

Invite your friends to take CS10 next sem!



UC Berkeley EECS  
Lecturer SOE  
Dan Garcia

# CS10: The Beauty and Joy of Computing

## Lecture #25 Summary & Farewell



Lab this week  
is Survey  
(0:30), online  
final (1:20)

2012-04-25

CS10 final party  
Wednesday 6-8pm in the Woz!!!

## GOOGLE GLASSES, NEXT "IT"?

Google's "Project Glass" hopes to bring all services from Android to a display you carry with you on your glasses. Next big thing?



Discussion this week is important –  
course feedback + summary

[g.co/projectglass](http://g.co/projectglass)



# I must own & wear these glasses!!!

- a) Strongly disagree
- b) Mildly disagree
- c) Neutral
- d) Mildly agree
- e) Strongly agree





# Upcoming Calendar

Sun	Mon	Tue	Wed	Thu	Fri	Sat
04/22	04/23	04/24	04/25  Lec: Farewell + Surveys  Lab: Feedback + Online Final	04/26  Lab: Feedback + Online Final	04/27  Lab: Survey + Online Final Discussion (Final Thoughts) Final Project Due @ 11:59pm	04/28
04/29	04/30  Final Project Due with slip @ 11:59pm	05/01	05/02  CS10 Party! 6-8pm (food) Woz Lounge in Soda (430 Soda)	05/03	05/04  Final Project Movies due @ 11:59pm	05/05
05/06  Review Session 6-9pm 2050 VLSB	05/07	05/08	05/09  Paper Final Exam 10 Evans 7-10pm	RRR Week		
FinalsWeek						





# Administrivia: Become active!

- **Online Exam details**

- No exam handed out unless you've filled in both HKN + our survey
- No "study sheets" needed / allowed since you have access to BYOB

- **Final Exam details**

- Only bring pen{cil}s, three 8.5"x11" handwritten sheets (writing on both sides).
- **Leave backpacks, books, calculators, cells & pagers home!**
- Everyone must take ALL of the final!

- **If you did well in CS10 and want to be on staff?**

- Usual path: Lab Assistant  $\Rightarrow$  Reader  $\Rightarrow$  TA
- LA: sign up w/Jenny Jones in 395 Soda before 1<sup>st</sup> week of semester
- Reader/TA forms: [www.cs/~juliaea/](http://www.cs/~juliaea/)
- I strongly encourage anyone who gets an B or above in the class to follow this path...

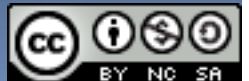




# Clickers were worth the time spent

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- a) Strongly Agree
- b) Moderately agree
- c) Neutral
- d) Moderately disagree
- e) Strongly disagree





# Exciting Future Implications

- **Need to revisit chronic unsolved problem**
  - Parallel programming!!
- **Implications for applications:**
  - Computing power available >>> (choose your favorite supercomputer from a decade ago) on an economical die inside your watch, cell phone or PDA
    - On your body health monitoring
    - Google + library of congress on your PDA
- **As devices continue to shrink...**
  - The need for great HCI (human-computer interfaces) is as critical as ever! (voice, gesture, etc)





# Taking advantage of Cal Opportunities

***"The Godfather answers all of life's questions"***

– Heard in "You've got Mail"

