

Nation

Code

Xcode

The basics

{codenation}[®]

Learning Objectives

- To understand the basics of Xcode
- To build simple app to include:
 - Label
 - Button
 - View Controller
 - Tab bar controller
 - Images (image on screen, or as background)



Creating a new project in Xcode



Welcome to Xcode

Version 10.2.1 (10E1001)



Get started with a playground

Explore new ideas quickly and easily.



Create a new Xcode project

Create an app for iPhone, iPad, Mac, Apple Watch, or Apple TV.



Clone an existing project

Start working on something from a Git repository.

Activity

Start a new project by selecting “Create a new Xcode project”

Choose a template for your new project:



iOS watchOS tvOS macOS Cross-platform

Filter

Application



Single View App



Game



Augmented
Reality App



Document
Based App



Master-Detail App



Page-Based App



Tabbed App



Sticker Pack App



iMessage App

Framework & Library



Cocoa Touch
Framework



Cocoa Touch
Static Library



Metal Library

Cancel

Previous

Next

Choose a template for your new project:



iOS watchOS tvOS macOS Cross-platform

Filter

Application



Single View App



Game



Page-Based App



Tabbed App

There are a number of templates you can choose from. For now, "Single View App" gives you the basics you need for creating an app from scratch.

Framework & Library



Cocoa Touch
Framework



Cocoa Touch
Static Library



Metal Library

Cancel

Previous

Next

Choose options for your new project:



Product Name: demo

Team: Add account...

Organization Name: Leona

Organization Identifier: Leona

Bundle Identifier: Leona.demo

Language: Swift

Use Core Data

Include Unit Tests

Include UI Tests

Add a name for your project

Cancel

Previous

Next

Choose options for your new project:



Product Name: demo

Team: Add account...

Organization Name: Leona

Organization Identifier: Leona

Bundle Identifier: Leona.demo

Language: Swift

Use Core Data

Include Unit Tests

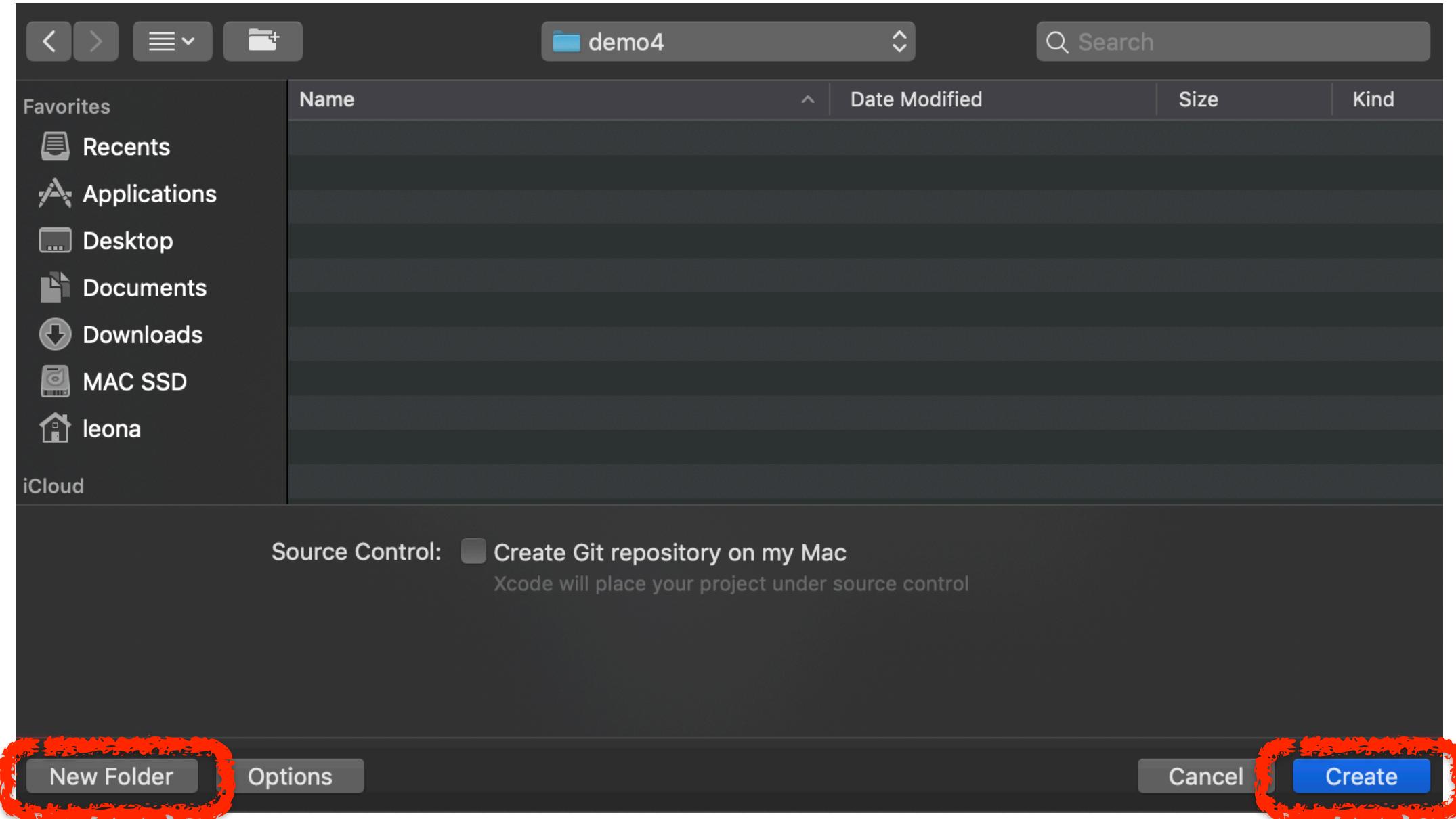
Include UI Tests

Add a name for your project

Swift is the main language for the project, but Objective-C was widely used in the past before Swift exists.

Cancel

Create a “New Folder” for your project, and “Create” {cn}®





The Xcode layout



Xcode workspace toolbar

demo Ready | Today at 15:24

demo

demo

General

Resource Tags

Info

Build Settings

Build Phases

Build Rules

Identity and Type

Display

Bundle ID

Identity

Automatically manage signing

Xcode will create and update profiles, app IDs, and certificates.

Team Add Account...

Provisioning Profile Xcode Managed Profile

Signing Certificate iOS Developer

Status ! Signing for "demo" requires a development team.
Select a development team in the project editor.

Deployment Info

Deployment Target 12.2

Devices Universal

Main Interface Main

Device Orientation Portrait
 Upside Down
 Landscape Left
 Landscape Right

Status Bar Style Default

Hide status bar
 Requires full screen

App Icons and Launch Images

App Icons Source AppIcon

Launch Images Source Use Asset Catalog...

Launch Screen File LaunchScreen

Embedded Binaries



demo > iPhone XR demo: Ready | Today at 15:24

demo

demo

AppDelegate.swift
ViewController.swift
Main.storyboard
Assets.xcassets
LaunchScreen.storyboard
Info.plist

demoTests

demoTests.swift
Info.plist

Products

Run the app

Build 1

Signing

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App Icons and Launch Images

App Icons Source AppIcon

Launch Images Source Use Asset Catalog...

Launch Screen File LaunchScreen

Identity and Type

Name demo

Location Absolute demo.xcodeproj

Full Path /Users/leona/Documents/coffeedrop/demo4/demo/demo.xcodeproj

Project Document

Project Format Xcode 9.3-compatible

Organization Leona

Class Prefix

Text Settings

Indent Using Spaces

Widths Tab 4 Indent 4

Wrap lines



demo > iPhone XR

demo: Ready | Today at 15:24

demo

demo

General Capabilities Resource Tags Info Build Settings Build Phases Build Rules

Identity and Type Name demo

AppDelegate.swift ViewController.swift Main.storyboard Assets.xcassets LaunchScreen.storyboard Info.plist

demoTests demoTests.swift Info.plist

Products

Scheme manager, showing current project with chosen device

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App Icons and Launch Images

App Icons Source AppIcon

Launch Images Source Use Asset Catalog...

Launch Screen File LaunchScreen

Filter

Embedded Binaries



demo: Ready | Today at 15:24

demo

demo

AppDelegate.swift
ViewController.swift
Main.storyboard
Assets.xcassets
LaunchScreen.storyboard
Info.plist

demoTests

demoTests.swift
Info.plist

Products

demo

General Capabilities Resource Tags Info Build Settings Build Phases Build Rules

Identity and Type

Name demo

Display Name demo
Bundle Identifier Leona.demo
Version 1.0
Build 1

Automatically manage signing
Xcode will create and update profile certificates.

Team Add Account...
Provisioning Profile Xcode Managed Profile
Signing Certificate iOS Developer

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Deployment Info

Deployment Target 12.2
Devices Universal
Main Interface Main

Device Orientation Portrait
 Upside Down
 Landscape Left
 Landscape Right

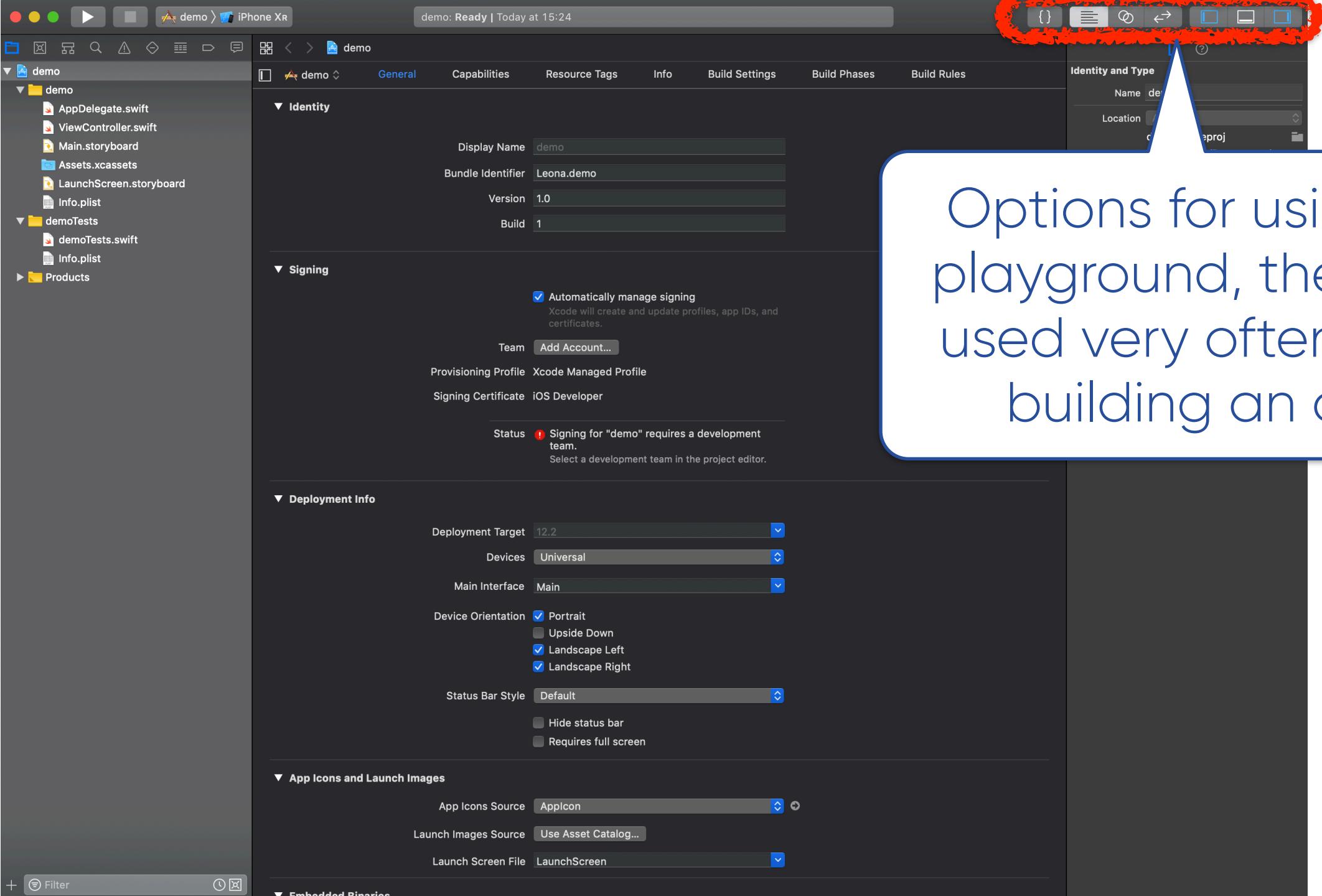
Status Bar Style Default
 Hide status bar
 Requires full screen

App Icons and Launch Images

App Icons Source AppIcon
Launch Images Source Use Asset Catalog...
Launch Screen File LaunchScreen

Embedded Binaries

Activity viewer, which tells you what's it's doing, e.g. running the project on iPhone XR.





demo: Ready | Today at 15:24

demo

General Capabilities Resource Tags Info Build Settings Build Phases Build Rules

demo

AppDelegate.swift ViewController.swift Main.storyboard Assets.xcassets LaunchScreen.storyboard Info.plist

demoTests

demoTests.swift Info.plist

Products

Navigator area, showing the structure of the project

Signing

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Deployment Target 12.2
Devices Universal
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 Landscape Left
 Landscape Right
Status Bar Style Default
 Hide status bar
 Requires full screen

App Icons and Launch Images

App Icons Source AppIcon
Launch Images Source Use Asset Catalog...
Launch Screen File LaunchScreen

Identity and Type

Name demo
Location Absolute demo.xcodeproj
Full Path /Users/leona/Documents/coffeedrop/demo4/demo/demo.xcodeproj

Project Document

Project Format Xcode 9.3-compatible
Organization Leona
Class Prefix

Text Settings

Indent Using Spaces
Widths Tab 4 Indent 4
 Wrap lines



demo: Ready | Today at 15:24

demo

demo

General Capabilities Resource Tags Info Build Settings Build Phases Build Rules Identity and Type

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Version 1.0

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 Landscape Right

Status Bar Style Default

Hide status bar
 Requires full screen

App Icons Source AppIcon

Launch Images Source Use Asset Catalog...

Launch Screen File LaunchScreen

Text Set Indent Us Wid

Editor area, an area for creating the app via Main.storyboard, or writing code



demo > iPhone XR demo: Ready | Today at 15:24

demo

demo

AppDelegate.swift
ViewController.swift
Main.storyboard
Assets.xcassets
LaunchScreen.storyboard
Info.plist

demoTests

demoTests.swift
Info.plist

Products

Identity and Type

Name demo
Location Absolute demo.xcodeproj
Full Path /Users/leona/Documents/coffeedrop/demo4/demo/demo.xcodeproj

Project Document

Project Format Xcode 9.3-compatible
Organization Leona
Class Prefix

Text Settings

Indent Using Spaces
Widths Tab 4 Indent 4
 Wrap lines

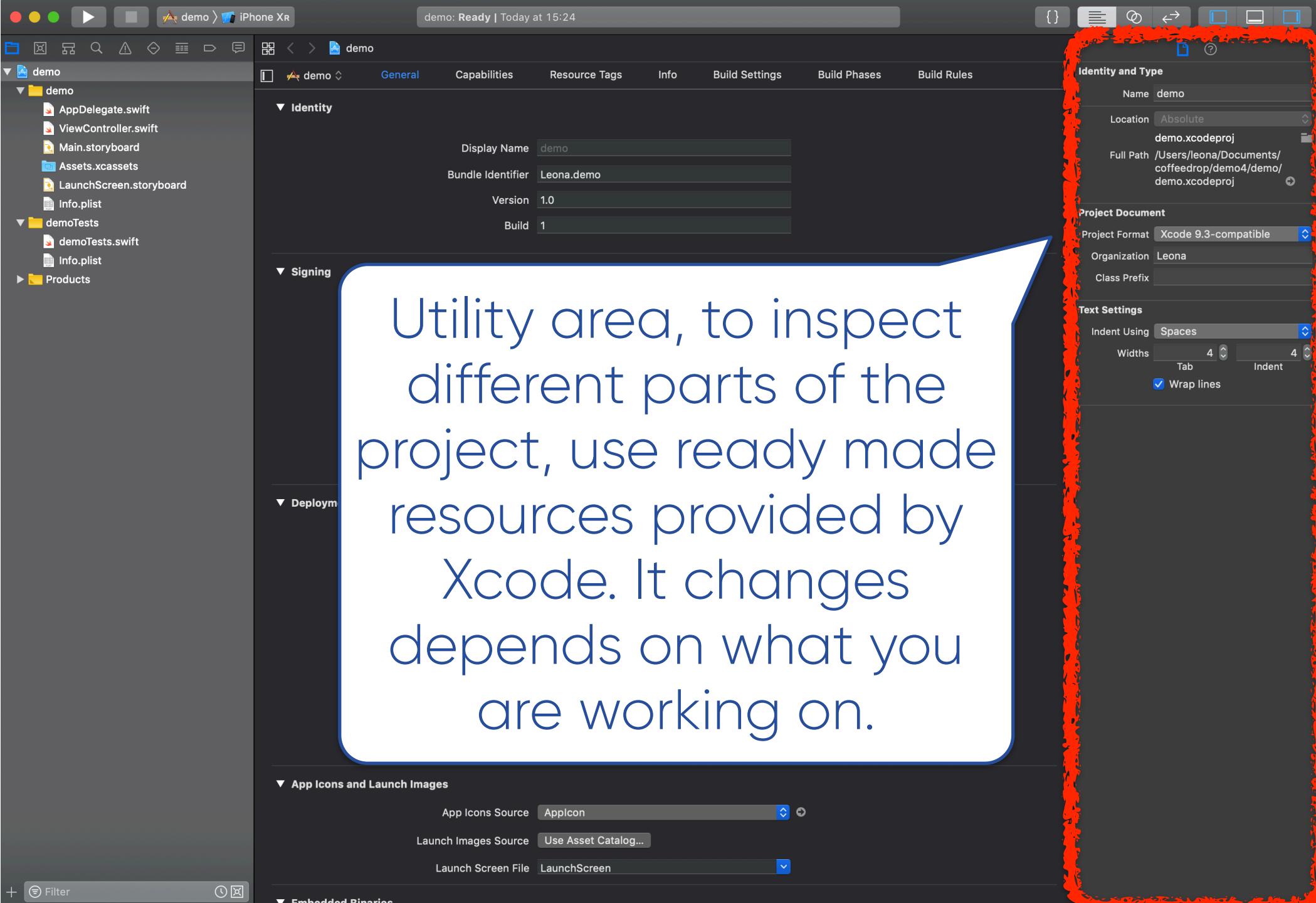
Utility area, to inspect different parts of the project, use ready made resources provided by Xcode. It changes depends on what you are working on.

