

TABLE OF CONTENTS

Preface	v
Organising Committees	vi

WEDNESDAY, AUGUST 29, 1984

C1A:	WORKSTATION DATABASES Chairperson: H. S. Lim (Singapore)	
	Database Portals — A New Application Program Interface M.R. Stonebraker, L.A. Rowe (U.S.A.)	3
	A Personal Data Manager P. Lyngbaek, D. McLeod (U.S.A.)	14
	Query Processing on Personal Computers — A Pragmatic Approach R. Krishnamurthy, S.P. Morgan (U.S.A.) (Short Paper)	28
	Ski: A Semantics Knowledgeable Interface R. King, S. Melville (U.S.A.) (Short Paper)	30
C1B:	DATABASE THEORY 1 Chairperson: N. Goodman (U.S.A.)	
	Dependency Satisfaction in Databases with Incomplete Information G. Grahne (Finland)	37
	Transactions in Relational Databases (Preliminary Report) S. Abiteboul (France), V. Vianu (U.S.A.)	46
	A Data Manipulation Model — An Extension of the Alpha Expression I. Kobayashi (Japan)	57
	A Less Costly Constraints Checking for Join Dependency K.P. Tan (Singapore)	63
C2A:	DATABASE DESIGN Chairperson: A. Albano (Italy)	
	Datadict — A Data Analysis and Logical Database Design Tool T.J. Tan, Tan Kah Poh, A.M. Goh (Singapore)	71
	Relationship Merging in Schema Integration S.B. Navathe, T. Sashidhar, R. Elmasri (U.S.A.)	78
	A Temporal Framework for Database Specification and Verification C.H. Kung (Norway)	91
C2B:	PANEL: STATISTICAL DATABASES Chairpersons: Z.M. Ozsoyoglu, G. Ozsoyoglu (U.S.A.)	

C3A:	PERFORMANCE Chairperson: K. Lin (U.S.A.)	
	The Performance of Concurrency Control Algorithms for DBMSs	107
	M.J. Carey, M.R. Stonebraker (U.S.A.)	
	Choice and Performance in Locking for Databases	119
	Y.C. Tay, R. Suri (Singapore, U.S.A.)	
	Evaluating Multiple Server DBMS in General Purpose Operating System Environments.....	129
	T. Harder, P. Peini (W. Germany)	
C3B:	PANEL: MULTIMEDIA DATABASE MANAGEMENT SYSTEMS Chairperson: G. Gardarin (France)	

THURSDAY, AUGUST 30, 1984

C4A:	ADVANCED APPLICATIONS 1 Chairperson: V. Lum (W. Germany)	
	Characteristics of Scientific Databases	147
	A. Shoshani, F. Olken, H.K.T. Wong (U.S.A.)	
	Nested Transactions with Multiple Commit Points — An Approach to the Structuring of Advanced Database Applications	161
	B. Walter (W. Germany)	
	Molecular Objects, Abstract Data Types and Data Models — A Framework	172
	D.S. Batory, A.P. Buchmann (U.S.A., Mexico)	
C4B:	DATABASE THEORY 2 Chairperson: K. P. Tan (Singapore)	
	Equivalence and Mapping of Database Schemes	187
	A. D'Atri, D. Sacca (Italy)	
	Comprehensive Approach to the Design of Relational Database Schemes	196
	C. Beeri, M. Kifer (Israel)	
	Interval Queries on Object Histories: Extended Abstract	208
	S. Ginsberg, K. Tanaka (U.S.A., Japan)	
	Line Graphs of Gamma-Acyclic Database Schemes and its Recognition Algorithm	218
	Y.Z. Zhu (China) (Short Paper)	
C5A:	EFFICIENT SEARCH Chairperson: A. Goh (Singapore)	
	Bit-sliced VLSI Algorithm for Search and Sort	225
	Y. Tanaka (Japan)	
	Towards an Optimum Data Structure — CB-trees	235
	T.V. Prabhakar, H.V. Sahasrabudde (India)	
	A Dynamic Perfect Hash Function Defined by an Extended Hash Indicator Table	245
	W.P. Yang, M.W. Du (Taiwan)	
C5B:	PANEL: DATABASES FOR EXPERT SYSTEMS Chairpersons: S.B. Navathe (U.S.A.), R. Van de Riet (Netherlands)	
C6A:	OFFICE DATABASE SYSTEMS Chairperson: A. Solvberg (Norway)	

