

iPhone Specialist Lab

L04: iOS Development Patterns

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<http://hci.rwth-aachen.de/iphone>



Objective-C

- Roots in the early 1980's
- Strongly influenced by Smalltalk
- Mainly used in NeXTSTEP, OS X, iPhone OS



Characteristics

- Strict superset of C
 - can be mixed with C and C++
- Single inheritance
- Dynamic runtime
- Loosely typed (if you want it)
- Memory management



Collections

- **Classes**
 - NSArray: ordered list
 - NSSet: unordered set
 - NSDictionary: keyed collection
- **Mutable vs. Immutable**
- **Fast Enumeration**
 - `for(id obj in objects) { ... }`



Lab 4.1: Collections

- Log the contents of all given data structures
 - log keys and values for the dictionary
- Use Fast Enumeration

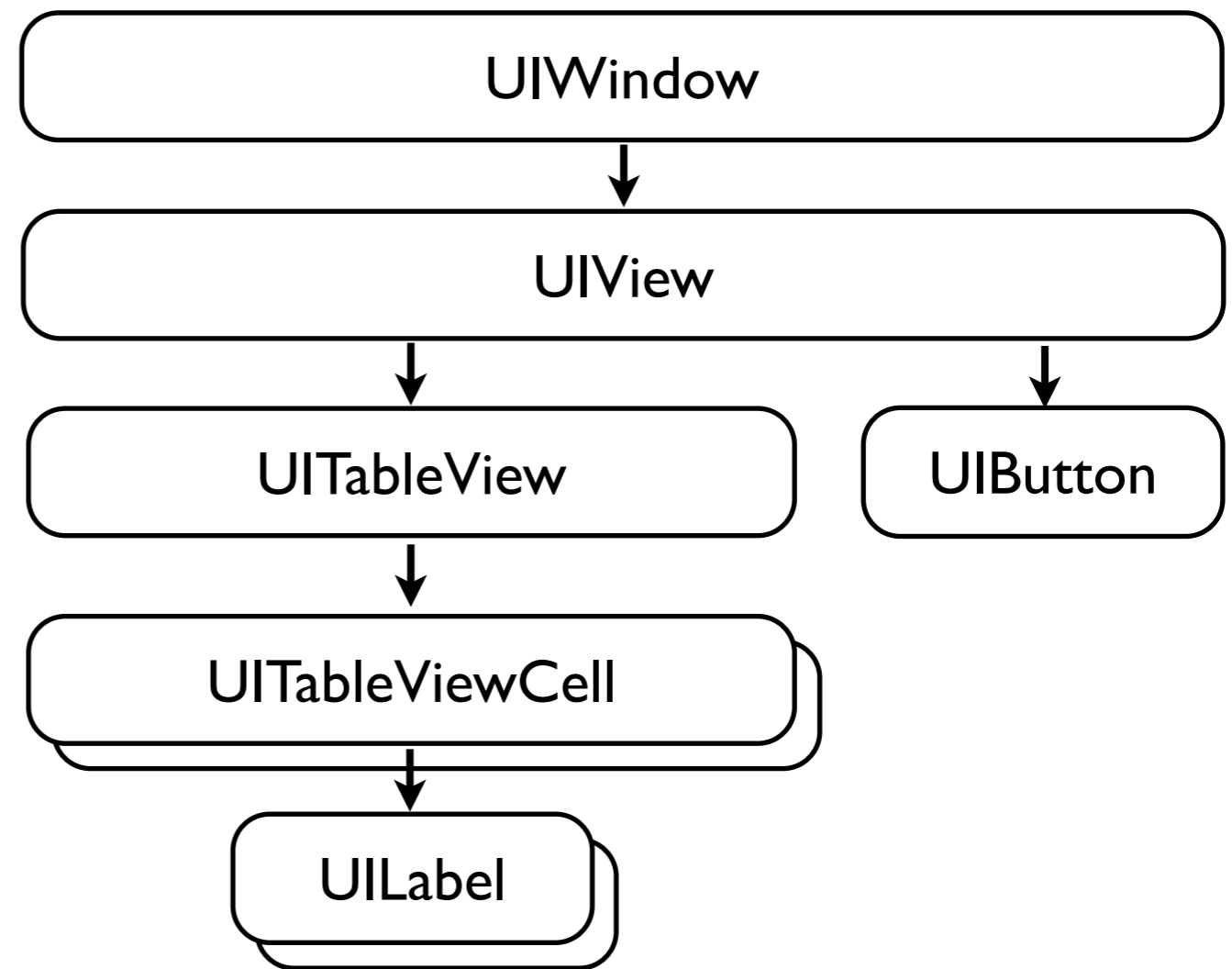
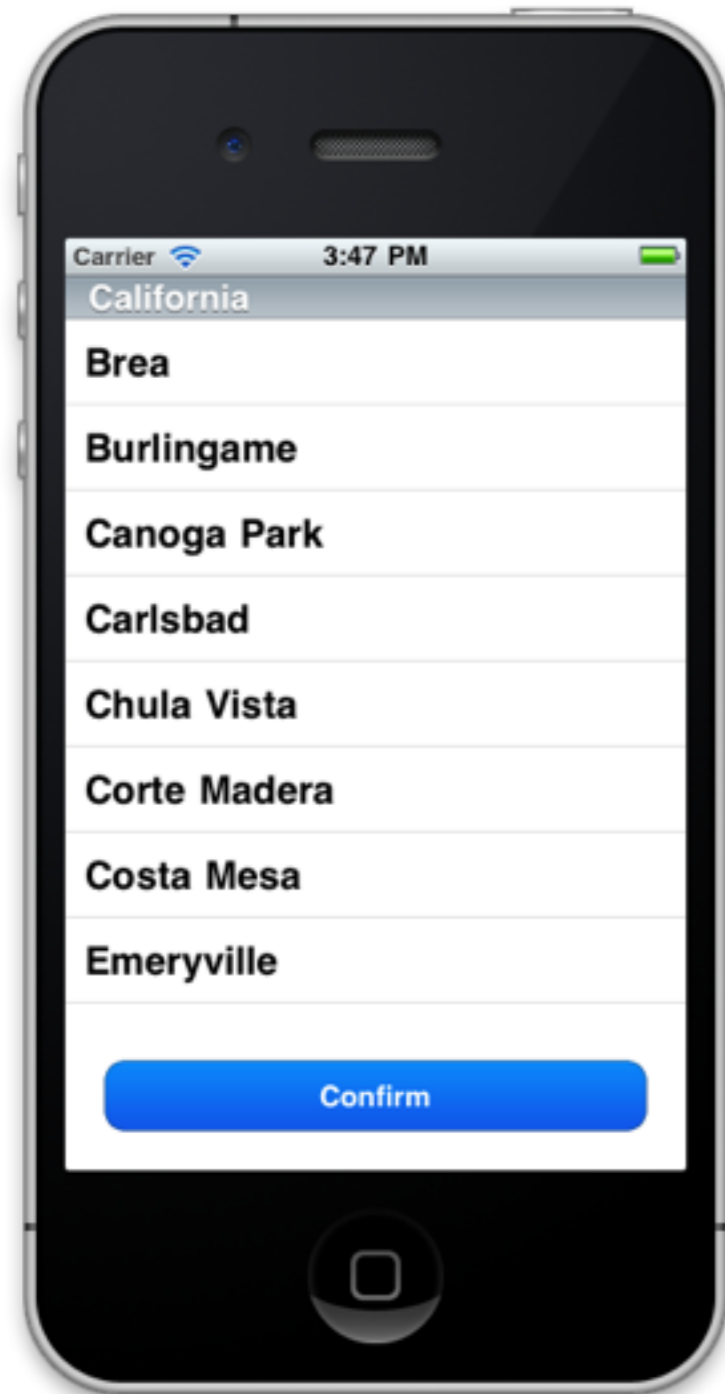


