What's New in Storyboards

Mapping the flow of your app

Session 215

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What’s New

Organizing Your Storyboards
Customizing Standard Segues
Unwind Segues and Custom Containers
Organizing Your Storyboards
Navigation Controller contains Collection View Controller shows Photo View Controller
Main Storyboard

Scenes

Navigation Controller

Collection View Controller

Photo View Controller

Interface Builder Core Concepts
Main Storyboard

Relationship Segue

Navigation Controller ➔ Collection View Controller ➔ Photo View Controller

interface builder core concepts
wwdc 2013
Main Storyboard

Triggered Segue

Navigation Controller <- root -> Collection View Controller <- shows -> Photo View Controller

Interface Builder Core Concepts  WWDC 2013
Main.storyboard

showPic

collectionVC

photoController
UIStoryboard(name: "Secondary")
UIStoryboard(name: "Secondary")
    .instantstantiateViewControllerWithIdentifier("tabController")
Storyboard References

Stands in for another scene
Can be destination of Relationship or Triggered Segue
Reference can be in same storyboard or another storyboard
Demo
Using storyboard references
Customizing Standard Segues
Table View Controller
Table View
Controller

present
modally

Table View Controller

Table View
Controller

present
modally

Table View
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Table View Controller

present modally

Navigation Controller

- Title: Picnic
- Date: May 16, 2015
- Location: San Diego, CA
- Image: None
- Notes: None
Table View Controller
<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 16, 2015</td>
<td>Picnic</td>
<td>San Diego, CA</td>
</tr>
<tr>
<td>May 14, 2015</td>
<td>Museum</td>
<td>Los Angeles, CA</td>
</tr>
<tr>
<td>May 11, 2015</td>
<td>Sunset</td>
<td>Los Angeles, CA</td>
</tr>
<tr>
<td>May 10, 2015</td>
<td>Scenic Driving</td>
<td>Santa Barbara, CA</td>
</tr>
<tr>
<td>May 10, 2015</td>
<td>Scenic Driving</td>
<td>Santa Barbara, CA</td>
</tr>
<tr>
<td>May 10, 2015</td>
<td>Scenic Driving</td>
<td>Santa Barbara, CA</td>
</tr>
</tbody>
</table>
Table View Controller

present modally
Table View Controller ➔ Navigation Controller
class MySegue: UIStoryboardSegue {

    override func perform() -> () {

        setUpAnimation()

        sourceViewController.presentViewController("")
    }
}
Segue Subclassing

Can specify a **UISStoryboardSegue** subclass for any triggered or unwind segue

Override `perform()`

Call `super.perform()` for standard behavior

Present Modally and Popover Presentation segues retained throughout presentation
Segue Subclassing
Customizing presentation animations
Segue Subclassing
Customizing presentation animations

User triggers segue
Segue Subclassing

Customizing presentation animations

User triggers segue
  • Assign transitioning delegate
Segue Subclassing

Customizing presentation animations

User triggers segue
- Assign transitioning delegate
- Call `super.perform()` to start modal presentation
Segue Subclassing

Customizing presentation animations

User triggers segue
  • Assign transitioning delegate
  • Call `super.perform()` to start modal presentation
  • Vend animation controller for presentation
Segue Subclassing

Customizing presentation animations

User triggers segue

• Assign transitioning delegate

• Call `super.perform()` to start modal presentation

• Vend animation controller for presentation

• Animate appearance of view controller

Custom Transitions Using View Controllers
Segue Subclassing

Customizing presentation animations

Custom Transitions Using View Controllers

WWDC 2013
Segue Subclassing

Customizing presentation animations

User dismisses presentation

Segue

Destination View Controller

Transitioning Delegate

Custom Transitions Using View Controllers

WWDC 2013
Segue Subclassing

Customizing presentation animations

User dismisses presentation

• Vend animation controller for dismissal
Segue Subclassing

Customizing presentation animations

User dismisses presentation

- Vend animation controller for dismissal
- Animate dismissal of view controller
Getting Started with Multitasking on iPad in iOS 9
Segue Subclassing
Customizing adaptive presentations
Segue Subclassing
Customizing adaptive presentations

