Programming Abstractions in C++

CS106B

Cynthia Lee

Today's Topics

1. Introductions
2. Course structure and procedures
3. What is this class? What do we mean by "abstractions"?
4. Introduce the C++ language
   - Functions
   - Strings
   - Streams

Upcoming lectures:

- Strings and streams, continued
- Data structures: Grid

Your instructor: Cynthia Lee

Research:

- PhD @ UCSD: market-based resource allocation in large-scale systems
- Recently: computer science education

Teaching:

- At Stanford since 2013, 3 years at UCSD
- CS106B, CS106X, CS107, CS109, CS9, SSEA, next quarter: 103

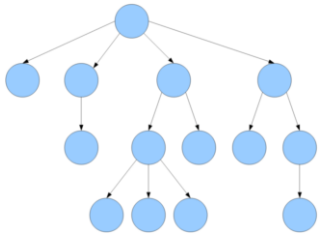
Software engineer:

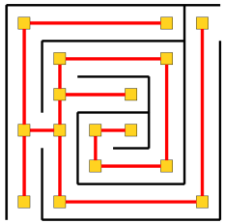
- iPhone educational games
- Document clustering and classification

When I'm not working:

- Family, biking, climbing, hiking, pet chickens

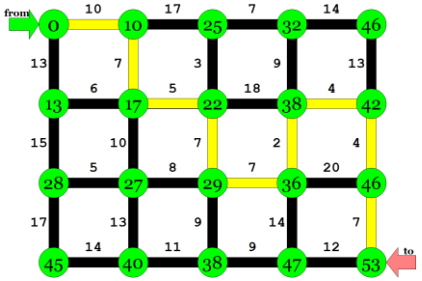
What is CS 106B?



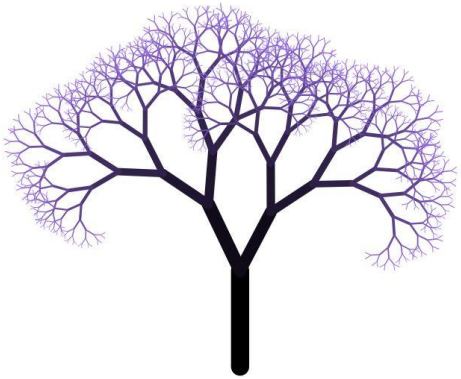


CS 106B: PROGRAMMING ABSTRACTIONS

- solving big(ger) problems and processing big(ger) data
- learning to manage complex data structures
- algorithmic analysis and algorithmic techniques such as recursion
- programming style and software development practices
- familiarity with the C++ programming language



PREREQUISITE: CS 106A OR EQUIVALENT



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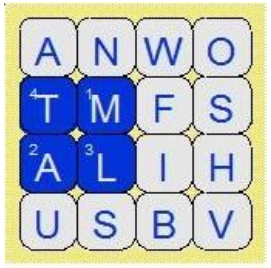

Stanford University

Late Days

Late day: allows you to submit a homework **1 Lecture Day** late

- You get 3 free (no-penalty) late days for the quarter, but only one or two can be used on a given assignment
- After your late days are used up (or for the 3rd late day), 1 bucket grade is deducted per day
- NO SUBMISSIONS are accepted after 3 days late

Example:

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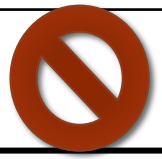
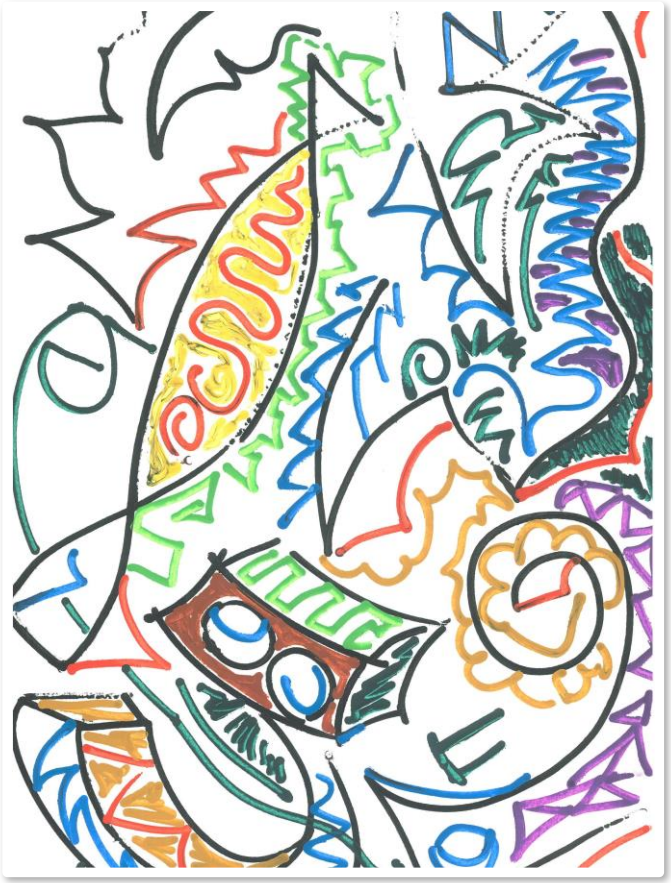
2				due	1 day late	1 day late	2 days late
3	2 days late	2 days late	3 days late	3 days late			

What is this class about?

What do we mean by "abstractions"?



Colatina, Carlos Nemer

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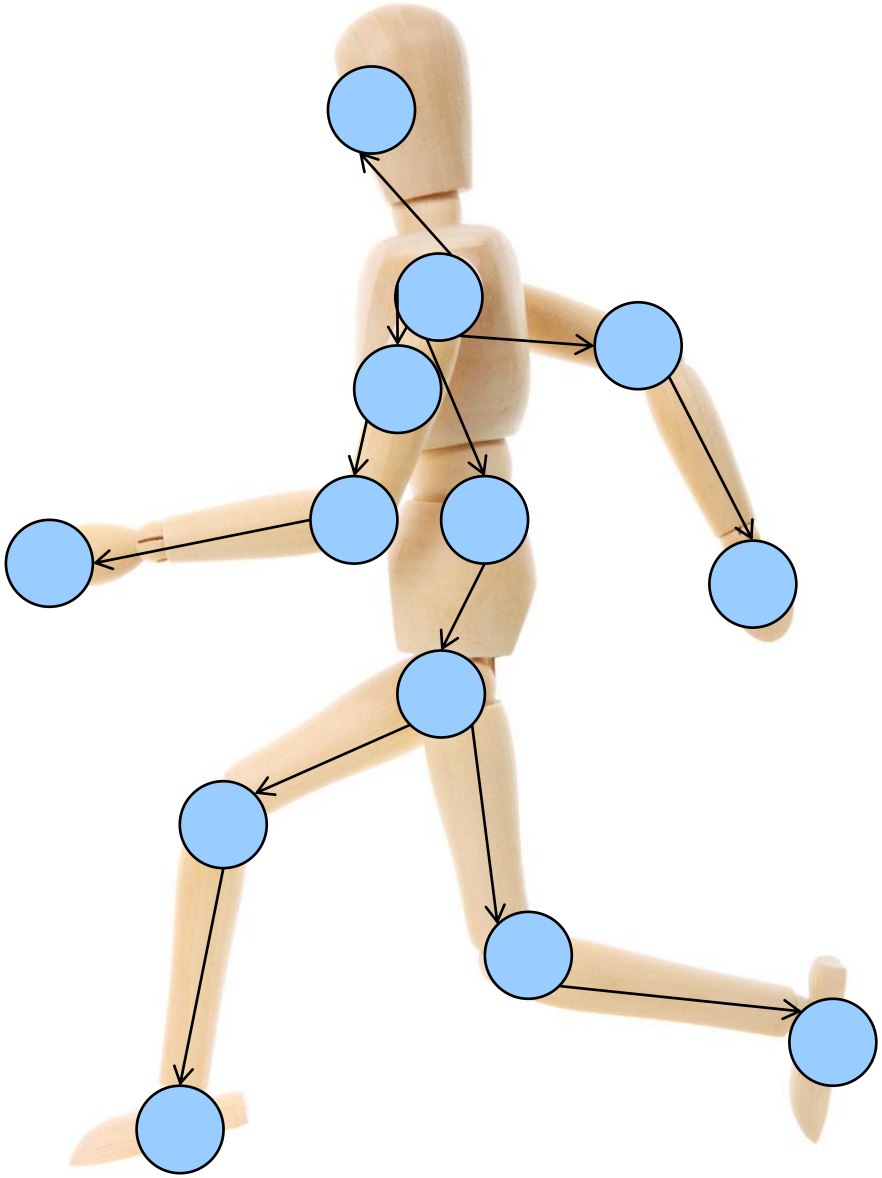