View Controllers

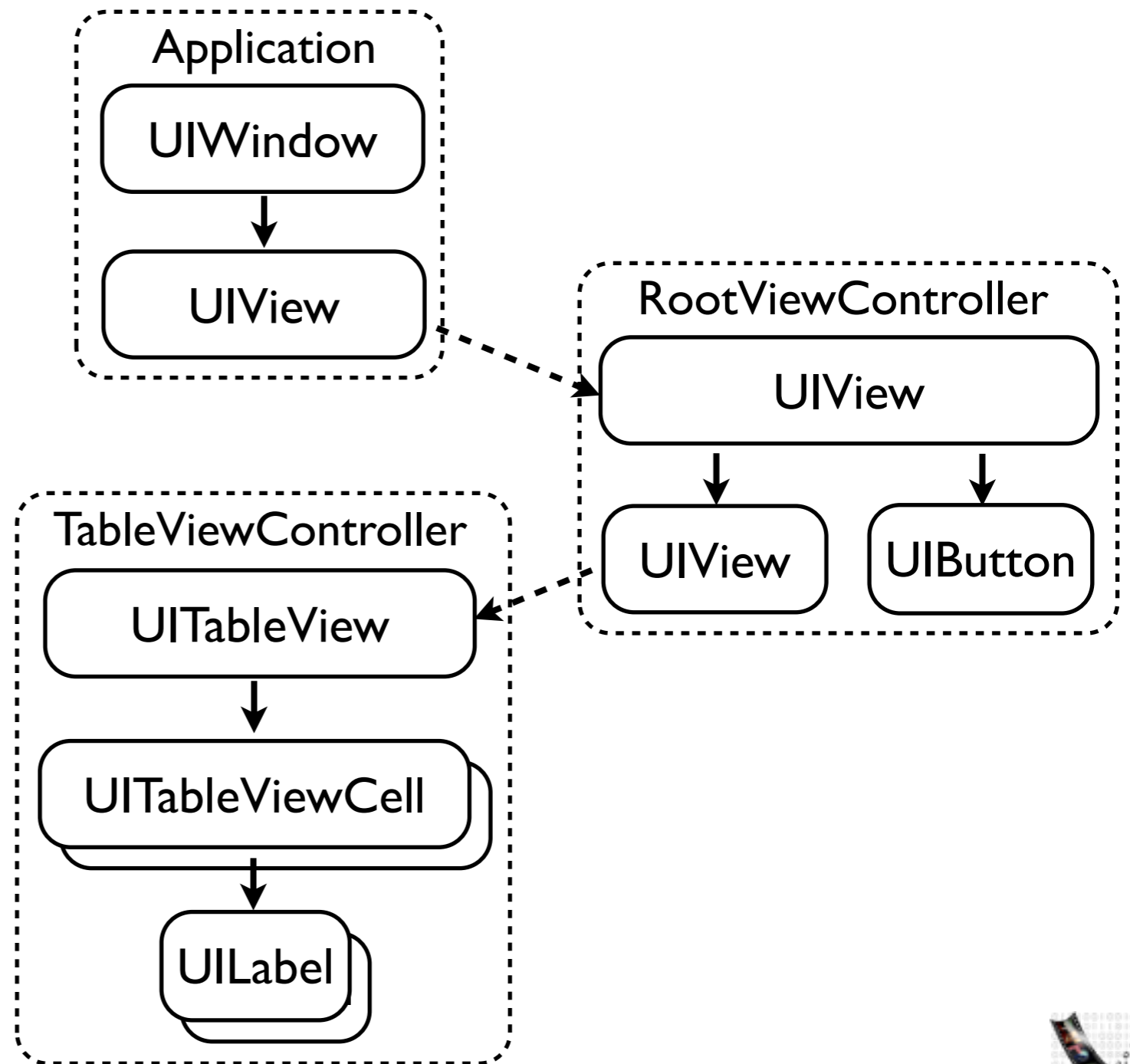
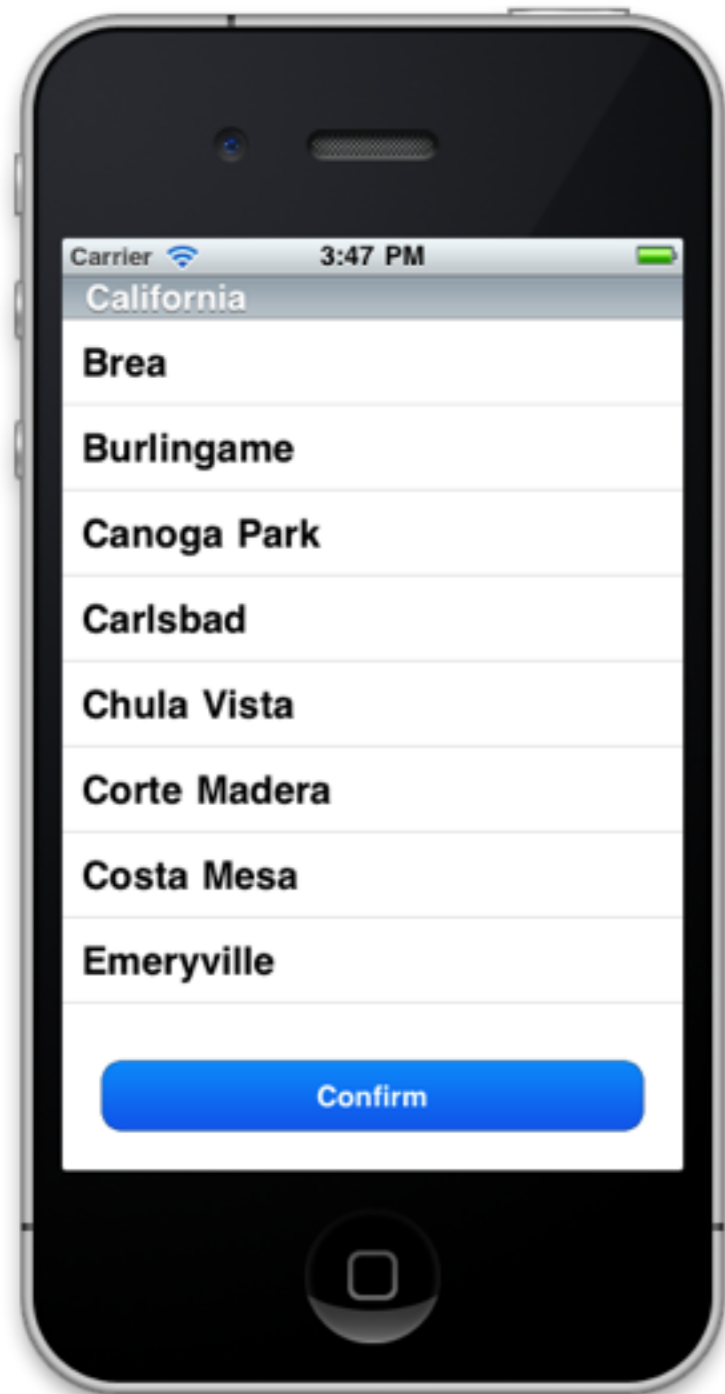
- Every screen gets its own controller
- Complex views can get their own controllers
- The view should be managed only from the closest controller



