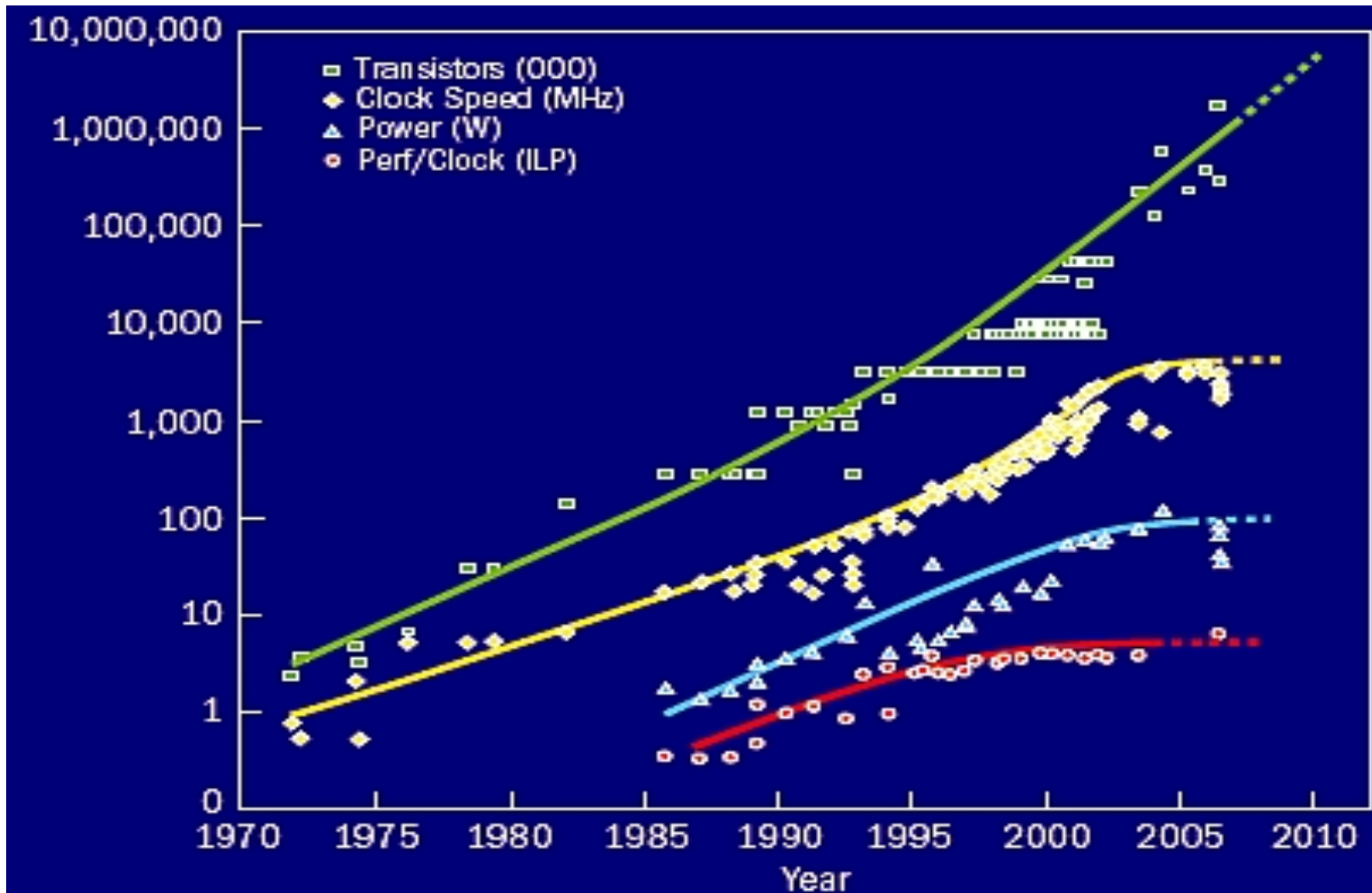


Welcome to CMPS 10

Instructor: Dustin Adams, PhD

duwadams@ucsc.edu

Increase of Computing Power

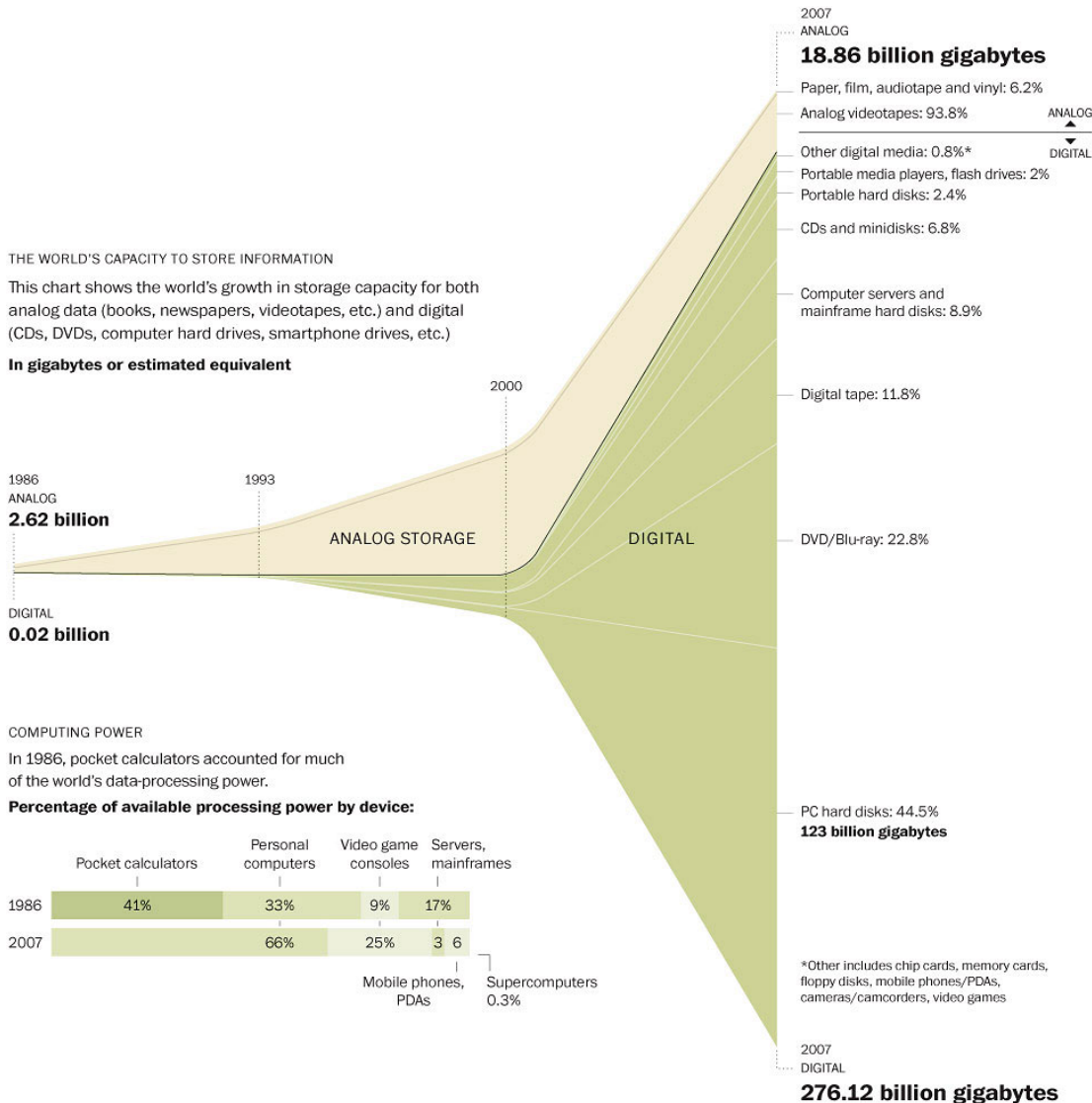


What does increased computer power really mean?

- Computing techniques same, but can do it now more quickly
- Miniaturization & Mobile
- Apple SIRI:
 - Speech recognition and Text to Speech
 - PERSONALIZED & CONTEXT: who and where the user is



Big Data is here



kilo, mega, giga, tera, peta, exa

1 Tera Byte is how many bytes?

- A. 1,000,000
- B. 1,000,000,000
- C. 1,000,000,000,000
- D. 1,000,000,000,000,000

Why might you be interested in CS? A job?

- Although the economy continues to face some challenges, the startup and tech industries are very much alive. While IPOs in general in 2016 were down, tech IPOs still maintained large positive gains. The appetite for seed and angel investing was extremely active. Tech incubators and accelerator programs kept popping up, especially in the Biotech industry.

