

Getting Started

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Fall 2015
09/14/2015
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Overview

- Getting Started
- iOS Overview
- OOP

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Why are we here?

- To build iPhone/iPad applications using Swift



Requirements

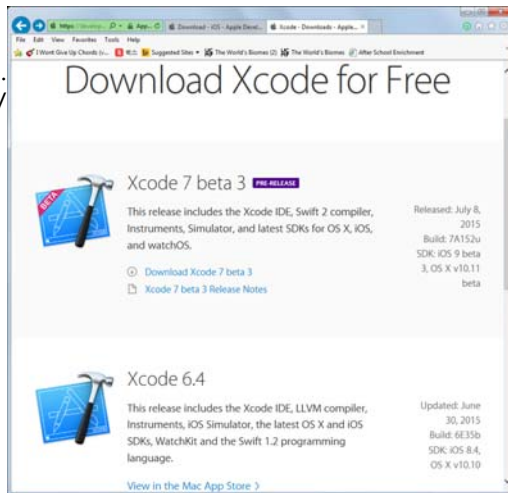


- Hardware & Software
 - Intel-based Macintosh, running **Mac OS X 10.10 Yosemite**
 - Hardware required for final project (iPad) and iPad loaners available
 - **iPhone SDK iOS 8.4 & Xcode 6.4**
- Apple Developer Account
 - <http://developer.apple.com/programs/start/register/create.php>
 - Sign up for Apple's iOS Developer Program
 - You must have an Intel-based Mac running on Mac OS X Yosemite or later to develop Mac OS X and iOS apps for the App Store.

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iPhone SDK

- Go to iOS Dev Center
 - <https://developer.apple.com/xcode/downloads/>
- Download Xcode 6.4
 - Included iOS SDK : iOS 8.4
 - Included Max SDK : Mac OS X 10.10
 - Included Swift 1.2**



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iPhone SDK

- Uninstall older version of Xcode
 - <http://macdevelopertips.com/xcode/how-to-uninstall-xcode.html>
 - `sudo <Xcode>/Library/uninstall-devtools --mode=all`
- Install Xcode 6.4
 - Double-clicking on "xcode_4.0.2_and_ios_sdk_4.3.dmg"
 - Double-clicking on "Xcode and iOS SDK.mpkg" (Downloaded from Mac OS X 10.6.6)
- Launch Xcode 6.4
 - Open "Macintosh HD" (finder) and then go to >Developer>Applications>Xcode



iOS Overview

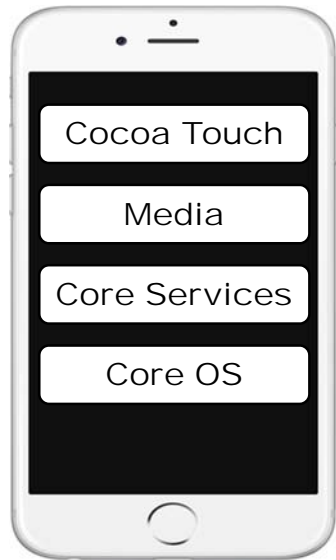
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Mac OS X



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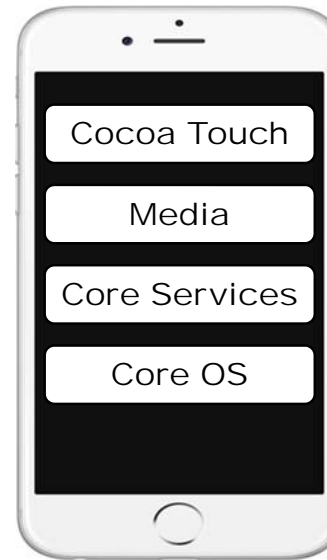
iPhone OS



