iOS DeCal

lecture 3

Multiview Applications

cs198-001 : fall 2017

announcements

- Hangman project due Friday at 10pm
  - office hour after lecture in 283E (undergrad lounge)
  - only excusing absences for midterm conflicts - no review sessions

view controller lifecycle

view controller lifecycle

viewDidLoad()
viewWillAppear()
viewDidAppear()
viewWillDisappear()
viewDidDisappear()

someViewController.swift

view controller lifecycle

viewDidLoad()
viewWillAppear()
viewDidAppear()
viewWillDisappear()
viewDidDisappear()

someViewController.swift

automatically called when the view controller loaded completely in the memory

view controller lifecycle

viewDidLoad()

viewWillAppear()

viewDidAppear()

viewWillDisappear()

viewDidDisappear()

someViewController.swift

called when the view controller is about to be added to the view hierarchy

view controller lifecycle

viewDidLoad()
viewWillAppear()
viewDidAppear()
viewWillDisappear()
viewDidDisappear()

someViewController.swift

called when the view controller was added to the view hierarchy

view controller lifecycle

viewDidLoad()
viewWillAppear()
viewDidAppear()
viewWillDisappear()
viewDidDisappear()

someViewController.swift

called when the view controller is about to be removed from the view controller hierarchy

view controller lifecycle

viewDidLoad()
viewWillAppear()
viewDidAppear()
viewWillDisappear()
viewDidDisappear()

someViewController.swift

called when the view controller was removed from the view controller hierarchy

view controller lifecycle

viewDidLoad()
viewWillAppear()
viewDidAppear()
viewWillDisappear()
viewDidDisappear()

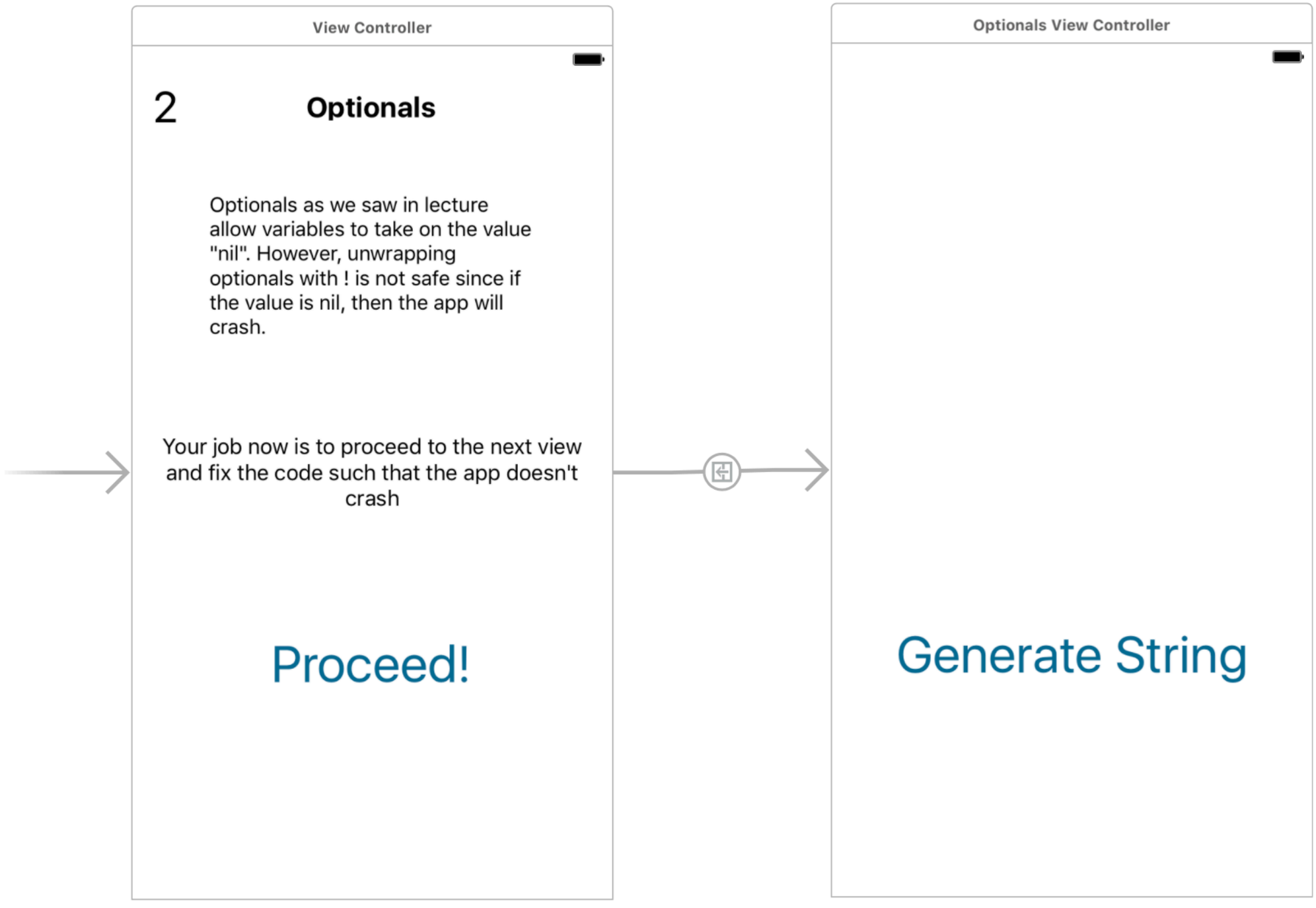
someViewController.swift

didReceiveMemoryWarning

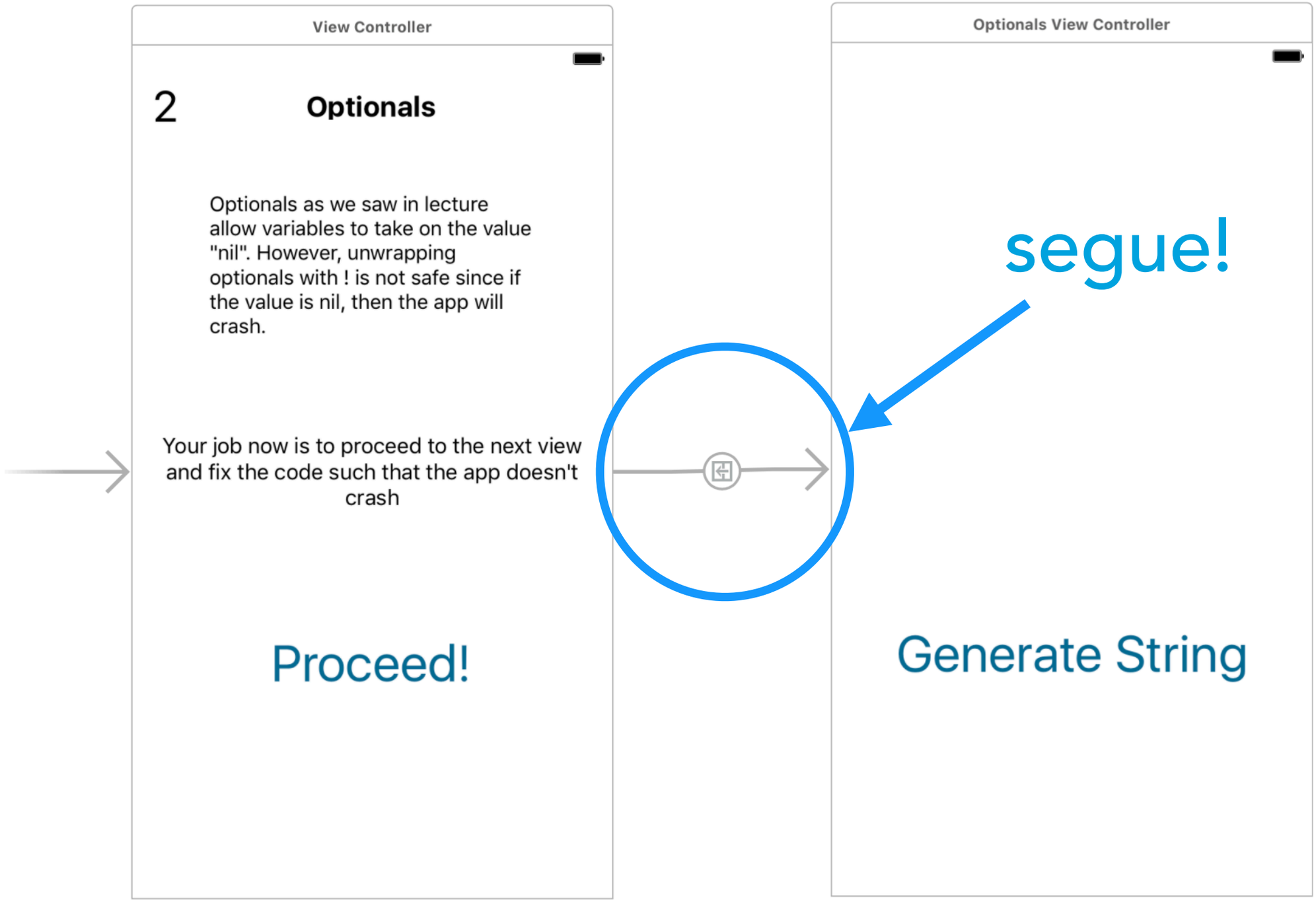
called when available memory is low

multiview applications

lab 1 (multiview example)



lab 1 (multiview example)



multiview applications

Multi-view applications are made up of multiple MVC's stringed together

To communication and transitioning between MVC's, create **segues** between View Controllers in Storyboard

Each time a user triggers a segue, a **new instance** of an MVC will be created (not an old instance).
More on this later!

