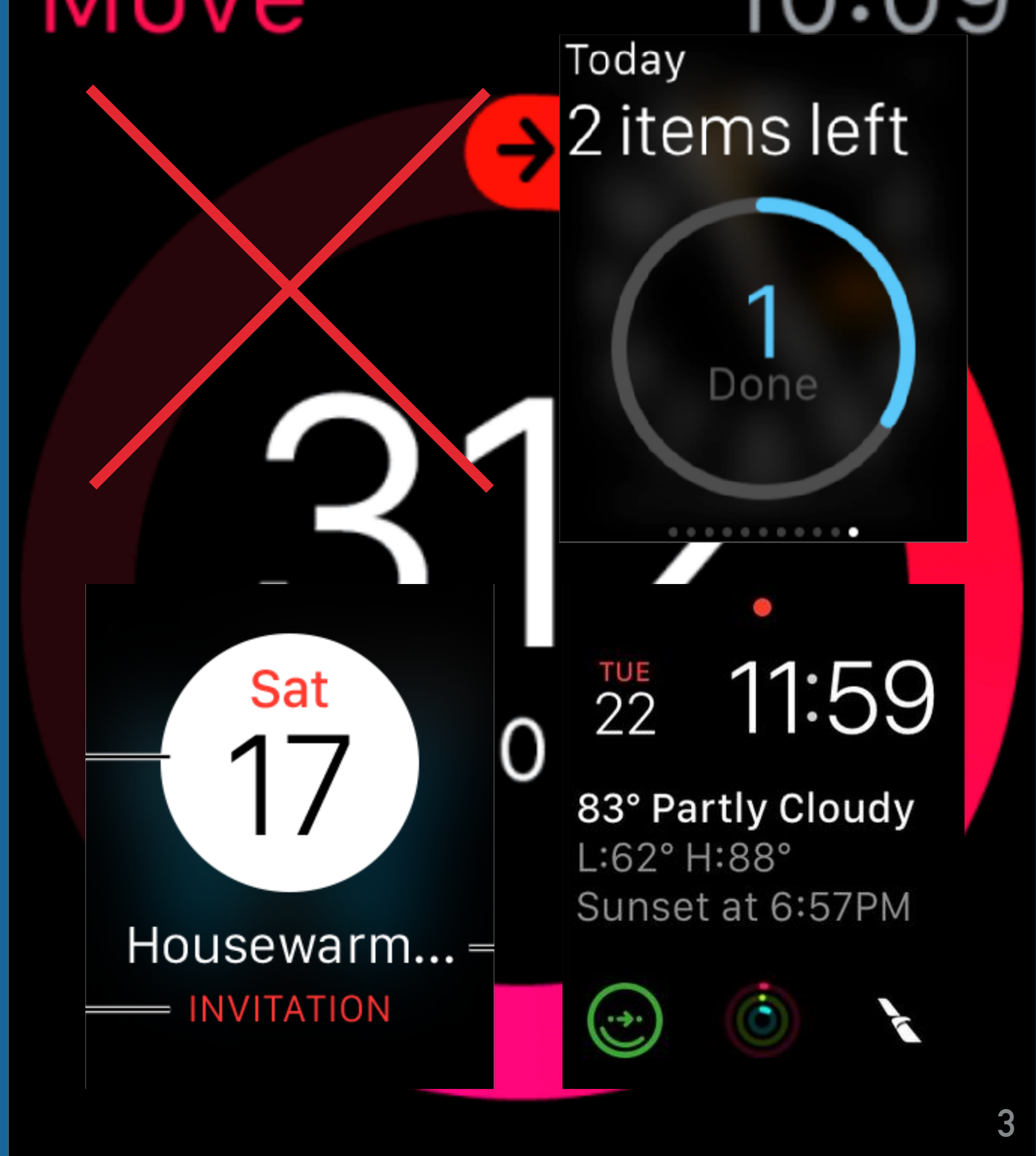
USER INTERACTIONS ON 

USER INTERACTIONS

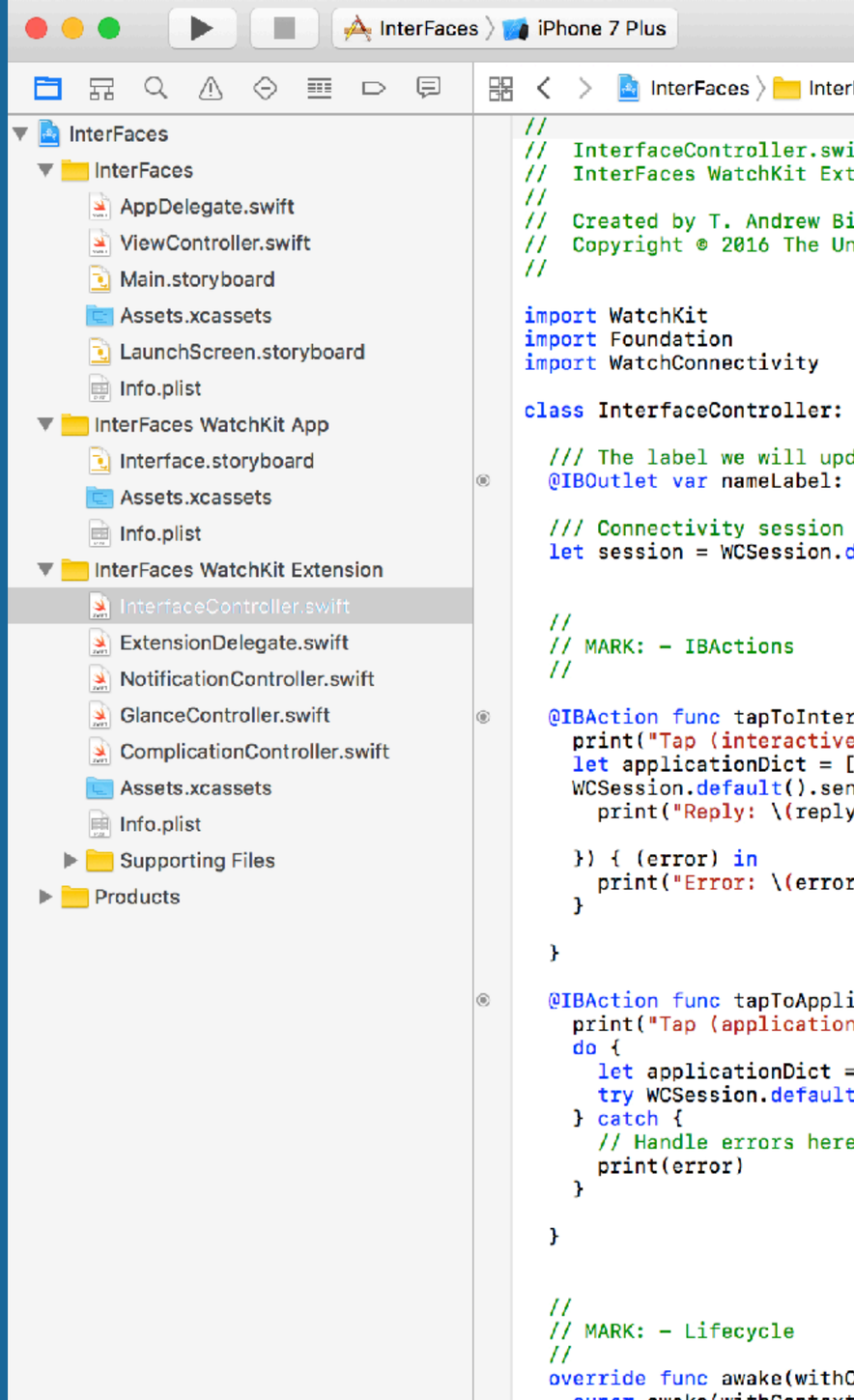
SUBTITLE

- User interactions available
  - WatchKit App
  - ~~Glances~~
  - Dock
  - Custom notifications
  - Complication (new in 2.0)



USER INTERACTIONS

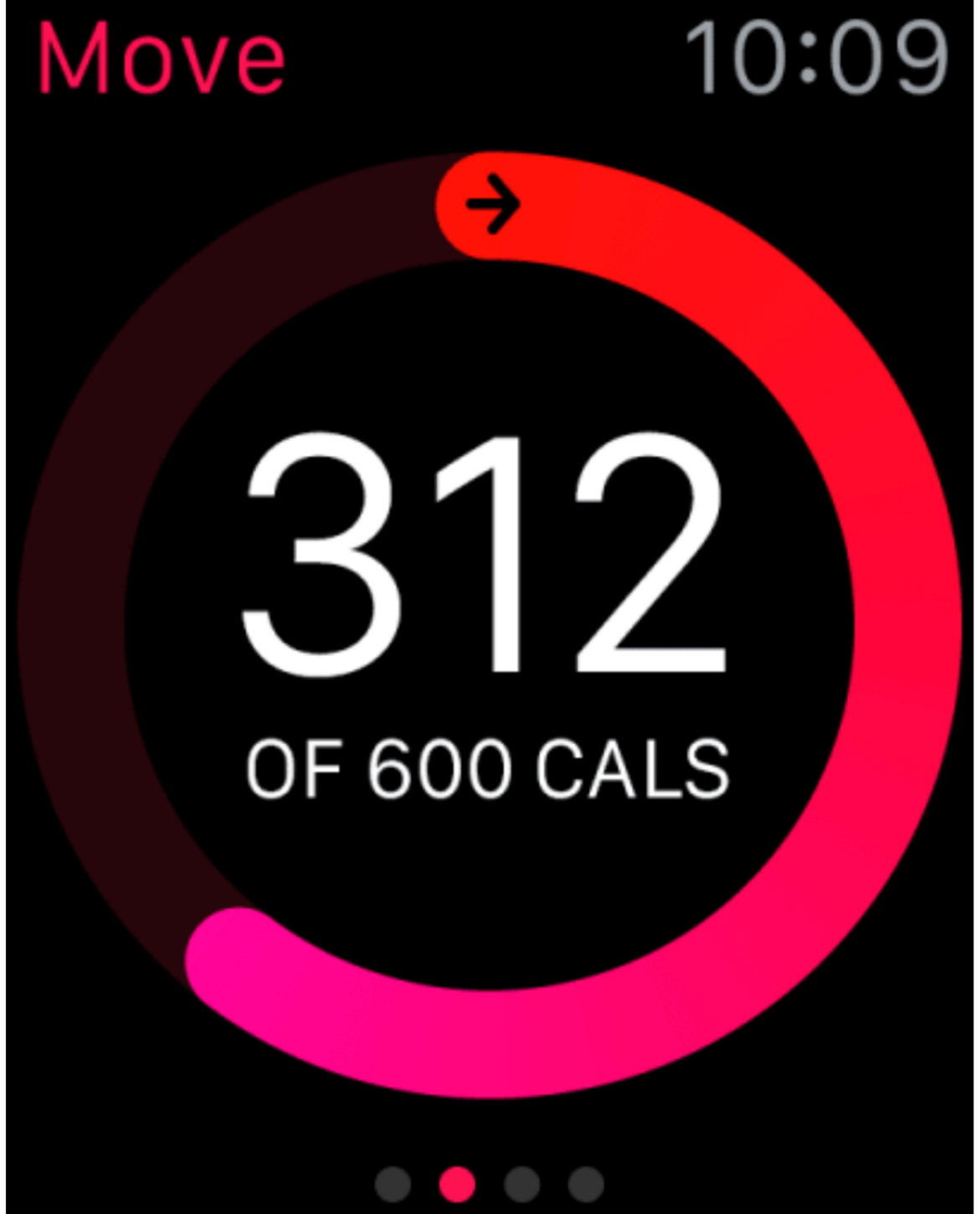
- What makes up a Watch App?
  - Interface
  - Notification Interface
  - Complication Interface
  - Code for managing all interfaces in extension



