

What's New in watchOS

Session 205

Ian Parks, watchOS Engineering

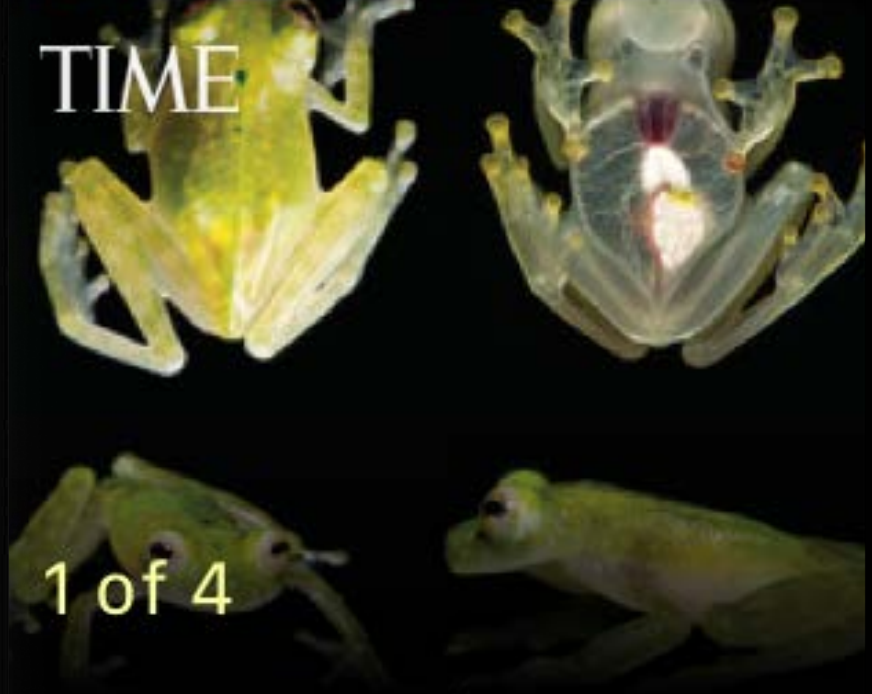
watchOS 4



Top Stories

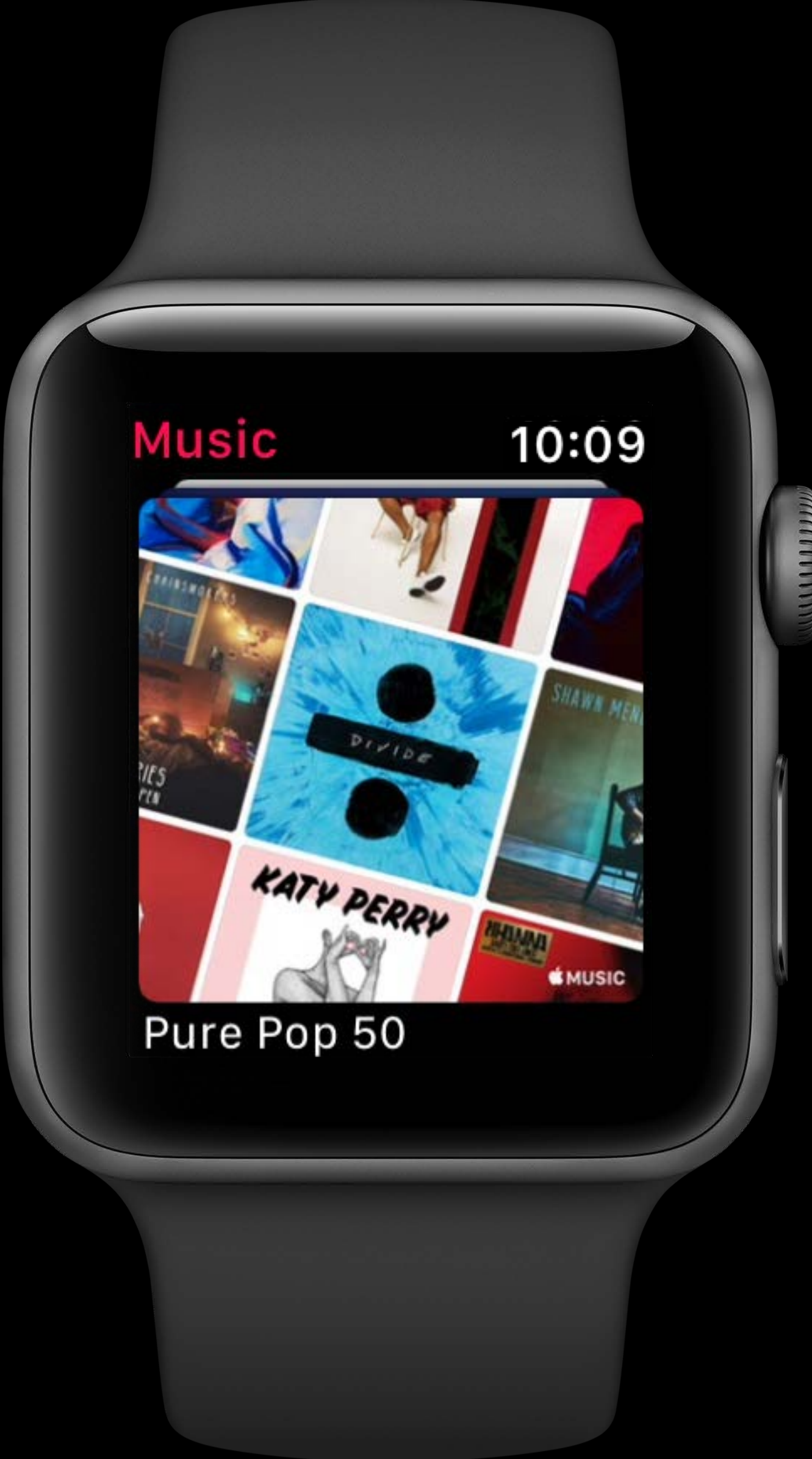
10:09

TIME



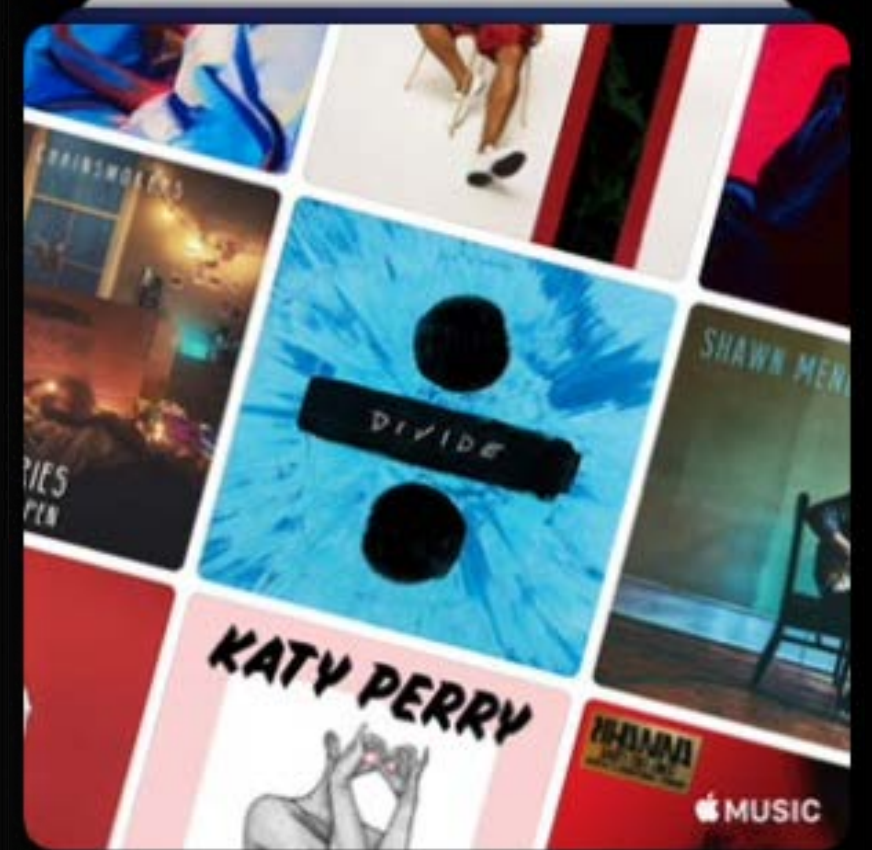
1 of 4

A Peek Inside the
Transparent Frog



Music

10:09



Pure Pop 50



10:09



0 ACTIVE CAL

0 TOTAL CAL

--BPM



0FT





10:09



0 ACTIVE CAL

0 TOTAL CAL

--BPM 

0FT





MON 5



10:09

San Jose



79°/54°

10:00 AM - 12:00 PM

Keynote

San Jose McEne...





