

# Navigation and Segues

Mobile Application Development in iOS

School of EECS

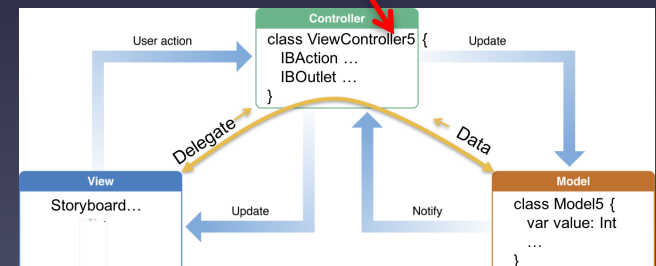
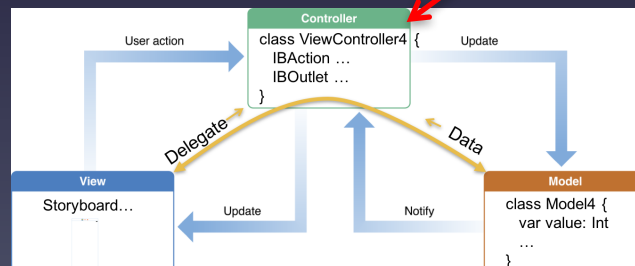
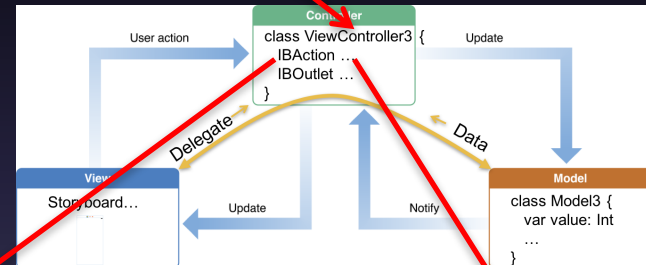
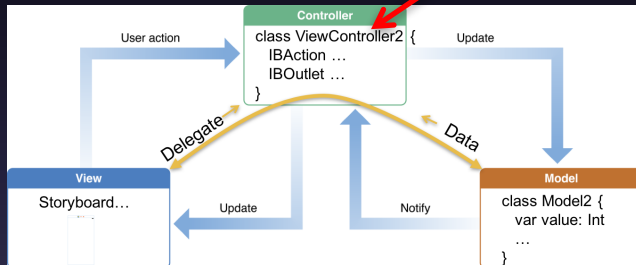
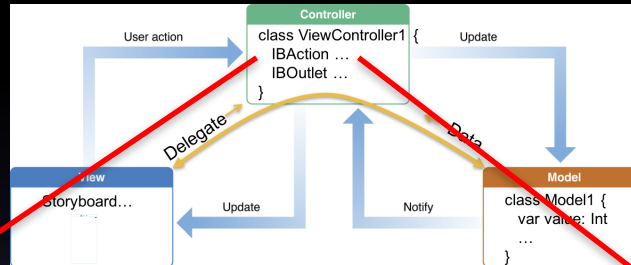
Washington State University

Instructor: Larry Holder

# Outline

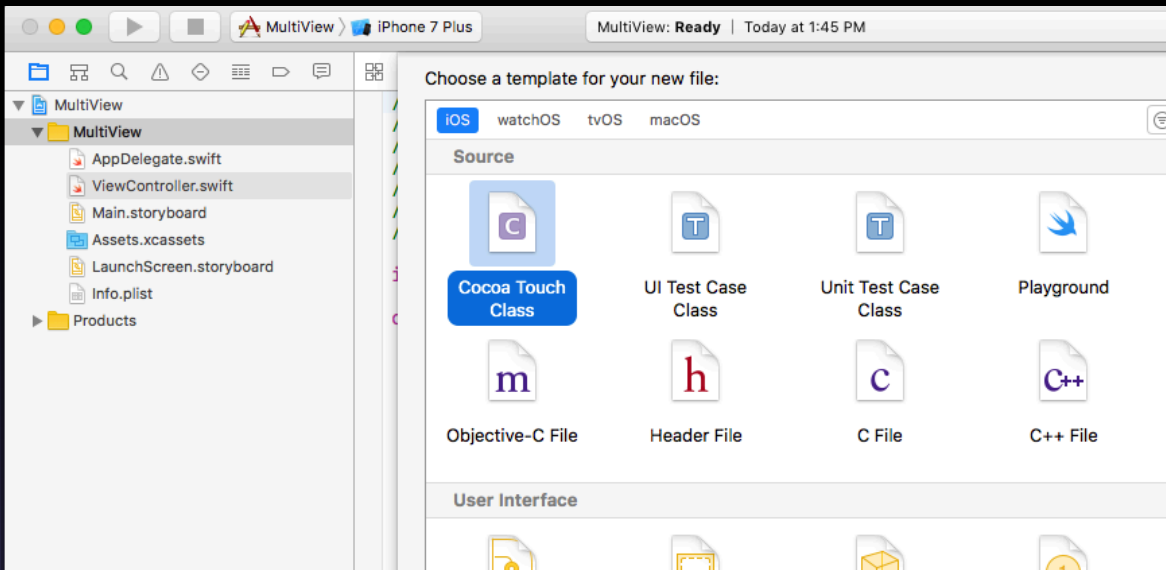
- Multiple views
- Segues
- Navigation Controller
- Application templates
  - Master-detail (Split View Controller)
  - Page-based (Page View Controller)
  - Tabbed (Tab Bar Controller)

# Multiple Views



# Multiple Views

## 1. File → New



## 2. Rename Class & Subclass

Class:

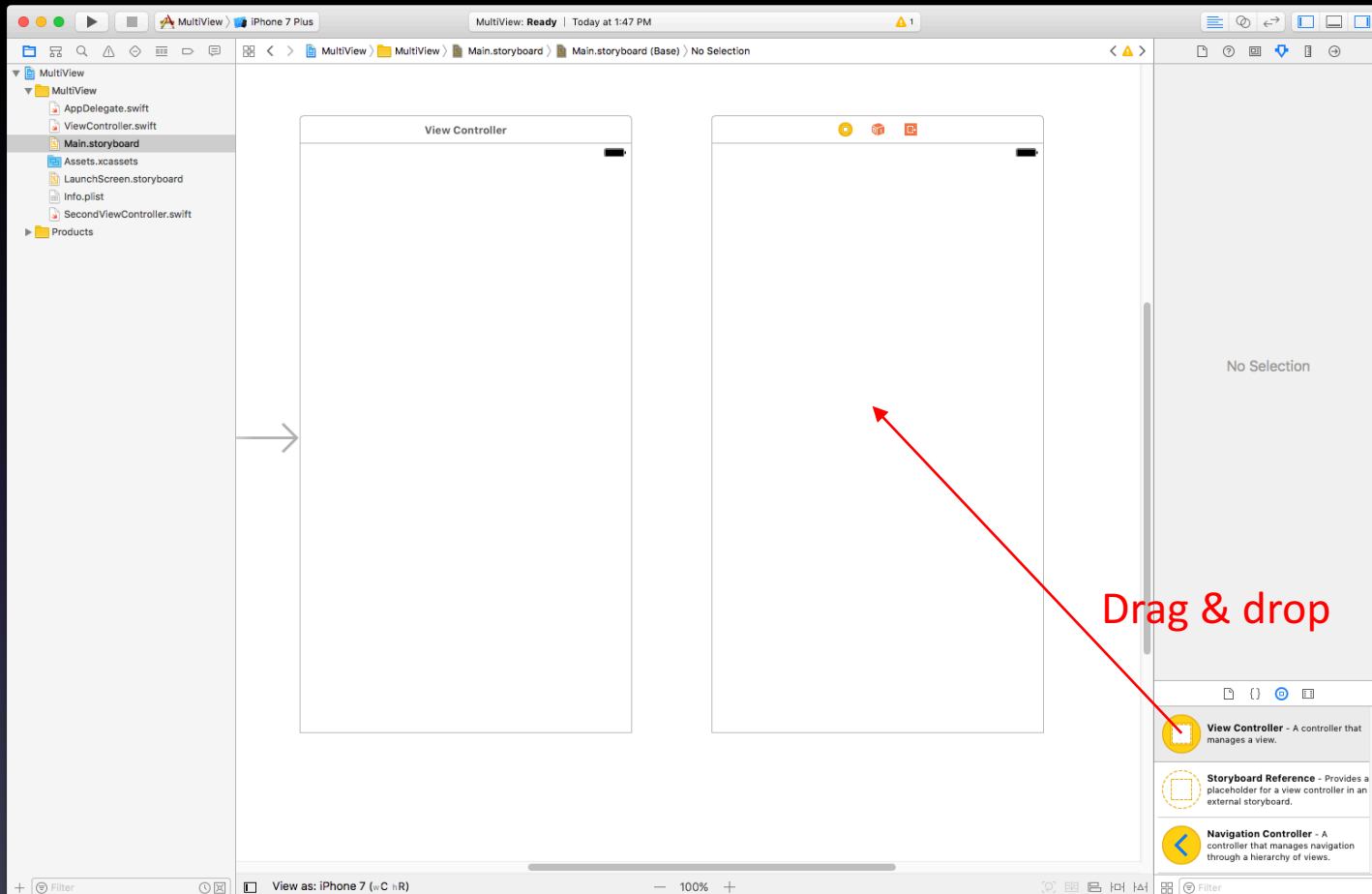
Subclass of:  ▼

☐ Also create XIB file

Language:  ▼

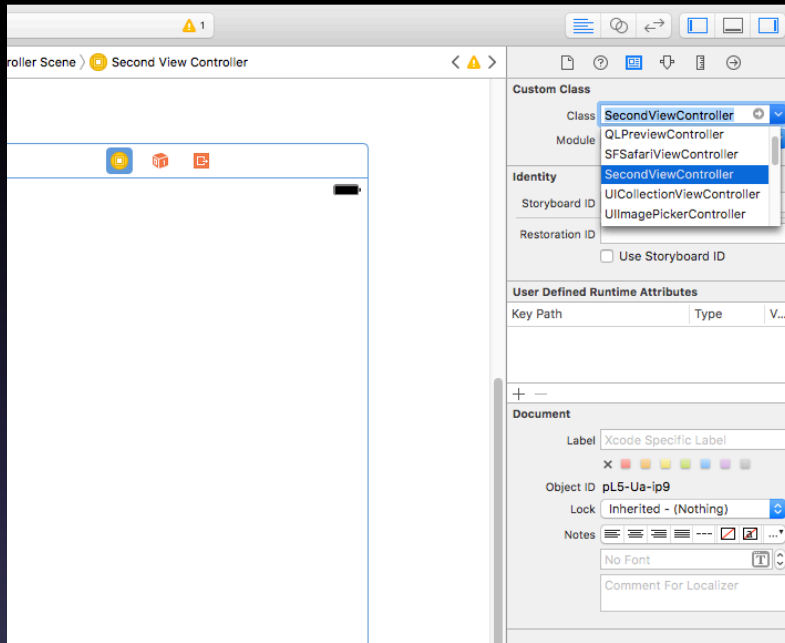
# Multiple Views

## 3. Add View Controller to Storyboard

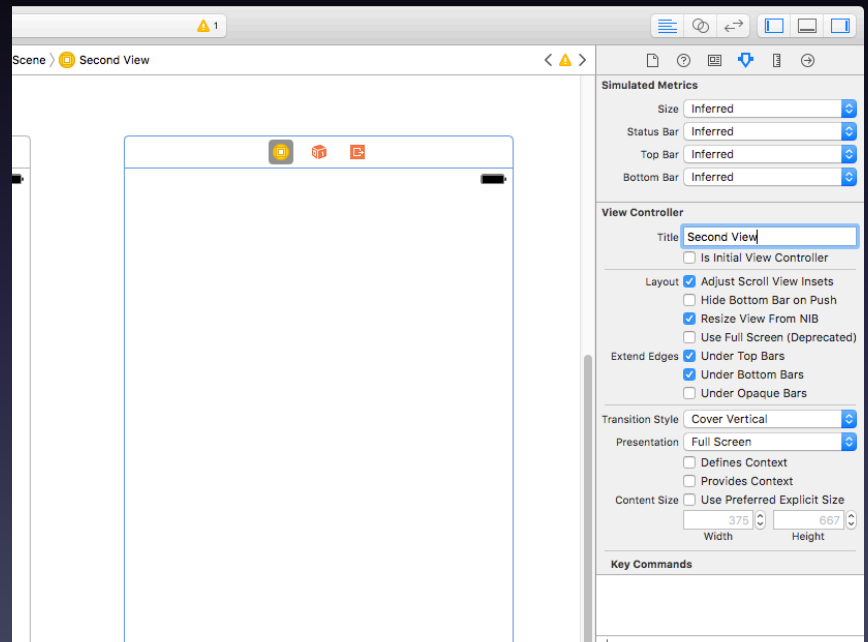


# Multiple Views

## 4. Change View Controller's Class



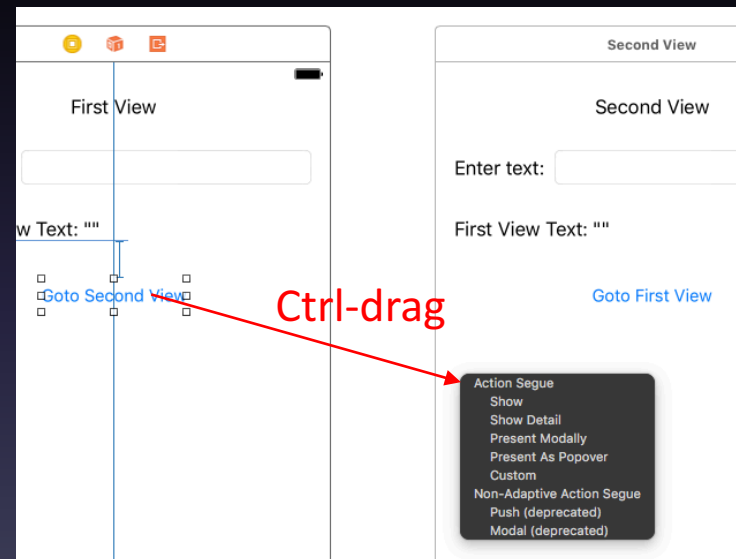
## 5. (Optional, but recommended) Change View Controller's Title



# Segues

- Transition from one view to another
- Adaptive: Transition type depends on device/context

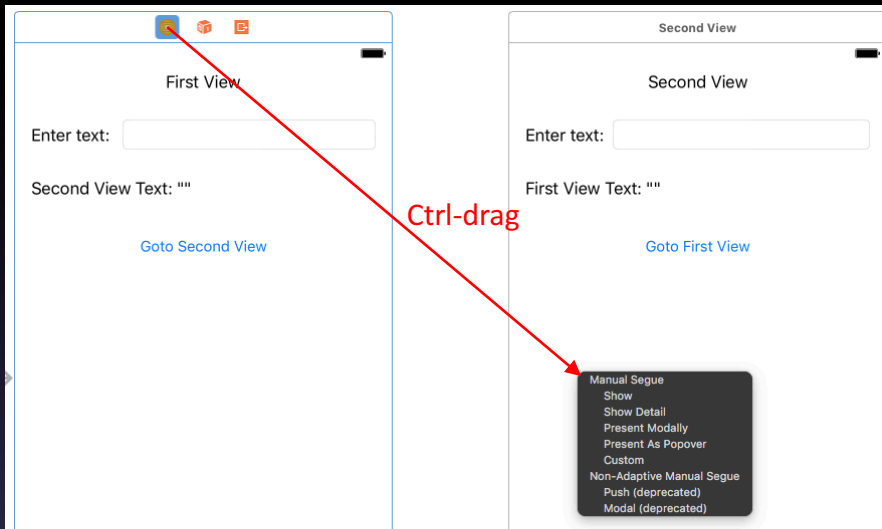
- Show (Push)
- Show Detail (Replace)
- Present Modally
- Present As Popover
- Custom



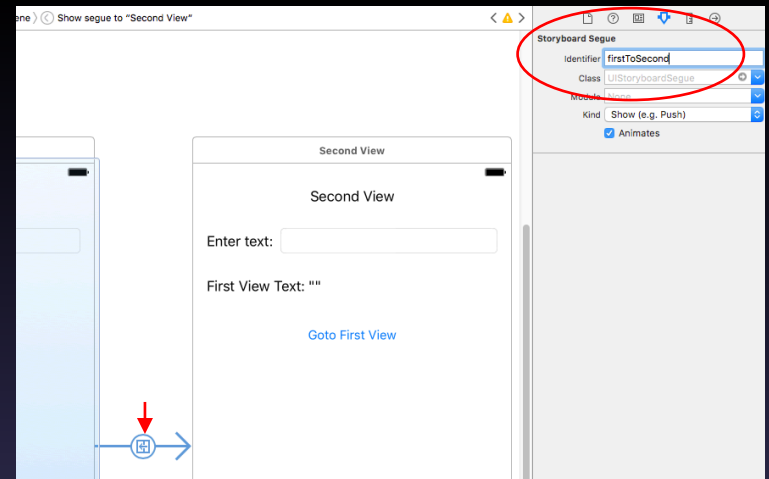
- Creates and adds new view instance to navigation stack

# Programmatic Segues

## 1. Segue from View Controller to View Controller.



## 2. Give segue an identifier.



## 3. Use performSegue to invoke.

```
@IBAction func gotoSecondViewTapped (_ sender: UIButton) {  
    performSegue(withIdentifier: "firstToSecond", sender: nil)  
    // sender could also be the button (sender) or self  
}
```



# Preparing for Segue

- Perform tasks before destination view loaded
  - Destination view class instance already initialized
  - Usually for passing data to destination view

```
override func prepare(for segue: UIStoryboardSegue, sender: Any?) {  
    if (segue.identifier == "firstToSecond") {  
        let secondViewController = segue.destination as! SecondViewController  
        secondViewController.firstViewText = self.firstViewText.text!  
    }  
}
```

- Warnings
  - Destination view elements not initialized
  - Each segue creates new destination view instance

