



Computing & Information Sciences
FLORIDA INTERNATIONAL UNIVERSITY

Mobile Application Development

lecture4

Fall 2011 - COP 4655 U1

T/R 5:00 - 6:15pm – ECS 134

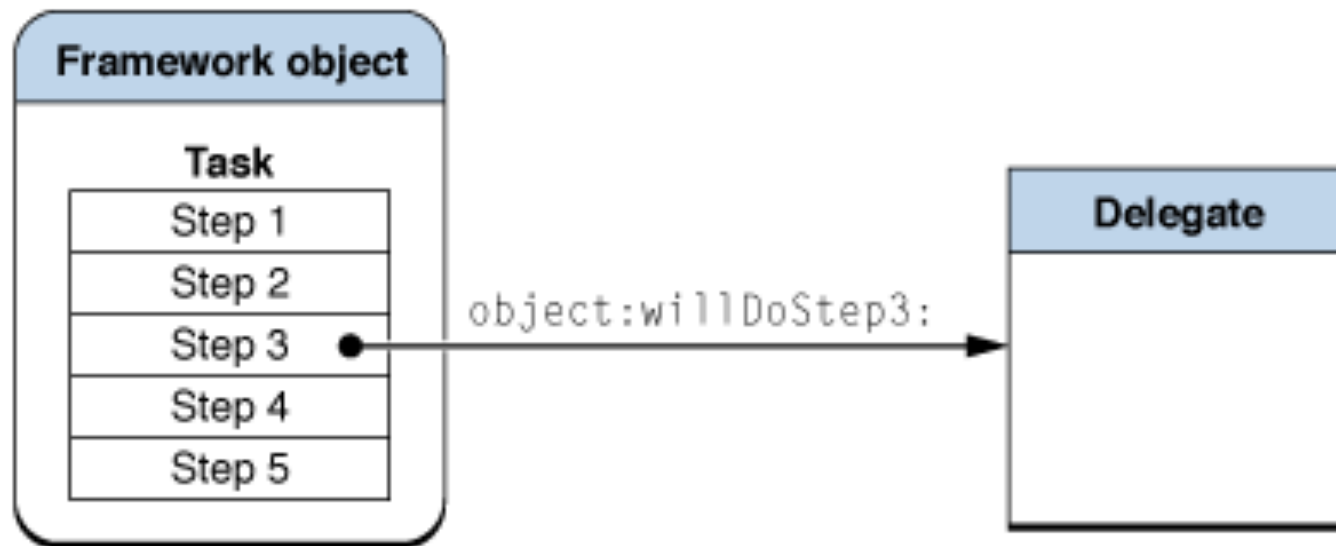
Steve Luis

Agenda

