Welcome to CS 61A!

I’m John DeNero

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By appointment: denero.org/meet

The 61A Community

45 undergraduate student instructors / teaching assistants (TAs):
• Teach lab & discussion sections
• Hold office hours
• Lots of other stuff: develop assignments, grade exams, etc.

45+ tutors & mentors:
• Teach mentoring sections
• Hold office hours
• Lots of other stuff: homework parties, mastery sections, etc.

200+ lab assistants help answer your individual questions

1,500+ fellow students make CS 61A unique

Parts of the Course

Lecture: Videos posted to cs61a.org before each live lecture
Lab section: The most important part of this course (next week)
Discussion section: The most important part of this course (this week)
Staff office hours: The most important part of this course (next week)
Online textbook: http://composingprograms.com

Weekly homework assignments, three exams, & four programming projects
Lots of optional special events to help you complete all this work

An Introduction to Computer Science

What is Computer Science?

What problems can be solved using computation, how to solve those problems, and what techniques lead to effective solutions

The study of...

Systems
Artificial Intelligence
Graphics
Security
Networking
Programming Languages
Theory
Scientific Computing

Decision Making
Robotics
Natural Language Processing
Answering Questions
Translation
...

What is This Course About?

A course about managing complexity
Mastering abstraction
Programming paradigms
An introduction to programming
Full understanding of Python fundamentals
Combining multiple ideas in large projects
How computers interpret programming languages
Different types of languages: Scheme & SQL
A challenging course that will demand a lot of you

Alternatives to CS 61A
CS 10: The Beauty and Joy of Computing

Designed for students without prior experience
A programming environment created by Berkeley, now used in courses around the world and online
An introduction to fundamentals (& Python) that sets students up for success in CS 61A
Taught in Fall 2016 by Dan Garcia
More info: cs10.org

Data Science 8: Foundations of Data Science

Fundamentals of computing, statistical inference, & machine learning applied to real-world data sets
Great programming practice for CS 61A
Cross-listed as CS C8, Stat C8, & Info C8
Taught in Fall 2016 by Ani Adhikari
More info: data8.org & databears.berkeley.edu

Course Policies

Learning

Community

Course Staff

Details...

http://cs61a.org/articles/about.html

Collaboration

Asking questions is highly encouraged
- Discuss everything with each other; learn from your fellow students!
- Homework can be completed with a partner
- Projects should be completed with a partner
- Choose a partner from your discussion section

The limits of collaboration
- One simple rule: Don't share your code, except with your partner
- Copying project solutions causes people to fail
- We really do catch people who violate the rules, because...
- We also know how to search the web for solutions
- We use computers to check your work

Build good habits now

Expressions

Types of expressions

An expression describes a computation and evaluates to a value

\[ 18 + 69 \]
\[ \frac{6}{7} \]
\[ \sin \pi \]
\[ \log_2 1024 \]
\[ 2^{100} \]
\[ f(z) \]
\[ 7 \mod 2 \]
\[ \sum_{i=1}^{100} \]
\[ \frac{1}{\sqrt[n]{a^2}} \]
\[ \lim_{x \to \infty} \frac{69}{18} \]

Call Expressions in Python

All expressions can use function call notation
(Demo)
Evaluation procedure for call expressions:

1. Evaluate the operator and then the operand subexpressions
2. Apply the function that is the value of the operator subexpression to the arguments that are the values of the operand subexpression