Core OS

OS X Kernel Power Mgmt
Mach 2.0 Keychain
BSD Certificates
Sockets File System
Security Bonjour

iPhone OS

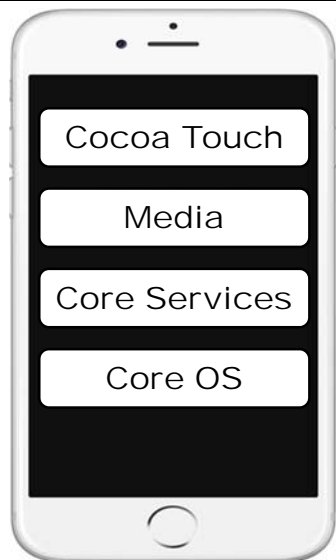


Core Services

Collections Core Location
Address Book Net Services
Networking Threading
File Access Preferences
SQLite URL Utilities

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iPhone OS

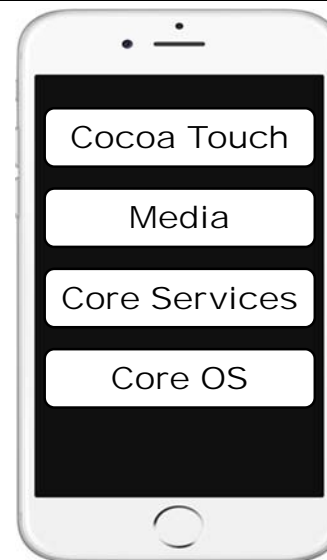


Media

Core Audio JPEG, PNG, TIFF
OpenAL PDF
Audio Mixing Quartz (2D)
Audio Recording Core Animation
Video Playback OpenGL ES

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iPhone OS



Cocoa Touch

Multi-Touch Alerts
Core Motion Web View
View Hierarchy Map Kit
Localization Image Picker
Controls Camera

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Platform Components

Tools



Xcode



Instruments

Frameworks



Foundations



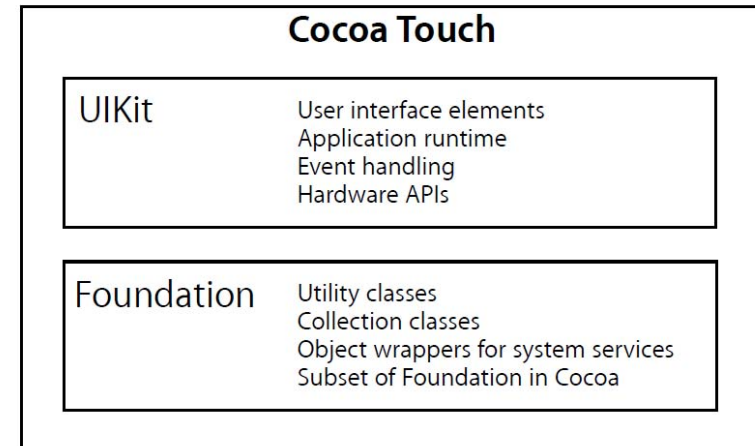
UIKit

Language
(& Runtime)

```
let value = formatter.numberFromString(display.text!)?doubleValue
```

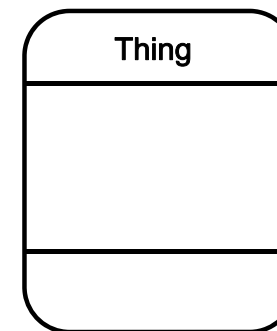
Swift

Cocoa Touch Architecture

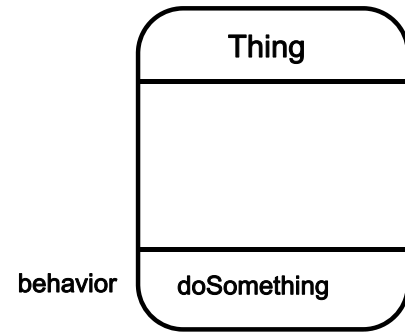


Object-Oriented Programming

Object

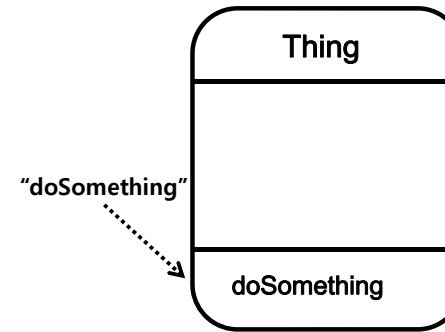


Behavior



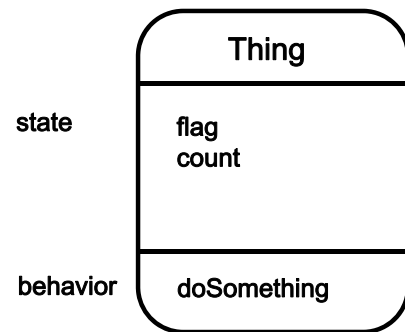
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Message