Glanceable



Glanceable



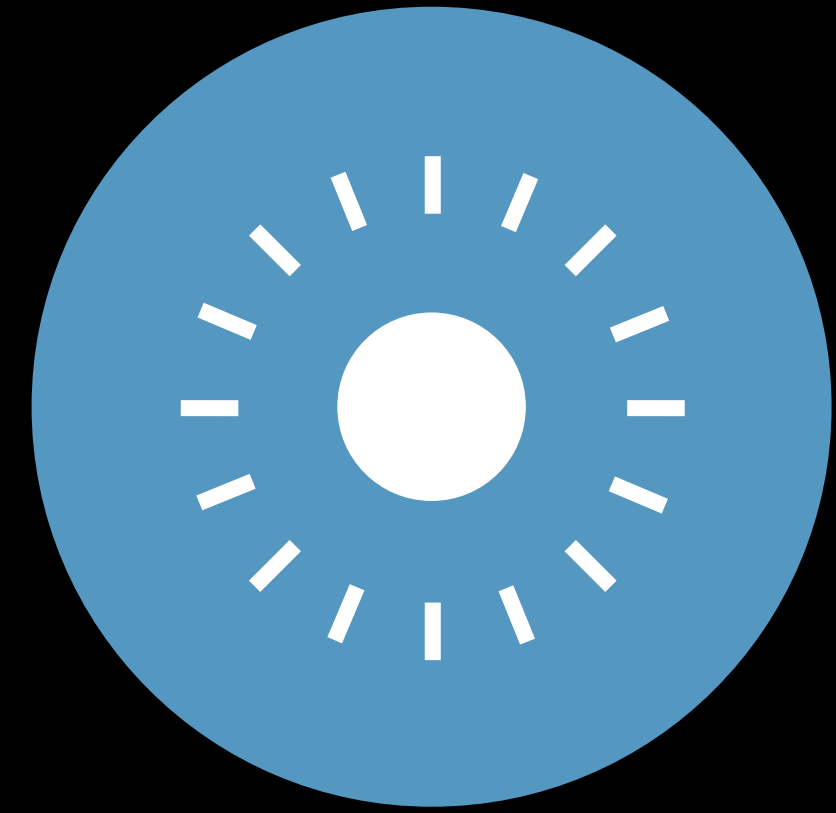
Actionable



Glanceable



Actionable



Responsive



Workout 10:09

Quick Start
Outdoor Run
Open Goal
Last: 6/14/16, 3.2mi

Outdoor Run

Outdoor Cycle



Workout

10:09



High Intensity
Interval Training
OPEN GOAL





High Intensit... 10:09



Lock



New



End



Pause





Weather

10 10 10

Calendar

27

No events today.

Timer



Weather

10 10 10

Sat 27 Calendar

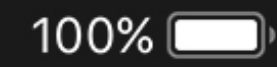
27

No events today.

Timer



10:09 AM



< My Watch

Dock

Edit

DOCK ORDERING

Recents

Favorites



Choose the apps you want to appear in the Dock, and how they are ordered.

FAVORITES



Activity



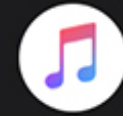
Timer



Workout



Calendar



Music



Reminders



Stocks



Home



Messages



My Watch



Face Gallery



App Store



Search



Stocks

Weather

58°

All Apps



UI Flexibility





UI Flexibility



KidFit

10:09



Playground Shenanigans

Running, Climbing, Core



Hide & Seek

Running



Tag

Running





Hide & Seek

10:09



0 CALS

00:00





Hide & Seek 10:09



0 CALS
00:00



10:09

SpriteKit Scene

0 CALS

00:00

ParentWorkout | Clean **Succeeded** | Today at 8:16 AM

ParentWorkout > Parent...it App > Interfa...board > Interfa...(Base) > inWor...Scene > inWorkoutStats > Group

- workoutSelection Scene
- inWorkoutStats Scene
 - inWorkoutStats
 - Group**
 - Metrics
 - Calories
 - Lbl Timer Label
 - Chase Scene
 - inWorkoutControls Scene
 - workoutSummary Scene
 - ChaseScene Scene
 - History Scene
 - workoutAchievement Scene
 - Static Notification Interface Control...
 - Notification Controller Scene

Group

- Layout
 - Horizontal
 - Vertical
 - Overlap
- Insets Default
- Spacing Default Custom
- Background No Image
- Mode Scale To Fill
- Animate No
- Color Default
- Radius Default Custom

View


- Alpha 1
- Hidden
- Installed
- Semantic Unspecified
- Alignment
 - Horizontal Left
 - Vertical Center
- Size
 - Width Relative to Container
 - 1
 - Adjustment 0
 - Height Relative to Container
 - 1
 - Adjustment 0

View as: Apple Watch 42mm — 200% +

iPhone 7...2 - 42mm | ParentWorkout | Clean **Succeeded** | Today at 8:16 AM

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- inWorkoutStats Scene
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Alignment

- Horizontal Left
- Vertical Center

Size

- Width Relative to Container
- Height Relative to Container



Hide & Seek

10:09

14 CALS

00:42





Hide & Seek

10:09

14 CALS

00:42





Turn Digital Crown to
unlock and eject water

```
// Enable Water Lock
```

```
@IBAction func waterlockButtonPressed() {  
    WKExtension.shared().enableWaterLock()  
}
```

```
// Enable Water Lock
```

```
@IBAction func waterlockButtonPressed() {  
    WKExtension.shared().enableWaterLock()  
}
```



10:09



Parenting Win!



10:09



Parenting Win!



Parenting Win!



10:09



10:09



Parenting Win!

```
// Enable Autorotate

override func willActivate() {
    WKExtension.shared().isAutorotating = true
}
```



```
// Enable Autorotate
```

```
override fun willActivate() {
```

```
    WKExtension.shared().isAutorotating = true
```

```
}
```

