GENERAL ASSEMBLY

MOBILE DEVELOPMENT

STORYBOARDS

William Martin
Head of Product, Floored

LEARNING OBJECTIVES

- Add multiple View Controllers to storyboard.
- And link them together with Segues.
- Use Navigation Controller to link Scenes (View Controllers) together.

REVIEW YOUR APPS

REVIEW: MOBILE DESIGN PATTERNS

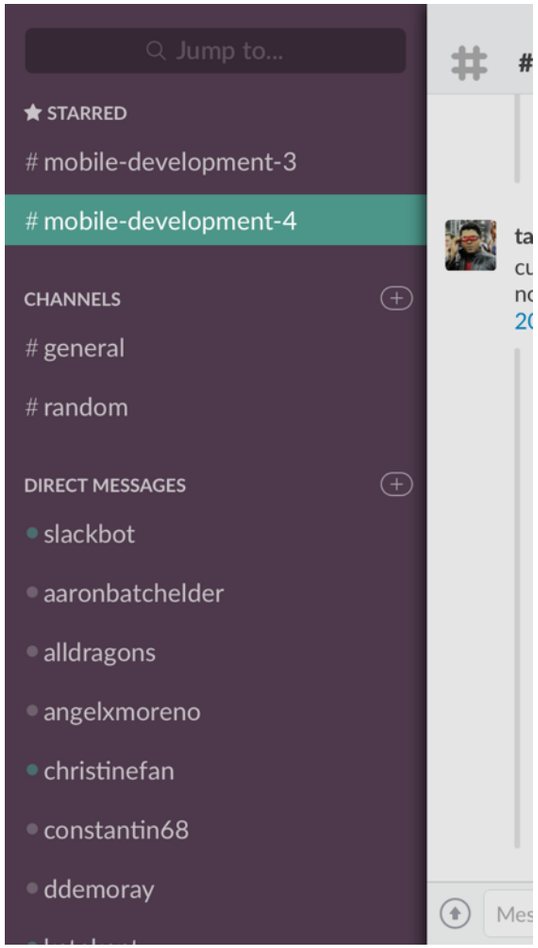
Navigation
Screen-level actions
User onboarding
Lists
Dialog boxes

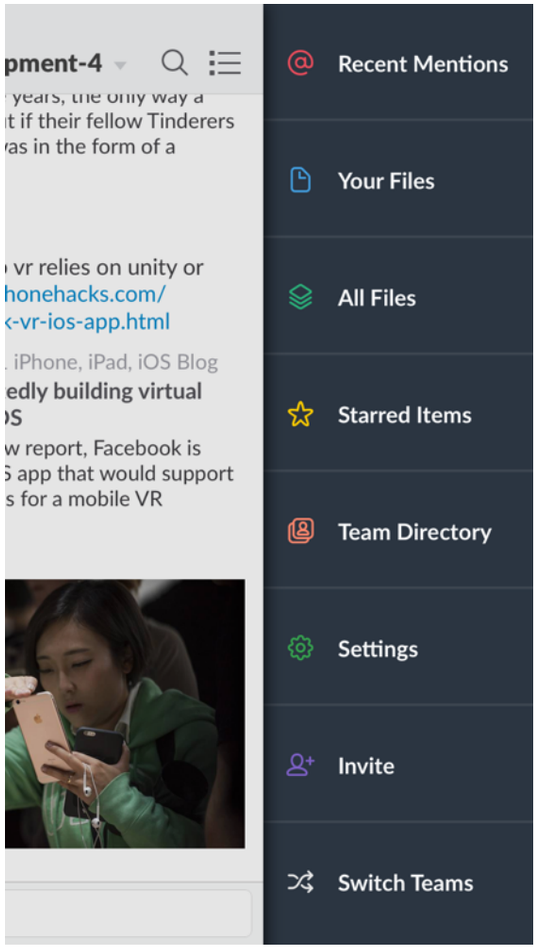
Left/right reveal
Pull-down/pull-up shelves
Master/detail
Swipe-to-reveal
Notifications

MORE MOBILE DESIGN PATTERNS

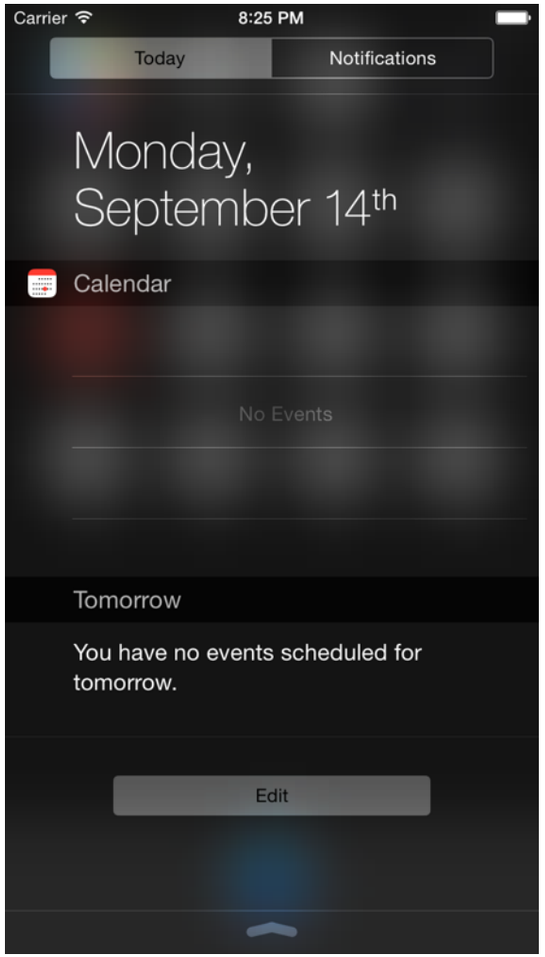
- Left / right reveals
- Pull-down / pull-up shelves
- Master / detail
- Swipe-to-reveal