View Hierarchy



View Controller Hierarchy

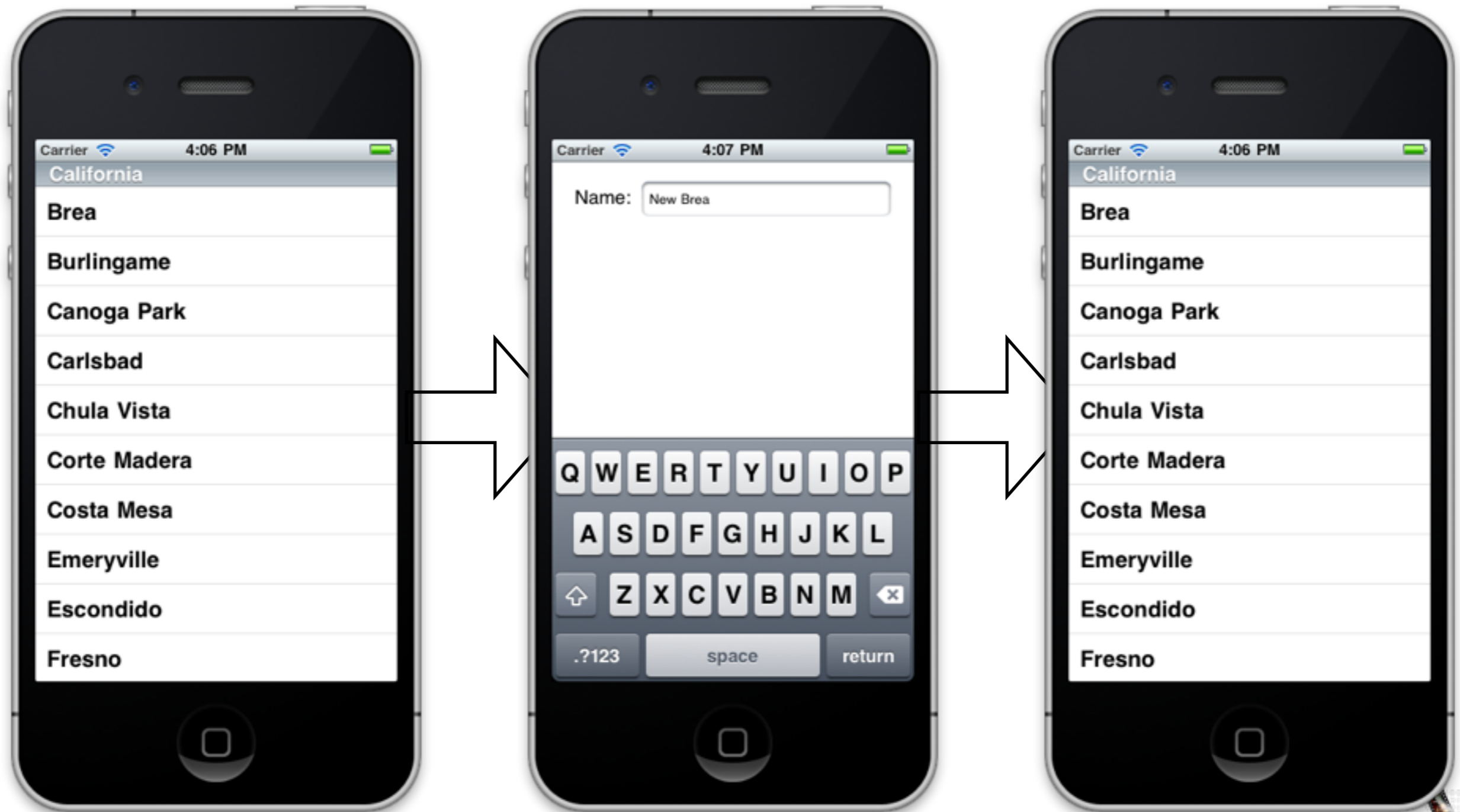


Lab 4.2: View Controllers

- Let the Table View Controller open the Detail View Controller



Delegation



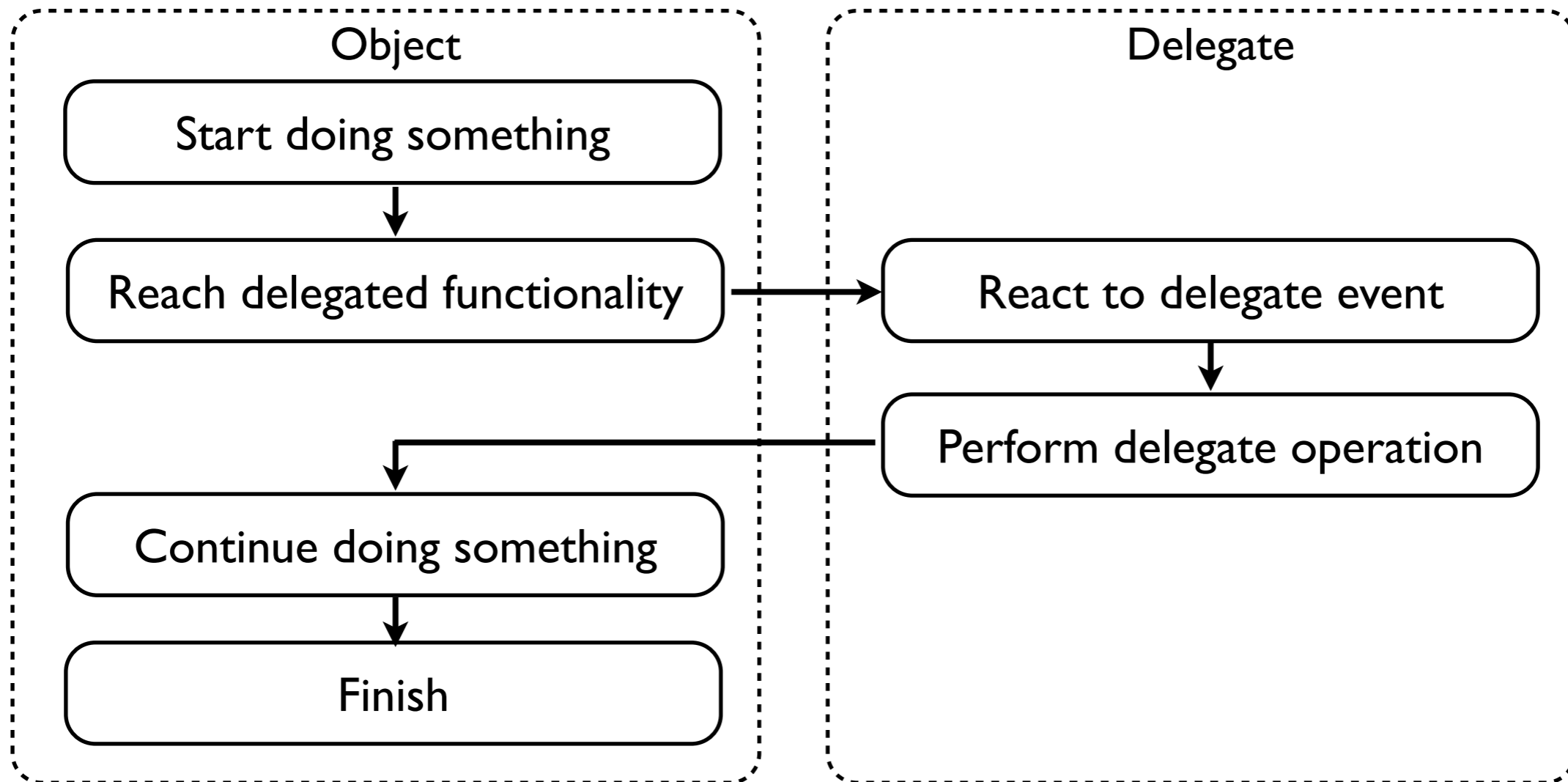
Delegation

What if a view controller must be notified if something changed in another view controller?

More general: What if an object must be notified if something was done in another object?



Delegate



iOS SDK Delegates

Object	Delegate
UIApplication	UIApplicationDelegate
UITextField	UITextFieldDelegate
UIPickerController	UIPickerControllerDelegate
CMMotionManager	CMMotionManagerDelegate

and many more...



Implementing Delegates

- Delegate Protocol
 - define what methods the delegate must define
- Delegate Property
 - assign the delegate



Lab 4.3: Web Loader

- Implement a new class that loads images from the web
 - Copy the code from the view controller
- Implement a delegate mechanism for the class
- Replace the image loading with your new class

