contents).
  - Boolean.
  - Date.
  - General.
  - Number.
  - Text.
  - Formula.

Note that formula values must start with =, or they will be output as text.

Set **Byte Order Mark** checked write a Unicode Byte Order Mark to the file (only available for UTF encodings and ignored when appending to an existing file).

Check **remove empty** to recursively remove any nodes that have an empty value and no children (only available for JSON and XML files). For example:

	A	A.B	A.B.C
1			
2		1	
3			1

Is output to XML with **remove empty** checked as:

```
<root>
  <record>
    <A>
      <B>1</B>
    </A>
  </record>
  <record>
    <A>
      <B>
        <C>1</C>
      </B>
    </A>
  </record>
</root>
```


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Is output to XML with **remove empty** unchecked as:

```
<root>
  <record>
    <A>
      <B>
        <C></C>
      </B>
    </A>
  </record>
  <record>
    <A>
      <B value="1">
        <C></C>
      </B>
    </A>
  </record>
  <record>
    <A>
      <B>
        <C>1</C>
      </B>
    </A>
  </record>
</root>
```

Set **Root name** and **Row name** depending on the name you want to use for the root and row XML records (only available for XML files).

Use **Write mode** to determine how existing files are treated:

Write mode for Excel files	**File exists with named sheet**	**File exists without named sheet**	**File does not exist**
Overwrite / File	Overwrite named sheet, delete all other sheets	Add named sheet, delete all other sheets	Create file with only named sheet
Overwrite / Sheet	Overwrite named sheet*	Add named sheet	Create file with only named sheet
Append	Append to named sheet	Add named sheet	Create file with only named sheet
New	Do nothing	Do nothing	Create file with only named sheet
Disabled	Do nothing	Do nothing	Do nothing

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*Overwriting a named sheet can cause the file size to increase each time. You can delete the file and re-output it if this becomes a problem.

Write mode for non-Excel files	**File exists**	**File does not exist**
Overwrite	Overwrite file	Create file
Append	Append to file	Create file
New	Do nothing	Create file
Disabled	Do nothing	Do nothing

Check **write header** to write the header (only available for Excel, Delimited text, HTML and Markdown files). If **Write mode** is **Append** you can check **if file empty** to only write the header if the file is currently empty or does not exist (and not for subsequent appends).

Use **Alias** to identify the file for batch processing.

Use **Comment** to record any notes that might be useful to a colleague or your future self.

2.5 File formats

2.5.1 File formats

Easy Data Transform supports the following data file formats:

Format	**Input**	**Output**
Delimited text (including CSV and TSV)	Yes	Yes
Excel XLSX/XLS	Yes	Yes
Fixed width	Yes	No
JSON	Yes	Yes
HTML	No	Yes
Markdown	No	Yes
Plain text	Yes	No
vCard	Yes	Yes

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Format	Input	Output
XML	Yes	Yes
YAML	No	Yes

You can manage the default file type for different file extensions in the **Input Extensions** and **Output Extensions** tabs of the **Preferences** window.

2.5.2 CSV format

Easy Data Transform can input from and output to CSV format files. Default file extension ".csv".

CSV (Comma Separated Value) format is commonly used for exchanging tabular data between programs.

CSV is a type of delimited text file format. The column delimiter is usually a comma, but not always. The row delimiter is line feed, carriage return or carriage return+line feed.

Easy Data Transform supports the following column delimiters:
- Comma (,)
- Semi-colon (;)
- Colon (:)
- Pipe (|)
- Caret (^)
- Tab (\t) (used for TSV format)
- Space ( )
- Custom (choose your own)

For files padded to fixed column widths with space see Fixed width format.

To output to a CSV file you should typically set **Delimiter** to **Comma (,)** and **Quoting** to **As needed** in the **Right** pane.

For example:

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	CategoryID	CategoryName	Description	In stock
1	1	Beverages	Soft drinks, coffees & teas	true
2	2	Condiments	Sweet and savory sauces	false
3	3	Confections	Candies and sweet breads	true

Is output with **Delimiter** set to **Comma (,)** and **Quoting** set to **As needed** as:

```
CategoryID,CategoryName,Description,In stock
1,Beverages,"Soft drinks, coffees & teas",true
2,Condiments,Sweet and savory sauces,false
3,Confections,Candies and sweet breads,true
```

Note that " quotes have been used to enclose values that contain delimiter characters.

Set **Quoting** to **Always** if you want to quote every value. Set **Quoting** to **Never** if you don't want to quote values (delimiters and carriage returns within values will be changed to spaces).

If you want to input a file with a different delimiter to those listed, then:
1. Input it with a delimiter unlikely to be in the text, e.g. caret (^), to input it as a single column
2. Use the Split Col transform to transform it into multiple columns using the appropriate delimiter.

Many CSV file are not well formed. For example, they have unescaped quotes. As the CSV format is not well-defined, badly formed CSV files can be interpreted in more than one way. Easy Data Transform will do the best it can in these circumstances.

See also TSV format.

2.5.3 Excel format

Easy Data Transform can input from and output to Excel ".xlsx" and ".xls" format files, even if you don't have Excel installed.

Excel format is the native format of the Microsoft Excel spreadsheet application. It is commonly used for exchanging tabular data.

You can specify the sheet name when inputting or output Excel files using square brackets, e.g. `MySpreadsheet.xlsx[Sheet1]` means sheet `Sheet1` of file `MySpreadsheet.xlsx`.

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You can specify how to format columns when outputting to Excel using the **Formatting** option.

Please note the following limitations of Excel:

- Excel .xlsx files are limited to 1,048,576 rows and 16,384 columns.
- Excel .xls files are limited to 65,536 rows and 256 columns.
- Date values are input using ISO date format YYYY-MM-DD, regardless of your locale.
- Datetime values are input using ISO date format YYYY-MM-DDTHH:MM:SS, regardless of your locale.
- The following characters are not allowed in sheet names: `\ / * [ ] : ?`

2.5.4 Fixed width format

Easy Data Transform can input from fixed width format files, also known as fixed column width format. Default file extension ".txt".

Fixed width format is used for exchanging tabular data between programs. It is often associated with legacy systems, but is also used for large files where performance is an issue (e.g. bioinformatics).

In fixed width format each column has a fixed width in characters. There is no column delimiter. Spaces are typically used as padding to make up the column width. The row delimiter is line feed, carriage return or carriage return+line feed. For example:

```
ID    Name          Payment   Country  Date
8904  John Black    12345.67  GB       08/20/2020
3999  Jane Brown    23456.78  US       08/20/2020
7489  Zadie Green   34567.89  DE       08/20/2020
```

Is input as:

	ID	Name	Payment	Country	Date
1	8904	John Black	12345.67	GB	08/20/2020
2	3999	Jane Brown	23456.78	US	08/20/2020
3	7489	Zadie Green	34567.89	DE	08/20/2020

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Easy Data Transform will analyze the data and guess the column layout if you set **Columns** in the right pane to **Automatic**. Or you can choose the column widths by setting **Columns** to **Manual**. Click the '...' button to edit the manual column widths.

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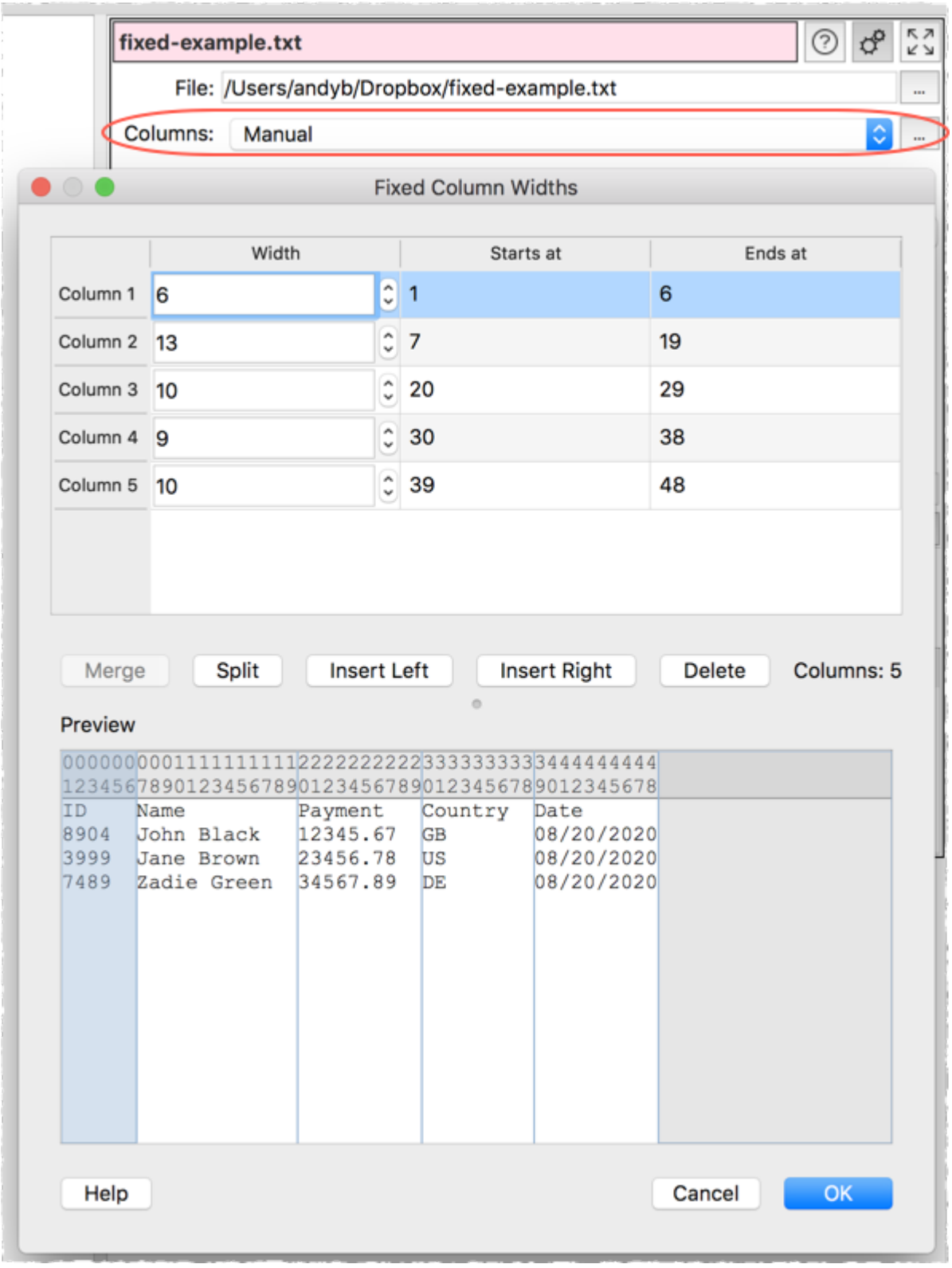

The current column boundaries are shown on the first few rows in the **Preview**. The horizontal offset of each character is shown in gray at the top. The currently selected

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columns are highlighted. Click on a column in the **Preview** to select it in the table, or vice versa.

You can change the column widths using the **Width** column of the table.

Select 2 or more adjacent columns and click **Merge** to merge them into 1 column. Click then Shift+click in either the table or the preview to select multiple adjacent columns.

Select 1 column with a **Width** > 1 and click **Split** to split into into 2 columns.

Select 1 or more adjacent columns and click **Insert Left** or **Insert Right** to add a new column with width 1 to the left or right of the selected columns.

Select 1 or more adjacent columns and click **Delete** delete the selected columns.

Click **OK** to save your changes and **Cancel** to discard them.

Unwanted columns and rows in the dataset can be removed after input using the Remove Cols and Filter transforms.

2.5.5 JSON format

Easy Data Transform can input from and output to JSON format files. Default file extension ".json".

JSON (JavaScript Object Notation) format is commonly used for exchanging data between programs. JSON data is generally expected to be in UTF8 encoding without a Byte Order Mark (BOM).

For example:

	CategoryID	CategoryName	Description	In stock
1	1	Beverages	Soft drinks, coffees & teas	true
2	2	Condiments	Sweet and savory sauces	false
3	3	Confections	Candies and sweet breads	true

Is equivalent to:

```
[
  {
    "CategoryID": 1,
```


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```
    "CategoryName": "Beverages",
    "Description": "Soft drinks, coffees & teas",
    "In stock": true
  },
  {
    "CategoryID": 2,
    "CategoryName": "Condiments",
    "Description": "Sweet and savory sauces",
    "In stock": false
  },
  {
    "CategoryID": 3,
    "CategoryName": "Confections",
    "Description": "Candies and sweet breads",
    "In stock": true
  }
]
```

The dot ('.') character is used in the column header to show nesting. For example:

	name	carb	cholesterol	fiber	minerals.ca	minerals.fe	protein	sodium	vitamins.a	vitamins.c
1	Avocado Dip	2	5	0	0	0	1	210	0	0

Is equivalent to:

```
[
  {
    "name": "Avocado Dip",
    "carb": 2,
    "cholesterol": 5,
    "fiber": 0,
    "minerals": {
      "ca": 0,
      "fe": 0
    },
    "protein": 1,
    "sodium": 210,
    "vitamins": {
      "a": 0,
      "c": 0
    }
  }
]
```

Any dots in JSON names are converted to hyphens ('-') on input.

JSON arrays can be input in either long or wide **Format**. For example:

```
[
   {
      "name": "1",
      "values": [ "a", "b" ]
   },
   {
```


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```
        "name": "2",
        "values": [ "c", "d" ]
    }
]
```

Input as **Long (more rows):**

	name	values
1	1	a
2	1	b
3	2	c
4	2	d

Input as **Wide (more columns)**:

	name	values.0	values.1
1	1	a	b
2	2	c	d

An input JSON format file is expected to have either:
- a single top-level array or object; or
- a single JSON object on each line (see jsonlines.org).
- a record separator character followed by a single JSON object on each line (see RFC7464).

You can specify the JSON type for each columns when outputting to JSON using the **Value types** option. Any values that do not match the type selected are output as a JSON null value.

2.5.6 HTML format

Easy Data Transform can output to tables in HTML format files. Default file extension ".html".

HTML (HyperText Markup Language) format is commonly used for creating web pages. If you don't need the data to take up a whole page, you can just copy the `<table>` to `</table>` part of the output.

For example:

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	CategoryID	CategoryName	Description	In stock
1	1	Beverages	Soft drinks, coffees & teas	true
2	2	Condiments	Sweet and savory sauces	false
3	3	Confections	Candies and sweet breads	true

Is output as:

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8"/>
    <title>C:\Users\andyb\Desktop\output.html</title>
    <style>table,td,th{border:1px solid black;text-align:left;vertical-align:top;borde
  </head>
  <body>
    <table>
      <tbody>
        <tr>
          <th>CategoryID</th>
          <th>CategoryName</th>
          <th>Description</th>
          <th>In stock</th>
        </tr>
        <tr>
          <td>1</td>
          <td>Beverages</td>
          <td>Soft drinks, coffees &amp;amp; teas</td>
          <td>true</td>
        </tr>
        <tr>
          <td>2</td>
          <td>Condiments</td>
          <td>Sweet and savory sauces</td>
          <td>false</td>
        </tr>
        <tr>
          <td>3</td>
          <td>Confections</td>
          <td>Candies and sweet breads</td>
          <td>true</td>
        </tr>
      </tbody>
    </table>
  </body>
</html>
```

2.5.7 Markdown format

Easy Data Transform can output to tables in Markdown format files. Default file extension ".md".

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Markdown format is commonly used as a human-friendly markup language, which can be automatically translated to HTML.

For example:

	CategoryID	CategoryName	Description	In stock
1	1	Beverages	Soft drinks, coffees & teas	true
2	2	Condiments	Sweet and savory sauces	false
3	3	Confections	Candies and sweet breads	true

Is output as:

```
| CategoryID | CategoryName | Description                 | In stock |
|------------|--------------|-----------------------------|----------|
| 1          | Beverages    | Soft drinks, coffees & teas | true     |
| 2          | Condiments   | Sweet and savory sauces     | false    |
| 3          | Confections  | Candies and sweet breads    | true     |
```

You can also use Markdown when you need a plain text version of your data, for example in a code comment.

Note that not all Markdown implementations support tables. If your implementation does not support tables, you may need to output to HTML instead.

2.5.8 Plain text format

Easy Data Transform can input from plain text format files. Default file extension ".log".

Plain text format is used for outputting semi-structured data, such as computer generated log files.

In plain text format the dataset is read into a single column. The row delimiter is line feed, carriage return or carriage return+line feed.

For example:

```
03/22 08:51:01 INFO   :..settcpimage: Associate with TCP/IP image name = TCPCS
03/22 08:51:02 INFO   :..reg_process: registering process with the system
03/22 08:51:02 INFO   :..reg_process: attempt OS/390 registration
03/22 08:51:02 INFO   :..reg_process: return from registration rc=0
```

Is input in plain text format as:

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	1
1	03/22 08:51:01 INFO :..settcpimage: Associate with TCP/IP image name = TCPCS
2	03/22 08:51:02 INFO :..reg_process: registering process with the system
3	03/22 08:51:02 INFO :..reg_process: attempt OS/390 registration
4	03/22 08:51:02 INFO :..reg_process: return from registration rc=0

2.5.9 TSV format

Easy Data Transform can input from and output to TSV format files. Default file extension ".tsv".

TSV (Tab Separated Value) format is commonly used for exchanging tabular data between programs.

TSV is a type of delimited text file format where values are separated by tab characters and rows by line feed, carriage return or carriage return+line feed. Tabs and carriage return are not allowed within data values, so there is no need for quoting or escaping delimiters, as with CSV files. This means that TSV files are generally a bit more compact and faster to read and write than CSV files.

To output to a TSV file you should set **Delimiter** to **Tab (\t)** and **Quoting** to **Never** in the **Right** pane. If you have a tab character or carriage return within a value, then Easy Data Transform will then convert it to a space on output.

For example:

	CategoryID	CategoryName	Description	In stock
1	1	Beverages	Soft drinks, coffees & teas	true
2	2	Condiments	Sweet and savory sauces	false
3	3	Confections	Candies and sweet breads	true

Is output with **Delimiter** set to **Tab (\t)** and **Quoting** set to **Never** as:

```
CategoryID  CategoryName      Description                 In stock
1           Beverages        Soft drinks, coffees & teas  true
2           Condiments       Sweet and savory sauces      false
3           Confections      Candies and sweet breads     true
```


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2.5.10 vCard format

Easy Data Transform can input from and output to vCard format files. Default file extension ".vcf".

VCard format is commonly used as way of exchanging contact details between programs.

Note that you need to change the column header names to the values expected by vCard (using the Rename Cols transform).

For example:

	N	FN	ORG	TEL;TYPE=WORK,VOICE	ADR;TYPE=WORK,PREF
1	Gump;Forrest;;Mr.;	Forrest Gump	Bubba Gump Shrimp Co.	(111) 555-1212	100 Waters Edge;Baytown;

Is equivalent to:

```
BEGIN:VCARD
VERSION:3.0
N:Gump;Forrest;;Mr.;
FN:Forrest Gump
ORG:Bubba Gump Shrimp Co.
TEL;TYPE=WORK,VOICE:(111) 555-1212
ADR;TYPE=WORK,PREF:100 Waters Edge;Baytown;LA;30314;United States of America
END:VCARD
```

2.5.11 XML format

Easy Data Transform can input from and output to XML format files. Default file extension ".xml".

XML (Extensible Markup Language) format is commonly used for exchanging data between programs.

For example:

	CategoryID	CategoryName	Description	In stock
1	1	Beverages	Soft drinks, coffees & teas	true
2	2	Condiments	Sweet and savory sauces	false
3	3	Confections	Candies and sweet breads	true

Is equivalent to:

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```
<?xml version="1.0" encoding="UTF-8"?>
<root>
  <record>
    <CategoryID>1</CategoryID>
    <CategoryName>Beverages</CategoryName>
    <Description>Soft drinks, coffees &amp;amp; teas</Description>
    <In-stock>true</In-stock>
  </record>
  <record>
    <CategoryID>2</CategoryID>
    <CategoryName>Condiments</CategoryName>
    <Description>Sweet and savory sauces</Description>
    <In-stock>false</In-stock>
  </record>
  <record>
    <CategoryID>3</CategoryID>
    <CategoryName>Confections</CategoryName>
    <Description>Candies and sweet breads</Description>
    <In-stock>true</In-stock>
  </record>
</root>
```

The dot ('.') character is used in the column header to show nesting. For example:

	name	carb	cholesterol	fiber	minerals.ca	minerals.fe	protein	sodium	vitamins.a	vitamins.c
1	Avocado Dip	2	5	0	0	0	1	210	0	0

Is equivalent to:

```
<?xml version="1.0" encoding="UTF-8"?>
<root>
  <record>
    <name>Avocado Dip</name>
    <carb>2</carb>
    <cholesterol>5</cholesterol>
    <fiber>0</fiber>
    <protein>1</protein>
    <sodium>210</sodium>
    <minerals>
      <ca>0</ca>
      <fe>0</fe>
    </minerals>
    <vitamins>
      <a>0</a>
      <c>0</c>
    </vitamins>
  </record>
</root>
```

Any dots in XML element names are converted to hyphens ('-') on input.

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The underscore ('_') character is used at the start of a column header name to identify it as an XML attribute. For example:

	_name	_carb	_cholesterol	_fiber	minerals.ca	minerals.fe	_protein	_sodium	vitamins.a	vitamins.c
1	Avocado Dip	2	5	0	0	0	1	210	0	0

Is equivalent to:

```
<?xml version="1.0" encoding="UTF-8"?>
<root>
  <record carb="2" cholesterol="5" fiber="0" name="Avocado Dip" protein="1" sodium="21
    <minerals>
      <ca>0</ca>
      <fe>0</fe>
    </minerals>
    <vitamins>
      <a>0</a>
      <c>0</c>
    </vitamins>
  </record>
</root>
```

Repeated XML values can be input in either long or wide **Format**. For example:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITEMS>
  <ITEM>
    <PARAM name="a" value="1"/>
    <PARAM name="b" value="2"/>
  </ITEM>
</ITEMS>
```

Input as **Long (more rows):**

	PARAM._name	PARAM._value
1	b	2
2	a	1

Input as **Wide (more columns)**:

	PARAM._value	PARAM._name	PARAM._value.1	PARAM._name.1
1	1	a	2	b

You are responsible for ensuring that the names of XML nodes and attributes are valid (e.g. start with a letter or underscore and do not contain spaces).

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2.5.12 YAML format

Easy Data Transform can output to YAML format files. Default file extension ".yaml".

YAML (YAML Ain't Markup Language) format is commonly used for exchanging data between programs and for configuration files.

For example:

	CategoryID	CategoryName	Description	In stock
1	1	Beverages	Soft drinks, coffees & teas	true
2	2	Condiments	Sweet and savory sauces	false
3	3	Confections	Candies and sweet breads	true

Is output as:

```
---
-
  CategoryID: 1
  CategoryName: Beverages
  Description: Soft drinks, coffees & teas
  In stock: true
-
  CategoryID: 2
  CategoryName: Condiments
  Description: Sweet and savory sauces
  In stock: false
-
  CategoryID: 3
  CategoryName: Confections
  Description: Candies and sweet breads
  In stock: true
```

2.6 Comments

You can manage the complexity of large .transform files adding comment text to:

- The **Comment** field of Note items. These are added to the center pane by right clicking and selecting **Note** from the menu. You can also set an **Arrow** direction and a **Color**. If you right click on an existing item, the Note item will be placed pointing to that item, if there is space. The comment will be shown as a tooltip when you hover over the Note item.

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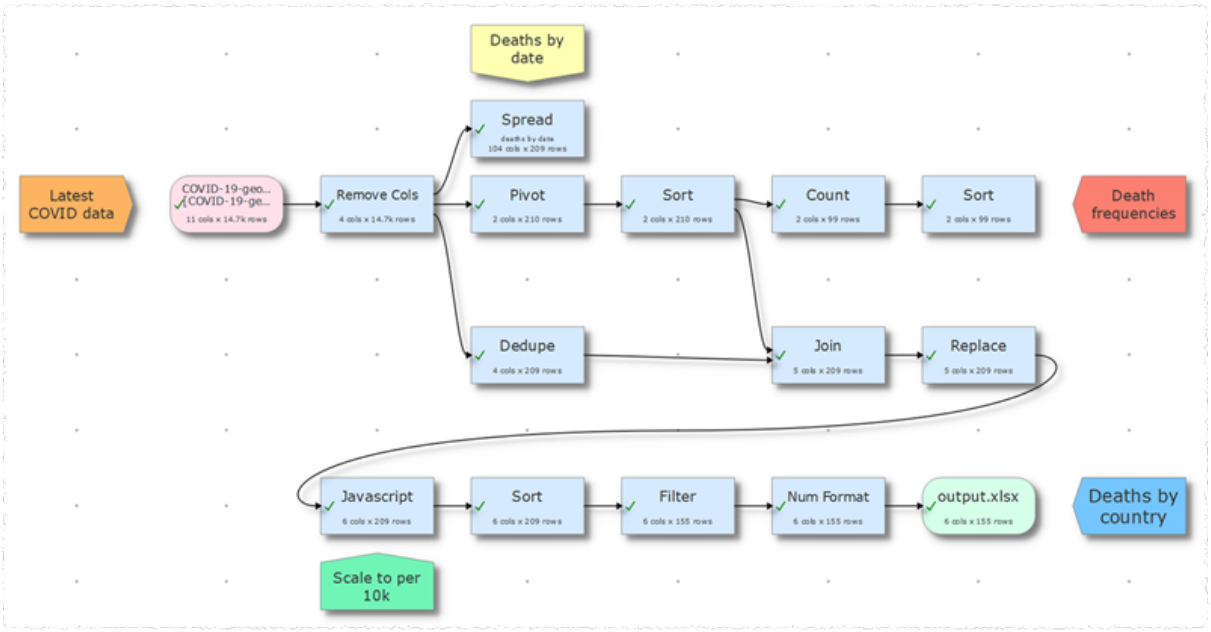

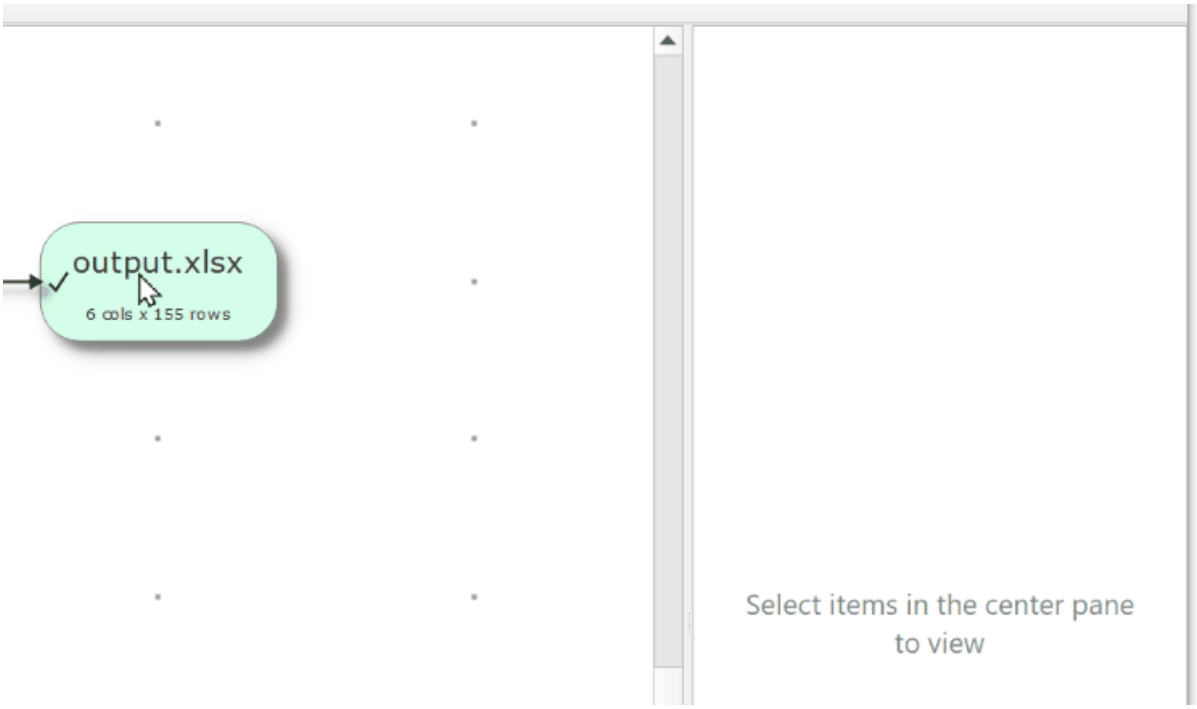

- The **Comment** tab of Input, Transform or Output items. Check **View>Show Comments** to show these comments in the center pane. The comment will be shown as a tooltip when you hover over the item.

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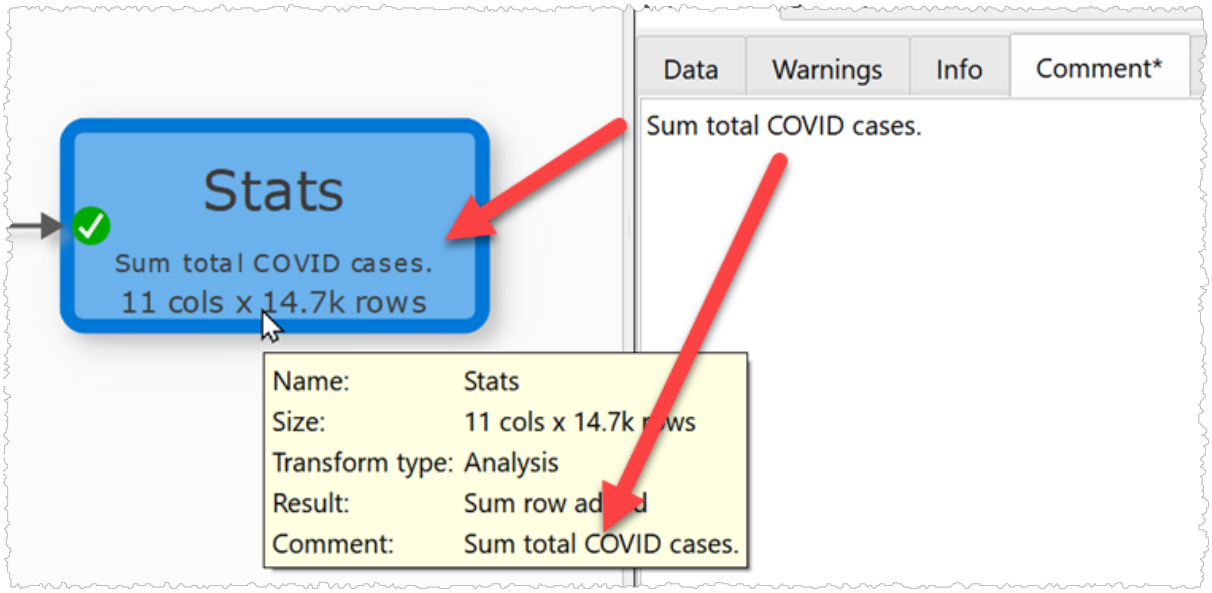

- In the **Notes** window that is displayed when you select **File>Notes...** from the main menu.

You can also group related items in the center pane to show that they are related.

2.7 Headers

If the first row of an input is a header (i.e. one that describes the columns below) check **has header** for that input in the **Right** pane.

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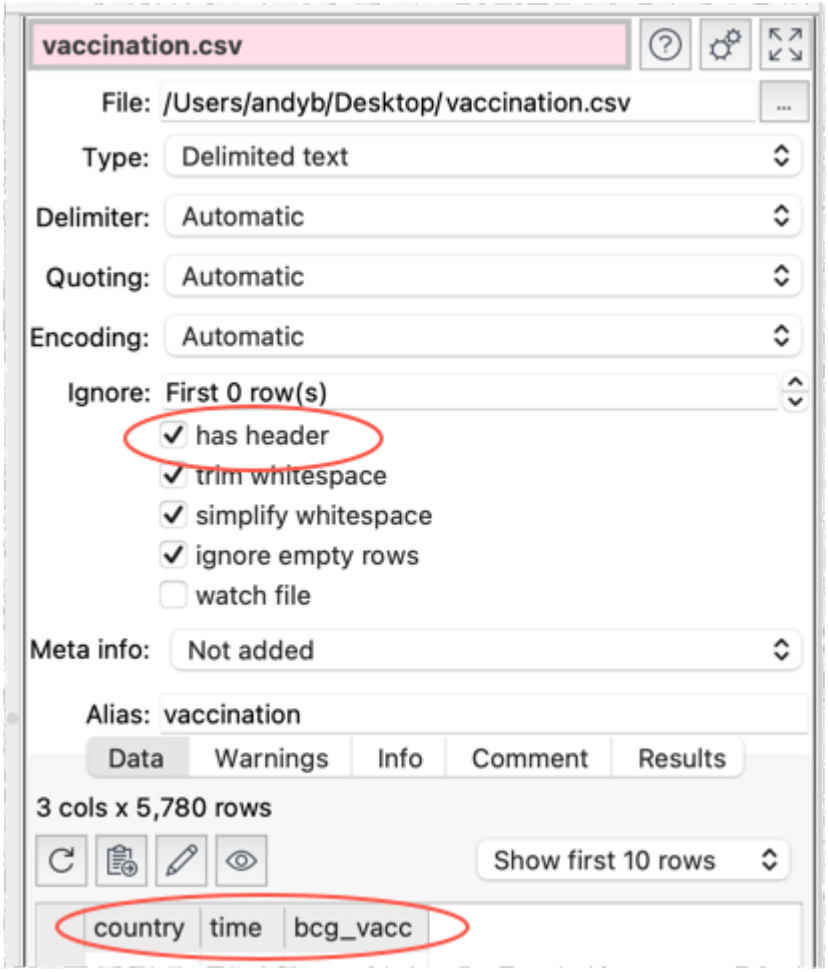

When you first read in a dataset Easy Data Transform will make a guess about whether the first row is a header (it will assume it is a header if it contains no dates or numbers).

You can move 1 or more dataset rows to the header using the Header transform.

2.8 Connections

When you select an input or transform item and add a transform or output item, connections are added automatically.

To select a connection

To select a connection either:

- Click on the connection; or
- Click and drag a box over any part of the connection. This may be easier than clicking the connection when you are zoomed back.

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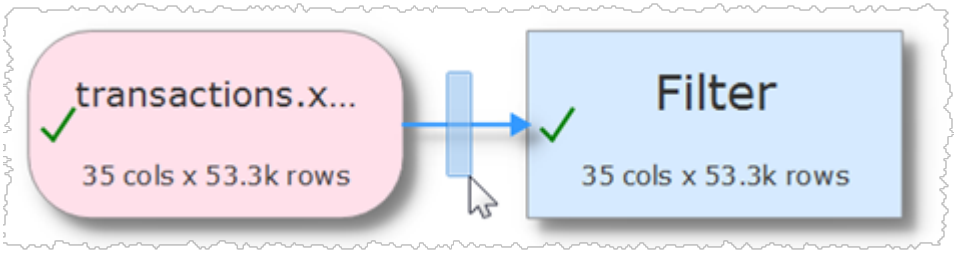


To delete a connection

To delete a connection:

- Select the connection.
- Select **Edit>Delete** (or click the **Delete** tool bar button).

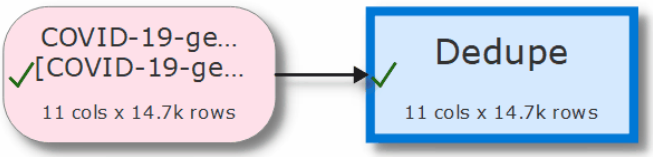
Note that deleting a connection may unset column related parameters downstream, so should generally be avoided where possible.

- If you want to change an input file, do it by selecting the input and clicking on '...' in the **Right** pane, rather than disconnecting the input and connecting a new one.
- If you want to add a new transform between 2 already connected items, you can do it without disconnecting (see below).

To add a transform to a connection

To add a transform between two already connected items:

- Select the connection.
- Choose the new transform from the **Left** pane or using the right click menu.



To add a connection

To add a new connection between two existing items:

- Hover over the start item.
- Click the '**+**' that appears.

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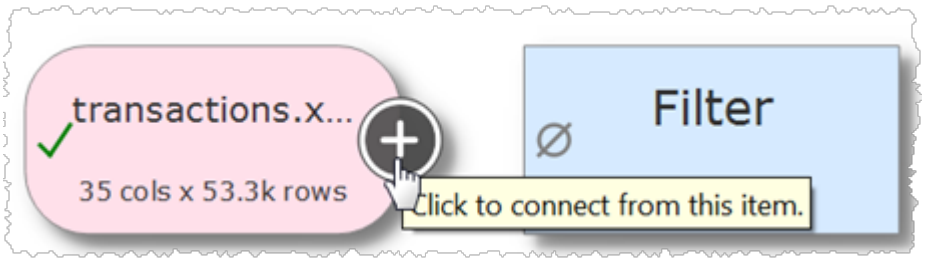
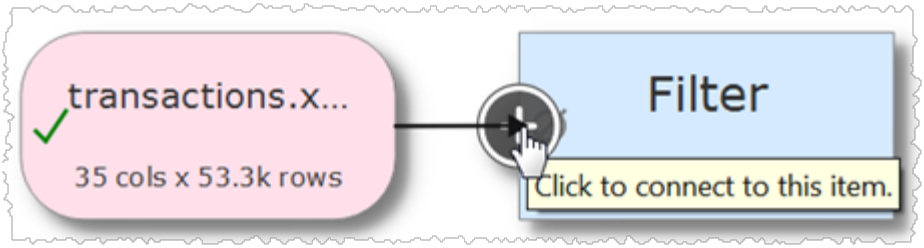


- Hover over the end item
- Click the '**+**' that appears.



Press the 'Esc' key or click away from an item to cancel adding the connection.

Note that the '**+**' will only appear if an additional connection is allowed. For example you can't:

- Create a loop.
- Connect more than once from a transform.
- Connect more than once to an output.

2.9 Text

Whitespace (such as Space and Tab characters) and capitalization are always significant, unless stated otherwise.

You can remove leading and trailing whitespace by checking **trim whitespace** in the Input or using the Whitespace transform.

You can change the case using the Case transform.

You can concatenate and split columns of text using the Concat Cols and Split Col transforms.

2.10 Dates

Set **Supported Date Formats** in the **Preferences** window according to how you want to interpret values as dates.

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Format	Meaning
d	The day as number without a leading zero (1 to 31)
dd	The day as number with a leading zero (01 to 31)
ddd	The abbreviated localized day name (e.g. 'Mon' to 'Sun'). Uses the system locale to localize the name.
dddd	The long localized day name (e.g. 'Monday' to 'Sunday'). Uses the system locale to localize the name.
M	The month as number without a leading zero (1 to 12).
MM	The month as number with a leading zero (01 to 12)
MMM	The abbreviated localized month name (e.g. 'Jan' to 'Dec'). Uses the system locale to localize the name.
MMMM	The long localized month name (e.g. 'January' to 'December'). Uses the system locale to localize the name.
yy	The year as two digit number (00 to 99).
yyyy	The year as four digit number. If the year is negative, a minus sign is prepended in addition.

For example:
- To support a date such as 31/1/2019 add a supported date format: d/M/yyyy
- To support a date such as 1-31-19 add a supported date format: M-d-yy

List the date formats in order of preference, with the most likely to be used first.

Dates with only two year digits, are treated as a date between 1900 and 1999. E.g. "31/1/19" is interpreted in d-M-yy format as 31st January 1919.

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Values that are in a recognized date format will be treated as dates in transforms such as: Calculate, Compare, Filter, If and Sort. Supporting large numbers of date formats will slow down these transforms.

You can change the format of dates using the Date Format transform.

You can do date calculations, such as calculating the number of days between 2 dates, using the Calculate or Javascript transform.

You can convert an ISO standard datetime (e.g. 2020-10-16T01:51) into separate date and time columns by using the Split Cols transform on the "T" delimiter.

2.11 Numbers

Set the **Locale** in the Preferences window according to how you want to interpret values as numbers. For example, if **Locale** is set to US or UK then "123.45" is a number and "123,45" isn't, and vice versa if **Locale** is Germany or France.

An integer is a whole number. E.g. "1.0" or "1,0" (depending on your **Locale**), "0", "-1" and "1e3" are considered integers.

You can change the format of numbers using the Num Format transform.

You can do numeric calculations, such as multiplying 2 columns, using the Calculate or Javascript transform.

2.12 Meta Information

You can add meta information to input data using the **Meta info** field in the **Right** pane when you select an input item. Set it to **At start**, **At end** or **Every row**, depending on where you want the meta information to appear. Then click on the ... button to edit which information you wish to show. The following placeholders are substituted by their actual values at the time of input.

Meta Information	Description	Example
