




## *Current and Future Trends in DBMS*

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## *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

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## *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.....

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## *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

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## *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 !!!**

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