Data Models

Data Types

Data Constraints

Domain Integrity

Elements must be within the domain. Example, if an attribute is True/False then a value for that attribute cannot be bananas

Entity Integrity

Keys cannot be null

Referential Integrity

Referenced key must exist

Key Integrity

Key cannot already exist

Keys

A key is a set of attributes that where the values of those attributes are designated to a unique tuple within the relation. Commonly these are the id number attributes.

Functional Dependencies

B+ Tree

Query / Relational Algebra

Relational Algebra	SQL Statement
σ	Where

Relational Algebra	SQL Statement
π	Select
$\times$	From
$\bowtie$	Join
$\cap, \cup, -$	Group By
Sort: min/max	Min. Max

Query I/O analysis

Query Optimization

XML

XPATH

XQuery