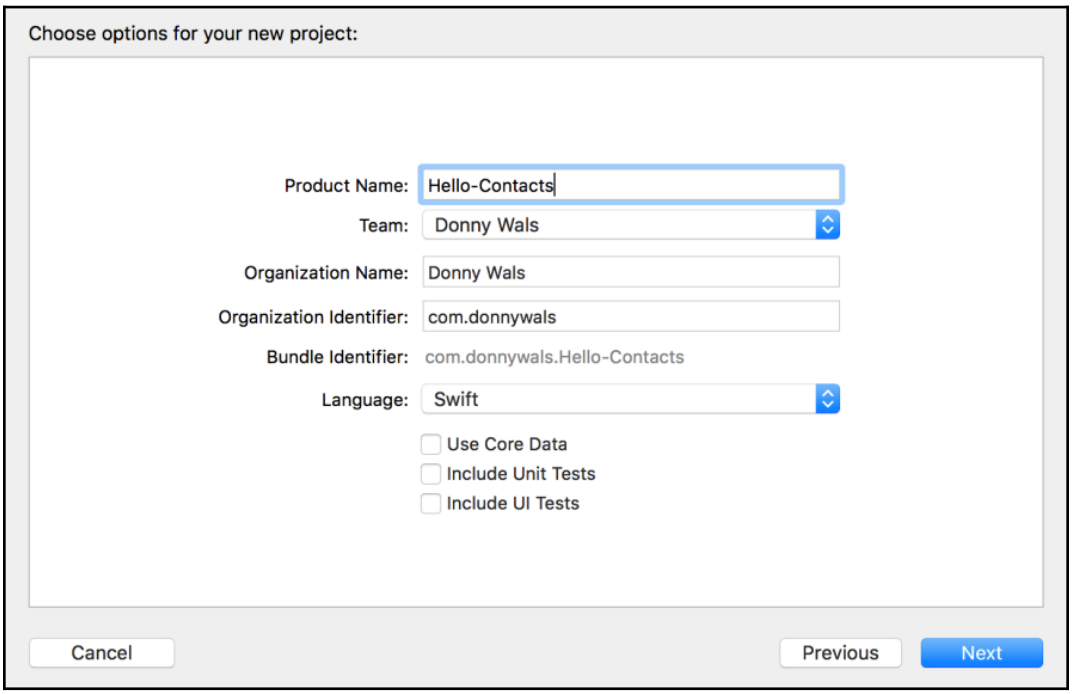
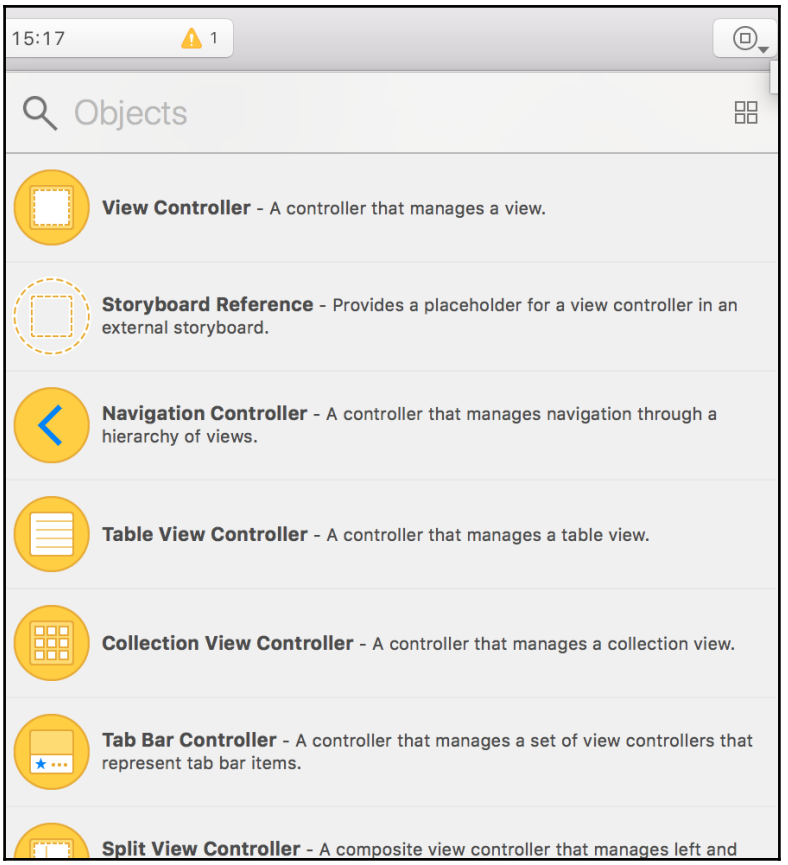
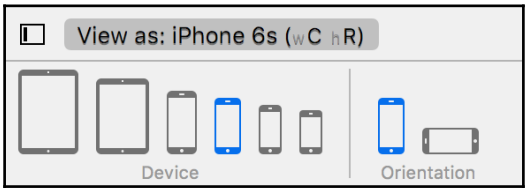
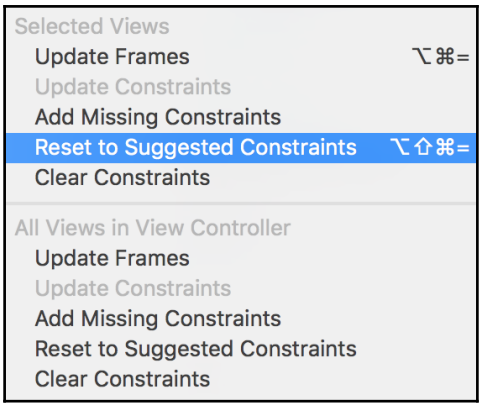
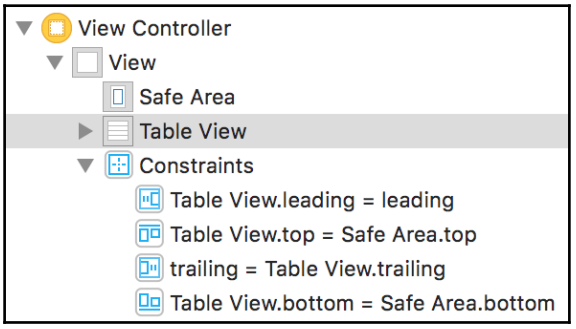
Chapter 1: UITableView Touch-up




15:17
1
Objects
View Controller - A controller that manages a view.
Storyboard Reference - Provides a placeholder for a view controller in an external storyboard.
Navigation Controller - A controller that manages navigation through a hierarchy of views.
Table View Controller - A controller that manages a table view.
Collection View Controller - A controller that manages a collection view.
Tab Bar Controller - A controller that manages a set of view controllers that represent tab bar items.
Split View Controller - A composite view controller that manages left and


View as: iPhone 6s (wC hR)
Device
Orientation






```
    undefined.
2018-07-09 13:06:08.526450+0200 Hello-Contacts[5483:985753] libMobileGestalt MobileGestalt.c:879: MGIsDeviceOneOfType is not
    supported on this platform.
