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(54) Title: MEMORY-RESIDENT DATABASE MANAGEMENT SYSTEM AND IMPLEMENTATION THEREOF

(57) Abstract: A comprehensive Memory-Resident Database Management System (115) architecture and implementation is disclosed where a) all data storage in database is in memory, b) all database management functionality is in memory except backup and recovery storage based on hard disk, c) all database objects including tables, views, triggers, procedures, functions... are in memory, d) all data security is at memory level, e) all data indexed, sorted and searched based on the selected search algorithms are in memory, f) all logging functionality to refresh in-between transactions reside in memory. Therefore, the processing speed of database query will take advantage of speed of RAM (101) (Random Access Memory) without sacrifice any speed losing on Hard disk I/O. Not only the whole database is running in RAM (101), but also all or pre-selected database table columns are default to be indexed. All internal processing of database query is based on indexed columns.

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