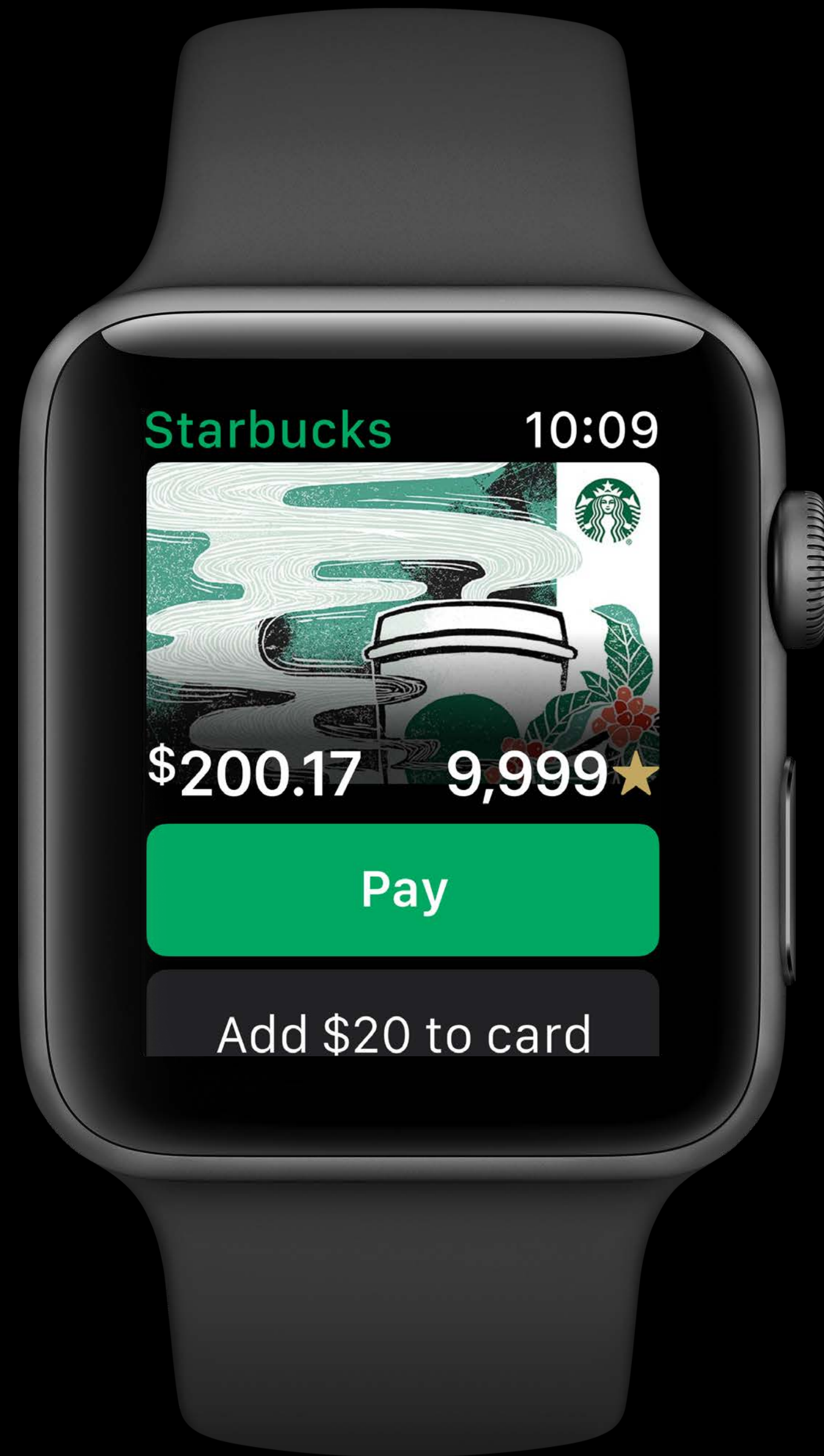


Proloquo4Text





Starbucks





Starbucks





10:09



Parenting Win!



10:09



Parenting Win!

```
// Vertical Paging Interface

func loadWorkout(workoutType: String) {
    WKInterfaceController.reloadRootPageControllers(
        withNames: ["workoutAchievement", "workoutSummary"],
        contexts: nil,
        orientation: .vertical,
        pageIndex: 0)
}
```

```
// Vertical Paging Interface

func loadWorkout(workoutType: String) {
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        withNames: ["workoutAchievement", "workoutSummary"],
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// Vertical Paging Interface

func loadWorkout(workoutType: String) {
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        withNames: ["workoutAchievement", "workoutSummary"],
        contexts: nil,
        orientation: .vertical,
        pageIndex: 0)
}
```



History

10:09

 65 CALS
May 28

 136 CALS
May 27

 184 CALS
May 26

 136 CALS
May 24



History

10:09

 65 CALS
May 28

 136 CALS
May 27

 184 CALS
May 26

 136 CALS
May 24

```
//Scroll Position Callbacks and Setting Scroll Position
```

```
func interfaceOffsetDidScrollToBottom()
```

```
func interfaceOffsetDidScrollToTop()
```

```
func interfaceDidScrollToTop()
```

```
func scroll(to: WKInterfaceObject,
```

```
    at: WKInterfaceScrollPosition,
```

```
    animated: Bool)
```

```
//Scroll Position Callbacks and Setting Scroll Position
```

```
func interfaceOffsetDidScrollToBottom()
```

```
func interfaceOffsetDidScrollToTop()
```

```
func interfaceDidScrollToTop()
```

```
func scroll(to: WKInterfaceObject,
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```
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```
//Scroll Position Callbacks and Setting Scroll Position
```

```
func interfaceOffsetDidScrollToBottom()
```

```
func interfaceOffsetDidScrollToTop()
```

```
func interfaceDidScrollToTop()
```

```
func scroll(to: WKInterfaceObject,  
           at: WKInterfaceScrollPosition,  
           animated: Bool)
```



10:09

Parenting Win!