[<CNContact: 0x7fee7dc16130: identifier=177C371E-701D-42F8-A03B-C61CA31627F6, givenName=Kate, familyName=Bell,
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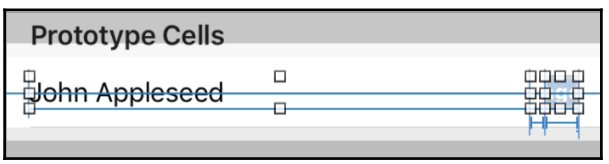
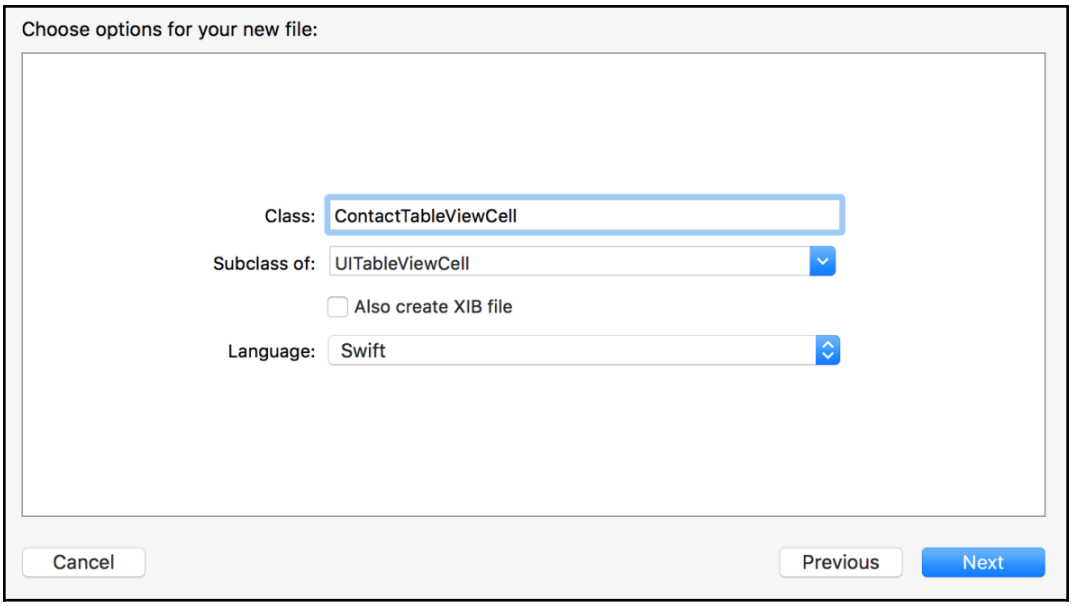
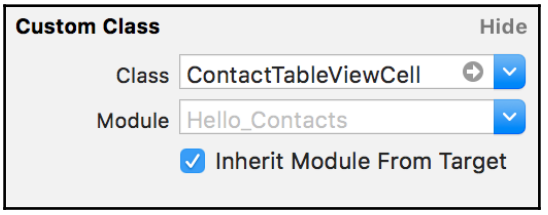
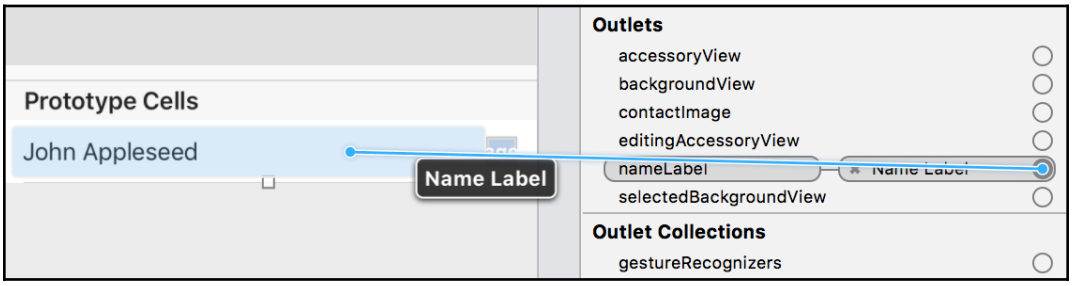
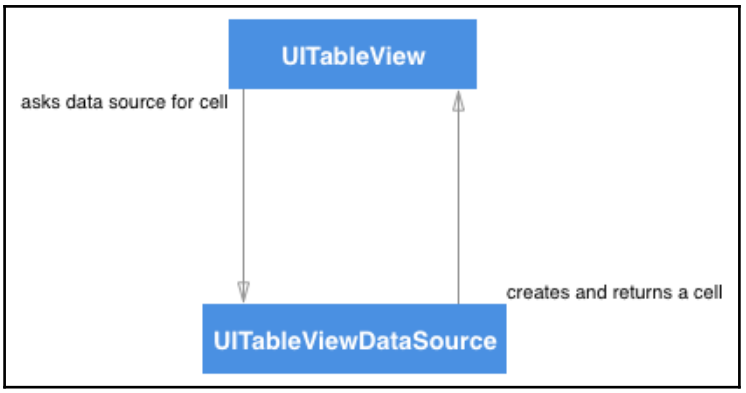