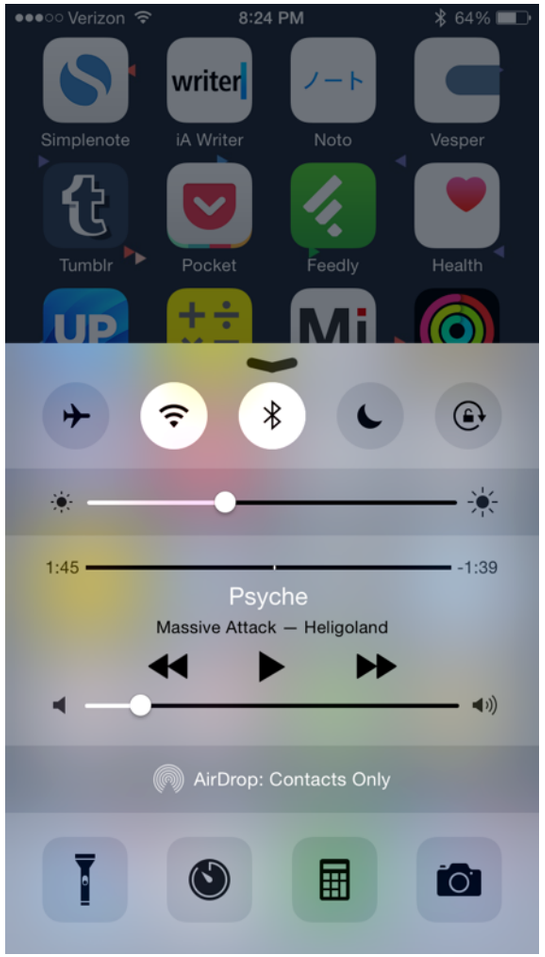
LEFT/RIGHT REVEALS



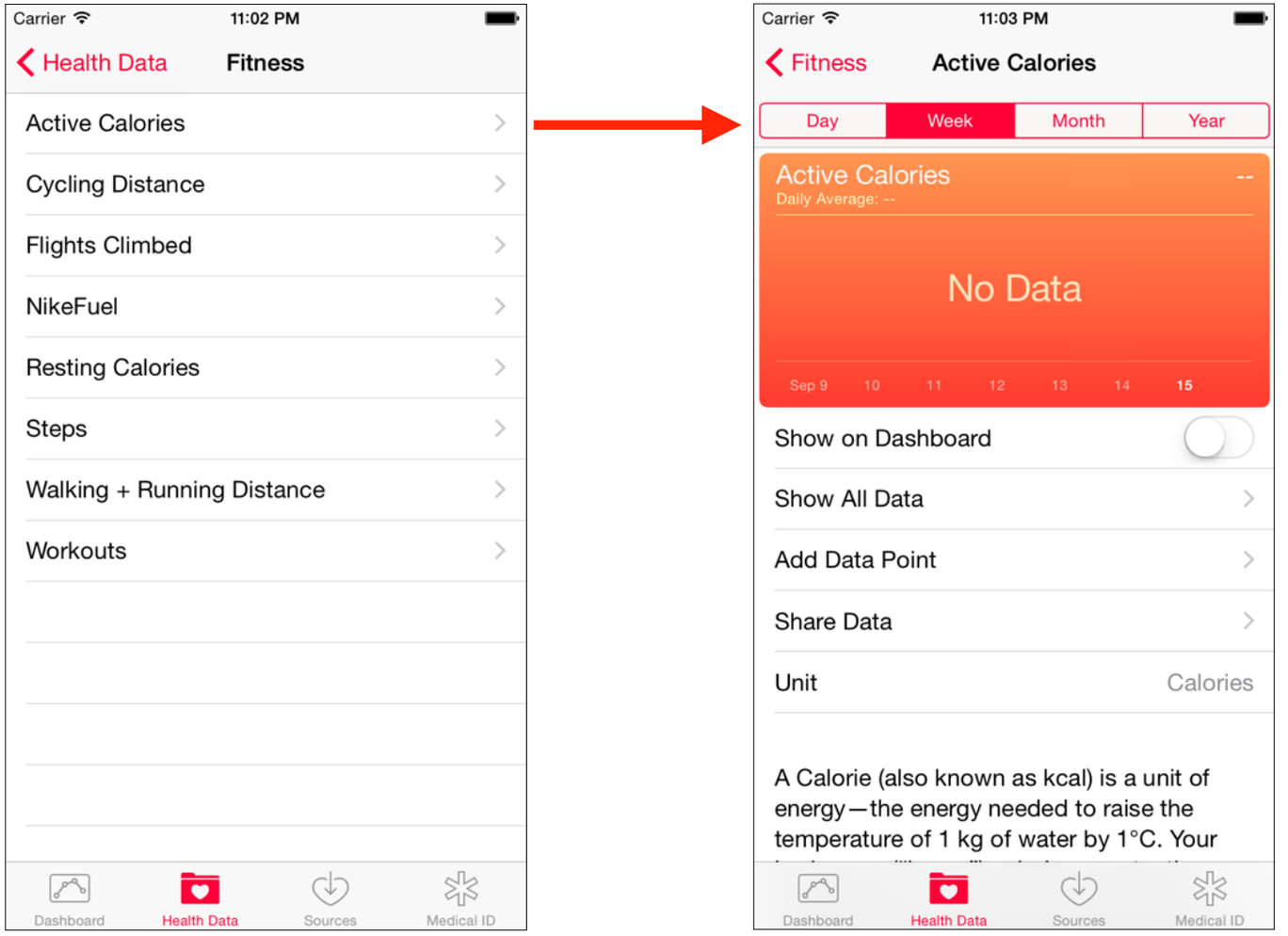


PULL-DOWN / PULL-UP SHELVES

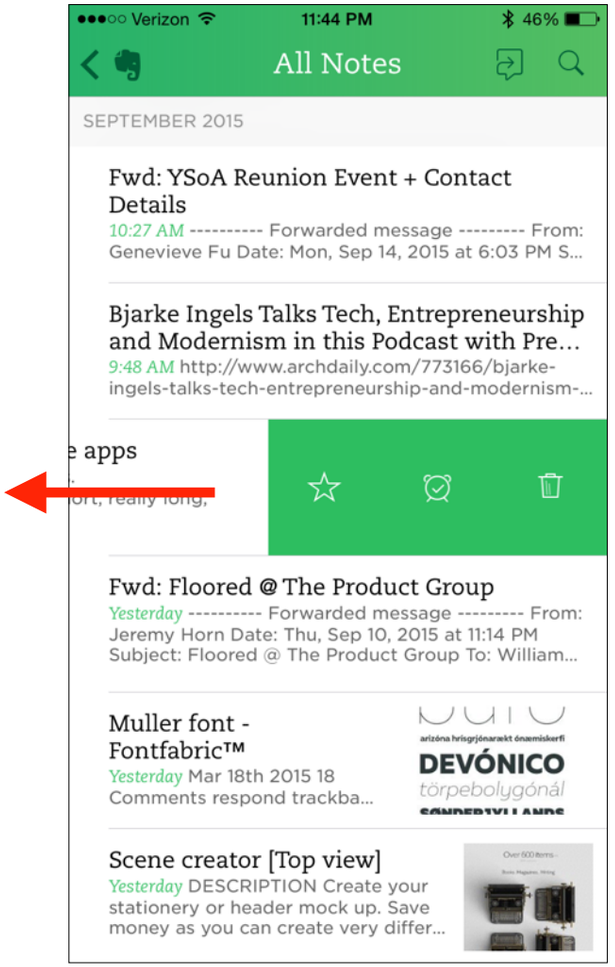




MASTER / DETAIL PATTERNS



SWIPE-TO-REVEAL LIST VIEWS



APPLE HUMAN INTERFACE GUIDELINES

https://developer.apple.com/library/ios/documentation/UserExperience/Conceptual/MobileHIG/

Designing for iOS

iOS embodies the following themes:

- **Deference.** The UI helps people understand and interact with the content, but never competes with it.
- **Clarity.** Text is legible at every size, icons are precise and lucid, adornments are subtle and appropriate, and a sharpened focus on functionality motivates the design.
- **Depth.** Visual layers and realistic motion impart vitality and heighten people's delight and understanding.

ACTIVITY

EXERCISE

KEY OBJECTIVE(S)

Identify mobile patterns in apps you use every day.

TIMING

10 min	1. Identify one of each of the mobile patterns discussed in the PDF or in class.
5 min	2. Debrief

DELIVERABLE

- Screenshot of each mobile pattern.

WHAT ARE STORYBOARDS?

WHAT IS COCOA TOUCH?

- Cocoa Touch contains key “frameworks” for building iOS apps. These frameworks are pre-built mechanisms for the appearance and behavior of iPhone apps.
- They also provide the basic app infrastructure and support for key technologies such as multitasking, touch-based input, push notifications, and many system services.
- When designing your apps, you should investigate the technologies here first to see if they meet your needs.
- From the Apple docs here.