CS is collaborative!



Meeting of a project team at Google

CS is creative!

- CS is NOT just code
- Code is technical, but it's also creative!



Introducing Leah Buechley

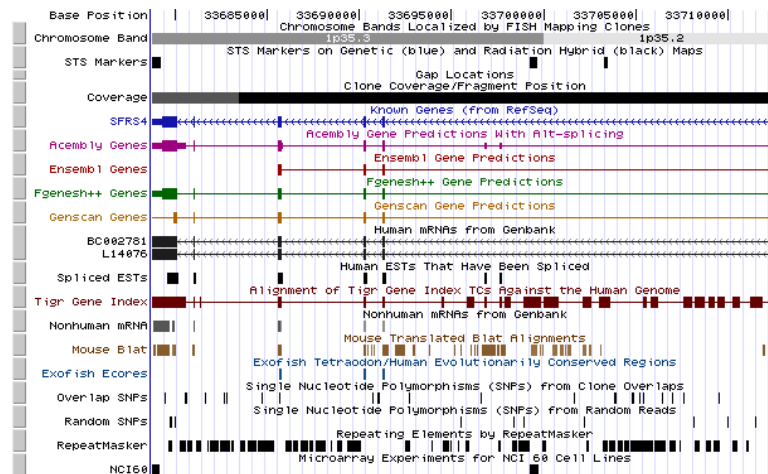
Before College: Interested in art and design, liked math.

In College: Studied fine arts, then computer science.

Now: Creates clothes that light up.

CS Jobs Benefit Society

The Human Genome Project and the field of bioinformatics have revolutionized what is possible in forensics, health care, science, criminal justice and other fields through the creation of the DNA database.



genome.ucsc.edu

Student Interests + CS = Innovative Careers!



*Find out what you love
to do and do that. It's
that simple.*

~ Dr. A. L. Garcia

Science + CS = Something for everyone

- **Bioinformatics**
- **Computational biology**
- **Genome informatics**
- **Cheminformatics**



Pictured above: Human chromosomes on a black background, from the National Human Genome Research Institute

Humanities/Social Science + CS =

- Motion graphic design
- Animation (2D & 3D)
- Computer graphics
- Computational linguistics
- Speech recognition software
- Human computer interaction



Pictured above: Digital art collage created by students at the Texas School for the Deaf in Austin, TX

Photo: Texas School for the Deaf

Education + CS =

- Educational technology
- Instructional design
- Assistive technology
- Electronic learning/
e-learning/online learning
- Distance education
- Educational animation



Pictured above: Assistive speech generating devices for language learners and disabled learners