Choose options for your new file:
Class: ContactTableViewCell
Subclass of: UITableViewCell
Also create XIB file
Language: Swift
Cancel
Previous
Next

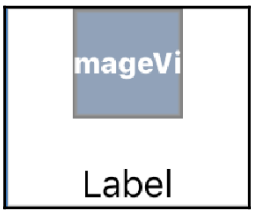

Custom Class
Hide
Class ContactTableViewCell
Module Hello_Contacts
Inherit Module From Target

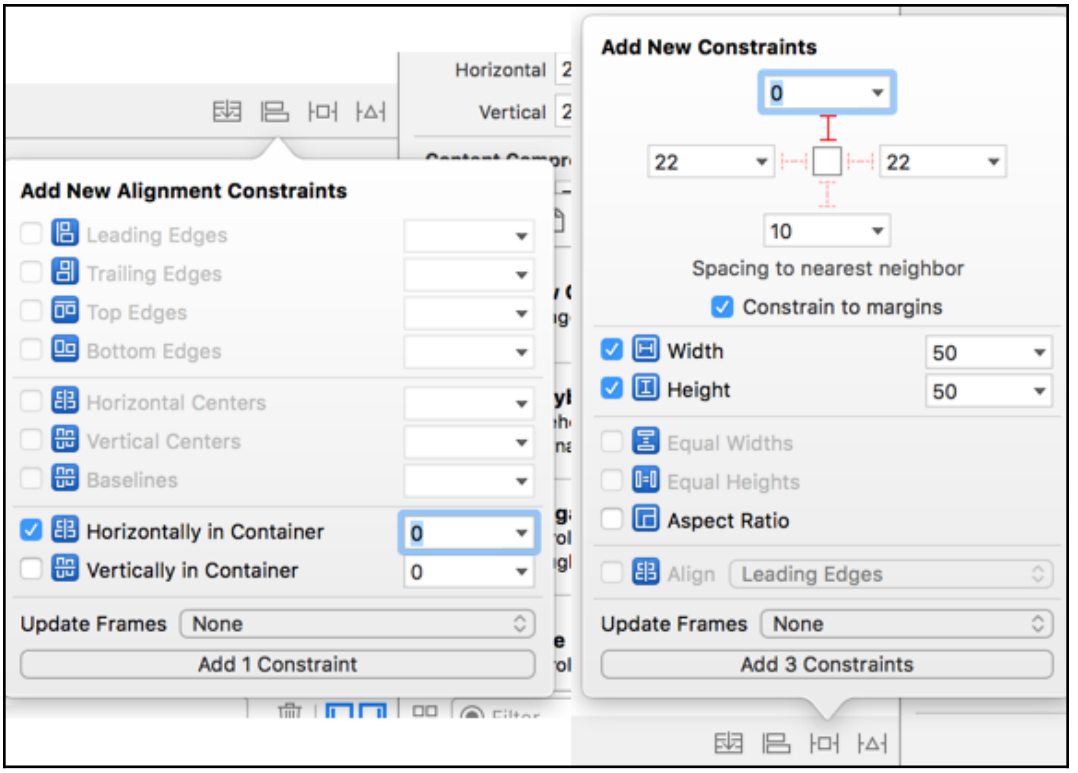

Prototype Cells
John Appleseed
Name Label
Outlets