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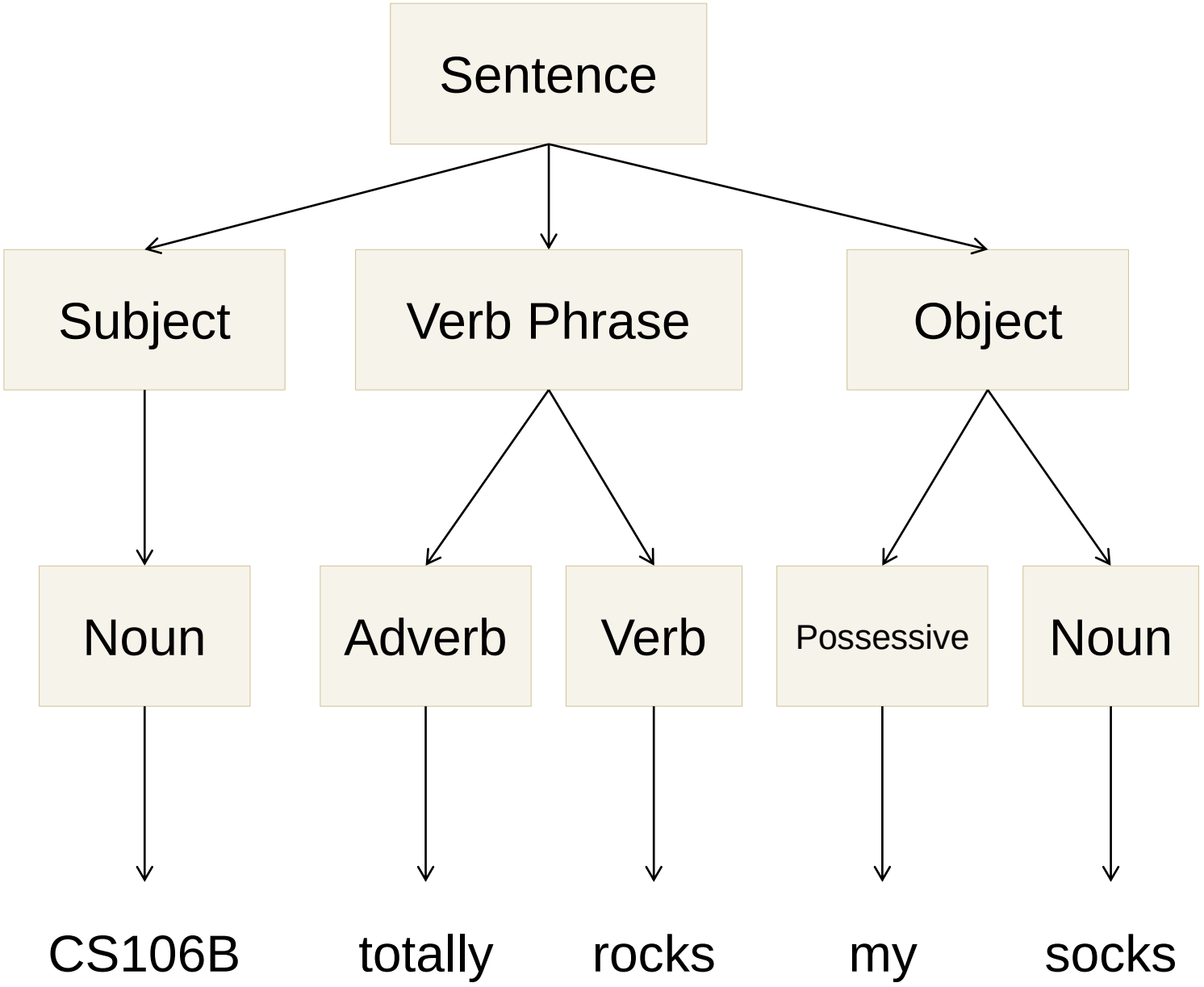
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