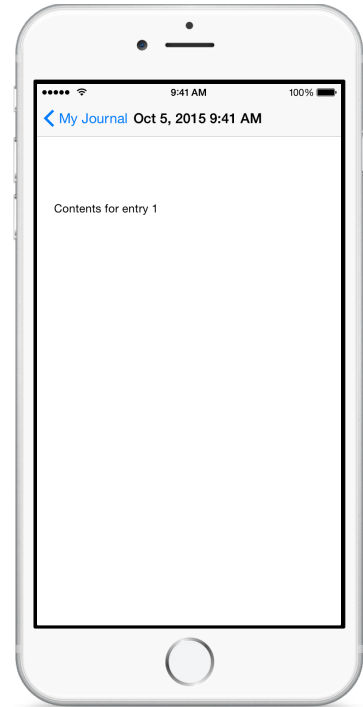# Journal
Lesson 8

Description

Use a segue to pass a `JournalEntry` object to the `JournalEntryViewController`.

Learning Outcomes

- Practice binding user-defined classes to view controllers with Interface Builder.
- Practice adding interface elements to a view, and establishing an outlet connection between a controller and view.
- Discover how storyboard segues and `UITableViewDelegate` messages are sent when a user interacts with a table view.
- Describe how to use segues to pass data to destination view controllers.
- Practice using Swift control flow with type casting and optional binding to increase code safety.

Vocabulary

text view	outlet connection	`UITableViewDelegate`
segue	`UIStoryboardSegue`	`NSIndexPath`
type casting	optional binding	

Materials

- **Journal Lesson 8** Xcode project

Opening

How can we display the selected journal entry contents after tapping on an entry in the table?

Agenda

- Discuss how a custom controller class will be used to encapsulate the behavior of viewing the contents of a `JournalEntry`.
- Add a new (⌘N) `JournalEntryViewController` class to the project that extends `UIViewController`.

```swift
import UIKit

class JournalEntryViewController: UIViewController {

}
```

- Using Interface Builder, select the Journal Entry View Controller, and use the Identity Inspector (⌥⌘3) to set its Class to `JournalEntryViewController`.
- Using the Object Library (⌥⌘L), drag a Text View onto the Journal Entry View Controller canvas, and use Control-dragging to establish constraints for the top, leading, trailing and bottom edges of the text view.
- With the text view selected, use the Attributes Inspector (⌥⌘4) to uncheck the Editable attribute, and replace the placeholder text with **JournalEntry contents**.
- Using the Assistant Editor (⌥⌘↩), Control-drag from the text view to create an outlet property in the `JournalEntryViewController` class.

```swift
@IBOutlet weak var journalEntryContents: UITextView!
```

- Add a `JournalEntry` property to the `JournalEntryViewController` class.

```swift
var journalEntry: JournalEntry?
```

- Discuss that the `journalEntry` property is an optional type, because the controller initializer will not initialize the property.
- Update the `viewDidLoad` implementation of the `JournalEntryViewController` to use the `JournalEntry` property to prepare the view.

```swift
override func viewDidLoad() {
    super.viewDidLoad()
    if let journalEntry = journalEntry {
        journalEntryContents.text = journalEntry.contents
        navigationItem.title =journalEntry.description
    }
}
```

- Discuss how, assuming the `journalEntry` property can be assigned a `JournalEntry` object, it will use the `contents` to update the text view; and how the date and time of the `JournalEntry` should appear in the navigation bar of the view controller.

- Explain how a controller within a navigation hierarchy has a `navigationItem` property that represents the navigation bar title, which may be assigned a `String`.

- Using the Documentation and API Reference (⇧⌘0), explore the `UITableViewDelegate` protocol reference, drawing attention to the `tableView:didSelectRowAtIndexPath:` method.

- Discuss how, when a table cell is tapped, the `tableView:didSelectRow:atIndexPath:` method will be called, because the controller is acting as the table view delegate.

- Using the Documentation and API Reference (⇧⌘0), explore the `UIViewController` `prepareForSegue:sender:` method.

- Explain that, because the storyboard is managing the segue transition from the table view controller to the journal entry view controller, the method `prepareForSegue:sender:` should be used instead of `tableView:didSelectRow:atIndexPath:`.

- In the `JournalTableViewController` implementation, uncomment and update the implementation of `prepareForSegue:sender:`.

```swift
override func prepareForSegue(segue: UIStoryboardSegue,sender: AnyObject?) {
    if let journalEntryViewController =
        segue.destinationViewController as? JournalEntryViewController,
        cell = sender as? UITableViewCell,
        indexPath = self.tableView.indexPathForCell(cell),
        entry = journal.entry(indexPath.row) {
            journalEntryViewController.journalEntry = entry
    }
}
```

- Using the Documentation and API Reference (⇧⌘0), explore the `UIStoryboardSegue` class reference.

- Explain how the `UIStoryboardSegue` `destinationViewController` property references the view controller that will appear when the segue is invoked.

- Discuss the need to cast the type of the destination controller; how the `sender` argument represents the cell that is tapped in the table view; how the controller, as the table view delegate, may obtain the `NSIndexPath` using the `sender` argument;

and how multiple optional bindings are used to ensure safety before assigning a value to the `journalEntry` property.

• Run the app (⌘R), tap on a cell, and observe the `JournalEntry` contents appear.

Closing

How is a text view different from a label? What happens to a text view when its content is longer than what fits on the screen at one time?

Modifications and Extensions

• Remove the storyboard segue between the journal table view controller and the journal entry view controller. Implement the `tableView:didSelectRowAtIndexPath:` method to display the details of the selected `JournalEntry`.

Resources

The Swift Programming Language: Classes and Structures https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/ClassesAndStructures.html

The Swift Programming Language: Properties https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/Properties.html

Xcode Overview: Build a User Interface https://developer.apple.com/library/ios/documentation/ToolsLanguages/Conceptual/Xcode_Overview/edit_user_interface.html

View Controller Catalog for iOS: Navigation Controllers https://developer.apple.com/library/ios/documentation/WindowsViews/Conceptual/ViewControllerCatalog/Chapters/NavigationControllers.html

Storyboard Help: Setting the Initial Controller for a Storyboard https://developer.apple.com/library/ios/recipes/xcode_help-IB_storyboard/chapters/SetInitialController.html

View Controller Programming Guide for iOS: Using Segues https://developer.apple.com/library/prerelease/ios/featuredarticles/ViewControllerPGforiPhoneOS/UsingSegues.html

Storyboard Help: Adding a Segue Between Scenes https://developer.apple.com/library/ios/recipes/xcode_help-IB_storyboard/chapters/StoryboardSegue.html

UITableView Class Reference https://developer.apple.com/library/ios/documentation/UIKit/Reference/UITableView_Class/index.html

UITableViewController Class Reference https://developer.apple.com/library/ios/documentation/UIKit/Reference/UITableViewController_Class/index.html

UITableViewDelegate Protocol Reference https://developer.apple.com/library/ios/documentation/UIKit/Reference/UITableViewDelegate_Protocol/index.html

The Swift Programming Language: Type Casting https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/TypeCasting.html

NSIndexPath Class Reference https://developer.apple.com/library/ios/documentation/UIKit/Reference/NSIndexPath_UIKitAdditions/index.html