- Build View Controller Based Application
- Programming assignment #1

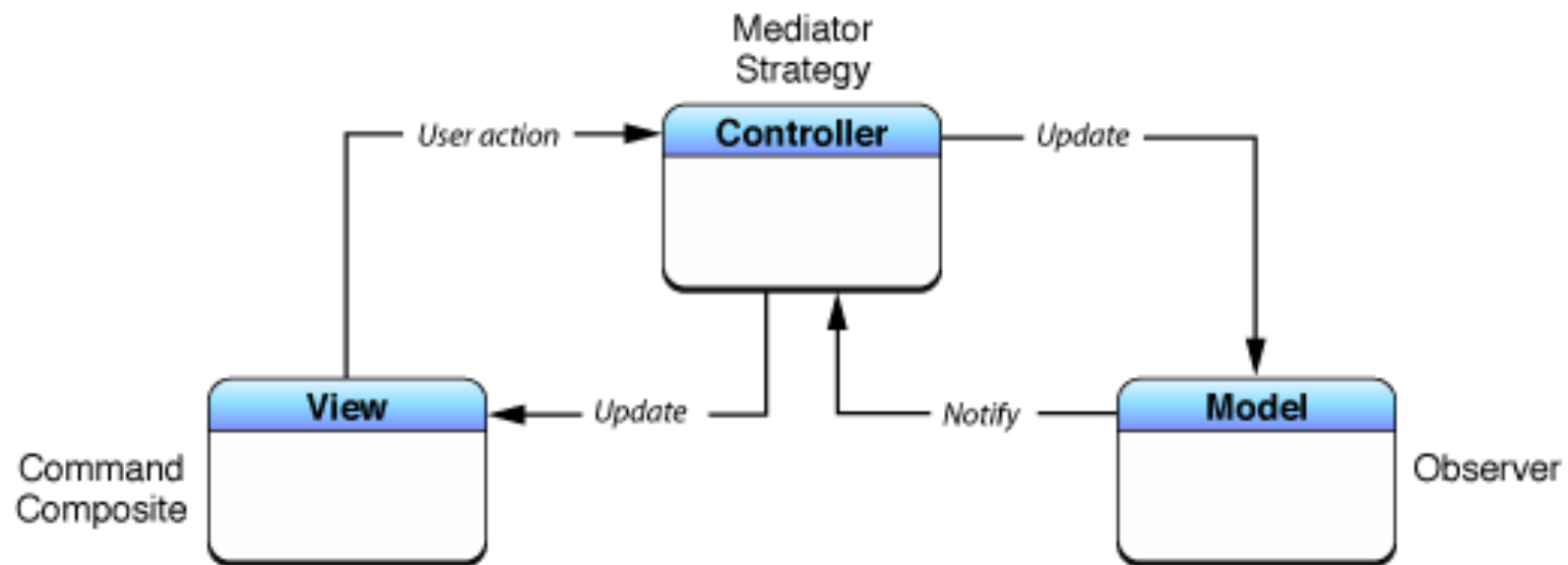


Delegation Pattern



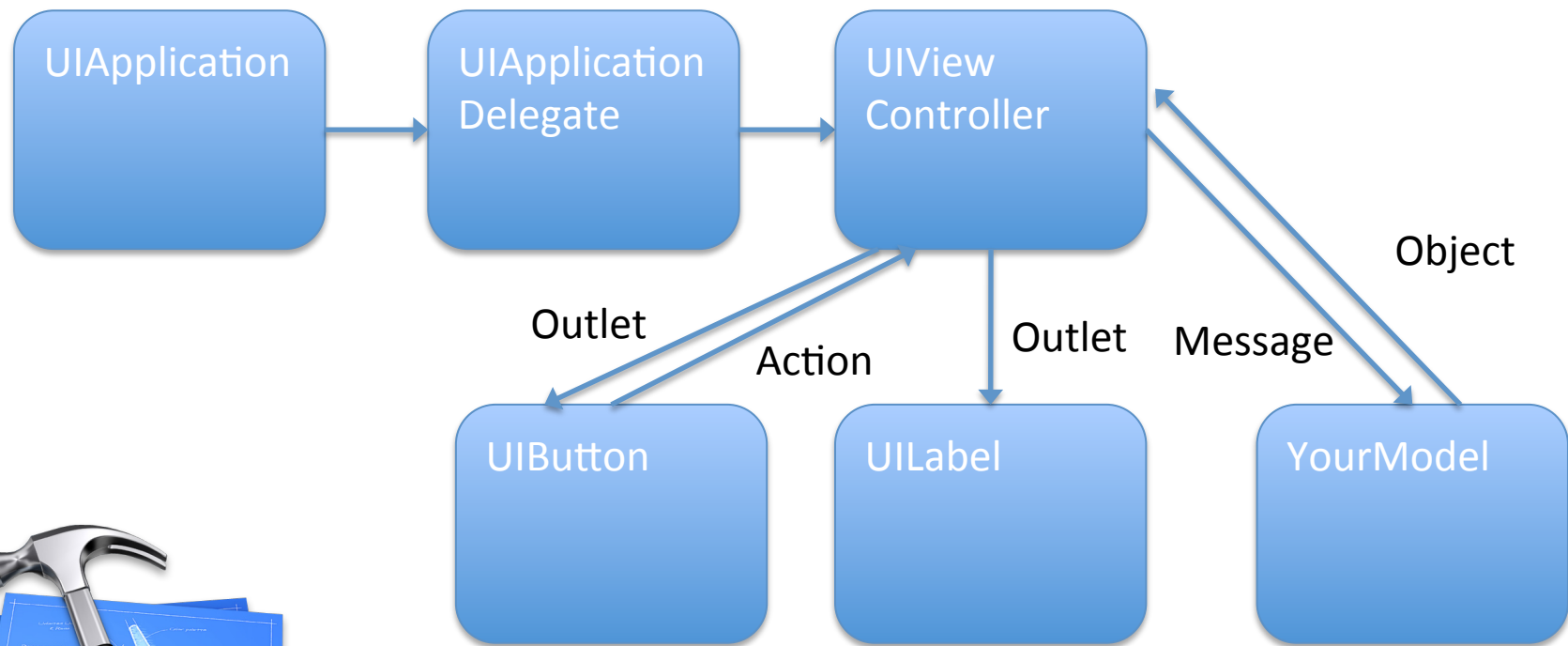
Apple Developer Library, "Cocoa Design Patterns"