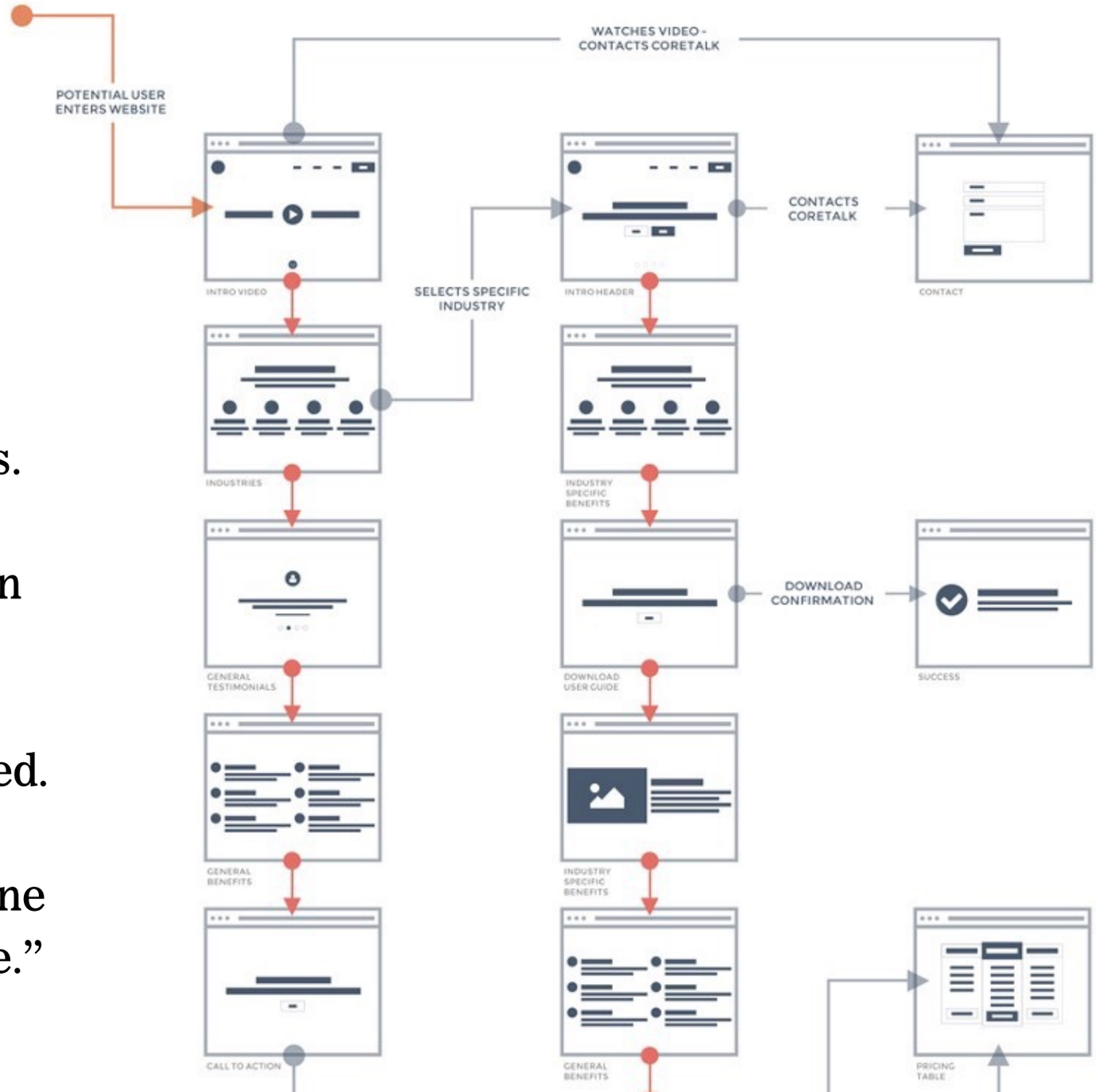
STORYBOARDS

WEBSITE SITEMAPS

Web and UX designers draw sitemap flows that show the structure of a site and describe the “flow” between pages.

Storyboards are like this. They show an app’s screens (here called “Scenes”, each of which correlates to a View Controller), and how they are connected.

Each line of flow (or transition) from one Scene to the another is called a “Segue.”



WHAT ARE STORYBOARDS?

- A Storyboard is a mechanism that enables you to compose
  - multiple Scenes,
  - the transitions between them, and
  - their respective Views
- in a single place.

WHAT ARE STORYBOARDS?

Storyboards can serve as the scaffolding for the various screens of an app.

By themselves, they can be deployed as a way to prototype apps without code.

Unlike sitemaps, however, Storyboards aren’t passive descriptions, they are active documents that we can use to author a significant part of our apps.

WHAT ARE STORYBOARDS?

Storyboards are made of:

1. Views
2. View Controllers
3. Navigation Controllers
4. Segues

MORE ON VIEWS

- A View is a UI element, typically rectangular, drawn at some location (or “position”) with a size.
- Views can “contain” other views (i.e. “subviews”).
- Most views have some level of interactivity (e.g. scrolling, detecting taps or other gestures, etc.).
- You can also develop your own Views.

View Controller - A controller that supports the fundamental view-management model in iOS.

Navigation Controller - A controller that manages navigation through a hierarchy of views.

Table View Controller - A controller that manages a table view.

Tab Bar Controller - A controller that manages a set of view controllers that represent tab bar items.

Split View Controller - A composite view controller that manages left and right view controllers.

Page View Controller - Presents a sequence of view controllers as pages.

GLKit View Controller - A controller that manages a GLKit view.

Object - Provides a template for objects and controllers not directly available in Interface Builder.

Collection View Controller - A controller that manages a collection view.

AVKit Player View Controller - A view controller that manages a AVPlayer object.

Label **Label** - A variably sized amount of static text.

Button **Button** - Intercepts touch events and sends an action message to a target object when it's tapped.

1 2 **Segmented Control** - Displays multiple segments, each of which functions as a discrete button.

Text **Text Field** - Displays editable text and sends an action message to a target object when Return is tapped.

Slider - Displays a continuous range of values and allows the selection of a single value.

Switch - Displays an element showing the boolean state of a value. Allows tapping the control to toggle the value.

Activity Indicator View - Provides feedback on the progress of a task or process of unknown duration.

Progress View - Depicts the progress of a task over time.

Page Control - Displays a dot for each open page in an application and supports sequential navigation through the pages.

Stepper - Provides a user interface for incrementing or decrementing a value.

Table View - Displays data in a list of plain, sectioned, or grouped rows.

Table View Cell - Defines the attributes and behavior of cells (rows) in a table view.

Image View - Displays a single image, or an animation described by an array of images.

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Date Picker - Displays multiple rotating wheels to allow users to select dates and times.

Picker View - Displays a spinning-wheel or slot-machine motif of values.