`$(ComputerName)`	The name of the computer.	`MyComputer`
`$(CurrentDate)`	The current date, in ISO format.	`2020-08-18`

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Meta Information	Description	Example
`$(CurrentDateTime)`	The current datetime, in ISO format.	`2020-08-18T18:00:00`
`$(DataColumns)`	The number of columns in the dataset (not including meta data).	`10`
`$(DataRows)`	The number of row in the dataset (not including meta data).	`10,000`
`$(DataValues)`	The number of columns x rows in the dataset (not including meta data).	`100,000`
`$(FileCreatedDate)`	The date the file was created, in ISO format. Only available for file input.	`2020-08-18`
`$(FileCreatedDateTime)`	The datetime the file was created, in ISO format. Only available for file input.	`2020-08-18T18:00:00`
`$(FileName)`	The name of the file, including it's extension. Only available for file input.	`myfile.csv`
`$(FilePath)`	The full path (location) of the file.	`/Users/andy/Documents/myfile.csv`

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Meta Information	Description	Example
	Only available for file input.	
`$(FileSizeBytes)`	The size of the file in bytes. Only available for file input.	`1,234,567`
`$(FileUpdatedDate)`	The date the file was last updated, in ISO format. Only available for file input.	`2020-08-18`
`$(FileUpdatedDateTime)`	The datetime the file was last updated, in ISO format. Only available for file input.	`2020-08-18T18:00:00`
`$(UserName)`	The name of the user (from the USER or USERNAME environment variable).	`Andy`

2.13 Column variables

Some transforms allow you to use the values of columns on the same row using column variables. Column values can be referenced either:

- By column header name, e.g. `$(item cost)` for the 'item cost' column; or
- By column index, e.g. `$(1)` for the first column.

Notes:
- The column name is case sensitive.
- Whitespace at the start or end of the column name is ignored.
- If multiple columns have the same name, the first from the left will be used.
- Reference by name takes priority over reference by index. For example, if there is a column named "1" then `$(1)` will refer to that rather than the first column.

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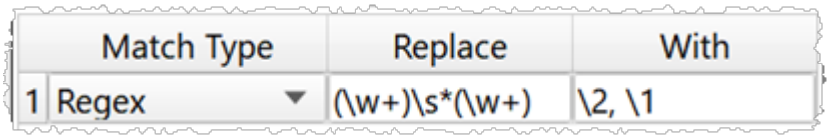
2.14 Regular expressions

Easy Data Transform allows the use of regular expressions in the Filter, If, Replace, Slice and Split Rows transforms. It is also available as part of the Javascript language in the Javascript transform.

Regular expressions are a powerful way to match patterns in text (including text representation of dates and numbers). For example, you can use a regular expression in the Replace transform to swap first and last names:

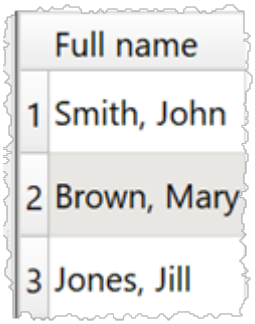


	Match Type	Replace	With
1	Regex	(\w+)\s*(\w+)	\2, \1

Turns:

	Full name
1	John Smith
2	Mary Brown
3	Jill Jones

Into:



	Full name
1	Smith, John
2	Brown, Mary
3	Jones, Jill

Regular expressions are far too big a topic to cover here. However there are many detailed resources online, such as www.regular-expressions.info and regexr.com.

2.15 Batch processing

To apply the current transform template file to multiple input files select **File>Batch Process...** . The **Batch Process** window will appear with a column for each input item and a column for each output item. The **Alias** for each item is displayed in the column header.

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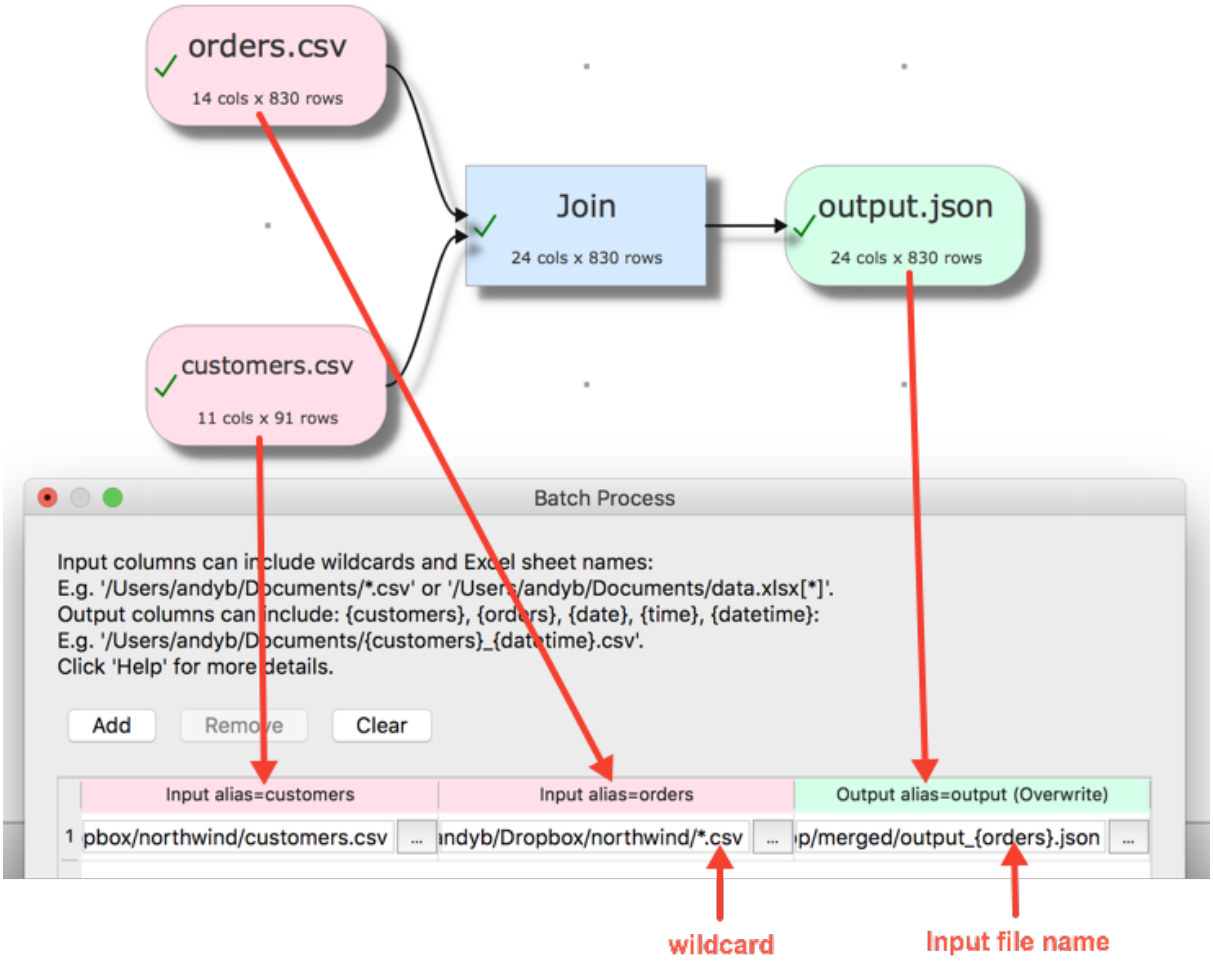

Note:

- All input and output items must have an alias.
- An output item can't have the same alias as another output or input item.
- Output items with **Write mode**=Disabled are not shown.

Click **Add** to add a new processing row.

Click **Remove** to remove the selected processing row(s).

Click **Clear** to remove all processing rows.

In the (pink) input column you can use * and ? wildcards for file name stems, file extensions and Excel sheet names. E.g.:

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Input	Description
`/Users/andy/Documents/*.csv`	All files with extension .csv in the Documents folder
`/Users/andy/Documents/d?.csv`	All the files with name 'd' plus a single character in the Documents folder
`/Users/andy/Documents/data.xlsx[*]`	All the sheets in data.xlsx in the Documents folder
`/Users/andy/Documents/*.xlsx[data*]`	All the sheets beginning with 'data' in all the .xslx files in the the Documents folder

Note:

- If there is more than 1 input column that specifies multiple files or sheets, then an output will be created for each possible permutation of input files/sheets in the row. E.g. 3 input files from column 1 x 4 sheets from column 2 = 12 outputs to process.
- Excel sheet names are not case sensitive.
- You cannot use wildcards for folder names.
- Batch processing will ignore files in sub-folders.
- All the files input to an input item or output from an output item should be the same file type as the original.

In the (green) output column you can use the following variables to create your output file name:

Output variable	Meaning	Example
`{<input alias>}`	The name of the input file being processed in the column with the corresponding alias.	If input alias 'orders' is using file
`{date}`	Date processing was carried out in	2020_04_18

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	year_month_day format	
`{time}`	Time processing was carried out in hours_minutes_seconds_milliseconds format	15_21_56_599
`{datetime}`	Date/Time processing was carried out in year_month_day_hours_minutes_seconds_milliseconds format format	2020_04_18_15_21_56_599

Whether an ouput file is created, overwritten or appended to depends on the **Write mode** of the output item.

Click **Process** to start processing the rows.

Click **Stop** to stop processing the rows.

Click **Close** to close the window.

See also:
- Batch processing examples
- Command line arguments

2.16 Command line arguments

Easy Data Transform accepts the following command line arguments:

Argument	Description
`<file name>`	The .transform file to open at start-up.
`-cli`	Close the application once any processing on the opened file is complete.
`-file <alias>=<location>`	Sets the input or output file with the given alias to the location (path) specified. Input Excel files should include the sheet name, e.g. `file.xlsx[sheet]`. Output Excel files may optionally include a sheet name. The file type should be the same as the original.

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Argument	Description
`-new_window`	Don't load the last opened .template file, even if **open previous file at start-up** is checked in **Preferences**.
`-verbose`	Output additional information to the terminal.

This allows you to process .transform files in batch mode. For example:

To run `/Users/andy/Documents/myfile 1.transform` with the output with alias `output1` output inste

```
/Applications/EasyDataTransform.app/Contents/MacOS/EasyDataTransform /Users/andy/Docu
```

To run `/Users/andy/Documents/myfile2.transform` with the input with alias `input1` input instead fro

```
/Applications/EasyDataTransform.app/Contents/MacOS/EasyDataTransform /Users/andy/Docu
```

You can also use the Mac 'open' command:

```
open /Applications/EasyDataTransform.app --args /Users/andy/Documents/myfile\ 1.transf
open /Applications/EasyDataTransform.app --args /Users/andy/Documents/myfile2.transfo
```

But note that no command line output is shown if you use 'open'.

Put single quotes (') around any arguments with spaces or a backslash (\) in front of each space (as shown in the examples above).

To do this on a schedule, call a script file from a scheduling program, such as launchd.

See also:
- Batch processing

2.17 .transform files

.transforms file are stored in a simple XML format. So you can edit them with a standard text editor. However we recommend you make a copy first.

The results of transformations are not stored in the .transform file, and are recalculated whenever you **File>Open...** the file.

The contents of Input and Output files are not stored in the .transform file, only their locations. These locations are stored as 'absolute' locations, so you can move the .transform file without changing the locations of the Input and Output files.

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If you open a .transform file in a different location from that in which it was saved and it can't find Input and Output files at the expected location it will look for them in the same location relative to the old .transform file. This allows you to easily move .transform files to different locations and computers if you keep the Input and Output files in the same relative location (e.g. in the same folder as the .transform file). This even works between Windows and Mac (and vice versa),

Example:

- `mytransform.transform` is in `C:\Users\andy\Documents\` on Windows and uses Input file `MyData.csv` in sub-folder `MyData` (`C:\Users\andy\Documents\Data\MyData.csv`).
- `mytransform.transform` is moved to `/Users/Bob/Documents/EDT` on a Mac.
- When `mytransform.transform` is opened it will look for `MyData.csv` in `/Users/andy/Documents/Data`.
- If it can't find that it will look for `MyData.csv` in sub-folder `MyData` (`/Users/Bob/Documents/EDT/Data/MyData.csv`).

If you paste in data **From Clipboard** this is stored in the .transform file. We don't recommend you do this for large datasets as XML is not very efficient for storing large amounts of data.

2.18 Keyboard shortcuts

Using keyboard shortcuts can improve your productivity. If you are using Easy Data Transform a lot we suggest you find the time to learn at least some of them. The following keyboard shortcuts are available for the Mac version of Easy Data Transform:

Key	Shortcut	Action
A	`Cmd+A`	Select all in **Center** pane.
B	`Cmd+B`	Show the **Batch Process** window.
D	`Cmd+D`	Duplicate the selected branch in the **Center** pane.
F	`Ctrl+Cmd+F`	Toggle setting **Right** pane item to fullscreen. Only works if 1 item in **Right** pane.

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Key	Shortcut	Action
I	`Option+I`	Input From File.
	`Option+Shift+I`	Input From Clipboard.
N	`Cmd+N`	New .transform file.
O	`Cmd+O`	Open .transform file.
	`Cmd+Shift+O`	Show the **Open Recent** window.
	`Option+O`	Output To File.
S	`Cmd+S`	Save .transform file.
T	`Cmd+T`	Toggle two screen mode on/off
U	`Cmd+U`	Toggle user interface between light and dark themes (if available).
Z	`Cmd+Z`	Undo
	`Cmd+Shift+Z`	Redo
Backspace	`Backspace`	Delete selected item(s) in **Center** pane.
,	`Cmd+,`	Show **Preferences** window.
=	`Cmd+=`	Zoom **Center** pane so all items fit.
+	`Cmd++`	Zoom **Center** pane in.
-	`Cmd+-`	Zoom **Center** pane out.
[	`Option+[`	Move keyboard focus to **Center**

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Key	Shortcut	Action
		pane.
]	Option+]	Move keyboard focus to **Right** pane.
Left arrow	Cmd+Left arrow	Move **Center** pane selection from item to highest[1] item that inputs to it.
Right arrow	Cmd+Right arrow	Move **Center** pane selection from item to highest[1] item that it outputs to.
Up arrow	Cmd+Up arrow	Move **Center** pane selection from item to highest[1] sibling[3].
Down arrow	Cmd+Down arrow	Move **Center** pane selection from item to lowest[2] sibling[3].
1...9	Cmd+1...Cmd+9	Select input item 1 to 9 (based on height in **Center** pane).
	Option+1...Option+9	Select output item 1 to 9 (based on height in **Center** pane).
F1	F1	Show help.

[1] Highest=nearest the top of the **Center** pane.
[2] Lowest=nearest the bottom of the **Center** pane.
[3] Two items are considered siblings if they have inputs from the same item(s) or they both have no inputs.

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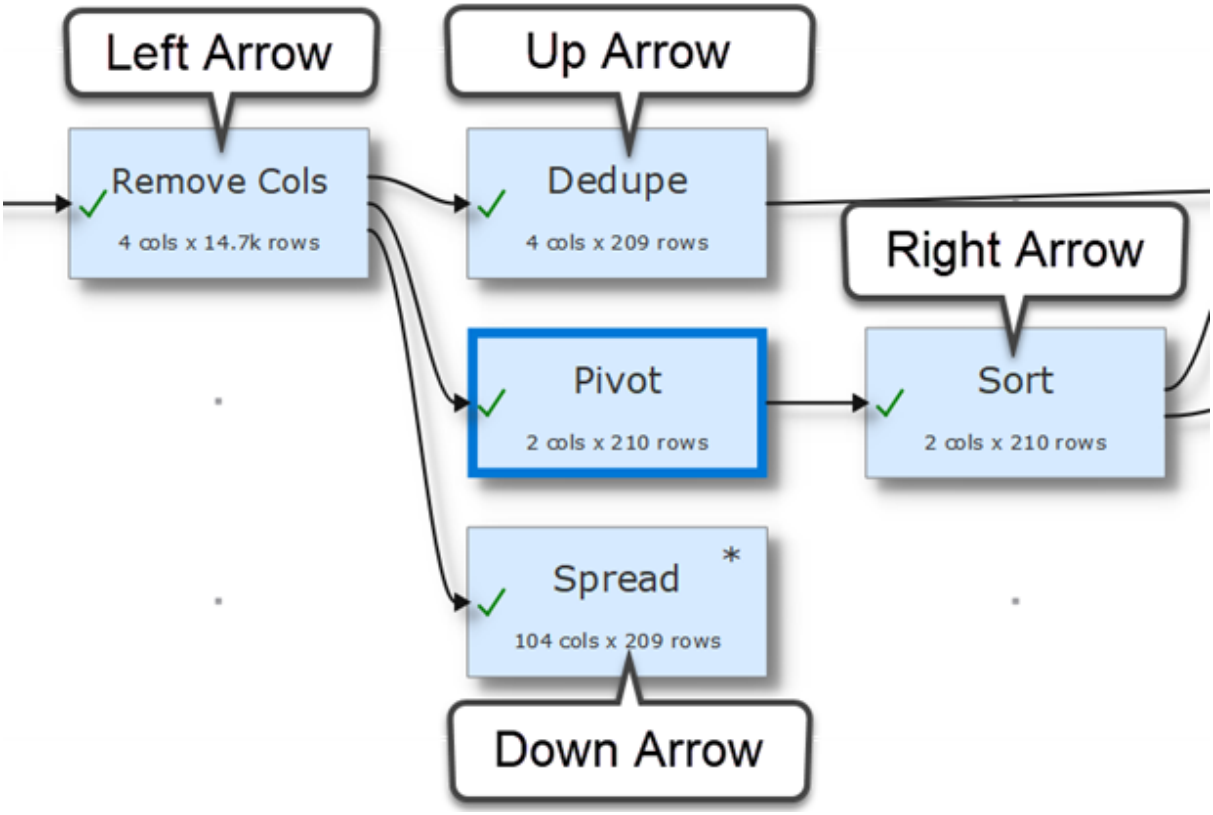
You can also use the keyboard to add transforms in the **Center** pane. Just select the item(s) you want to add the transform to and start typing the name. Only eligible transform that contain the typed letters will be displayed (spaces are ignored).

For example, to add the **Rename Cols** transform an existing Input item:

- select the input items
- type `ren`
- press the `Return` key

If you want to see a list of all the transform names, press the `Space` key before you start typing. You can use the `Del` or `Backspace` key to undo letters typed.

You can quickly change selection in the **Center** pane using arrow keys with the `Cmd` key.



If you are zoomed in you can scroll the Center pane by pressing the `Shift` key and dragging the canvas.

2.19 Dark mode

Select **View>Toggle UI Theme** to swap between light and dark user interface themes. You can also change the **Center** color scheme in the **Colors** tab of the **Preferences** window.

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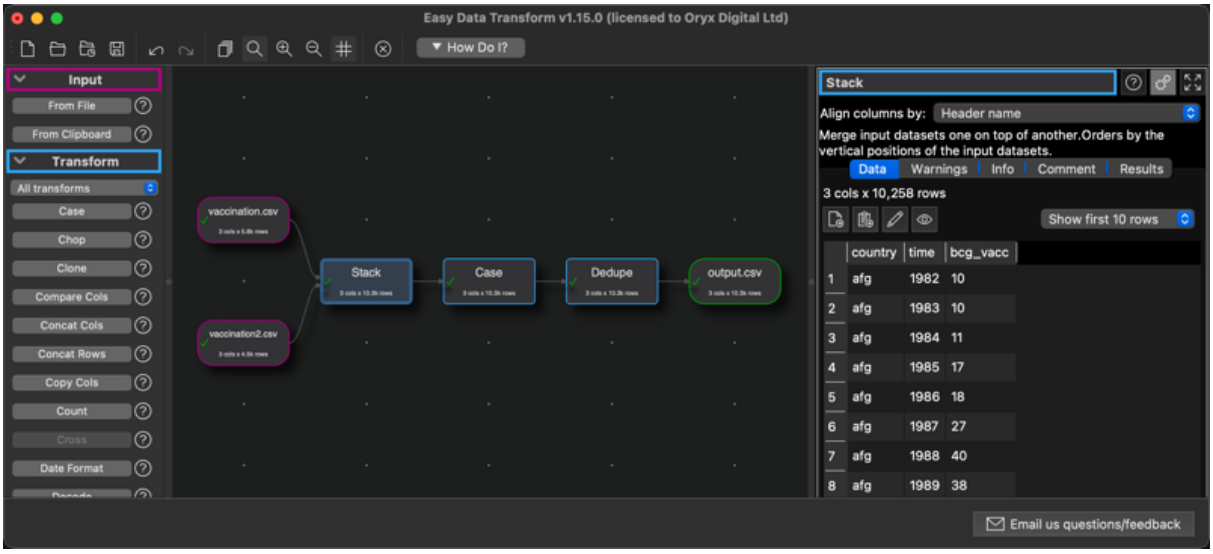

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How do I?

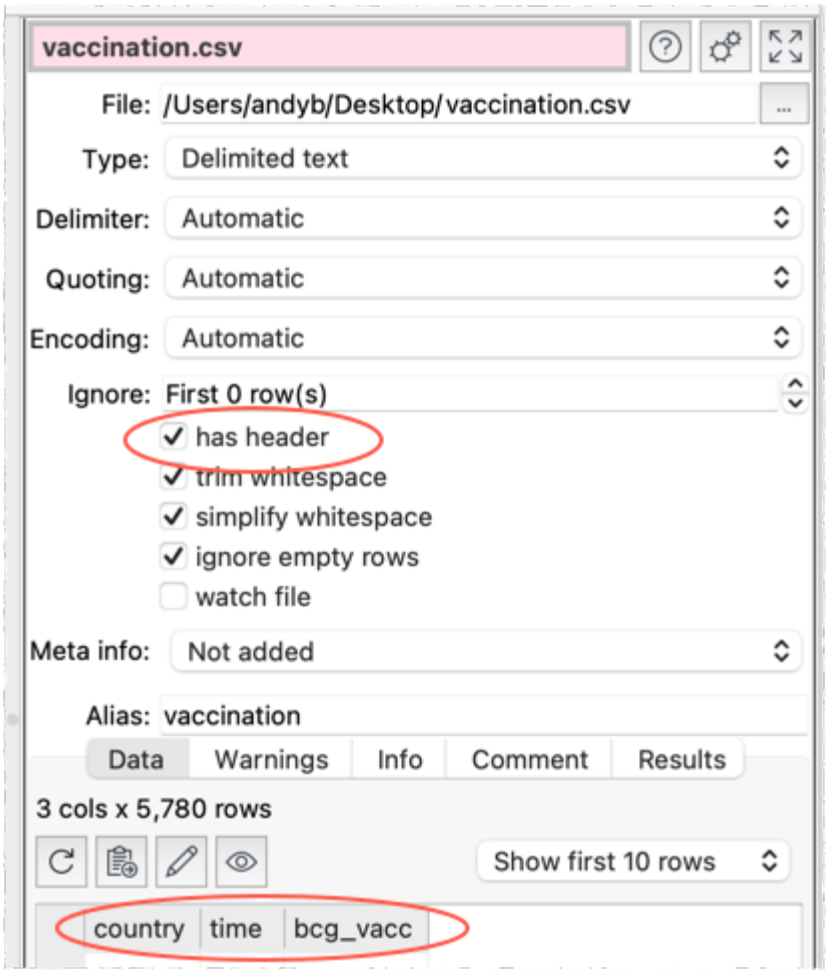
3 How do I?

3.1 Add a transform between existing items

To add a new transform between existing items (e.g. between 2 already connected transforms) see connections.

3.2 Add or remove a header

To add or remove a header just check or uncheck the **has header** checkbox for the appropriate input item.



You can also make the first row of your dataset into a header using the Header transform.

3.3 Change a connection

To change a connection see connections.

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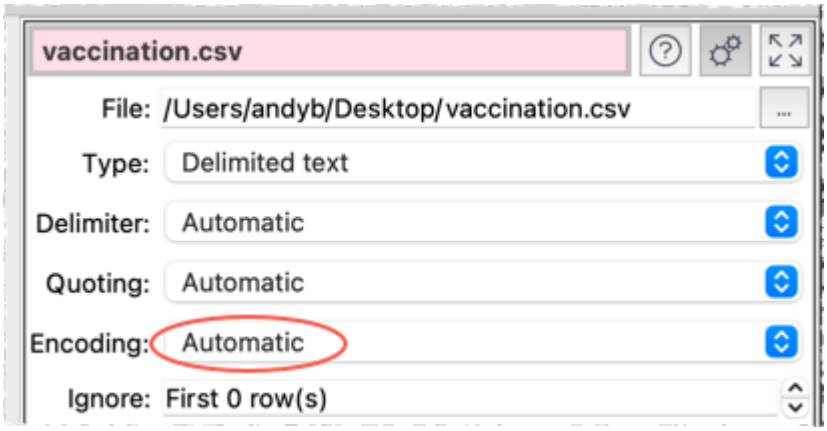
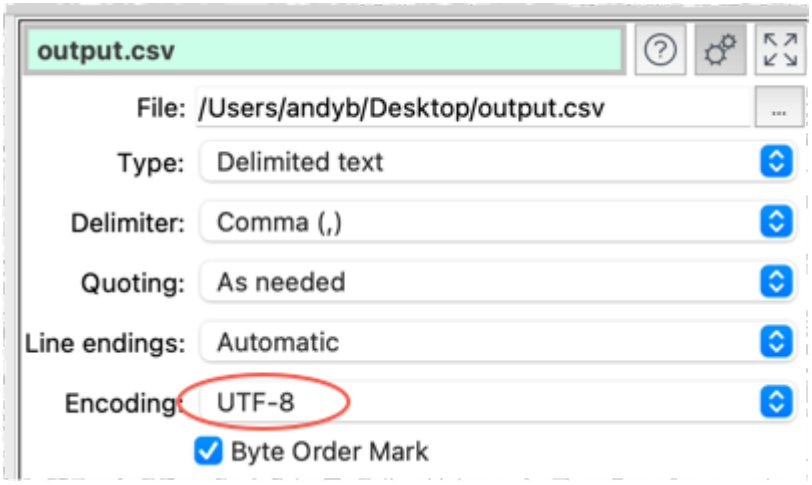
3.4 Change encoding

When Easy Data Transform inputs a text file (e.g. a CSV file) it will make a guess at the encoding. You can explicitly set the encoding by selecting an input item and changing **Encoding** from **Automatic** to one of the other encodings in the **Right** pane.



Similarly you can also set the encoding of a text file output by selecting the output item and changing **Encoding** in the **Right** pane.



3.5 Duplicate a series of transforms

To duplicate multiple items in the center pane (e.g. a sequence of transforms) right click on the first item and select **Duplicate Branch**.

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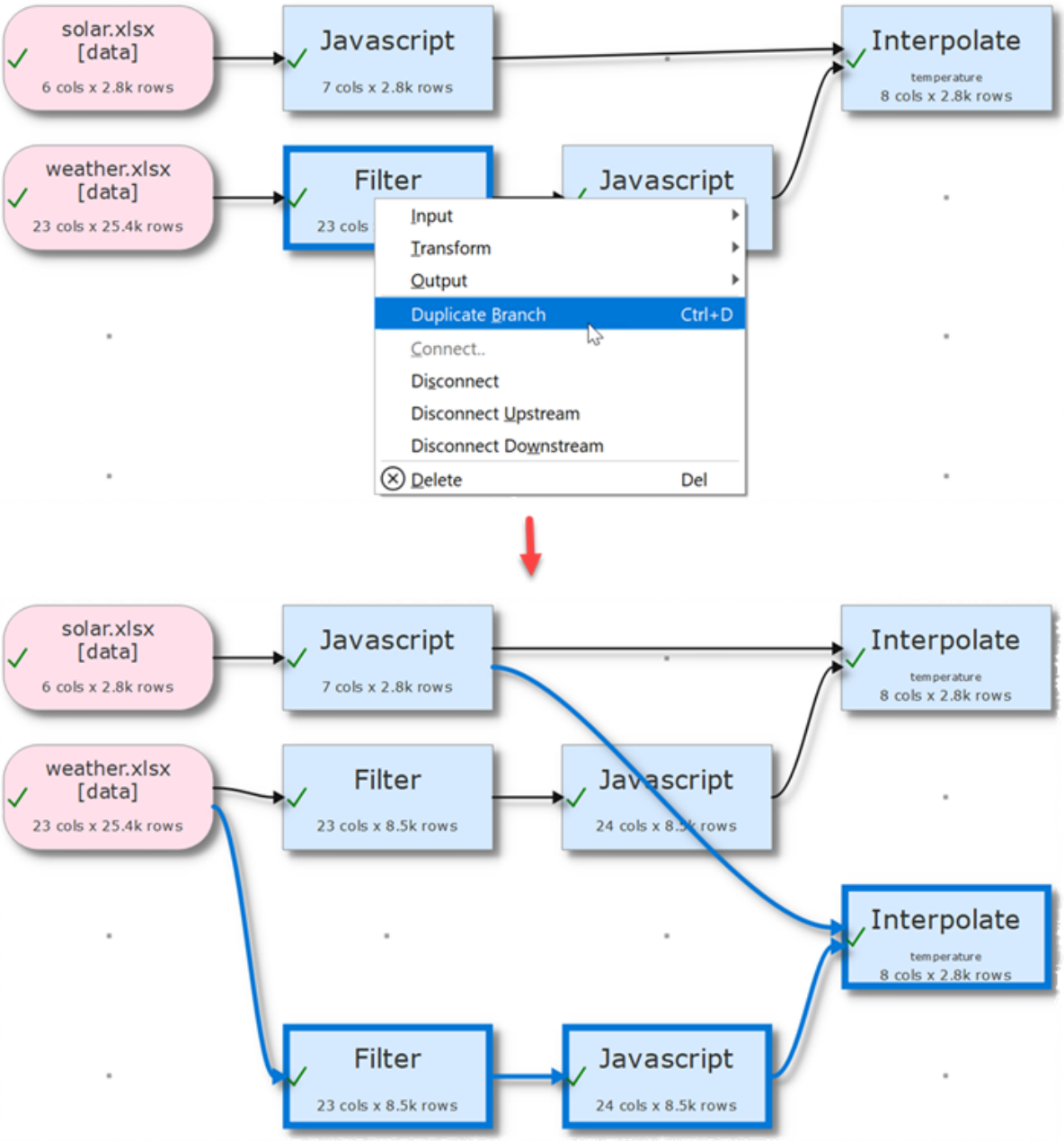

3.6 Dedupe a dataset

If you want to remove duplicate entries from a dataset, use the Unique transform. For example, to remove the 2 rows that have the same email from this dataset:

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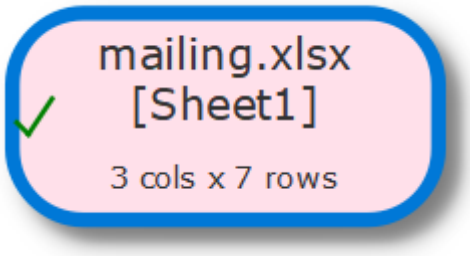
	First	Last	Email
1	J.A.	Black	jablack@gmail.com
2	Paul	White	p.white@hotmail.com
3	Barry	Green	bgreen@aol.com
4	Jane	Brown	Jb3423@gmail.com
5	J.	Taupe	taupe89759@gmail.com
6	John	Black	jablack@gmail.com
7	B.	Green	bgreen@aol.com

To get this dataset:

	First	Last	Email
1	J.A.	Black	jablack@gmail.com
2	Paul	White	p.white@hotmail.com
3	Barry	Green	bgreen@aol.com
4	Jane	Brown	Jb3423@gmail.com
5	J.	Taupe	taupe89759@gmail.com

Drag the dataset file onto the **Center** pane of Easy Data Transform.



Select the dataset then click the **Unique** transform in the **Left** pane.

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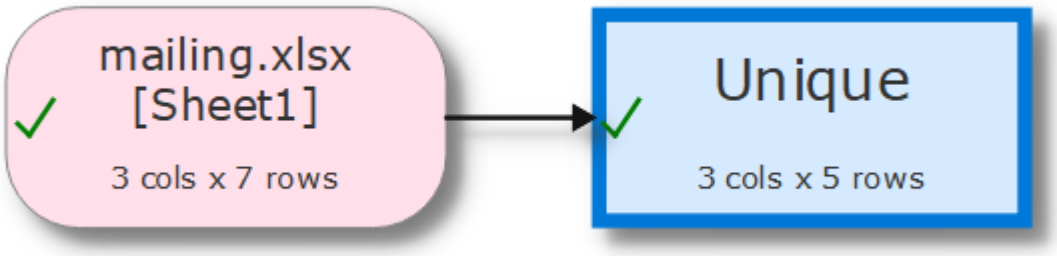
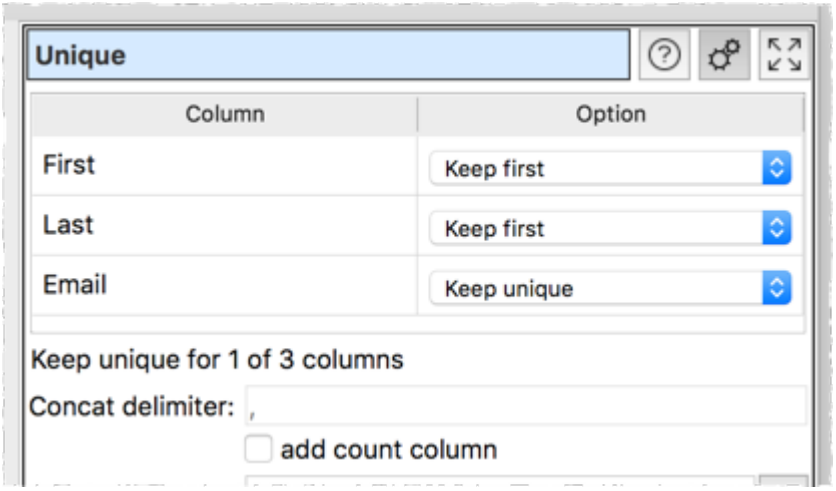


Set the **Email** column to **Keep unique** in the **Right** pane. Set the **First** and **Last** columns to **Keep first**.



Only one row with each email is kept. The first and last names are set to the first occurrence in the sort order. Use Sort if you want to change the order before removing duplicates.

If you only want to remove rows with the same first name, same last name and same email, set **First**, **Last** and **Email** columns to **Keep unique**.

Note that de-duplicating columns takes account of whitespace and case. So you might need to do Whitespace and Case transforms before the dedupe.

See the Unique documentation for a more detailed example.

3.7 Find the difference between dates/datetimes

You can calculate the number off days difference between two dates using the Calculate transform. For example:

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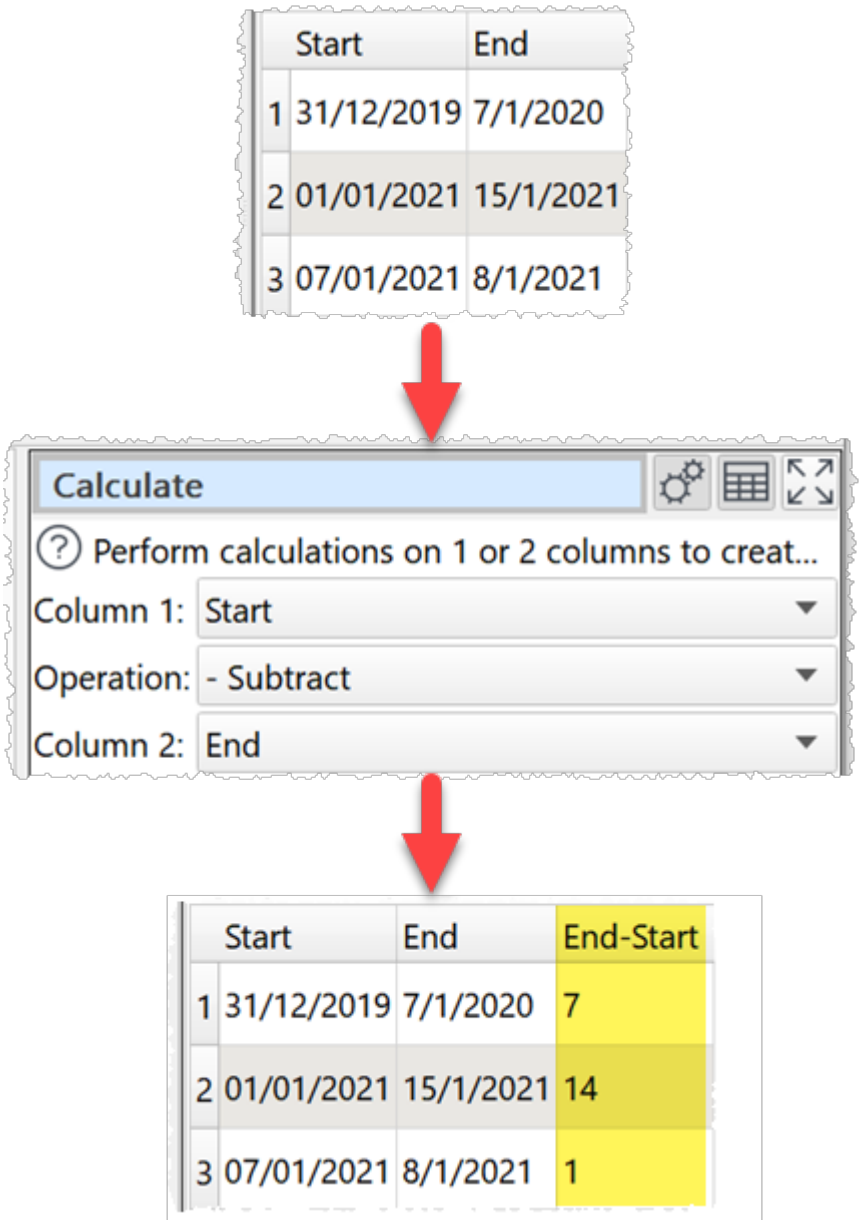

You can convert a datetime into a date using a transform such as Extract.

ALternatively, you can calculate the difference between two dates or datetimes using Date objects in the Javascript transform.

There are 4 ways to create a Javascript Date object:

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Date format	Description
`new Date(year, month, day, hours, minutes, seconds, milliseconds)`	Specified date and time specified as numeric parameters (January is month 0!).
`new Date(text date)`	Date and time specified as text.
`new Date(milliseconds)`	Milliseconds after 1st January 1970.
`new Date()`	Current date and time.

Notes:

- A text date should be in `yyyy-mm-dd` format.
- A Date object always includes a time. If no time is set, then the time is assumed to be midnight GMT.
- One and two digit years will be interpreted from 1900.

Examples

To calculate the number of milliseconds between a date in the 'date' column and 31st Dec 2000:

```
return new Date( $(date) ) - new Date( "2000-12-31" );
```

Or:

```
return new Date( $(date) ) - new Date( 2000, 11, 31 );
```

To calculate the difference between datetimes in the 'start' and 'end' columns in hours:

```
return ( new Date( $(end) ) - new Date( $(start) ) ) / ( 60 * 60 * 1000 );
```

To calculate how many days ago 'date' occurred (rounded down):

```
return Math.floor( ( new Date() - new Date( $(date) ) ) / ( 24 * 60 * 60 * 1000 ) );
```

For more information see the Javascript documentation.

3.8 Handle column name/order changes in inputs

If you have a .transform file that you want to run multiple input files through (perhaps with a different input file each month, or as a batch process) you need to be aware of differences in column name and column order in the input files.

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To change the file being used by an input, select the input item and change the file location in the **Right** pane (e,g, by clicking the '...' browse file button), rather the disconnecting the input and connecting a new one. Otherwise column-related parameters downstream will be reset.

Same columns in the same order, but with different names

Easy Data Transform references columns by their position (e.g. 3rd column from the left) not their column name. So differences in column names (e.g. first column is called "id" in input 1 and "UniqueID" in input 2) are not generally an issue. But you need to be careful if you are using the Stack transform with **Align columns by** set to **Header name**, as this will reorder columns by name. If you want to always output the same column names, regardless of the input column names, you should use a Rename Cols transform to set the names.

Same columns with the same names, but in a different order

If columns are in different orders in different input files (e.g. the "id" column in the first column in input 1 and the second column in input 2) you need to sort the input columns into a standard order before applying other transforms. You can so this using the Stack transform with **Align columns by** set to **Header name**. Stack your input under a dataset with columns in the correct order. You can use a Filter to remove any unneeded rows after the stacking.

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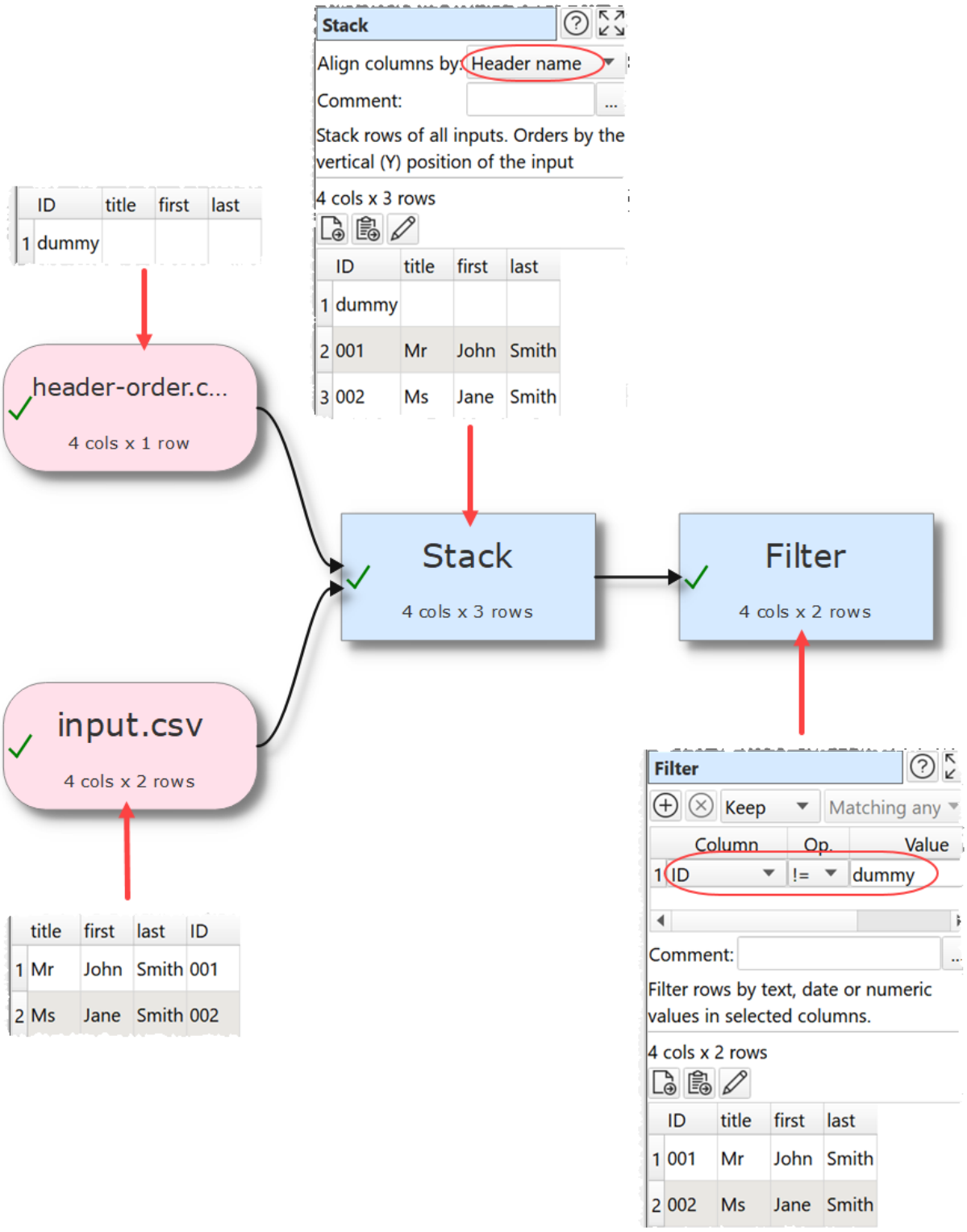

Same columns with different names, in a different order

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Easy Data Transform can't handle this automatically. But you can create a new .transform and use Reorder Cols and/or Rename Cols transforms to output to a new file with the correct column names/ordering. You can then input this to the original .transform.

3.9 Handle large datasets

Large datasets (e.g. a million data points or more) can slow down processing. If slow processing is a problem you can:

- Add a sample transform straight after the input and set **Rows** to pass through only the first 100 or so rows. Once you have completed all your transforms you can then **Disable sampling** to pass through all rows.
- Set **Right pane processing delay** in the **Preferences** window to a longer time (say 5 seconds) to ensure that that changes aren't processed until you have finished making the changes.
- Set **Write mode** to **Disabled** in output files, until you are ready to write them.

3.10 Input a fixed width format file

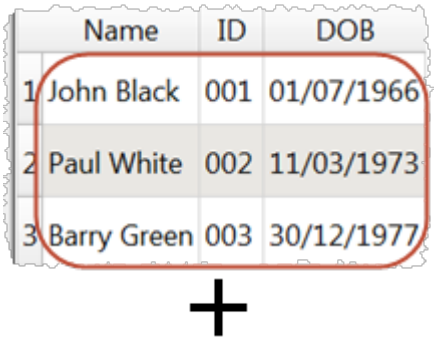
To input data from a fixed width file see fixed width format.

3.11 Merge datasets

Easy Data Transform has two main options for merging two datasets. Stack and Join.

Stack datasets

If you want to merge the two datasets so they are one on top of another, use the Stack transform. For example, to Stack these two datasets:



	Name	ID	DOB
1	John Black	001	01/07/1966
2	Paul White	002	11/03/1973
3	Barry Green	003	30/12/1977

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	Name	ID	DOB
1	Jane Brown	004	03/11/1980
2	Jill Taupe	005	01/03/1981

To get this dataset:

	Name	ID	DOB
1	John Black	001	1966-07-01
2	Paul White	002	1973-03-11
3	Barry Green	003	1977-12-30
4	Jane Brown	004	1980-11-03
5	Jill Taupe	005	1981-03-01

Drag the two dataset files onto the **Center** pane of Easy Data Transform.

Select the two datasets using `Cmd`+click then click the **Stack** transform in the **Left** pane.

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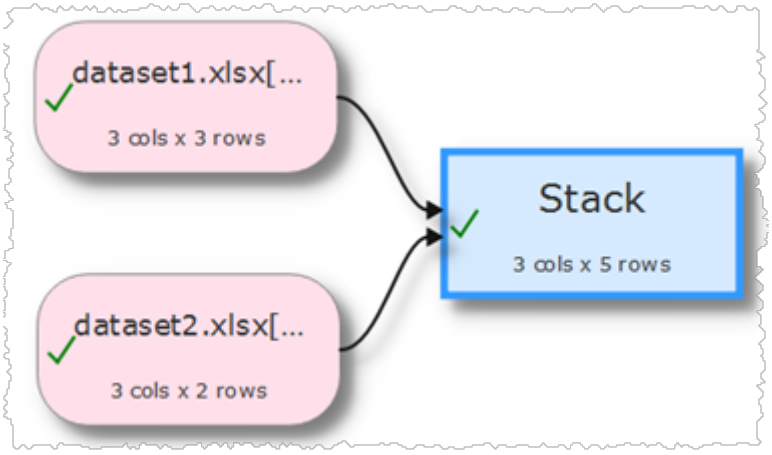

The datasets are now stacked in the vertical order that the datasets are shown on the screen. The top dataset is shown first. You can swap the the vertical positions of the datasets to change the order in which they are stacked.

If you want to stack column n of the first dataset above column n of the second dataset, set **Align columns by** to **Column number**.

If you want to stack columns by common header names (even if they aren't in the same order), set **Align columns by** to **Header name**.

If you want to stack a large number of files you can do it by using batch processing to write to an output item with **Write Mode**=Append.

Join datasets

If you want to merge the two datasets side-by-side using a common ('key') column, use the Join transform. For example, to Join these two datasets:

	Name	ID	DOB
1	John Black	001	1966-07-01
2	Paul White	002	1973-03-11
3	Barry Green	003	1977-12-30
4	Jane Brown	004	1980-11-03
5	Jill Taupe	005	1981-03-01

+

	ID	Department	Level
1	001	Engineering	1
2	003	Engineering	2
3	004	Marketing	1
4	002	Sales	2
5	005	Sales	3

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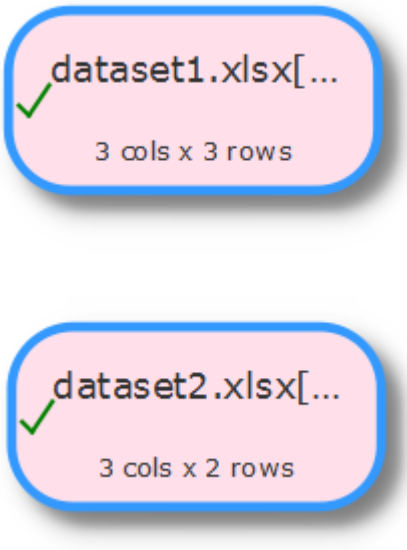
By common ID value to get this dataset:

	Name	ID	DOB	Department	Level
1	John Black	001	1966-07-01	Engineering	1
2	Paul White	002	1973-03-11	Sales	2
3	Barry Green	003	1977-12-30	Engineering	2
4	Jane Brown	004	1980-11-03	Marketing	1
5	Jill Taupe	005	1981-03-01	Sales	3

Drag the two dataset files onto the **Center** pane of Easy Data Transform.



Select the two datasets using `Cmd`+click then click the **Join** transform in the **Left** pane.

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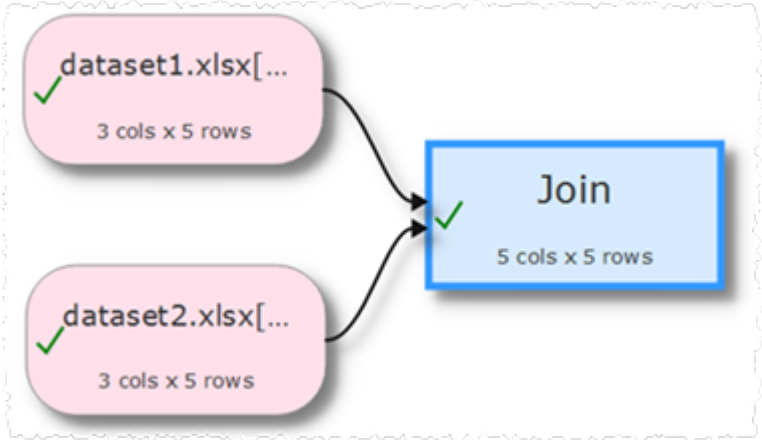

Set both **Top key column** and **Bottom key column** to the common ('key') column.

The datasets are now joined side-by-side using the common column. The top dataset is shown on the left. You can swap the the vertical positions of the datasets to change the order in which they are joined.

If you just want to join row N of one dataset to row N of another dataset, you can use the Row Num transform to create a common column in each dataset.

Set **include top non-matching rows** and **include bottom non-matching rows** depending on what you want to do with top and bottom dataset rows for which there are no matches.

Note that matching columns takes account of whitespace and case. So you might need to do Whitespace and Case transforms before the join.

If you are merging numerical datasets you can also use an Interpolate transform.

Video: How to join Excel files

3.12 Move a .transform file

To move a .transform file to a different location on the same computer use **File>Save As...** or **Finder**. You either leave the Input files at the original location or move them to the same location relative to the .transform file (e.g. if they were in the same folder as the .transform file before, move them to the same folder as new .transform file).

To move a .transform file to a different computer, move the Input files to the same location relative to the .transform file (e.g. if they were in the same folder as the .transform file before, move them to the same folder as new .transform file).

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See also .transform files.

3.13 Output nested JSON or XML

You can use the dot ('.') character in the column header to show nesting. For example:

	name	carb	cholesterol	fiber	minerals.ca	minerals.fe	protein	sodium	vitamins.a	vitamins.c
1	Avocado Dip	2	5	0	0	0	1	210	0	0

Is output to JSON as:

```
[
  {
    "name": "Avocado Dip",
    "carb": "2",
    "cholesterol": "5",
    "fiber": "0",
    "minerals": {
      "ca": "0",
      "fe": "0"
    },
    "protein": "1",
    "sodium": "210",
    "vitamins": {
      "a": "0",
      "c": "0"
    }
  }
]
```

And to XML as:

```
<?xml version="1.0" encoding="UTF-8"?>
<root>
  <record>
    <name>Avocado Dip</name>
    <carb>2</carb>
    <cholesterol>5</cholesterol>
    <fiber>0</fiber>
    <protein>1</protein>
    <sodium>210</sodium>
    <minerals>
      <ca>0</ca>
      <fe>0</fe>
    </minerals>
    <vitamins>
      <a>0</a>
      <c>0</c>
    </vitamins>
  </record>
</root>
```

For more details see:

- JSON format

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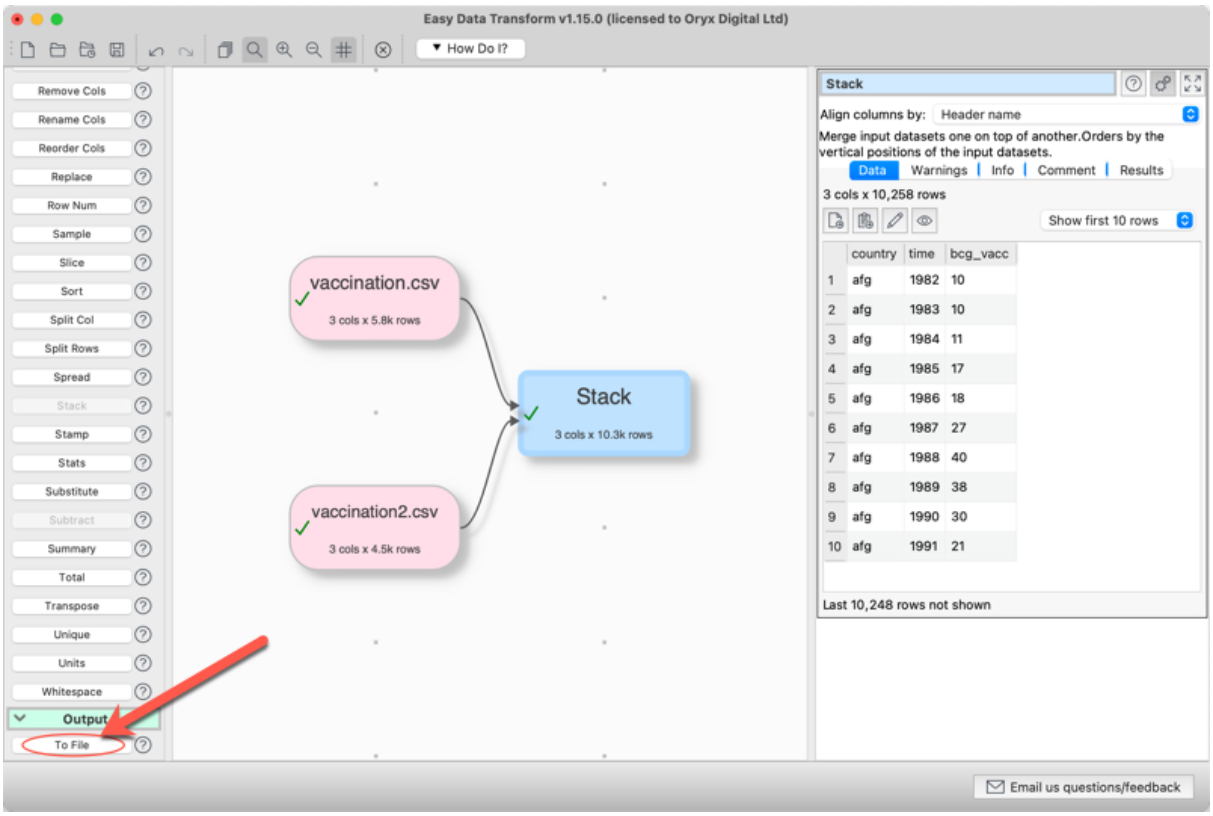
- XML format

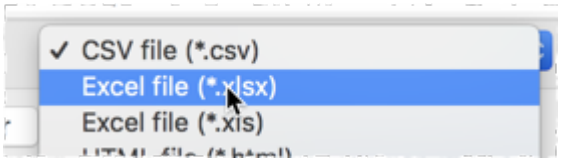
3.14 Output to Excel

To output results from a transform to an Excel .xlsx/.xls file:

- Select the transform item in the **Center** pane.
- Click **To File** at the bottom of the **Left** pane.



- Select ***.xlsx** or ***.xls** from the file type drop-down list that appears.



Note that Excel .xlsx files are typically limited to 1,048,576 rows and 16,384 columns.

See also:

- Write to multiple sheets of an Excel file

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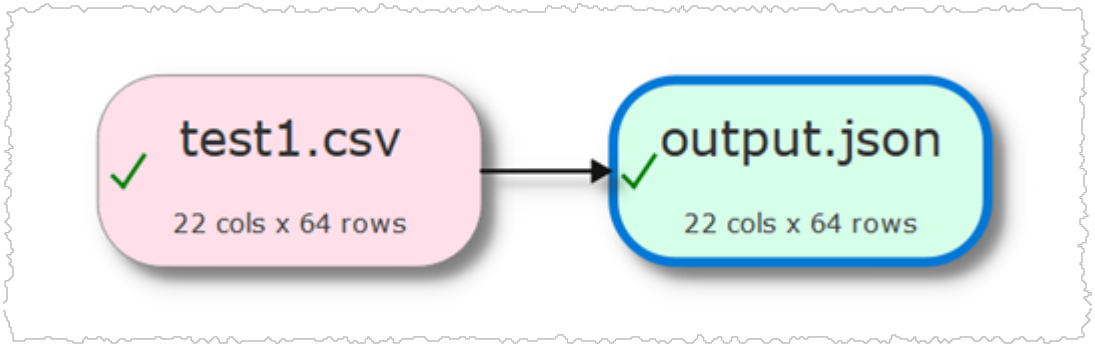
3.15 Perform the same transforms on many files

You can perform the same set of transforms on multiple inputs in one operation using batch processing or command line arguments.

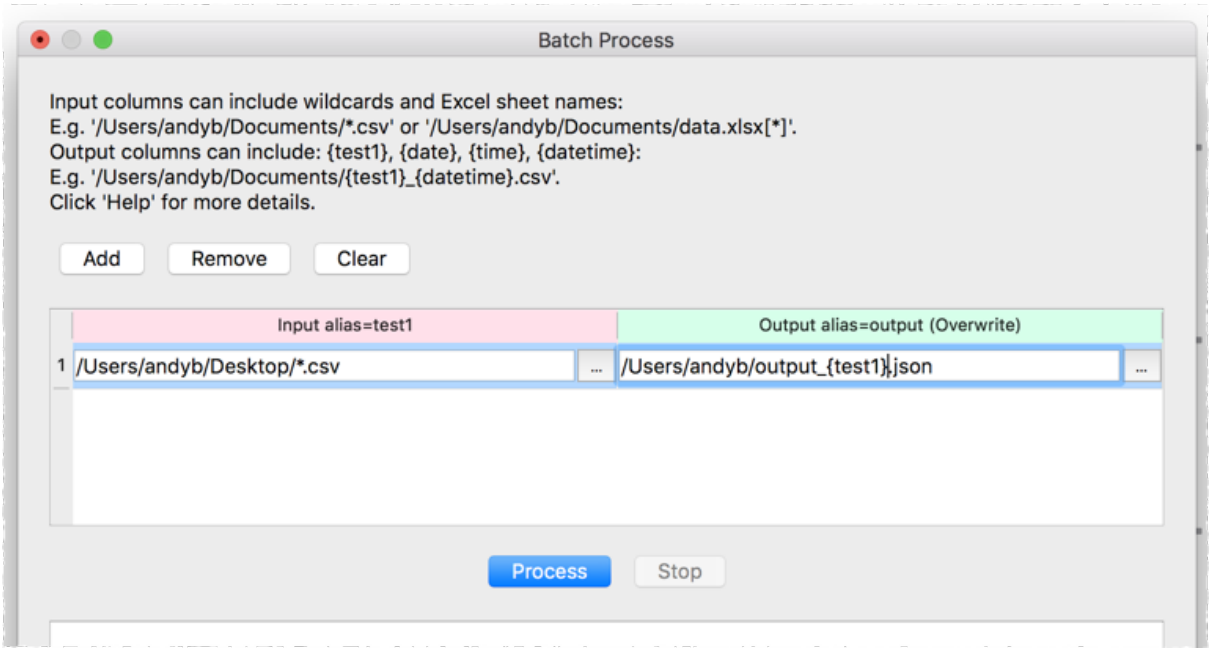
Example 1

To convert a folder full of .csv files to .json files:

1. Select **File>New** to create a new transform template file
2. Drag one of the .csv files onto the **Center pane**. Ensure the options (encoding etc) are correct in the **Right** pane.
3. Click on the **To File** button at the bottom of the **Left** pane and set the location of a .json file to create. Ensure the options (encoding etc) are correct in the **Right** pane.



4. Select **File>Batch Process**.
5. In the **Batch Process** window change the .csv file name to `*.csv` and `output.json` to `output_{test1}.json`.



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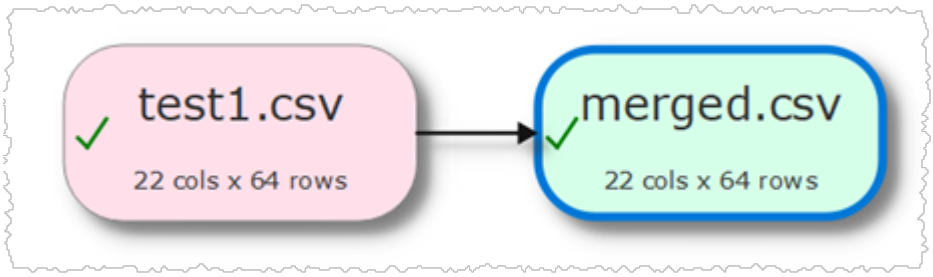
6. Press the **Process** button. A .json file will now be created for each .csv file in the folder.

If you want to process input files from another folder then click **Add** to add a new row and change the **test1** input folder.

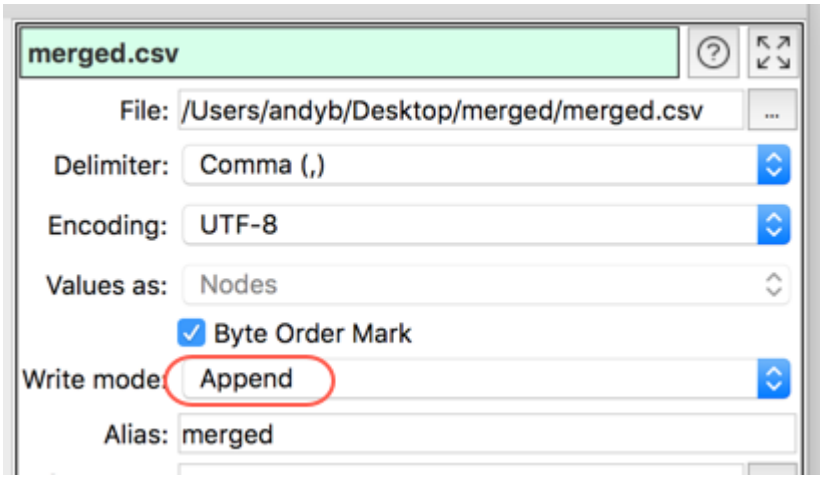
Example 2

Merge multiple .csv files into a single .csv file:

7. Select **File>New** to create a new transform template file
8. Drag one of the .csv files onto the **Center pane**. Ensure the options (encoding etc) are correct in the **Right** pane.
9. Click on the **To File** button at the bottom of the **Left** pane and set the location of a `merged.csv` file to create, in a different folder to the input .csv files. Ensure the options (encoding etc) are correct.



4. Set **Write Mode** to **Append** in the **Right** pane.



5. Select **File>Batch Process**.
6. In the **Batch Process** window change the input .csv file name to `*.csv`.

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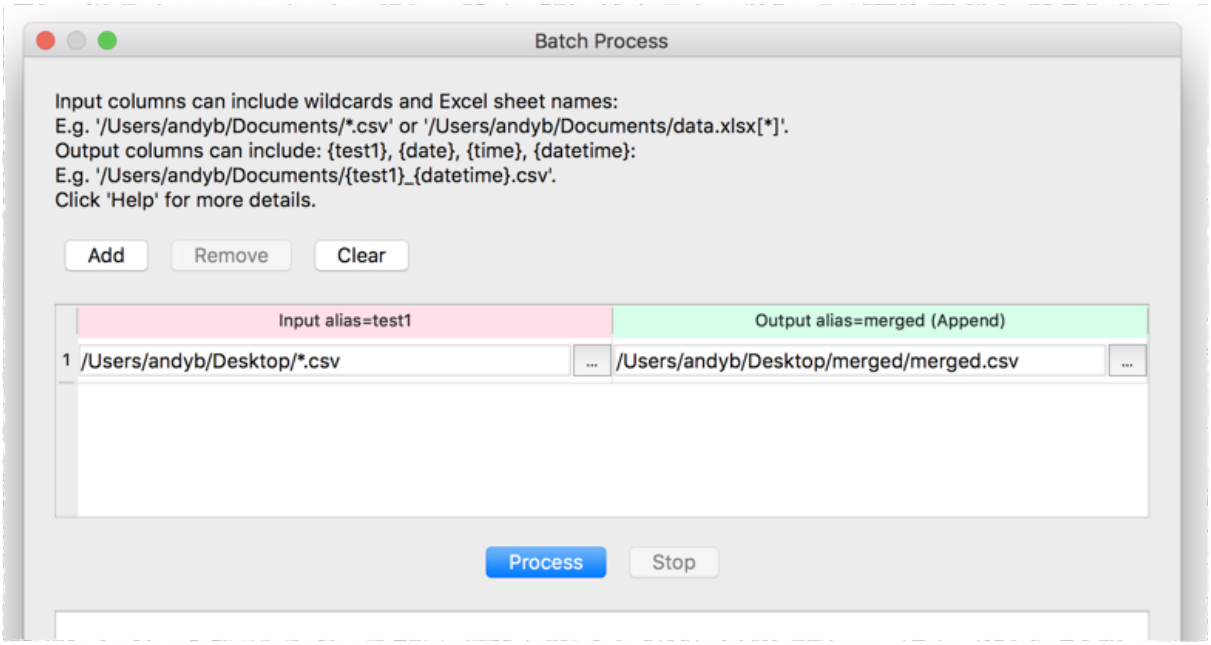
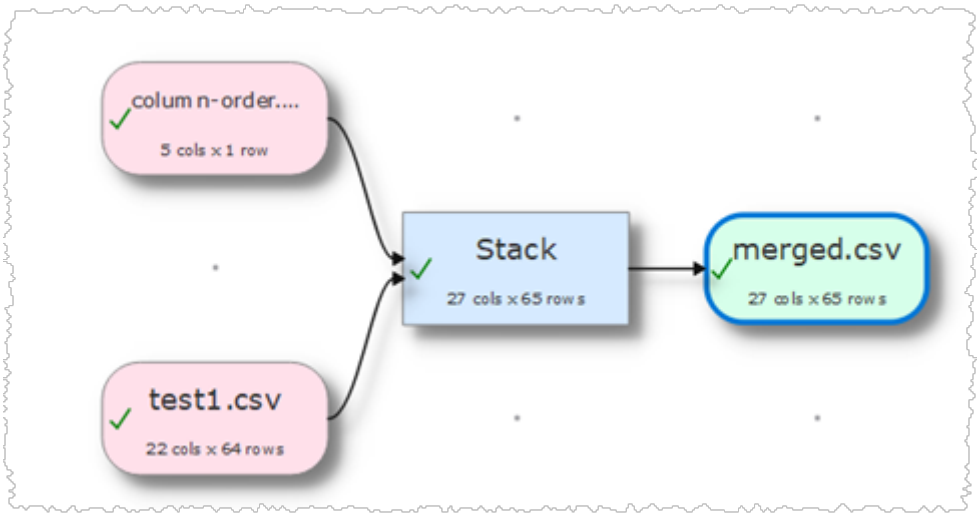


7. Press the **Process** button. A single `merged.csv` file will now be created that contains a concatenation of all the other .csv files. If `merged.csv` already exists, you may need to delete it first.

If the headers are different orders in different .csv files, then you can Stack by header name to get a consistent column order before outputting.



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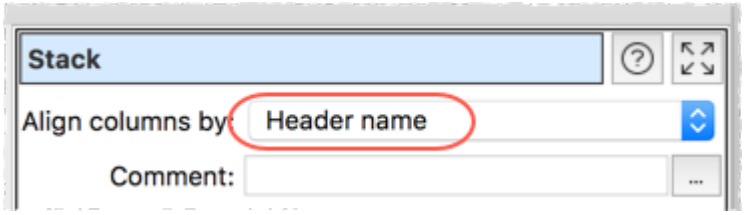

3.16 Replace empty values

You can replace empty values using the Replace transform.

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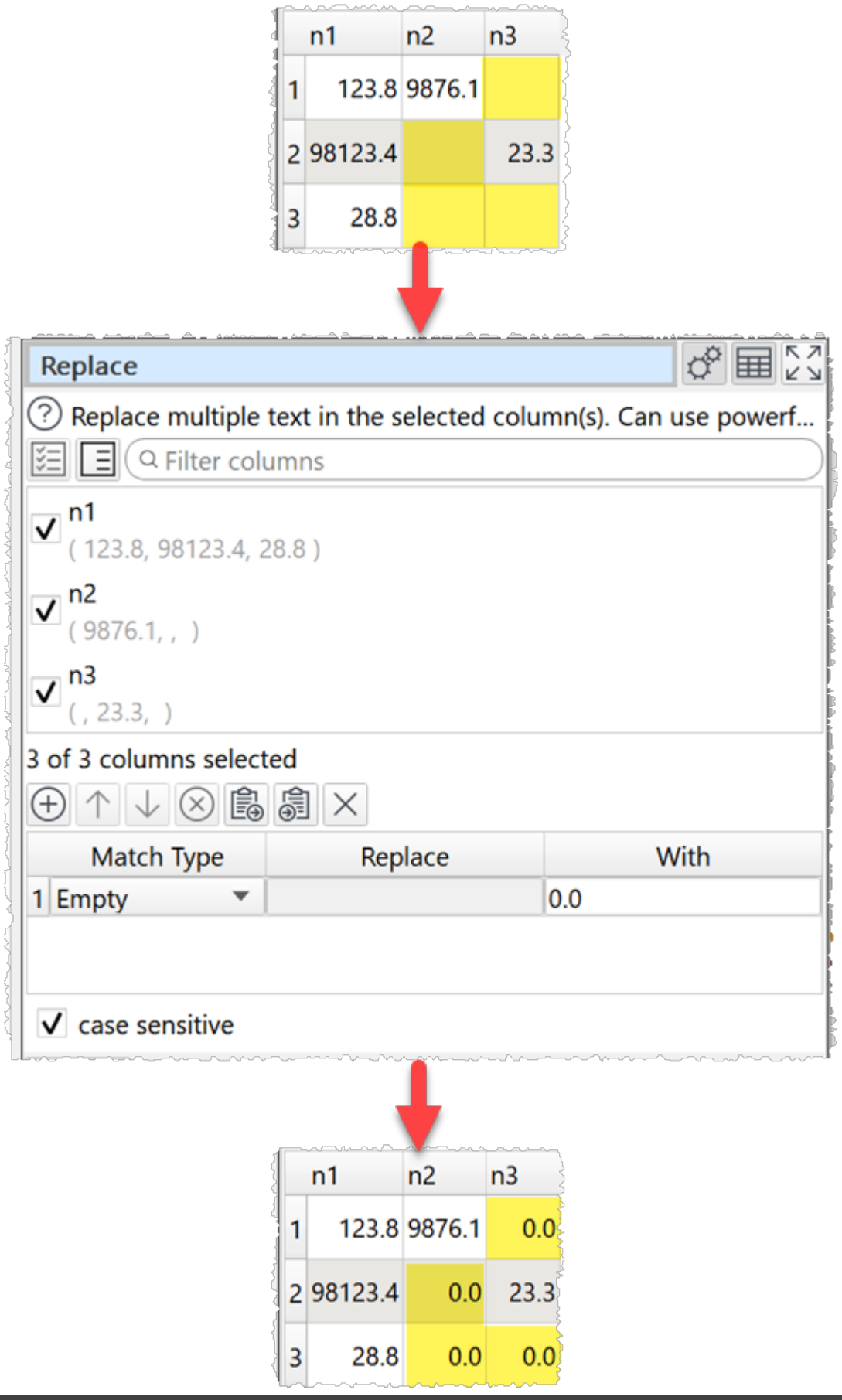

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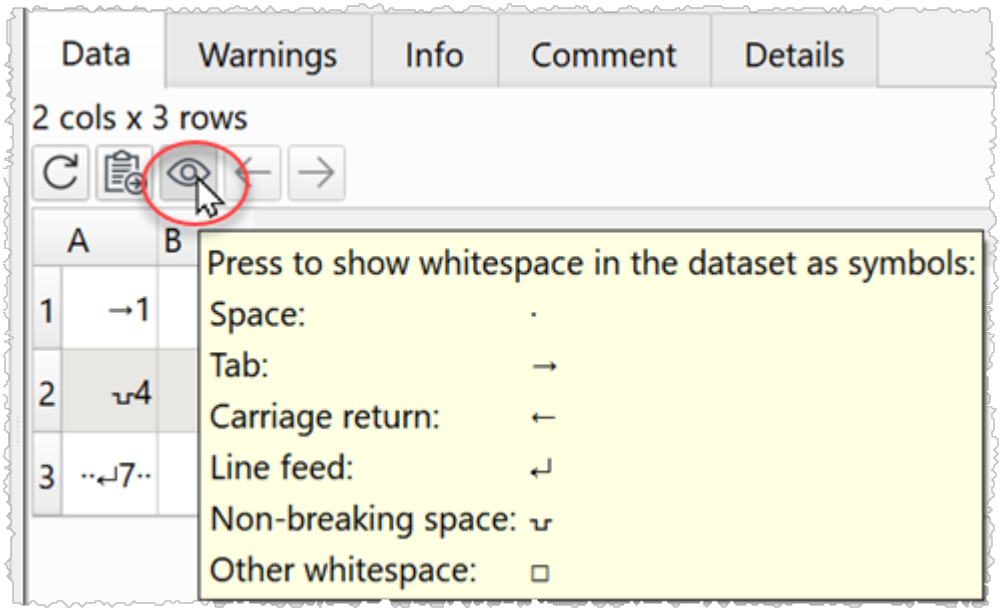
3.17 Show whitespace

Click the eye icon in the **Right** pane to show whitespace in the data.



3.18 Write to multiple sheets of an Excel file

