

FUTURE DIRECTIONS IN DATA BASE MANAGEMENT SYSTEMS

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Abstract

Data base management systems are evolving in three orthogonal directions - function, architecture and environmental support. Functional directions include aspects of user languages, data independence and data semantics or control. Architecture directions include data base machines, special back end processors, etc. Environmental support includes facilities for designing data bases, tools for the collection of the initial data from diverse sources, tools for conversion and maintenance of application programs, etc. Each of these major areas will be discussed, with examples indicating the state of the art and expected future directions.

System R: A Relational Data Base Management System

Abstract

The structure of System R will be discussed with descriptions of the user interfaces.

Implementation of the Storage System:

The storage system of System R is a record level network data base management system. The functions and implementation of this system will be described with emphasis on storage management, recovery and locking.

Implementation of the Data Base Compiler:

The relational data system of System R is a compiler which performs authorisation, binding and access path selection for SQL statements. The structure and optimisation strategies will be described.

The structure of the system is defined by the following components: the data base, the processing unit, and the control unit. The data base is the central element of the system, which stores and manages the data. The processing unit is responsible for the execution of the programs and the manipulation of the data. The control unit is responsible for the coordination of the system and the management of the resources.

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