

1. Record Nr.	UNINA9910830385503321
Autore	Kumar Vijay <1946->
Titolo	Mobile database systems [[electronic resource] /] / Vijay Kumar
Pubbl/distr/stampa	Hoboken, NJ, : Wiley-Interscience, c2006
ISBN	1-280-51919-3 9786610519194 0-470-04829-8 0-470-04828-X
Descrizione fisica	1 online resource (320 p.)
Disciplina	004.165 658.8/7202854678 658.87202854678
Soggetti	Mobile communication systems Mobile computing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Mobile Database Systems; Contents; Acknowledgments; Preface; 1 Mobile Database System; 1.1 Introduction; 1.1.1 Fully Connected Information Space; 1.2 Types of Mobility; 1.3 Summary; References; 2 Wireless Network Communication; 2.1 Introduction; 2.1.1 Radio Frequency - Spectrum and Band; 2.1.2 Cellular Communication; 2.2 Continuous Connectivity; 2.2.1 Structure of a Channel; 2.2.2 Absence of Free Channel; 2.2.3 Signal Fading; 2.2.4 Frequency Reuse; 2.2.5 PCS and GSM; 2.2.6 PCS - Personal Communication Service; 2.2.7 Interface; 2.2.8 Call Processing 2.2.9 GSM - Global System for Mobile Communication2.3 Summary; References; 3 Location and Handoff Management; 3.1 Introduction; 3.1.1 Location Management; 3.1.2 Handoff Management; 3.1.3 Roaming; 3.2 Summary; References; 4 Fundamentals of Database Technology; 4.1 Conventional Database Architecture; 4.1.1 Database Partition and Distribution; 4.2 Database Processing; 4.2.1 Transaction Structure; 4.3 Serialization of Transactions; 4.3.1 Serializability-Based Correctness Criteria; 4.3.2 Serializability Theory; 4.3.3 Degree of Isolation; 4.4 Advanced Transaction Models

4.4.1 Nested Transaction Model; 4.4.2 SAGA; 4.4.3 Cooperative Transaction; 4.4.4 ConTract; 4.4.5 Flex Transaction; 4.5 Summary; References; 5 Introduction to Concurrency Control Mechanisms; 5.1 Introduction; 5.1.1 Ways of Locking Data Items; 5.1.2 The Phantom Problem; 5.1.3 Multigranularity Locking; 5.1.4 Heuristic Approach in Locking Schemes; 5.1.5 Non-Locking-Based Schemes; 5.1.6 Mixed Approaches; 5.1.7 Multiversion Approach; 5.1.8 Optimistic Concurrency Control Mechanisms; 5.1.9 Two-Phase Locking for Distributed Database Systems; 5.2 Summary; References; 6 Data Processing and Mobility

6.1 Introduction; 6.2 Effect of Mobility on the Management of Data; 6.2.1 Data Categorization; 6.2.2 Location Dependent Data Distribution; 6.3 Summary; References; 7 Transaction Management in Mobile Database Systems; 7.1 Mobile Database System; 7.2 Transaction Execution in MDS; 7.3 Mobile Transaction Model; 7.4 Execution Model based on ACID Transaction Framework; 7.4.1 Execution Model with Reporting Transaction; 7.4.2 Two-Level Consistency Model; 7.4.3 Pro-Motion: Proactive management of Mobile Transactions; 7.5 Pre-write Transaction Execution Model

7.5.1 Pre-write Execution in Mobile Database Systems; 7.6 Mobile Transaction Model; 7.6.1 HiCoMo: High Commit Mobile Transaction Model; 7.6.2 Moflex Transaction Model; 7.6.3 Kangaroo Mobile Transaction Model; 7.6.4 MDSTPM Transaction Execution Model; 7.6.5 Mobilaction-A Mobile Transaction Model; 7.6.6 Atomicity for Mobilaction; 7.6.7 Isolation for Mobilaction; 7.6.8 Consistency and Durability for Mobilaction; 7.7 Data Consistency in Intermittent Connectivity; 7.8 The Consistency Model; 7.8.1 The Extended Database Operation Interface; 7.8.2 Data Correctness; 7.9 Weak Connectivity Operation

7.9.1 Correctness Criterion

Sommario/riassunto

A breakthrough sourcebook to the challenges and solutions for mobile database systems. This text enables readers to effectively manage mobile database systems (MDS) and data dissemination via wireless channels. The author explores the mobile communication platform and analyzes its use in the development of a distributed database management system. Workable solutions for key challenges in wireless information management are presented throughout the text. Following an introductory chapter that includes important milestones in the history and development of mobile data processing, the