Robert Soulé
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Research on networks, languages, distributed systems, and databases

Brown
1995–1999 BA CS, Art-Semiotics

NYU
2004–2006 MS CS
2006–2012 PhD CS

Cornell
IBM
2008–2011
2012–2014 Postdoc

Data Intensive Systems group

Lugano
2014-present
Assistant Professor
What is a Database?

• A collection of information that exists over a long period of time

• Models some real-world enterprise (organization) and the totality of the information it contains

• A *database management system* (DBMS) is a software system to enter, modify, and query data
Why Study Databases?

• An increasing shift from computation to information

• Databases are a crucial component of most real-world applications and businesses

• DBMSs include most aspects of computer science:
  • OS, PL, AI, algorithms, theory, distributed systems, …
Course Goals

• Become familiar with fundamental DBMS concepts and tools
• Study alternatives to “traditional” approaches
• Understand enough to learn more
Topics Covered

- Conceptual design
- Relational model
- Relational algebra
- SQL
- Logical design and normalization
- Query execution
- Transaction processing
- Data storage
- Indexing
- Query optimizations
- Alternatives to relational model (e.g., NoSQL)
This Course

• The syllabus/schedule is likely to change as we go along

• We will try to make the course as smooth as possible, but expect some bumps
Books
Grading

- *Roughly*: 35% for homework and projects, 25% for the mid-term, 40% for the final exam
Late Policy

• If you submit less than one hour late, there is a 10% deduction.
• If you submit less than 3 hours, but more than 1 hour late, it is a 50% deduction.
• Anything more than 3 hours late is not accepted.
Academic Integrity

• You may discuss assignments and solutions with others. You must say who you worked with, and cite outside sources.

• You must write and turn in your own solutions

• Any incidents of cheating will be reported to the department, and the assignment will be given a 0.