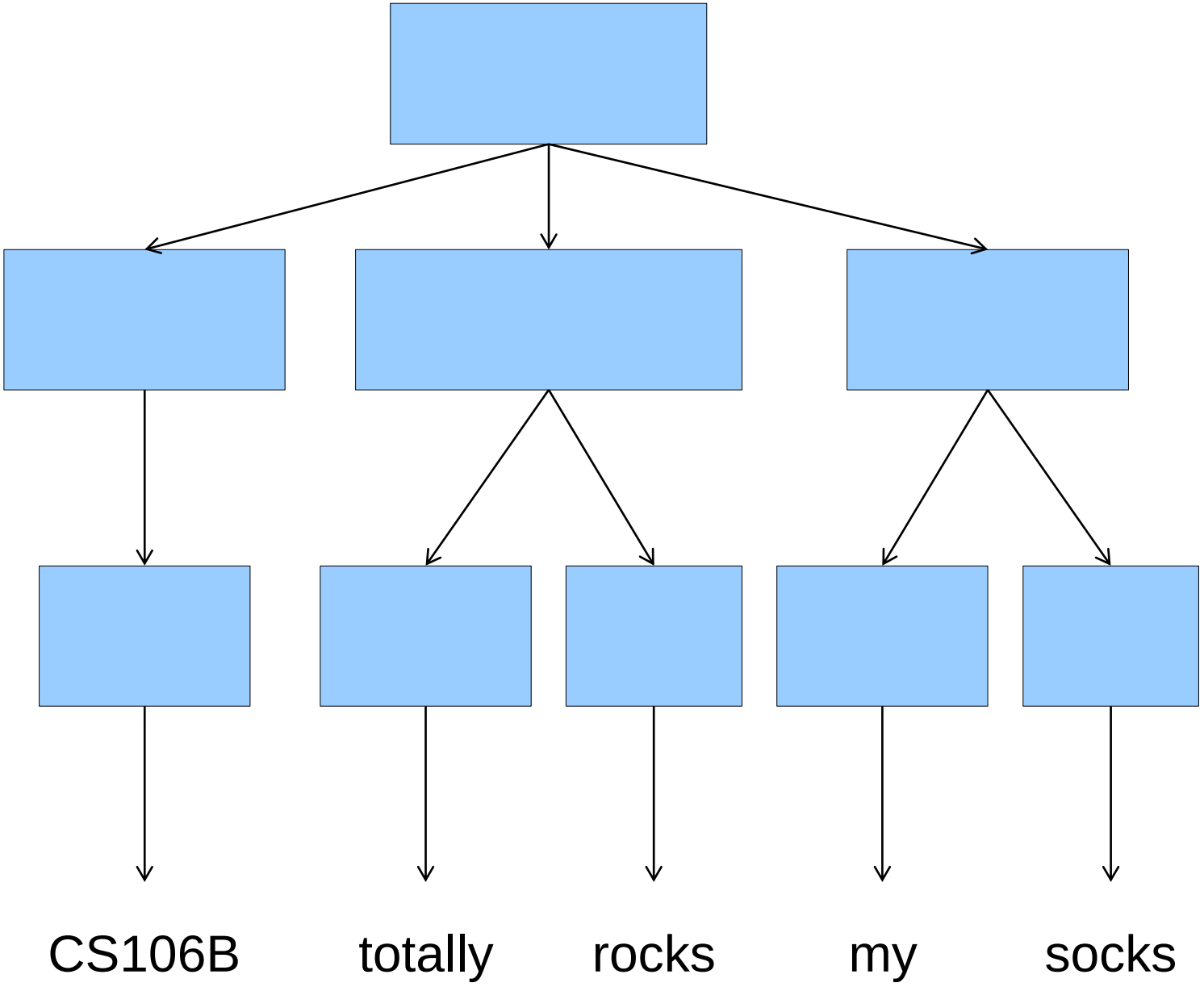
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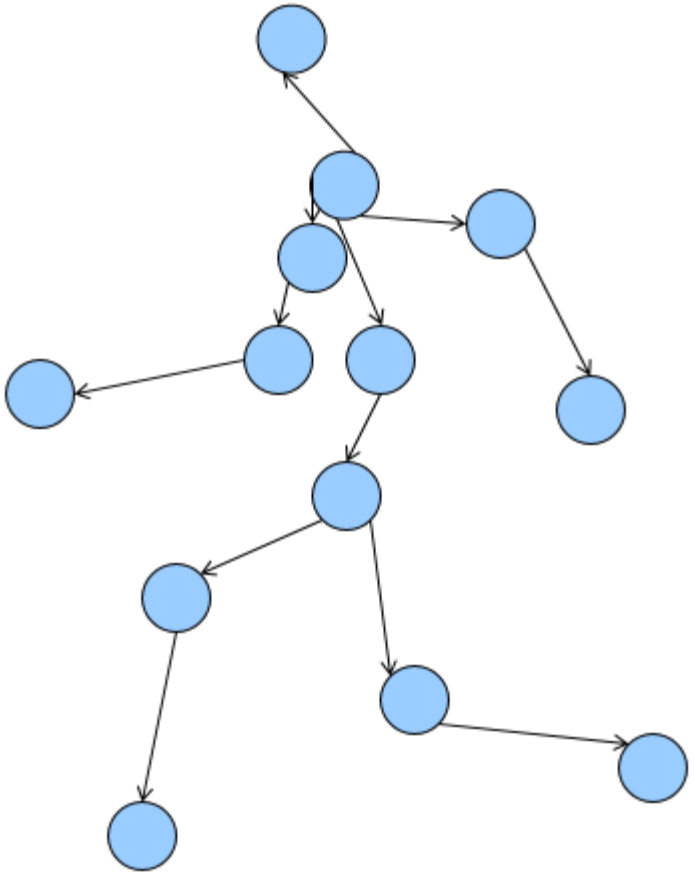

