

Xcode Intro

Xcode

Objective-C

Swift

Interface Builder

MVC

First responders

Delegation

Xcode Intro

Xcode

- Managing all code

- Running App in the simulator

Objective-C

- Declaring and implementing objects

- Sending messages between objects

Interface Builder

- Connecting objects to send messages to each other

- Setting up the properties of objects

Xcode

Xcode

an integrated development environment (IDE) containing a suite of software development tools developed by Apple for developing software for OS X and iOS.

Xcode

- Installing Xcode and the iOS SDK
- Becoming a registered Apple Developer
- Joining the iOS Developer Program
- Creating a simple iOS app

Objective-C

Objective-C was created by Brad Cox and Tom Love in 1983

It was his attempt to add object-oriented programming concepts to the C programming language

Steve Jobs licensed Objective-C (then OpenStep) for use in NeXT computers

Most of Apple's present-day Cocoa API is based on OpenStep interface objects, and is the most significant Objective-C environment being used for active development

Objective-C

In 1997, Apple purchased NeXT and transformed NeXTSTEP into MacOS X which was first released in the summer of 2000

Objective-C has been one of the primary ways to develop applications for MacOS for the past 11 years

In 2008, it became the primary way to develop applications for iOS targeting (currently) the iPhone and the iPad and (soon, I'm guessing) the Apple TV

Objective-C

Objective-C makes a small set of extensions to C which turn it into an object-oriented language

Strict superset of C

The Foundation framework contains classes for basic concepts such as strings, arrays and other data structures and provides classes to interact with the underlying operating system

The AppKit contains classes for developing applications and for creating windows, buttons and other widgets

Objective-C

Data types

Variables

Operators

Functions

Objective-C

Together, Foundation and AppKit are called **Cocoa**
On iOS, AppKit is replaced by UIKit

Foundation and UIKit are called **Cocoa Touch**

C Skills? Highly relevant

Since Objective-C is “C plus objects” any skills you have in the C language directly apply

statements, data types, structs, functions, etc.

What the OO additions do, is reduce your need on structs, malloc, dealloc and the like

and enable all of the object-oriented concepts we've been discussing

Objective-C and C code otherwise freely intermix

Swift

Introduced in 2014

Swift is a multi-paradigm, compiled programming language created by Apple for iOS and OS X development.

Swift is designed to work with Apple's frameworks and the large body of existing Objective-C code written for Apple products.

Swift contains a lot of modern features that will make it more versatile, more concise, and nicer to read and write

Swift

Most of Apple's Apps are written in Obj-C

most of the iOS development related questions asked on sites such as StackOverflow are answered with Obj-C code

Many tutorials are also written using Obj-C

For the next several years, it will be important for professional iOS developers to have a good grasp of both Objective-C and Swift

Swift & Objective-C

With Swift, you're developing apps using the same framework and APIs as you would with Obj-C

Swift:

```
let view = UIView(frame: CGRectMake(0, 0, 200, 200))  
view.backgroundColor = UIColor.blueColor()
```

Objective-C:

```
UIView *view = [[UIView alloc] initWithFrame:CGRectMake(0, 0, 200, 200)];  
view.backgroundColor = [UIColor blueColor];
```

Interface Builder

Interface Builder is a software development application for Apple's Mac OS X operating system.

It is part of Xcode (formerly Project Builder)

Allows developers to create interfaces for applications using a graphical user interface without writing any code.

Simply drag and drop windows, buttons, text fields, and other objects onto the design canvas to create a functioning Mac, iPhone, or iPad user interface.

