

Lectures of DBIS:

ISE: DB + SQL Lab

- ER Model *Conceptual Model*
- Rel Model *Logical/abstract Data Model*
- Rel Algebra
- SQL

Declarative Query Languages

Data + Querying (polynomial)

non-monotonic *Logic Data Model*

Declarative Querying

SSD&XML:

- XML Data Model
- QEs: XPath + XQuery
- XSLT

MSc

LOGICS

- polynomial
- exponential
- undecidable!

ISC Courses

- Formal Logics
- Artificial Intelligence

First-Order Logic (FOL)

Open World Model Theory

Knowledge Bases

Data + Knowledge \rightarrow Querying to Reasoning

Deductive DB

Closed World (CWA)

relational Model

• Datalog

- Declarative
- Query + Knowledge Representation Lg.
- Non-classical Model Theory
- minimal models
- well-founded models
- stable models
- non-monotonic (Resolution Calc)
- "Answer Set Programming"

(XML) \rightarrow Semantic Web

Description Logic \subseteq FOL $(\Rightarrow$ CWA)

RDF Data Model

SPARQL Declarative Query Language

"ontologies"

OWL "Web Ontology Language"

(Tableau calculus)

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Example for human disjunctive reasoning:

Sudoku

3 v 6

3!

6 here

6!

6 v 7

6 here

7!

3 here v 7 here