Visual Effect View **Visual Effect View with Blur** - Provides a blur effect

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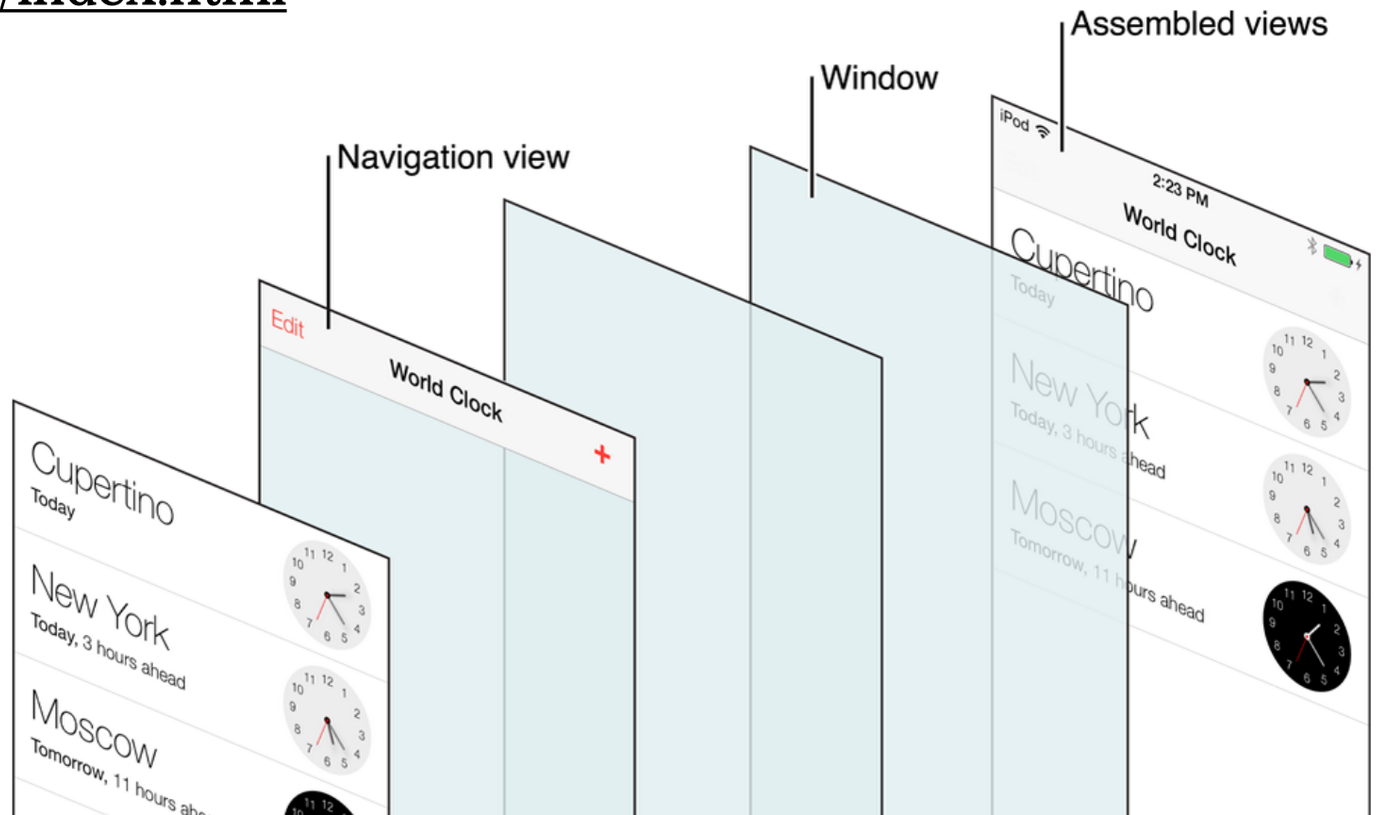
MORE ON VIEWS

UIKit User Interface Catalog

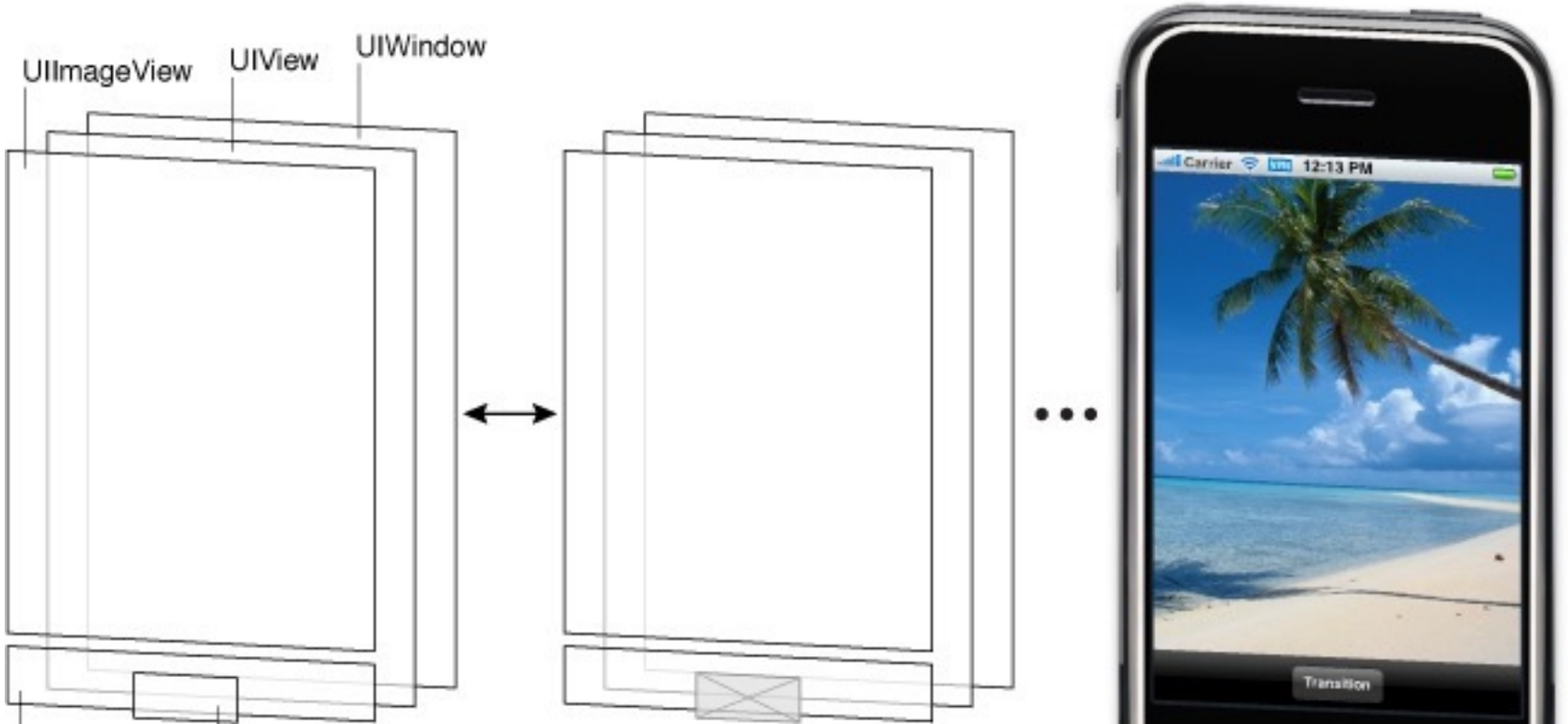
https://developer.apple.com/library/ios/documentation/UserExperience/Conceptual/UIKitUICatalog/index.html



