CS 274 iPhone App Development

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Application Development for iPhone & iPod Touch

Today

• Introductions and Course Administration
• Overview of iPhone App Development
• A Simple App
Course Home Page

http://www.cs.bc.edu/~muller/teaching/cs274/s10/

A Two-headed Course

• 200-Level: A more-or-less conventional software development class on a novel platform
  – Assumes experience with programming in an OO language (CS 101)
  – Text and lecture
  – Programming assignments (50% of grade)
  – Midterm, final (40% of grade)

• Teaching Assistant: Sarah Gilliland

A Two-headed Course

• 300-Level: a warm-up exercise followed by a semester long project
  – Assumes:
    • Significant experience programming
    • knowledge of data structures (CS 102)
    • the ability to pick up a new programming language and SDK quickly
    • the ability to develop a substantial piece of software
    • a fair degree of independence
A Two-headed Course

• 300-Level:
  – Project proposal (1-2 pages) due by Friday February 5, 2010
  – Mid-project report due by Friday March 12, 2010
  – Final Project Due by First App Presentation Day
  – Class attendance recommended
  – Check-in meeting with me every 2 or 3 weeks
  – No TA

Results of Preliminary Survey

Syllabus
Developer Support from Apple

Apple’s iPhone Developer Program
- Registration
- University Developer Program
  - Certificates for running apps on devices
- Submitting Apps to iTunes

- Language: Objective-C and Runtime
- Tools: Xcode, Interface Builder
- Frameworks: Foundation, UIKit
Objective-C

- A marriage of C and Smalltalk-80, language of choice at NextStep
- Explicit pointer syntax: `Foobar *f;`
- Programmer required to manage memory using reference counts;
- Syntactic quirks: `[[Foobar alloc] init];`

Xcode IDE

- (IDE = Integrated Development Environment)
- Xcode + Interface Builder + Simulator
- Editor, Compiler, Linker, Debugger, Revision Control System

Overview of iPhone OS
- **Core OS**
  - OS X Kernel
  - Mach 3.0
  - BSD
  - File System
  - Sockets
  - Security
  -Bonjour
  - Power Mgmt
  - Keychain
  - Certificates

- **Core Services**
  - File Access
  - SQL Lite
  - Collections
  - Address Book
  - Threading
  - Core Location
  - Networking
  - Preferences
  - URL Utilities
• Media
  – Core Audio
  – JPG, PNG, TIFF
  – PDF
  – Quartz 2D
  – Open GL ES
  – Audio Recording
  – Audio Mixing
  – Video Playback
  – Core Animation

• Cocoa Touch
  – Foundation Classes
  – UIKit
    – Multi-touch Events
    – Multi-touch Controls
    – Accelerometer
    – Localization
    – Alerts
    – Pickers
    – Controllers
    – Web Views
    – View Hierarchy

Event Driven Programming
Next Two Meetings!

• In the lab (Fulton 160)

• Pick a lab partner or see me if you can’t find one

• Accept my email invitation to join the “team”

• If you have an iPhone or iPod Touch, find it’s ID number (in iTunes) and send it to Sarah