USER INTERACTIONS

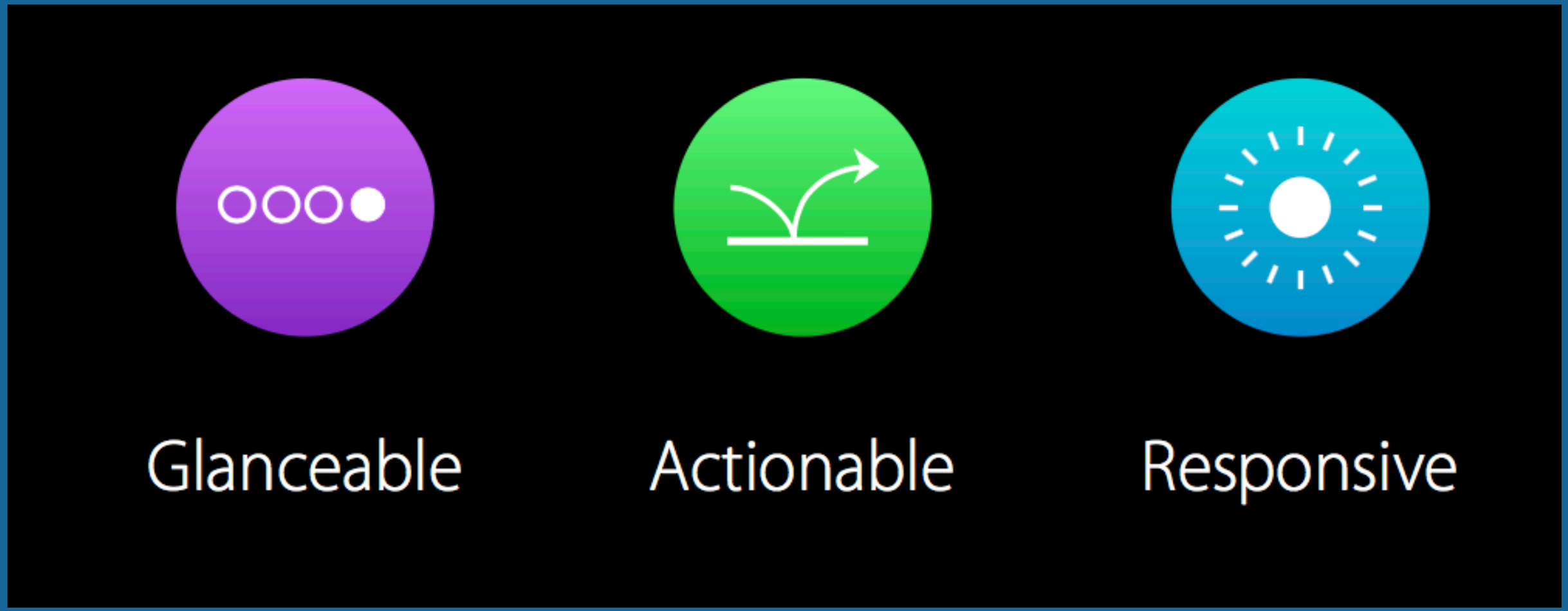
SUBTITLE

- WatchKit App
  - Full-app experience which they interact with by opening your app from the Home screen
  - Main way to interact with data
  - Typically, users will only interact with a subset of data/features