MORE ON VIEWS

View Programming Guide for iOS

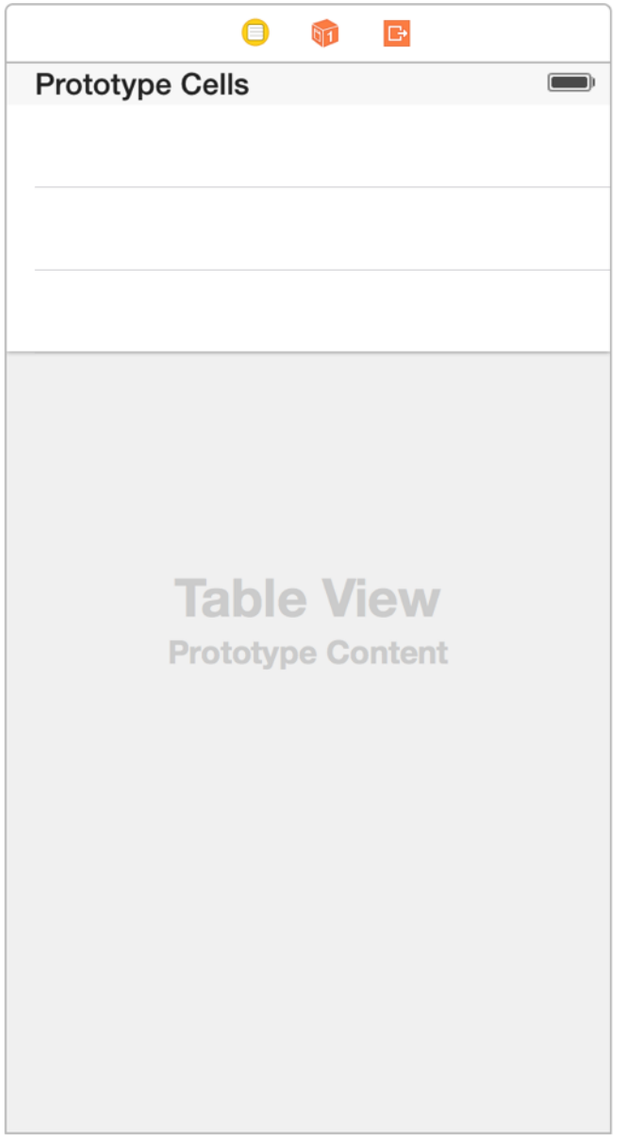
https://developer.apple.com/library/ios/documentation/WindowsViews/Conceptual/ViewPG_iPhoneOS/Introduction/Introduction.html



VIEW CONTROLLERS

- Each screen of our app is made up of at least one View Controller and at least one View.
- A View Controller typically supports one “Scene,” or a single UI screen.
- A View Controller “manages” a set of Views.

VIEW CONTROLLERS



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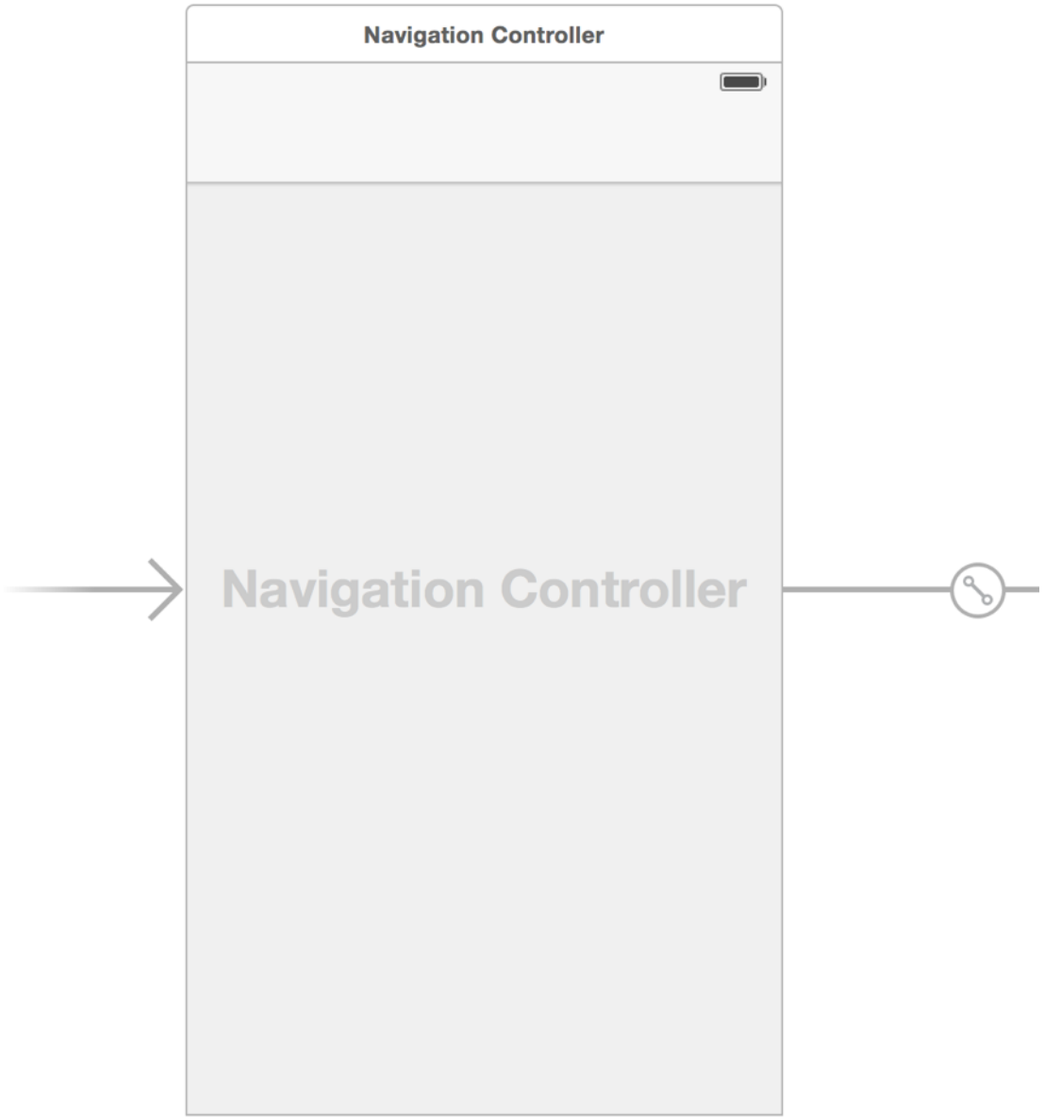
NAVIGATION CONTROLLERS

- Navigation Controllers manage several View Controllers.
- One View Controller is “presented” to the user at a time.
- They organize the View Controllers in a browser-history-like fashion (think forward and back buttons).
- By default, they place Navigation Bars on all the View Controllers they manage.