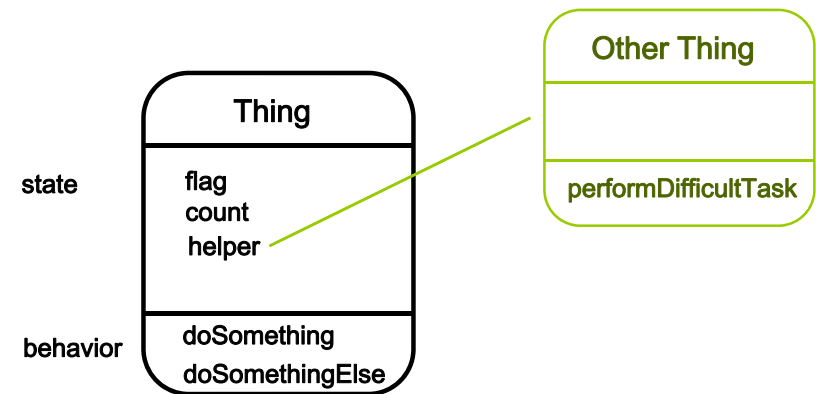
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State



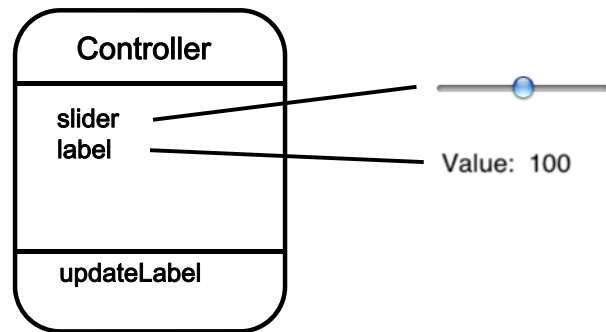
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Other Objects As State



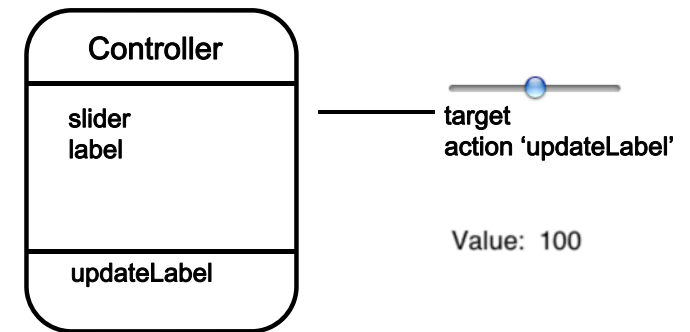
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Outlets



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Target/Action



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Demo



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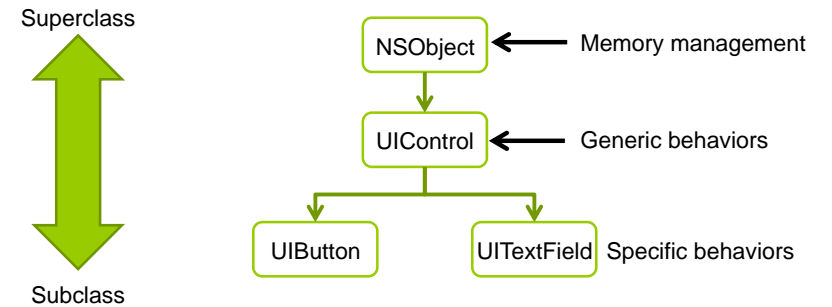
Object-Oriented Programming