accessoryView
backgroundView
contactImage
editingAccessoryView
nameLabel
selectedBackgroundView
Outlet Collections
gestureRecognizers

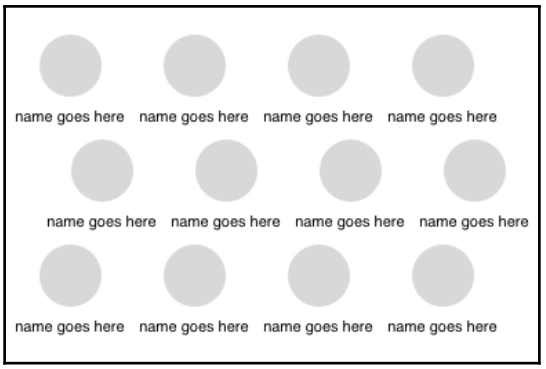

UITableView
asks data source for cell
creates and returns a cell
UITableViewDataSource

Cells in memory
Visible cells

Chapter 2:
A Better Layout with UICollectionView






name goes here
name goes here
name goes here
name goes here
name goes here
name goes here
name goes here
name goes here
name goes here
name goes here
name goes here
name goes here

old bounds
new bounds
name here
name here
name here
name here
name here
name here
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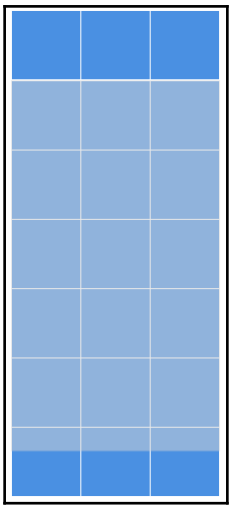
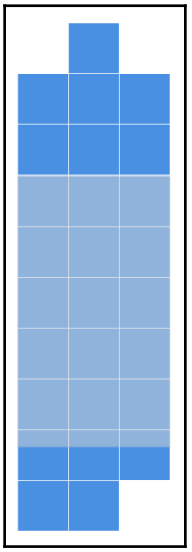
