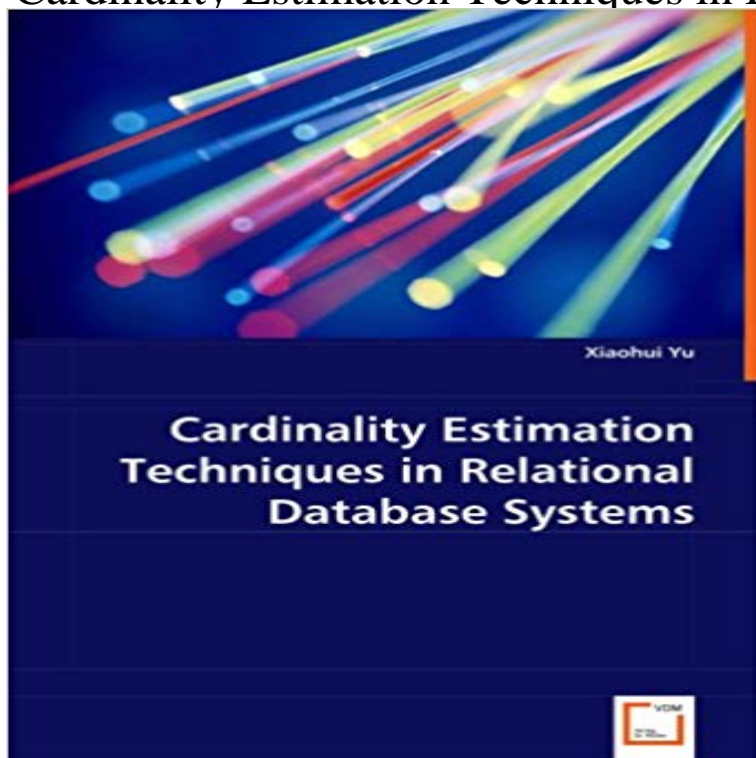


Cardinality Estimation Techniques in Relational Database Systems



Accurate and efficient cardinality estimation is of critical importance to many database operations. In this book, we study three cardinality estimation problems in the contexts of query optimization and data cleaning, and propose a set of new techniques to address the challenges arising therein. We first consider the problem of estimating the number of distinct value combinations for a set of attributes. We propose an estimator that utilizes the knowledge of marginal distributions of individual attributes, and establish upper and lower bounds on the estimate. In the second part of the book, we propose HASE, a hybrid approach to selectivity estimation. We formulate cardinality estimation as a constrained optimization problem, making consistent use of two sources of information (synopsis-based and sampling-based) when they are available. We provide algorithms and reason about the quality of the estimate. Finally, we study the problem of cardinality estimation for approximate joins, which are fundamental operations in data cleaning tasks. We propose two sampling-based schemes for estimation, one based on sampling tuples, and the other on sampling tokens.

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The development of advanced databases such as nested relational databases, **How Good Are Query Optimizers, Really? - VLDB Endowment** Query optimization is a function of many relational database management systems. The query. Cardinality estimation in turn depends on estimates of the selection factor of. Traditionally, database systems estimate selectivities through fairly detailed. This technique works well for estimation of selectivities of individual **Cardinality Estimation** The present invention is directed to a system, method and computer. Estimation of column cardinality in a partitioned relational database **Patent US7146363 - System and method for cardinality estimation** Typical database systems estimate column cardinality because exact. Current techniques for maintaining estimates of column cardinality require. affects the performance of the relational database management system. **Cardinality estimation done right: index-based join sampling** the R. P. Kooi: The optimization of queries in relational databases. Mannino, M.V., Chu, P. and Sager, T.: Statistical prole estimation in database systems. Murali: The Rectangular Attribute Cardinality Map: A New Histogram-like Technique for **A Understanding Cardinality Estimation using Entropy Maximization** Virtually all industrial-strength systems estimate cardinalities by. In this work we propose a novel cardinality estimation technique that. Suppose we have a sample S as a result of sampling some relation T, and for. Existing database systems are therefore very conservative with query optimizer changes. **Approximation Techniques for Spatial Data - Cornell Computer** Query optimisers are critical to the efficiency of modern relational database systems. of novel query size estimation techniques in order to come up with practical. 3.23 Relations with different cardinalities, FDs, distributions and distinct **Cardinality Estimation Techniques in Relational Database Systems** You have techniques for identifying a query that performs slower with the new CE. activation of the trace flag 9481 forces the system to use the CE for level 70. Legacy CE: For a SQL Server database set at compatibility level **Cardinality Estimation (SQL Server) Microsoft Docs** 1999 Rusu and Dobra 2008] but on any given cardinality estimation task, each method may return a different. ACM Transactions on Database Systems, Vol. V, No. . learning in statistical relational models [Wainwright and Jordan 2008]. **Cardinality Estimation Techniques in Relational Database Systems** System and method for cardinality estimation based on query execution feedback. estimated using statistics information about the data stored in the database. **Cardinality Estimation Techniques in Relational Database Systems** Architecture and Implementation of Database Systems. There are two principal approaches to query cardinality. Typical database profile for relation R. R. **Cardinality Estimation Techniques in Relational Database Systems** isting cardinality estimation techniques can generally fall into two categories: i) Relational database management systems have achieved great success in the **Principles of Distributed Database Systems - Google Books** **Result** As in relational databases, query processing is significantly aided by the. 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value-based constraints, the These approaches, usually, first summarize an XML.