

Frequent Itemsets

Finds frequent itemsets in the data.

Inputs

- Data: Data set

Outputs

- Matching Data: Data instances matching the criteria.

The widget finds **frequent items** in a data set based on a measure of support for the rule.

Info

Number of itemsets: 122
 Selected itemsets: 1
 Selected examples: 2513

Expand all Collapse all

Find itemsets

Minimal support: 2%
 Max. number of itemsets: 10000

☒ Auto find itemsets is on

Filter itemsets

Contains:
 Min. items: 1 Max. items: 999

☒ Apply these filters in search

☒ Auto send selection is on

Itemsets	Support	%
whole milk	2513	25.55
other vegetables	736	7.483
root vegetables	228	2.318
rolls/buns	557	5.663
soda	394	4.006
bottled water	338	3.437
root vegetables	481	4.891
shopping bags	241	2.45
sausage	294	2.989
pastry	327	3.325
bottled beer	201	2.044
newspapers	269	2.735
pip fruit	296	3.01
fruit/vegetable juice	262	2.664
whipped/sour cream	317	3.223
brown bread	248	2.522
domestic eggs	295	2.999
frankfurter	202	2.054
pork	218	2.217
butter	271	2.755
curd	257	2.613

1. Information on the data set. 'Expand all' expands the frequent itemsets tree, while 'Collapse all' collapses it.
2. In *Find itemsets* by you can set criteria for itemset search:

- **Minimal support:** a minimal ratio of data instances that must support (contain) the itemset for it to be generated. For large data sets it is normal to set a lower minimal support (e.g. between 2%-0.01%).
 - **Max. number of itemsets:** limits the upward quantity of generated itemsets. Itemsets are generated in no particular order. If *Auto find itemsets* is on, the widget will run the search at every change of parameters. Might be slow for large data sets, so pressing *Find itemsets* only when the parameters are set is a good idea.
3. *Filter itemsets:* If you're looking for a specific item or itemsets, filter the results by **regular expressions**. Separate regular expressions by comma to filter by more than one word.
- **Contains:** will filter itemsets by regular expressions.
 - **Min. items:** minimum number of items that have to appear in an itemset. If 1, all the itemsets will be displayed. Increasing it to, say, 4, will only display itemsets with four or more items.
 - **Max. items:** maximum number of items that are to appear in an itemset. If you wish to find, say, only itemsets with less than 5 items in it, you'd set this parameter to 5. If *Apply these filters in search* is ticked, the widget will filter the results in real time. Preferably not ticked for large data sets.
4. If *Auto send selection* is on, changes are communicated automatically. Alternatively press *Send selection*.

Example

Frequent Itemsets can be used directly with the **File** widget.

Orange Data Mining interface showing the workflow and results for Frequent Itemsets.

Workflow: File widget connects to both Data Table and Frequent Itemsets widgets.

Data Table Widget:

- Info: 9835 instances, 169 features (tags, density 2.61%), No target variable, No meta attributes.
- Variables:
 - ☒ Show variable labels (if present)
 - ☐ Visualize continuous values
 - ☒ Color by instance classes
- Selection:
 - ☐ Select full rows

Frequent Itemsets Widget:

- Info: Number of itemsets: 122, Selected itemsets: 2, Selected examples: 3680.
- Find itemsets:
 - Minimal support: 2%
 - Max. number of itemsets: 10000
 - ☒ Auto find itemsets is on
- Filter itemsets:
 - Contains: soda
 - Min. items: 1, Max. items: 5
 - ☒ Apply these filters in search
 - ☐ Send selection

Itemsets Table:

Itemsets	Support	%
whole milk	2513	25.55
soda	394	4.006
other vegetables	1903	19.35
soda	322	3.274
rolls/buns	1809	18.39
soda	377	3.833
soda	1715	17.44
shopping bags	242	2.461
sausage	239	2.43
pastry	207	2.105
yogurt	1372	13.95
soda	269	2.735
bottled water	1087	11.05
soda	285	2.898
tropical fruit	1032	10.49
soda	205	2.084
whole milk	2513	25.55
soda	394	4.006
other vegetables	1903	19.35
soda	322	3.274
rolls/buns	1809	18.39

Data Table Widget (Detailed View):

	{...}
4	yogurt, pip fruit, cream cheese, meat spreads
5	whole milk, other vegetables, condensed milk, long life bakery product
6	yogurt, whole milk, butter, rice, abrasive cleaner
7	rolls/buns
8	other vegetables, rolls/buns, UHT-milk, bottled beer, liquor (appetizer)
9	pot plants
10	whole milk, cereals
11	tropical fruit, other vegetables, white bread, bottled water, chocolate
12	citrus fruit, tropical fruit, yogurt, whole milk, butter, bottled water, curd, flour, dis...
13	beef
	rolls/buns, frankfurter, soda
	tropical fruit, chicken
	butter, sugar, fruit/vegetable juice, newspapers
	fruit/vegetable juice
	packaged fruit/vegetables
	chocolate