

# Relational Constraint

```
graph TD; A[Relational Constraint] --> B[Domain Constraints]; A --> C[Key Constraints or Uniqueness Constraints]; A --> D[Entity Integrity Constraints]; A --> E[Referential Integrity Constraints];
```

**Domain  
Constraints**

**Key  
Constraints or  
Uniqueness  
Constraints**

**Entity  
Integrity  
Constraints**

**Referential  
Integrity  
Constraints**

# Constraints And Databases

**Raghu Ramakrishnan, Peter Stuckey**



## **Constraints And Databases:**

**Constraint Databases and Applications** Bart Kuijpers, Peter Revesz, 2004-10-14 The first International Symposium on the Applications of Constraint Databases CDB2004 took place in Paris France on June 12-13 2004 just before the ACM SIGMOD and PODS conferences Since the publication of the paper Constraint Query Languages by Kanakis Kuper and Revesz in 1990 the last decade has seen a growing interest in constraint database theory query evaluation and applications reflected in a variety of conferences journals and books Constraint databases have proven to be extremely flexible and adoptable in environments that relational database systems cannot serve well such as geographic information systems and bioinformatics This symposium brought together people from several diverse areas all contributing to the practice and the application of constraint databases It was a continuation and extension of previous workshops held in Friedrichshafen Germany 1995 Cambridge USA 1996 Delphi Greece 1997 and Seattle USA 1998 as well as of the work in the comprehensive volume Constraint Databases edited by G Kuper L Libkin and J Paredaens 2000 and the textbook Introduction to Constraint Databases by P Revesz 2002 The aim of the symposium was to open new and future directions in constraint database research to address constraints over domains other than the reals to contribute to a better implementation of constraint database systems in particular of query evaluation to address efficient quantifier elimination and to describe applications of constraint databases

**Constraints and Databases** Raghu Ramakrishnan, Peter Stuckey, 1997-12-31 Constraints and Databases contains seven contributions on the rapidly evolving research area of constraints and databases This collection of original research articles has been compiled as a tribute to Paris C Kanellakis one of the pioneers in the field Constraints have long been used for maintaining the integrity of databases More recently constraint databases have emerged where databases store and manipulate data in the form of constraints The generality of constraint databases makes them highly attractive for many applications Constraints provide a uniform mechanism for describing heterogeneous data and advanced constraint solving methods can be used for efficient manipulation of constraint data The articles included in this book cover the range of topics involving constraints and databases join algorithms evaluation methods applications e.g. data mining and implementations of constraint databases as well as more traditional topics such as integrity constraint maintenance Constraints and Databases is an edited volume of original research comprising invited contributions by leading researchers

**Introduction to Constraint Databases** Peter Revesz, 2002-01-08 Differing from other books on the subject this one uses the framework of constraint databases to provide a natural and powerful generalization of relational databases An important theme running through the text is showing how relational databases can smoothly develop into constraint databases without sacrificing any of the benefits of relational databases whilst gaining new advantages Peter Revesz begins by discussing data models and how queries may be addressed to them From here he develops the theory of relational and constraint databases including Datalog and the relational calculus concluding with three sample constraint database systems

DISCO DINGO and RATHER Advanced undergraduates and graduates in computer science will find this a clear introduction to the subject while professionals and researchers will appreciate this novel perspective on their subject Constraint Databases Gabriel Kuper, Leonid Libkin, Jan Paredaens, 2013-03-09 This book is the first comprehensive survey of the field of constraint databases Constraint databases are a fairly new and active area of database research The key idea is that constraints such as linear or polynomial equations are used to represent large or even infinite sets in a compact way The ability to deal with infinite sets makes constraint databases particularly promising as a technology for integrating spatial and temporal data with standard relational databases Constraint databases bring techniques from a variety of fields such as logic and model theory algebraic and computational geometry as well as symbolic computation to the design and analysis of data models and query languages The book is a collaborative effort involving many authors who have contributed chapters on their fields of expertise Despite this the book is designed to be read as a whole as opposed to a collection of individual surveys In particular the terminology and the style of presentation have been standardized and there are multiple cross references between the chapters The idea of constraint databases goes back to the late Paris Kanellakis **Modeling of Database Constraints in Active Databases** S. B. Navathe, Georgia Institute of Technology. College of Computing. Project no. C-36-687, 1993 *Understanding Databases* Suzanne W. Dietrich, 2021-08-02 Understanding Databases Concepts and Practice is an accessible highly visual introduction to database systems for undergraduate students across many majors Designed for self contained first courses in the subject this interactive e textbook covers fundamental database topics including conceptual design the relational data model relational algebra and calculus Structured Query Language SQL database manipulation transaction management and database design theory Visual components and self assessment features provide a more engaging and immersive method of learning that enables students to develop a solid foundation in both database theory and practical application Concise easy to digest chapters offer ample opportunities for students to practice and master the material and include a variety of solved real world problems self check questions and hands on collaborative activities that task students to build a functioning database This Enhanced eText also offers interactive multiple choice questions with immediate feedback that allow students to self assess as they proceed through the book Case studies illustrative examples color summary figures and tables with annotations and other pedagogical tools are integrated throughout the text to increase comprehension and retention of key concepts and help strengthen students problem solving skills *Constraint Databases and Applications* Volker Gaede, 1996-12-19 This book presents the refereed proceedings of the Second International Workshop on Constraint Database Systems CDB 97 held in Delphi Greece in January 1997 together with some papers presented at the CP 96 Workshop on Constraints and Databases held in Cambridge Massachusetts in August 1996 The 18 revised full papers presented were carefully reviewed and selected for inclusion in the volume also included are the extended abstract of an invited contribution and two survey papers The papers are organized in sections on