Development Tools

Apple's XCode is used to develop in Objective-C

Behind the scenes, XCode makes use of either gcc or Apple's own LLVM to compile Objective-C programs

The latest version of Xcode, Xcode 4, has integrated functionality that previously existed in a separate application, known as Interface Builder

We'll see examples of that integration next week

Development Tools

XCode is available on the Mac App Store
It is free for users of OS X Lion

Otherwise, I believe it costs \$5 for previous versions of
OS X

Clicking **Install** in the App Store downloads a program called
“Install XCode”. You then run that program to get XCode installed

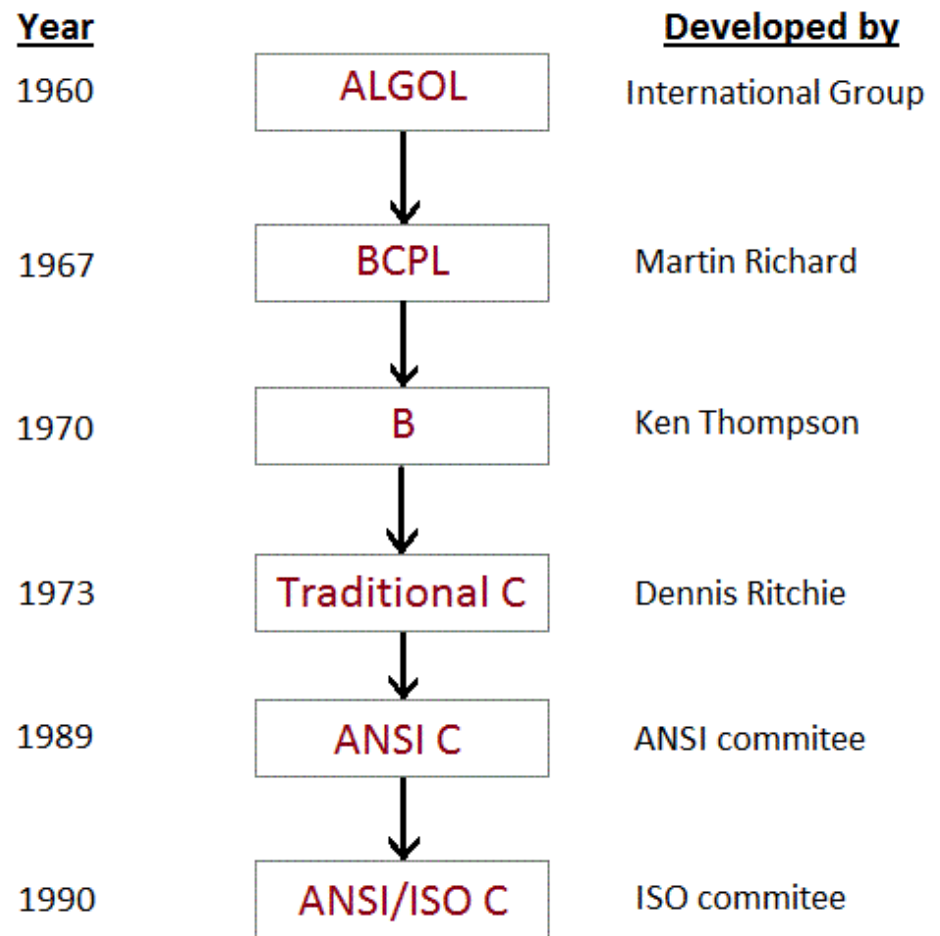
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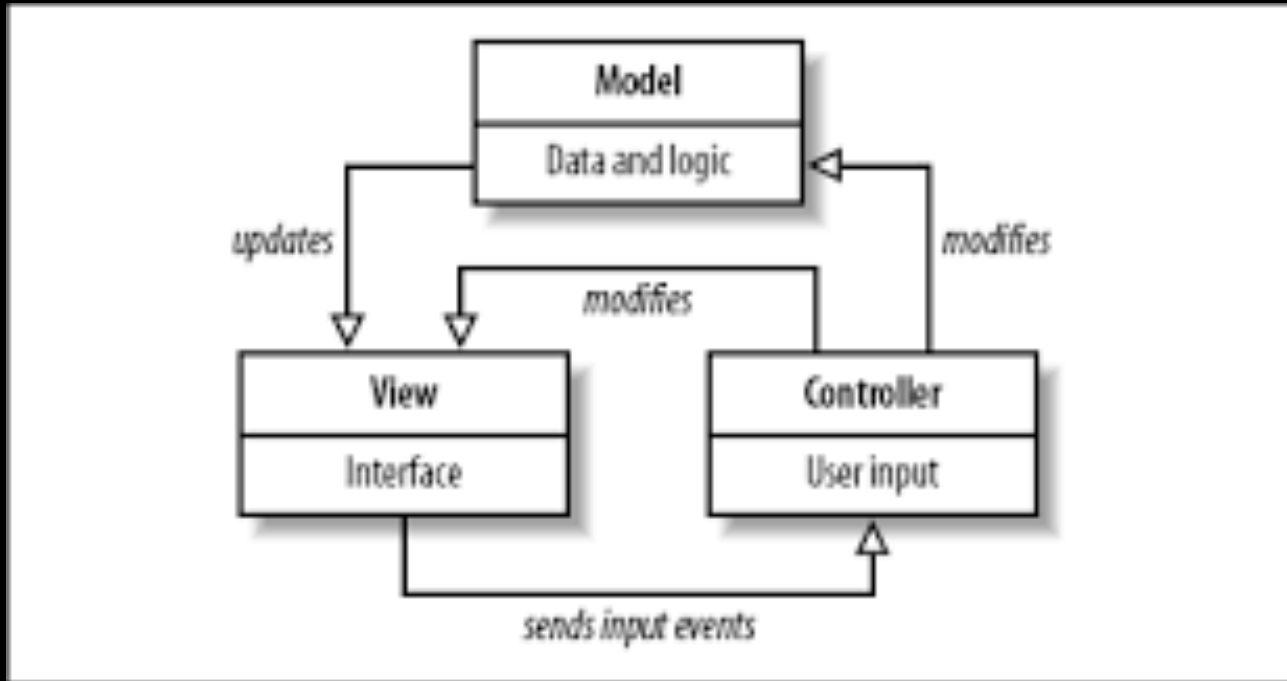
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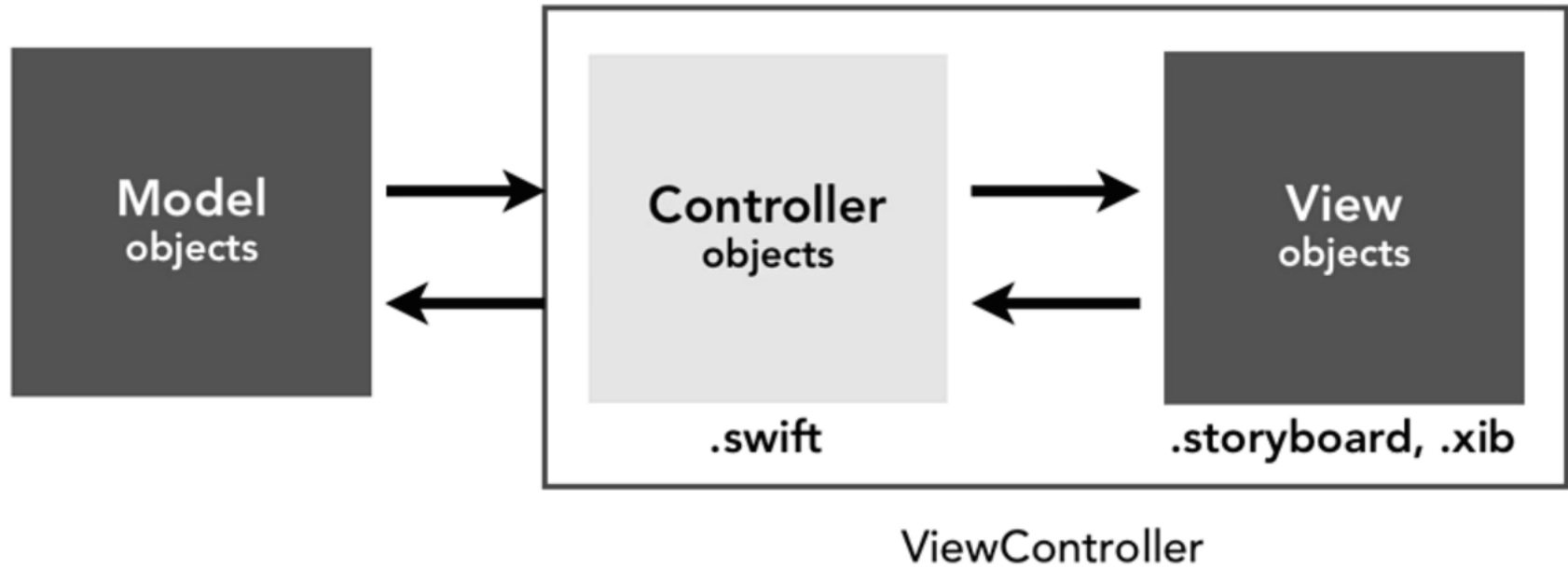
History of C language