User triggers segue
Segue Subclassing

Customizing adaptive presentations

User triggers segue

- Assign delegate to presentation controller
Segue Subclassing
Customizing adaptive presentations

User triggers segue
• Assign delegate to presentation controller
• Call `super.perform()` to perform modal presentation
Segue Subclassing
Customizing adaptive presentations

User triggers segue
• Assign delegate to presentation controller
• Call `super.perform()` to perform modal presentation

Size class changes
Segue Subclassing
Customizing adaptive presentations

User triggers segue
• Assign delegate to presentation controller
• Call `super.perform()` to perform modal presentation

Size class changes
• Presentation controller informs delegate
Segue Subclassing
Customizing adaptive presentations

User triggers segue
• Assign delegate to presentation controller
• Call `super.perform()` to perform modal presentation

Size class changes
• Presentation controller informs delegate
• Delegate vends new view controller

View Controller Advancements in iOS 8
WWDC 2013
Demo
Customizing standard segues
Unwind Segues and Custom Containers
“Take me home”
"Take me home"

1. Identify destination
1. Identify destination

2. Find destination

“Take me home”
1. Identify destination

2. Find destination

3. Follow route

“Take me home”
Unwind Segues
Unwind Segues

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller
Unwind Segues

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photos Collection View Controller
Unwind Segues

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller
Unwind Segues

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller
Unwind Segues

Custom Tab View Controller

Journal Navigation Controller → Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller → Photo View Controller

Photo Navigation Controller

Photo View Controller
Unwind Segues

"Go back to the journal"
Unwind Segues

- Custom Tab View Controller
  - Journal Navigation Controller
    - Journal Table View Controller
  - Photo Navigation Controller
    - Photos Collection View Controller
    - Photo View Controller
Unwind Segues

Custom Tab View Controller

Journal Navigation Controller

Photo Navigation Controller

Journal Table View Controller

Photos Collection View Controller

Photo View Controller
performSelectorWithIdentifier("goBackToJournal", sender:…)

Unwind Segues

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller
Unwind Segues

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller
Unwind Segues
Identify the destination

Custom Tab View Controller

- Journal Navigation Controller
  - Journal Table View Controller
- Photo Navigation Controller
  - Photos Collection View Controller
  - Photo View Controller

Phone App Interface:
- Schedule
- Journal
- Map
- Photos
  - May 14, 2015
Unwind Segues
Identify the destination

Custom Tab View Controller
- Journal Navigation Controller
  - Journal Table View Controller
- Photo Navigation Controller
  - Photos Collection View Controller
  - Photo View Controller
Unwind Segues
Identify the destination

- Custom Tab View Controller
  - Journal Navigation Controller
    - Journal Table View Controller
  - Photo Navigation Controller
    - Photos Collection View Controller
    - Photo View Controller
Unwind Segues
Identify the destination

```swift
@IBAction func iAmTheJournal(_: UIStoryboardSegue) -> () {
    // empty
}
```
Unwind Segues
Identify the destination

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller
Unwind Segues
Find the destination

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller
Unwind Segues

Find the destination

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller
Unwind Segues

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller
Unwind Segues

viewControllerForUnwindSegueAction("iAmTheJournal:", withSender:...)
Unwind Segues

**override** allowedChildViewControllersForUnwindingFromSource(_:)

![Diagram of unwind segues with Custom Tab View Controller, Journal Navigation Controller, Journal Table View Controller, Photo Navigation Controller, Photos Collection View Controller, and Photo View Controller.]
Unwind Segues

childViewControllerContainingSegueSource(_:)
Unwind Segues

childViewControllerContainingSegueSource(_:)

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller
Unwind Segues

childViewControllerContainingSegueSource(_:)

