## iOS Dev Accelerator Week 1 Day 3

- App Delegate
- UIWindow
- Views
- FirstResponder
- Textfields
- KVO Notifications

## AppDelegate

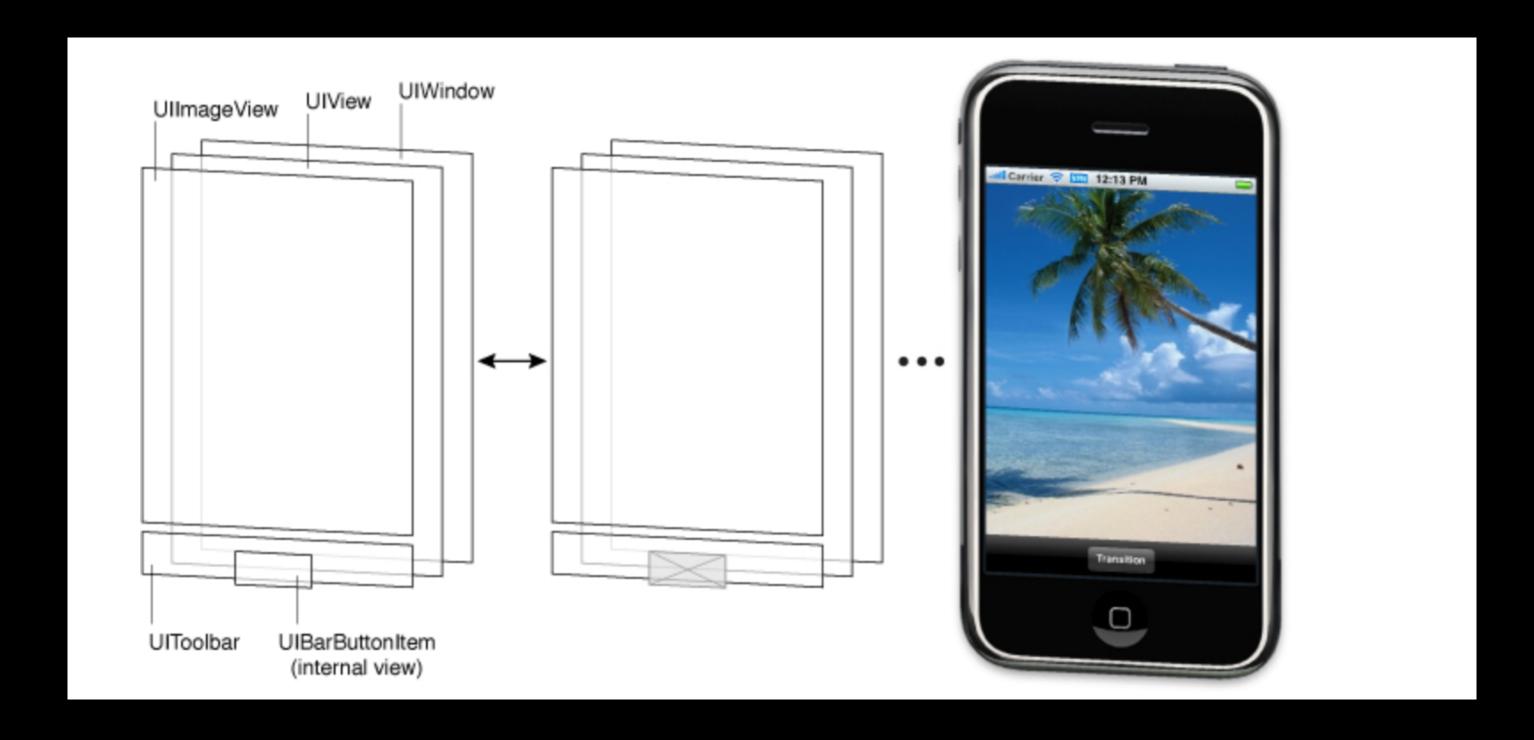
- The app delegate is a custom object created at launch
- The primary job of the app delegate is to bootstrap application startup, then handle transitions to and from the background.
- AppDelegate handles APN, openURL, NSURLSession downloads...
- Great place to manually set the root view controller.
- Demo

#### UIWindow

- UIWindow provides an area to to draw UIViews
- The most important property of a UIWindow is its rootViewController property
- Assigning a rootViewController sets the rootViewController's view as the contentView of the window
- UIWindow also has a screen property; the screen displaying the window
- By default, all windows are created on the primary device screen
- Displaying views on an airplay display is an example of a non-primary screen

# AppDelegate - Demo

#### Views



- "A view is an instance of the UIView class (or one of its subclasses) and manages a rectangular area in your application window"
- "Views are responsible for drawing content, handling multitouch events, and managing the layout of any subviews."

#### Views

- To be displayed on screen, a **UIView** must be added as a subview of a parent view.
- All views can be a child view of a parent view, and all views can have children views of their own. This is called the view hierarchy.
- A UIView has many properties that dictate its appearance:
  - backgroundColor
  - alpha
  - hidden
  - opaque
  - tintColor
  - layer
  - clipsToBounds
- The most common UIView properties affect its location and size: Frame and Bounds

#### Frame and Bounds

- Frame Describes the view's location and size in its superview's coordinate system.
- Bounds Describes the view's location and size in its own coordinate system.
- Both are CGRect data structures
  - x offset from the left edge
  - y offset from the top edge (bottom edge in AppKit/SpriteKit)
  - width width of the rectangle
  - height height of the rectangle

## UIResponder

- The UIResponder class defines an interface for objects that respond to and handle events
- UIView inherits from UIResponder, so all views can respond to and handle events
- Touch motion events are the two relevant event types in Cocoa Touch
- firstResponder is the object at the top of the responderChain
  - events are sent to the firstResponder for that event type
  - If the responder object resigns firstResponder, the event "bubbles up" the responderChain to the next responder

## Responder Chain

- When a user-generated event happens, UlKit creates an event with all the pertinent info and places it in the event queue.
- Touch events send an NSSet of touches packed in a UIEvent object
  - motion events can include a number of different objects depending on the framework.
- The event then travels up the responderChain until it hits an object that can handle the event.
  - You will most likely never need to manually worry about the **responderChain** and what views a touch will interact with.
  - If you ever need to make a view completely ignore and pass touches through, just set its enableUserInteraction property to false.

#### UITextField

- A **UITextField** object is a control that displays editable text and sends an action message to a target object when the user presses the return button
- A UITextField can have a delegate to handle editing related notifications
- When a user taps into a UITextField, it becomes the firstResponder and it brings the keyboard on screen
- You are responsible for making sure the UITextField you are editing is not obscured by the keyboard

#### UIView Animation API

- Animates changes to properties over time in a UIView
  - can animate most properties, including frame and bounds
  - animates using linear keyframes by default
  - can use alternate key-frame timing (easeIn, easeOut, etc.)
- UIView animateWithDuration()
  - Class method on **UIView** that takes 2 parameters
    - the duration of the animation
    - a closure containing the desired changes
- We will cover closures more in depth in Week 3, but they are just like blocks if you are coming from Objective-C.

### UIView Animation API - Demo