# Unwinding from Segue

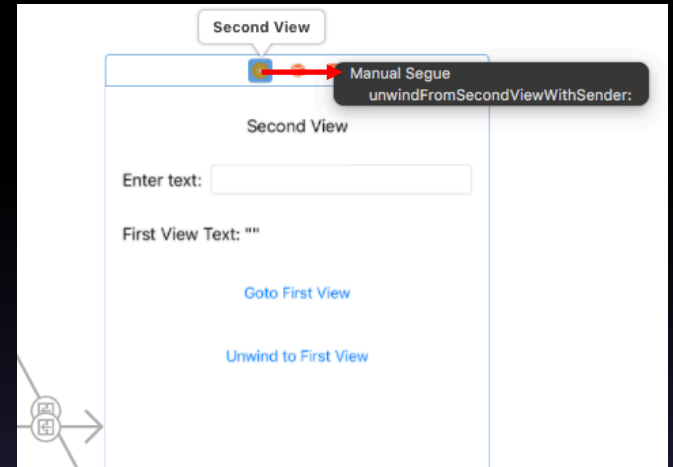
- Perform tasks as you pop view off navigation stack
- Returns to previous instance of destination view
  - Data intact
- Programmatically invoked via `performSegue()`

1. In `FirstViewController`, create `@IBAction func` taking `UIStoryboardSegue` parameter.

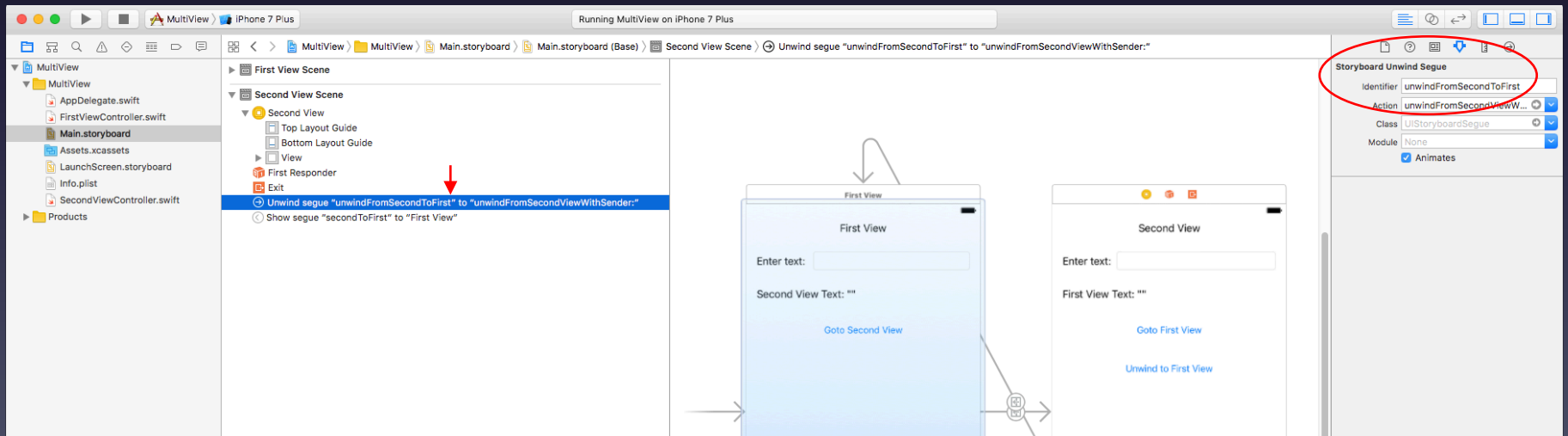
```
@IBAction func unwindFromSecondView (sender: UIStoryboardSegue) {  
    let secondViewController = sender.source as! SecondViewController  
    let newText = secondViewController.secondViewText.text!  
    firstViewLabel.text = "Second View Text: \"\$(newText)\""  
}
```