App Icons and Launch Images

App Icons Source AppIcon
Launch Images Source Use Asset Catalog...
Launch Screen File LaunchScreen

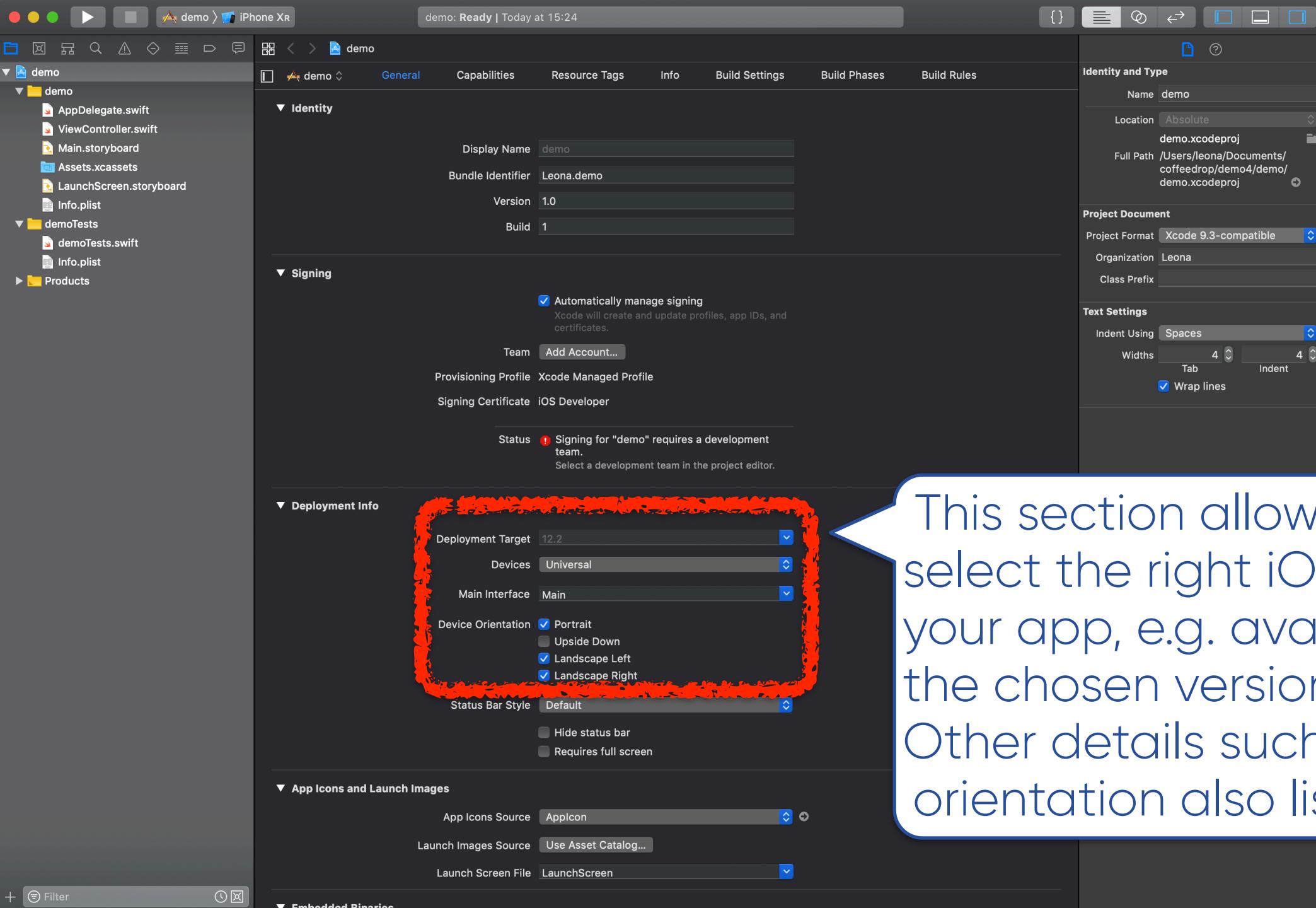
Filter

Embedded Binaries





Get started with Xcode Interface Builder



This section allows you to select the right iOS version for your app, e.g. available for the chosen version or above. Other details such as device orientation also listed here.



demo > iPhone XR demo: Ready | Today at 15:24

demo

demo

AppDelegate.swift

Main.storyboard

LaunchScreen.storyboard

Info.plist

demoTests

demoTests.swift

Info.plist

Products

General Capabilities Resource Tags Info Build Settings Build Phases Build Rules

Select “Main.storyboard” to open the project canvas

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Main Interface Main

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 Upside Down
 Landscape Left
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Status Bar Style Default

Hide status bar
 Requires full screen

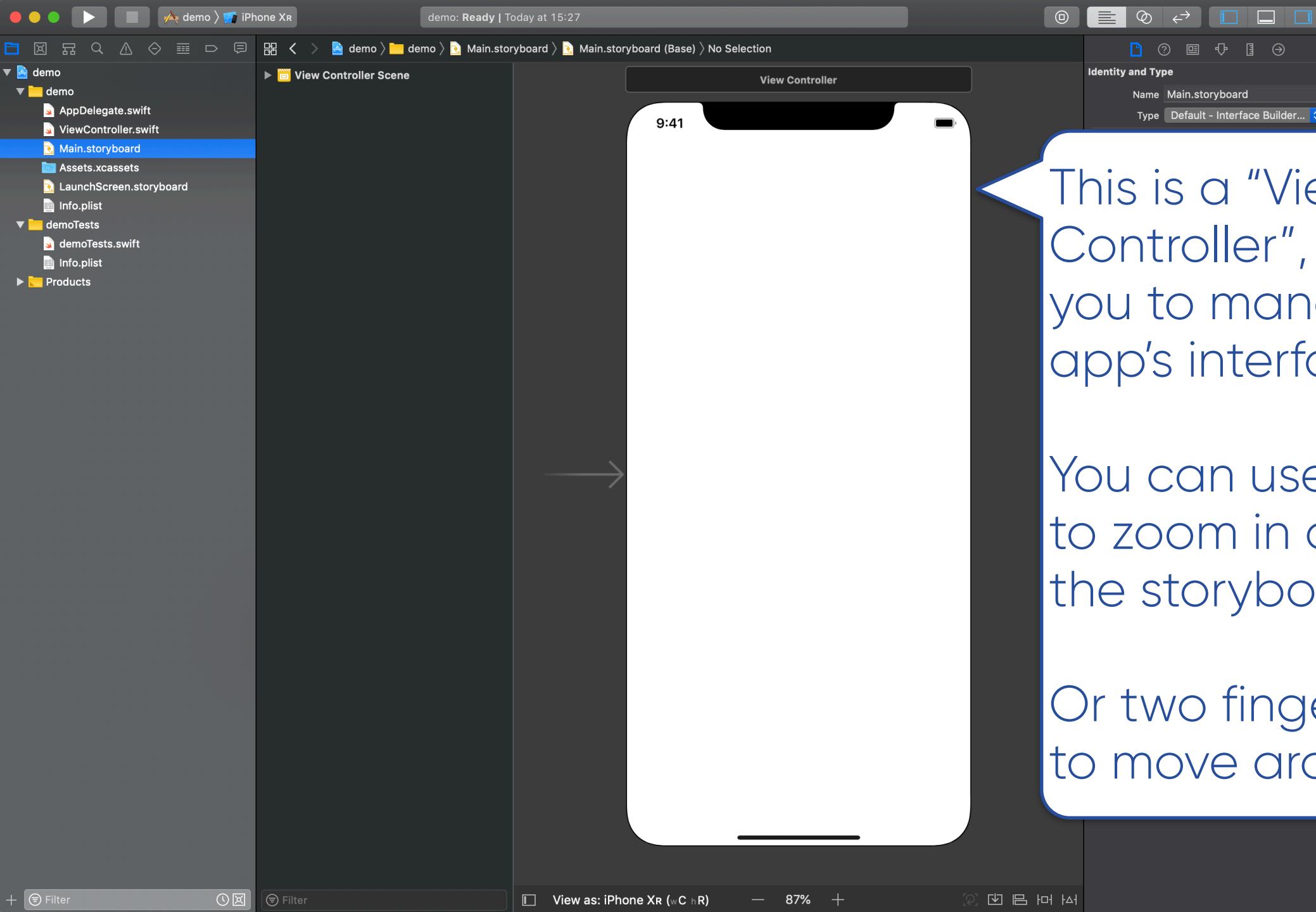
App Icons and Launch Images

App Icons Source AppIcon

Launch Images Source Use Asset Catalog...

Launch Screen File LaunchScreen

Embedded Binaries

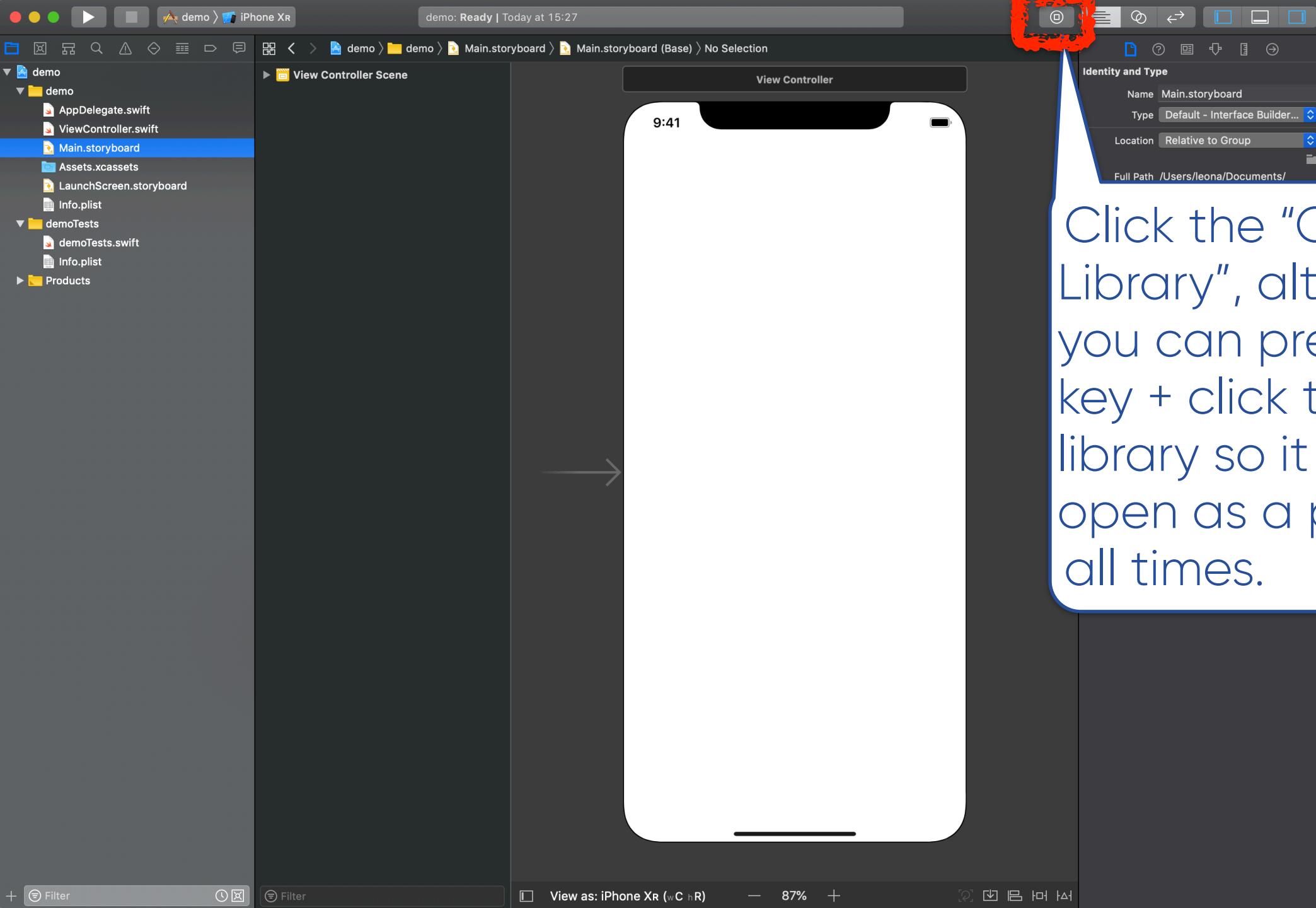


This is a “View Controller”, it allows you to manage the app's interface.

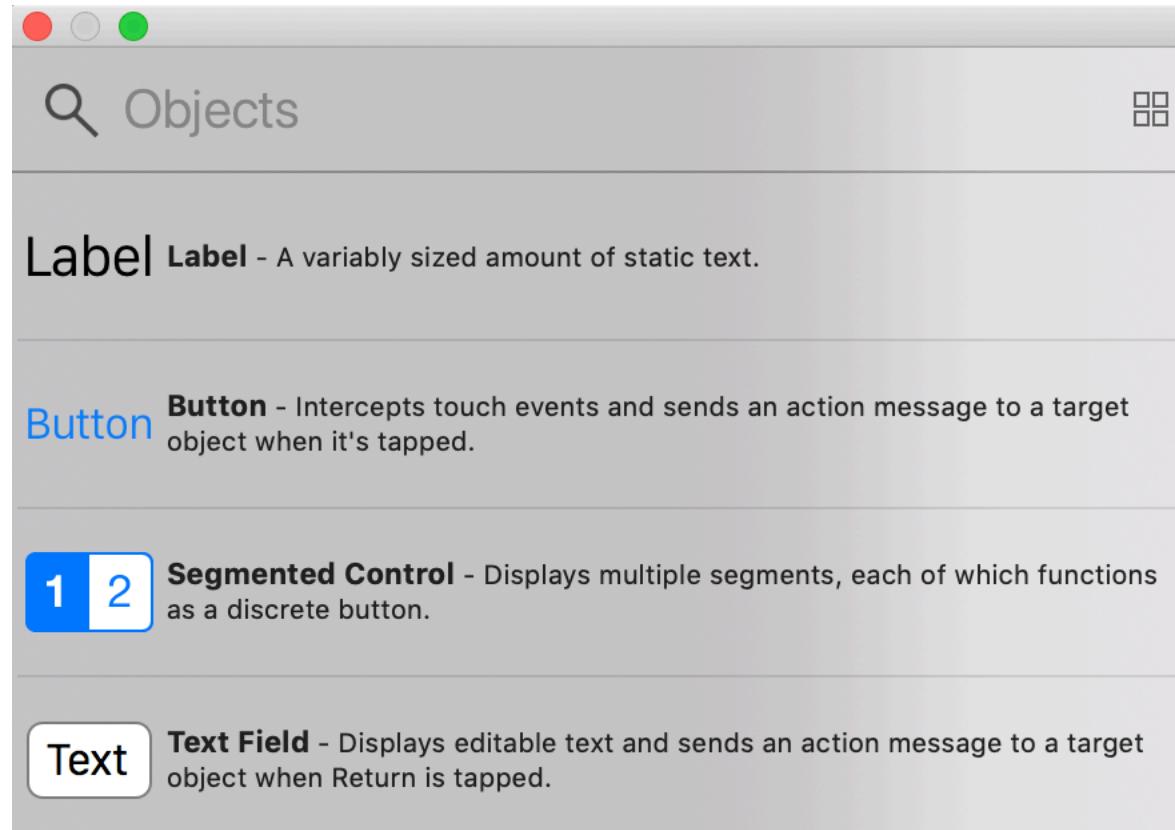
You can use two fingers to zoom in and out of the storyboard.

Or two fingers together to move around.

