Administrative Stuff

• Updated programming assignment handout on web page
  • due by start of class next Thursday (Jan. 21)

• Work on & submit assignment #1 individually

• Review: testing expands a coder’s reach

• Office space: Gates B28

• Website: http://cs193s.stanford.edu
### Weekly Syllabus

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<th>1. Scalability: <em>(Jan.)</em></th>
<th>7. Analytics*</th>
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<td><strong>2. Agile Practices</strong></td>
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* assignment due
Programming Assignment #1 (follow up)

• Submit your work individually

  • will set up a git repository at: /afs/ir/class/cs193s/

• Use JUnit 3

  • GWT does not support JUnit 4 features yet

• Write 1-2 interesting paragraphs about your project interests

  • these serve as a pitch to your fellow students
Toshiba just announced a tiny 64GB Flash module for 2010.

2000 of these packages would fit in a 4” cube (10cm cube).

Over 100,000,000,000,000 bits.

More than one for each dollar in the Zimbabwean bank note.

Although it would cost 6-7 figures in U.S. dollars!
$\approx 1.95 \times 10^{160}$  
Closing in on a Googol Googols
Other Notable Agile Tools

• Review: JUnit, Ant, Cruise Control

• Trac issue tracker
  • simplify communication with broader community
  • users, project managers, QA

• Nagios system monitoring
  • information gathering from the physical infrastructure
  • learn explicit modeling of distributed systems
Tools vs. Processes vs. Practices

• Tools matter only if you use them
  • expand reach & accuracy of your information (force multiplier)

• Processes sound slow by definition
  • something you struggle to start let alone complete

• It’s what people accomplish that counts
  • efficient, effective communication
  • effortless distributed action
Valuable Team Practices

• Weekly Release Cycle
  • Plan / Task creation / Task allocation
  • Development
  • Test / Release

• Stand up meetings

• Many whiteboards
Ultimately About People

• Random collections of people do not result in scaled outcomes

• Specialization emerges:
  
  • visionaries
  
  • drivers
  
  • contributors
  
  • observers

• There is no group composed solely of people just like you
Presidential Election Example

• Inspiring leader
  • clear consistent message

• Highly motivated team
  • unbelievable sense of shared purpose

• Extremely focused use of communication, fundraising

• Largest agile endeavor I’ve participated in
Social Bullseye Model

- Self
- Participant
- Observer
- Everyone else
Universal Model

• Social networks (distance and privacy)
  • self, friend/fan, friend of friend, etc.

• Product Communities
  • creator, contributor, user, etc.

• Organizational structure
  • leader, employees, customers, etc.

• Narcissism or Solipsism???
Power Law of Participation

Collective Intelligence

Collaborative Intelligence

Lead

Moderate

Collaborate

Refactor

Write

Network

Share

Subscribe

Comment

Tag

Favorite

Read

Low Threshold with Tool

Periphery

Core

High Engagement with Community

(CC) Ross Mayfield 2006
Users of a Web Service

- Founder
- Team
- Power User
- Fan
- Observer
History of Technology Lifecycles

• Once upon a time it was prestigious to work at the post office, railroad

• More recently it was the same for the phone company and airlines

• Now it’s Google, Apple, Microsoft

• Is there a limit to how long a company can stay cutting edge?

• Are there any 100 year businesses or technologies left?

• We are entering an era where change is the only constant
Back to Software

• Why agile practices in startups?

  • the faster the response to environmental change the better

  • imeem’s switch from a primarily P2P to web based DB design

• Unpredictable scaling issues in both hardware and software

  • ability to test multiple permutations quickly

• Find the tools that best accelerate your pace

  • reducing friction, increasing understanding, eliminating indispensibility
Scale Out Ideas

- Server virtualization
  - use when not single resource bound

- Automatic server allocation
  - demands simple server setup

- Database replication and partitioning
  - simple key based partitioning is most feasible

- Cache data both associatively and object at a time
Worth Checking Out

• Trac
  • http://trac.edgewall.org/

• Nagios
  • http://www.nagios.org/

• Built to Last, James Collins & Jerry Porras

• Getting Things Done (GTD)
  • http://www.davidco.com/
Q & A Topics

• Assignment #1

• Upcoming programming project teams
  
  • no leaders per se, but emergent advocates
  
  • IRL the best companies are still benevolent dictatorships

• project planning
  
  • now’s the time to advertise!