



The Relational Language

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Relational Query Languages

- Query languages
 - Allow manipulation and **retrieval of data** from a database.
- Query Languages
 - QLs not intended to be used for complex calculations.
 - QLs support easy, efficient access to large data sets.
- Two types of languages
 - Formal (mathematical) query language (ch 4)
 - Relational Algebra
 - Relational Calculus
 - Real (or operational) language --- SQL (ch 5)



Formal Relational Query Languages

Two mathematical Query Languages form the basis for “real” languages (e.g. SQL), and for implementation:

- ✓ *Relational Algebra*: More **operational**, very useful for representing execution plans.
- ✓ *Relational Calculus*: Lets users describe what they want, rather than how to compute it.