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
Discussion Section, SLs

SECTION LEADERS: Helpful undergraduate assistants who will:

 run your discussion section each week
 grade your homework assignments and exams
 help you when you have questions
 ... and much more
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**

[HTTP://CS106B.STANFORD.EDU/](http://cs106b.stanford.edu/)
**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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What is this class about?

What do we mean by “abstractions”?
CS106B totally rocks my socks.
CS106B totally rocks my socks
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.