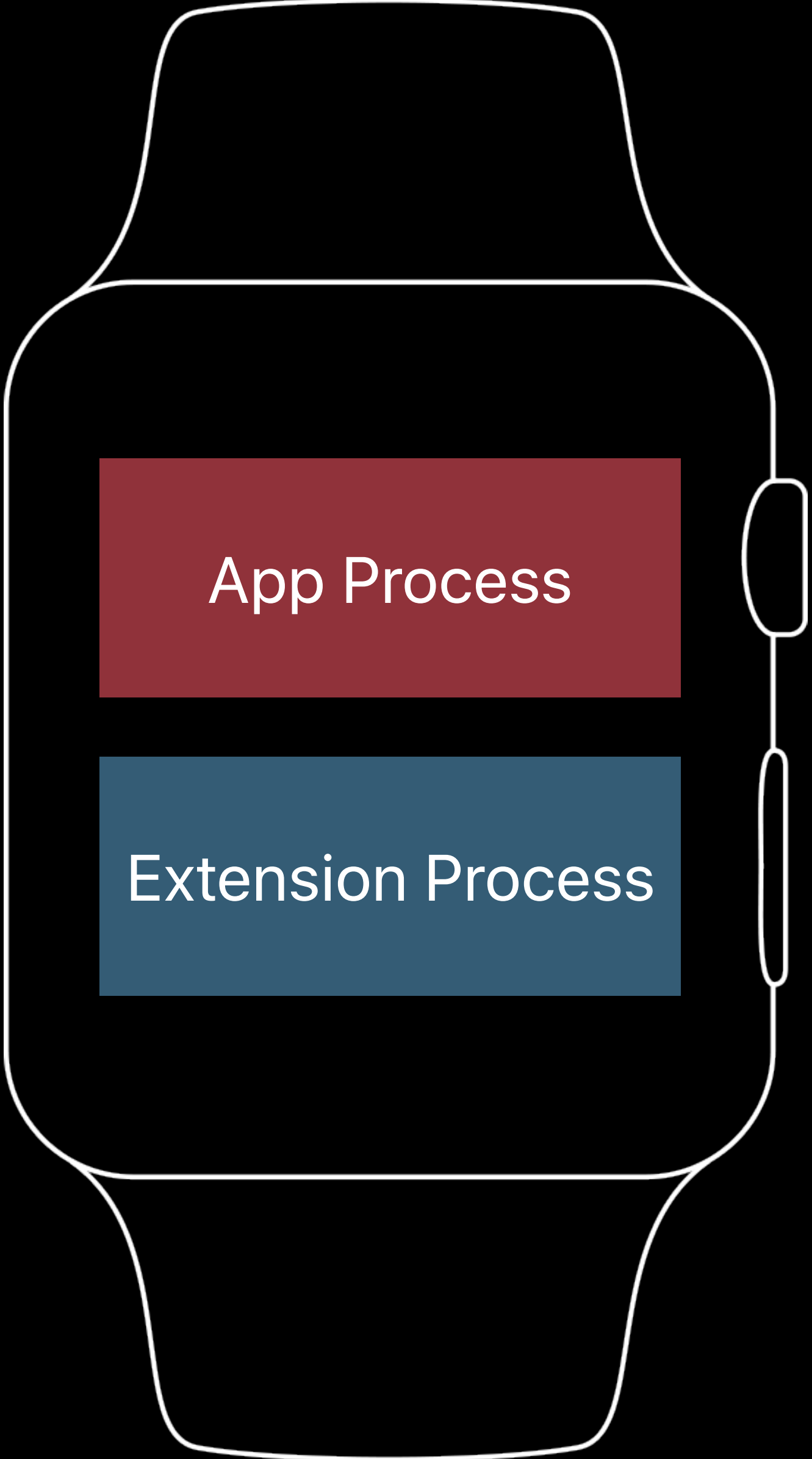
10:09



Parenting Win!