Photo: Spectronicsinoz

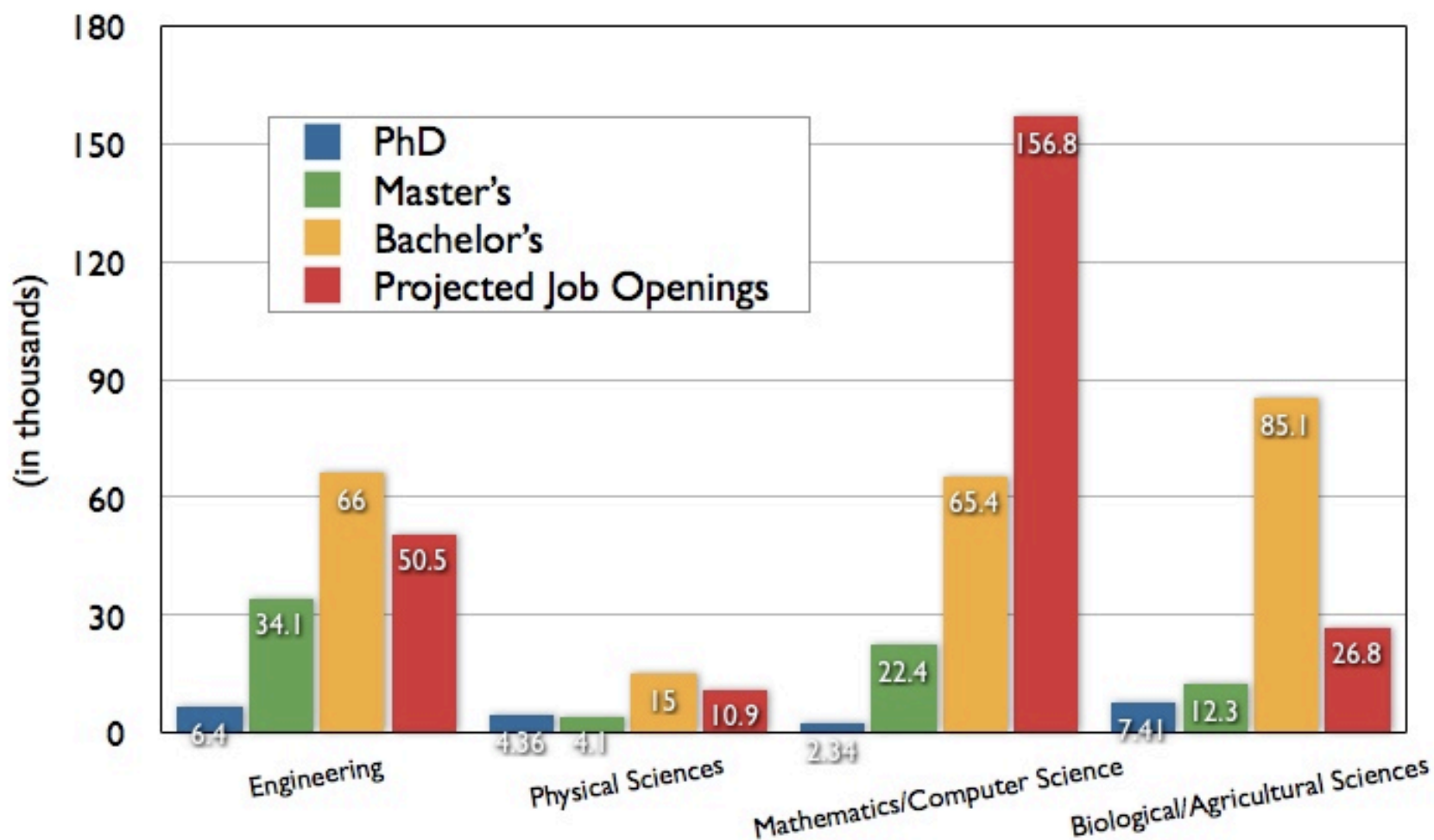
Business + CS =

- **Management information systems (MIS)**
- **Computer information systems (CIS)**
- **Database administrator**
- **Network administrator**
- **IT Portfolio Management**