Adding a label

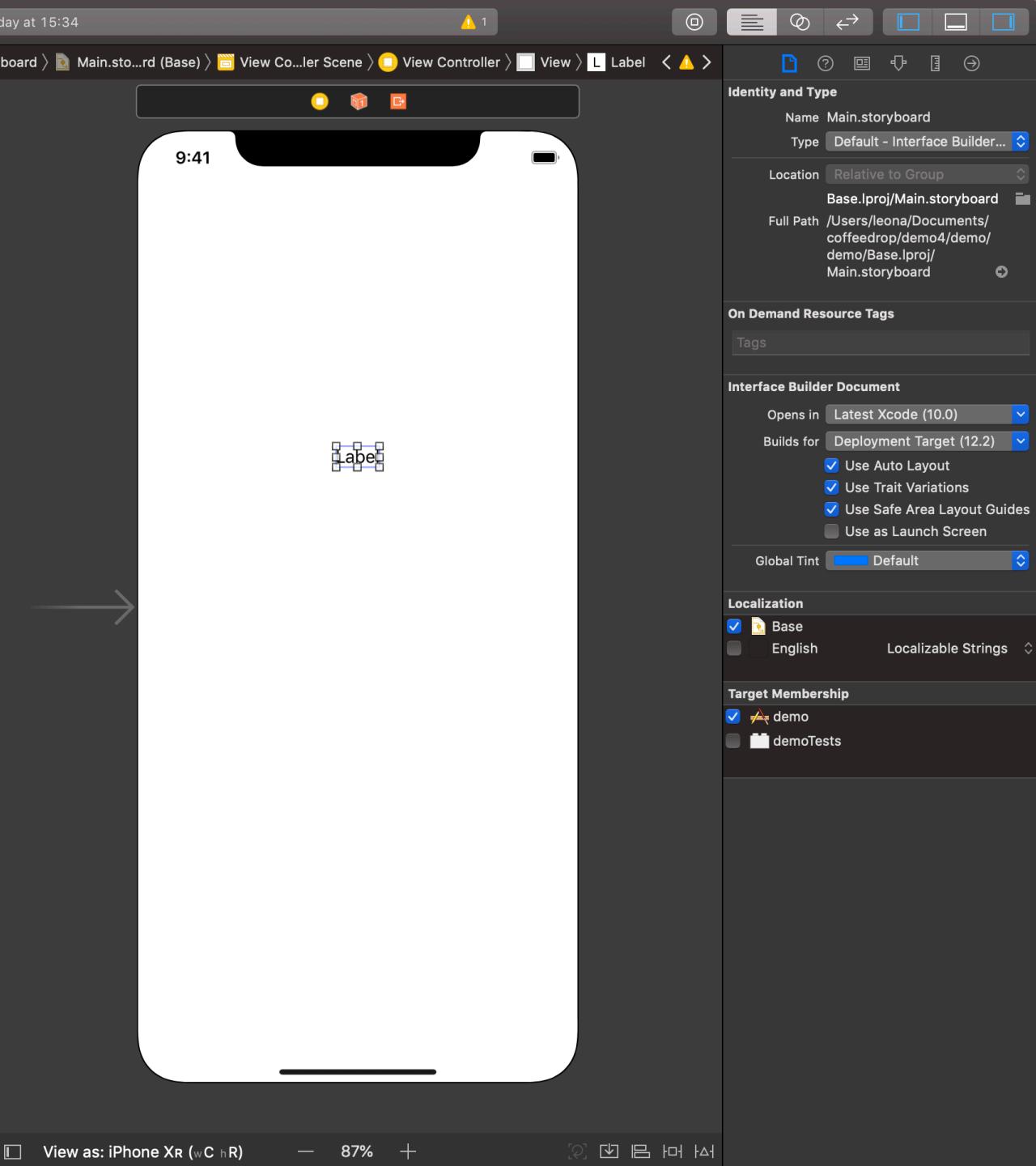


Object library - label



Select Label, or search for a label if you can't find it.

Drag and drop it into the view controller.

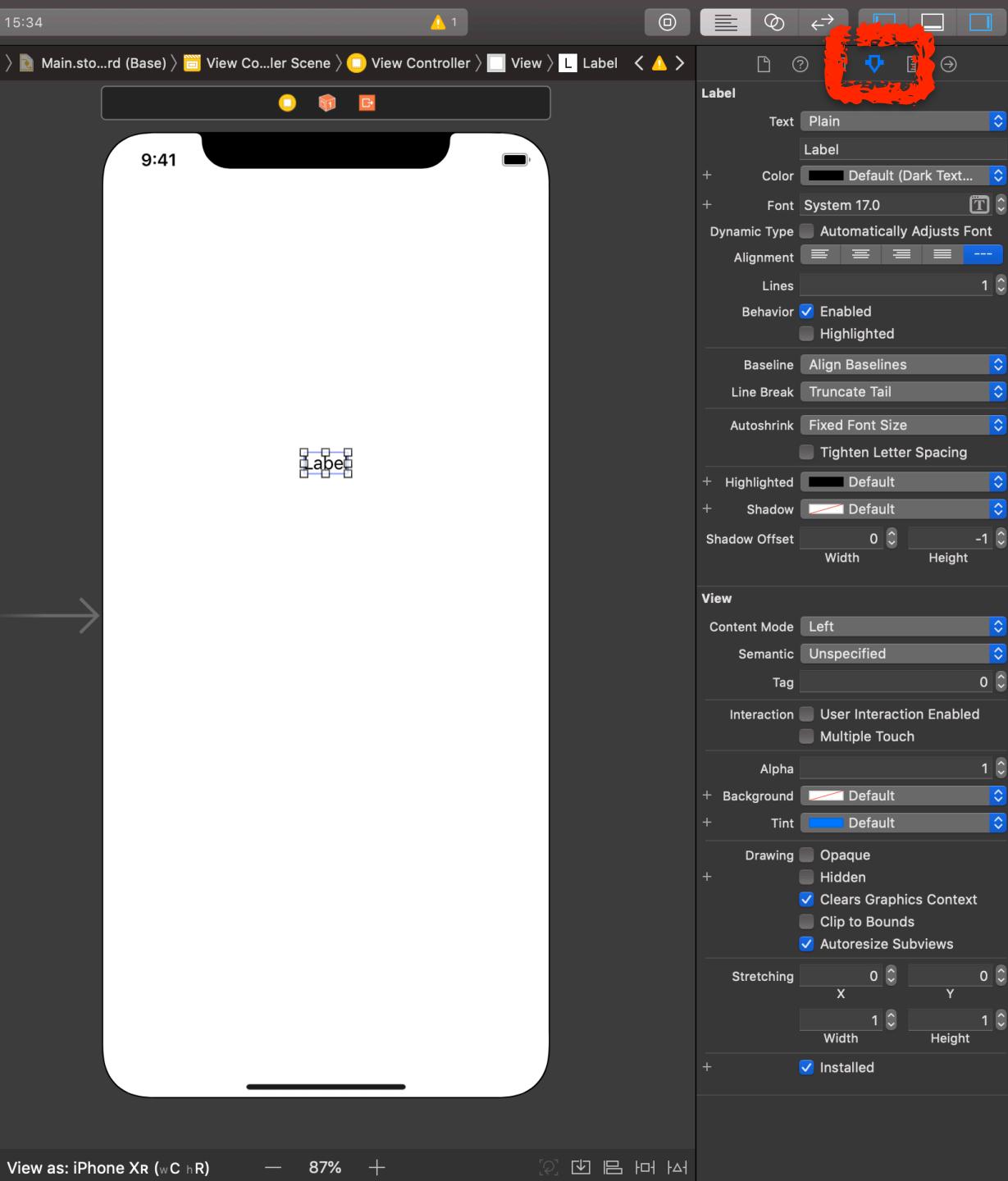


You can...

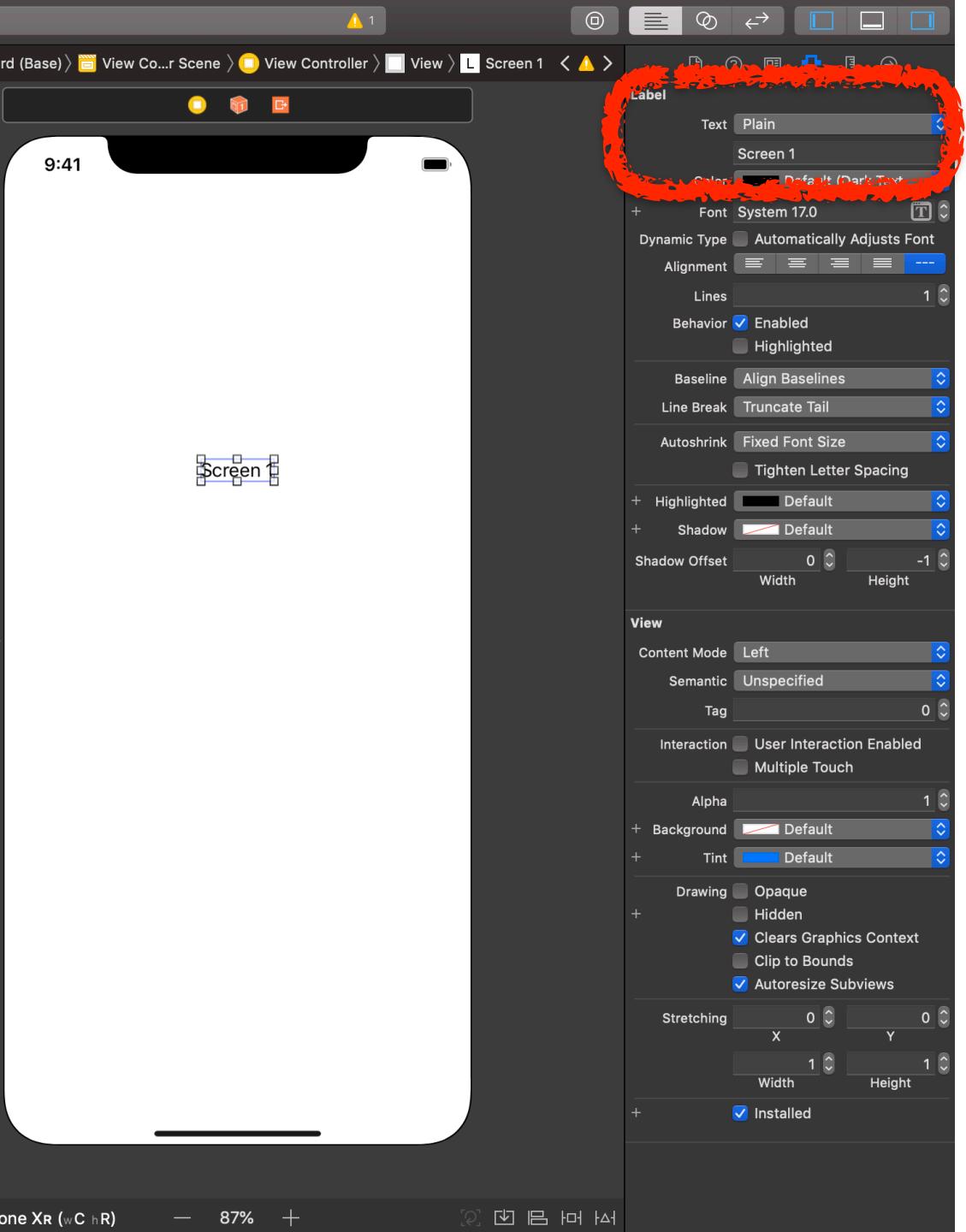
Click to highlight and move

Double-click to edit text

What function does a label serve?



The “Attribute” (fourth icon) will give you all you need to change the attributes of the label, such as font, size, colour etc.



The “Attribute” (fourth icon) will give you all you need to change the attributes of the label, such as font, size, colour etc.

Change the text of the label.

Alternatively , you can double click the label to change the text.



Adding a button

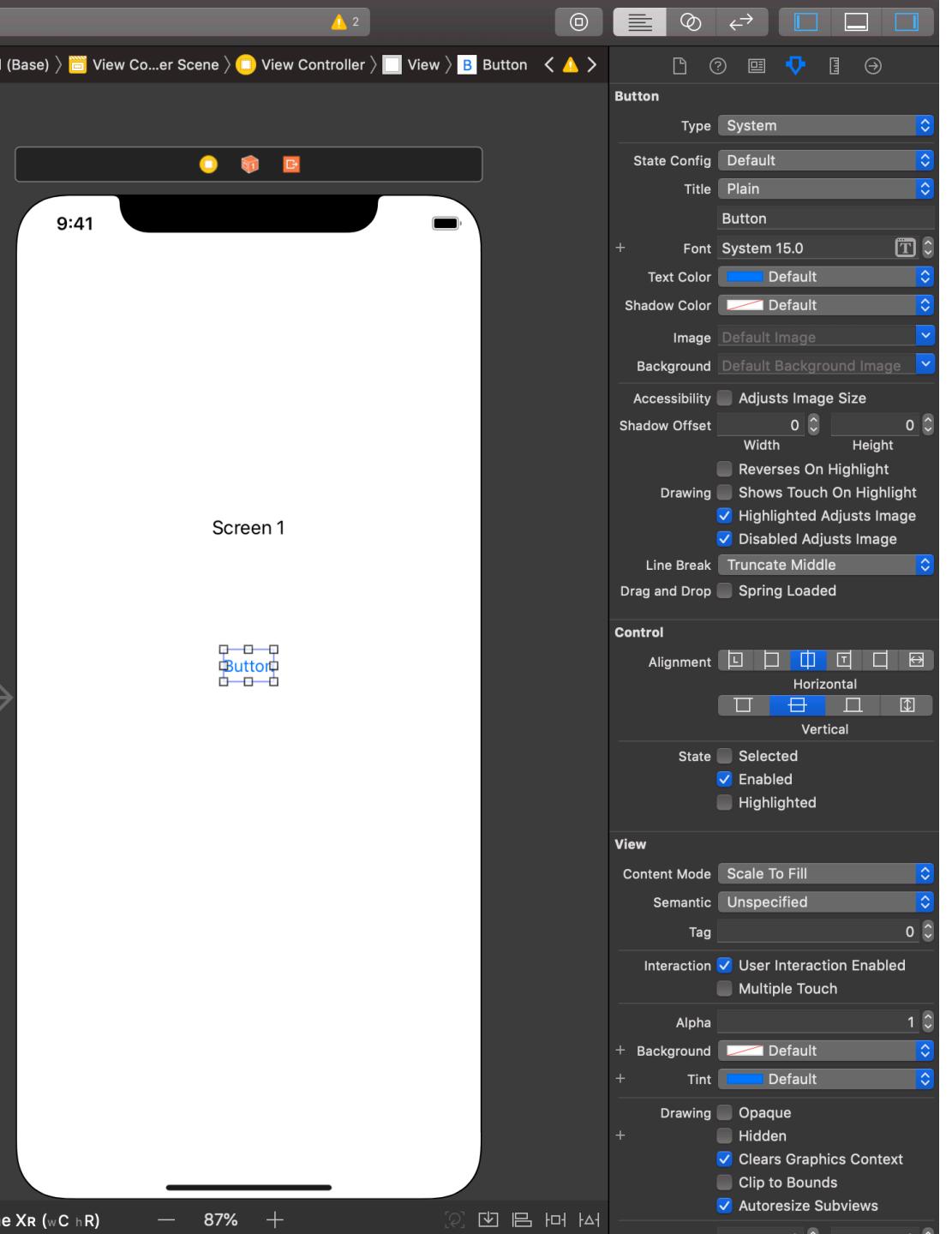
Object library - button

The screenshot shows the Xcode Object Library interface. At the top, there is a search bar with the text "button". Below the search bar, there are three items listed:

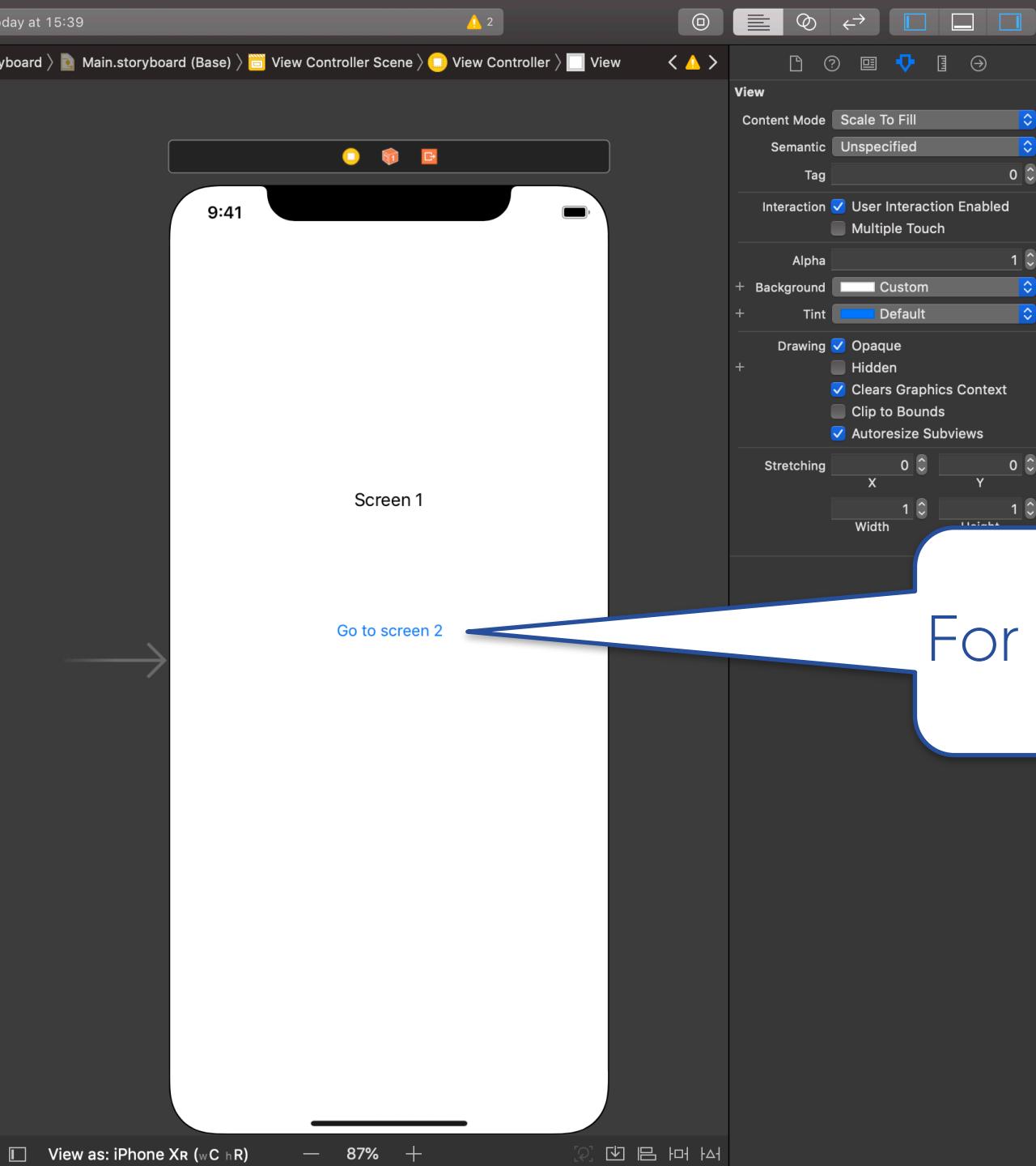
- Button** - Represents a standard touchable button.
- Item** - Represents an item on a UIToolbar or UINavigationItem object.
- Fixed Space Bar Button Item** - Represents a fixed space item on a UIToolbar object.
- Flexible Space Bar Button Item** - Represents a flexible space item on a UIToolbar object.