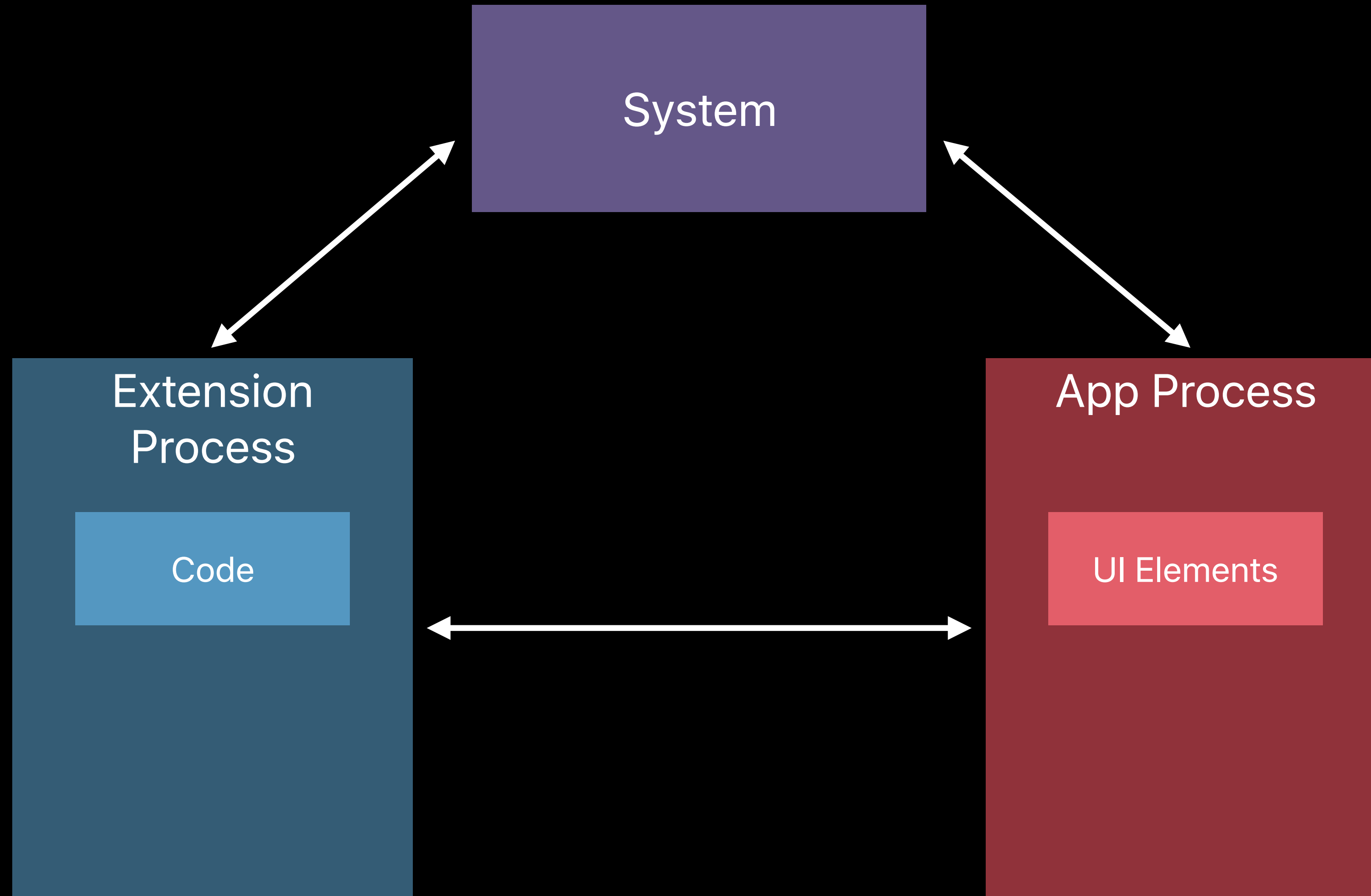


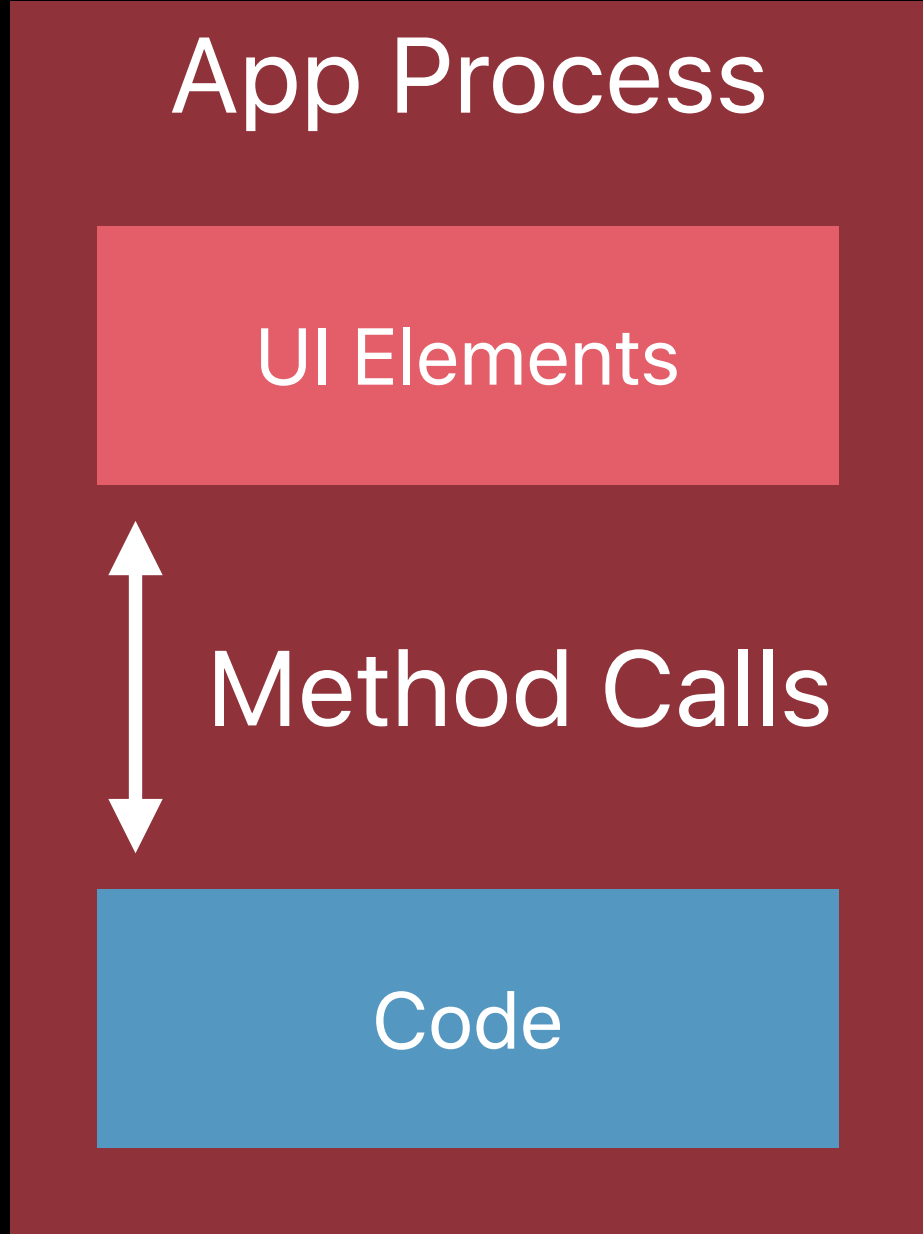
Performance



App Process

Extension Process







Background Processing

Workout Background Mode



Workout Background Mode

Hardware pause/resume



Workout Background Mode

Hardware pause/resume

Workout segments



Workout Background Mode

Hardware pause/resume

Workout segments

Workout routes



Workout Background Mode

Hardware pause/resume

Workout segments

Workout routes



Location Background Mode

Location Background Mode

Appears on wrist raise

Location Background Mode

Appears on wrist raise

Audio and haptics from background

Location Background Mode

Appears on wrist raise

Audio and haptics from background

Supports enabling water lock mode

Location Background Mode

Appears on wrist raise

Audio and haptics from background

Supports enabling water lock mode

CPU limited

Location Background Mode

Appears on wrist raise

Audio and haptics from background

Supports enabling water lock mode

CPU limited

Start from foreground

Location Background Mode

Appears on wrist raise

Audio and haptics from background

Supports enabling water lock mode

CPU limited

Start from foreground



In-line Audio Recording and Background Mode

In-line Audio Recording and Background Mode



In-line Audio Recording and Background Mode

Custom recording controls



In-line Audio Recording and Background Mode

Custom recording controls

In-line processing



In-line Audio Recording and Background Mode

Custom recording controls

In-line processing

Background recording



In-line Audio Recording and Background Mode