NAVIGATION CONTROLLERS



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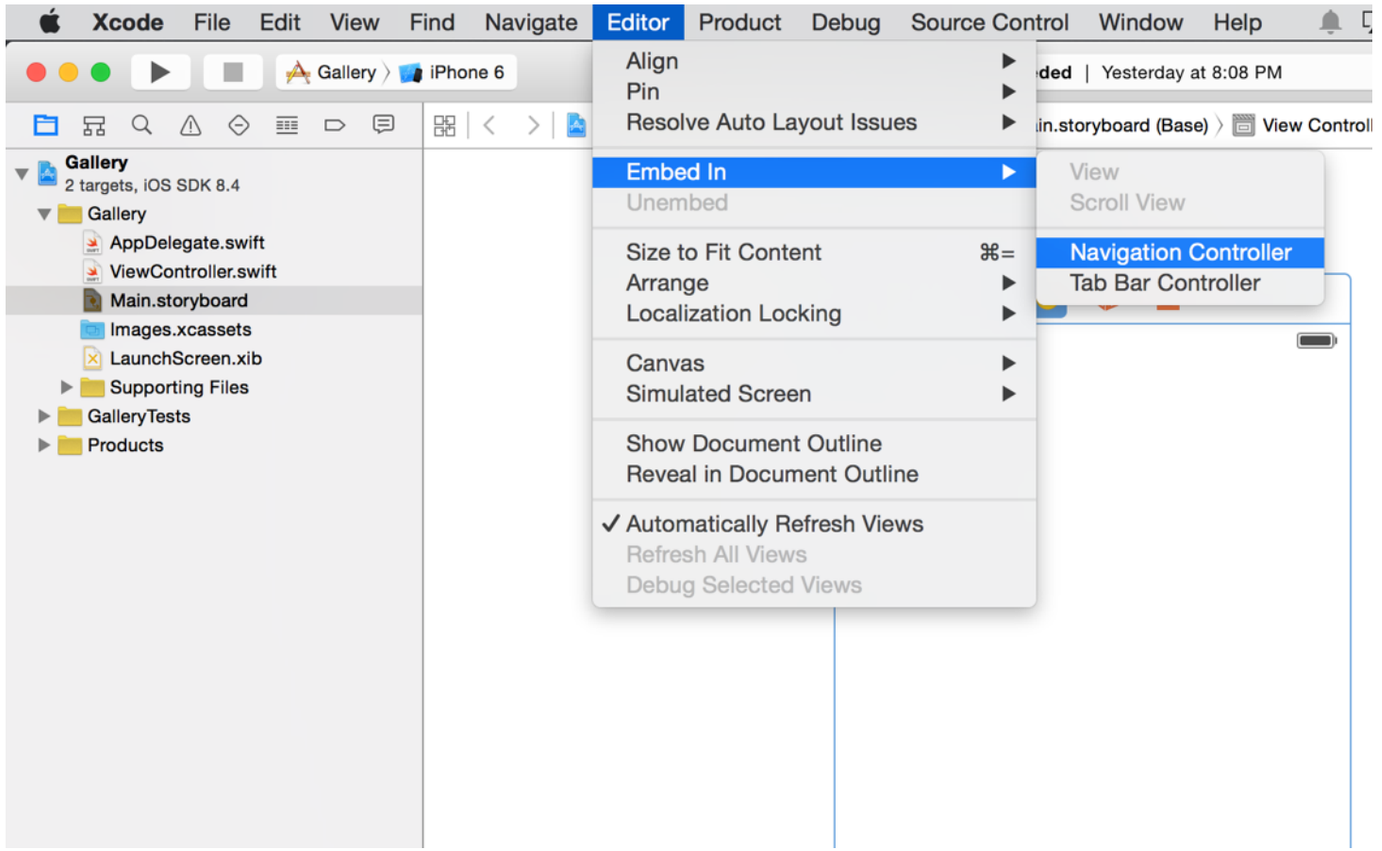


NAVIGATION CONTROLLERS

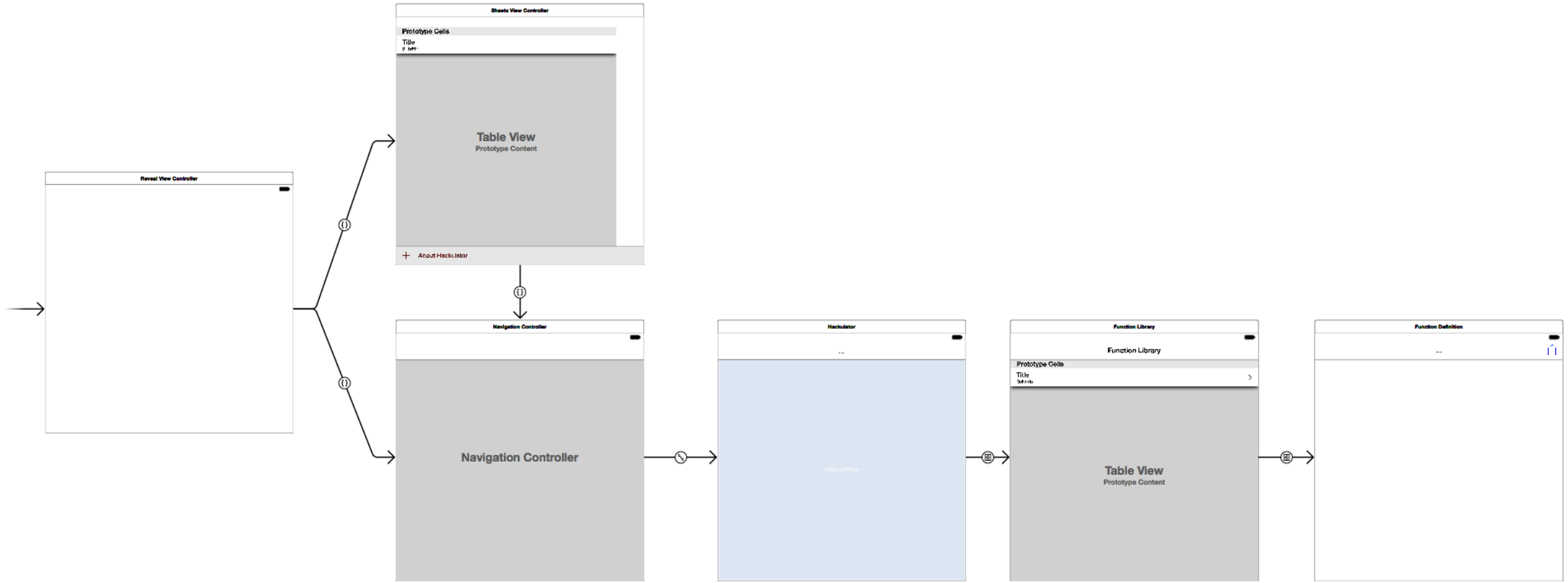
Some terms:

- “Initial View Controller” – The View Controller the app will load when an app is launched.
- “Root View Controller” – The View Controller that a Navigation Controller will first load when it is created.

BACK TO STORYBOARDS...

- Navigation Controllers enable us to link multiple Scenes (View Controllers) together with a very typical mobile navigation paradigm.
- They represent transitions between many Scenes. These transitions are encoded by “Segues”.

HACKULATOR'S STORYBOARD



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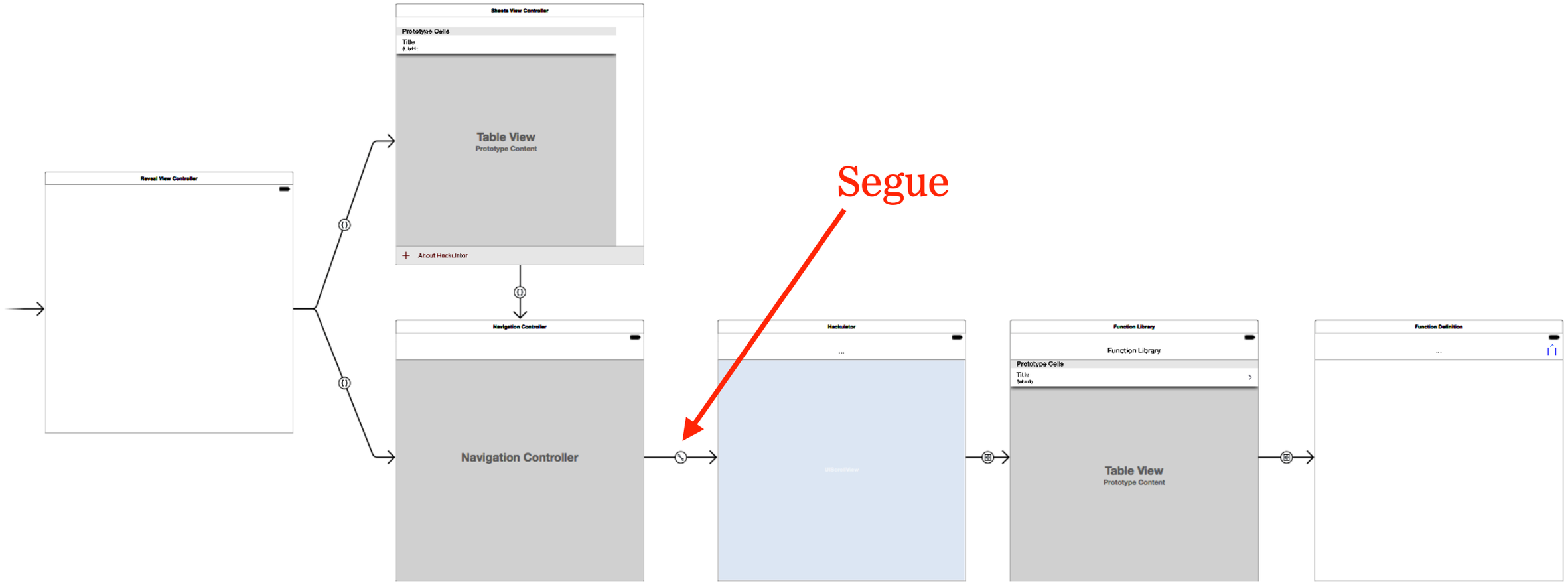