USER INTERFACES ON WATCHOS

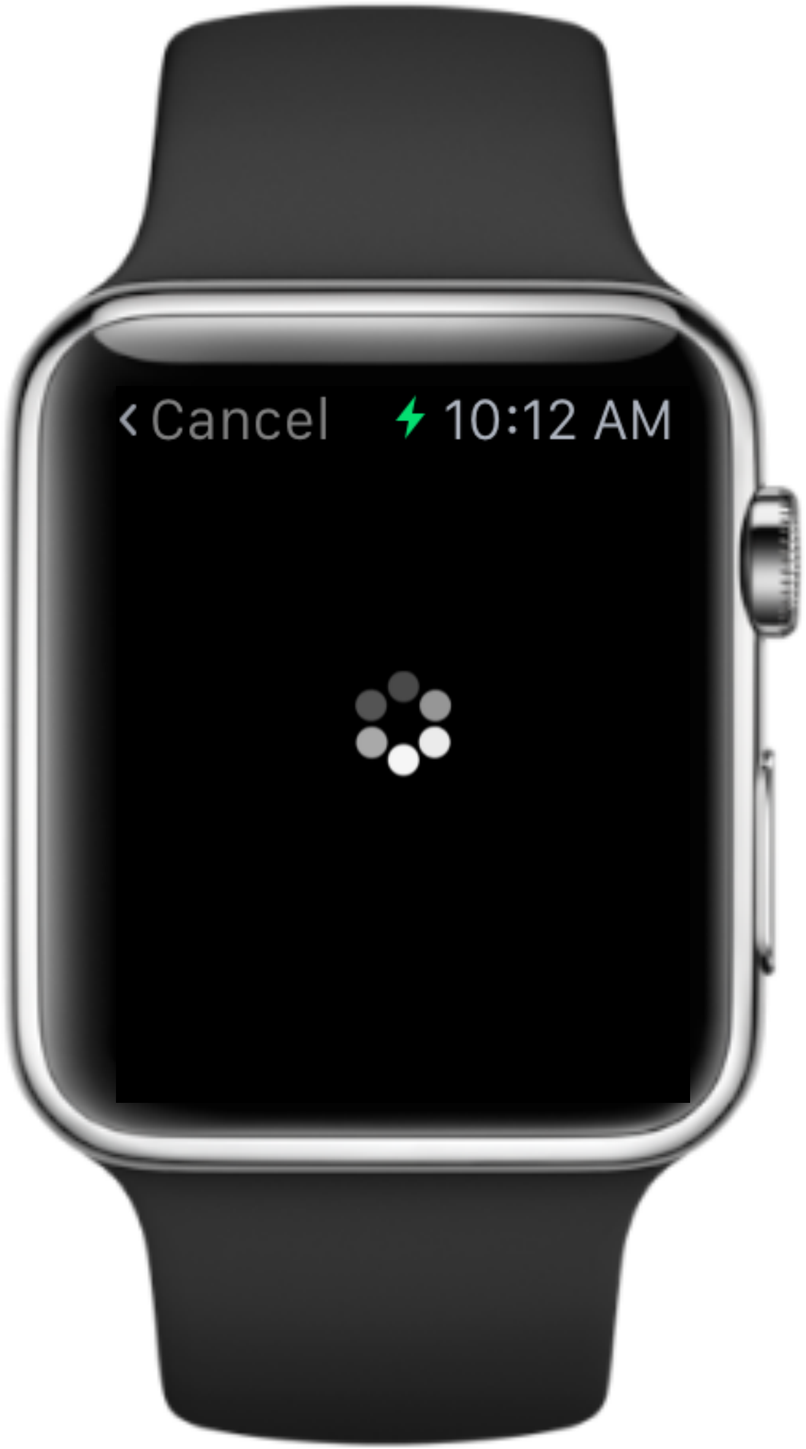
USER INTERACTIONS



- Design for quick interactions

USER INTERACTIONS

- Users will not be interested in seeing this interface in your application



USER INTERACTIONS

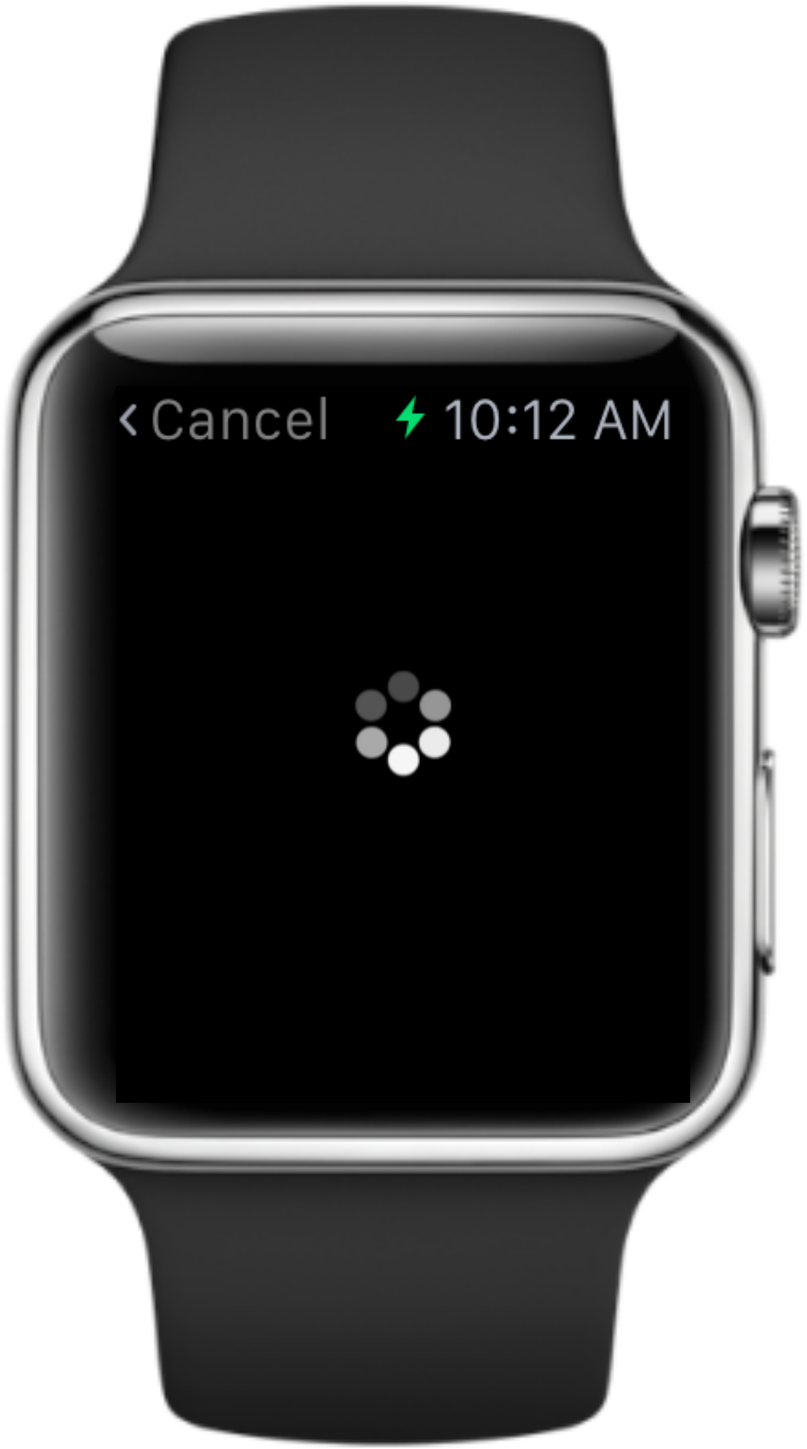
- How long is a quick interaction?
- **2 seconds**

USER INTERACTIONS

- Design for quick and fast interactions
- Be very conscious of load times
- ~~Compliment you iOS app~~
- Independent watch apps

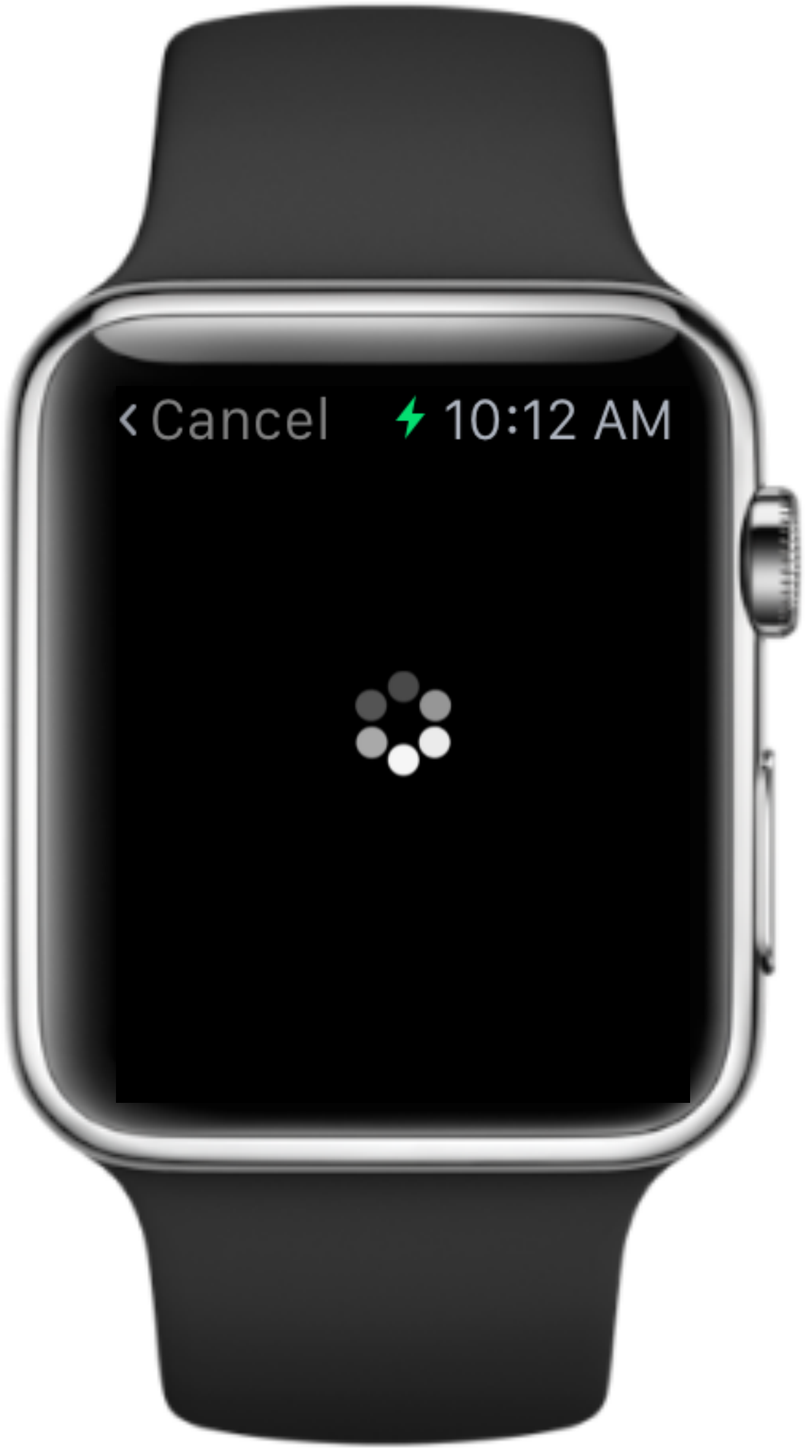
USER INTERACTIONS

- Interacting
  - Gesture recognizers
  - Digital crown rotation



USER INTERACTIONS

- watchOS additions to support displaying and updating information
  - Improved table navigation (vertical paging)
  - Support for new Notifications Framework
  - SceneKit and SpriteKit integration

