Ontology and Database Systems
Knowledge Representation and Ontologies

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Overview of the Part on "KR and Ontologies" I

1. Modeling information through ontologies
   1. Introduction to ontologies
   2. Using logic for representing knowledge
   3. Ontology languages
   4. UML class diagrams as FOL ontologies

2. Description Logics
   1. Brief introduction to computational complexity
   2. Introduction to Description Logics
   3. Description Logics and UML Class Diagrams

3. Query answering in databases and ontologies
   1. Querying databases and ontologies
   2. Query answering in Description Logics

4. Ontology-based data access
   1. The *DL-Lite* family of tractable Description Logics
   2. Linking ontologies to relational data

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Overview of the Part on "KR and Ontologies" II

5. Reasoning in the *DL-Lite* family
   1. TBox reasoning
   2. TBox & ABox reasoning and query answering
   3. Beyond *DL-Lite*

6. Reasoning in the $\mathcal{ALC}$ family
   1. Properties of $\mathcal{ALC}$
   2. Reasoning over $\mathcal{ALC}$ concept expressions
   3. Reasoning over $\mathcal{ALC}$ knowledge bases
   4. Extensions of $\mathcal{ALC}$
   5. Reasoning in extensions of $\mathcal{ALC}$
   6. $\mathcal{SHOIQ}$ and $\mathcal{SROIQ}$