

Lesson 6: Principles of Data Manipulation and Management

- ✓ **Video:** Data Models, Terminology
5 min
- ✓ **Video:** From Data Models to Databases
4 min
- ✓ **Video:** Pre-Relational Databases
5 min
- ✓ **Video:** Motivating Relational Databases
3 min
- ▶ **Video:** Relational Databases: Key Ideas
4 min

Lesson 7: Relational Algebra

Lesson 8: SQL for Data Science

Lesson 9: Key Principles of Relational Databases

Assignment 2: SQL

Relational Databases: Key Ideas

UNIVERSITY of WASHINGTON

Relational Database History

Pre-Relational: if your data changed, your application broke.

Early RDBMS were buggy and slow (and often reviled), but required only 5% of the application code.

“Activities of users at terminals and most application programs should remain unaffected when the internal representation of data is changed and even when some aspects of the external representation are changed.”

Key Ideas: Programs that manipulate tabular data exhibit an algebraic structure allowing reasoning and manipulation independently of physical data representation

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Bill Howe, eScience Institute
17



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English



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- 0:00 [MUSIC] Okay, so let's talk about relational databases. So the history here is that, which I motivated last time I hope, is that pre-relational, if your data changed in some significant way, if you need to reorganize things in some way, your application broke.
- 0:19 So if you changed the parent-child relationships in the hierarchy of the model, or if you pretty much did anything with the network or file-oriented model, your applications had to be rewritten to support that, okay. And so early relational databases addressed this issue, and even though they were buggy and sort of slow, they required only about 5% of the code you had to write