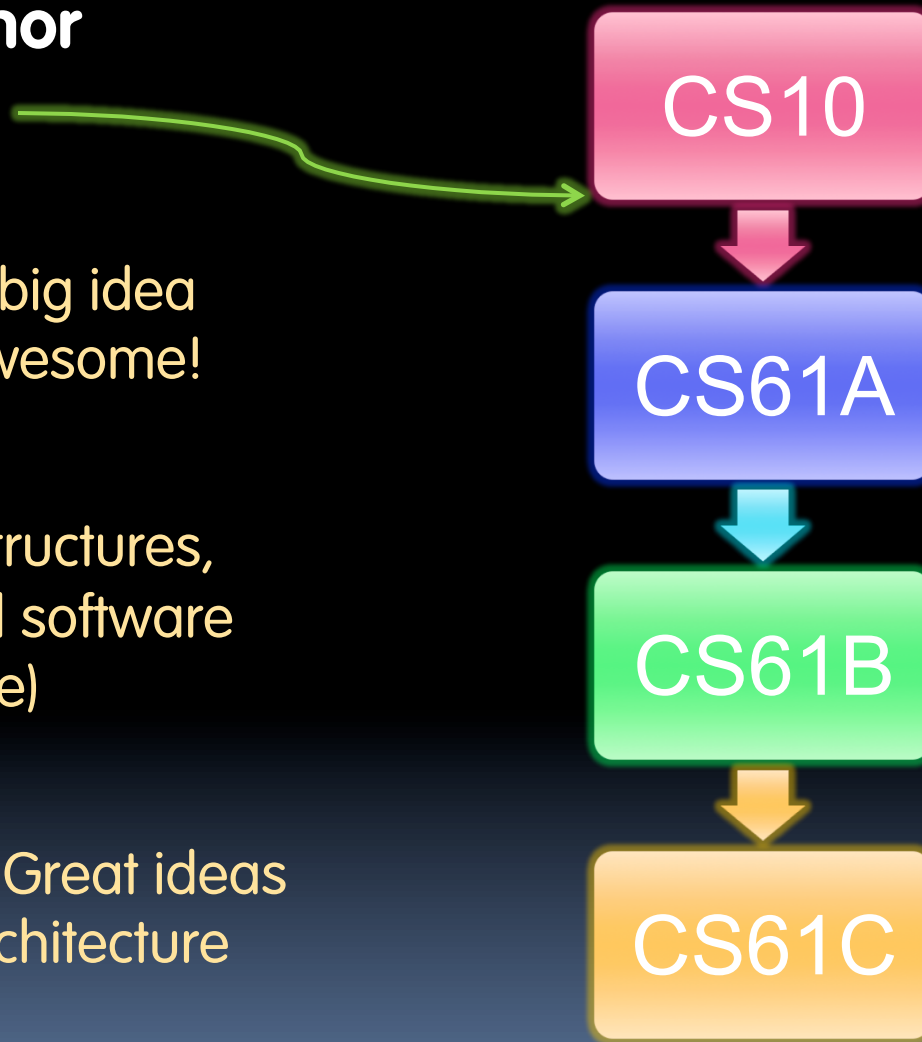
- **Why were we the #2 Univ in the WORLD?**  
So says the 2004 ranking from the "Times Higher Education Supplement"
  - Research, reseach, research!
  - Whether you want to go to grad school or industry, you need someone to vouch for you!
    - ...as is the case with the Mob
- **Techniques**
  - Find out what you like, do lots of web research (read published papers), hit OH of Prof, show enthusiasm & initiative
- <http://research.berkeley.edu/>
- <http://researchmatch.heroku.com/>





# Ok, I'm hooked! Where do I go next?

- **CS Major / Minor**
  - You are here
- **CS61A**
  - In Python, one big idea every week. Awesome!
- **CS61B**
  - In Java, data structures, algorithms and software engineering (lite)
- **CS61C**
  - In C and MIPS, Great ideas in computer architecture (parallelism)







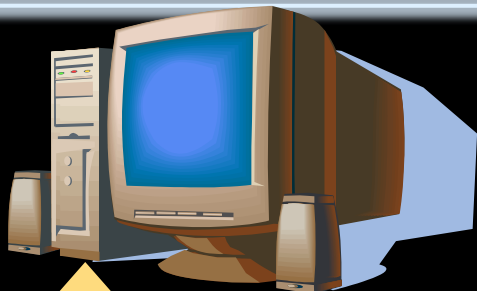
# Opportunities Fall 2012

- **CS61A** (1<sup>st</sup> course in CS major)
  - Structure and Interpretation of Computer Programs
- **CS9 series** (learn a second language)
  - I would recommend Python next, CS9H
- **GamesCrafters** (Game Theory R & D)
  - Develop SW, analysis on 2-person games of no chance. (e.g., go, chess, connect-4, nim, etc.)
  - Req: Game Theory / SW Interest
- **MS-DOS X** (Mac Student Developers)
  - Learn to program Macintoshes.
  - Req: Interest. Owning a mac helps, not required.
  - Taught as a DeCal by MS-DOS X veterans
- **UCBUGG** (Recreational Graphics)
  - Develop computer-generated images, animations.
  - Req: 3D interest
  - Taught as a DeCal by UCBUGG veterans