Model-View-Controller (MVC)



Model-View-Controller (MVC)



iOS Development Terms

Xcode

Swift

View Controllers

App Delegate

First Responder

Storyboard files

.xib files Cocoa Touch Reference Counting Delegation

MVC

Target-Action

Protocols

iOS Development Terms

Instruments LLVM/LLDB

Core Location

Core Graphics

Core Audio

Core Video

Core Data

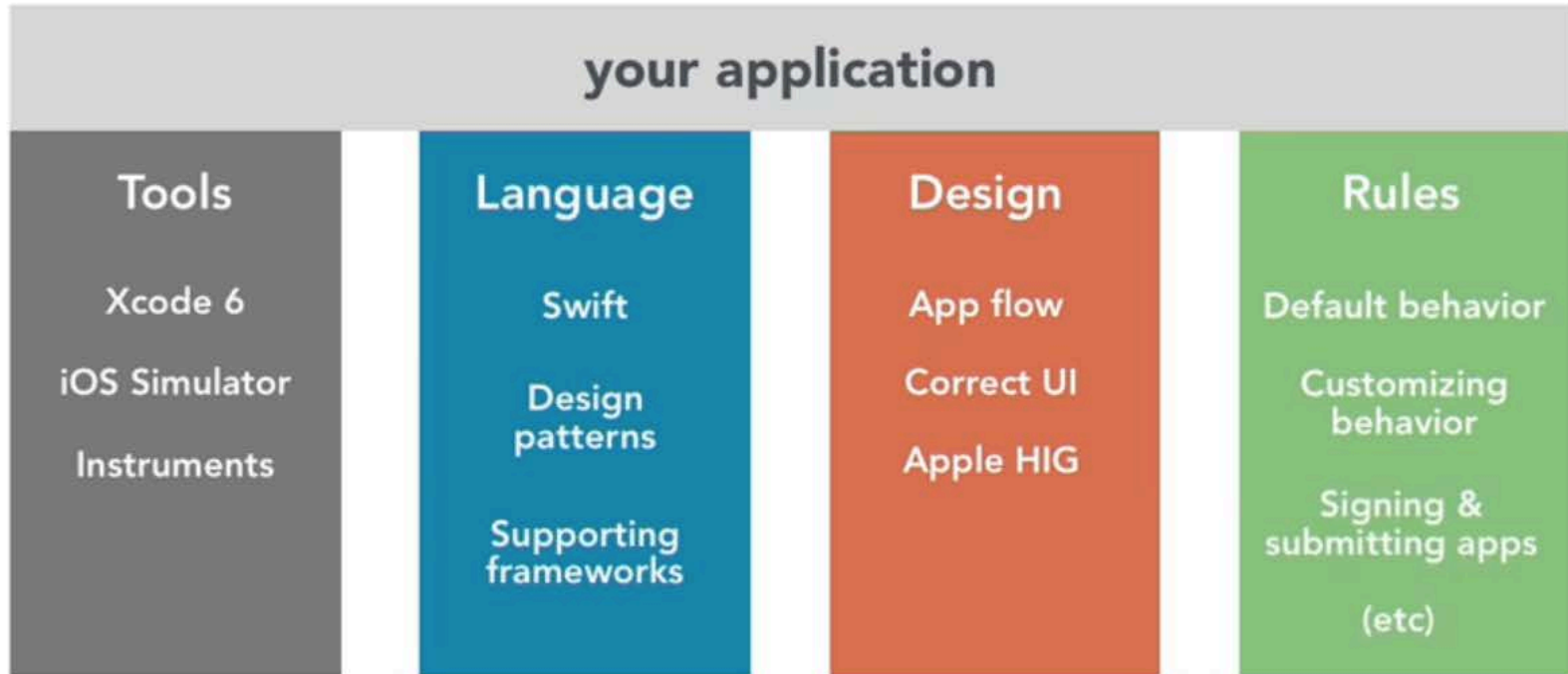
Device Provisioning

Certificates

Universal Apps

Table Views

Four pillars of iOS development