languages expressiveness of spatial languages systems temporal applications new applications indexing constraint programming and optimization      *Introduction to Constraint Databases* Peter Revesz, 2004 This text presents the theory and applications of constraint database systems which provide new methods for the design of data models and query languages

**Advances in Spatial Databases** Max J. Egenhofer, John R. Herring, 1995-07-19 This book presents the proceedings of the 4th International Symposium on large Spatial Databases SSD 95 held in Portland Maine USA in August 1995 The 23 refereed full papers presented were selected from more than 60 submissions and describe the state of the art in the expanding field of large spatial databases with a certain emphasis on an upcoming new generation of spatial database management systems The volume is organized in sections on spatial data models spatial data mining spatial query processing multiple representations open GIS geo algorithms reasoning about spatial relations spatial joins and benchmarks

**Advances in Spatial Databases**, 1995      *Advances in Databases*, 1997      *A Method for Compiling Efficient Constraint Checks in Database Programming Languages* Ralph Edward Bunker, 1987      *Repairing and Querying Databases under Aggregate Constraints* Sergio Flesca, Filippo Furfaro, Francesco Parisi, 2011-10-20 Research has deeply investigated several issues related to the use of integrity constraints on relational databases In particular a great deal of attention has been devoted to the problem of extracting reliable information from databases containing pieces of information inconsistent with regard to some integrity constraints In this manuscript the problem of extracting consistent information from relational databases violating integrity constraints on numerical data is addressed Aggregate constraints defined as linear inequalities on aggregate sum queries on input data are considered The notion of repair as consistent set of updates at attribute value level is exploited and the characterization of several data complexity issues related to repairing data and computing consistent query answers is provided Moreover a method for computing reasonable repairs of inconsistent numerical databases is introduced for a restricted but expressive class of aggregate constraints An extension of this method for dealing with the data repairing problem in the presence of weak aggregate constraints which are expected to be satisfied but not required to is presented Furthermore a technique for computing consistent answers of aggregate queries in the presence of a wide form of aggregate constraints is provided Finally extensions of the framework as well as several open problems are discussed      *Path Constraints for Databases with Or Without Schemas* Wenfei Fan, 1999      Object-Oriented Databases Setrag Khoshafian, 1993-05-10 This book thoroughly explains object oriented concepts such as abstract data typing inheritance and others Surveys all existing and emerging database models including relational complex object and intelligent databases Offers real world examples drawn from actual products and practical prototypes      *Relational Databases and Knowledge Bases* Georges Gardarin, Patrick Valduriez, 1989 Relational Databases and Knowledge Bases is written from a systems implementation point of view No previous knowledge of relational data base technology is needed the text follows a natural progression from introductory matter such as file systems to more advances topics such as deductive databases The

inclusion of knowledge bases recognizes recent developments in artificial intelligence and expert systems      **Recent Advances in Temporal Databases** James Clifford, Alexander Tuzhilin, 1995-09-29 This volume contains papers presented at the International Workshop on Temporal Databases held in Zurich Switzerland from 17 18 September 1995 The papers cover a wide range of topics from the highly theoretical through to reports on how temporal data bases can be used to solve real problems In addition to the technical papers there are also summaries of two panel discussions which assess the recently completed TSQL2 Language Design and examine the need for additional research into the development of TSQL3 Together these papers provide a comprehensive overview of the latest research work into the area of temporal databases They will provide invaluable reading for researchers postgraduate students and practitioners      **Proceedings of the Second ACM SIGACT-SIGMOD Symposium on Principles of Database Systems** ,1983      **Principles and Practice of Constraint Programming** ,1999      *Object Database Development* David W. Embley, 1998 With a focus on core principles and concepts this book takes an object oriented approach to modeling and developing database applications and provides a seamless way to move from analysis through specification and design into implementation Case studies are presented using Oracle UniSQL O2 ObjectStore with Java Ode and PROLOG

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