SEGUES

- A “Segue” is essentially a transition between two View Controllers.
- In code, we can use them to transfer information from one View Controller to another, like going from a list of emails to a single view of just one email.
- There are several types…

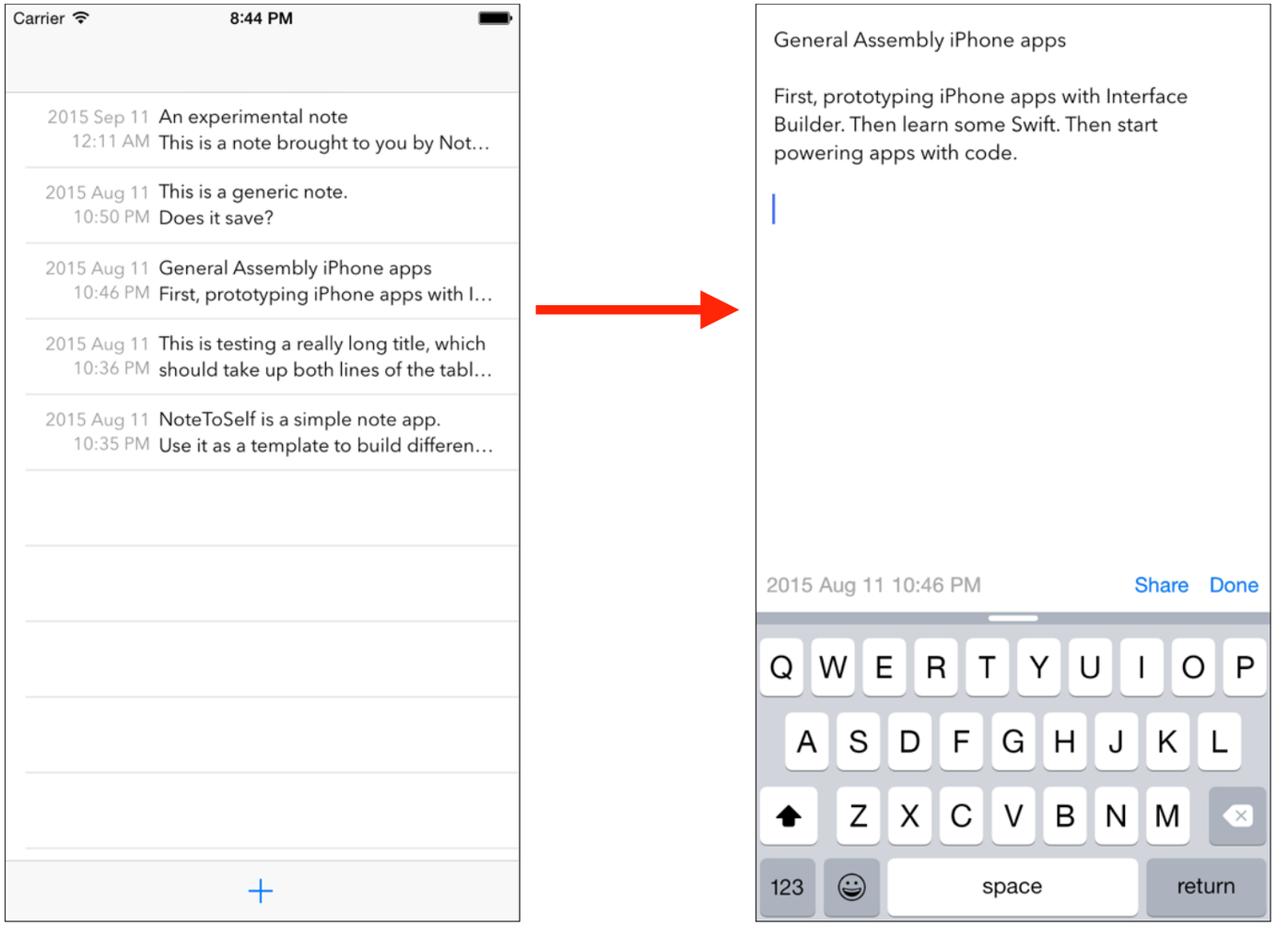
Name	Interface Builder Symbol	Description
Show		Present the content in the detail or master area depending on the content of the screen. If the app is displaying a master and detail view, the content is pushed onto the detail area. If the app is only displaying the master or the detail, the content is pushed on top of the current view controller stack.
Show Detail		Present the content in the detail area. If the app is displaying a master and detail view, the new content replaces the current detail. If the app is only displaying the master or the detail, the content replaces the top of the current view controller stack.
Present Modally		Present the content modally. There are options to choose a presentation style (`UIModalPresentationStyle`) and a transition style (`UIModalTransitionStyle`).
Present as Popover		Present the content as a popover anchored to an existing view. There is an option to specify the possible directions of the arrow shown on one edge of the popover view (`UIPopoverArrowDirection`). There is also an option to specify the anchor view.
Custom		A custom segue enabling you to write your own behaviors.
Push (Deprecated)		Present the content by pushing it onto the current stack of view controllers.
Modal (Deprecated)		Present the content modally on top of the existing screen. The options are the same as Present Modally.
Popover (Deprecated)		Present the content as a popover. The options are the same as Present as Popover.

USER FLOW

- Storyboards can reflect the structure of an app's user interface very well.
- Consider different ways of structuring a notes app.