Search for a button.

Drag and drop it into the view controller.



Now change the text of the button by double clicking or via the "Attribute" on the right.

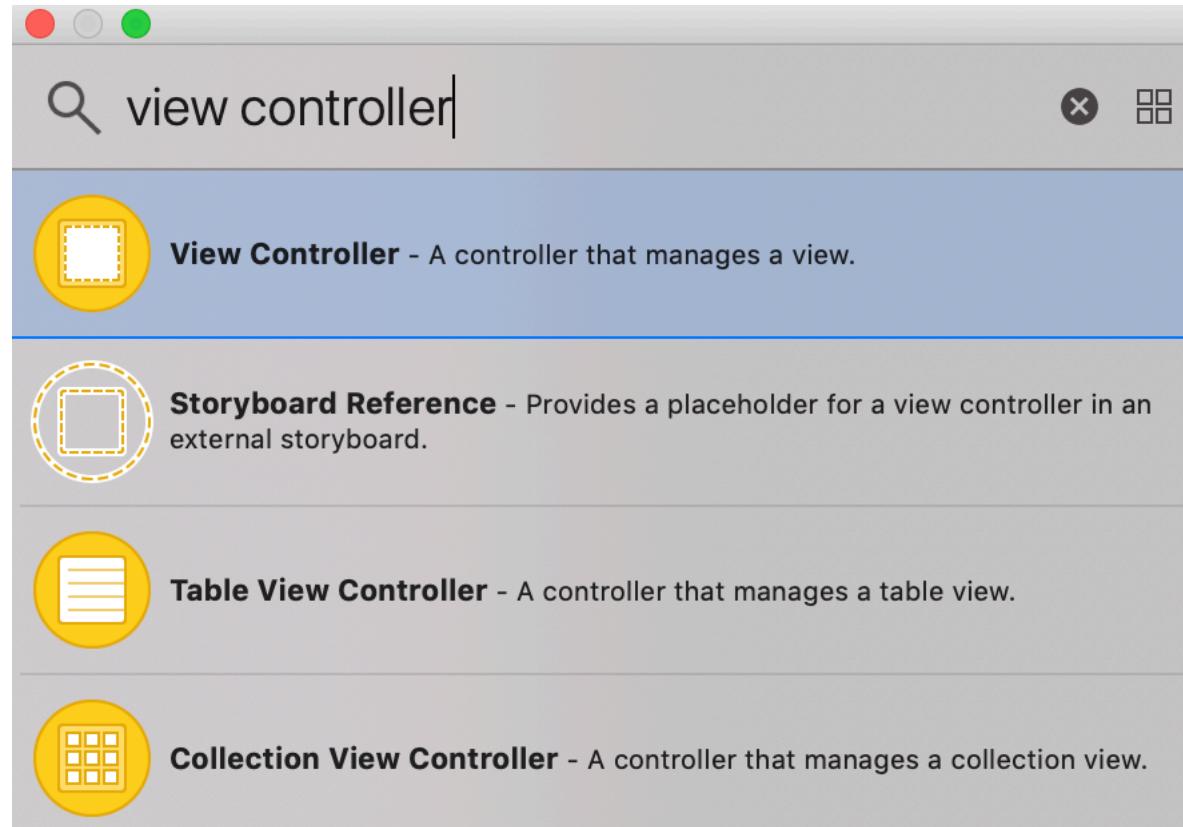


For now, label "Go to screen 2"



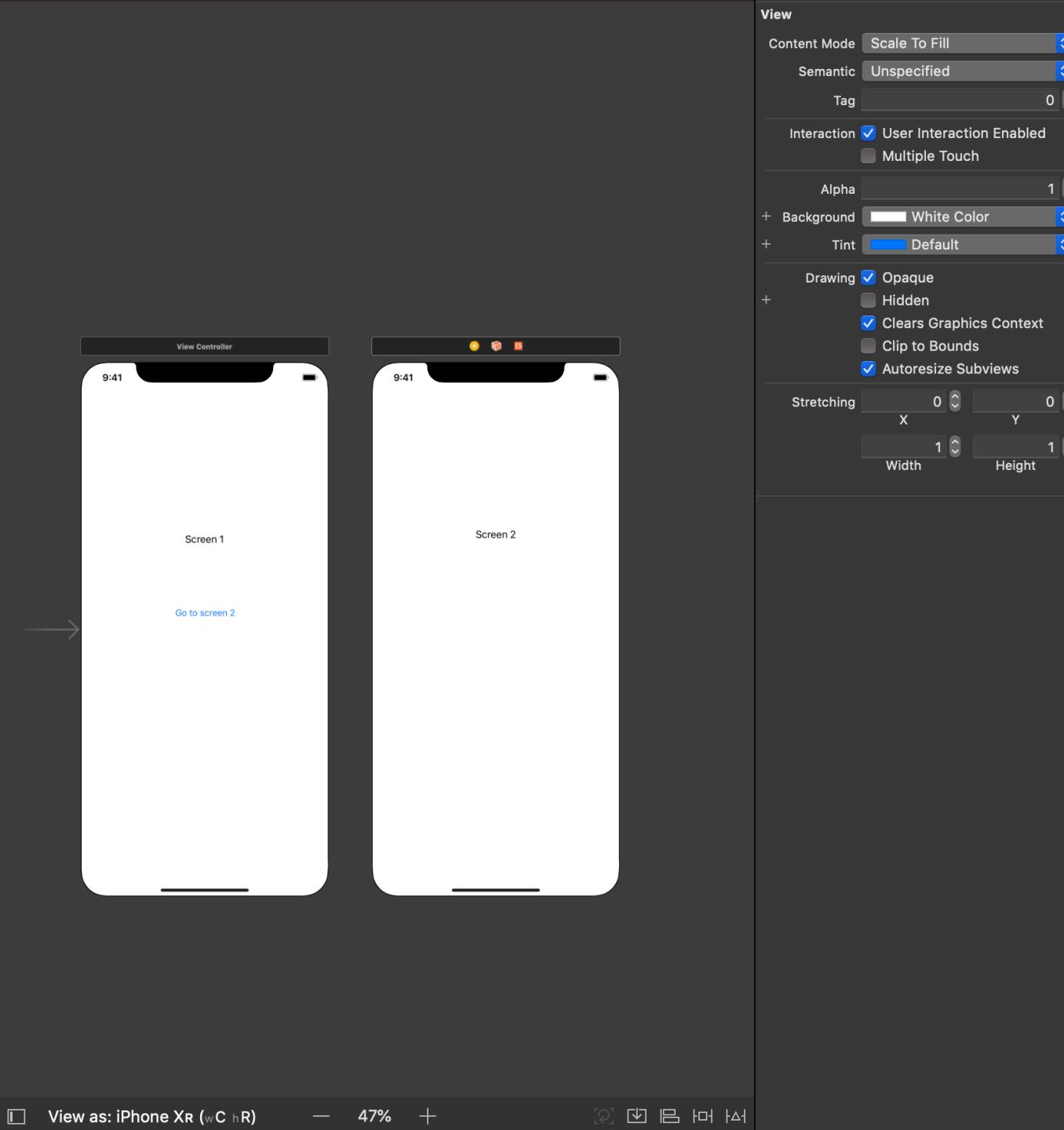
Adding a View Controller

Object library - View Controller



Search for a "View Controller".

Drag and drop it into the editor area, (not on the view controller already in the area).



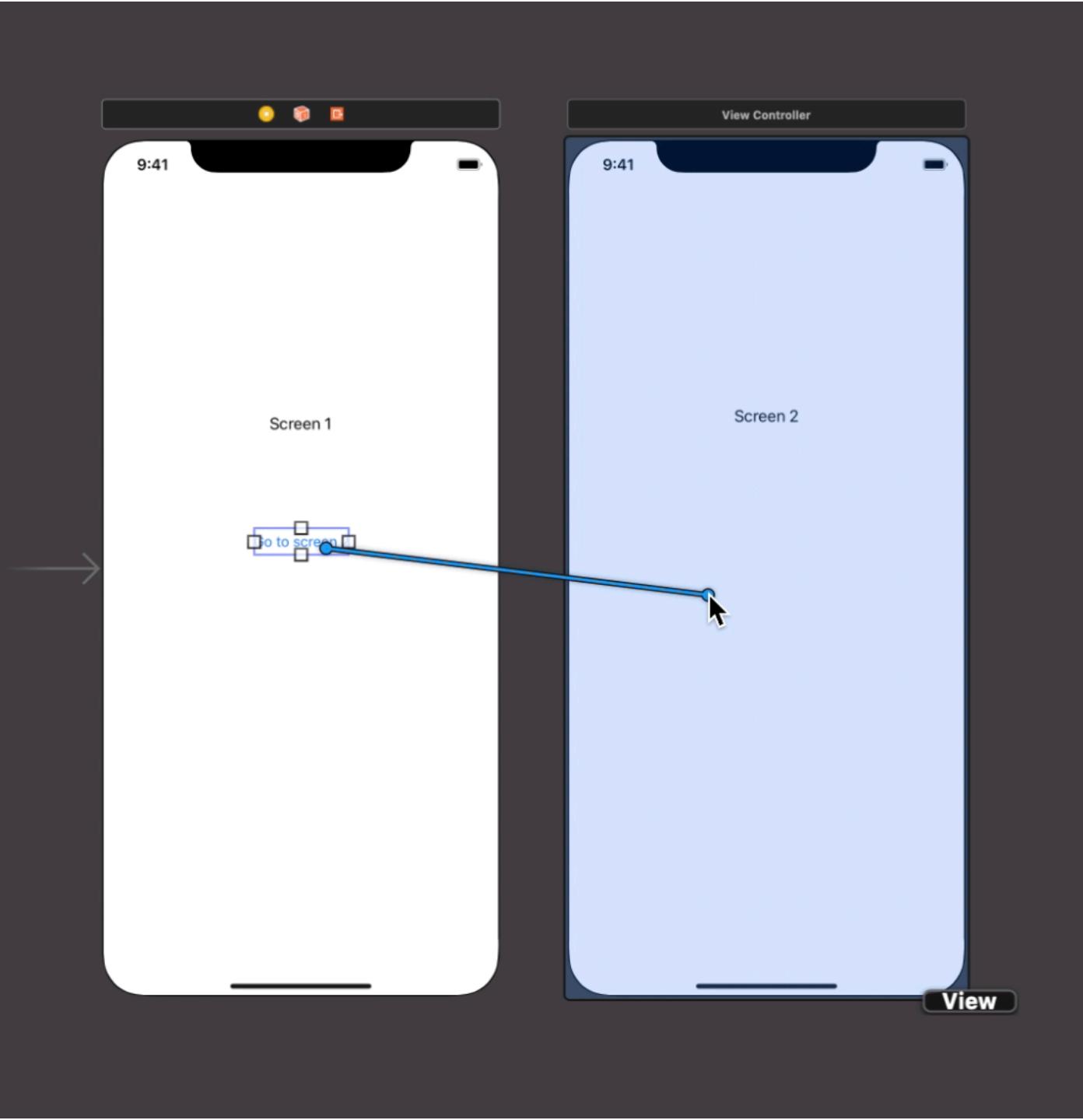
You can drop the view controller anywhere in the canvas.

Clicking on the top bar you can drag it elsewhere in the editor area.

Add a label on the second screen.

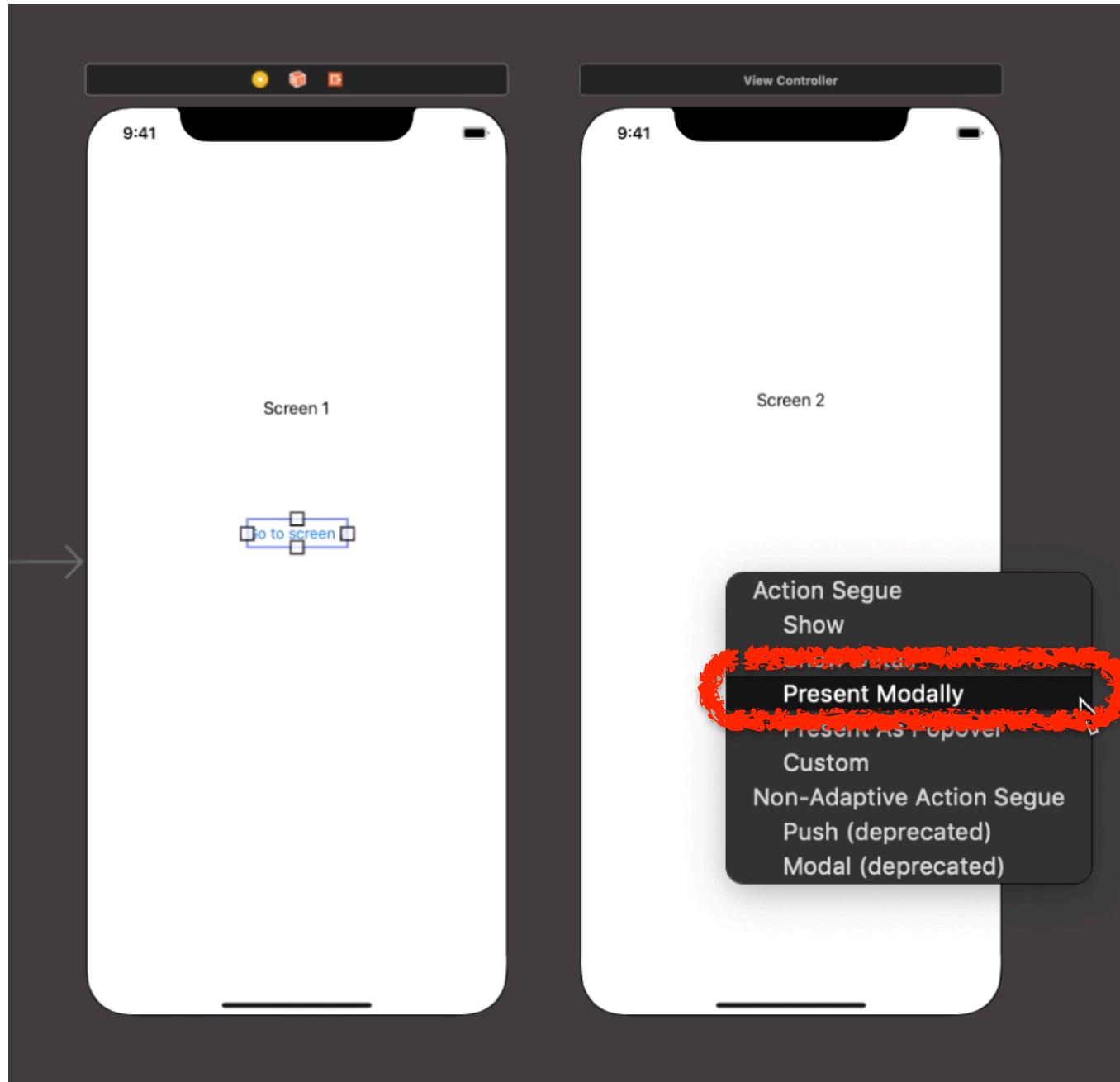


Linking a button to another View Controller

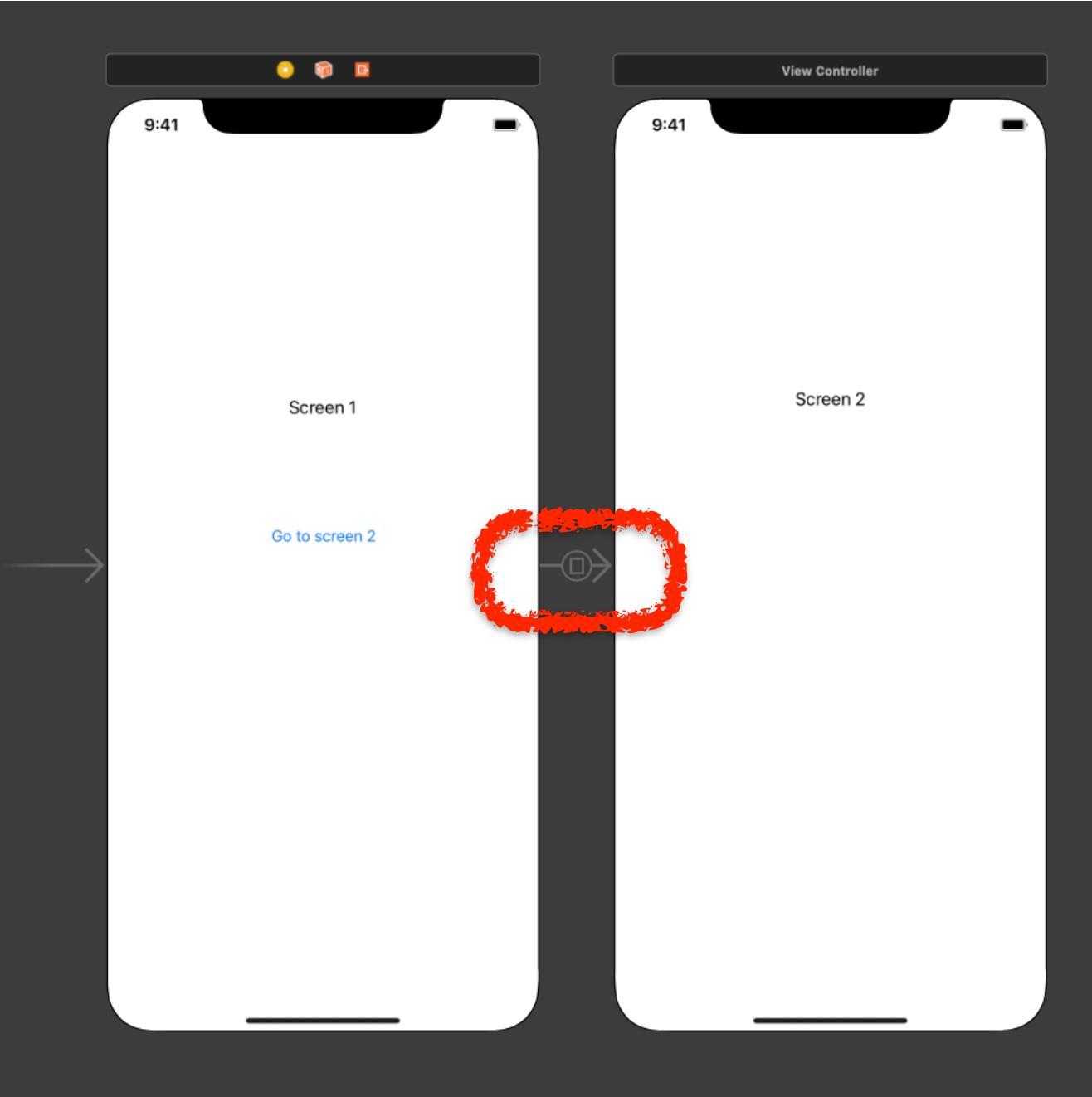


Press “control” and drag and drop from the button to the view controller you want to link the button to.