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller
Unwind Segues

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller
Unwind Segues

override allowedChildViewControllersForUnwindingFromSource(::_:)

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller
Unwind Segues

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller
Unwind Segues

canPerformUnwindSegueAction("iAmTheJournal:", fromViewController:…)
Unwind Segues

canPerformUnwindSegueAction("iAmTheJournal:", fromViewController:...)
Unwind Segues

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller
override allowedChildViewControllersForUnwindingFromSource(_:)
Unwind Segues

- Custom Tab View Controller
  - Journal Navigation Controller
    - Journal Table View Controller
  - Photo Navigation Controller
    - Photos Collection View Controller
    - Photo View Controller
Unwind Segues

childViewControllerContainingSegueSource(_:)
Unwind Segues

childViewControllerContainingSegueSource(_:)

- Custom Tab View Controller
  - Journal Navigation Controller
    - Journal Table View Controller
  - Photo Navigation Controller
    - Photos Collection View Controller
    - Photo View Controller
Unwind Segues

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller

Journal Table View Controller

Journal Navigation Controller

Custom Tab View Controller

Unwind Segues
Unwind Segues

Custom Tab View Controller

- Journal Navigation Controller
  - Journal Table View Controller
- Photo Navigation Controller
  - Photos Collection View Controller
  - Photo View Controller

Phone Interface:
- Schedule
- Journal
- Map
- Photos
- May 14, 2015
Unwind Segues

override allowedChildViewControllersForUnwindingFromSource(_:)

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller

Photos Collection View Controller
override allowedChildViewControllersForUnwindingFromSource(_:)
Unwind Segues

- Custom Tab View Controller
  - Journal Navigation Controller
  - Journal Table View Controller
- Photo Navigation Controller
  - Photos Collection View Controller
  - Photo View Controller
canPerformUnwindSegueAction("iAmTheJournal:", fromViewController:...)
Unwind Segues

canPerformUnwindSegueAction("iAmTheJournal:", fromViewController:…)
Unwind Segues

Custom Tab View Controller

- Journal Navigation Controller
- Journal Table View Controller

Photo Navigation Controller

- Photos Collection View Controller
- Photo View Controller

Photo Navigation Controller
- Photo View Controller
Unwind Segues

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller
Unwind Segues

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller

Photo

Schedule

Journal

Map

Photos

May 14, 2015
override segueForUnwindingToViewController(_:fromViewController:identifier:)
Incremental Unwinding

- Custom Tab View Controller
  - Journal Navigation Controller
    - Journal Table View Controller
  - Photo Navigation Controller
    - Photos Collection View Controller
    - Photo View Controller
Incremental Unwinding

Custom Tab View Controller

Journal Navigation Controller

Journal Table View Controller

Segue

Photo Navigation Controller

Photos Collection View Controller

Photo View Controller

NEW

iOS

Schedule  +
Journal  +
Map      
Photos   May 14, 2015

NEW
Incremental Unwinding

perform()
Incremental Unwinding

- Custom Tab View Controller
  - Journal Navigation Controller
    - Journal Table View Controller
  - Photo Navigation Controller
    - Photos Collection View Controller
    - Photo View Controller

Segue
Incremental Unwinding

Follow the route

- Custom Tab View Controller
- Journal Navigation Controller
- Journal Table View Controller
- Photo Navigation Controller
- Photos Collection View Controller
- Photo View Controller
- Segue
Incremental Unwinding

Follow the route

- Custom Tab View Controller
- Journal Navigation Controller
- Journal Table View Controller
- Photo Navigation Controller
- Photos Collection View Controller
- Photo View Controller
- Segue
Incremental Unwinding

Custom Tab View Controller
- Journal Navigation Controller
  - Journal Table View Controller
- Photos Collection View Controller
  - Photo View Controller

Segue

Photo Navigation Controller
- Photo View Controller

[Diagram of app flow with various view controllers and segues connected]

