

# Concatenate

Concatenates data from multiple sources.

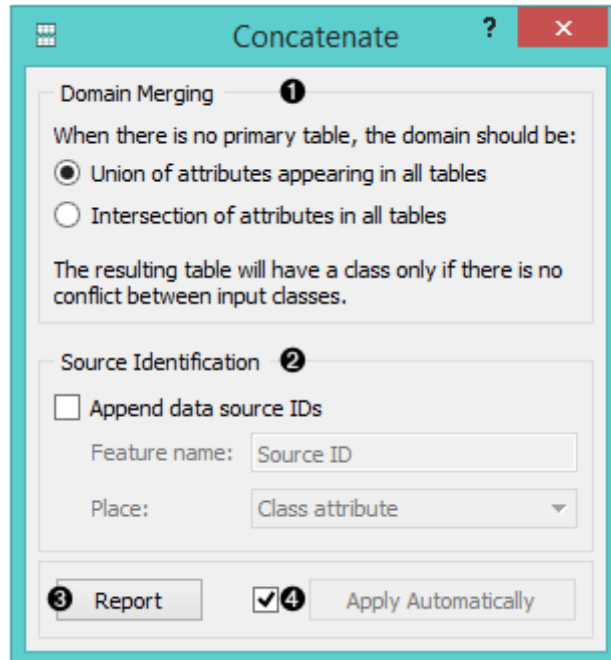
## Inputs

- Primary Data: data set that defines the attribute set
- Additional Data: additional data set

## Outputs

- Data: concatenated data

The widget concatenates multiple sets of instances (data sets). The merge is “vertical”, in a sense that two sets of 10 and 5 instances yield a new set of 15 instances.



1. Set the attribute merging method.
2. Add the identification of source data sets to the output data set.
3. Produce a report.
4. If *Apply automatically* is ticked, changes are communicated automatically. Otherwise, click *Apply*.

If one of the tables is connected to the widget as the primary table, the resulting table will contain its own attributes. If there is no primary table, the attributes can be either a union of all attributes that appear in the tables specified as *Additional Tables*, or their intersection, that is, a list of attributes common to all the connected tables.

## Example

As shown below, the widget can be used for merging data from two separate files. Let's say we have two data sets with the same attributes, one containing instances from the first experiment and the other instances from the second experiment and we wish to join the two data tables together. We use the **Concatenate** widget to merge the data sets by attributes (appending new rows under existing attributes).

Below, we used a modified Zoo data set. In the **first File** widget, we loaded only the animals beginning with the letters A and B and in the **second** one only the animals beginning with the letter C. Upon concatenation, we observe the new data in the **Data Table** widget, where we see the complete table with animals from A to C.

The screenshot shows the Orange Data Mining software interface. A workflow is visible in the main window, consisting of two 'File' widgets (labeled 'ZOO A+B' and 'ZOO C'), a 'Concatenate' widget, and a 'Data Table' widget. The 'Concatenate' widget is connected to both 'File' widgets and the 'Data Table' widget. The 'Data Table' widget displays the concatenated data, showing 17 instances (no missing values), 16 features (no missing values), a discrete class with 7 values (no missing values), and 1 meta attribute (no missing values). The 'Data Table' widget also shows the 'Info' and 'Variables' sections, with checkboxes for 'Show variable labels (if present)', 'Visualize continuous values', and 'Color by instance classes'.

Three data table windows are open, showing the data from the 'Concatenate' widget:

- Data Table (A+B)**: Contains 6 instances (no missing values), 16 features (no missing values), a discrete class with 7 values (no missing values), and 1 meta attribute (no missing values). The data is as follows:
 

	type	name	hair	feathers	eggs	milk
1	mammal	aardvark	1	0	0	1
2	mammal	antelope	1	0	0	1
3	fish	bass	0	0	1	0
4	mammal	bear	1	0	0	1
5	mammal	boar	1	0	0	1
6	mammal	buffalo	1	0	0	1
- Data Table (C)**: Contains 11 instances (no missing values), 16 features (no missing values), a discrete class with 7 values (no missing values), and 1 meta attribute (no missing values). The data is as follows:
 

	type	name	hair	feathers	eggs	milk
1	mammal	calf	1	0	0	1
2	fish	carp	0	0	1	0
3	fish	catfish	0	0	1	0
4	mammal	cavy	1	0	0	1
5	mammal	cheetah	1	0	0	1
6	bird	chicken	0	1	1	0
7	fish	chub	0	0	1	0
8	invertebrate	clam	0	0	1	0
- Data Table (A+B+C)**: Contains 17 instances (no missing values), 16 features (no missing values), a discrete class with 7 values (no missing values), and 1 meta attribute (no missing values). The data is as follows:
 

	type	name	hair	feathers	eggs	milk
1	mammal	aardvark	1	0	0	1
2	mammal	antelope	1	0	0	1
3	fish	bass	0	0	1	0
4	mammal	bear	1	0	0	1
5	mammal	boar	1	0	0	1
6	mammal	buffalo	1	0	0	1
7	mammal	calf	1	0	0	1
8	fish	carp	0	0	1	0
9	fish	catfish	0	0	1	0
10	mammal	cavy	1	0	0	1
11	mammal	cheetah	1	0	0	1
12	bird	chicken	0	1	1	0
13	fish	chub	0	0	1	0
14	invertebrate	clam	0	0	1	0
15	mammal	cow	1	0	0	1
16	mammal	goat	1	0	0	1
17	mammal	horse	1	0	0	1

Variables

☒ Show variable labels (if present)

☒ Visualize continuous values

☒ Color by instance classes

Selection

☒ Select full rows

Restore Original Order

Report

☒ Send Automatically

5	mammal	boar	1	0	0	1
6	mammal	buffalo	1	0	0	1
7	mammal	calf	1	0	0	1
8	fish	carp	0	0	1	0
9	fish	catfish	0	0	1	0
10	mammal	cavy	1	0	0	1
11	mammal	cheetah	1	0	0	1
12	bird	chicken	0	1	1	0
13	fish	chub	0	0	1	0
14	invertebrate	clam	0	0	1	0
15	invertebrate	crab	0	0	1	0
16	invertebrate	crayfish	0	0	1	0
17	bird	crow	0	1	1	0

### Concatenate

**Domain Merging**

When there is no primary table, the domain should be:

☒ Union of attributes appearing in all tables

☐ Intersection of attributes in all tables

The resulting table will have a class only if there is no conflict between input classes.

**Source Identification**

☐ Append data source IDs

Feature name:

Place:

Report ☒ Apply Automatically