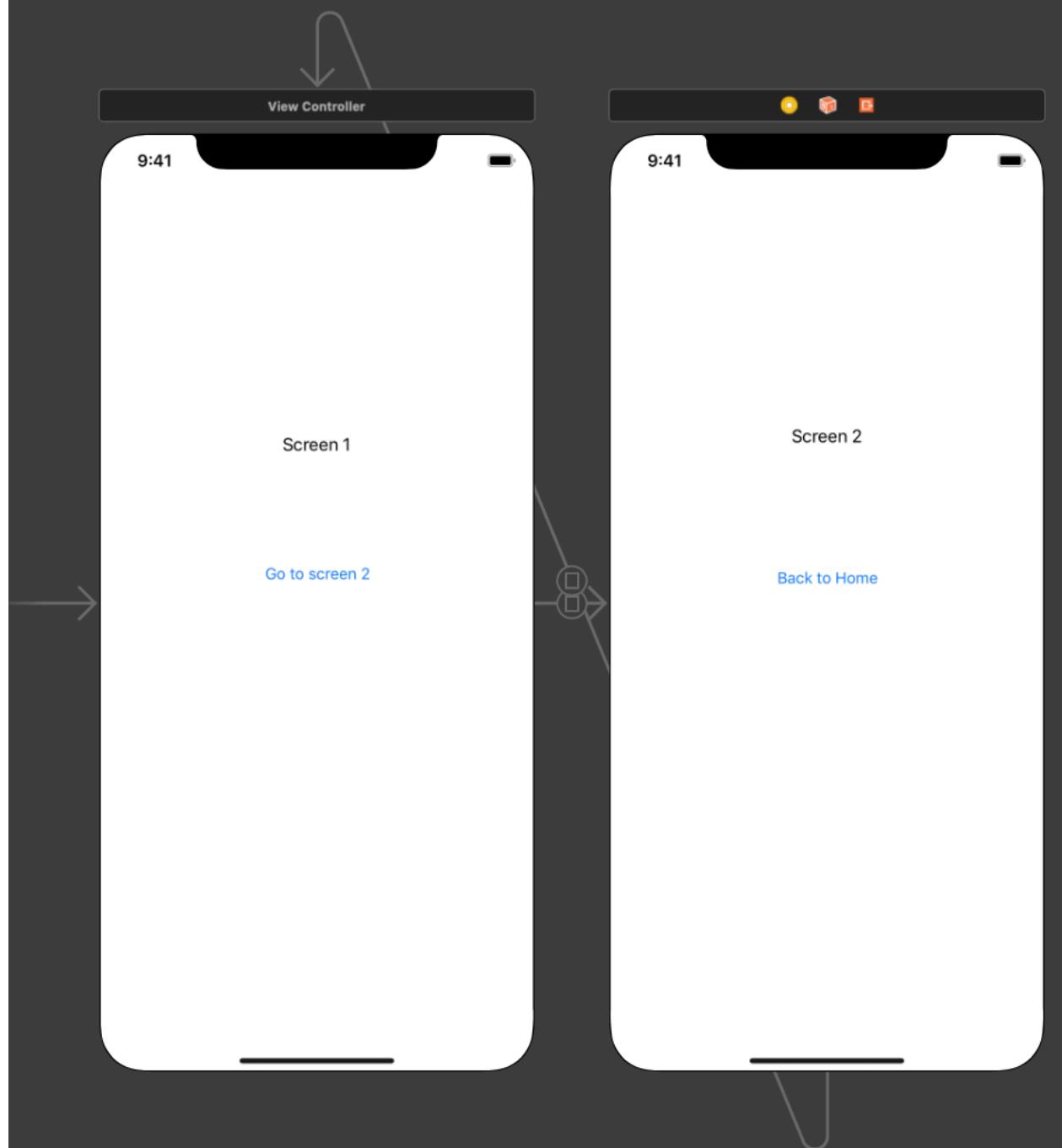
Let go and it will give you a number of options.



Select "Present Modally"



You will see an arrow to show you the links between the two view controllers.



Activity

Add a button on the second screen and link the button back to the first screen.



Tab Bar Controller

15:31 ↗



What's good in

Manchester



Events near Manchester



MAY Designops Global Conference 2019

30 The Hilton, Beetham Tower



Bradford Pride 2019

1 June • 12:00 BST

City Park, Bradford



The Stadium Business Summit 2019

3–5 June • 19:30 BST

Emirates Old Trafford



Creative North presents The Future of Content



15:31



Explore

Explore Meetup

Popular Now



TOMORROW, 18:00

Manchester Tech Meetup

The Ultimate Tech Battle: Legacy VS Innovative Tech

6 JUN, 18:00

Infinity Works 101 Series

GraphQL-100 2 Evening

Tech

See all



Burns Sheehan

17 JUN, 19:00

Android Manchester

Monthly Meetup - Details to follow

25 JUN, 18:00

Burns Sheehan Manchester Events

Data Science: Products Innovation



Home

Explore

Notifications

Messages

15:29



Edit

World Clock



Today, +0HRS
London

15:29

Today, +7HRS
Hong Kong

22:29

Today, +1HR
Munich

16:29

Today, -5HRS
New York

10:29

Today, +8HRS
Tokyo

23:29

Tomorrow, +9HRS
Melbourne

00:29



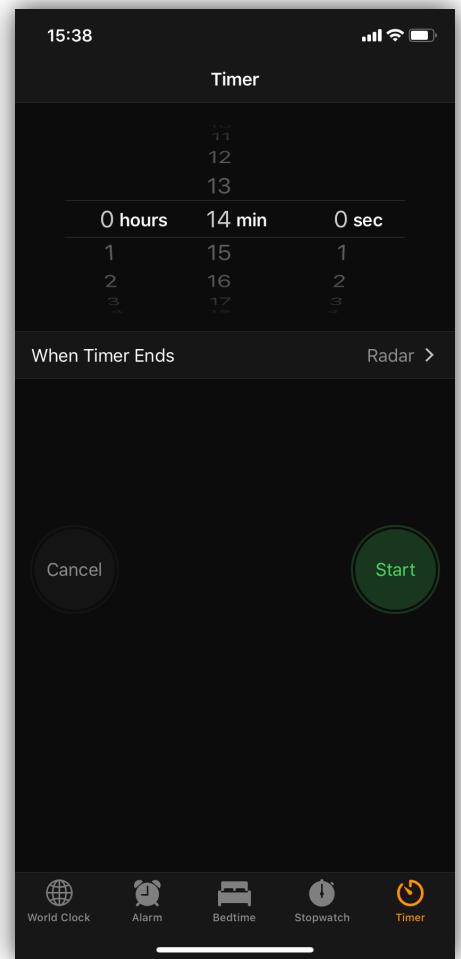
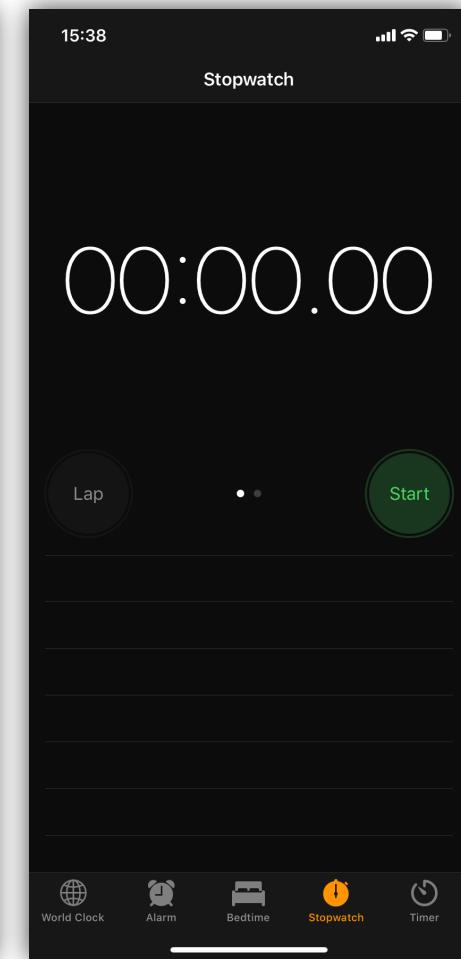
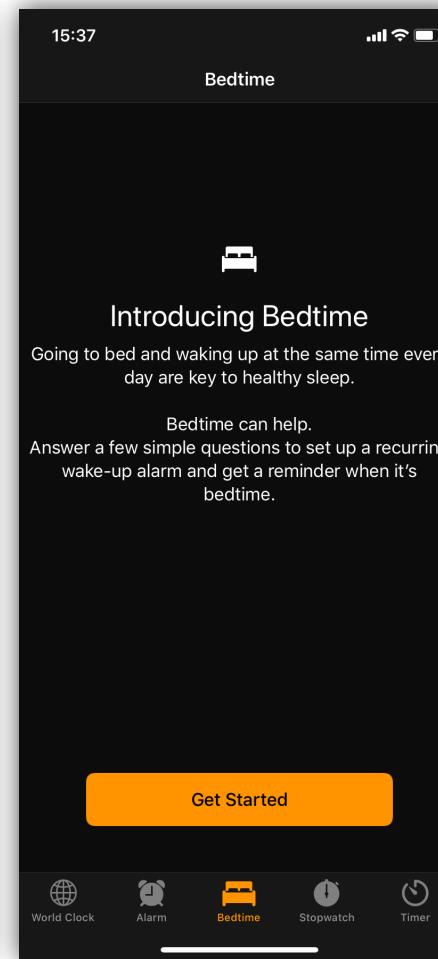
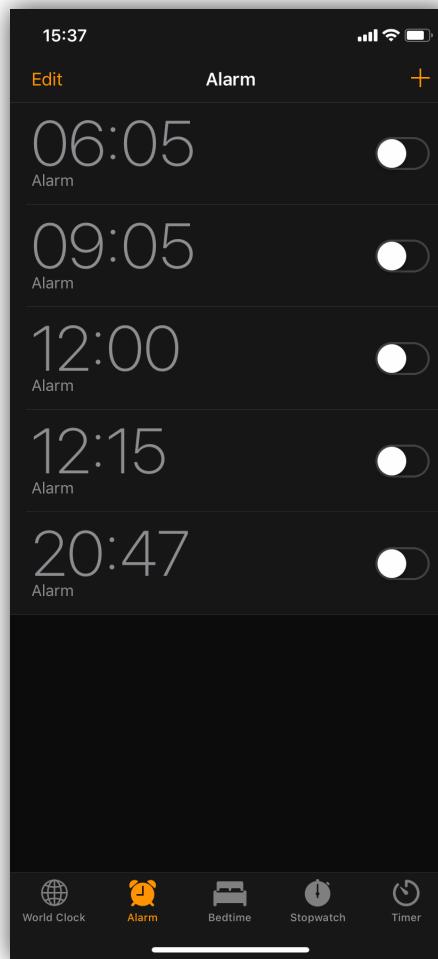
World Clock

Alarm

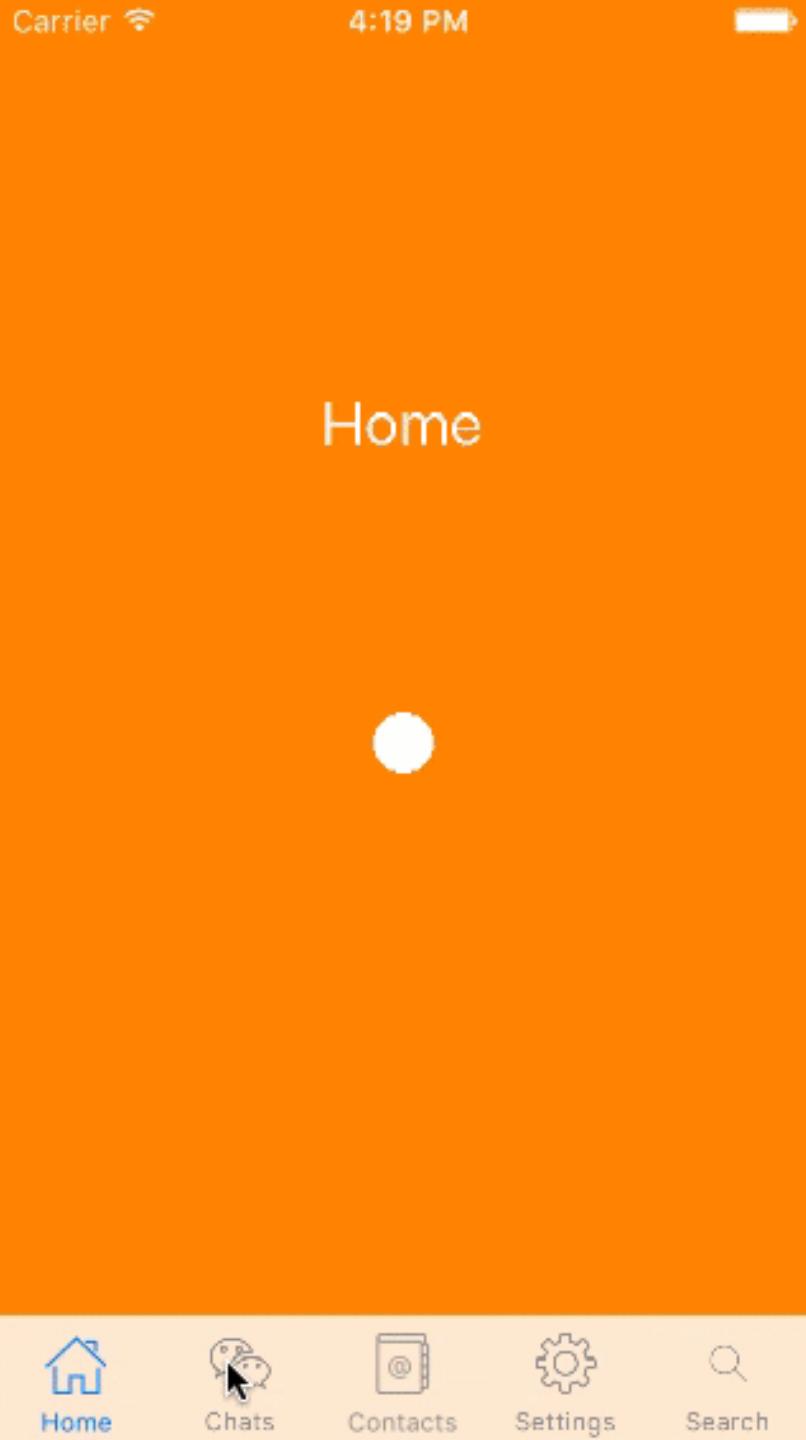
Bedtime

Stopwatch

Timer







Home

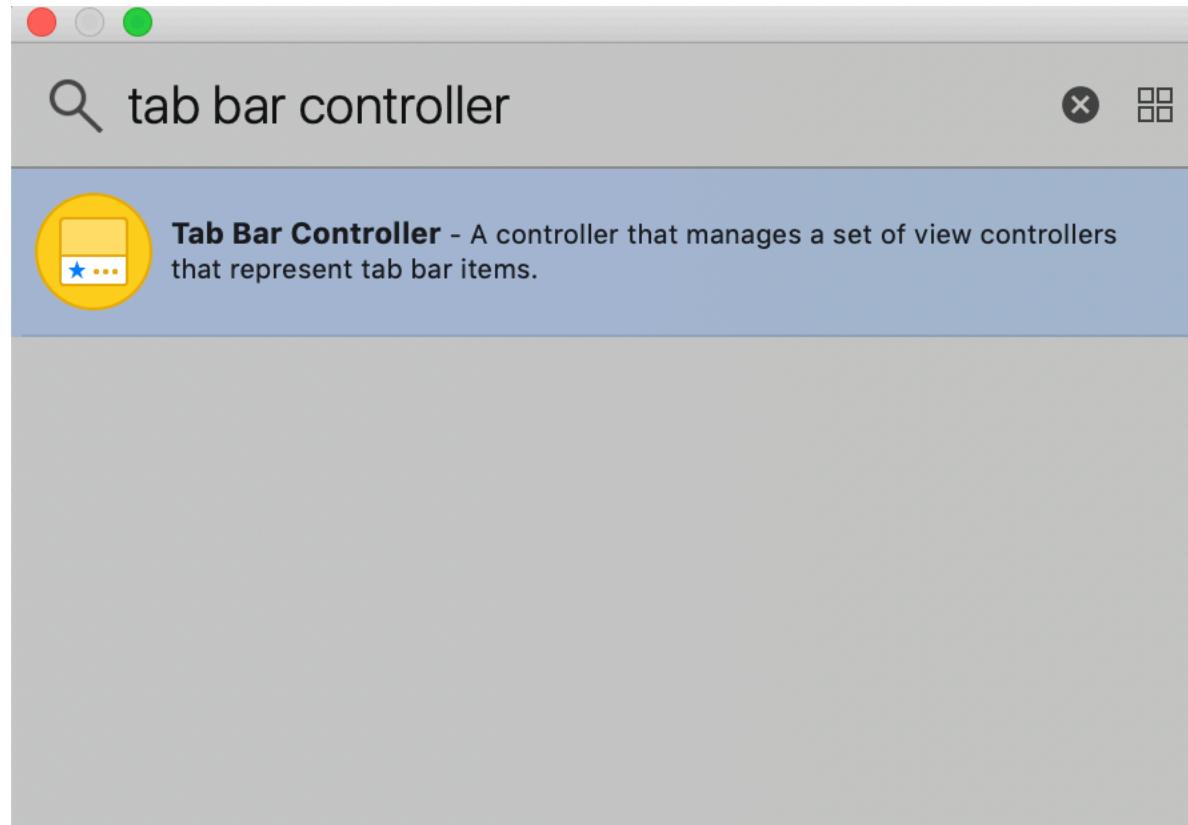
If there are five tabs then there will be five view controllers, switch between each view controller by selecting the associate button in the tab bar.