# Unwind Segue

2. Ctrl-drag from View to Exit.  
Select unwind func just created.

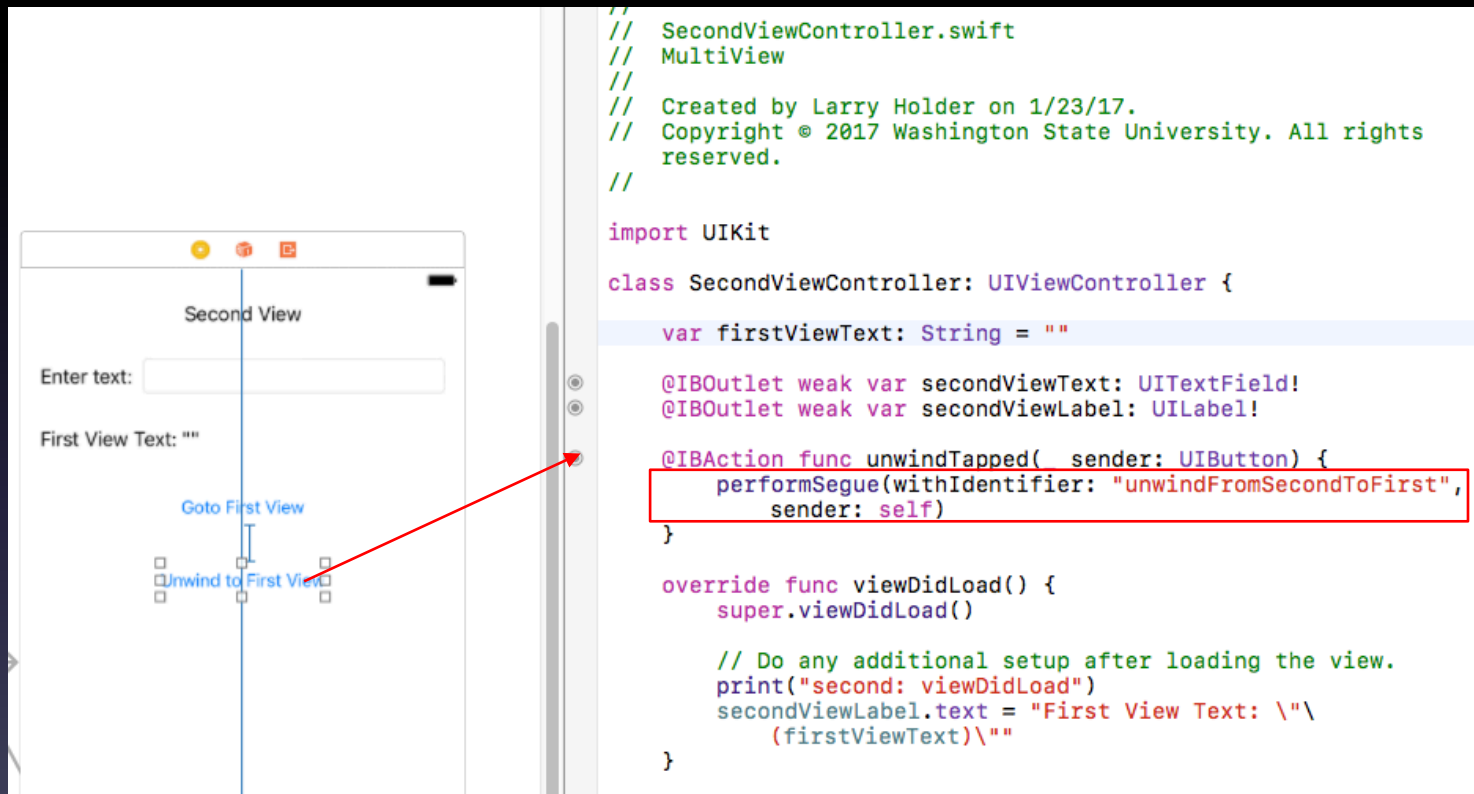


3. Add unwind segue identifier.



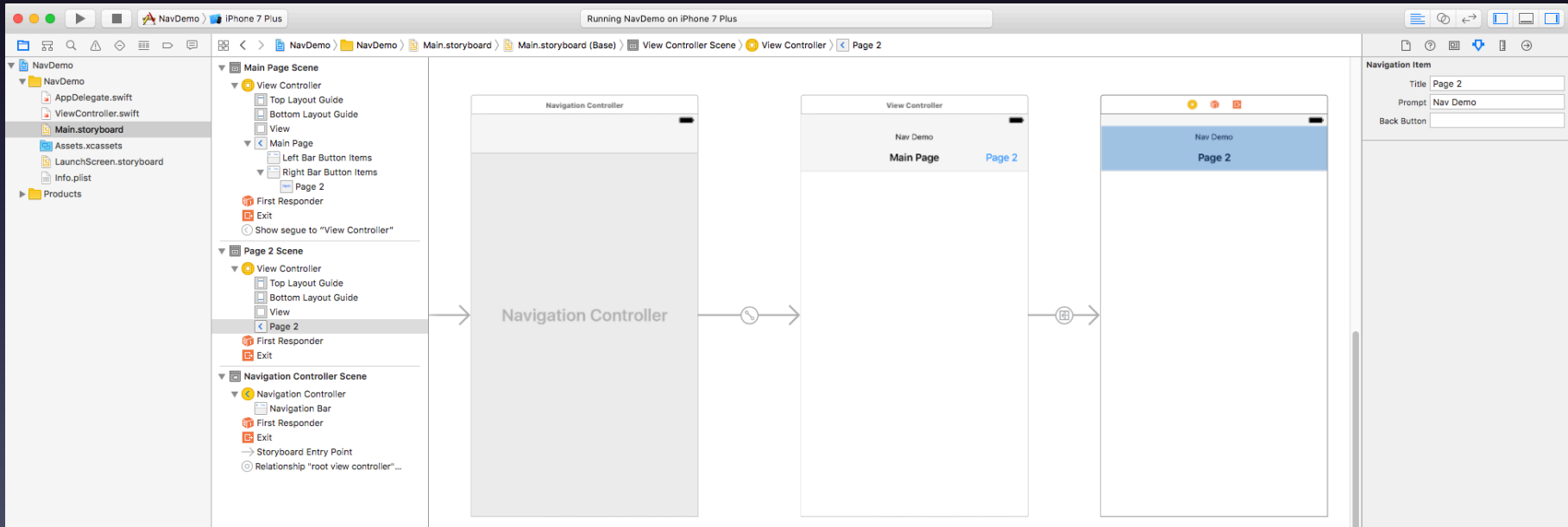
# Unwind Segue

4. Perform unwind segue where appropriate.



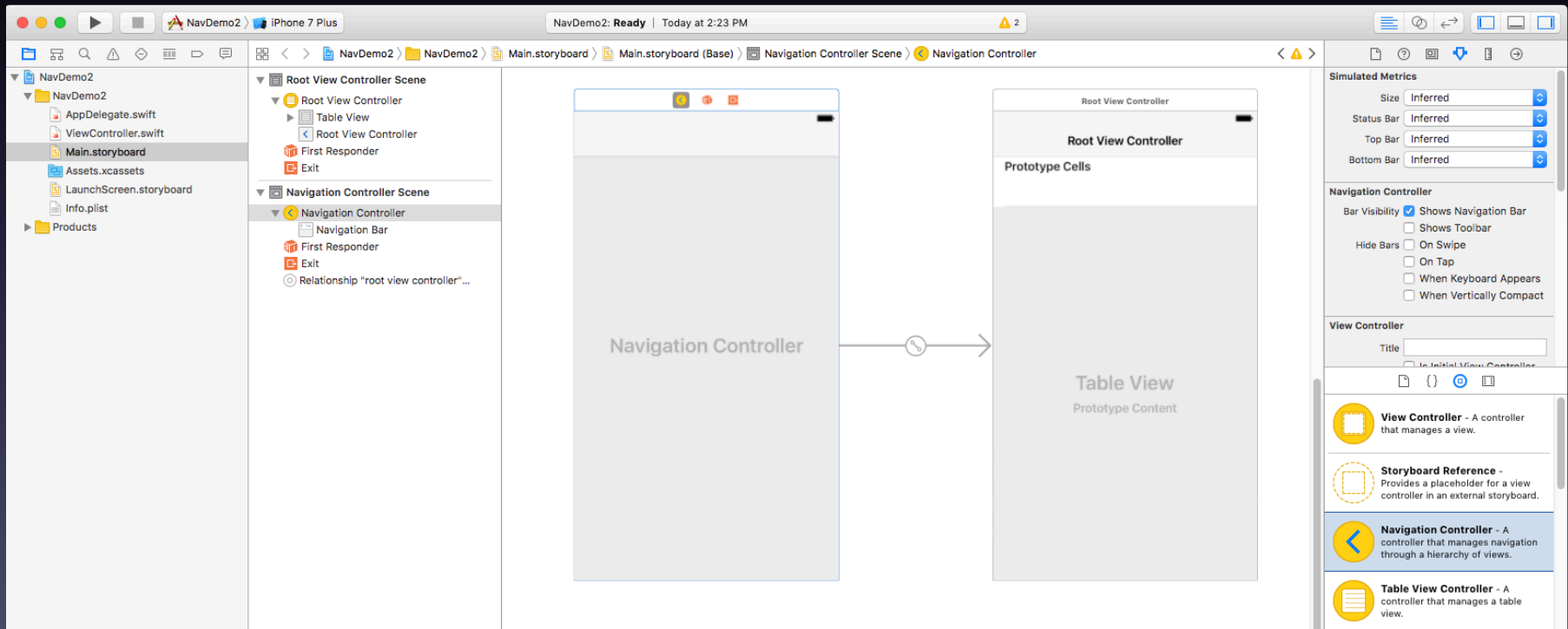
# Navigation Controller: Method 1

- Select View Controller
- Editor -> Embed In -> Navigation Controller
- Add more Views and segues between them
  - Toggle segue type to get nav bar (or embed each in its own Nav Controller)



# Navigation Controller: Method 2

- Add Navigation Controller to empty Storyboard
  - Comes with Table View Controller



