Query Processing Over Incomplete Databases

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Query processing is a fundamental activity in database processing which has been extensively addressed. However, the incomplete data in some datasets lead to the birth of incomplete databases where query processing is not straight forward. Thus the need for addressing this issue is fulfilled by this book which has five chapters.

In the first chapter on Introduction, the authors basically explained the issue of incomplete data management. Further, the querying and indexing in the incomplete databases with illustrations are presented. Three challenges in this direction such as index structure design, form efficient algorithms and query answering are posed by the authors.

The missing value is the main character of the incomplete datasets. They outlined three methods to deal with the missing values such as data discarding model, observed data dependant model and data imputation model in the second chapter on how to handle incomplete data methods. Further, they focus on statistical methods, machine learning approaches and a few new advance imputation methods.

In the third chapter on Query Semantics on Incomplete data, the authors have present three representative query semantics such as k-neighbor search, skyline query, and top-k dominating query in the incomplete databases.

The fourth chapter on Advanced Techniques is very crucial in this book. The authors treated a few advanced techniques for processing queries over incomplete data with a discussion on novel index structures, effective pruning heuristics and the crowdsourcing techniques. The index structures are well explained with the help of many illustrations followed by an extensive discussion on crowdsourcing techniques. The ten algorithms presented in this chapter with numerous architectures enhance the value of the content of this book.

The last chapter on Conclusion summarize the contributions. This book is supported by a well-knitted bibliography of useful references.

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