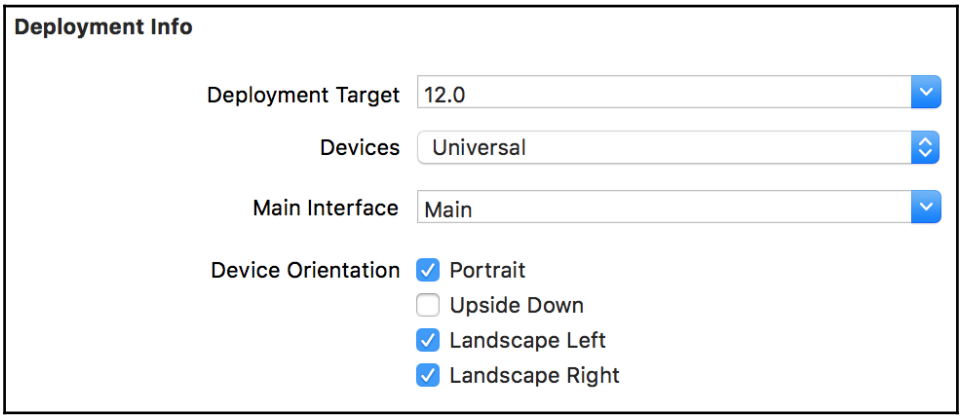
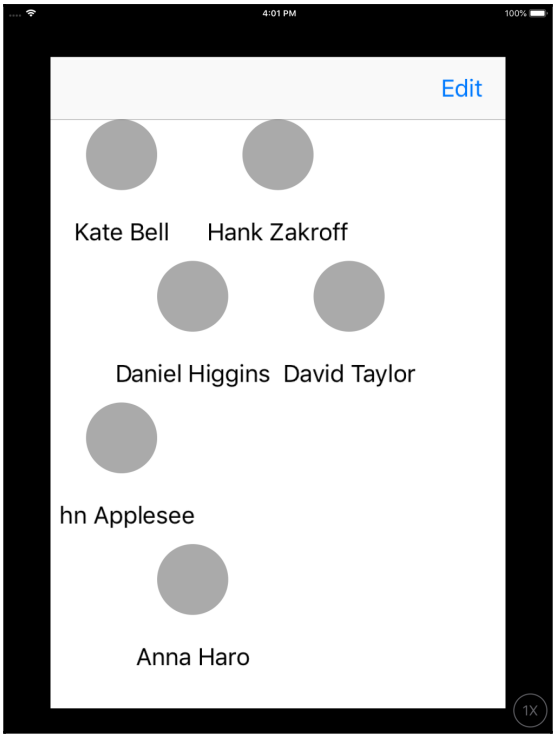
name here

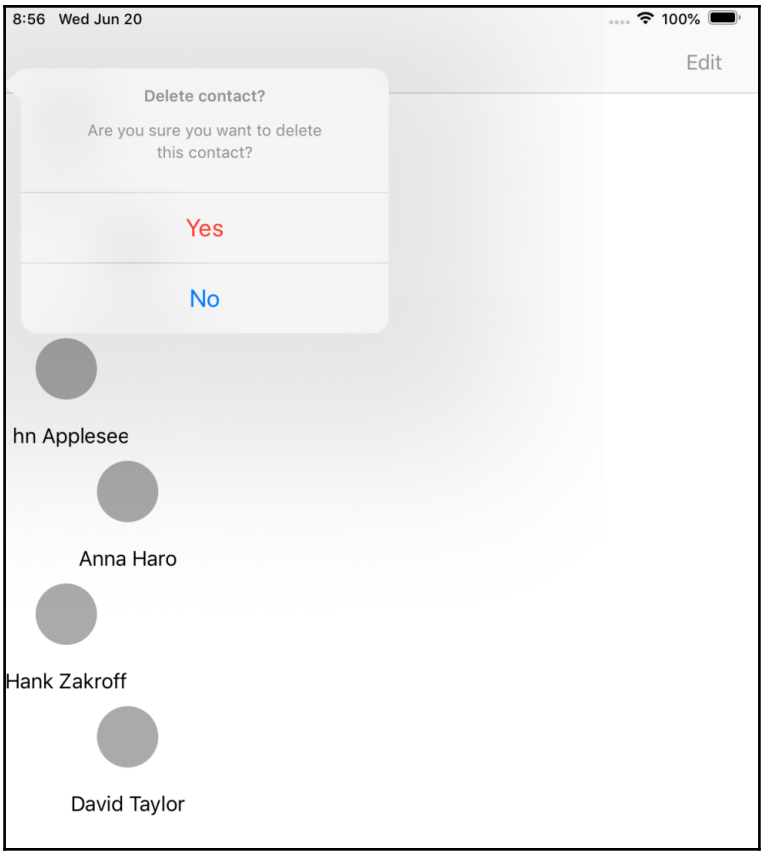


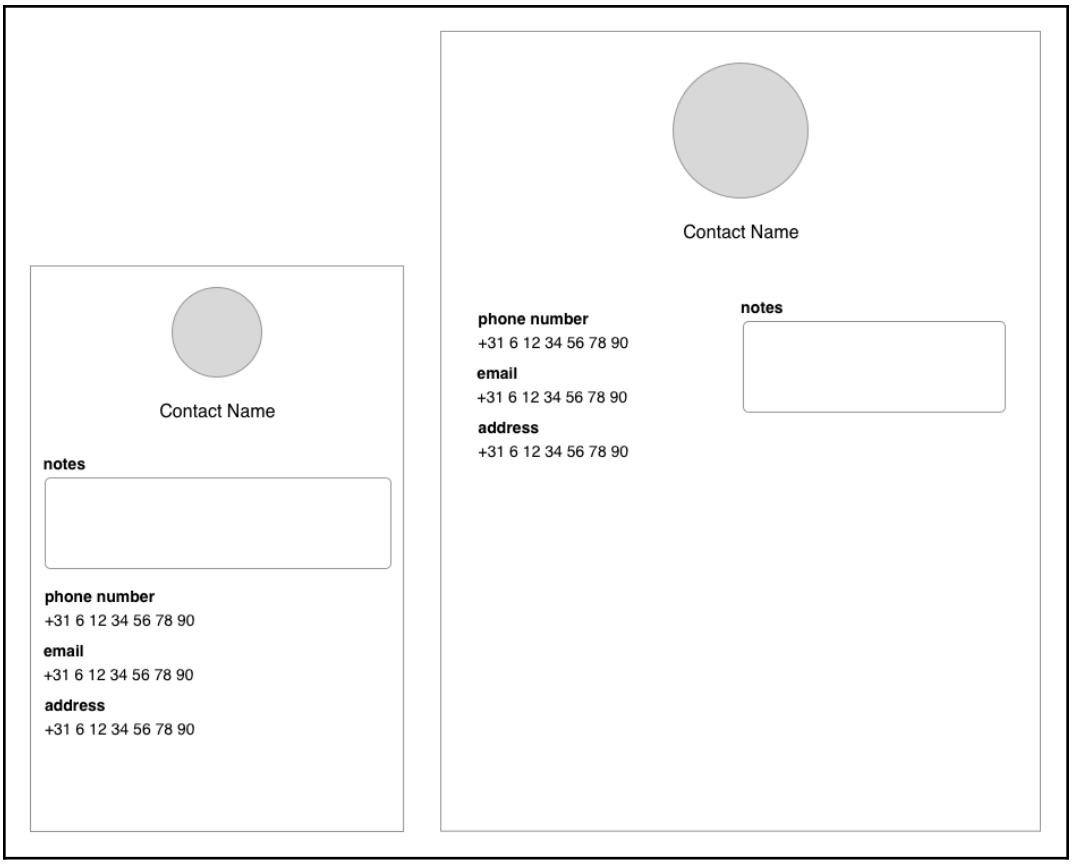


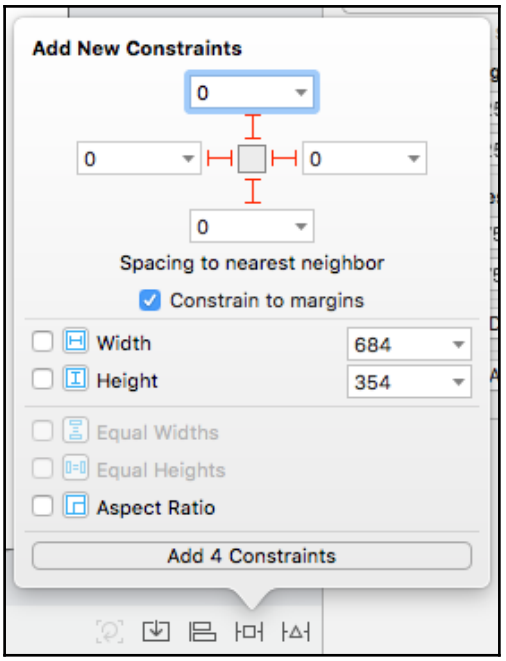
Chapter 3: Creating a Detail Page

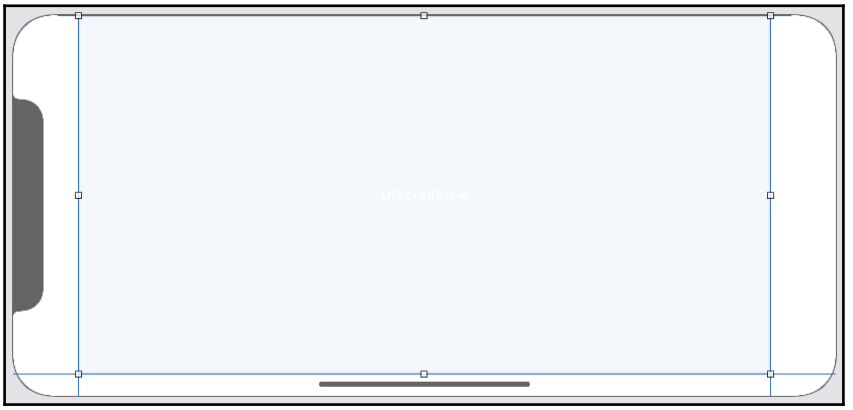




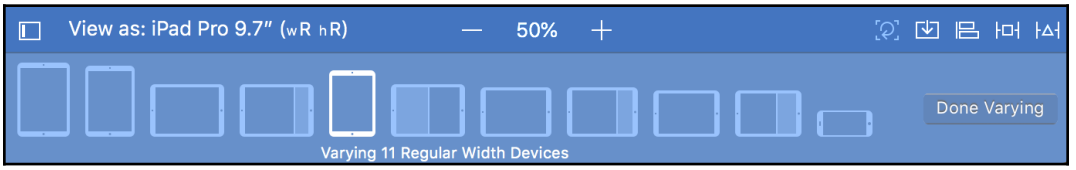

8:56 Wed Jun 20
100%
Edit
Delete contact?
