Introduction to Mobile Computing

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Mobile Computing

- Computers increasingly prevalent in daily life
  - Constant access to information and entertainment
  - Different types of user interfaces and displays
  - Restrictions on power usage and performance

- Mobile development requires:
  - Specific mobile programming languages
  - Database information
  - Device information
  - Novel ideas that provide customers value
Class Expectations

- Lab and project-based work
  - No exams
  - Weekly assignments/labs to build practical skills
  - Final team project to show-case understanding
- Engaged and helpful attitude
  - Ask and answer questions on Piazza
- Academic honesty required
- Positive teamwork and interactions
- Ability to read syllabus and schedule on your own!
Class Format

- Lecture days provide overview of material and in-class examples
- Lab days allow students to work through tutorials and do hands-on development
- Attendance for both days are mandatory!
- In-class quizzes using iClicker
- Lab check-in via iClicker
- Final project: building a complete app
  - Team-based
  - On-going reports and testable products
Topics Covered

- iOS development framework
- Swift language
- Related programming paradigms
- Data input
- Mobile interfaces
- Common iOS frameworks
- Project development cycles and practices
What Apps Do You Use?

- What are some of the design considerations?
- How do it utilize screen space?
- How long does the battery last?
- How nice are the graphics?
- What does it require for networking functionality?
What About the Code?

- What sort of features/programming paradigms might we need as mobile programmers?
Working in iOS

- Requires ready access to Macs!
  - Macs in the PCL Media Lab and CS basement
- Use Xcode (Apple’s free IDE) version 10 and Swift 4
  - Swift 5 is coming soon but students are not required to switch mid-class
Xcode Download


or

Xcode Setup

- Find Xcode after install in Applications folder
- Launch Xcode and keep in dock
  - Right click -> Options -> Keep in Dock
Playgrounds

- New option in Xcode
  - File -> New -> Playground
- Interactive environment that allows developers to write Swift interactively and see results immediately
- Allows for experimentation
Xcode and Playgrounds Demo