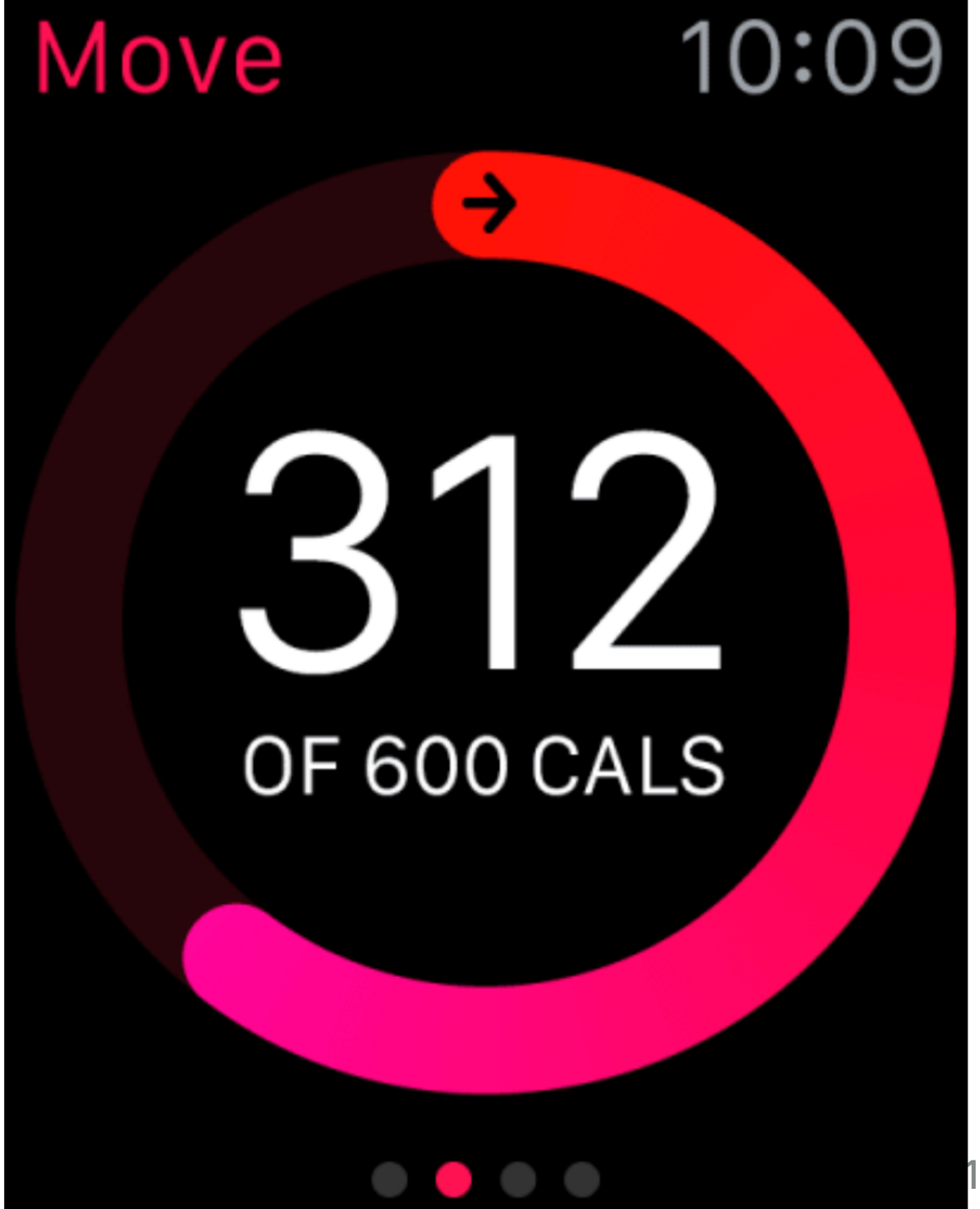


SOME WATCH APPS

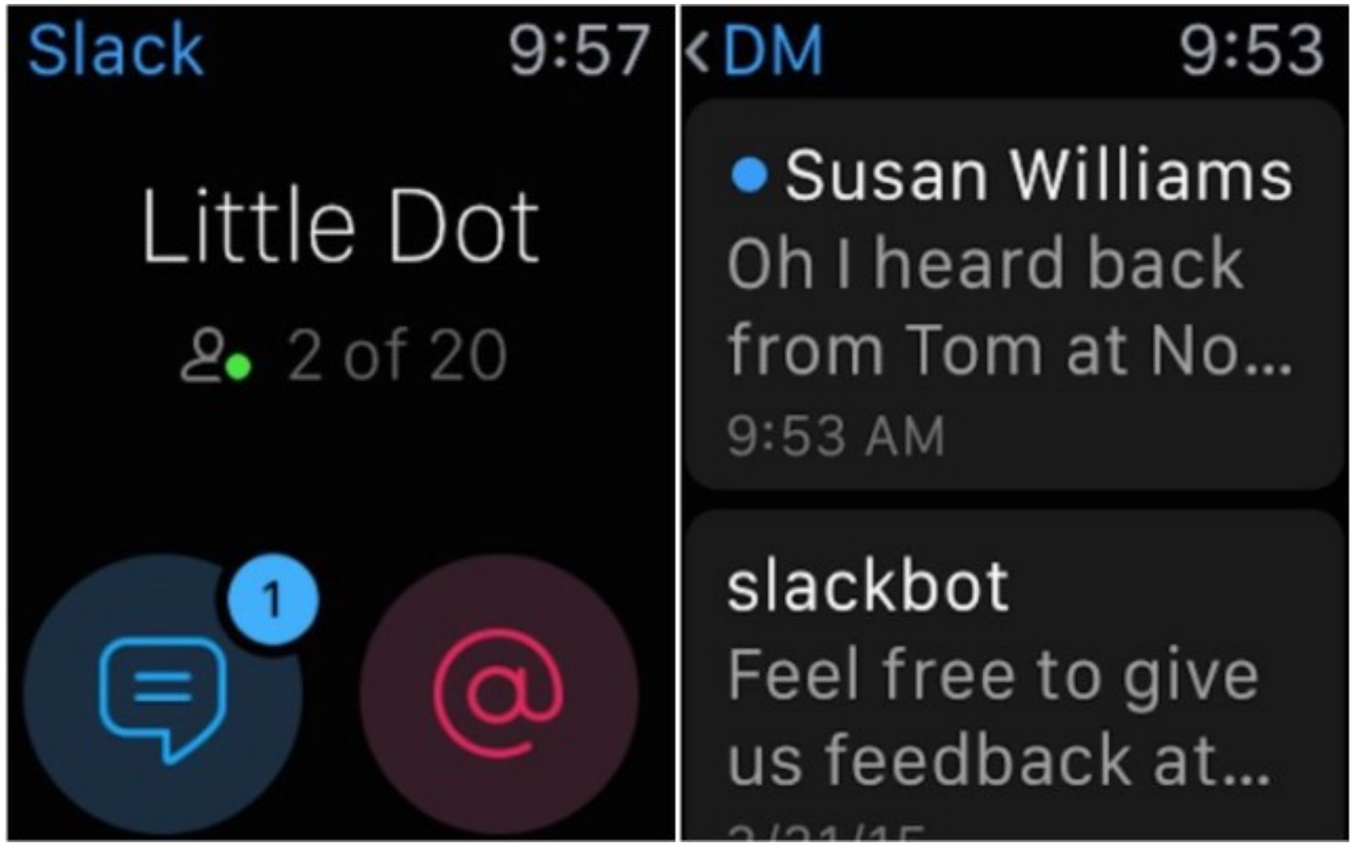
USER INTERACTIONS

SUBTITLE

- Watch apps have different navigation and interaction models
  - Health app
  - Music app
  - Game app
  - App app