NEW iOS

[Phone interface with tabs for Schedule, Journal, and Map]
Incremental Unwinding

**override unwindForSegue(segue, towardsViewController:custom tab)**
Incremental Unwinding
Incremental Unwinding

```swift
override unwindForSegue(segue, towardsViewController: journal nav)
```
Incremental Unwinding

Override unwindForSegue(segue, towardsViewController: journal nav)
Incremental Unwinding

override unwindForSegue(segue, towardsViewController:journal nav)
Incremental Unwinding

Custom Tab View Controller

Segue

Journal Navigation Controller

Journal Table View Controller

NEW iOS
override unwindTowardsViewController(CustomTab, fromViewController:Photo)
Incremental Unwinding

- Custom Tab View Controller
- Journal Navigation Controller
- Journal Table View Controller
Demo

Unwind segues and custom containers
Unwinding APIs
Finding the destination

- viewControllerForUnwindSegueAction(_:fromViewController:sender:)
- override allowedChildViewControllersForUnwindingFromSource(_:)
  childViewControllerContainingSegueSource(_:)
- override canPerformUnwindSegueAction(_:fromViewController:sender:)

- X viewControllerForUnwindSegueAction(_:fromViewController:sender:)
- ✓ override allowedChildViewControllersForUnwindingFromSource(_:)
  childViewControllerContainingSegueSource(_:)
- ✓ override canPerformUnwindSegueAction(_:fromViewController:sender:)

- ✓ override canPerformUnwindSegueAction(_:fromViewController:sender:)
  childViewControllerContainingSegueSource(_:)
- ✓ override allowedChildViewControllersForUnwindingFromSource(_:)
  viewControllerForUnwindSegueAction(_:fromViewController:sender:)

- ✓ override canPerformUnwindSegueAction(_:fromViewController:sender:)
  viewControllerForUnwindSegueAction(_:fromViewController:sender:)

- ✓ override allowedChildViewControllersForUnwindingFromSource(_:)
  viewControllerForUnwindSegueAction(_:fromViewController:sender:)

- ✓ override既有可计算性也能查询，因为两种情况都满足需求。
Unwinding APIs

Following the route

- `segueForUnwindingToViewController(_:fromViewController:identifier:)`
- `override unwindForSegue(_:towardsViewController:)`
Summary
Organize your storyboards using Storyboard References
Summary

Organize your storyboards using Storyboard References
Customize triggered and unwind segues by subclassing
Summary

Organize your storyboards using Storyboard References

Customize triggered and unwind segues by subclassing

• Present Modally and Popover Presentation segues have extended lifetimes
Summary

Organize your storyboards using Storyboard References

Customize triggered and unwind segues by subclassing

• Present Modally and Popover Presentation segues have extended lifetimes

Unwind segues move backward through application flow
Summary

Organize your storyboards using Storyboard References

Customize triggered and unwind segues by subclassing

- Present Modally and Popover Presentation segues have extended lifetimes

Unwind segues move backward through application flow

- Support unwind segues in custom containers
Summary

Organize your storyboards using Storyboard References

Customize triggered and unwind segues by subclassing
- Present Modally and Popover Presentation segues have extended lifetimes

Unwind segues move backward through application flow
- Support unwind segues in custom containers
- Remove implementations of deprecated API to get new behavior
More Information

Documentation
Storyboard Help
Sample Code
SegueCatalog

http://developer.apple.com/library

Technical Support
Apple Developer Forums
Developer Technical Support

General Inquiries
Curt Rothert, App Frameworks Evangelist
rothert@apple.com
## Related Session and Lab

<table>
<thead>
<tr>
<th>Session/Event</th>
<th>Location</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementing UI Designs in Interface Builder</td>
<td>Pacific Heights</td>
<td>Wednesday 1:30PM</td>
</tr>
<tr>
<td>Interface Builder and Auto Layout Lab</td>
<td>Developer Tools Lab B</td>
<td>Thursday 1:30PM</td>
</tr>
</tbody>
</table>