# Navigation Controller

- Use `prepareForSegue` to pass data forward

```
var firstViewData: Int = 1

override func prepare(for segue: UIStoryboardSegue, sender: Any?) {
    if (segue.identifier == "mainToPage2") {
        let destVC = segue.destination as! SecondViewController
        destVC.secondViewData = self.firstViewData
    }
}
```

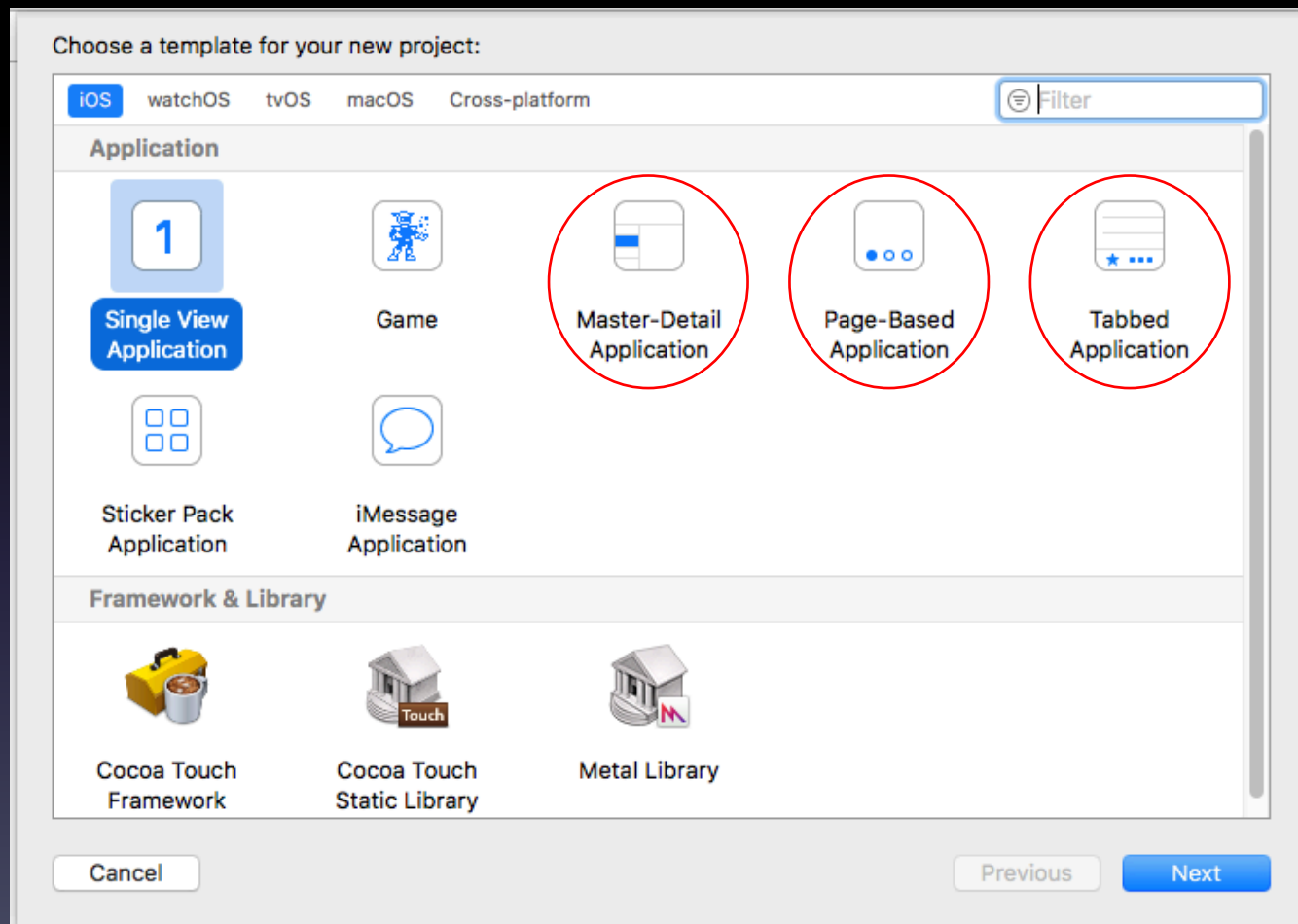
- Pass data back by accessing navigation view controllers

```
var secondViewData: Int = 2

let sourceVC = self.navigationController?.viewControllers[0] // first view
                as! FirstViewController
sourceVC.firstViewData = self.secondViewData
```