USER INTERACTIONS

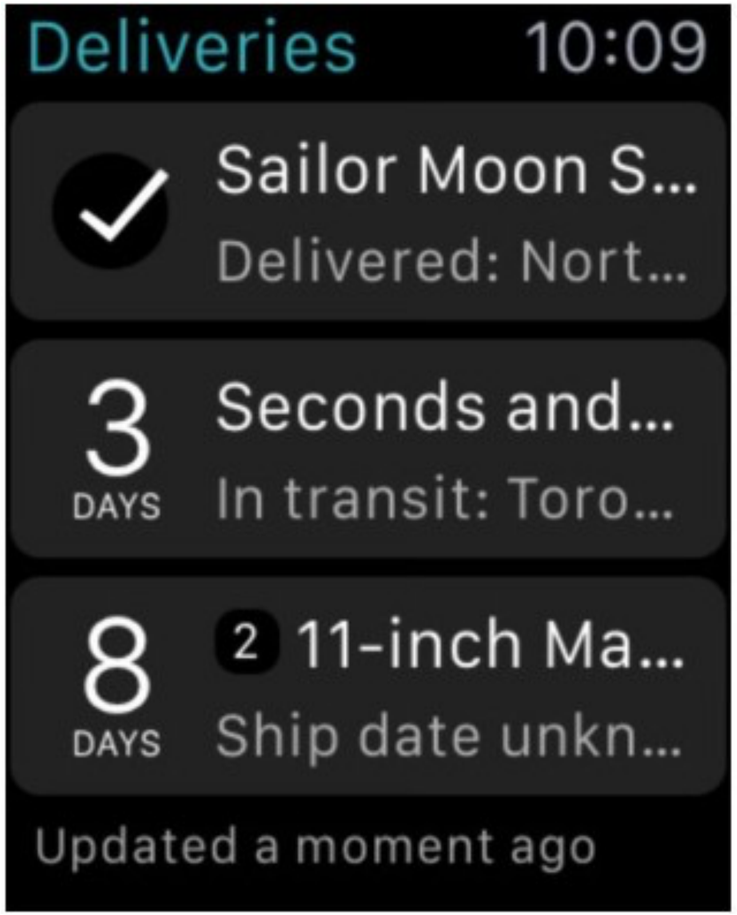


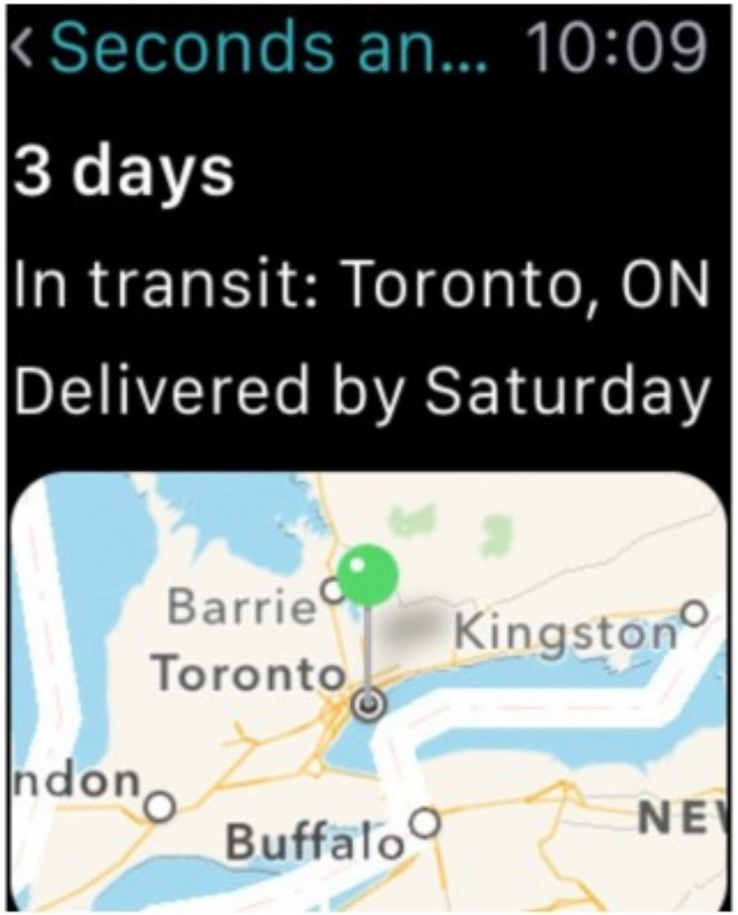
USER INTERACTIONS

USER INTERACTIONS

USER INTERACTIONS

USER INTERACTIONS



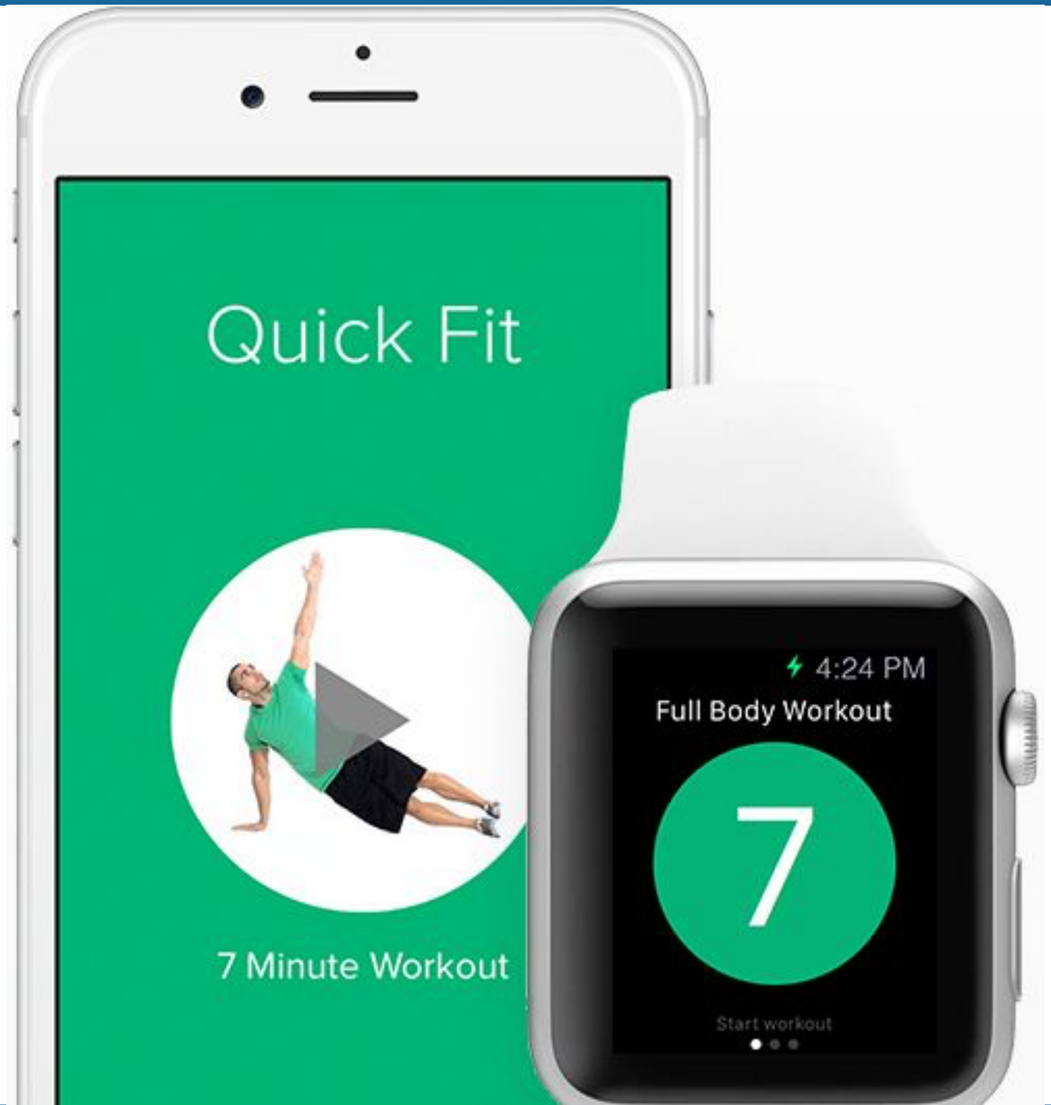


USER INTERACTIONS

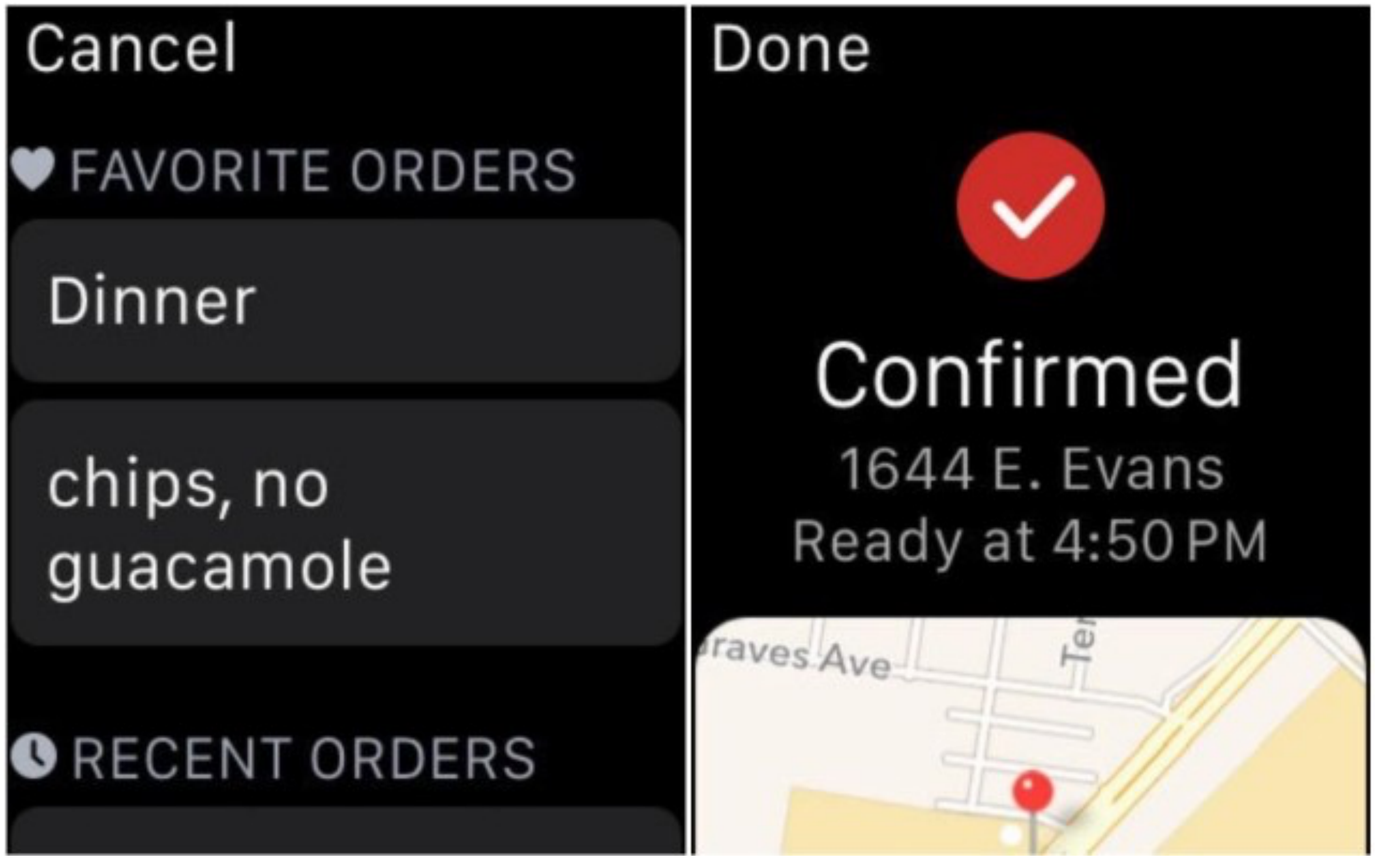
USER INTERACTIONS

USER INTERACTIONS

USER INTERACTIONS



USER INTERACTIONS

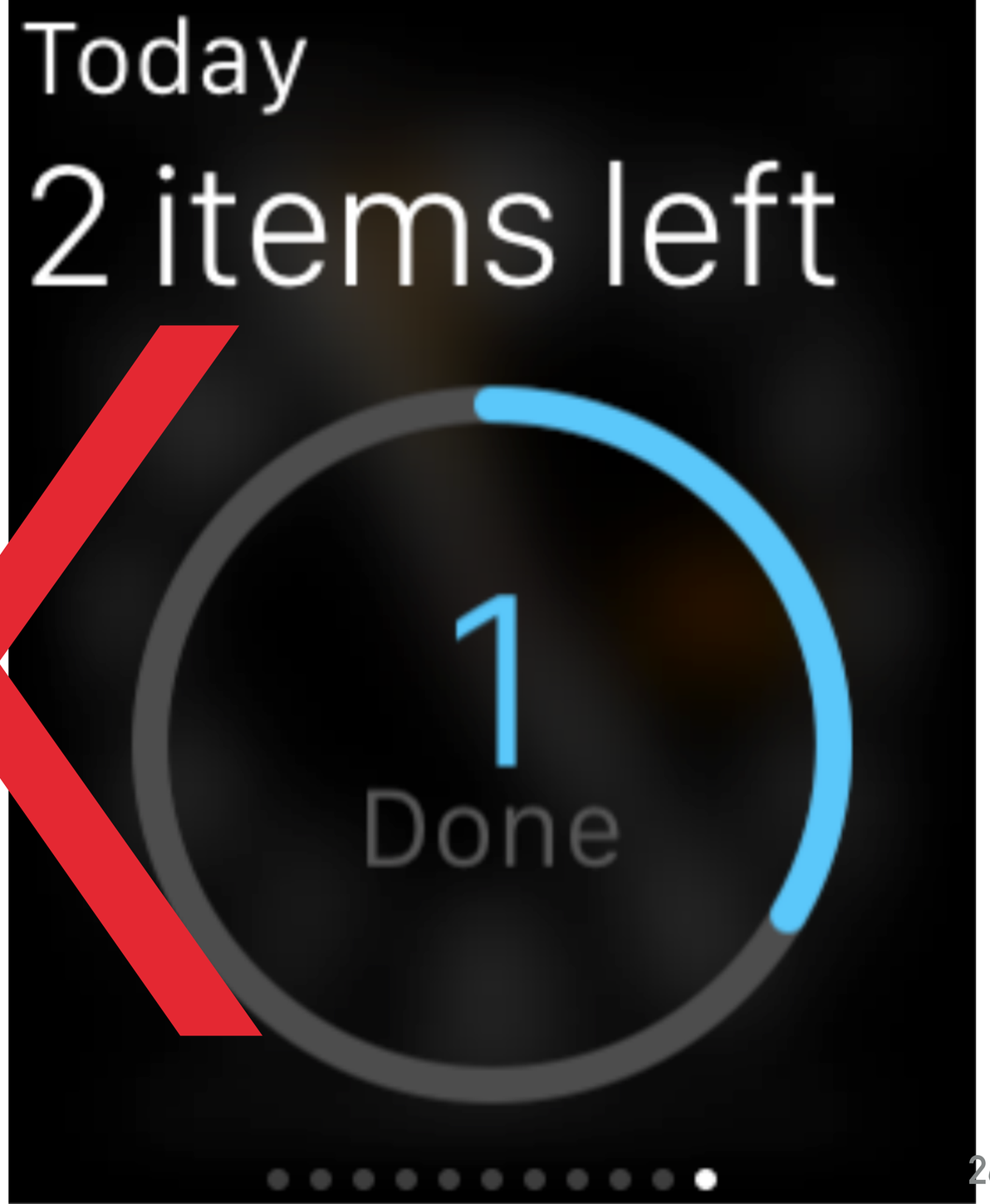


GLANCES 

USER INTERACTIONS

SUBTITLE

- Glances
  - A focused interface that you use to display your app's most important information
  - Glances are nonscrolling and read-only
  - Cannot contain buttons, switches, or other interactive controls
  - Tapping a glance launches your WatchKit app
    - "Not to be used as an app laun[illegible]"



