Mobile Apps Development for Journalists

Week 5 - Fall 2019
University of Texas at Austin
School of Journalism

Jeff Linwood
jlinwood@gmail.com
@jefflinwood

Agenda

- Storyboard, Outlets, Actions

- Working with Maps and Locations

Storyboards

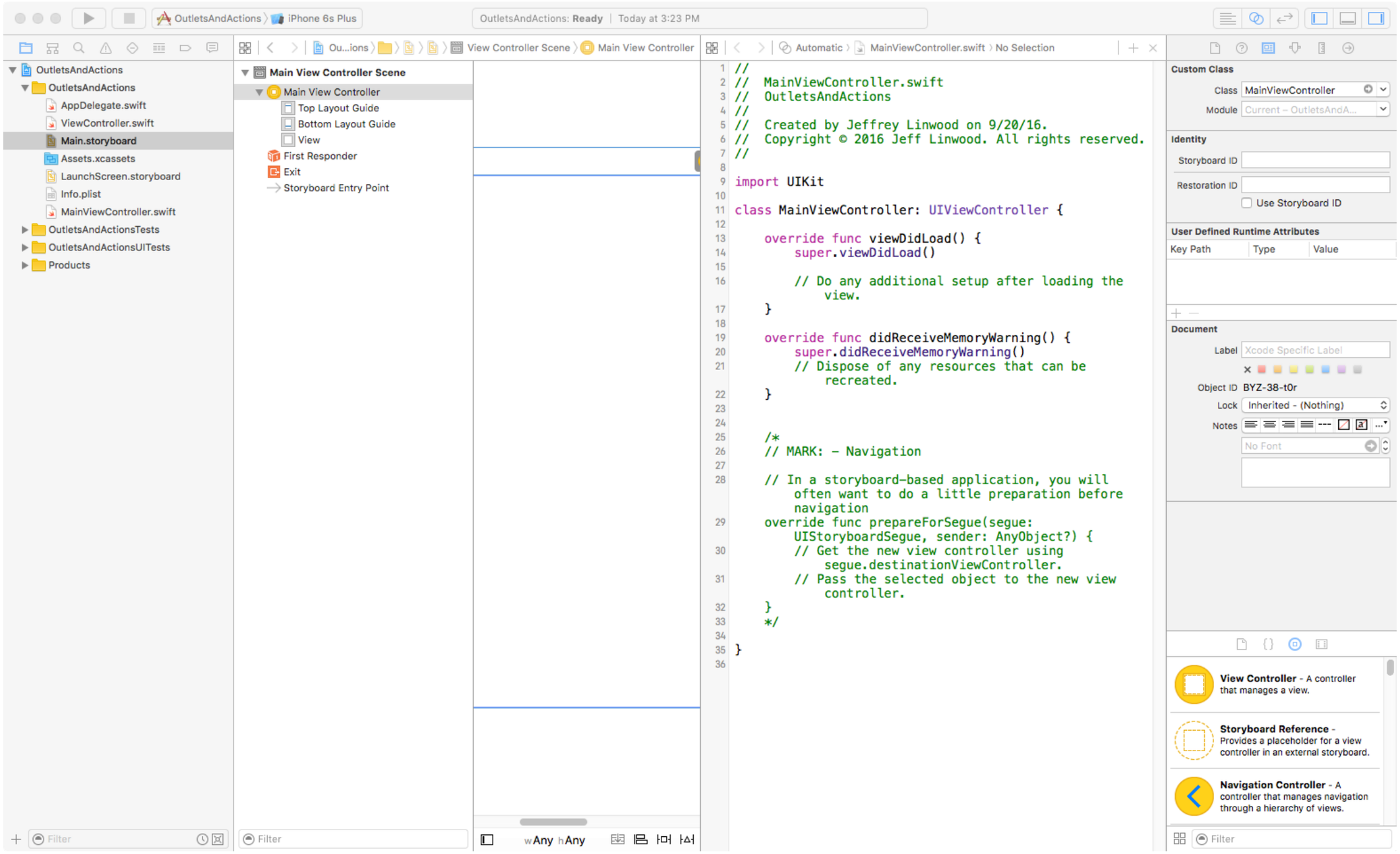
- User Interface Tool for iOS App Development

- Can connect to Swift code using Outlets and Actions

Outlets

- Connections between Storyboard and Code
- Variables in Swift View Controller classes
- Properties can be changed
- Easiest to add in Assistant View

Assistant View



Creating an Outlet

- Drag an image view, button, label, or other element onto the storyboard

- Hold the control button down and click and drag between the new item and the view controller

- Release and name the outlet

- Practice!