Appears on wrist raise

CPU limited

Start from foreground

In-line Audio Recording and Background Mode

Appears on wrist raise

CPU limited

Start from foreground



Core Bluetooth

Core Bluetooth

Limited to two peripherals

Core Bluetooth

Limited to two peripherals

Central support only

Core Bluetooth

Limited to two peripherals

Central support only

Minimum connection interval of 30ms foreground (120ms background)

Core Bluetooth

Limited to two peripherals

Central support only

Minimum connection interval of 30ms foreground (120ms background)

Background running apps can only connect (not scan)

Core Bluetooth

Limited to two peripherals

Central support only

Minimum connection interval of 30ms foreground (120ms background)

Background running apps can only connect (not scan)

Peripherals disconnect when app is suspended

Core Bluetooth

Limited to two peripherals

Central support only

Minimum connection interval of 30ms foreground (120ms background)

Background running apps can only connect (not scan)

Peripherals disconnect when app is suspended



ReSound Smart 3D



Frontmost App State



< Shopping list 10:09

Flour

Baking powder

Salt

Eggs



Timer

10:09

08:00

Reset

Pause



Timer

10:09

02:00

Reset

Pause

Frontmost App State

Frontmost App State

Extended frontmost time


```
//Enable Extended Frontmost
```

```
override func willActivate() {
```

```
    WKExtension.shared().isFrontmostTimeoutExtended = true
```

```
}
```

```
//Enable Extended Frontmost
```

```
override func willActivate() {
```

```
    WKExtension.shared().isFrontmostTimeoutExtended = true
```

```
}
```



