Current and Future Trends in DBMS

Current and Future DBMS Issues

❖ New applications yield new techniques
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❖ Some “new” applications:
  – Data warehousing
  – On-line analytical processing (OLAP)
  – Data mining
  – Distributed data
  – Heterogeneous data and data integration
  – Scientific/sequential/ordered data
  – Partial or approximate query answers

Current and Future Issues (cont.)

❖ Some “new” techniques:
  – New kinds of indices
  – Improved B Trees
  – Faster aggregation algorithms
  – New QP algorithms
  – Better optimization techniques
  – Data broadcasting
  – Generic data models
  – Faster sorting algorithms
  – New query languages
  – Deductive DBMSs

Current and Future Issues (cont.)

– Active DBs: rule management (ICs and triggers)
– Real-time DBMS
– Web-based DBMS
– XML and semi-structured data
– Spatial and high-dimensional data (lots of columns)
– Special-purpose DBMSs
– Digital Libraries
– Geographic Information Systems
– etc…..

Current and Future Issues (cont.)

– Object databases
– New algebras
– Query cost estimation
– New locking and commit protocols
– Main-memory databases
– CC/R techniques for non-relational settings
– DBMS interfaces, visualization tools
– DBMS development tools
– etc…..
❖ BOTTOM LINE: Lots of opportunities for research, development, and fun !!!