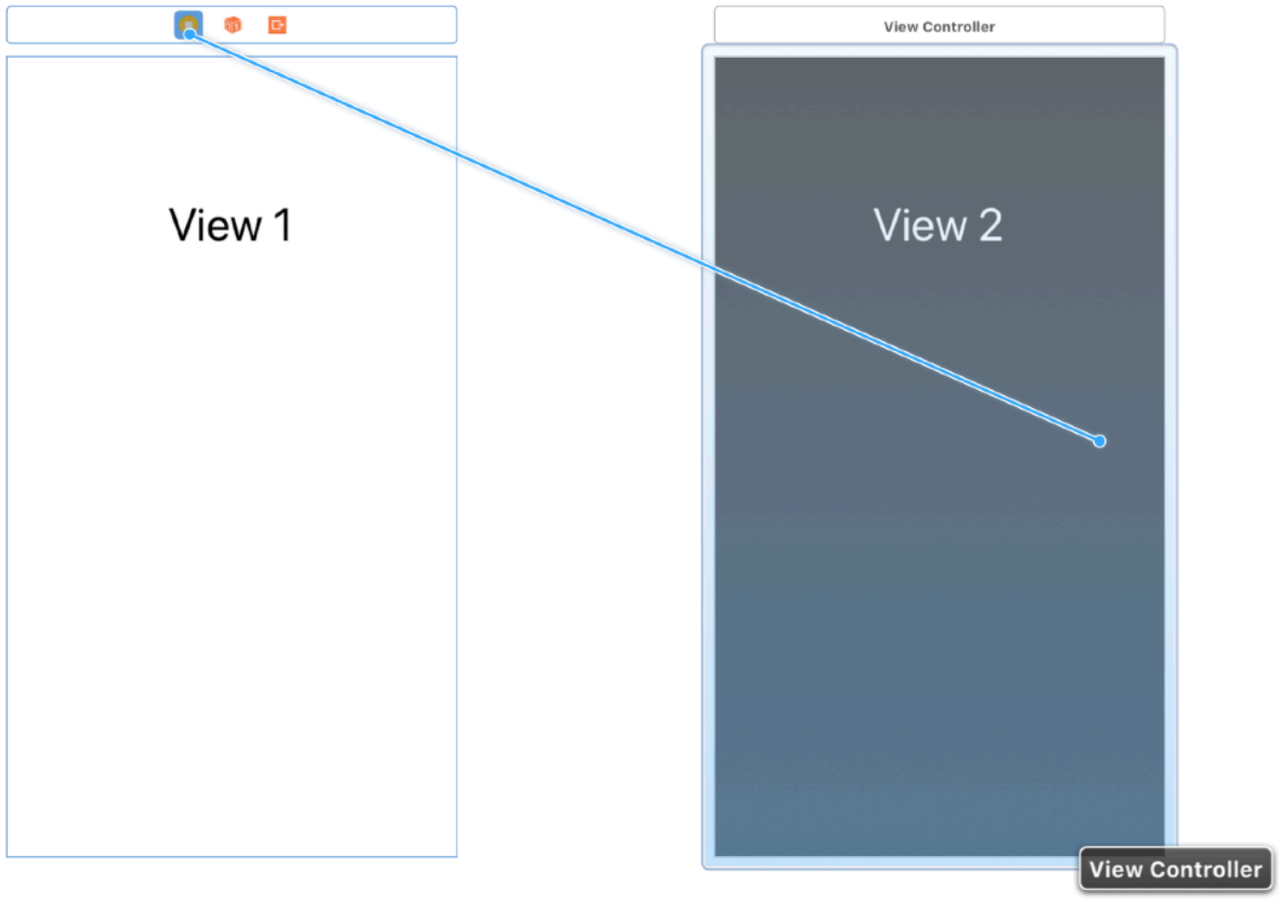
segues

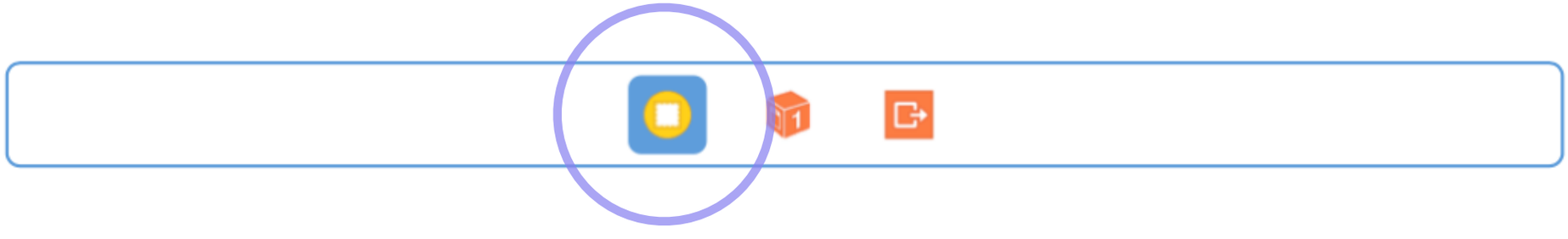
To create a segue between MVC's, you need to:

1. create the segue (control + drag)
2. create a segue identifier
3. trigger the segue using `performSegue`
    1. if you need to pass data or do any other "pre-segue" work, use the "`prepareForSegue`" method

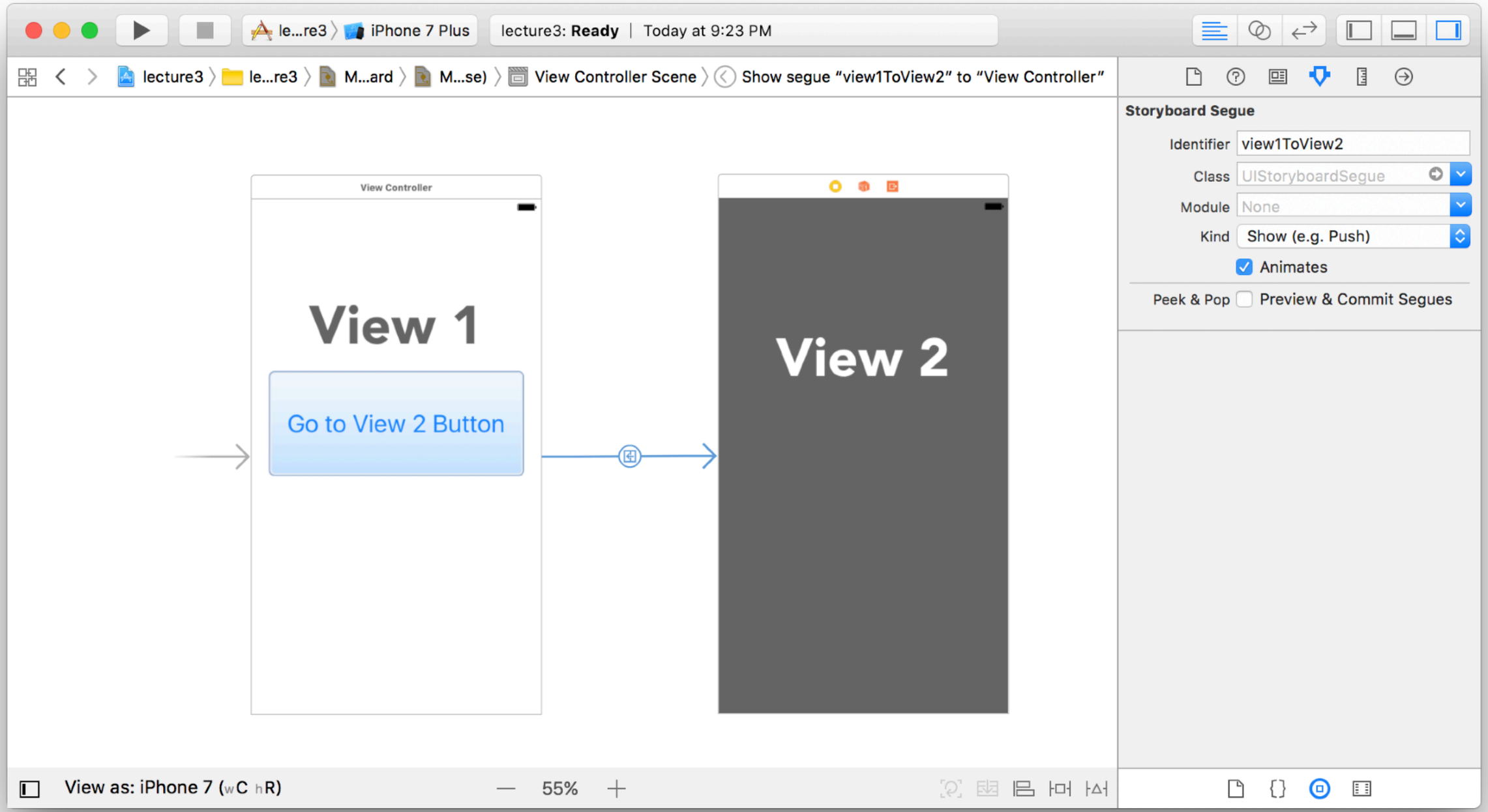
segue creation

Step 1: control drag from your initial view controller to the destination view controller