Adding a Tab Bar Controller

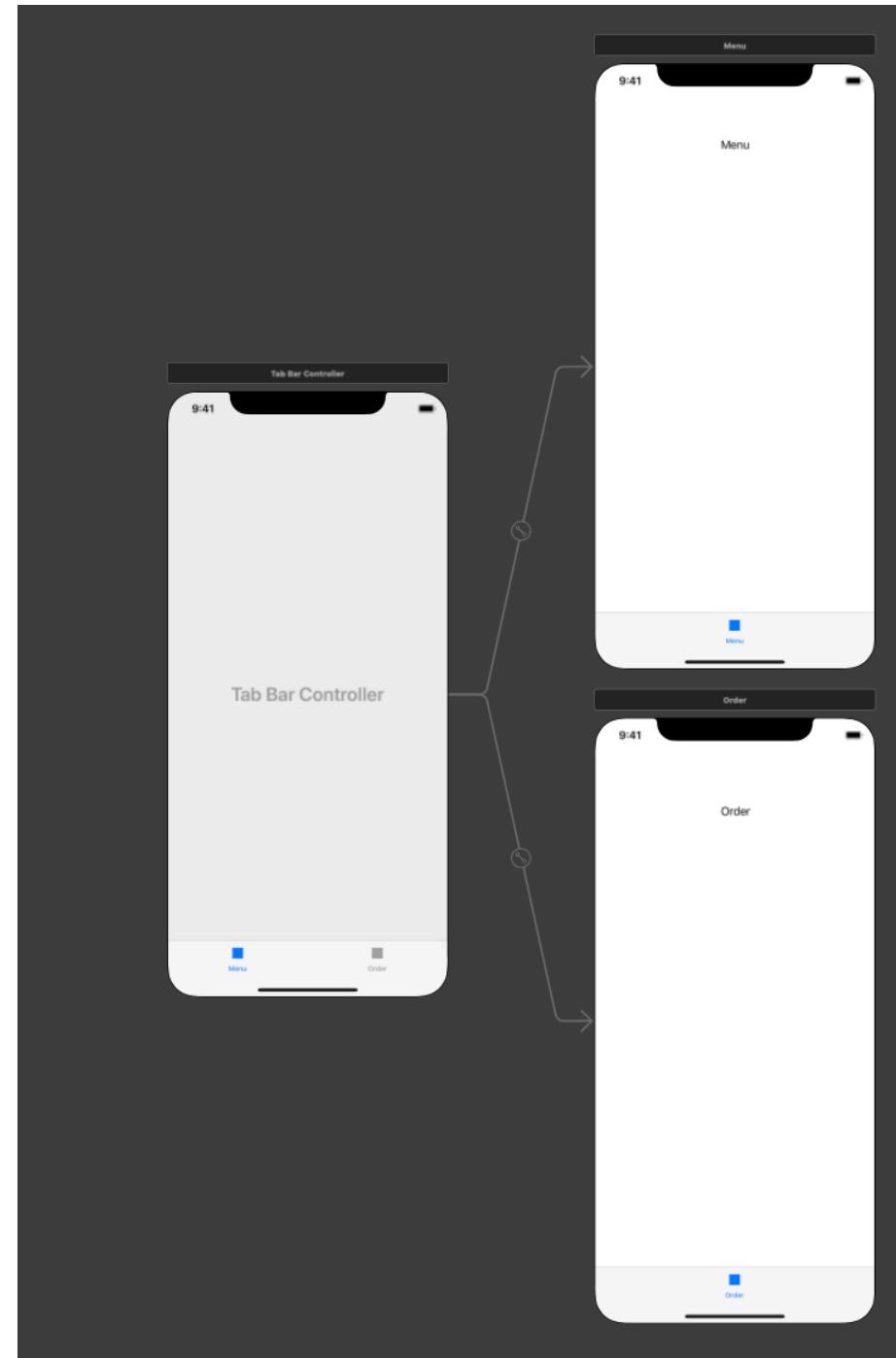
Object library - Tab Bar Controller



Search for “Tab Bar Controller”.

Drag and drop it into the editor area, (not on any view controller already in the area).

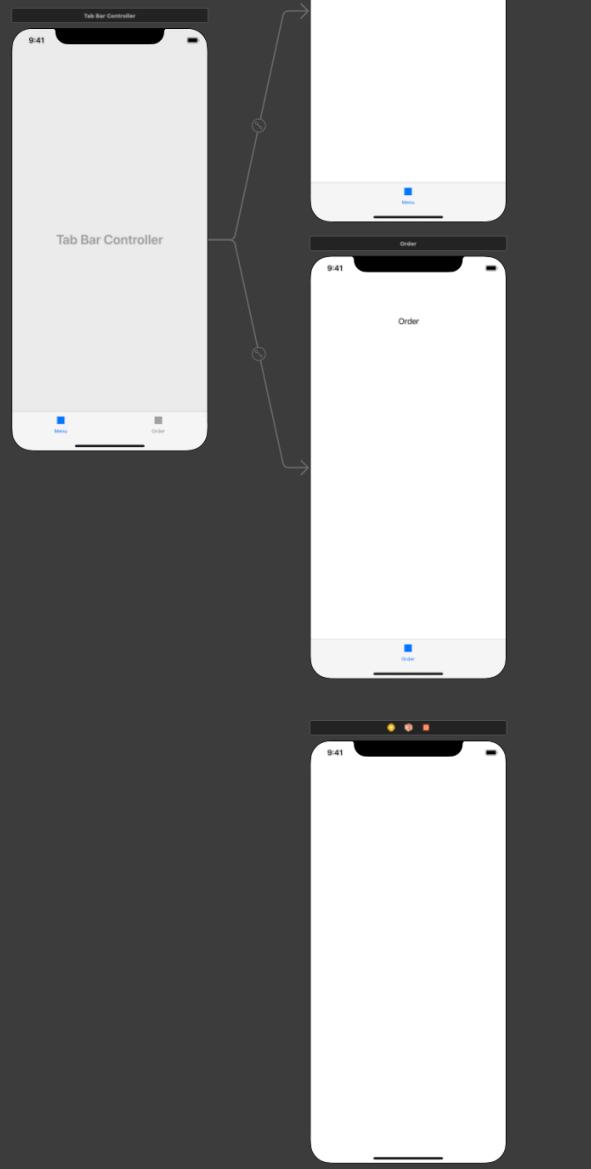
Tab Bar
Controller



View Controller

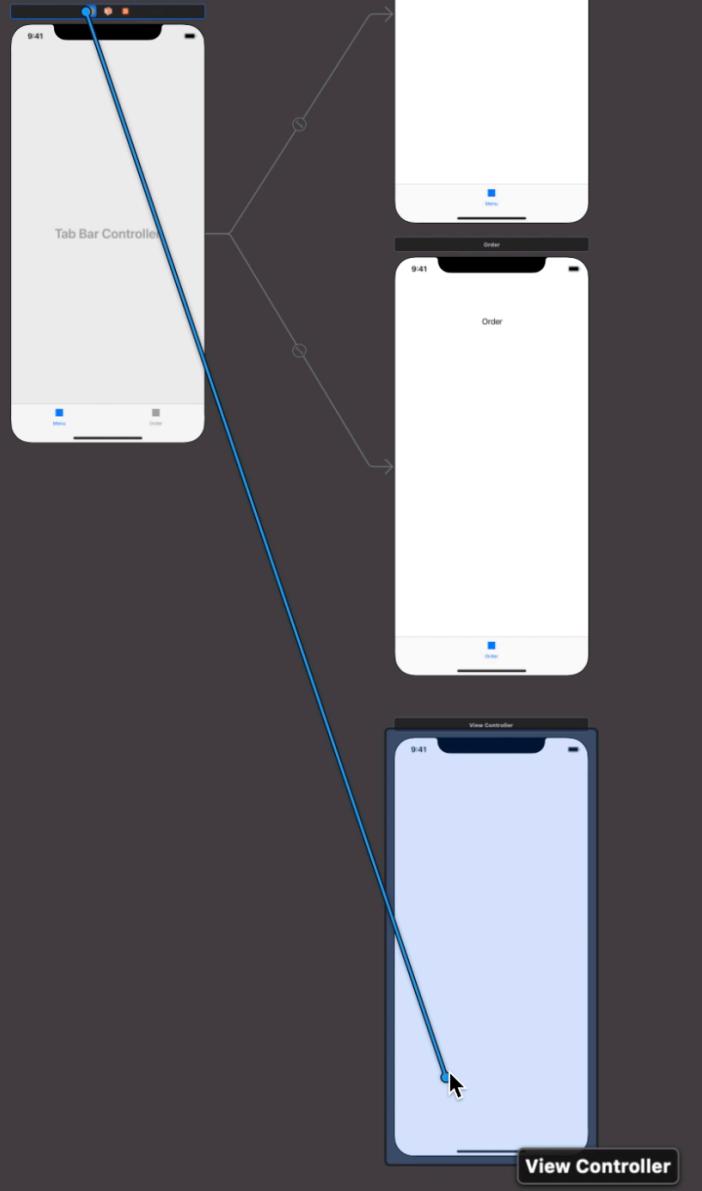
View Controller

Activity

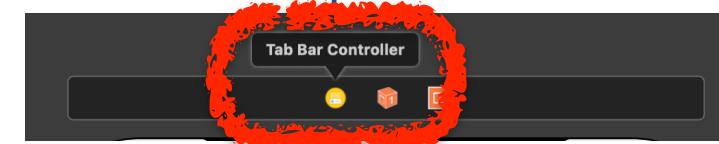


Add a “View Controller” onto the canvas.

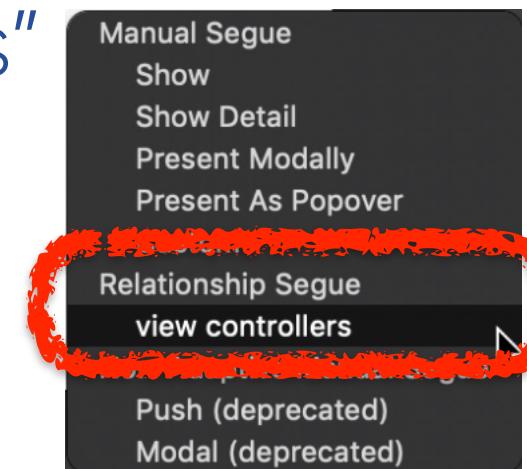
Activity



Press “Control” and drag the “Tab Bar Controller” icon then drop to the new “View Controller”



Select under “Relationship Segue” then “view controllers”





The screenshot shows the Xcode storyboard editor with a Tab Bar Controller at the top left. Three arrows point from the Tab Bar Controller to three separate view controllers below it: 'Menu', 'Order', and 'Item'. Each view controller has a small circular icon with a dot in the center, indicating they are linked to the Tab Bar Controller. The storyboard also includes a navigation bar at the top and a tab bar at the bottom.

Simulated Metrics

- Size: Inferred
- Top Bar: Inferred
- Bottom Bar: Inferred

View Controller

- Title: Is Initial View Controller
- Layout:
 - Adjust Scroll View Insets
 - Hide Bottom Bar on Push
 - Resize View From NIB
 - Use Full Screen (Deprecated)
- Extend Edges:
 - Under Top Bars
 - Under Bottom Bars
 - Under Opaque Bars
- Transition Style: Cover Vertical
- Presentation: Full Screen
 - Defines Context
 - Provides Context
- Content Size
 - Use Preferred Explicit Size
 - Width: 0 Height: 0

Key Commands

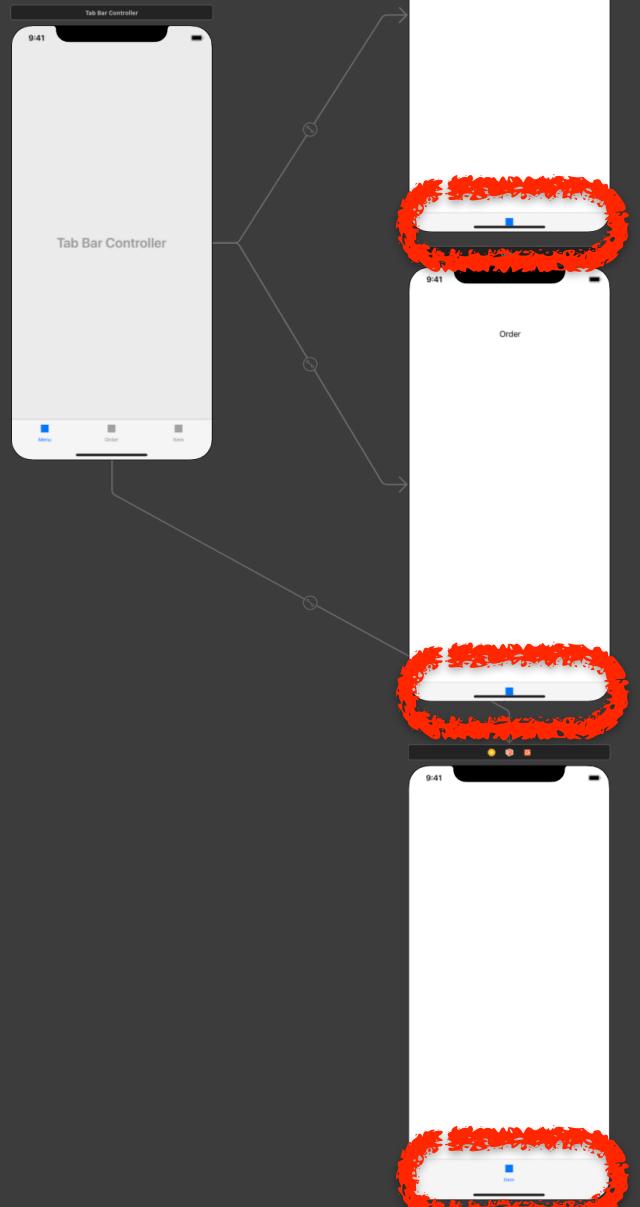
+ -

Key: Enter ⌘ Key
Selector: action

View as: iPhone XR (wC hR) 28% +

A new tab now added to the tab bar controller, with three view controllers.

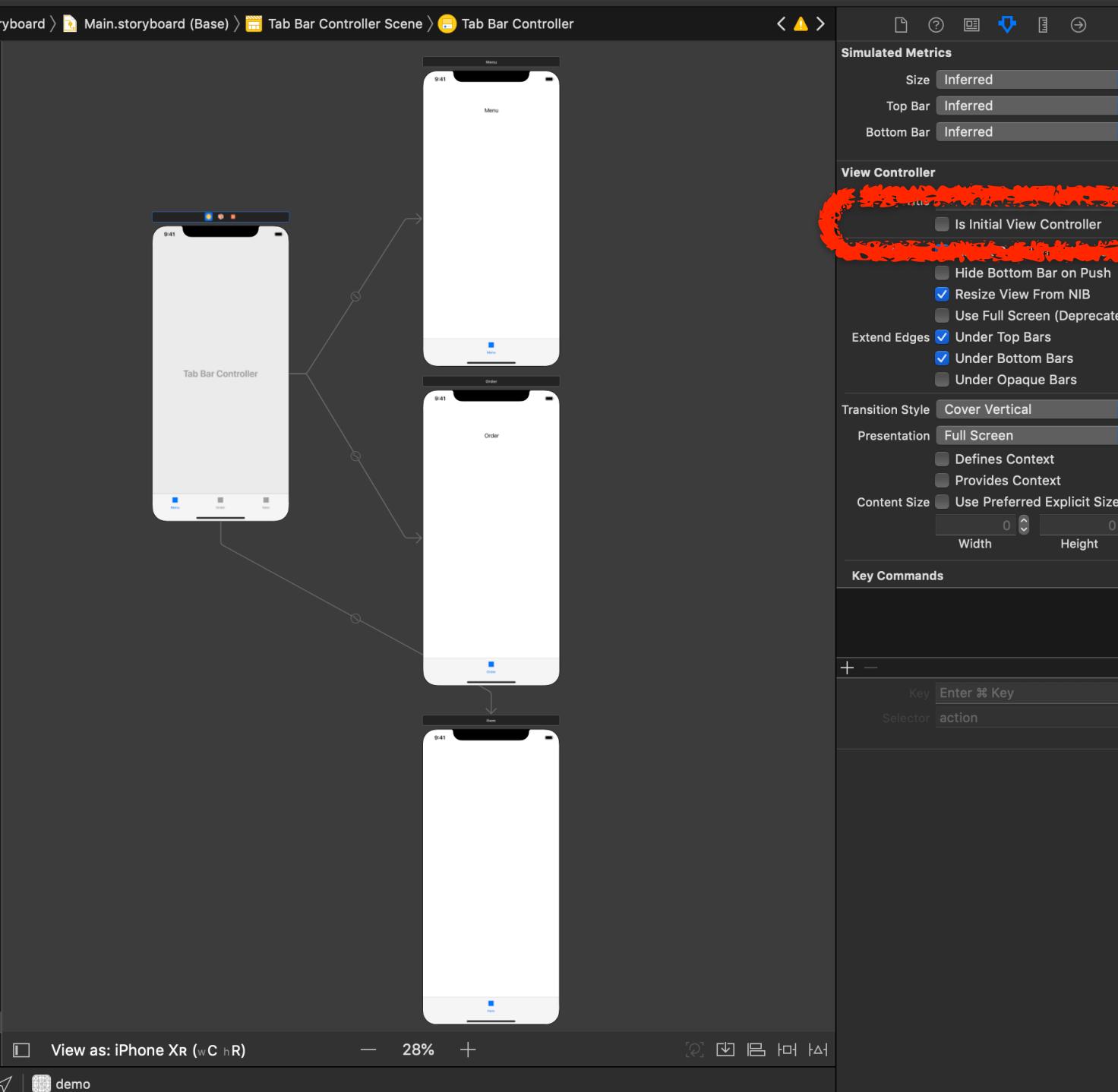
Arrows show which view controllers are linked to the tab bar controller.



