Gesturizer
Lesson 9

Description

Enable the controller to detect a shake motion event.

Learning Outcomes

- Distinguish a shake motion event from a UI gesture.
- Describe how iOS uses accelerometer data to send event notifications to responders.
- Apply `UIResponder` methods to enable a controller to respond to motion events.

Vocabulary

motion events	accelerometer	UIEvent
responder	UIResponder	UIEventSubtype
enumeration		

Materials

- **Gesturizer Lesson 9** Xcode project

Opening

How can we detect when the user shakes the device?

Agenda

- Using the Xcode Documentation and API Reference (⇧⌘0), explore the Motion Events documentation and draw attention to the section Detecting Shake-Motion Events with UIEvent.

- Discuss how shaking the device causes iOS to examine the accelerometer data and creates a `UIEvent`, which iOS sends to the active app.

- Using the Xcode Documentation and API Reference (⇧⌘0), explore the `UIEvent` class reference and draw attention to the `UIEventSubtype` enumeration.

- In the `ViewController` class, override the `UIResponder canBecomeFirstResponder` and `motionEnded:withEvent:` methods.

```swift
override func canBecomeFirstResponder() -> Bool {
    return true
}

override func motionEnded(motion: UIEventSubtype,
    withEvent event: UIEvent?) {
    if motion == .MotionShake {
        showGestureName("Shake")
    }
}
```

- Explain how, when the accelerometer motion ends, iOS calls the `motionEnded:withEvent:` method, passing it the type of the motion and an optional `UIEvent?` object associated with the motion.

- Run the app (⌘R), use the Simulator menu item *Hardware > Shake Gesture* (⌃⌘Z) to simulate shaking the device, and observe the **Shake** text appear.

Closing

We can implement our own `UIGestureRecognizer` classes, and detect touches and movement on our own. What are the benefits and drawbacks of using the built-in gesture recognizers? Do you have to swipe differently in one app than you do in another? Why do you think that is? In what situations might you implement your own `UIGestureRecognizer`?

Modifications and Extensions

- Implement a `UIGestureRecognizer` that recognizes triangle or circle shaped gestures.

Resources

Motion Events https://developer.apple.com/library/ios/documentation/EventHandling/Conceptual/EventHandlingiPhoneOS/motion_event_basics/motion_event_basics.html

UIResponder Class Reference https://developer.apple.com/library/ios/documentation/UIKit/Reference/UIResponder_Class/index.html

UIEvent Class Reference https://developer.apple.com/library/ios/documentation/UIKit/Reference/UIEvent_Class/index.html