To write to multiple sheets (tabs) of the same Excel file you need to set the **Write mode** of each output item to **Overwrite/Sheet** (to clear the sheet first) or **Append** (to add to existing sheet data).

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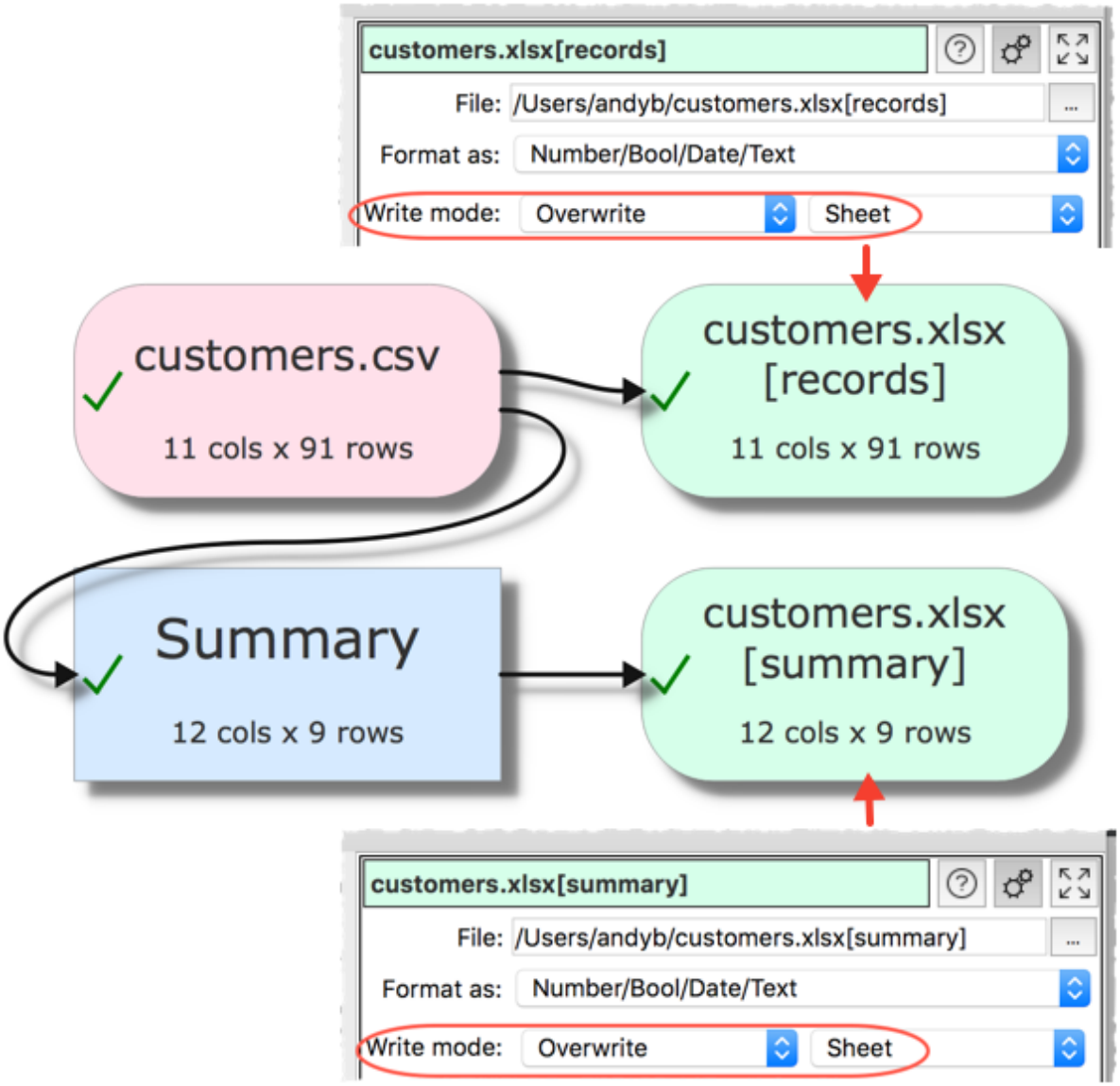

If you set the **Write mode** to **Overwrite/File** for an item then the write will remove existing sheets.

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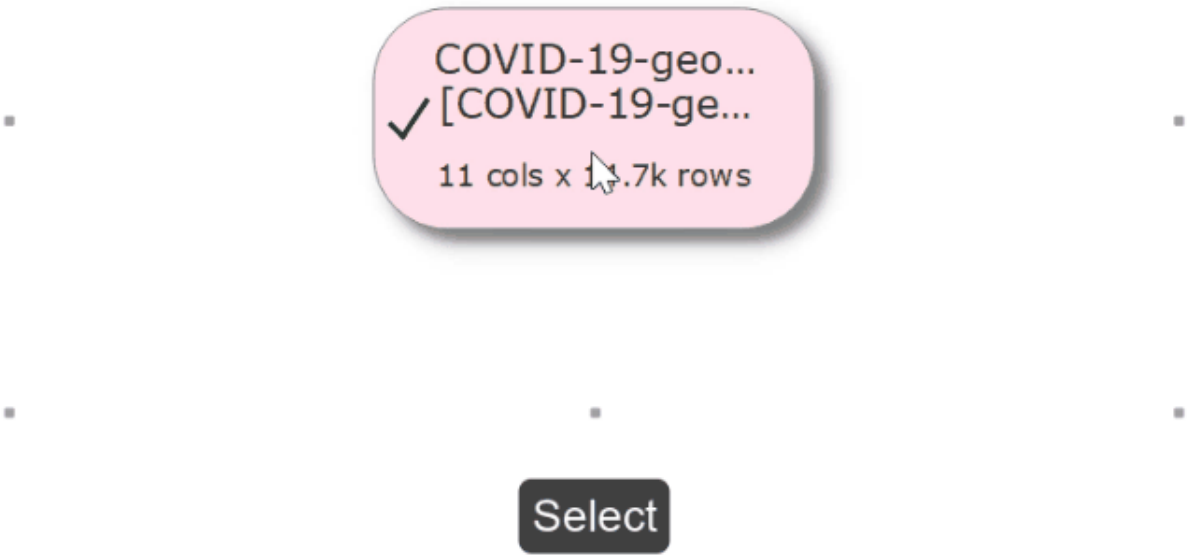
Expert tips

4 Expert tips

4.1 Expert tips

Here are some tips to help you be more productive with Easy Data Transform.

1. To add a transform click an existing Center pane item and type the first few letters of the transform name.



2. Hold down the `Shift` key and drag on the **Center** pane to scroll left/right/up/down.

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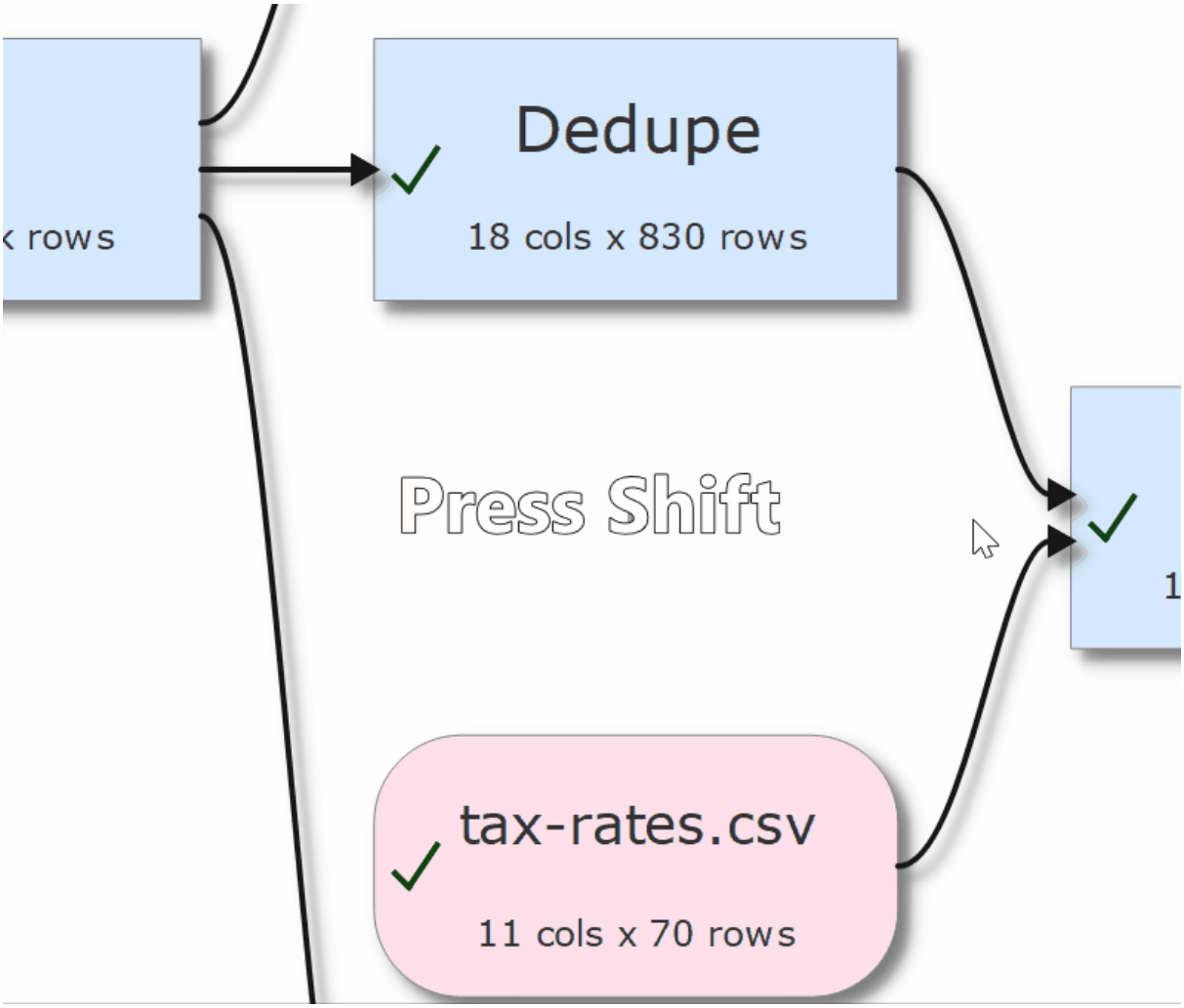

3. Use Note items to remind yourself how a complex `.transform` works.

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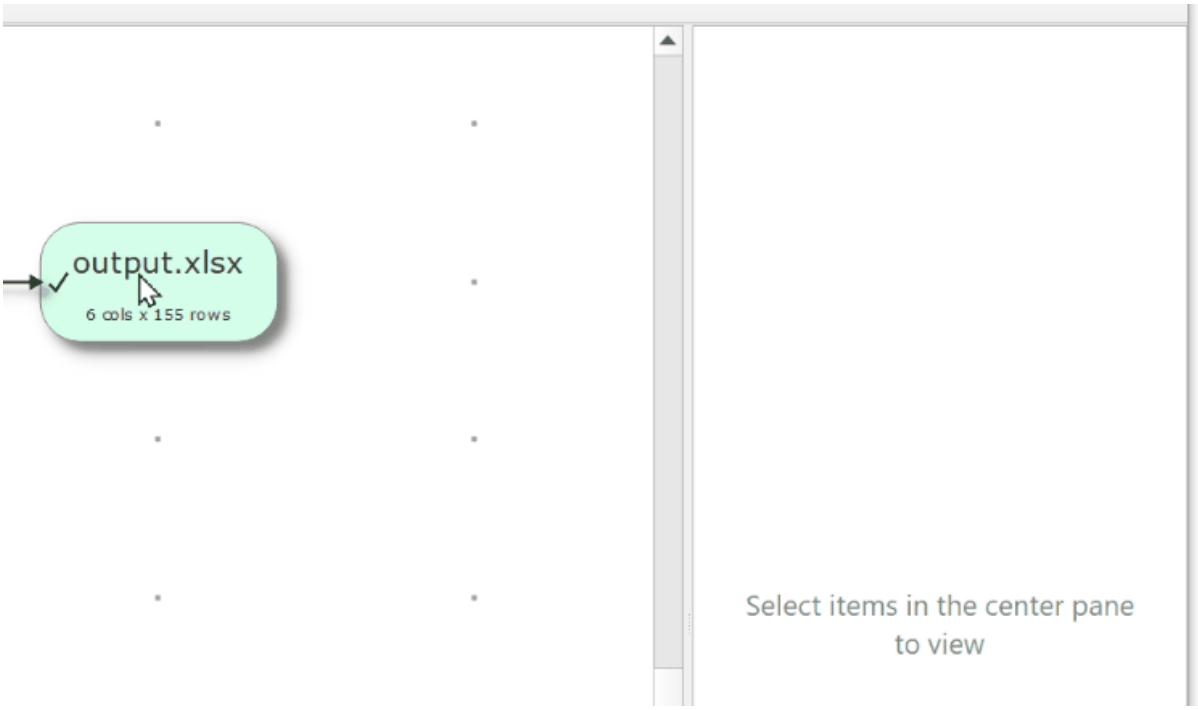

4. To select multiple items in the **Center** pane, left click with the mouse and drag a box over the items you want to select.

5. Try to avoid disconnecting transforms, as this can reset column related options downstream. Add a transform to an existing connection instead.

6. Add a Sample transform straight after the input of a large dataset and set **Rows** to pass through only the first 100 or so rows. Once you have completed all your transforms you can then **Disable sampling** to pass through all rows.

7. Click the eye icon in the **Right** pane to show whitespace in the data.

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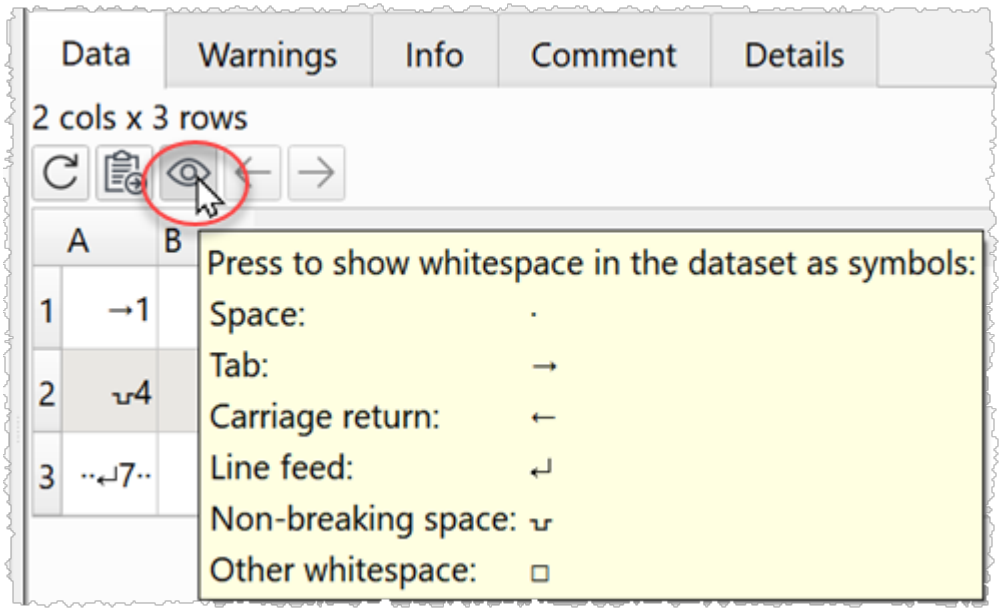

8. If you need several similar branches of transforms you can create one branch and duplicate it.

9. If you have 2 or more monitors connected to your computer try **View>Two Screen Mode** to show the **Right** pane on your second monitor.

10. Use batch processing with wildcards (e.g. *.csv) to process multiple data files in one operation.

11. Use command line arguments to run `.transform` files from a batch file.

12. Learn keyboard shortcuts. For example, you can quickly change selection in the **Center** pane using arrow keys with the `Cmd` key.

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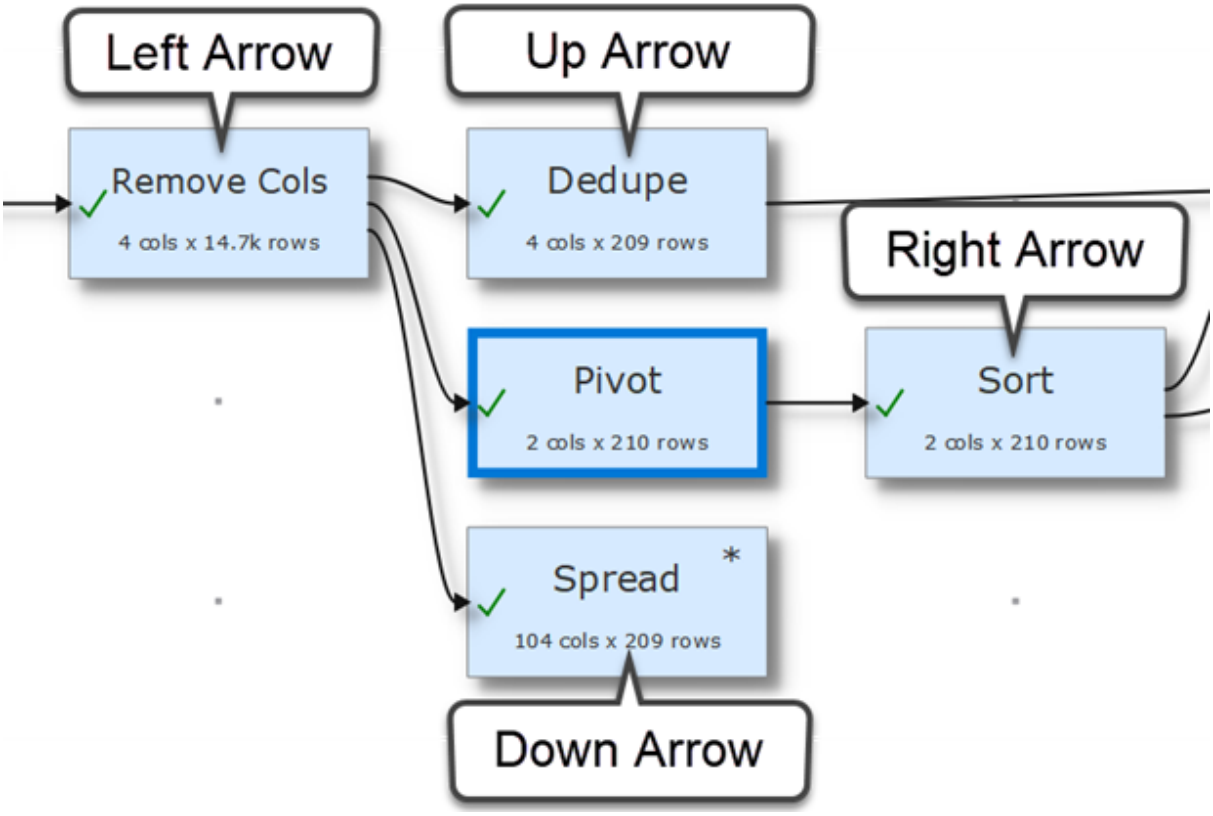
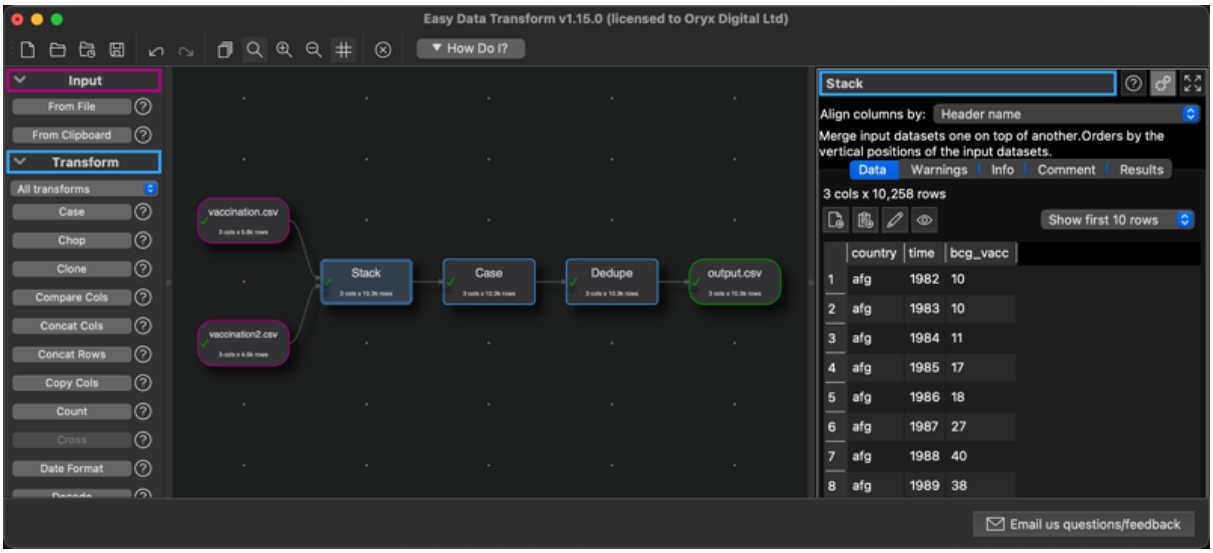


13. Change the **Center** pane color scheme in the **Colors** tab of the **Preferences** window.

14. Select **View>Toggle UI Theme** to swap between light and dark user interface themes.



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Support

5 Support

5.1 Forum

There is a discussion forum online at forum.easydatatransform.com. You can use this to ask questions, share what you are doing and keep up to date with news.

5.2 Contact support

If you have any questions or suggestions, please post a question on forum.easydatatransform.com or email us at support@easydatatransform.com.

5.3 Report a bug

Please report any bugs you find to support@easydatatransform.com Please include:

- your operating system (e.g. Windows 10)
- the version of Easy Data Transform (from **Help>About**)
- a step-by-step description of how we can reproduce the problem
- your .transform file and input data files (where appropriate)
- a screen capture or video can often be helpful

The step-by-step description is particularly important - if we can't reproduce your problem, then we probably won't be able to fix it.

We treat all data sent to us as confidential, unless you tell us otherwise. If your data is particularly sensitive, it might be enough to send us just the first few rows with sensitive values changed. Keep the same column structure though.

5.4 Request an enhancement

We are always very interested to hear your suggestions on how the software can be improved. Please post a feature suggestion on our forum.easydatatransform.com or email us at support@easydatatransform.com.

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