FCA Tools Bundle

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Introduction

FCA Tools Bundle is a website which contains a collection of tools that enable the user to analyze FCA contexts.
It requires you to create an account to log in but this way the user can keep a collection of its contexts and access them anytime.

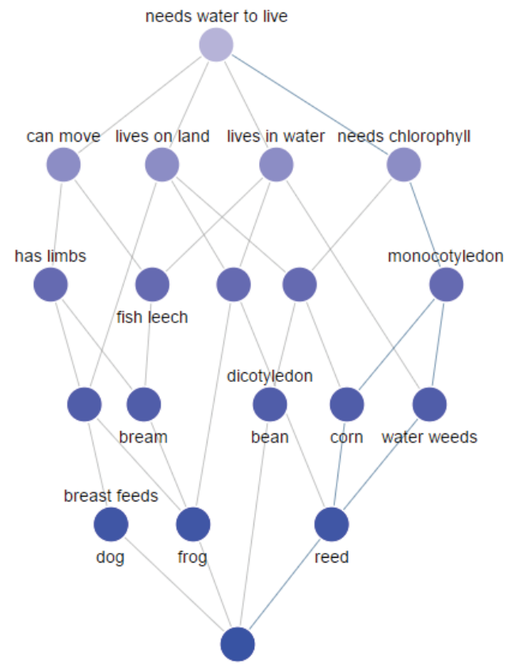
The following functionalities are available:
- Generation of the concepts of an N-dimensional context
- Generation of the concept lattice of a dyadic context
- A concept lattice visualization tool
- A navigation tool for triadic contexts.
- A search tool for finding a concept in big contexts.
- Groups of users for sharing your contexts.

All of these are enhanced by a clean and interactive JavaScript interface.

Context Analysis

Contexts can be imported in cxt and csv formats or created from scratch. After that the user can generate the concepts and the concept lattice of a context.

Although the concept lattice generation is only available for dyadic contexts the concepts generation and the concept finder work for any N-dimensional context.



Conceptual scaling

Steps:
- **Select a source:** the tool supports two sources types from where one may build scales: database and csv.
- **Provide General Scale Data:** the tool request to fill in the name of the scale, select a table for your scale and then select the type of the scale.
- **Provide Type Specific Data:**
- **nominal:** select the column on which to build the scale:
- **ordinal:** define the column on which to build the scale, the order of the scale (increasing or decreasing), the bounds of the scale (include or exclude) and the actual values.
- **interordinal:** define the column on which to build the scale, which side includes the bounds and the actual values
- **grid:** define the two columns on which to build the scale, the order for each of the two columns, the bounds for each of the two columns and the values for each of the two columns
- **custom:** create an incidence table defining the custom scale.

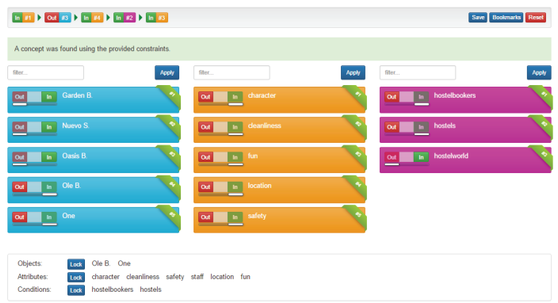
Concept Finder

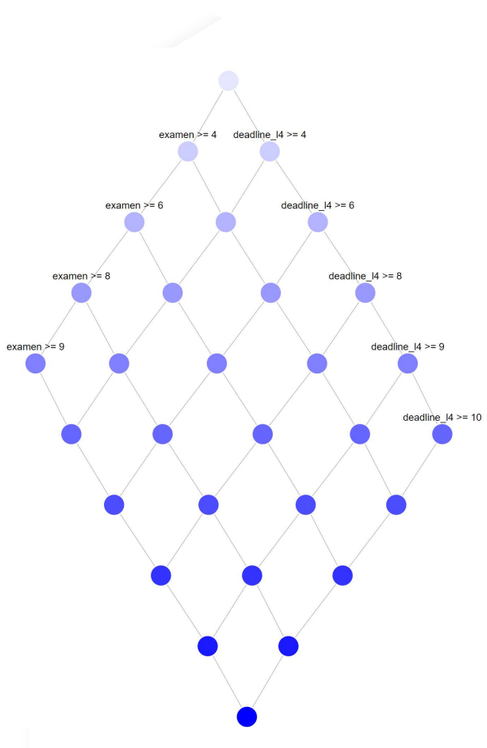
The concept finder is able to pin-point a concept by successive inclusions and/or exclusions of the elements of a context.

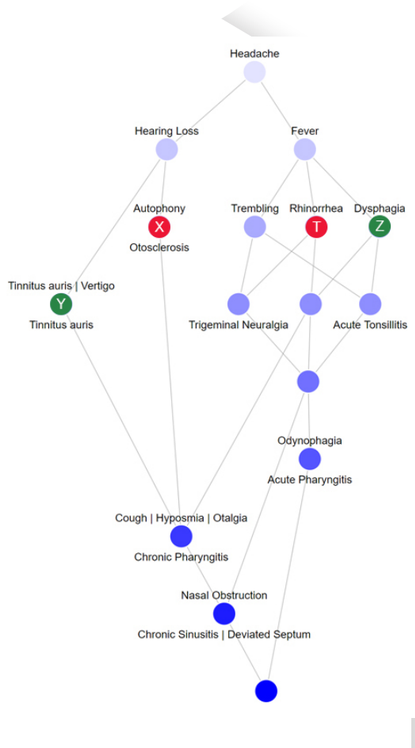
This is most useful for big contexts where algorithms are unable to generate the full list of concepts because of time and space constraints.

The concept finder works on any N-dimensional contexts and while for large contexts it starts out slow it gets faster as a cache system warms up behind the scene.

For ease of use and further reference the user is also able to bookmark the found concepts along with the path followed in order to find them.





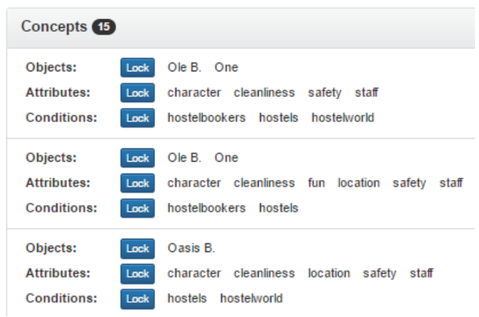


Analogical Reasoning

- Compute and display the concepts of a concept lattice which are in analogical complex relation by using the ASP based approach.
- This feature can be very useful since it is interesting to find relations between concepts that are not directly linked in a concept lattice.

Triadic Context

First a concept of the triadic concept is chosen. After that, the projected dyadic context is built along one of the perspectives of the triadic concept and its concept lattice is computed.
It can be proved that every dyadic concept of this projected context corresponds to exactly one tri-concept in the original tri-lattice.
These tri-concepts are called directly reachable and navigation among them is performed in the underlying dyadic concept lattice.
The navigation is done by selecting one of the dyadic concepts of the dyadic context and computing the associated triadic concept. By choosing different perspectives of that triadic concept one can navigate through the triadic context obtaining a different dyadic concept lattice and so on.



Contact and Acknowledgements

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