DBMS

Lec-1 DBMS for College / University Students

- → Basic Introduction
- → E-R Model
- → Basics of keys
- → Normalisation
- → Transaction control & concurrency
- → SQL & Relational Algebra
- → Indexing

Basic Introduction

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2-tier, 3-tier

3-Schema / 3 level of abstraction

Data independence

Data models

Network | Hierarchical | Relational | ER | Object oriented

ER model

- → Attributes
- → Relationship
- → Types of Relationship

Basics of keys

- Primary Key
- Candidate Key
- Super Key
- Foreign Key

Normalisation

- Closure method
- Functional dependencies
- 1NF
- 2NF
- 3NF
- BCNF

Transaction Control & Concurrency

- ACID → Atomicity, Consistency, Isolation, ~~Integrity~~, Durability
  - R-W
    - W-R
    - W-W
    - Conflict Serialisability
    - Recoverability
    - 2-Phase Lock
    - Timestamp

SQL and Relational Algebra

- DDL → Data Definition Language
- DML → Data Manipulation Language
- DCL
- Constraint
- Aggregate function
- Joins
- Nested Query → in, not in, any, all

Indexing → Primary, cluster, secondary → B-tree, B+ tree