Mobile Application Development
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GESTURE RECOGNIZERS

Gestures

- Apple's multitouch screens support gestures
  - Tap (single or multiple)
  - Pinch (zoom)
  - Rotation
  - Swipe (right, left, top, down)
  - Pan (drag)
  - Screen edge pan
  - Long press

Gestures

- A gesture is any sequence of events that happens from the time you touch the screen with one or more fingers until you lift your fingers off the screen.

  - As long as one or more fingers are still on the screen you are still within a gesture

- A gesture is passed through the system inside a series of events.

- When an action method is called the gesture object is passed in as a parameter.

Touch

- A touch refers to a finger being placed on the screen, dragging across the screen, or being lifted from the screen

- The number of touches in a gesture is the number of fingers on the screen at the same time

- A tap is when you touch the screen with a finger and then immediately lift your finger off the screen without having moved it around
  - iOS can track number of taps

Gesture Recognizers

- A gesture recognizer is an object that watches the stream of events generated by a user and recognizes predefined gestures

- UIKit includes **`UIGestureRecognizer`** which is the base class for gesture recognizers
  - Defines a common set of behaviors that can be configured for all gesture recognizers

- The **`UIGestureRecognizerDelegate`** protocol enables customization of some behavior

Gesture Recognizers

- **UIGestureRecognizer** has subclasses
  - **UITapGestureRecognizer**
  - **UIPinchGestureRecognizer**
  - **UIRotationGestureRecognizer**
  - **UISwipeGestureRecognizer**
  - **UIPanGestureRecognizer**
  - **UIScreenEdgePanGestureRecognizer**
  - **UILongPressGestureRecognizer**

Gesture Recognizers

- A view can contain more than one gesture recognizer because it might respond to multiple gestures
  - Attach a gesture recognizer to a view
  - Implement the action method to handle the gesture
- When a user touches that view the gesture recognizer is sent an event that a touch has occurred

Gesture Recognizers

- The action method for a gesture recognizer must conform to one of these method signatures:
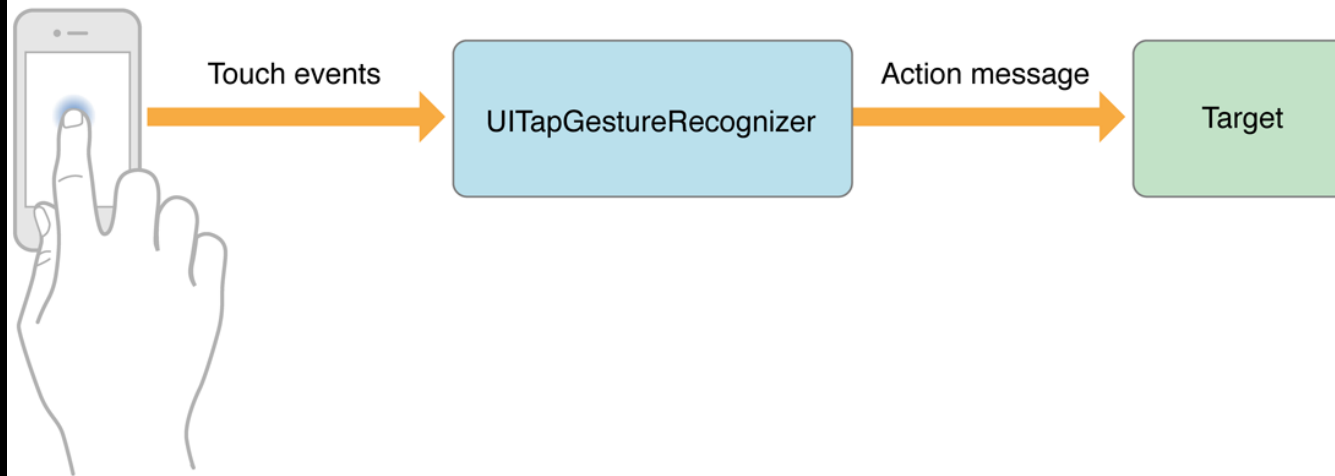
```
func handleGesture() { }
func handleGesture(gestureRecognizer:
    UIGestureRecognizer) { }
```
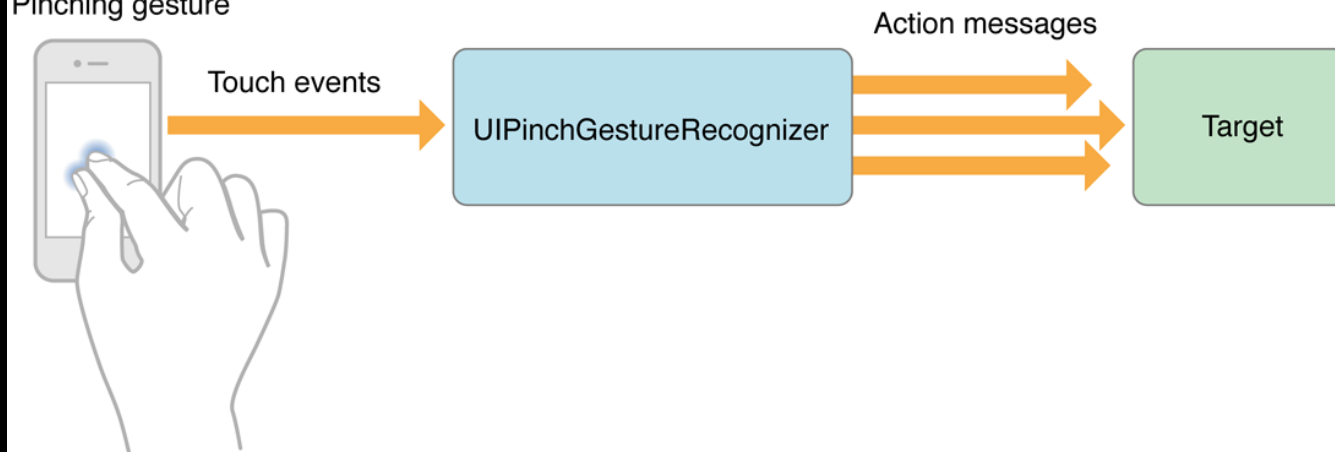
Gestures

- A discrete gesture occurs once. A single action is sent.

  – tap

- A continuous gesture takes place over time. An action message is sent for each incremental change until the multi-touch sequence concludes.

  – pinch

Gestures

Gesture Recognizers

- You can alter the behavior of a gesture recognizer by using the **`UIGestureRecognizerDelegate`** protocol
- You can also create a custom gesture by subclassing **`UIGestureRegcognizer`**