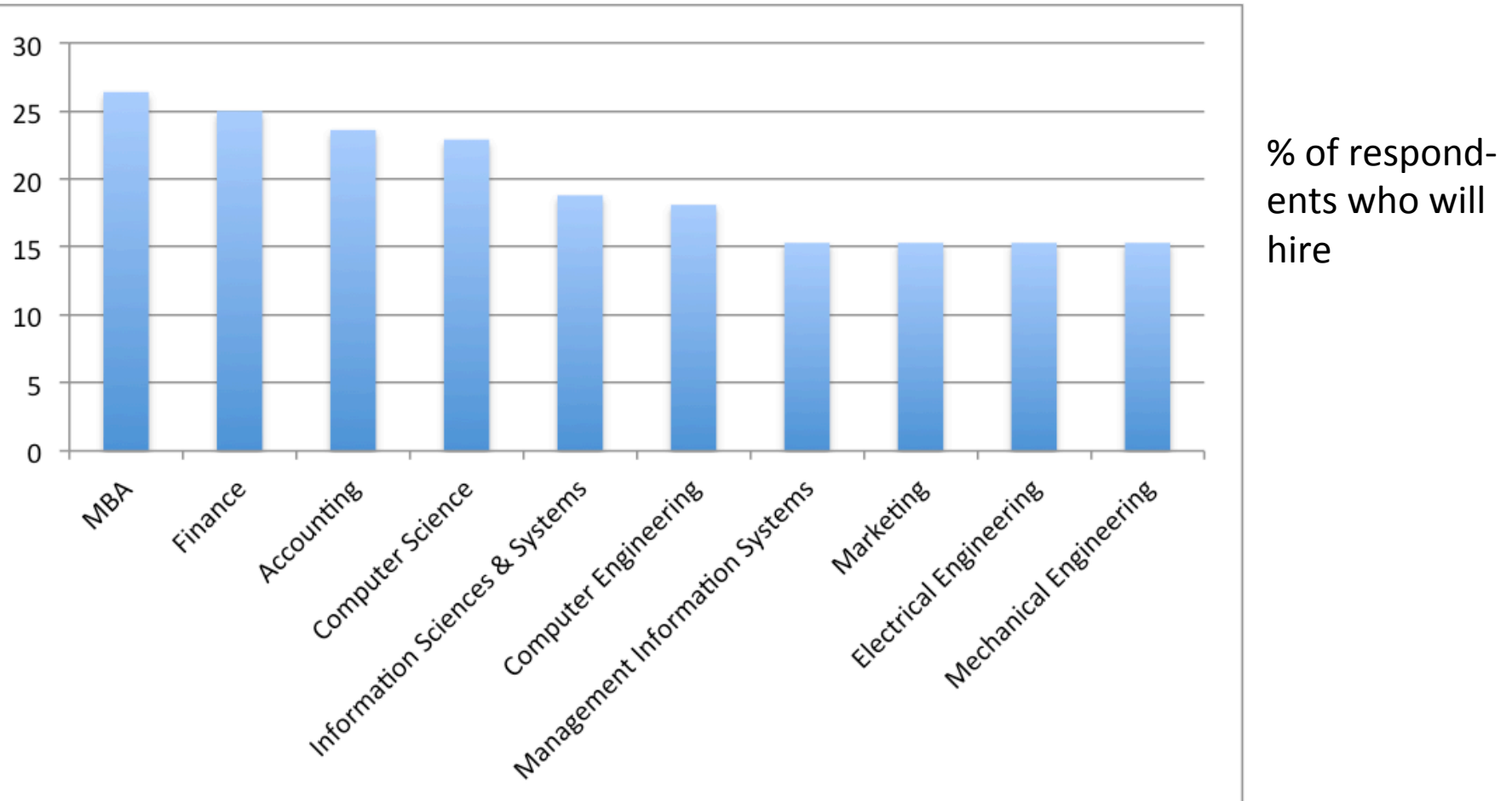


Annual Degrees and Job Openings in Broad S&E Fields (2006-2016)



Forbes Nov 23, 2016

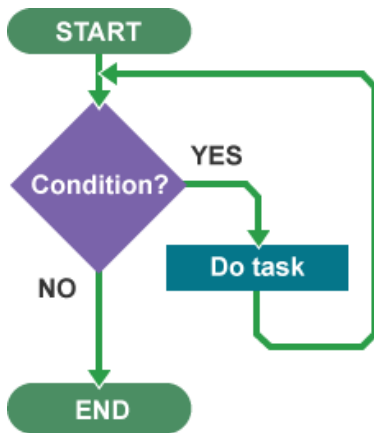
Top Bachelor's Degrees in Demand in 2017



% of respondents who will hire

In this class

- You'll learn some fundamental concepts in Computer Science, as well as some history



Loops, functions, conditions



HTML & CSS



Encryption

- You might decide whether you want to change your field of study

Technical Info

- Office hours
 - E2 249B
 - Tuesday 12-2pm, Thursday 1-3pm



Engineering 2 Building

Teaching Assistants

- Sean Smith (sewsmith@ucsc.edu)
 - Office Hours: Tuesday 1:30pm-2:30
- Nehal Bengre (nbengre@ucsc.edu)
 - Office Hours: Monday 10am-11
- Geetanjali Rakshit (grakshit@ucsc.edu)
 - Office Hours: Wednesday 1:30pm-2:30

Contact

- If you have any questions about the course, contact one of the TAs

Lab Sections

All Lab sections held in Ming Ong (Merrill College)

Monday 11am-12pm (Sean, Chloe)

Tuesday 11am-12pm (Sean, Janey)

Tuesday 3pm-4pm (Sean, Geetanjali)

Tuesday 4pm-5pm (Geetanjali, Janey)

Wednesday 11am-12pm (Nehal, Rohan)

Wednesday 3pm-4pm (Geetanjali, Rohan)