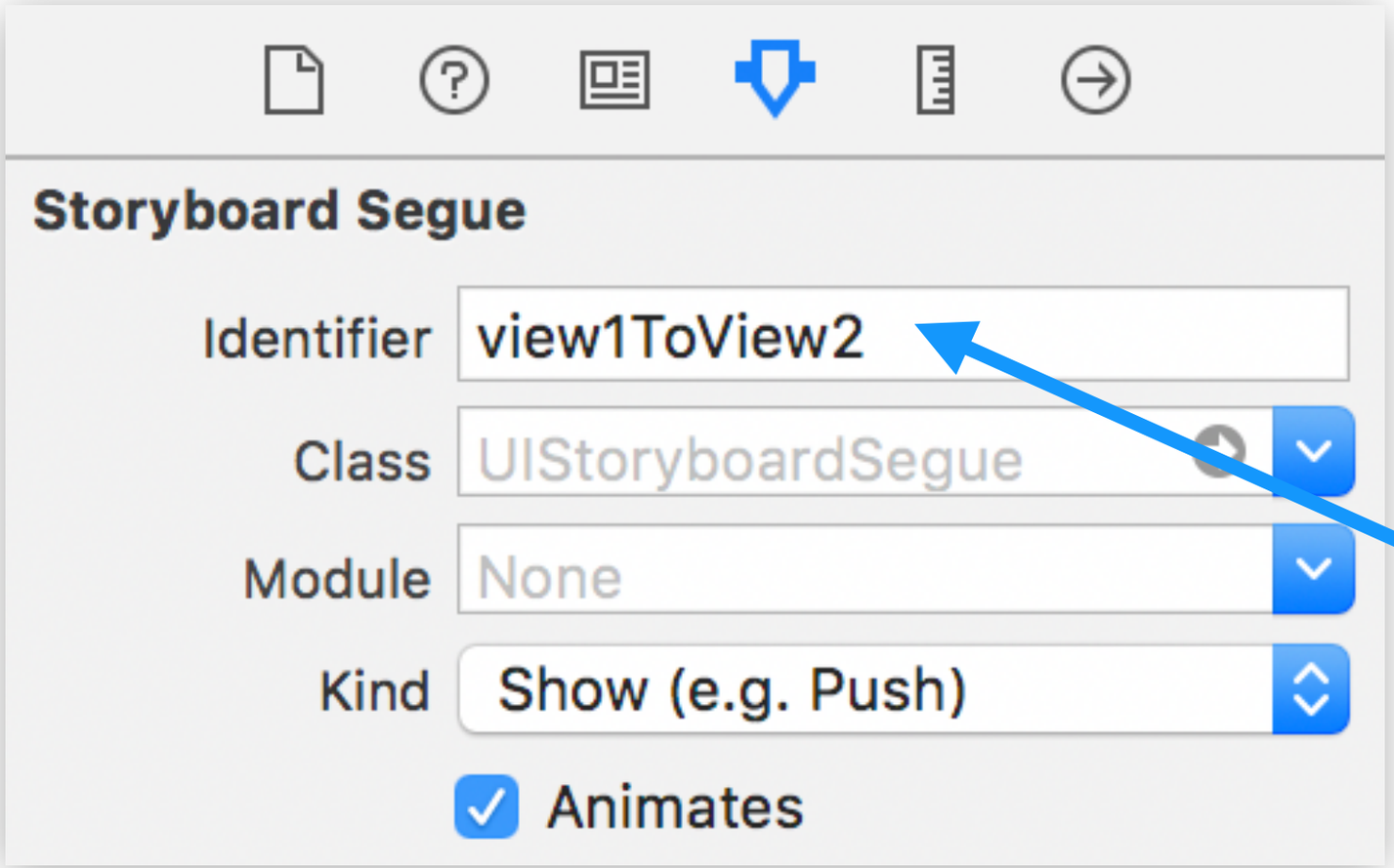




Segue Identification: Tap on a segue in Storyboard, and add a **Identifier** in the **Attributes Inspector**



Segue Identification: Tap on a segue in Storyboard, and add a **Identifier** in the **Attributes Inspector**

