Let’s Design a Multi-user DBMS

• Abbreviated specification
  – Input: Dynamic SQL Queries
  – Output: data or error messages
  – Properties
    • Login access control
    • Users do not interfere with each other
    • Other?
Desirable Design Characteristics

• Minimal Complexity
• Loose Coupling
• Reusability
• High fan-in
• Low-to-medium fan-out
• Leanness
• Stratified
• Standard techniques
Levels of Design

1. System
2. Division into subsystems
3. Division into classes within packages
4. Division into data and routines within classes
5. Internal routine design
Multi-user DBMS

- What are the subsystems?
- What interfaces should they have with each other?
Some Design Heuristics

- Real world objects
- Form consistent abstractions
- Encapsulate implementation details
- Inherit—when it simplifies the design
- Hide secrets (information hiding)
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