Description Logics for Schema Level Reasoning in Databases

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Abstract

Several recent papers point out that the research on Description Logics and their associated reasoning techniques can be profitably exploited in several ways in the area of Databases. We argue that one of the most important aspects of Databases where we can take advantage of Description Logics is the one related to schema level reasoning, i.e., reasoning at the intensional level of a database. This is the case in schema design, schema maintenance, schema integration, schema translation, integrity checking, query evaluation in cooperative information systems, etc. Indeed, on the one hand Description Logics can be seen as very powerful data models, and on the other hand, they can serve as unified formalisms that capture object-oriented, semantic and conceptual data models proposed in the literature. Most importantly, they can provide useful reasoning services in all the above mentioned tasks.