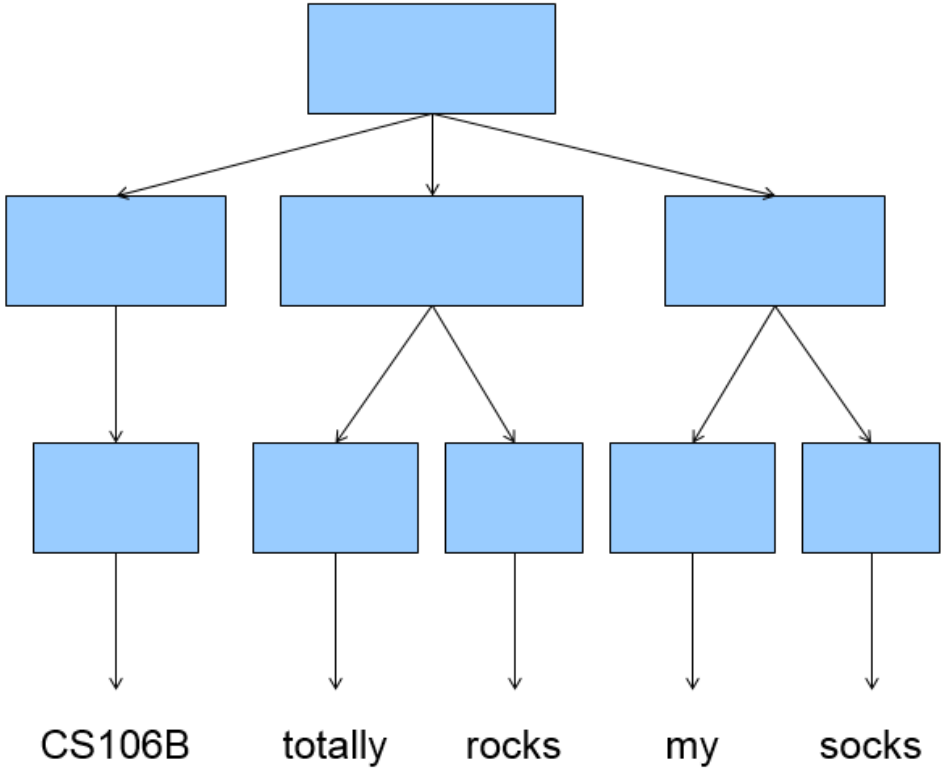
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Building a vocabulary of **abstractions**

makes it possible to represent and solve a huge variety of problems using known tools.

A little bit of advice for this course…

You'll have what is effectively a superpower

Spend some time thinking about how you'll use it.