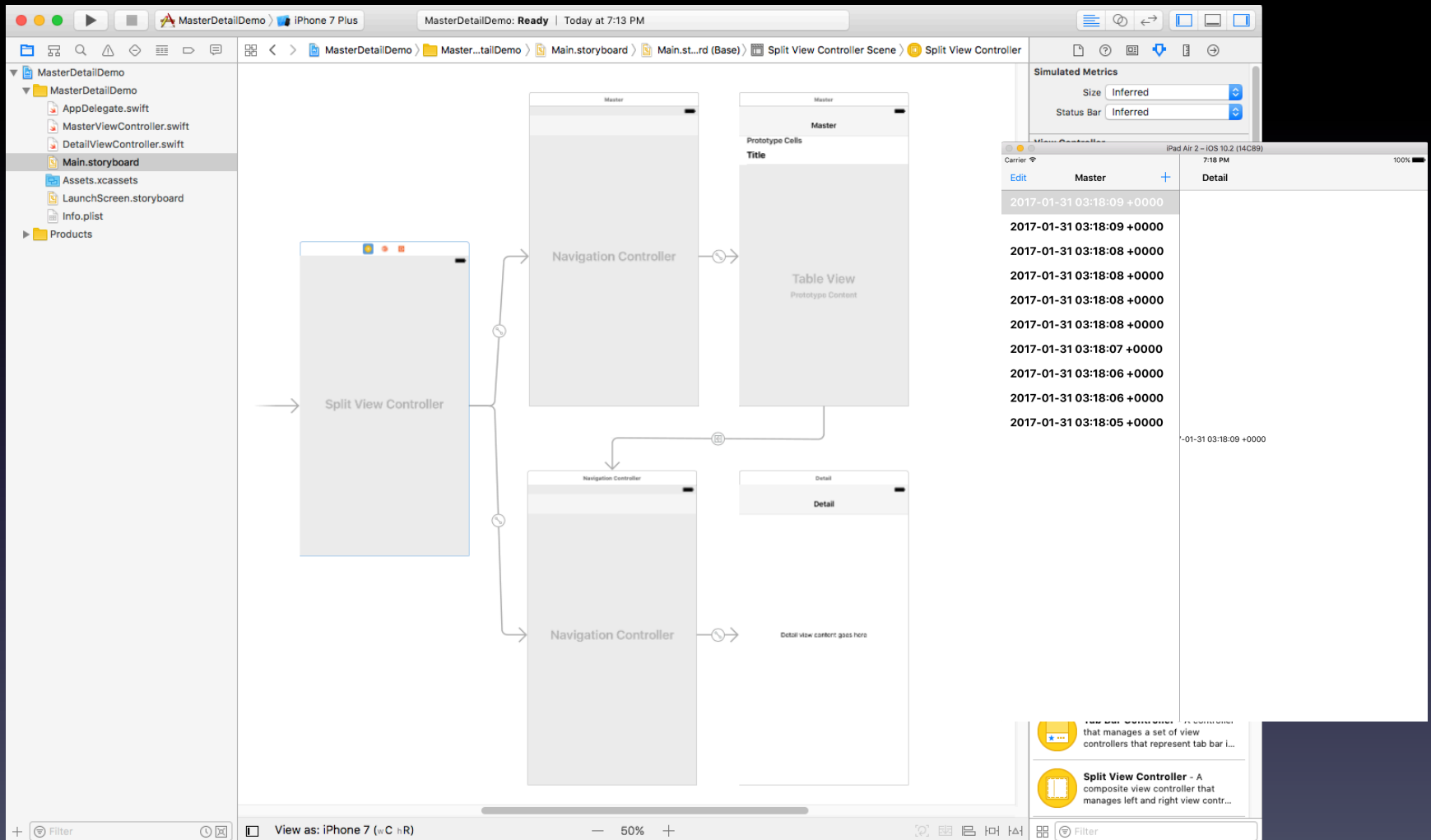
- Or, use `unwind segue` method on your own “Back” button