	Development of a Multimedia Information System for an Office Environment	261
	S. Christodoulakis, J. Vanderbroek, J. Li, T. Li, S. Wan, Y. Wang, M. Papa, E. Bertino (Canada)	
	End User Access to Very Large Databases in an Automated Office Workstation Environment	272
	R.M. Tagg (U.K.)	
	Language Support for Office Modelling	280
	W. Lamersdorf, G. Muller, J.W. Schmidt (W. Germany)	
C6B:	INTEGRITY AND VIEWS	
	Chairperson: R. Reiter (Canada)	
	Constraints Equations — Declarative Expression of Constraints with Automatic Enforcement	291
	M. Morgenstern (U.S.A.)	
	Specification, Semantics and Enforcement of Dynamic Database Constraints	301
	H-D. Ehrich, U.W. Lipeck, M. Gogolla (W. Germany)	
	A Relational Database View Update Translation Mechanism	309
	Y. Masunaga (Japan)	
C7A:	QUERY PROCESSING	
	Chairperson: T. W. Ling (Singapore)	
	Hashing Methods and Relational Algebra Operations	323
	K. Bratbergsengen (Norway)	
	Extending the Algebraic Framework of Query Processing to Handle Outerjoins	334
	A. Rosenthal, D. Reiner (U.S.A.)	
	Processing Read-Only Queries Over Views with Generalisation	344
	D. Goldhirsch, L. Yedwab (U.S.A.) (Short Paper)	
C7B:	PANEL: EXPERIENCE WITH DATABASE DESIGN AIDS	
	Chairperson:	
 FRIDAY, AUGUST 31, 1984		
C8A:	CAD/CAM DATABASE SYSTEMS	
	Chairperson: A. Buchmann (Mexico)	
	A Transaction Mechanism for Engineering Design Databases	355
	W. Kim, R. Lorie, D. McNabb, W. Plouffe (U.S.A.)	
	An Example of Knowledge-Based Query Processing in a CAD/CAM DBMS	363
	A. Rosenthal, S. Heiler, F. Manola (U.S.A.)	
	Information Processing for CAD/VLSI on a Generalised Data Management System	371
	M. Adiba, G.T. Nguyen (France) (Short Paper)	
C8B:	DISTRIBUTED SYSTEMS	
	Chairperson: T. Haerder (W. Germany)	
	Certification by Intervals of Timestamps in Distributed Database Systems	377
	C. Boksenbaum, M. Cart, J. Ferrié, J-F. Pons (France)	
	UNIBASE — An Integrated Access to Databases	388
	Z. Brzezinski, J. Getta, J. Rybnik, W. Stepniewski (Poland)	

	A Strategy for Decomposing Complex Queries in a Heterogeneous DDB	397
	S.M. Deen, R.R. Amin, M.C. Taylor (U.K.) (Short Paper)	
C9A:	DISTRIBUTED QUERY PROCESSING Chairperson: C. Thanos (Italy)	
	Optimisation of Nested Queries in a Distributed Relational Database	403
	G.M. Lohman, D. Daniels, L.M. Haas, R. Kistler, P.G. Selinger (U.S.A.)	
	Processing Inequality Queries Based on Generalised Semi-joins	416
	M. Yoshikawa, Y. Kambayashi (Japan)	
	Optimising Star Queries in a Distributed Database System	429
	A.L.P. Chen, V.O.K. Li (U.S.A.)	
C9B:	PANEL: INEXPENSIVE LARGE CAPACITY STORAGE WILL REVOLUTIONIZE THE DESIGN OF DATABASE MANAGEMENT SYSTEMS Chairperson: D. Childs (U.S.A.)	
C10A:	TRANSACTION MANAGEMENT Chairperson: G. Schlageter (W. Germany)	
	Robustness to Crash in a Distributed Database — A Non Shared-Memory Multi-Processor Approach	445
	A. Borr (U.S.A.)	
	Architectural Issues of Transaction Management in Multi-Layered Systems	454
	G. Weikum, H-J. Schek (W. Germany)	
	Distributed Transaction Management in Jasmin	466
	M-Y. Lai, W.K. Wilkinson (U.S.A.)	
C10B:	DYNAMIC HASHING Chairperson: R. Cook (Singapore)	
	Unified Dynamic Hashing	473
	J.K. Mullin (Canada)	
	Cascade Hashing	481
	P. Kjellberg, T.U. Zahle (Denmark)	
	A Mapping Function for the Directory of a Multidimensional Extendible Hashing	493
	E.J. Otoo (Canada)	
C11A:	ADVANCED APPLICATIONS 2 Chairperson: S. C. Lim (Singapore)	
	Integration of Time Versions into a Relational Database System	509
	P. Dadam, V. Lum, H-D. Werner (W. Germany)	
	Name-Tracing Using the ICL Content Addressable Filestore	523
	A.G. Ward (U.K.)	
	Automatic Classification of Office Documents by Coupling Relational Data bases and PROLOG Expert Systems	529
	K. Woehl (W. Germany) (Short Paper)	
	Retrieval of Relational Structures for Image Sequence Analysis	533
	W. Benn, B. Radig (W. Germany) (Short Paper)	
C11B:	PANEL: DATABASE SYSTEMS — PAST, PRESENT AND FUTURE Chairperson: D.K. Hsiao (U.S.A.)	
	Additional Referees	541
	Author index	542