< Shopping list 10:09

Flour

Baking powder

Salt

Eggs



< Shopping list 10:09

No Reminders

Frontmost App State

Extend runtime

Frontmost App State

Extend runtime

URLSession

Frontmost App State

Extend runtime

URLSession

WatchConnectivity

Frontmost App State

Extend runtime

URLSession

WatchConnectivity

Haptic playback

Frontmost App State

Extend runtime

URLSession

WatchConnectivity

Haptic playback

Notification handling



10:09

5
MINS

Pickup at
150 W San Carlos St

Request Ride







10:09

Arriving in

1 min

Johnny Appleseed



Call Driver



Summary



UI Flexibility

Summary

UI Flexibility

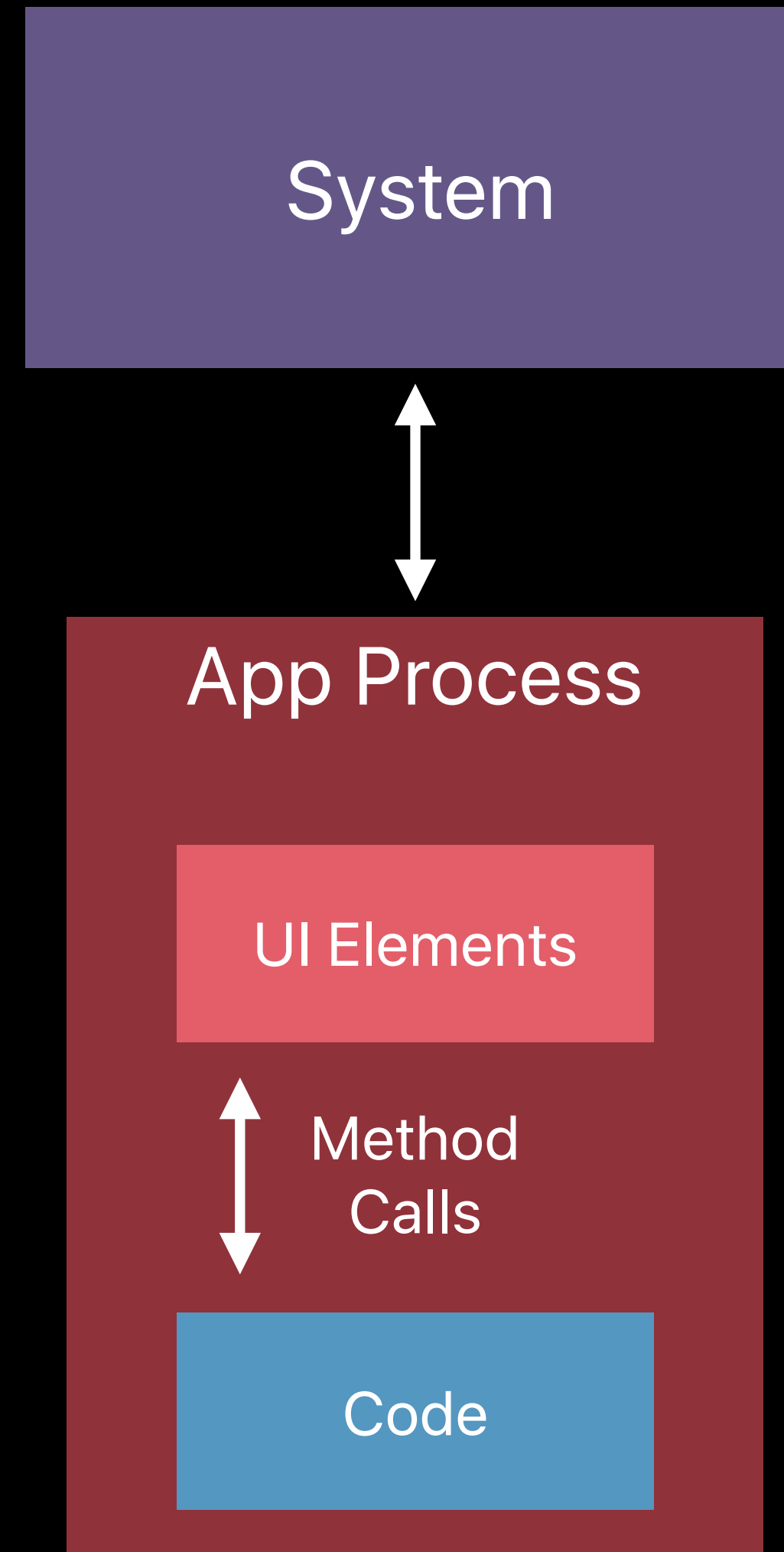


Summary

UI Flexibility



Summary



Summary



Background
Processing

New background modes

Core Bluetooth

Frontmost app state

Related Sessions

[The Life of a watchOS App](#)

Grand Ballroom B

Wednesday 1:50PM

[What's New in Health](#)

Grand Ballroom B

Wednesday 5:10PM

[What's New in Core Bluetooth](#)

Grand Ballroom B

Thursday 11:00AM

[Planning a Great Watch App Experience](#)

Grand Ballroom B

Thursday 5:10PM

Labs

Background Updates and WatchKit Lab

Technology Lab H

Wed 3:10PM–6:00PM

WatchKit Lab

Technology Lab C

Thu 1:00PM–4:00PM

WatchConnectivity and WatchKit Lab

Technology Lab B

Fri 9:00AM–11:00AM

More Information

<https://developer.apple.com/wwdc17/205>