USER INTERACTIONS

GLANCES HAS BEEN REPLACED BY THE DOCK

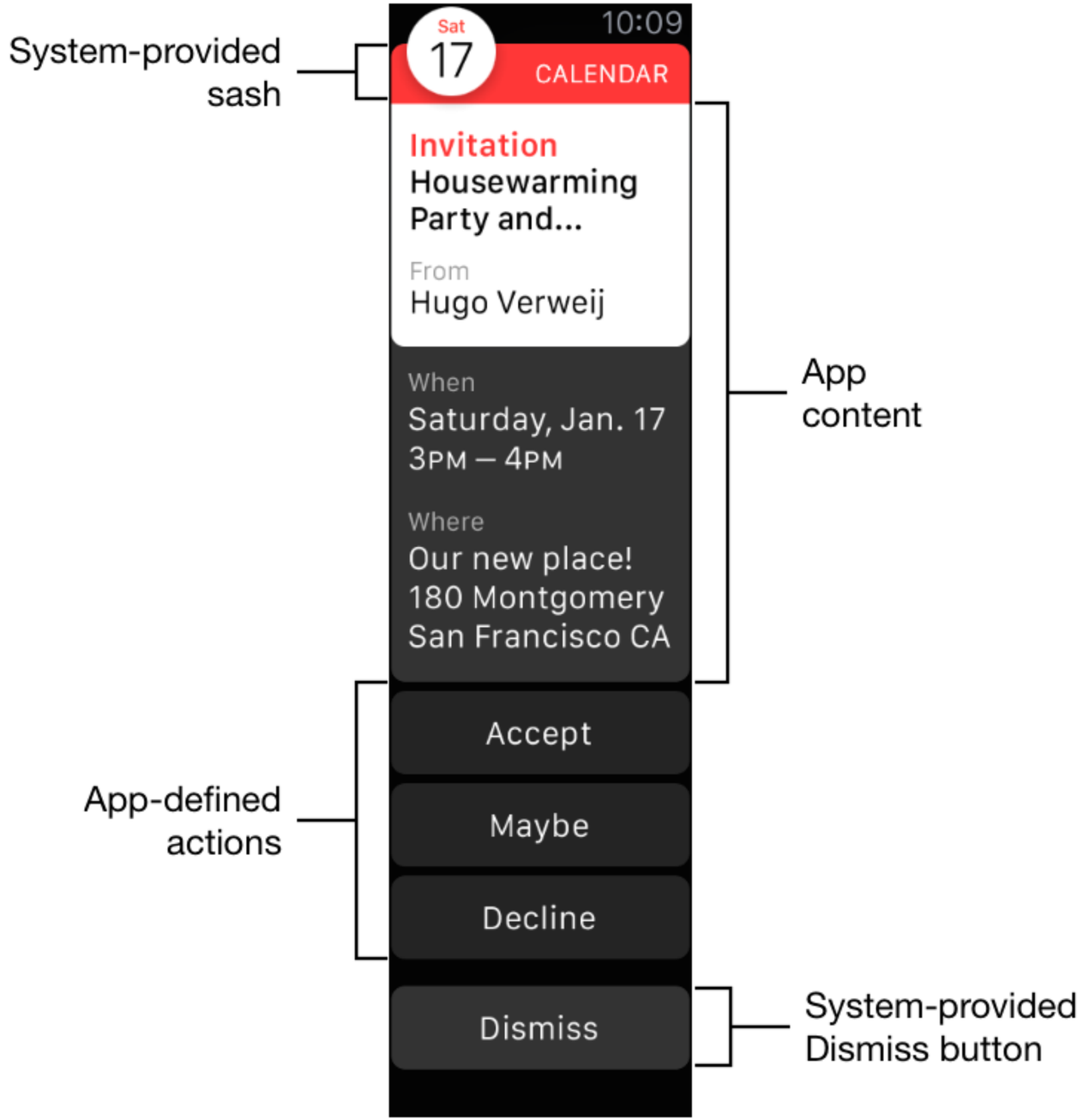
NOTIFICATIONS

USER INTERACTIONS

- Custom Notifications
  - Works with iPhone to display local and remote notifications
  - Providing custom notification interfaces
    - Short
    - Long

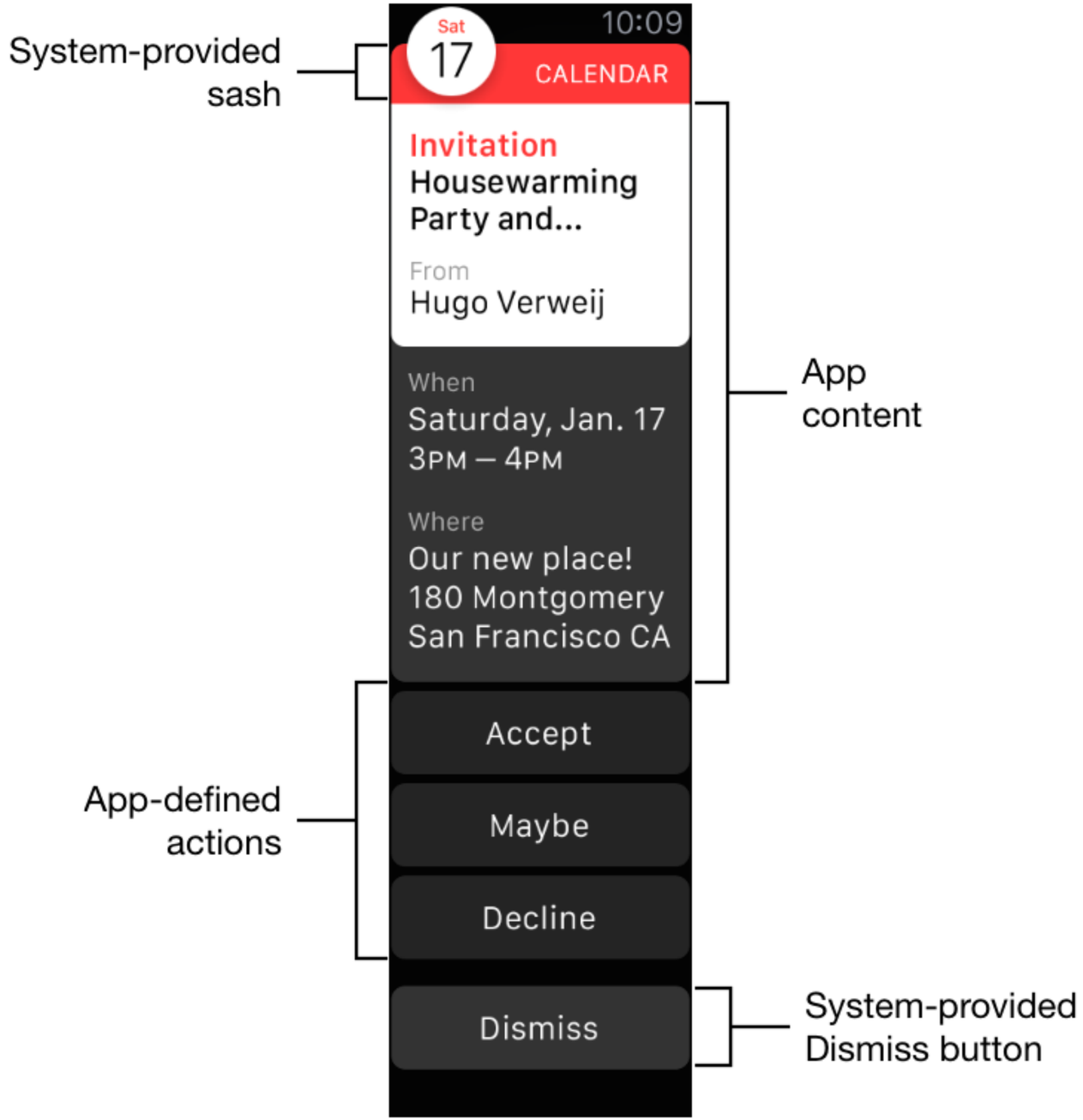
USER INTERACTIONS

- Long looks notifications
- Actionable notifications to increate functionality



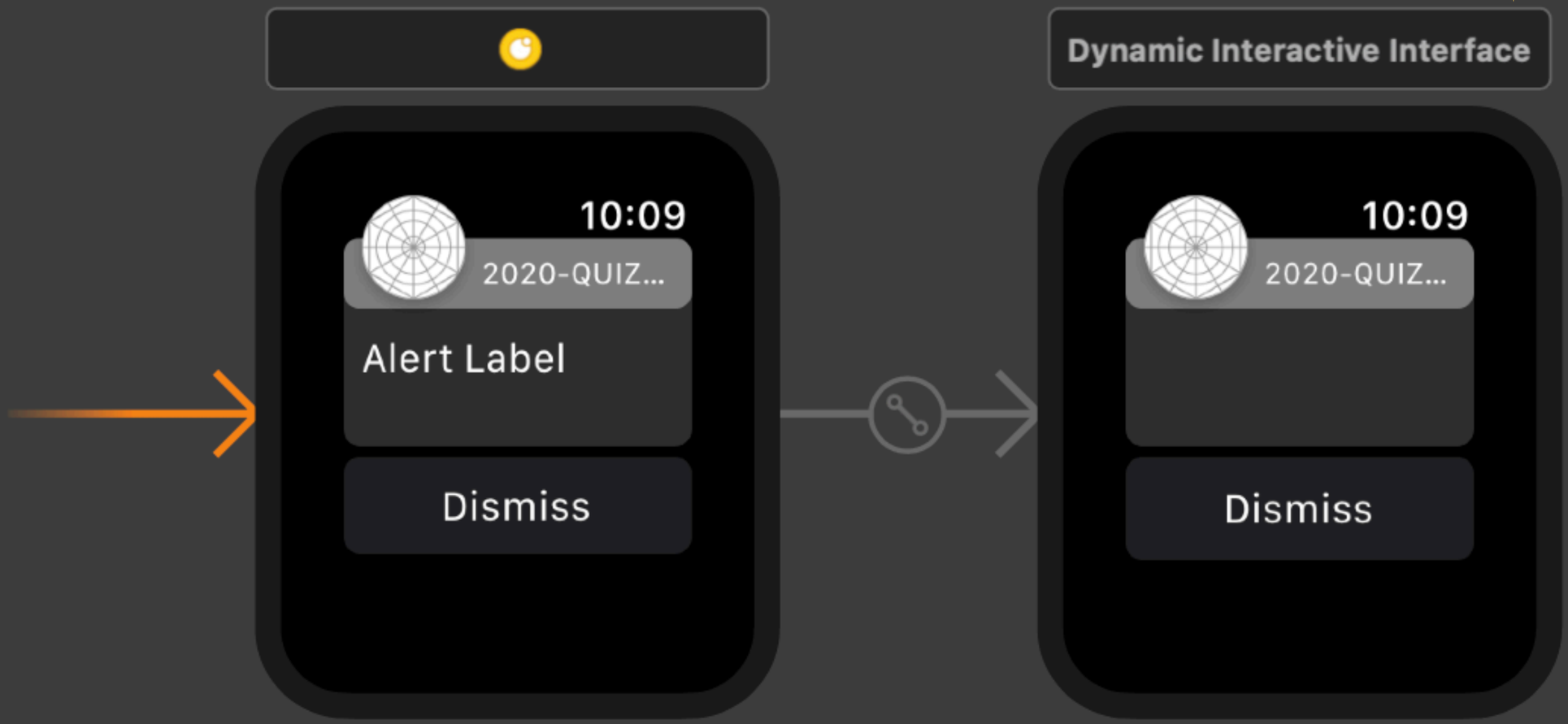
USER INTERACTIONS

- watchOS works with UNNotification framework
- Schedule and handle location notification on watch using extension
  - Time, location based
- Handle remote notifications delivered to watch



