Book Review

Datalog and Logic Databases
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In relational databases, datalog is an important attribute which helps to develop declarative queries. It is certainly the prolog that contributes this non procedural language. Datalog offers more than query languages with its recursion feature. Realizing its potential the authors in the book on Datalog and Logic Databases have presented a logical flow of datalog and logical databases with the help of eight chapters.

In the opening chapter on introduction they outline the scope and potential of this book which aims at the basics of datalog, its extensions including applications. In the second chapter on Logic and Relational Databases they outline the preliminaries underlying these types. The discussions include data dependencies and models with the algebraic concepts.

In the next chapter the authors have introduced the syntax and semantics behind the datalog, which is essential to understand in its proper form. Datalog programs are assessed using algorithms, including non-recursive programs and recursive programs. The evaluation exercise is supported with examples.

The expressive power of datalog is limited which can be extended by negation to produce nonmonotonic queries. The syntax behind datalog is well explained with definitions and illustrations followed by the extension of datalog with disjunction. The fifth chapter on Function Symbols highlight the approaches, the termination criteria and conditions for program evaluation.

Aggregation helps to characterize large amount of data in single value and hence they are discussed in the next chapter as the aggregate constructs are discussed to express optimization problems. The syntax and summation procedures are explained with numerous examples.

The techniques in the datalog queries are explained in the next chapter as they make the evaluation process easier. The two major queries magic-sets rewriting and chain queries. They are supported by adequate algorithms and examples.

In the ninth chapter on Applications of Datalog, the authors have outlined the various applications in the domains such as networking, cloud computing, P2P databases. program analysis, information extraction, social network analysis etc.

The eight chapters are supported by a lengthy bibliography. A useful addition to the database world is this exercise.

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