EECS 394
SOFTWARE DEVELOPMENT

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Developing Mobile/Web Apps
Next Tasks

- What to build
- How to build it
  - Scheduling: what and when
    - slices and pivots
  - Assigning tasks
    - push vs pull
    - pairing and swarming
SCHEDULING

Define the scope → Set the deadline

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OR

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As early tasks slip, later tasks get crunched, rushed, or omitted entirely. Tasks like system testing...
If you schedule by deadline

Iteration 1  Iteration 2  Iteration 3

Backlog

Timeboxes never slip. Features are reprioritized as needed. Features not done are returned to the backlog for future iterations.
Break development into releases (early startup: a month or so)

- **Release backlog**: functionality to be built

- Break releases into **fixed size iterations** (1 to 2 weeks)

  - [http://www.balagan.org.uk/work/agile_comparison.htm](http://www.balagan.org.uk/work/agile_comparison.htm)

- **Iteration backlog**: functionality for this iteration
SLICING A PROJECT

Foundations First

Seems logical, even necessary

Very risky, very bad idea
SLICING A PROJECT

Mockup First
Supports early UI testing
Most of the same problems as Foundations First
SLICING A PROJECT

Value First

Every slice has client value

End-to-end catches show-stoppers

Allows pivots
How to Pick a Slice

- Minimize risk
- Maximize value
**MINIMIZING RISK**

- Minimum Viable Product (MVP)
- "that version of a new product which allows a team to collect the maximum amount of validated learning about customers with the least effort."
Maximizing Value

- Each slice should be the most valuable (useful) product you can build in that iteration.
- Plan like there's no tomorrow.
  - The project's been canceled!
  - Do we have anything useful?
Pair Programming

- Two programmers, one keyboard
- The **driver** writes the code
- The **navigator** worries about bugs, alternatives, requirements, test cases
- Change roles every 20 minutes or so
Swarming

- Many team members attack the next backlog item to finish it as fast as possible.
- Minimize work-in-progress (WIP)
- Maximize team learning

http://submit2011.agilealliance.org/node/8867

http://www.flickr.com/photos/max_westby/63982702/sizes/m/in/photostream/
ASSIGNING TASKS

- Don't
Assigning Tasks

- Keep a public accessible iteration backlog.
  - The source repository, PivotalTracker, Google Docs, ...
  - Most valuable stories first.
- Only mark a task as yours when you begin it.
- Always take the next thing off the queue.
  - Mark who's working on it and when you started.
- Prefer helping finish a story in progress
  - Accept help when offered.
MOBILE CHOICES
Native Apps

- Native app
  - access to all phone features
  - better look and feel
- BUT non-portable development platforms:
  - iPhone: Objective-C
  - Android: Java
WEB PAGES

- Web page
  - multi-platform, easily tested
  - only needs HTML/CSS/Javascript skills
  - BUT limited access to phone features
  - feels like a web page
  - HTML5 extensions and new Javascript libraries blurring the line
    - support touch gestures and some phone features
  - See "Resources: Mobile Web Apps" for links
RESOURCES: MOBILE WEB APPS

- (book ad) http://www.sitepoint.com/books/mobile1/
MOBILE APP REQUIREMENTS

- iPhone requirements:
  - Mac with Snow Leopard (Lion?)
  - XCode IDE and libraries
  - iPhone SDK,
  - developer license
  - iPhone to deploy

- Android requirements:
  - Windows / Linux / Macs
  - Eclipse IDE recommended
  - Android SDK
  - phone recommended but emulator works
PhoneGap / Cordova

- Portable framework for iPhone, Android, Blackberry, ..
- Compromise: runs as an app, but coded HTML5 + CSS + Javascript
- Still requires the native development platform
  - iPhone: XCode, iPhone SDK, iPhone...
  - Android: Eclipse, Java, Android SDK, ...
- See "Resources: PhoneGap"
RESOURCES: PHONEGAP

- http://www.phonegap.com/
- http://incubator.apache.org/cordova/

Videos
- Early, non-slick 3 minute spiel on PhoneGap
- 9-minute demo converting HTML to iPhoneApp

Discussion groups
- http://groups.google.com/group/phonegap
- http://phonegapforum.com/

(books) http://www.amazon.com/s/ref=nb_sb_noss_1?url=search-alias%3Daps&field-keywords=phonegap
Choose development platform

Setup source control, build automation

Test all steps for all developers