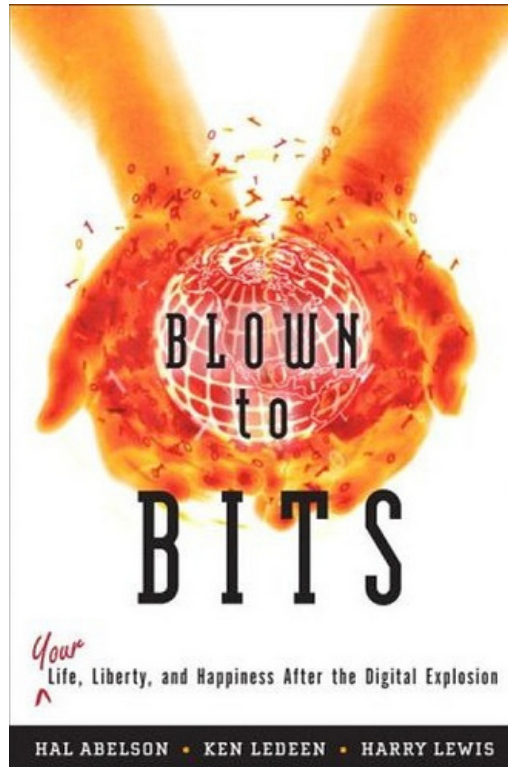
Wednesday 4pm-5pm (Geetanjali, Nehal, Chloe)

Thursday 10am-11am (Nehal, Chloe)

Friday 11am-12pm (Nehal, Chloe)

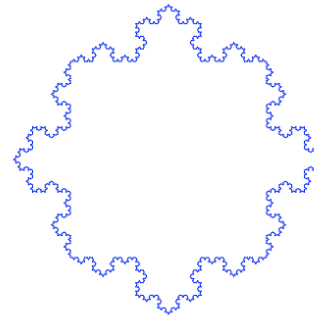
Textbook

Blown To Bits: Your Life, Liberty and Happiness After The Digital Explosion by Hal Abelson, Ken Leeden and Harry Lewis, 2010; Online Edition (download free)



Snap!

- All lab assignments (except first) will be done using Snap (snap.berkeley.edu)



Class Resources

- Canvas
- Piazza
- Course Webpage - <https://cmmps010-fall17-01.courses.soe.ucsc.edu/>
- Webcasts

Exams

- **Midterm:** Wednesday November 1, 2017
- **Final:** Tuesday December 12, 4pm-7pm

Please Note:* Makeup exams **will not be offered. Exams can only be taken during these times.

Assignments

- Lab Assignments: 9 assignments, due every week on Monday @ 8am. No extensions will be given.
- Late Policy: Late assignments (even by 1 minute) will be accepted up to 3 days after the assignment due date for 80% credit; assignments will not be accepted after 3 day grace period.

Pair Programming

- Many people (including experienced programmers) are initially resistant but then discover its value.
- Pair programming is two people working together at one computer. Take turns being the one at the keyboard.
- Pair programming is not “I’ll do this part and you do that part.”

Pair Programming (cont.)

- Partners are not required.
- In Canvas, make sure to state who your partner was on the assignment. Also state how much time both of you spent on the assignment.

HW Grading

- HW/Lab assignments (30%) – mostly programming in Snap
- Graded as:
 - ✓ 10 points out of 10 – Did what was expected
 - ✓ - 8 points out of 10 – Mostly ok, but some deficiencies
 - ½ 5 points out of 10 – A lot of problems, but some good things
 - zero 0 points – seriously deficient

Grade weights

Lab Attendance: 10%

Homework assignments: 30%

Midterm: 30%

Final: 30%

*Note: class attendance not required.

DRC

If you qualify for classroom accommodations because of a disability, please get an Accommodation Authorization from the Disability Resource Center (DRC) and submit it to me in person outside of class (i.e. during office hours) within the first two weeks of the quarter. Contact DRC at 459-2089 (voice), 459-4806 (TTY), or <http://drc.ucsc.edu> for more information.

Academic Dishonesty

The Baskin School of Engineering has a zero tolerance policy for any incident of academic dishonesty. If cheating occurs, consequences may range from getting zero on a particular assignment to failing the course. In addition every case of academic dishonesty is referred to the students' college Provost, who sets in motion an official disciplinary process. Cheating in any part of the course may lead to failing the course, suspension or dismissal from the Baskin School of Engineering, or from UCSC.

To-do

- Familiarize yourself with the course webpage:
 - <https://cmps010-fall17-01.courses.soe.ucsc.edu/>
- Hour of Code
 - **Due October 9**
- Lab 1: Intro to Snap
 - **Due October 9**