# iOS Navigation Templates

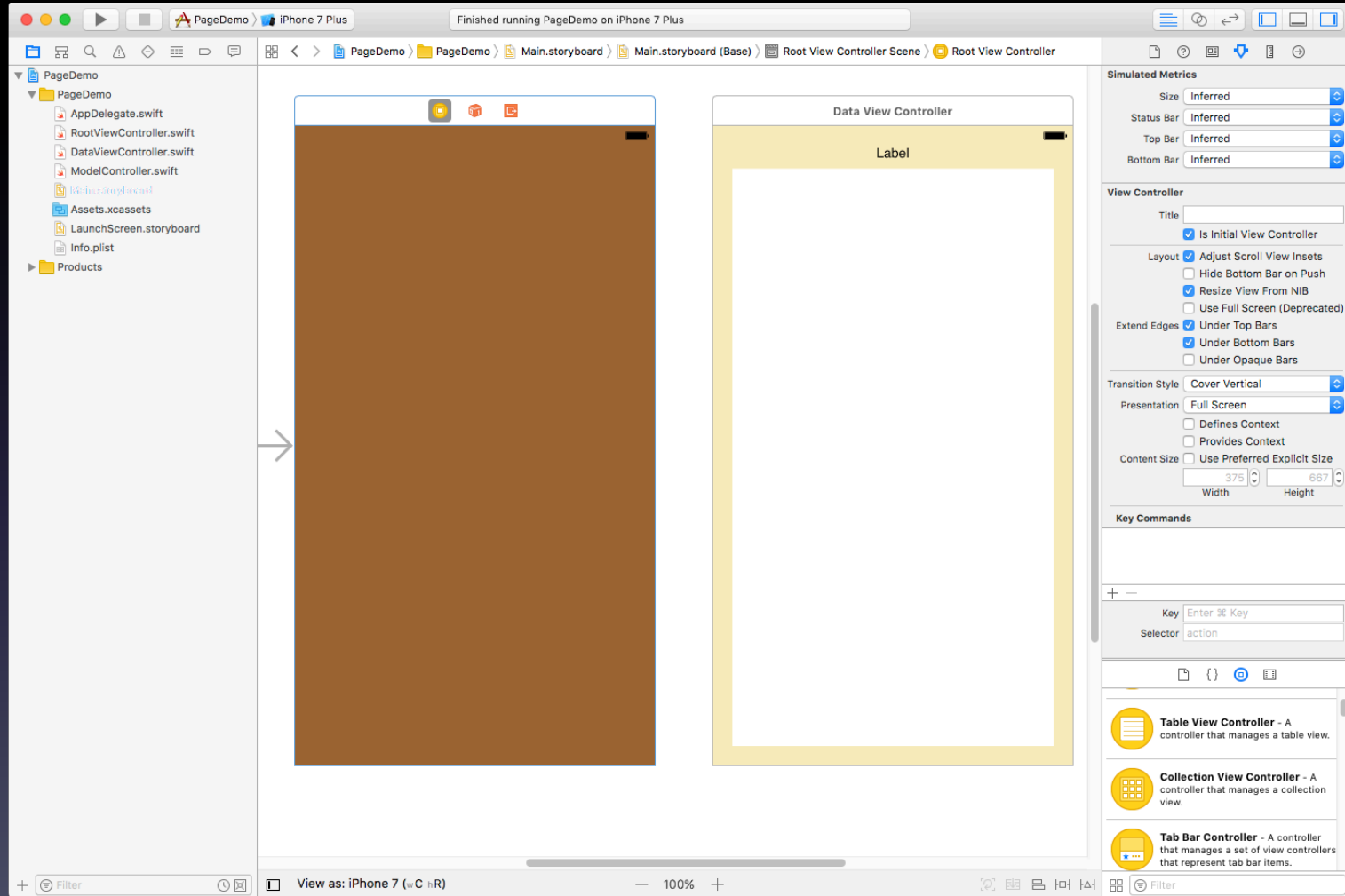




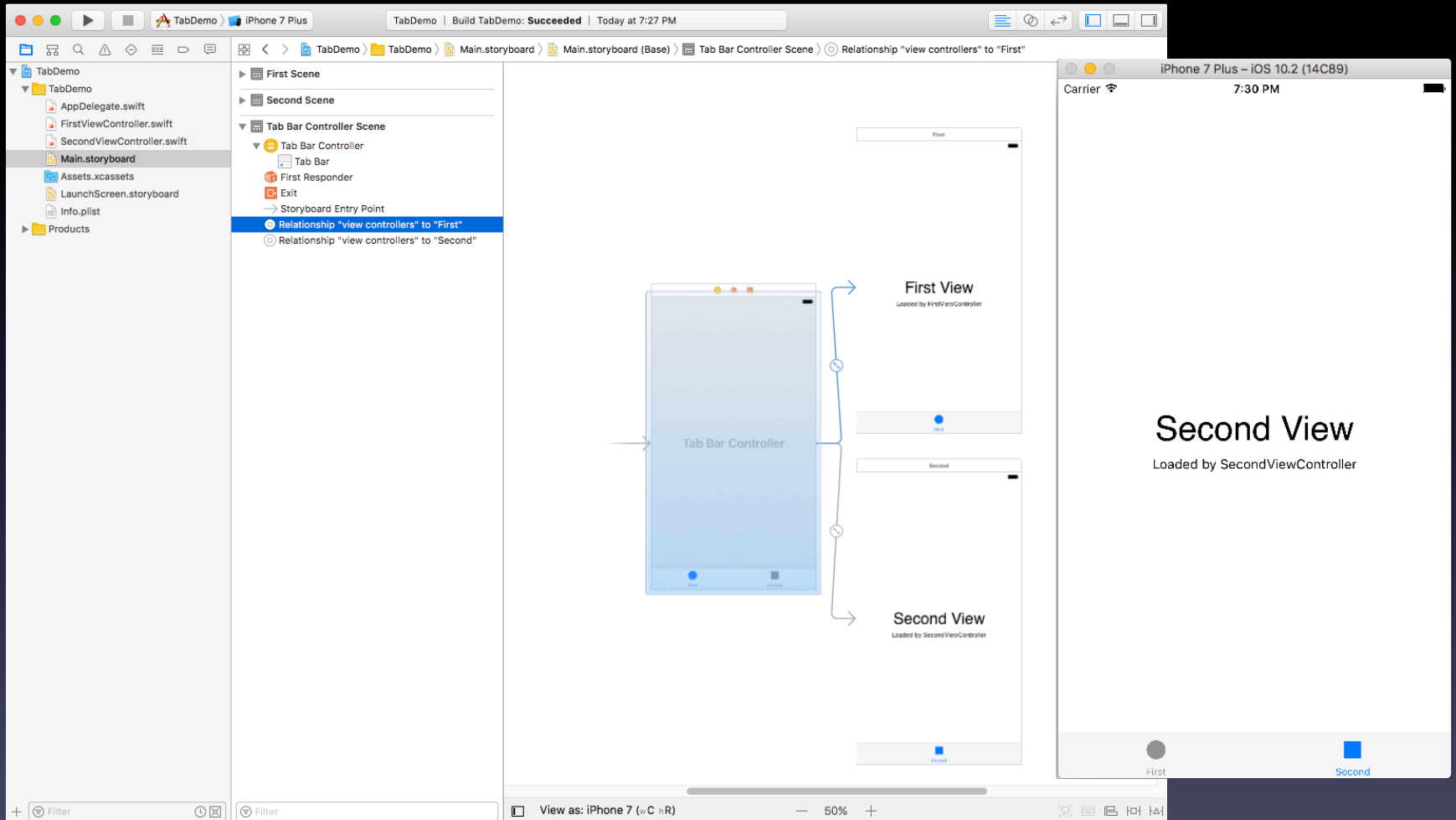
# Master-Detail Navigation



# Page-Based Navigation



# Tabbed Navigation



# Resources

- Segues
  - <https://developer.apple.com/library/content/featured/articles/ViewControllerPGforiPhoneOS/UsingSegues.html>
- UINavigationController
  - <https://developer.apple.com/reference/uikit/uINavigationController>