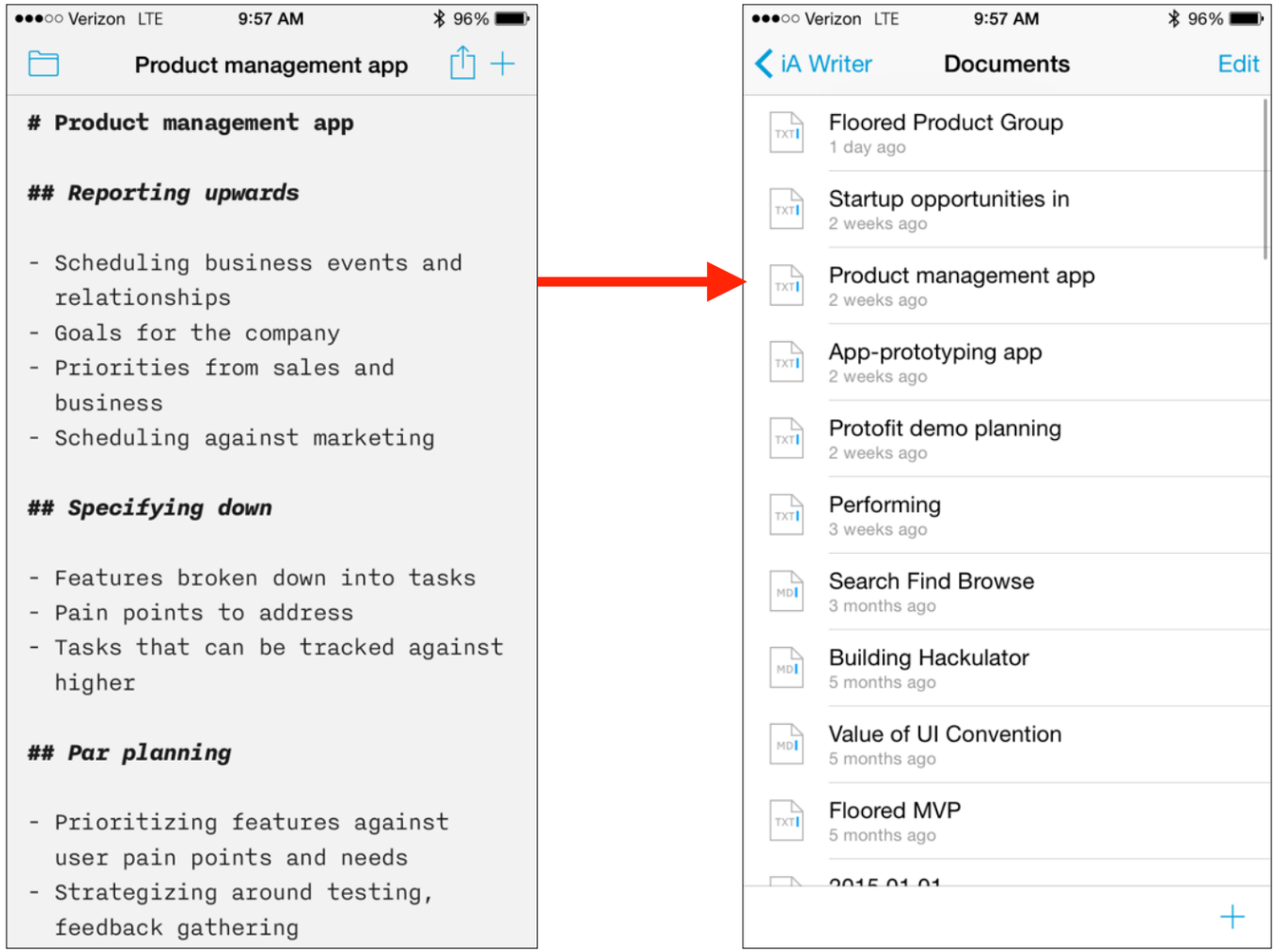
USER FLOW

- Master / Detail



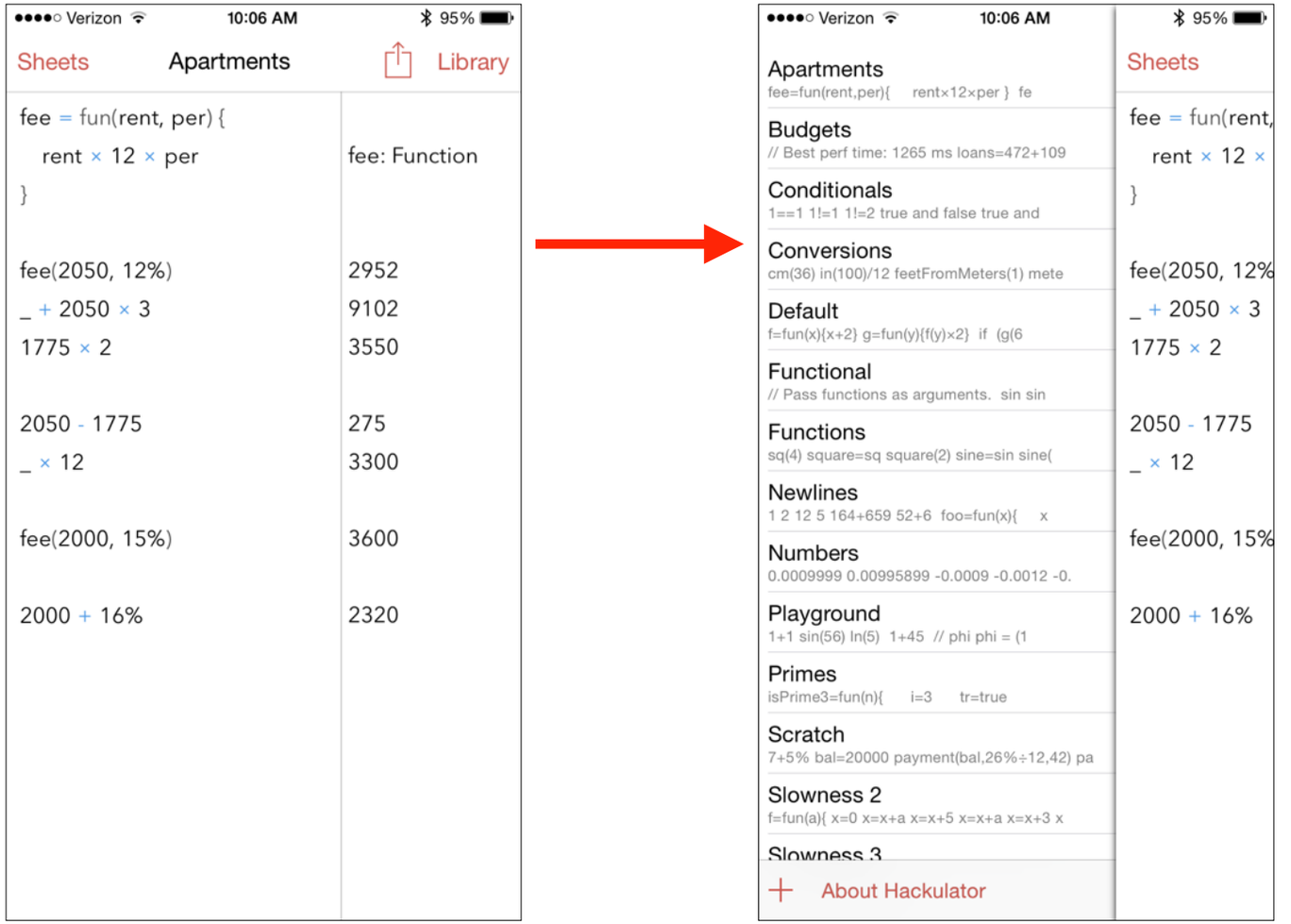
USER FLOW

- Focus / List



USER FLOW

- Focus / Reveal



CREATING STORYBOARDS

DOG CATALOG APP

STORYBOARDS

EXERCISE

KEY OBJECTIVE(S)

Add Scenes to a Storyboard.

TIMING

25 min	1. Add two more View Controllers to the Dog Catalog app.
5 min	2. Debrief

DELIVERABLE

- Add UI elements.
- Link scenes together using Segues.

Q&A