Formal Concept Analysis and Logic Diagrams

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Formal Concept Analysis (FCA) is a mathematical theory of data analysis which derives mathematical lattices (or "concept lattices") for binary relations or other tabular data (or "formal contexts"). Lattices formalise classifications and hierarchical orderings such as the ones occurring between concepts in subconcept-superconcept relationships. They can be represented by Hasse diagrams which can be visually explored, in particular with computer software which supports navigation, exploration, scaling and zooming of the diagrams. This talk will provide a brief introduction to and overview of FCA.

The further aim of this talk is to analyse connections between concept lattices and logic diagrams which are the focus of this conference. The main questions are what kind of logic diagrams are currently used with FCA and whether logic diagrams can be translated into the language of FCA and thus be explored in this manner or whether they are of a different nature. In the last case it would be of interest to explore whether other logic diagrams can contribute to FCA.