Compsci 92, Spring 2015

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Overview, Logistics, Demands, Plans
What is this course about?

- How does computer science and the innovations it engenders influence and affect the world? *Impact*

- How does the Internet work, who governs it, what does it enable? *Internet*

- What can be created using techniques from computing and computer science? *Creativity*
What (else) is this course about?

- A flood of information is changing everything about science, policy, society, and the world: Data

- Software, we simply can't function without it: Programming

- Scaling, Automation: Algorithms

"Our species needs, and deserves, a citizenry with minds wide awake and a basic understanding of how the world works."

Carl Sagan
http://rationalwiki.org/wiki/Carl_Sagan
What (else) is this course about?

- **Abstraction.** presented... abstractly
Seven Big Ideas

Abstraction
 Algorithms
 Creativity
 Data and Information
 Internet
 Global Impact
 Programming
Course logistics: accessing info

● See Sakai and the course website for full details
  ➢ http://www.cs.duke.edu/courses/spring15/compsci092/
  https://sakai.duke.edu/portal/site/compsci92-spring15

● Sakai
● Piazza
● Website
Course logistics

- **Two week thematic cluster**
  - Readings, labs, technical tools related to theme
  - Labs, homework, and assignment anchor cluster

- **Readings and homework each week**
  - Online quizzes, in-lab questions related to topics/reading
  - Wednesday class related to readings/questions
    - Lecture will be active and participatory
  - Friday will be similar, may lead into next lab
More course logistics

- **Midterm and Final, both inclass and online**
  - Not memorization, about applying concepts
  - Final can be taken in any three-hour block

- **Performance tasks: related to national pilot**
  - Origin, new AP course: CS Principles
  - Required collaborative and individual

- **Internet and computational projects**
  - Individually and in groups
Class work

- Forms, re-enactments, and more

Who are you?
Google/Apple Patent Smart Cars

- **Video** [http://1.usa.gov/1w5AExa](http://1.usa.gov/1w5AExa)
  - What does this URL tell you?

- **What is a smart car, Duke Connection**
  - Why are Google and Apple interested?
  - [https://www.youtube.com/watch?v=7Yd9Ij0INX0](https://www.youtube.com/watch?v=7Yd9Ij0INX0)

- **Why are smart cars a good idea? Bad idea?:**
  - Who drives a smart car? Why less accidents?
  - What are the downsides?
  - Ethical considerations?
Bitcoin: mining, use, security, ...

- **Article:** [http://econ.st/1DG1ylg](http://econ.st/1DG1ylg)

- **Why is Bitcoin in the news?**
  - What is a (virtual) currency?
  - Why do we need it?
  - How do you "make" or "mine" a bitcoin?
  - Duke connection: [http://ti.me/1aljaH5](http://ti.me/1aljaH5)
  - Duke connection: [http://onforb.es/1xPOO0s0](http://onforb.es/1xPOO0s0)
https://www.youtube.com/watch?v=TG_B-IqD63E

- **What is a URL?**
  - What comes after the ?
  - How many are there on YouTube?
  - How many could there be if all "like this"?

- **What is entailed in watching a YouTube video (on your desktop, phone, ...)**
  - How does your device know where the video is?
  - How does the video get to your device?
  - How did the video get on YouTube?
  - What if the video has a song by Prince in it?
Digital Copyright

- Perfect 10 v Google and Amazon
  - Fair use? Transformative use?
  - DMCA safe harbor

- Ethics and Legality of Shake it Off Parodies
  - https://www.youtube.com/watch?v=NoHp2Rq8sMI
  - https://www.youtube.com/watch?v=5p483f5eBTs
  - https://www.youtube.com/watch?v=c1wbhTXK1oQ
Exploring Streaming Video and more…

  - Answer with a different partner/team
Internet Governance

- **Article:** [http://wapo.st/14CLuFm](http://wapo.st/14CLuFm)
  - When, where, how was Internet created?
  - What is the Internet?
  - What is the Internet of Things, ...

- **Internet Standards: who and how?**
  - IETF: Rough Consensus and running code
  - ICANN: who should get nanogoogle.com?

- **How is Internet different from telephony**
  - Network, governance, standards, use?