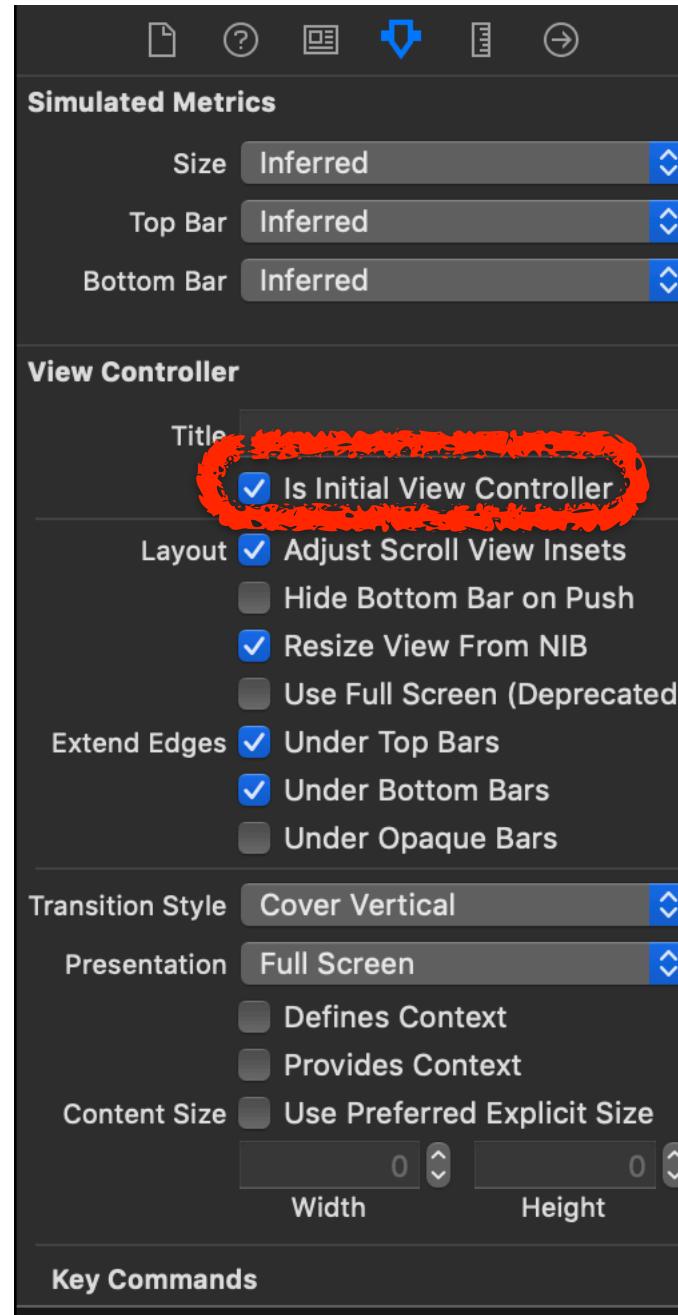
You can select any tab and change their attributes (as you do with labels), e.g. for the tab bar menu, icon, etc.



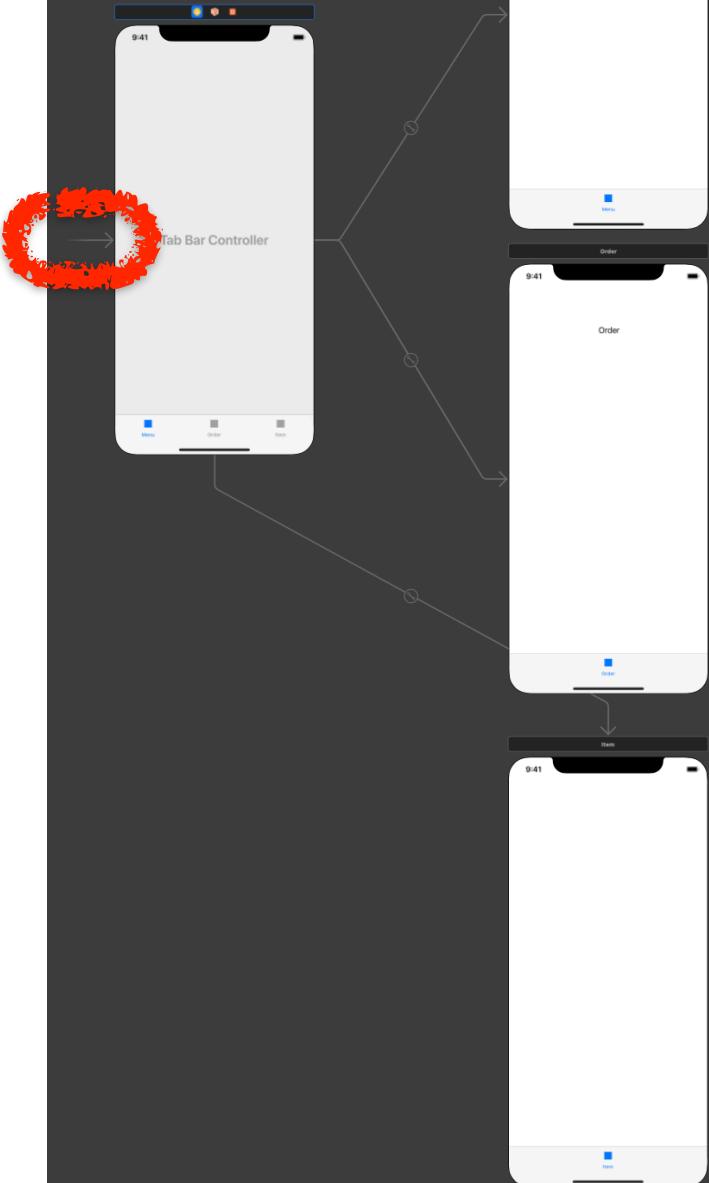
Setting Initial View Controller



Currently the tab bar controller is not part of the app, as it is not linked to any other view controller.



In order to make this the front page of the app, the "Is Initial View Controller" must be checked.



This arrow indicates the front page of the app.

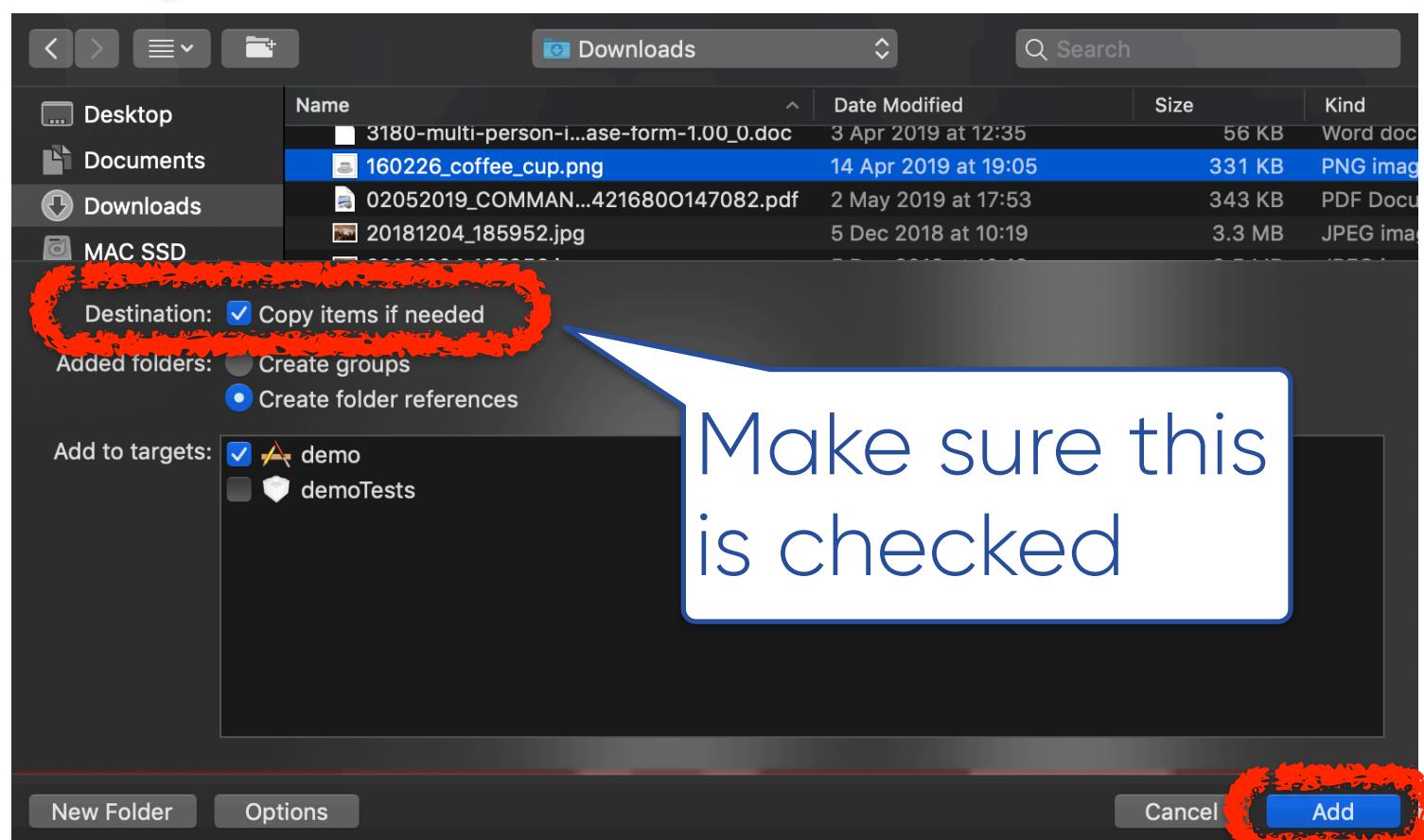
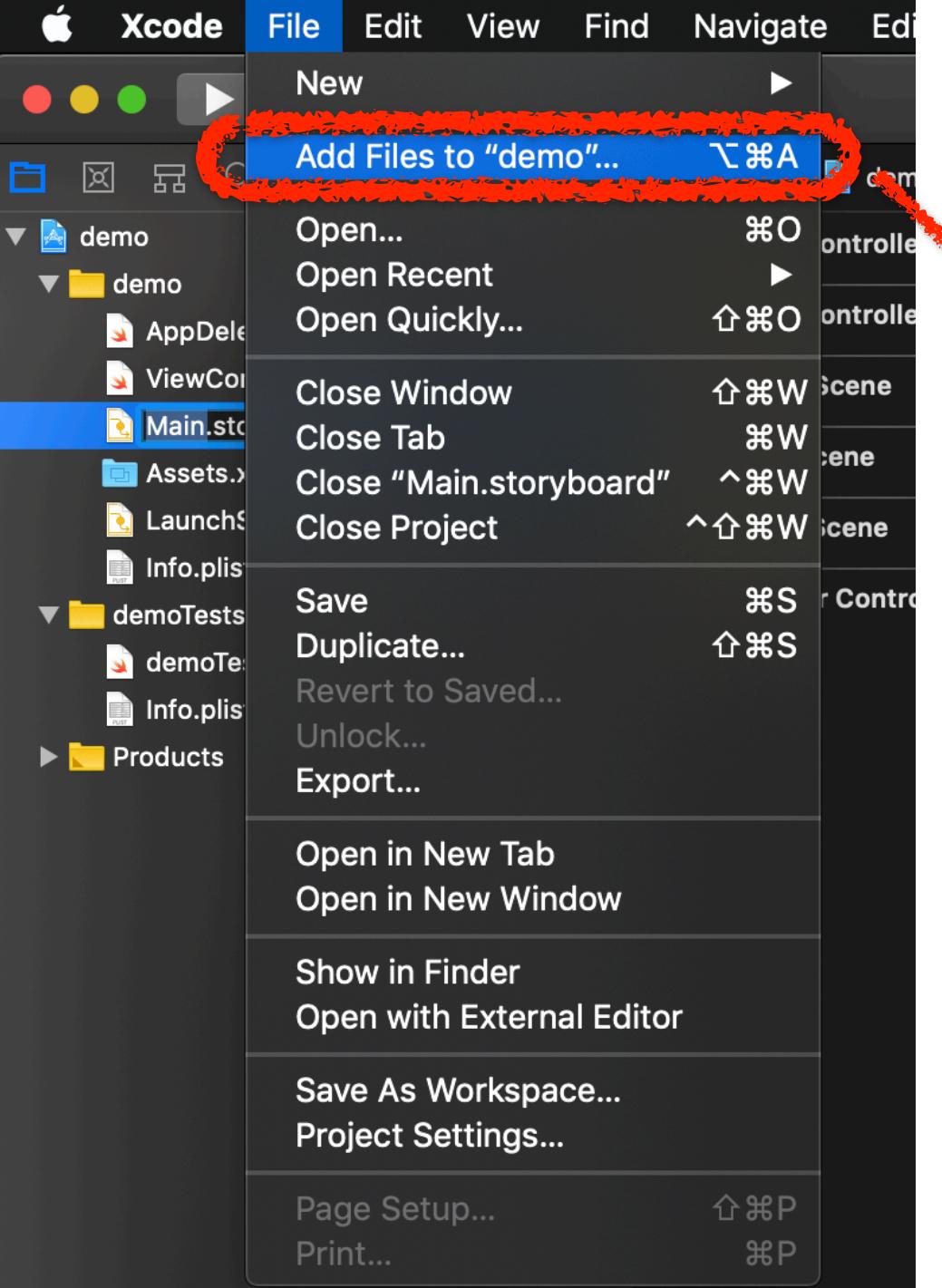


Adding Images

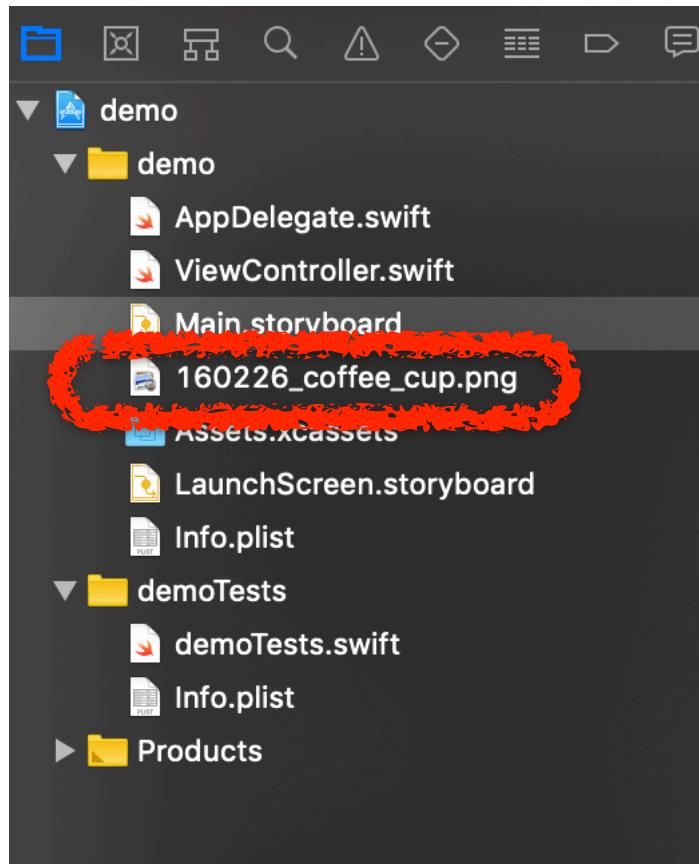


A little tip!

Make sure all images used are all saved in the same project folder.