Model View Controller Pattern



Apple Developer Library, "Cocoa Design Patterns"

View Based Application: Simplified



Build a View Based Application from Project Templates

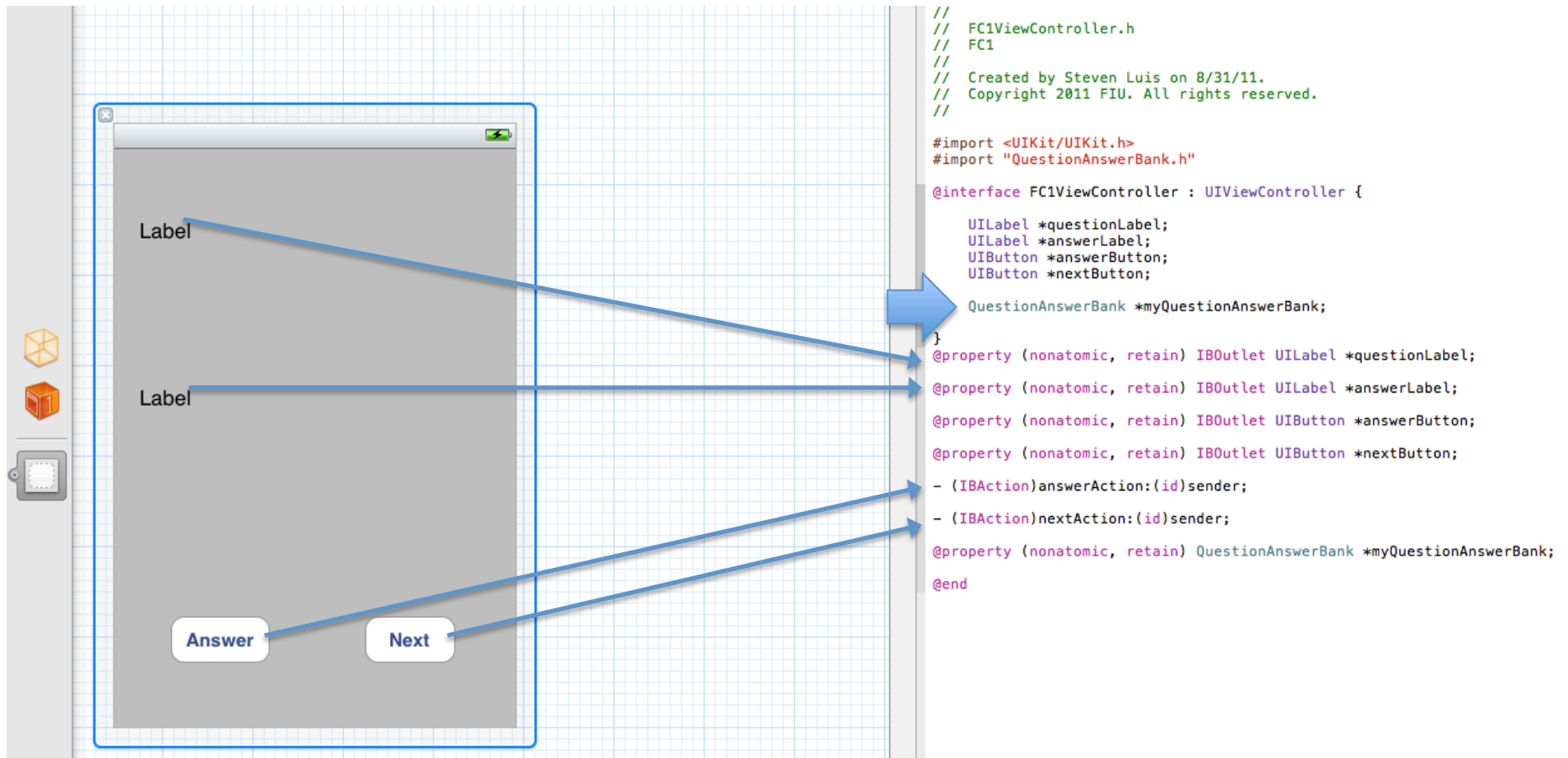
Programming Assignment #1

- Flash Card Game: Instructions
- Display a text based question.
- Make a guess.
- Press the answer button to see the text based answer.
- When you reach the last question start over.
- Build with 10 cards and answers.

How to build the Flash Card Game

- Use Xcode: Project Template for iOS:
View based application.
- Display the question in a UILabel.
- Use a UIButton to create an action to display the answer.
- Display the answer in a separate UILabel so you can see both the question and answer when displayed.
- Use a UIButton labeled “next” to create an action to view the next question.
- Modify the QuestionAnswerBank Class that is invoked to provide a new question and answer pair.