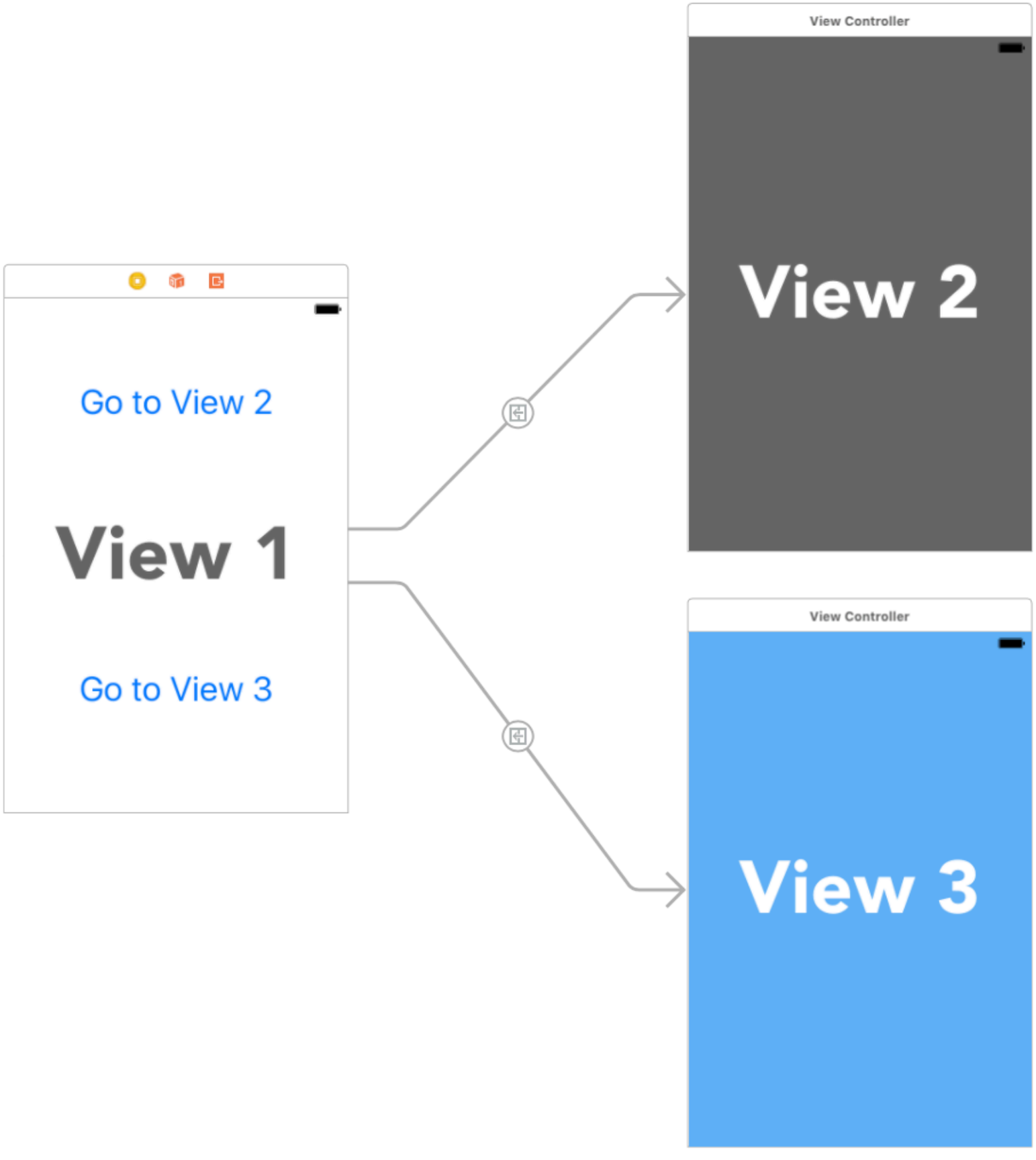


you can use this identifier to reference your segue in code

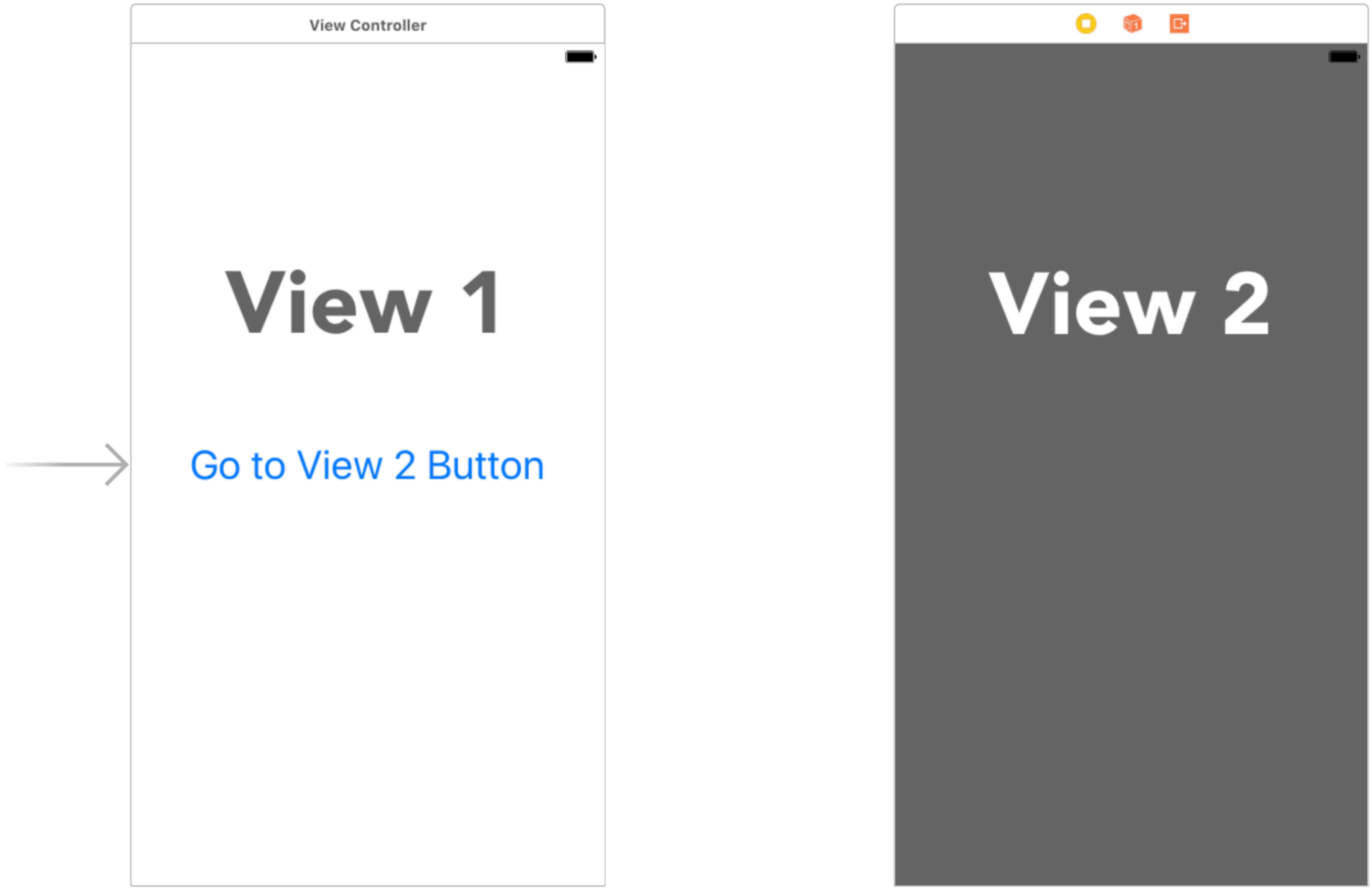
performSegue

Call `performSegue` to trigger the segue created in Storyboard using the identifier you set

```
@IBAction func buttonPressed(sender: UIButton) {
    performSegue(withIdentifier: “view1ToView2",
                 sender: sender)
}
```

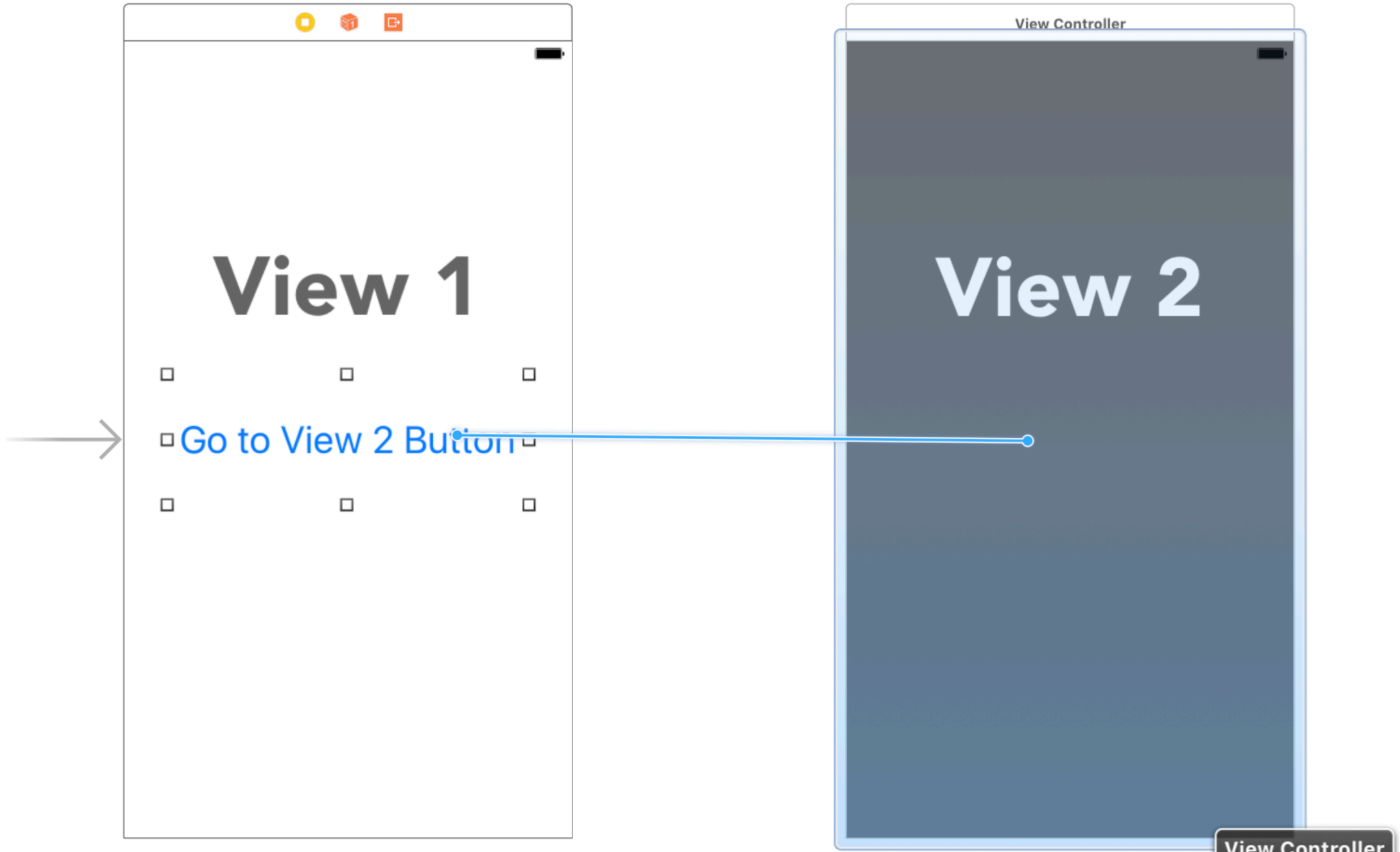


Segue Identifiers are useful to distinguish between which MVC you are going to (one MVC can have a segue to multiple others)



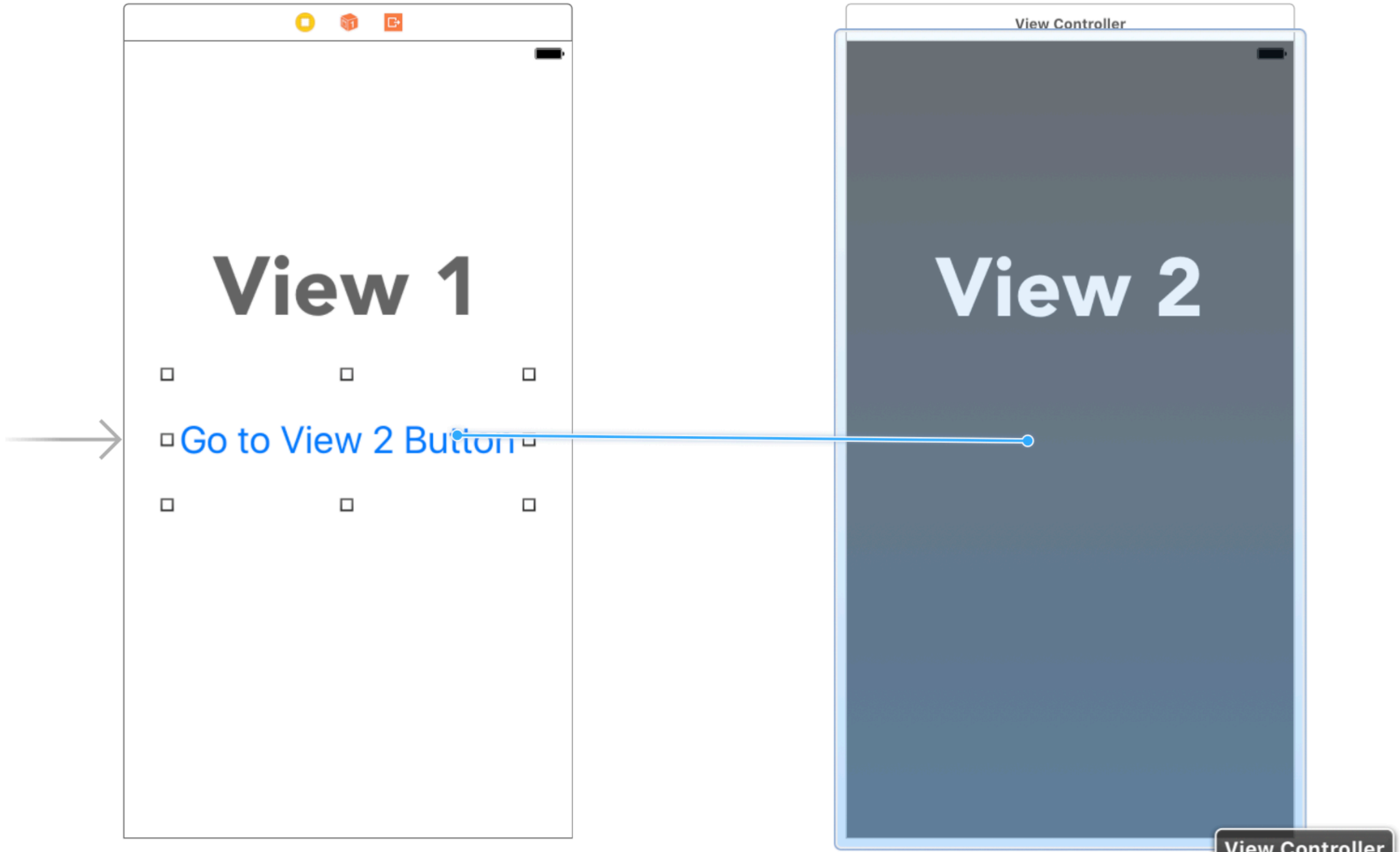
shortcut (if using button or cell)