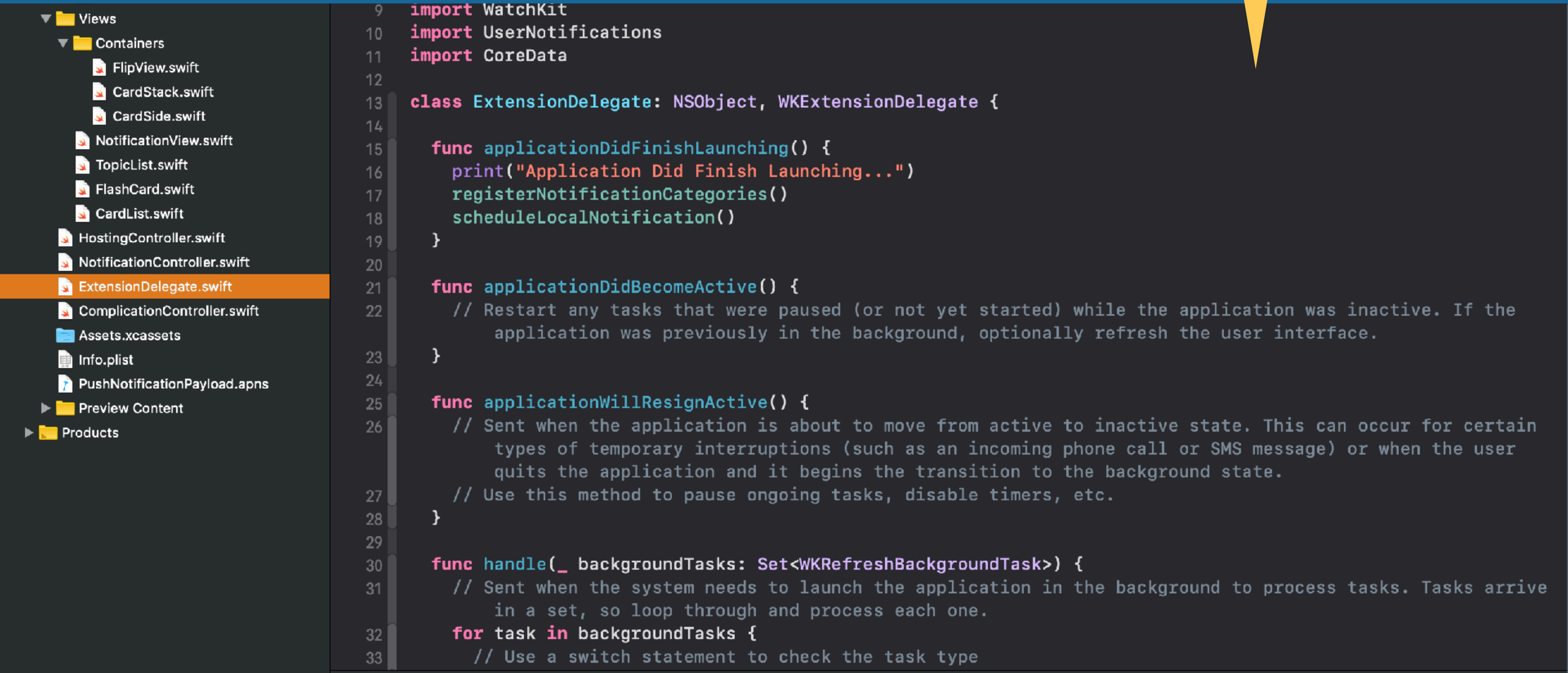
USER INTERACTIONS

Templates from Xcode



USER INTERACTIONS

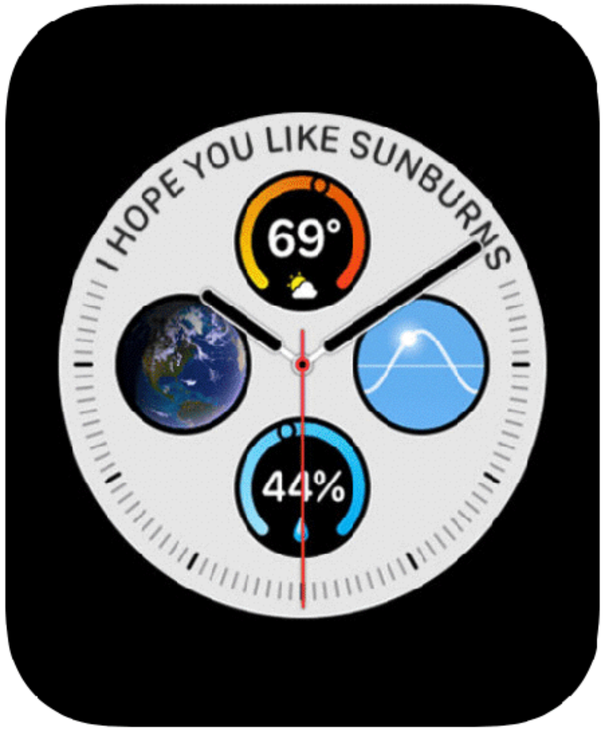
Templates from Xcode



COMPLICATIONS

USER INTERACTIONS

COMPLICATIONS

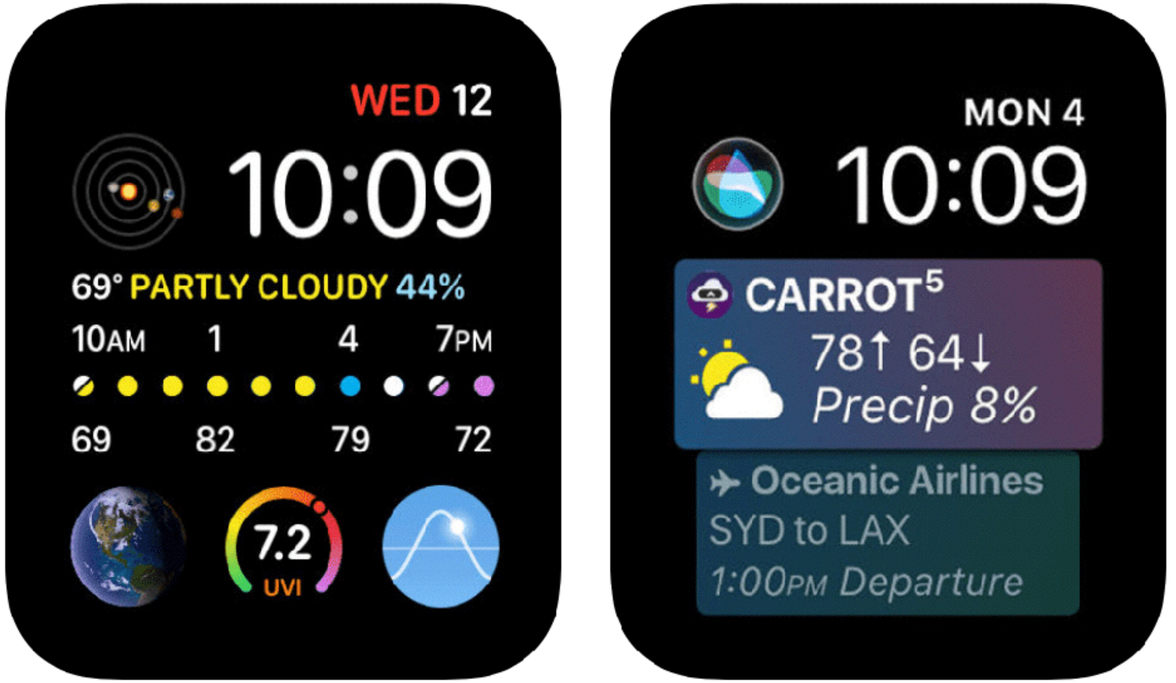


USER INTERACTIONS

COMPLICATIONS

SUBTITLE

- Small visual elements that appear on the watch face
  - Customizable
  - Always visible



USER INTERACTIONS

USER INTERACTIONS

COMPLICATIONS

SUBTITLE

- The term *complication* comes from watch making, where the addition of features added complexity to the watch construction

USER INTERACTIONS

COMPLICATIONS

> Apple recommends that all Watch apps include a complication, even if that complication only acts as a button to launch the app. For information about complications and how to implement them, see Complication Essentials.