Build the Interface



```
// FC1ViewController.h
// FC1
// Created by Steven Luis on 8/31/11.
// Copyright 2011 FIU. All rights reserved.
//
#import <UIKit/UIKit.h>
#import "QuestionAnswerBank.h"

@interface FC1ViewController : UIViewController {
    UILabel *questionLabel;
    UILabel *answerLabel;
    UIButton *answerButton;
    UIButton *nextButton;
    QuestionAnswerBank *myQuestionAnswerBank;
}
@property (nonatomic, retain) IBOutlet UILabel *questionLabel;
@property (nonatomic, retain) IBOutlet UILabel *answerLabel;
@property (nonatomic, retain) IBOutlet UIButton *answerButton;
@property (nonatomic, retain) IBOutlet UIButton *nextButton;
- (IBAction)answerAction:(id)sender;
- (IBAction)nextAction:(id)sender;
@property (nonatomic, retain) QuestionAnswerBank *myQuestionAnswerBank;
@end
```


Build the Model

```
//  
// QuestionAnswerBank.h  
// FC1  
//  
// Created by Steven Luis on 8/31/11.  
// Copyright 2011 FIU. All rights reserved.  
//  
  
#import <Foundation/Foundation.h>  
  
@interface QuestionAnswerBank : NSObject {  
}  
  
- (NSString *) dispenseQuestion ;  
- (NSString *) dispenseAnswer ;  
  
@end
```

```
//  
// QuestionAnswerBank.m  
// FC1  
//  
// Created by Steven Luis on 8/31/11.  
// Copyright 2011 FIU. All rights reserved.  
//  
  
#import "QuestionAnswerBank.h"  
  
@implementation QuestionAnswerBank  
  
- (NSString *) dispenseQuestion {  
    return(@"What is the meaning of life?");  
}  
  
- (NSString *) dispenseAnswer {  
    return(@"42");  
}  
  
@end
```

Build the View Controller

```
//  
// FC1ViewController.m  
// FC1  
//  
// Created by Steven Luis on 8/31/11.  
// Copyright 2011 FIU. All rights reserved.  
//  
  
#import "FC1ViewController.h"  
  
@implementation FC1ViewController  
@synthesize questionLabel;  
@synthesize answerLabel;  
@synthesize answerButton;  
@synthesize nextButton;  
@synthesize myQuestionAnswerBank;  
  
- (void)dealloc  
{  
    [questionLabel release];  
    [answerLabel release];  
    [answerButton release];  
    [nextButton release];  
    [super dealloc];  
}  
  
- (void)didReceiveMemoryWarning  
{  
    // Releases the view if it doesn't have a superview.  
    [super didReceiveMemoryWarning];  
  
    // Release any cached data, images, etc that aren't in use.  
}  
}
```

```
#pragma mark - View lifecycle  
  
// Implement viewDidLoad to do additional setup after loading the view,  
// typically from a nib.  
- (void)viewDidLoad  
{  
    myQuestionAnswerBank = [[QuestionAnswerBank alloc] init];  
    [super viewDidLoad];  
}  
  
- (void)viewDidUnload  
{  
    [self setQuestionLabel:nil];  
    [self setAnswerLabel:nil];  
    [self setAnswerButton:nil];  
    [self setNextButton:nil];  
    [super viewDidUnload];  
    // Release any retained subviews of the main view.  
    // e.g. self.myOutlet = nil;  
}  
  
- (BOOL)shouldAutorotateToInterfaceOrientation:(UIInterfaceOrientation)  
interfaceOrientation  
{  
    // Return YES for supported orientations  
    return (interfaceOrientation == UIInterfaceOrientationPortrait);  
}  
  
- (IBAction)answerAction:(id)sender {  
    answerLabel.text = [myQuestionAnswerBank dispenseAnswer];  
}  
  
- (IBAction)nextAction:(id)sender {  
    questionLabel.text = [myQuestionAnswerBank dispenseQuestion];  
    answerLabel.text = nil;  
}  
@end
```

Assignment

- Read in Apple Developer Library:
 - Xcode 4 User Guide (review)
 - The Objective-C Programming Language (review)
 - Cocoa Design Patterns (new)
 - UIViewController, UIApplication, UIApplicationDelegate
- Read Kochan:
 - Chapters 4, 5, and 6
- Complete Reading/Participation assignments by Thursday, Sept. 8th.
- Programming assignment due Tues. Sept. 6th.