You can also control + drag from an instigator (typically a button) from one MVC to another MVC



shortcut (if using button or cell)

You can also control + drag from an instigator (typically a button) from one MVC to another MVC



shortcut (if using button or cell)

this eliminates the need to call “performSegue” in your code

passing data between MVC's

When the user taps on a button that triggers a segue, the MVC they will transition to will be a **new instance of that MVC**.

passing data between MVC's

When the user taps on a button that triggers a segue, the MVC they will transition to will be a **new instance of that MVC**.

Therefore, we need to pass data from the first MVC to the new MVC **before** the segue takes place.

How do we do this? —> `prepareForSegue`

prepareForSegue

```
func prepare(for segue: UIStoryboardSegue, sender: Any?) {
  if let identifier = segue.identifier {
    if identifier == "goToMainView" {
      if let dest = segue.destination as? MainViewController {
          dest.somePropertyOnMainView = "hi!"
          dest.someMainViewSetupFunc()
      }
    }
    else if identifier == "goToSettings" {
      if let dest = segue.destination as? SettingsViewController {
          // do stuff in the settingsVC before it loads
      }
    }
  }
}
```

prepareForSegue

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func prepare(for segue: UIStoryboardSegue, sender: Any?) {
  if let identifier = segue.identifier {
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      if let dest = segue.destination as? SettingsViewController {
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    }
}
```

segue : The segue just instigated

sender : The segue's instigator (usually a button)

prepareForSegue

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    }
}
```

First, get the identifier we created in Storyboard by accessing `segue.identifier`

prepareForSegue

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    if identifier == "goToMainView" {
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      if let dest = segue.destination as? SettingsViewController {
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    }
}
```

If the identifier is "`goToMainView`", we know we are heading to the `MainViewController`

prepareForSegue

```
func prepare(for segue: UIStoryboardSegue, sender: Any?) {
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    else if identifier == "goToSettings" {
      if let dest = segue.destination as? SettingsViewController {
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      }
    }
}
```

We can get a reference to the destination View Controller by accessing `segue.destination`

prepareForSegue

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    }
}
```

type(segue.destination) is ViewController,
we need to cast it as a MainViewController

prepareForSegue

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}
```

Now we can set properties / call methods in the `MainViewController` before it's view loads

prepareForSegue

