

Lecture 1

Relational Theory

Modeling

- Making the right choices
- Primary Key
- Entity

Lecture 2

Cardinality

Normalization

Query Language

Two main components of SQL

- DDL
- DML

Key Properties of Relations

Case Sensitivity

- Keywords
- Identifiers

Data Types

- Text
- Number
- Date
- Binary

NULL

Comments

Constraints

- Primary Key
- UNIQUE

Referential Integrity

INSERT

Strings

Date

Lecture 3

SELECT

IN()

LIKE

NULL

Concatenating Strings

CASE ... END

Useful Functions

- Numerical
- String
- Date
- cast
- distinct

Aggregate Functions

- GROUP BY
- HAVING

Lecture 4

JOIN

USING

Alias

Self-join

INNER JOIN

OUTER JOIN

COALESCE()

Filter close to tables

Filtering and Qualifying

Set Operations

- UNION
- UNION ALL
- EXCEPT / MINUS

Subquery

- Correlation
- IN()

Lecture 5

- NULLS
- WHERE Correlated Query

Sorting Data

- ORDER BY NULL
- Collation
- Advanced Sorts
- LIMIT
- Third Page
- Materialized Path
- Dynamic Ordering
- Recursive Queries

Window Functions

- Format
- Agggregate Functions as Window Function
- OVER()
- Ranking Reporting Functions

Generating HTML

Lecture 6

HTML Charts

SQL Subtleties

- Common Table Expressions
- WITH
- LEFT OUTER JOIN
- Interesting use of min/ max
- exists compared to count
- Limiting Damage
- Fuzzy Searches
- soundex()

Thinking a Query

Transaction

- UPDATE
- INSERT

Populate Numerical Identifiers

- SEQUENCE
- Auto-Numbered Column

Lecture 7

Loading Data From a File

UPDATE

Update or Insert

Update then Insert

DELETE

SQL Programming

- Functions
- Procedural extensions in SQL
- Cursors