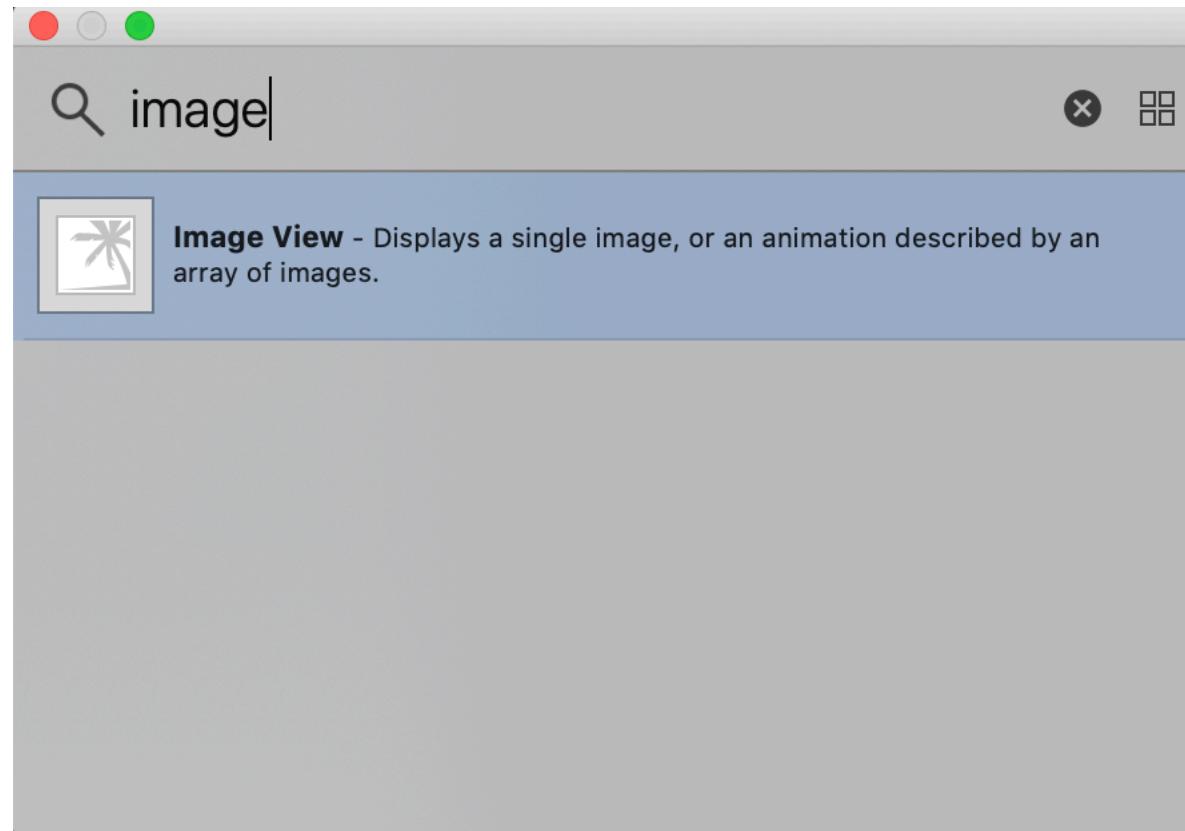


Make sure this
is checked



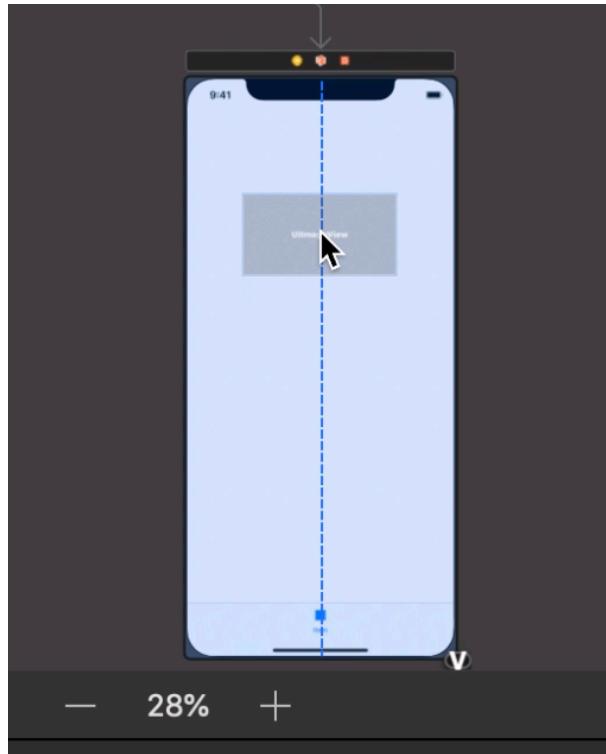
All items added will be shown here.

Object library - Images

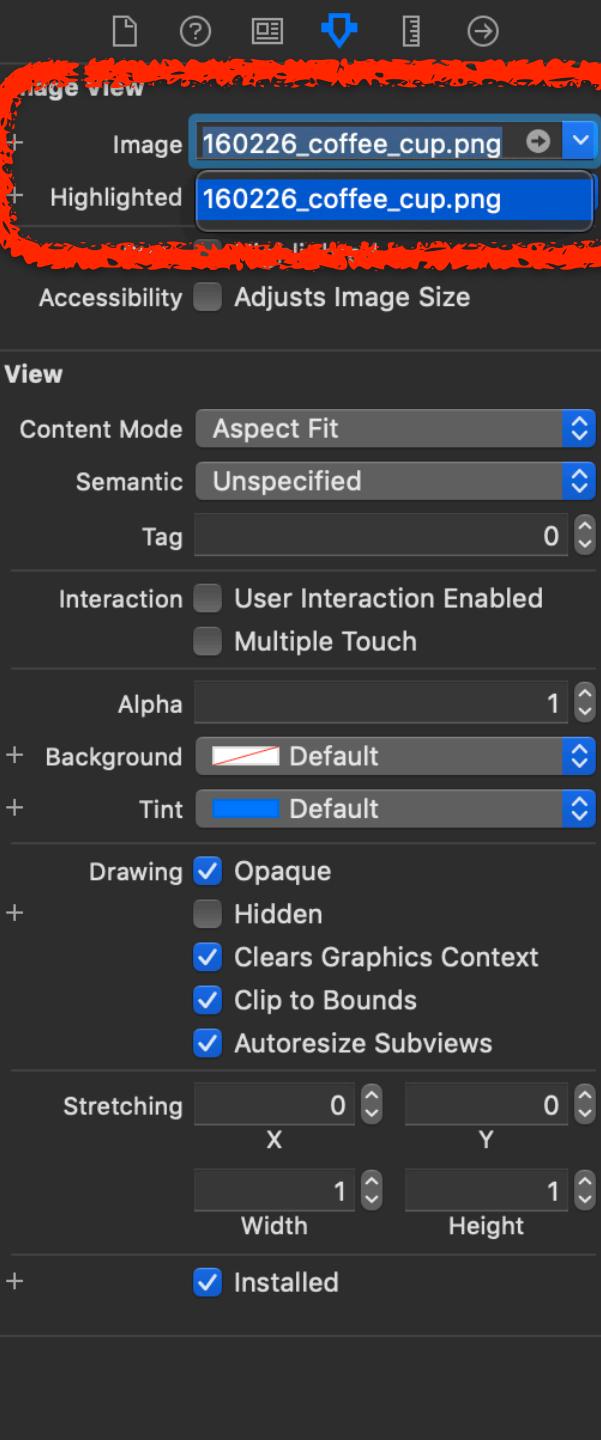


Search for "Image View".

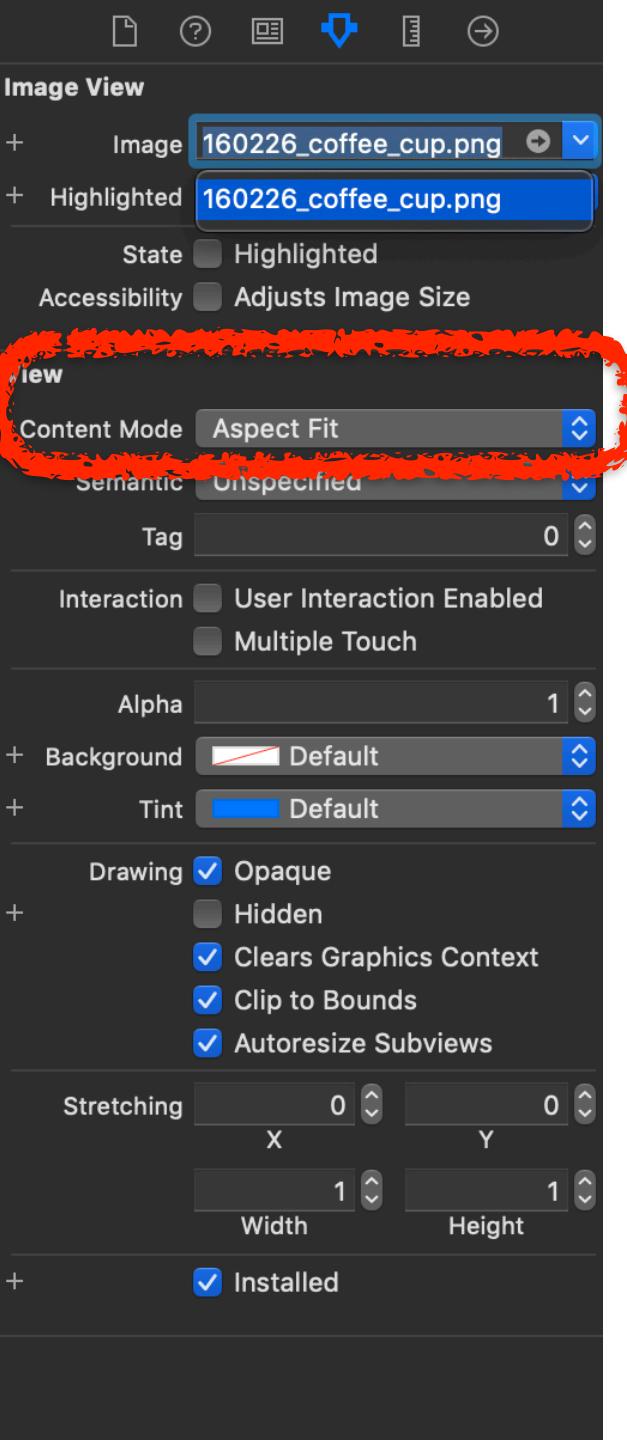
Drag and drop it into the view controller where you would like the image to display.



The lines helps to identify if the image is in the centre or the edge of the screen.



Select the image view, then select the "Attribute" icon, find the image you want to use via the drop down.

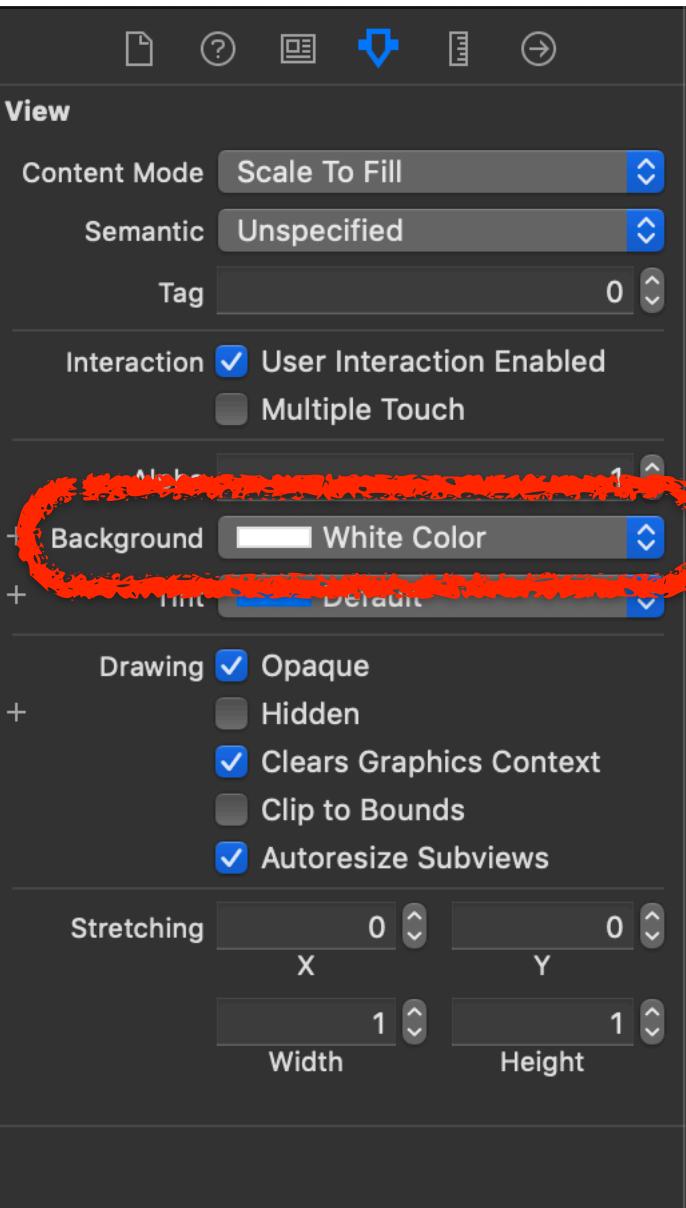


Select the image view, then select the "Attribute" icon, find the image you want to use via the drop down.

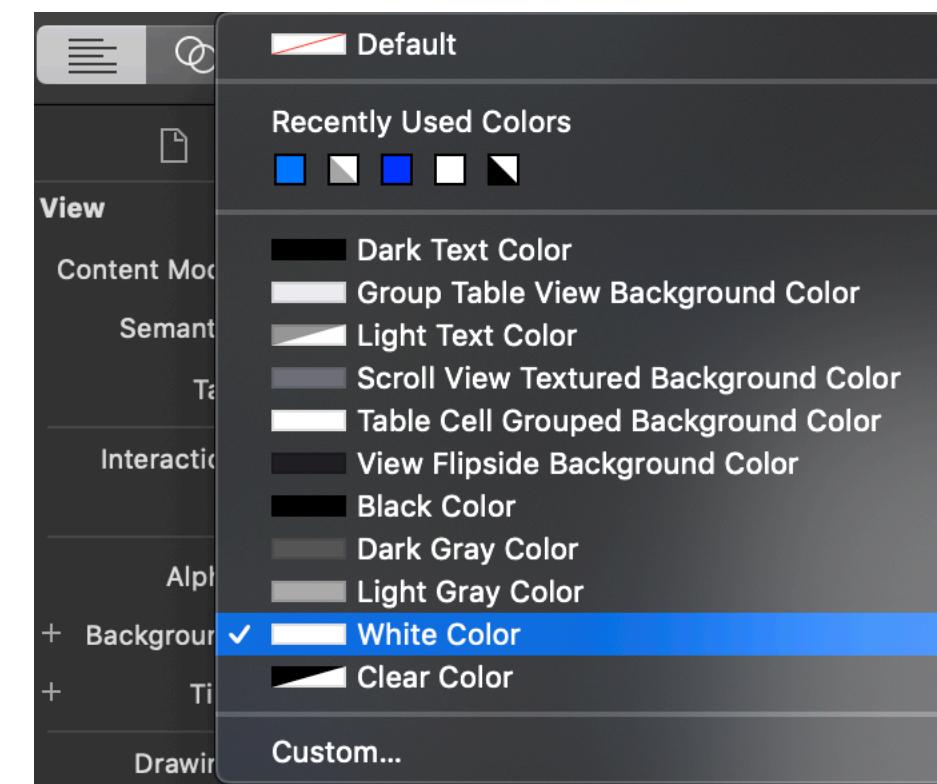
The Content mode gives you options, select "Aspect Fit".

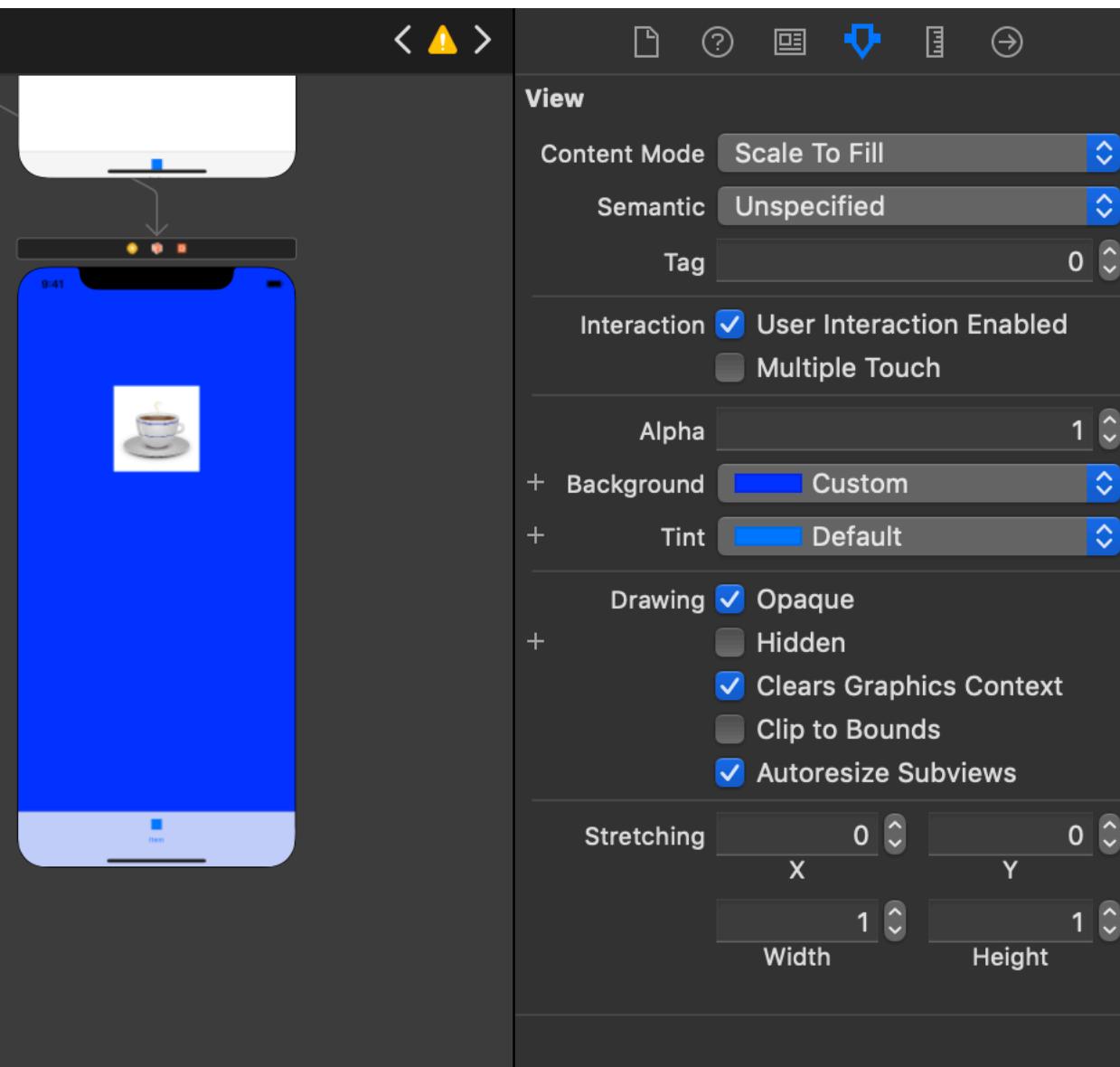
You can play around other options.

Adding background colour to a view controller



Select a view controller, then "Attribute", there are a number of options you can choose from, under "Background", you can select a colour.





All done!

Learning Objectives

- To understand the basics of Xcode
- To build simple app to include:
 - Label
 - Button
 - View Controller
 - Tab bar controller
 - Images (image on screen, or as background)