```
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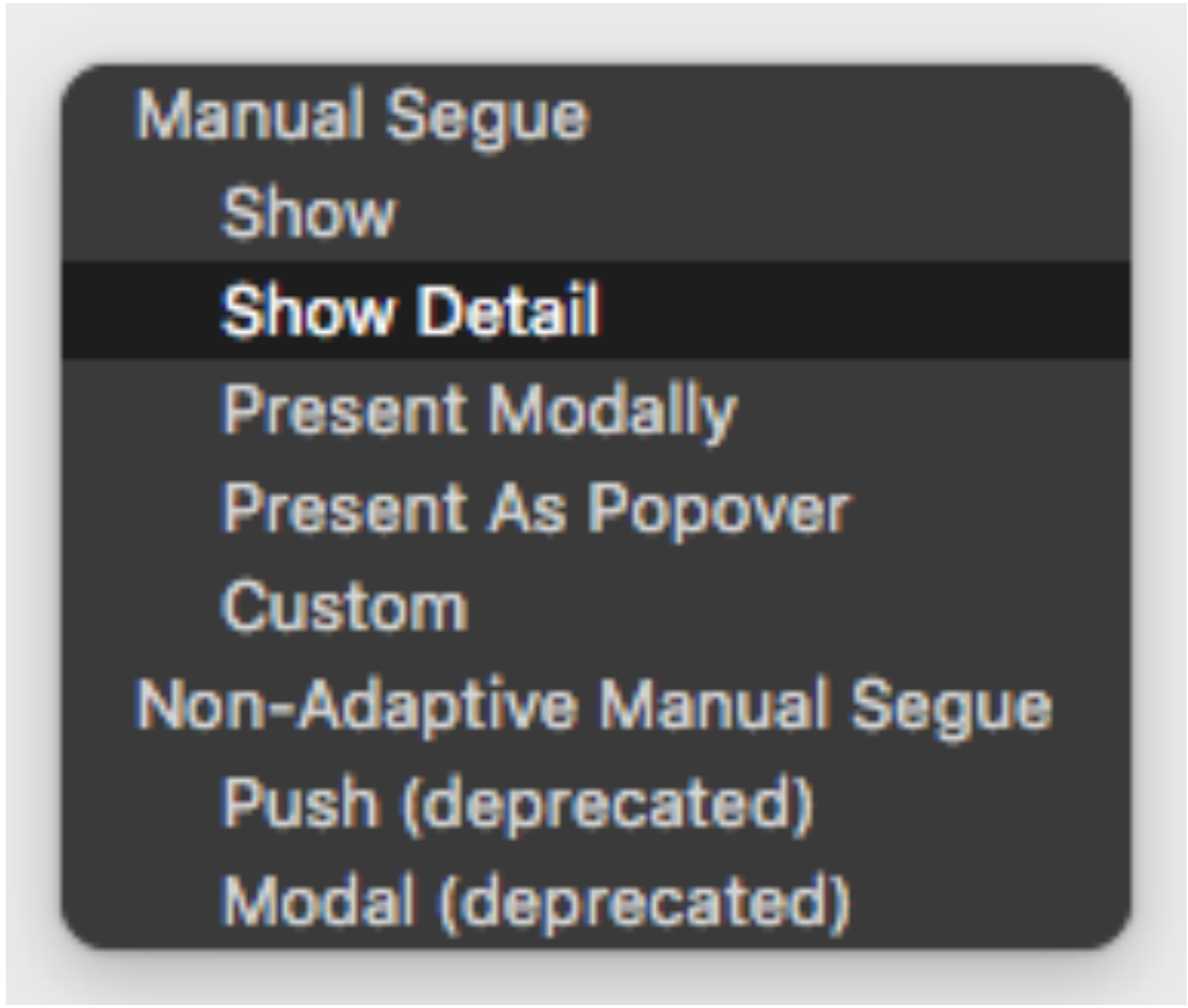
          // do stuff in the settingsVC before it loads
      }
    }
}
```

Since MVC's can segue to multiple other MVC's, `segue.identifier` can take on different values

segue types

when control dragging to create a segue, drop down will show up, asking you to specify the segue type

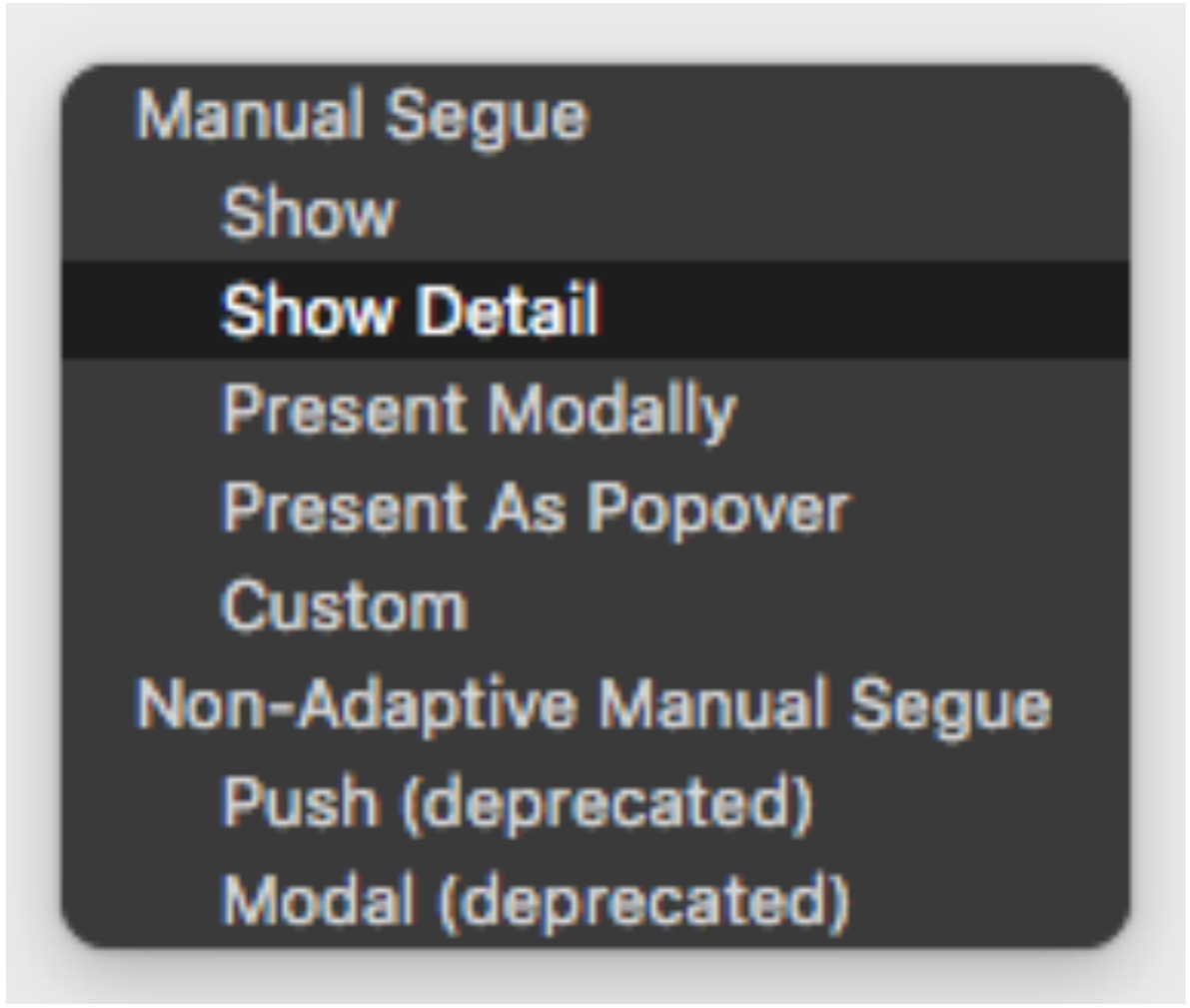


available segue options

- show
- show detail
- present modally
- present as popover
- custom

segue types

when control dragging to create a segue, drop down will show up, asking you to specify the segue type



available segue options

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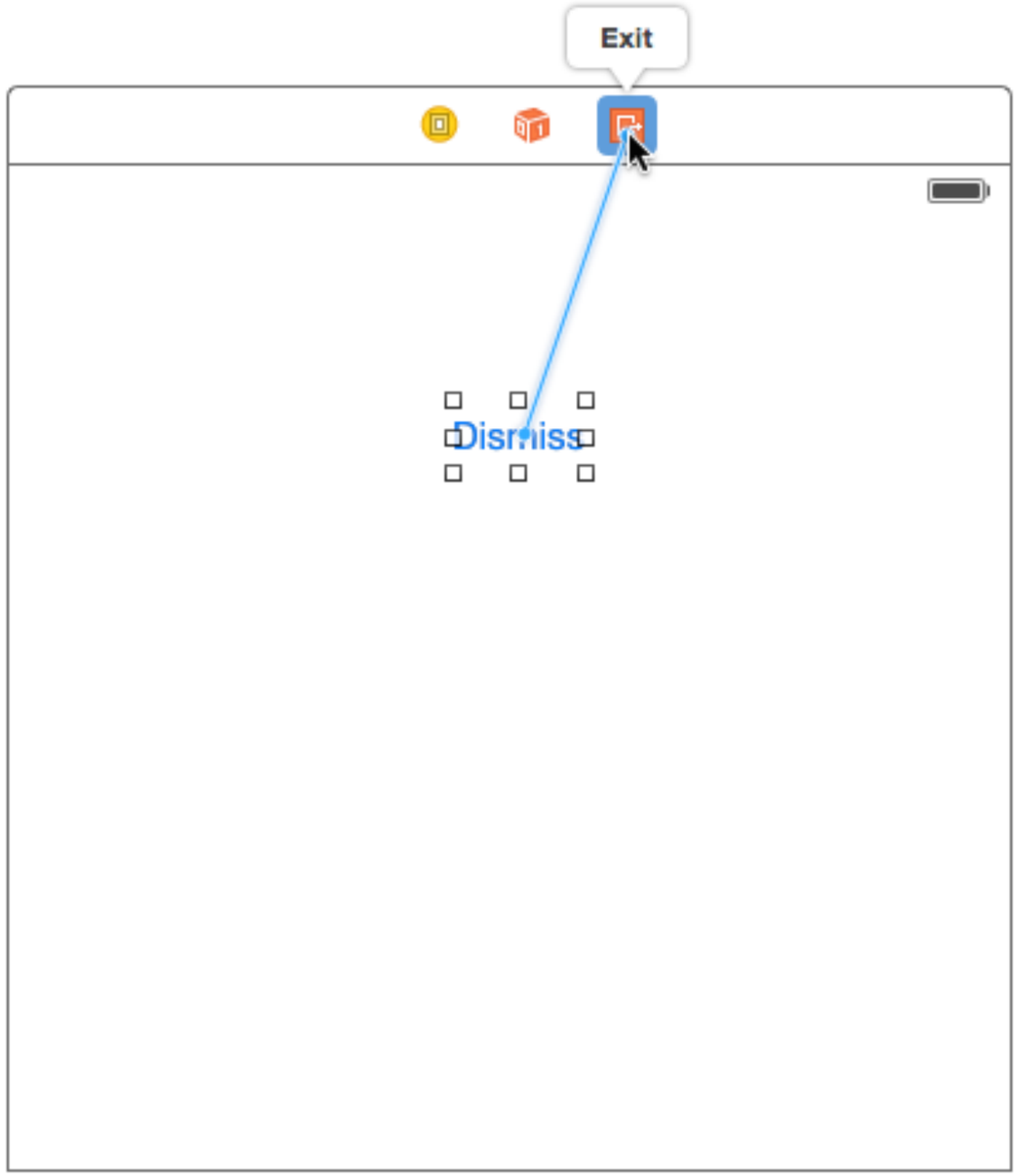
- present modally
- present as popover
- custom

great explanation of the difference between segue types here: https://stackoverflow.com/questions/25966215/whats-the-difference-between-all-the-selection-segues

unwind segues

to dismiss a view controller that you've presented, create an **unwind segue**