Actions

- Swift functions that run when something happens - a user taps a button, a switch is changed

- The **func** keyword

- Similar to outlets, but creates a function, not a variable

- Be sure to change Outlet to Action in Pop Up

- Use Assistant View

Location and Mapping Frameworks

- CoreLocation - https://developer.apple.com/documentation/corelocation?language=swift

- MapKit - https://developer.apple.com/documentation/mapkit

- https://developer.apple.com/maps/

Location Functionality

- Get user's current location at a point in time
- Get notified when user moves a significant amount of distance
- Get notified when the user enters a geofence

Map Providers for iOS

- Apple MapKit - https://developer.apple.com/maps/
- Google Maps SDK for iOS - https://developers.google.com/maps/documentation/ios-sdk/
- MapBox - https://www.mapbox.com/
- ArcGIS SDK for iOS - https://developers.arcgis.com/ios/

Location and Privacy

- Your iOS App will have to ask the user for permission to get their location
- Choices for tracking user's location
    - Always - the application will get location updates in the background
    - When in use - only when the application is running

Provide Privacy in Info.plist

- Add a row, with a key value of:
- NSLocationWhenInUseUsageDescription
- NSLocationAlwaysAndWhenInUseUsageDescription
- And a String value with a message such as "This app would like to use your location for…."

Location and Privacy Concerns

- What are some concerns that users might have about their location being used by an app?

- How could these be alleviated or mitigated?

Getting Started with Location

- import **CoreLocation** framework
- Initialize a Location Manager
- Set the delegate on the location manager to self
- Request authorization from the user (the popup dialog)
- Tell the Location Manager to Start Updating Locations

Managers and Delegates

- We haven't worked with managers or delegates before

- **CLLocationManager** - responsible for getting location updates from the phone and passing them to the delegate

- **CLLocationManagerDelegate** - your code that does something with updates

- Need to set the delegate on the manager to **self**

Implementing a Delegate

```
import UIKit
import CoreLocation

class ViewController: UIViewController, CLLocationManagerDelegate {

    let locationManager = CLLocationManager()

    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after loading the view, typically from a nib.
        locationManager.delegate = self
        if (CLLocationManager.authorizationStatus() == .notDetermined) {
            locationManager.requestWhenInUseAuthorization()
            locationManager.startUpdatingLocation()

        }
        if (CLLocationManager.authorizationStatus() == .authorizedWhenInUse) {
            locationManager.startUpdatingLocation()
        }
    }

    func locationManager(_ manager: CLLocationManager, didUpdateLocations locations:
[CLLocation]) {
       print("Received Location Update")
    }
}
```

Apple Documentation

- CLLocationManager - https://developer.apple.com/reference/corelocation/cllocationmanager

- CLLocationManagerDelegate - https://developer.apple.com/reference/corelocation/cllocationmanagerdelegate

Testing the App

- In Simulator, go to the Debug Menu, and choose the Location sub menu, then pick the run, bike, or freeway drive.

- You can also set a custom location, or even use location track files

Review of CoreLocation

- Privacy Permission in Info.plist
- import CoreLocation framework
- Initialize a Location Manager
- Set the delegate on the location manager to self
- Request authorization from the user (the popup dialog)
- Tell the Location Manager to Start Updating Locations

Map Tutorial

- Building Mapping Apps with Swift e-book

- Map Tutorial - Chapter 1

Map User Location Tutorial

- Building Mapping Apps with Swift e-book

- User Location Tutorial - Chapter 2

In Class Exercise

- Team up in groups of 2 or 3, and brainstorm several ideas for journalism-related applications you could build that would use location or mapping technology

- Will share with class