- 🤷‍♀️

USER INTERACTIONS

COMPLICATIONS

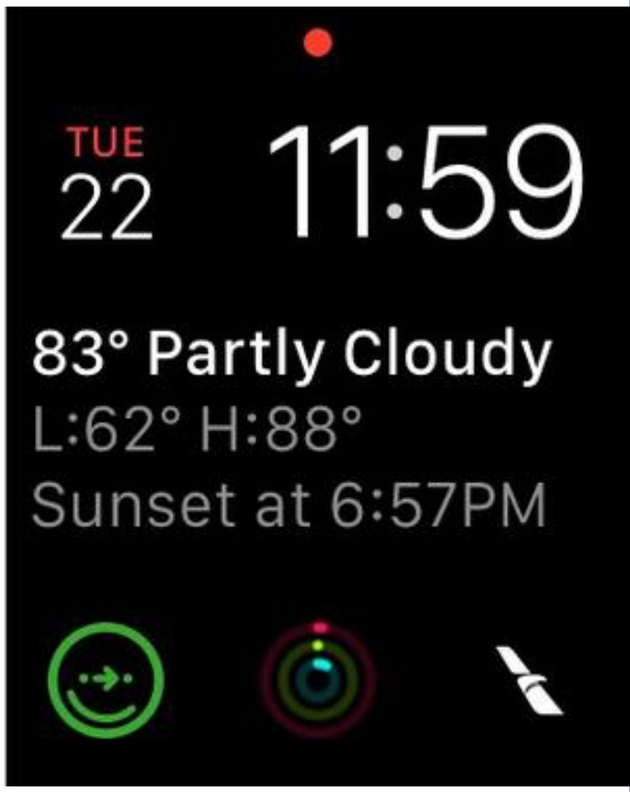
- Number of complications varies depending on the watch face

Nike Run Club

USER INTERACTIONS

COMPLICATIONS

- Apps whose complications are selected on the face get VIP treatment
  - Stays in memory; fast launch
  - Receives more time to execute background tasks
  - Receive background updates (at least 2x/hour)



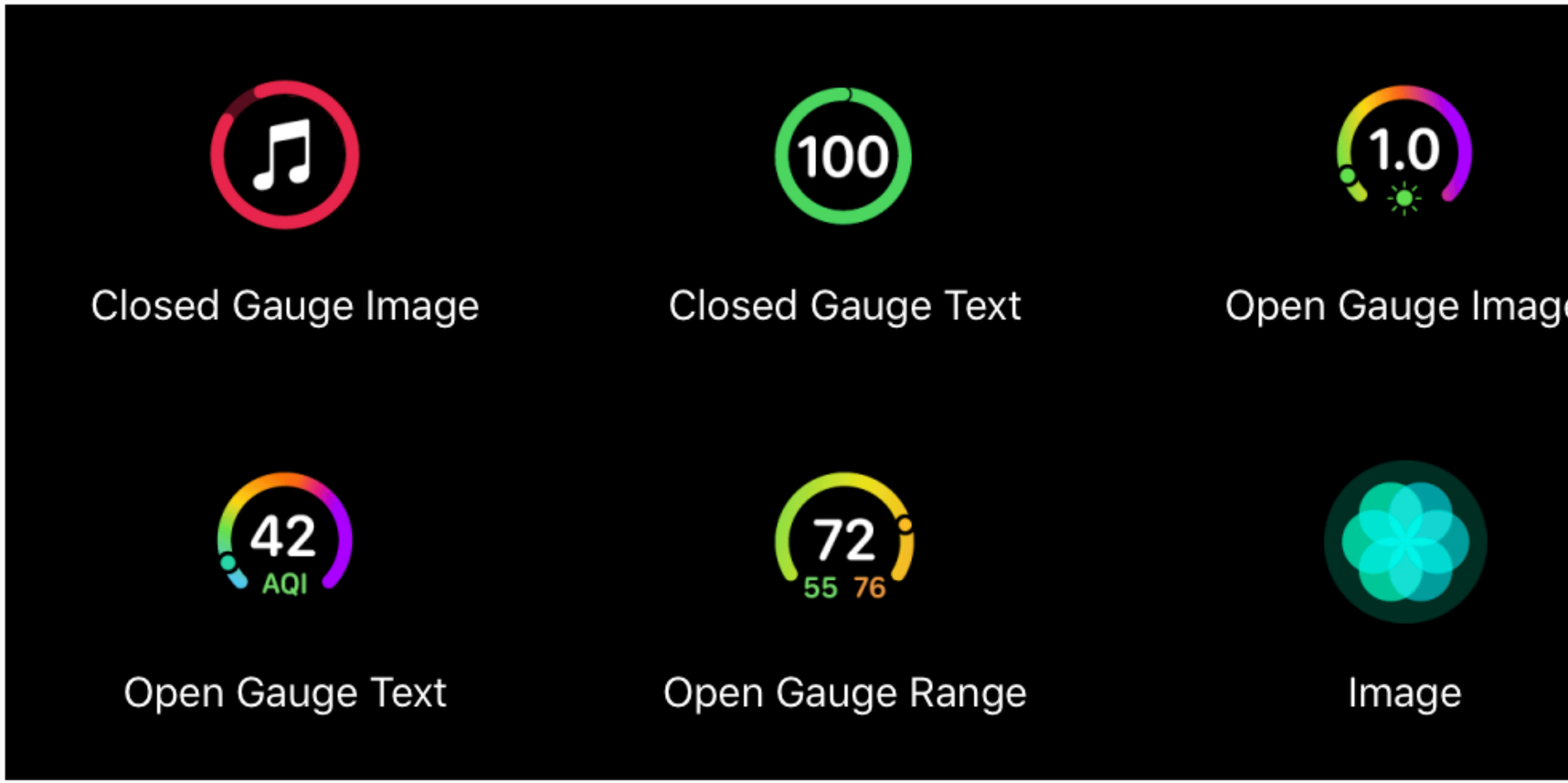
USER INTERACTIONS

COMPLICATIONS

- Different templates for the different watch styles

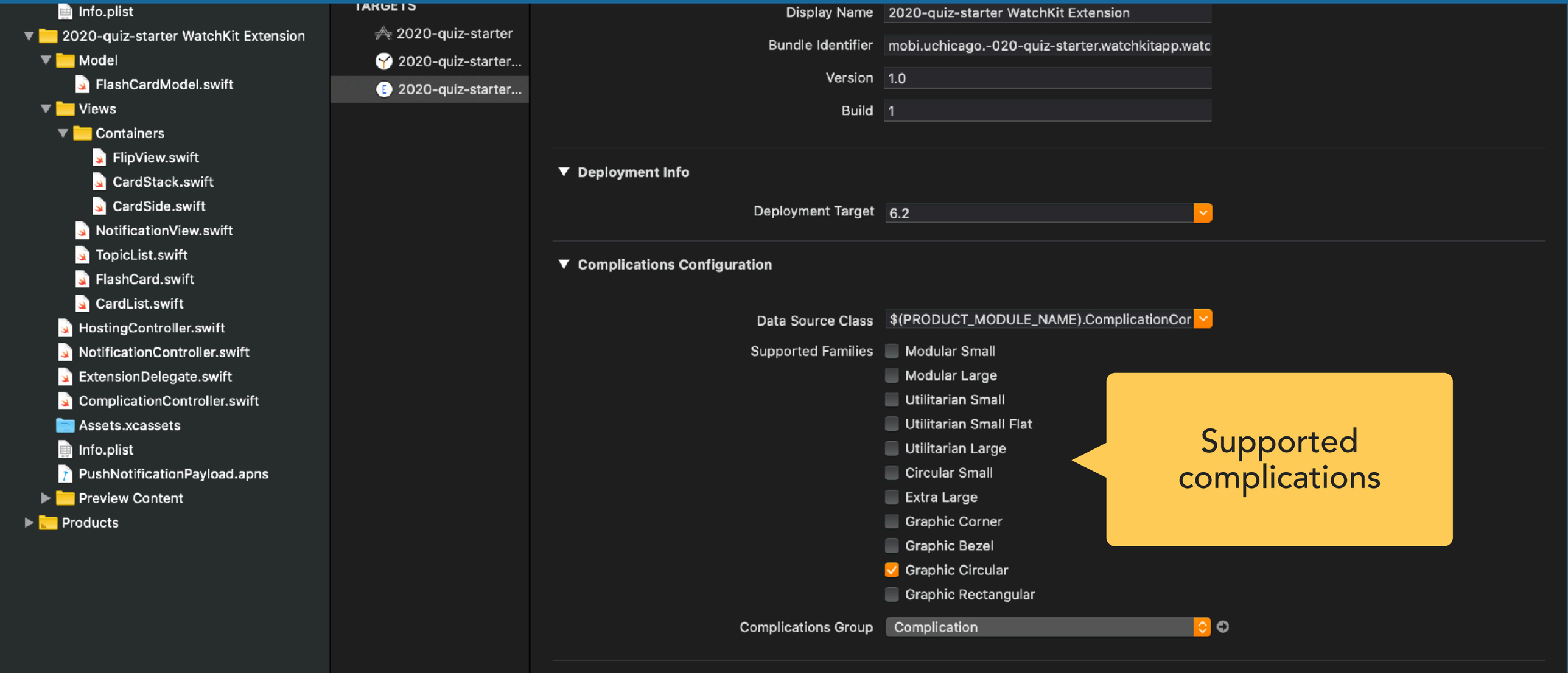
Graphic Circular

These templates display text, gauges, and full-color images in small circular areas o
Infograph and Infograph Modular watch faces. Some of the templates also support
multicolor text. The Infograph and Infograph Modular faces are only available on App
Watch Series 4.



USER INTERACTIONS

COMPLICATIONS



ASSIGNMENT 3

PART 2

ASSIGNMENT 3

- Pop Quiz!
- Independent watchOS application for studying flashcards

ASSIGNMENT 3

SUBTITLE

- Features
  - Core Data model for data persistence
  - Custom notifications
    - From APNS
    - Local notification
  - Complication
  - SwiftUI

ASSIGNMENT 3

SUBTITLE

- Template app that provides core functionality and design
  - Feel free to change anything

ASSIGNMENT 3

- Change data model to use CoreData
  - 3 subjects worth of data
  - 10 questions per subject
- Add buttons for "Correct" and "Incorrect"
- Keep statistics on correct/incorrect

Add Buttons

ASSIGNMENT 3

SUBTITLE

- Update Complication to use a "Graphic Circle Closed Gauge Text"
  - Show percent answered correctly
  - Gauge completion is percent correct
- Add a background update to refresh the percentages

ASSIGNMENT 3

SUBTITLE

- Update Notification to handle CoreData model
- Local notification should randomly select an incorrect question from last session
- Handle statistics on the "Correct/Incorrect" actions

ASSIGNMENT 3

SUBTITLE

- Add all necessary app icons

THE UNIVERSITY OF CHICAGO

WATCH APPLICATION DEVELOPMENT

MPCS 51032 • SPRING 2020 • SESSION 5