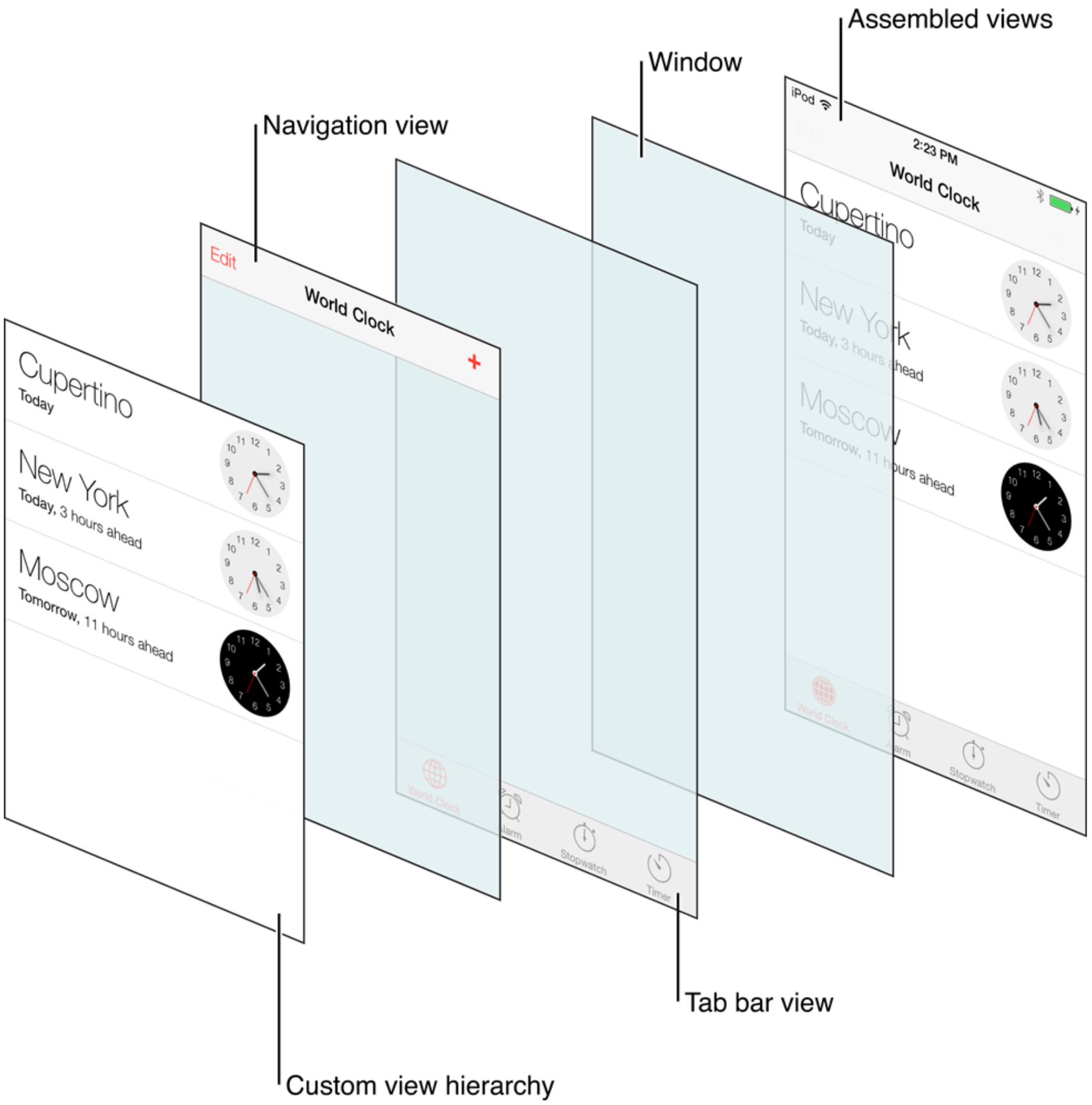
1. define an unwind @IBAction in the view controller you want to return to after dismissal
2. create segue by control dragging to the "exit" in storyboard
3. select the IBAction you created

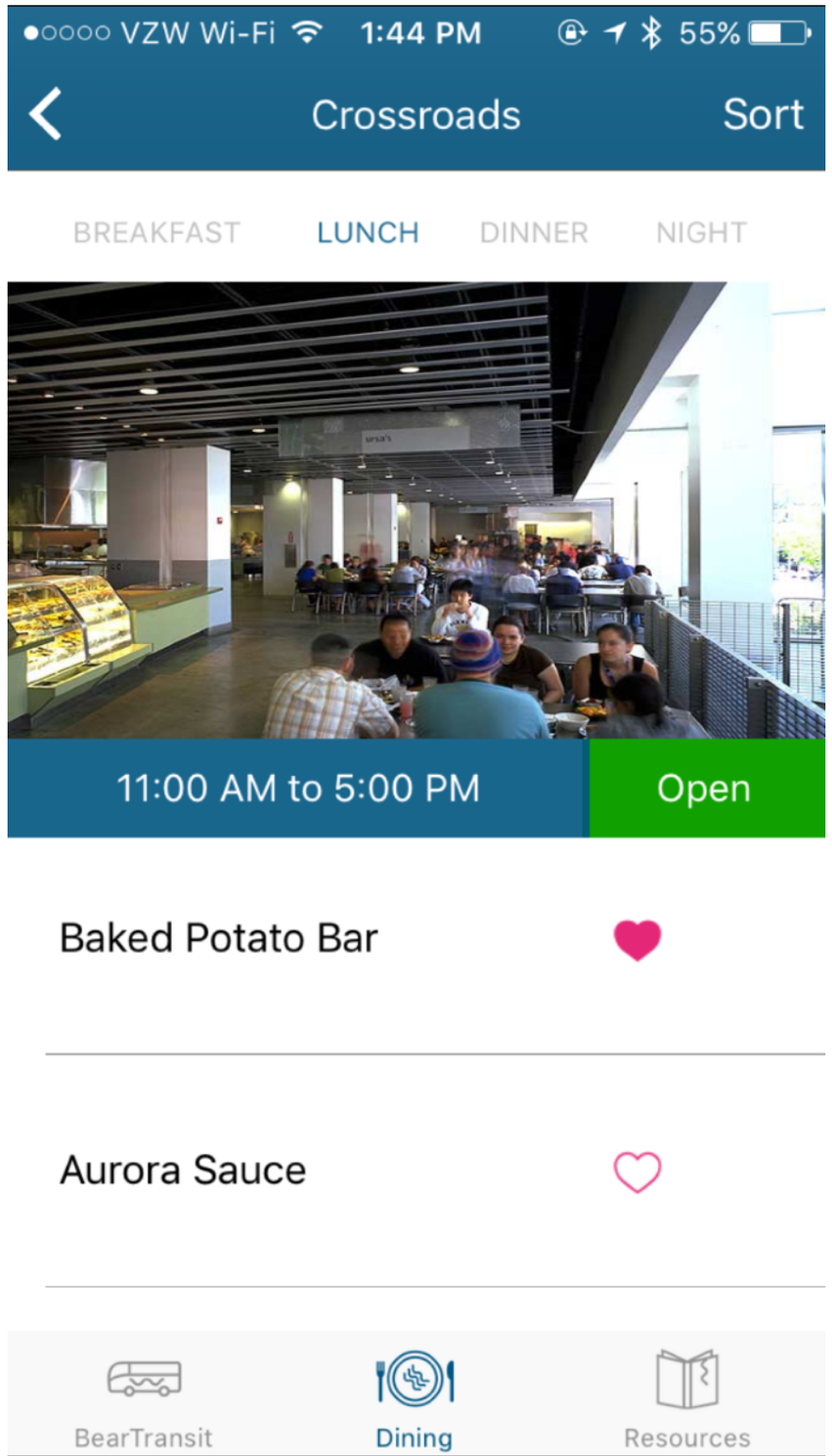


segue demo

https://github.com/paigeplan/Segue-Demo

Navigation + Tab bars

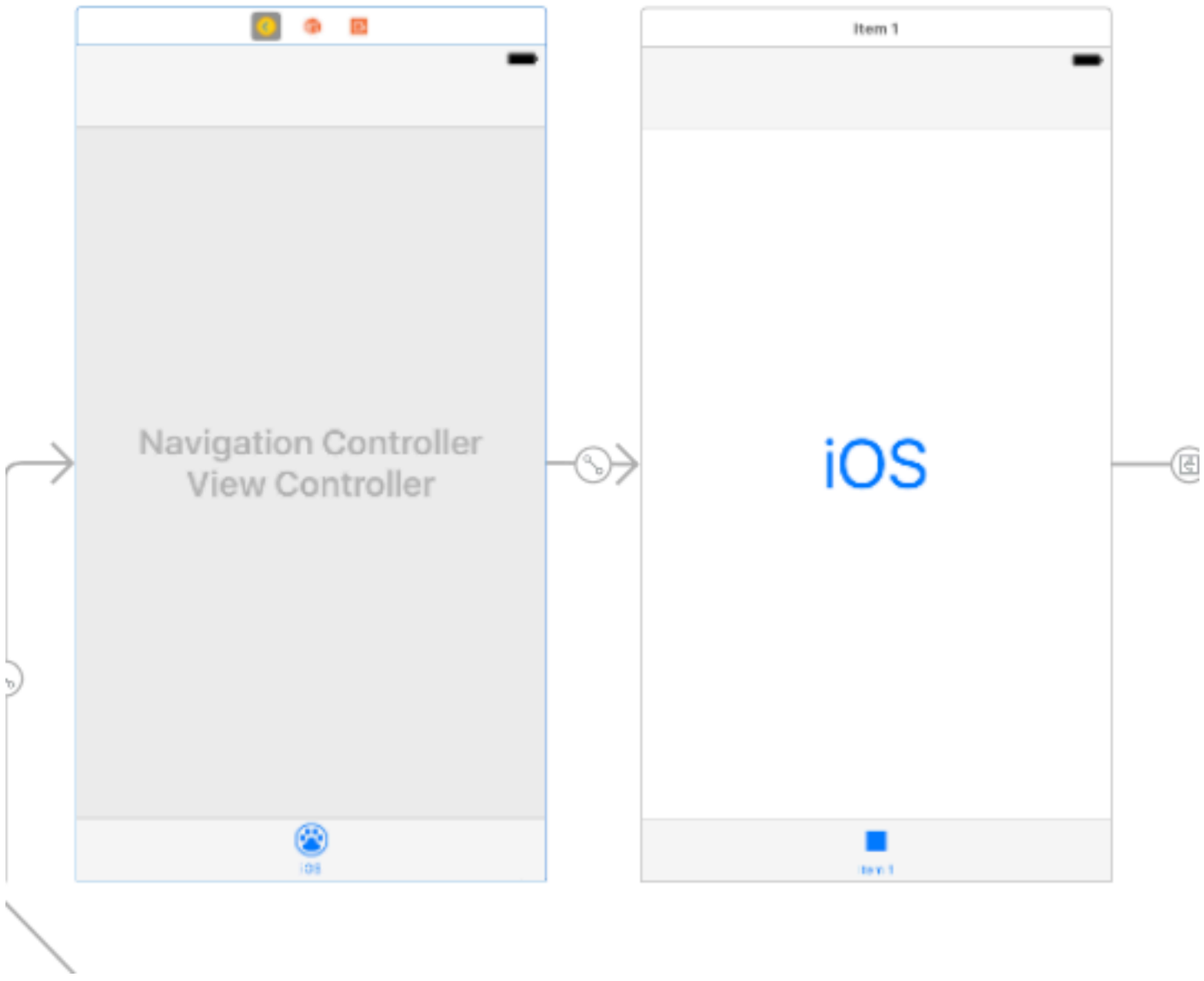

Assembled views
Window
Navigation view
iPod
2:23 PM
World Clock
Cupertino
Today
New York
Today, 3 hours ahead
Moscow
Tomorrow, 11 hours ahead
Edit
+
World Clock
Alarm
Stopwatch
Timer
Tab bar view
Custom view hierarchy


VZW Wi-Fi
1:44 PM
55%
Crossroads
Sort
BREAKFAST
LUNCH
DINNER
NIGHT
11:00 AM to 5:00 PM
Open
Baked Potato Bar
Aurora Sauce
BearTransit
Dining
Resources

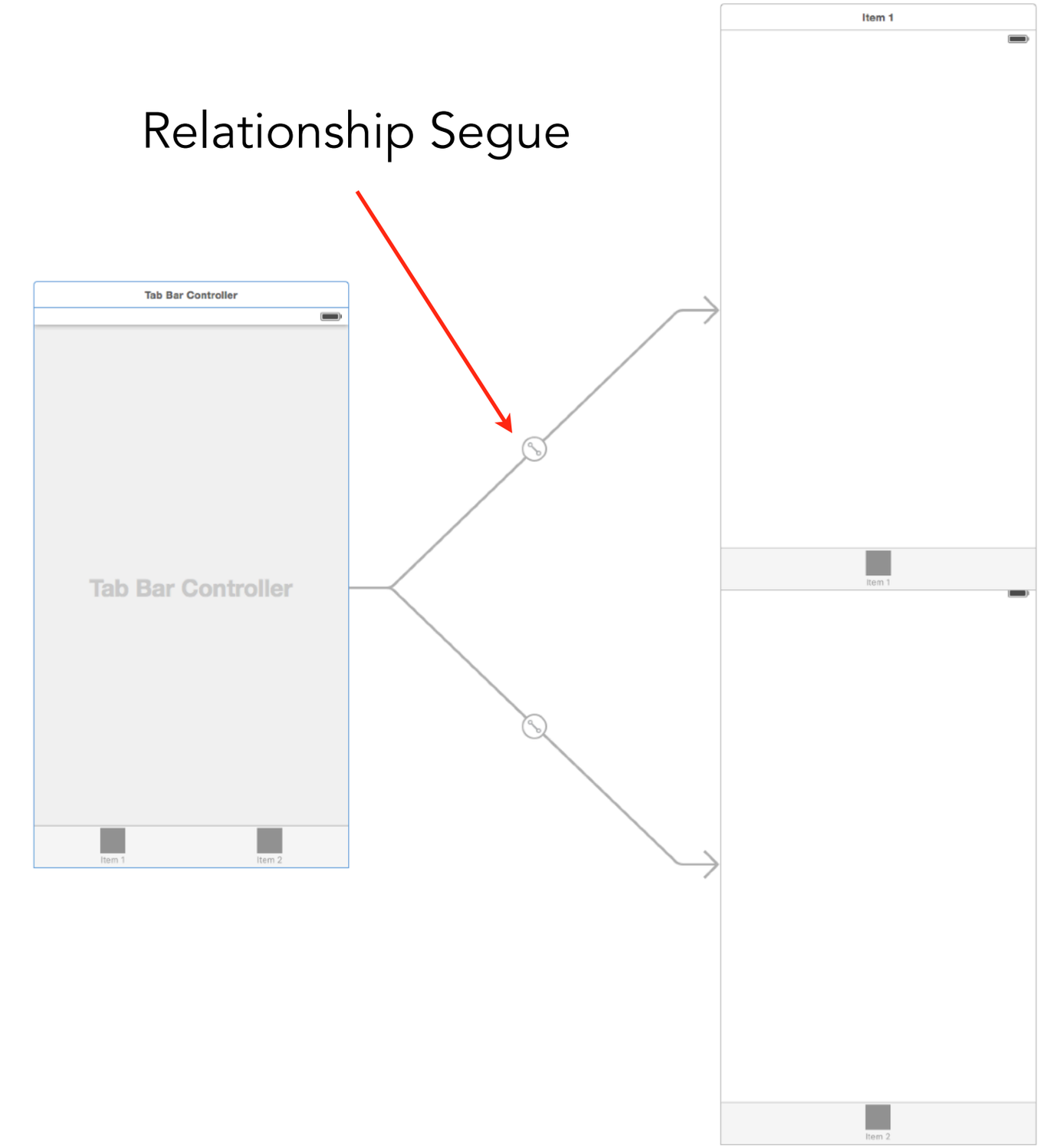
navigation controllers

1. pull out a navigation controller from the object library
2. set a “root view controller”
3. add view controllers to your navigation stack using “show” segues
4. if needed, create “unwind segues” to dismiss view controllers

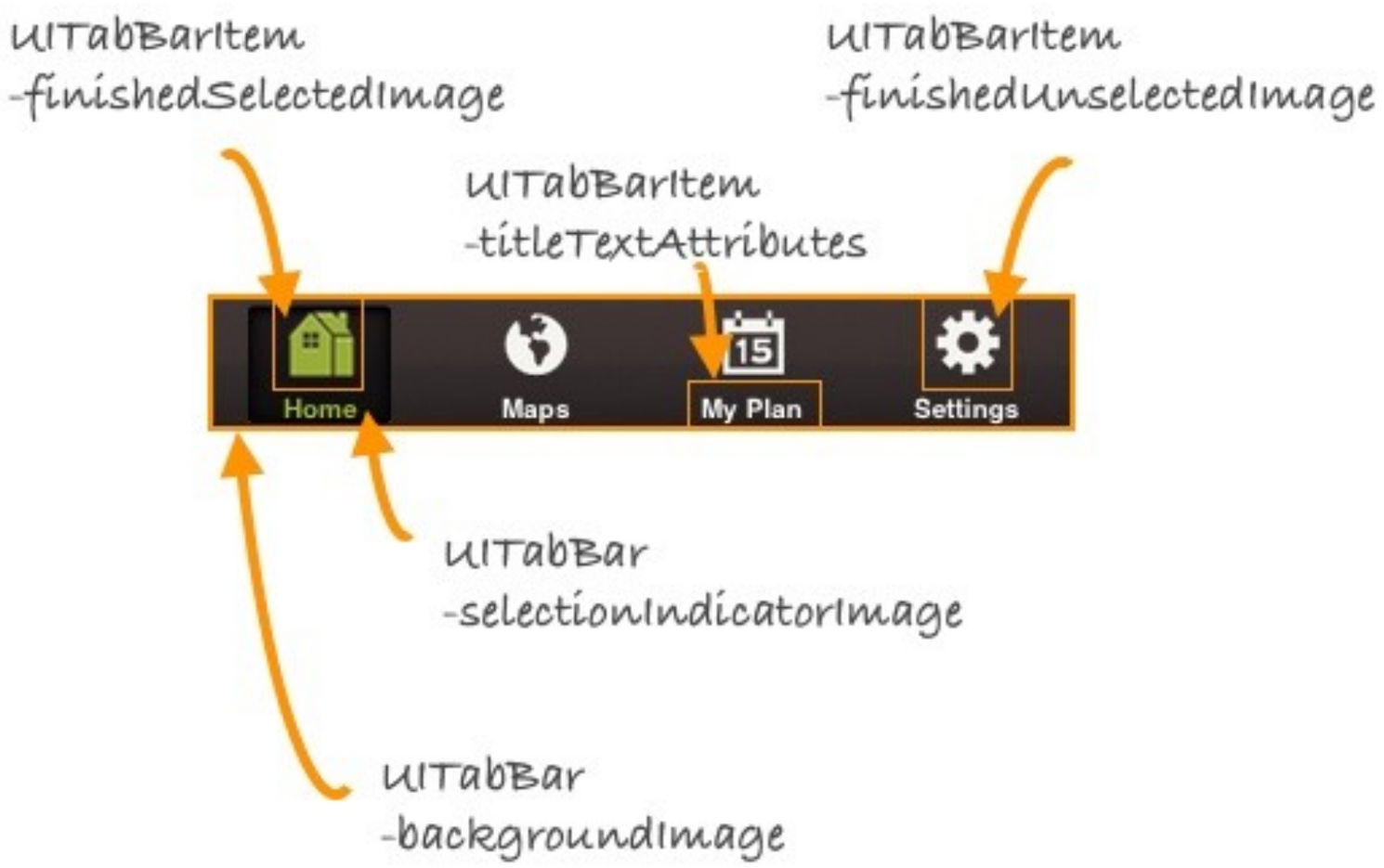
Navigation Bars



Tab Bars


Relationship Segue
Tab Bar Controller
Tab Bar Controller
Item 1
Item 2
Item 1
Item 1
Item 2

Tab Bars : Customization



Tab Bars : Customization

```
class AppDelegate: UIResponder, UIApplicationDelegate {

    var window: UIWindow?


    func application(_ application: UIApplication,
        didFinishLaunchingWithOptions launchOptions:
        [UIApplicationLaunchOptionsKey: Any]?) -> Bool {

        UITabBar.appearance().tintColor =
          UIColor.lightGray//selected tab color
        UITabBar.appearance().backgroundImage =
          UIImage(named:"tabbarbg.png")
        UITabBar.appearance().barTintColor =
          UIColor.white
        return true
}
```

Navigation Bars : Customization

```
class ViewController: UIViewController

func viewDidLoad() {

    navigationBar.barTintColor =
    UIColor(colorLiteralRed: 51/255, green:
    90/255, blue: 149/255, alpha: 1)

    navigationBar.titleTextAttributes =
    [NSForegroundColorAttributeName:
    UIColor.white]

    navigationBar.tintColor = UIColor.white
}
```