Outlets and Actions

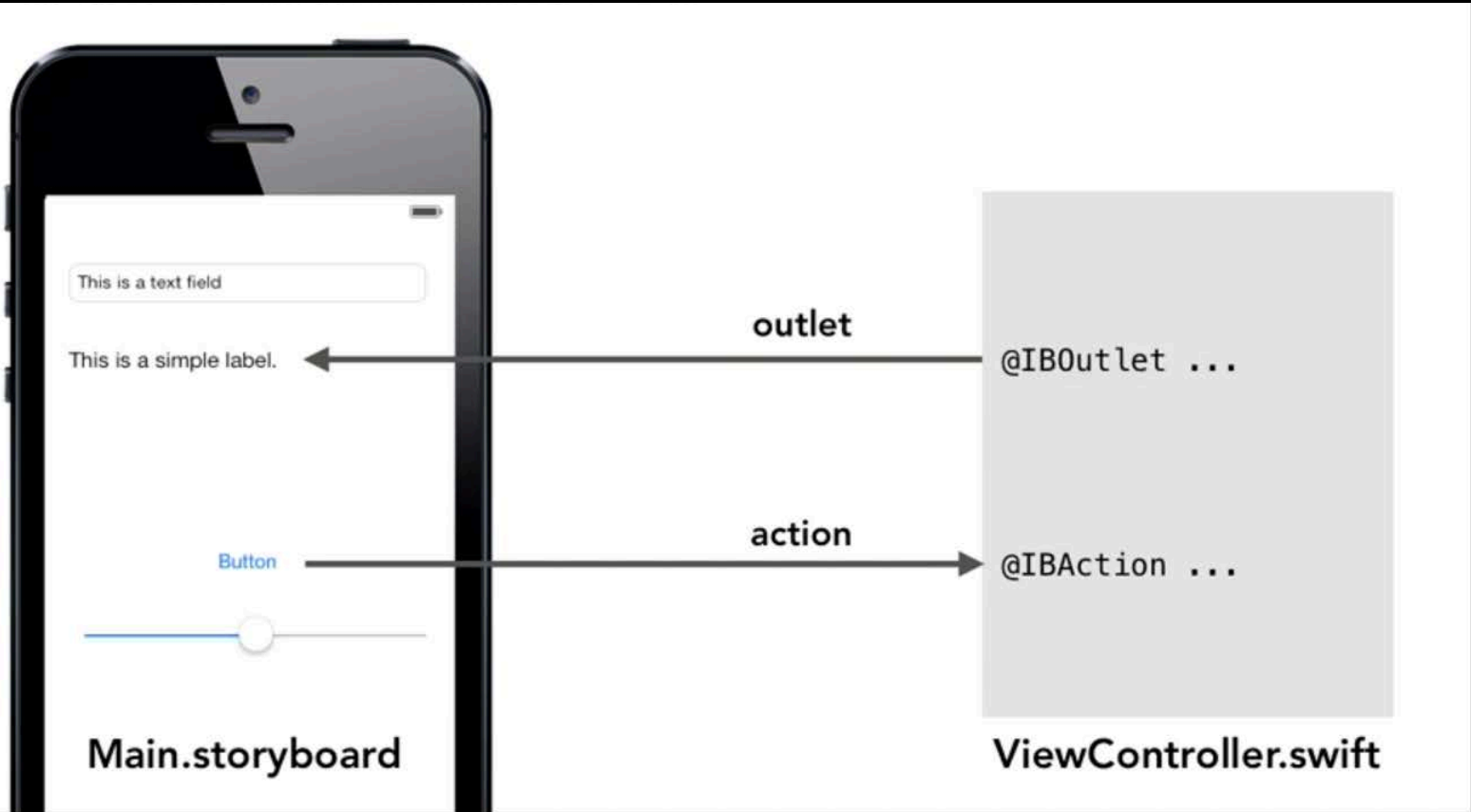


action

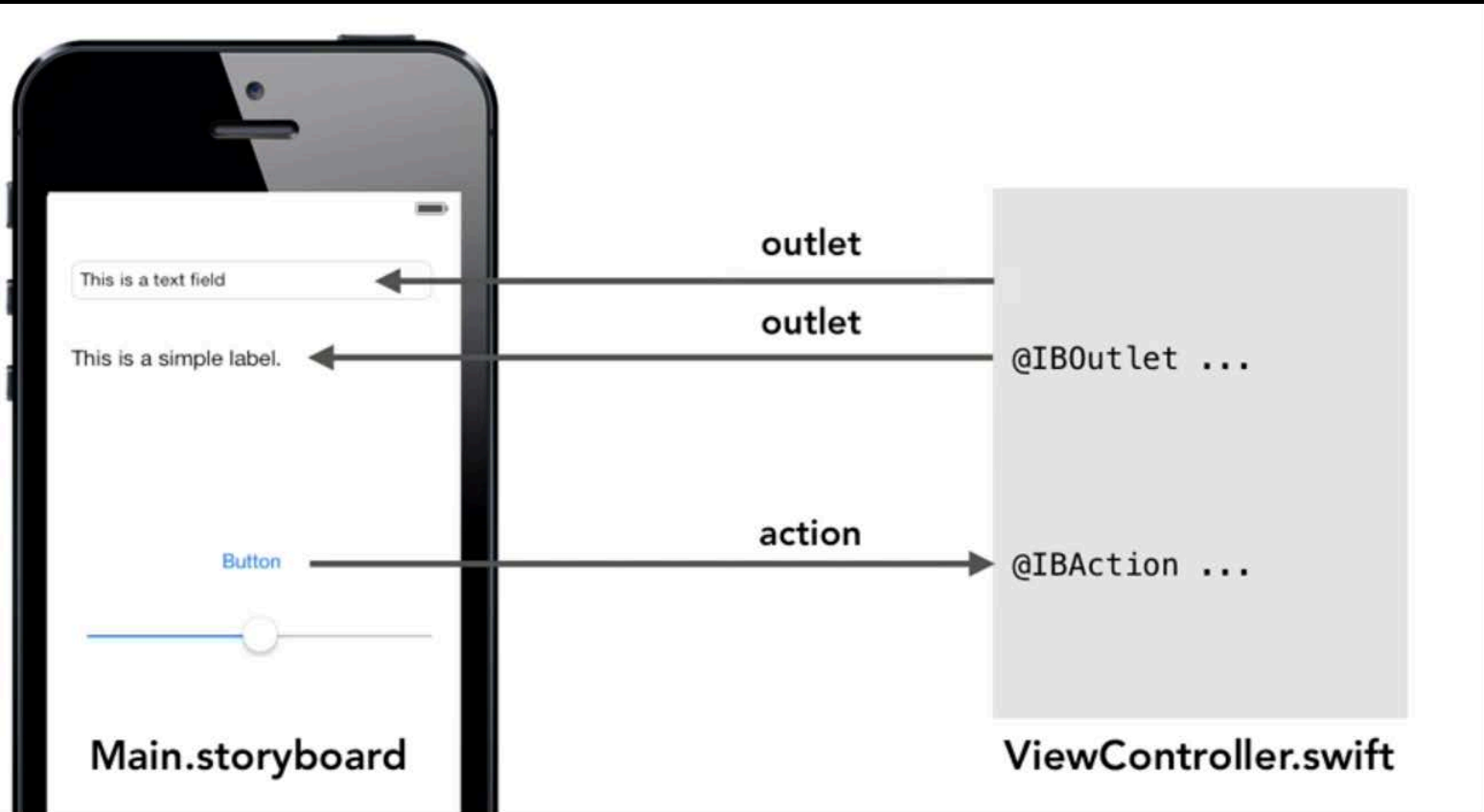


ViewController.swift

Outlets and Actions



Outlets and Actions



Delegation

How one **object** can hand off responsibility to another **object**

