Introduction to iPhone Application Development (ECS 189H)

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http://graphics.cs.ucdavis.edu/~porumbes/iPhone/ecs189H/
Announcements

• We’re working on apps for next 5 weeks!
• Lectures as usual
Today

• Intro to 2D game programming with cocos2d
Introduction to 2d Game Programming Using cocos2d

Serban Porumbescu
Overview

• Why cocos2d?
• Beginner Hurdles
• cocos2d Basics
• cocos2d Specifics
• Samples and Tests
• Resources
Why cocos2d?

- Well over 200 games shipped
- Great licensing
- Lots of features
- Extremely active community
- What’s your business?
<table>
<thead>
<tr>
<th>Topic</th>
<th>Posts</th>
<th>Last Poster</th>
<th>Freshness</th>
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<td>rolando</td>
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Why cocos2d?

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Beginner Hurdles
Beginner Hurdles

- Objective-C and Memory
- Setting Up a cocos2d Project
- Running Samples and Tests
- Understanding Tests
Learn Objective-C

Read: “Learning Objective-C: A Primer”
Learn Memory Management

Read: “Memory Management Programming Guide for Cocoa”
cocos2d Project Setup

- Super easy ... now
- sudo ./install_template.sh
Choose a template for your new project:

- iPhone OS
- Application
- Library
- User Templates
- MacFUSE
- Mac OS X
  - Application
  - Framework & Library
  - Application Plug-in
  - System Plug-in
  - Other

- cocos2d-0.8.1 Application
- cocos2d-0.8.2-beta Application
- cocos2d-0.8.2-beta Box2d Application
- Navigation-based Application
- OpenGL ES Application
- Tab Bar Application
- Utility Application
- View-based Application

- cocos2d-0.8.2-beta Application

This template provides a starting point for an application that uses the cocos2d-iphone framework.
Groups & Files
- cocos2dTestMe
  - cocos2d Sources
    - cocoslive
    - FontLabel
    - TouchJSON
    - CocosDenshion
    - cocos2d
  - Classes
    - HelloWorldScene.h
    - HelloWorldScene.m
    - cocos2dTestMeAppDelegate.h
    - cocos2dTestMeAppDelegate.m
  - Other Sources
    - cocos2dTestMe_Prefix.pch
    - main.m
  - Resources
    - Default.png
    - fps_images.png
    - Icon.png
    - Info.plist
  - Frameworks
  - Products
  - Targets
  - Executables
  - Find Results
  - Bookmarks
Running Samples & Tests

- Wonderful source of examples that people seem to overlook
- Once noticed, folks have issues running
No launchable executable present at path.

/Users/porumbes/Business/HiddenElephant/Apple/iPhoneGameEngines/cocos2d/cocos2d-iphone-0.8.2-beta/build/Debug-iphonesimulator/AccelViewportTest.app

OK
Running Samples & Tests

- Where are they and how do we run?
Running Samples & Tests

• Make sure to set both the “Active Target” and the “Active Executable”
Tests

- Not games
- Meant to exercise some specific functionality
- Useful for figuring stuff out
Tests

- Structured very similarly
- Some base test class

- Instantiate new test by advancing through NSStrings using NSClassFromString
Tests

- Let's look at AtlasSpriteTest and EaseActionsTest
cocos2d Basics
cocos2d Basics

- Game has Scenes
- Each Scene has some number of Layers
- Layers capture user interaction and contain sprites
- Director manages the scenes
Scenes

- Screens in your game
- Can almost think of them as separate apps
Layers

- Take up the entire screen
- Setup to handle touch and accelerometer
- Can contain other layers and sprites (and other stuff)
Sprites
Director

- Manages moving between Scenes
- Pausing and running Scenes
- Sets up OpenGL ES
- Layer asks Director to move on
A regular menu scene

Game name
Start Game
Highscore
Options

Background layer
Animation layer
Menu layer
cocos2d Specifics
Important Classes

- CocosNode
- Scene
- Layer
- Director
- AtlasSprite
- AtlasSpriteManager
CocosNode
CocosNode

- Lots of properties
- position, scale, camera, OpenGL z position, children
- Most objects in cocos2d inherit from CocosNode
Scene
Layer
Director(s)
AtlasSprite
AtlasSpriteManager
Sprite vs. AtlasSprite
Sprites
AtlasSprite
Sprite vs. AtlasSprite

• In general, don’t use Sprites
• AtlasSprites way faster
• It’s all about the OpenGL ES
Samples and Tests
Resources

http://www.cocos2d-iphone.org/
Resources

Resources

Forums:  http://www.cocos2d-iphone.org/forum/