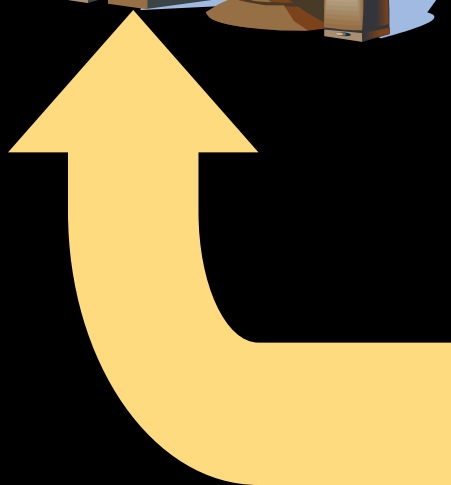




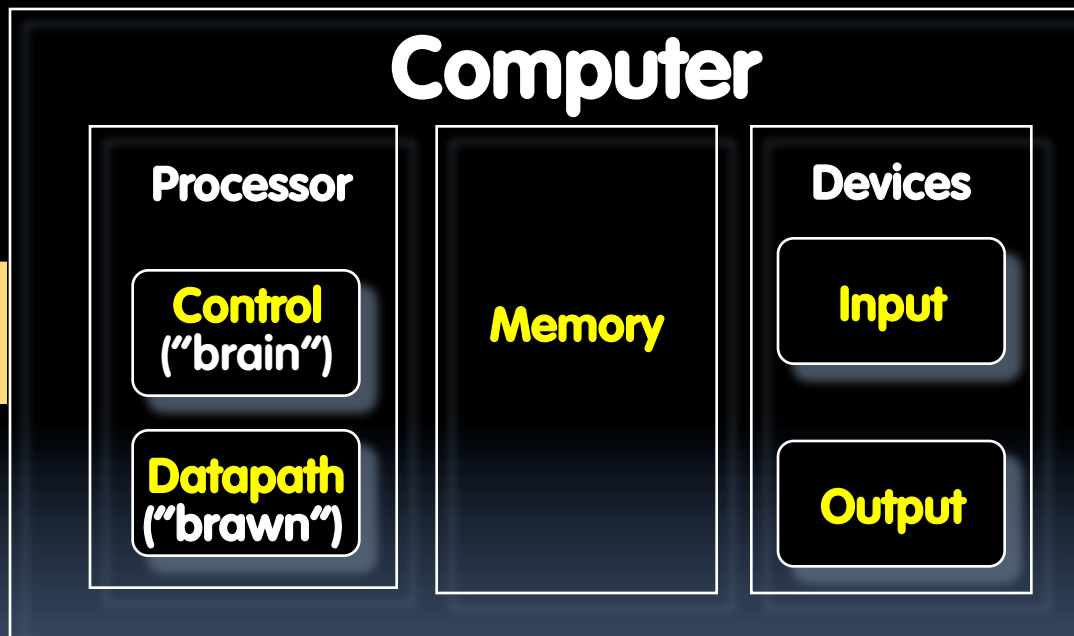
# Review: 5 components of any Computer



In the future, what'll be the most important computer component?



- a) Control
- b) Datapath
- c) Memory
- d) Input
- e) Output





# Peer Instruction Opinion



- “Forget cloning. Forget TVs on your wrist watch. The biggest invention of the next 100 years will be the ability to directly connect your brain to a machine, aka wet computing.” – Dan Garcia
  - A macaque monkey at Duke University can already control a robotic arm with thought.
  - DARPA interested for mind-control robots & flying
  - Virtual Reality achieved with proper I/O interfacing...



**Jose Carmena**, UCB EECS Prof  
Research: Brain-Machine Interface  
[www.eecs.berkeley.edu/~carmena/](http://www.eecs.berkeley.edu/~carmena/)





# Penultimate slide: Thanks to the staff!

## ▪ TAs



Luke Segars



Navin Eluthesen



Yaniv "Rabbit" Assaf

- Pierce Vollucci
- Aijia Yan
- Samir Makhani

## ▪ Readers

- Shreya Lakhan-Pal
- Kylan Nieh
- Max Dougherty
- Aatash Parikh
- Christian Pedersen
- Ian Birnam

## ▪ Lab Assistants

- Joanna Abot
- Carlos Asuncion



Michael Ball

- Jose Batilando
- Madeeha Ghorri
- Dylan Harris
- Alysha Jivani
- David Lau
- Trace Levinson
- Vivian Lo
- Jennifer Ma
- Mark Miyashita
- Lauren Mock
- Christian Pedersen
- Emily Shiue
- Peter Sujan
- Kou Takahama
- Minh Tran
- Alice Wang
- Ruoyang Wang





# The Future for Future Cal Alumni

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- What's The Future?
- New Millennium
  - Ubiquitous & Quantum Computing, Nanotechnology, 10 M "volunteer" CPUs, the Parallel revolution...
  - Rapid Changes in Technology (e.g., voice input!)
  - World's <sup>2nd</sup> Best Education
  - Never Give Up!

**"The best way to predict the future is to invent it"**  
– Alan Kay

# The Future is up to you!