- Class
 - Defines the grouping of data and code, the "type" of an object
- Instance
 - A specific allocation of a class
- Message
 - Sent to objects to make them act
- Method
 - A "function" that an object knows how to perform
- Instance variable
 - A specific piece of data belonging to an object
- Property
 - A way to access instance variables and other attributes of an object

Object-Oriented Programming

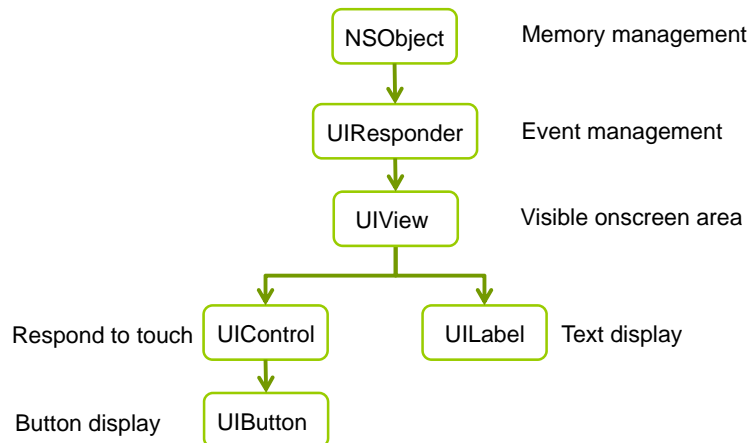
- Encapsulation
 - Keep implementation private and separate from interface
- Polymorphism
 - Different objects, same interface
- Inheritance
 - Hierarchical organization, share code, customize or extend behaviors

Inheritance

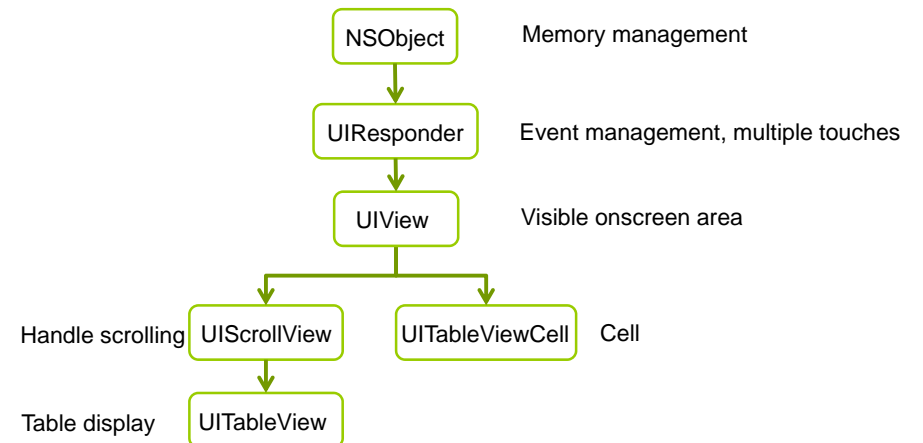


- Hierarchical relation between classes
- Subclass “inherit” behavior and data from superclass
- Subclasses can use, augment or replace superclass methods

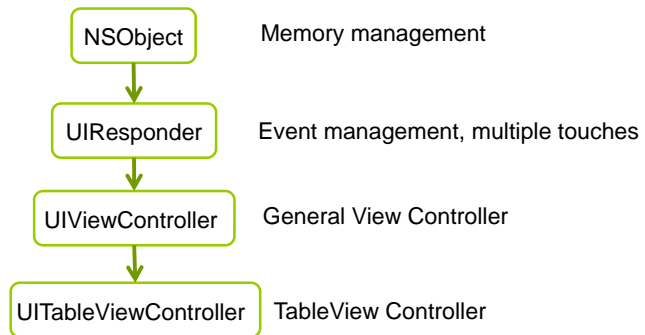
Inheritance



Inheritance



Inheritance



References

- ▣ Lecture 1 Slide from Developing iOS8 Apps with Swift (Winter 2015) @Stanford University