Are you sure you want to delete this contact?
Yes
No
hn Applesee
Anna Haro
Hank Zakroff
David Taylor

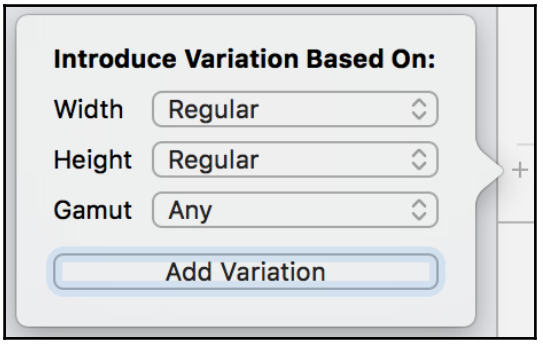

Contact Name
notes
phone number
+31 6 12 34 56 78 90
email
+31 6 12 34 56 78 90
address
+31 6 12 34 56 78 90
Contact Name
phone number
+31 6 12 34 56 78 90
email
+31 6 12 34 56 78 90
address
+31 6 12 34 56 78 90
notes

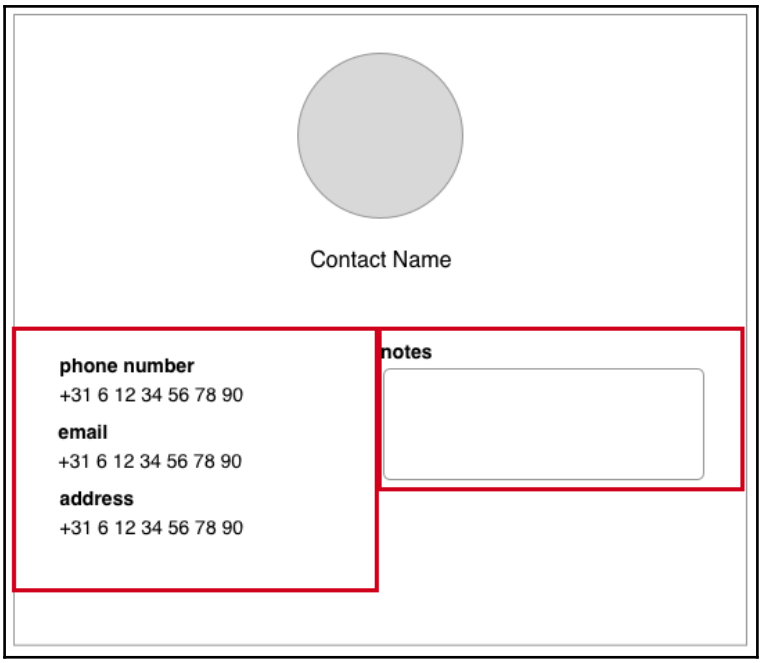

Add New Constraints
0
0
0
0
Spacing to nearest neighbor
Constrain to margins
Width
684
Height
354
Equal Widths
Equal Heights
Aspect Ratio
Add 4 Constraints

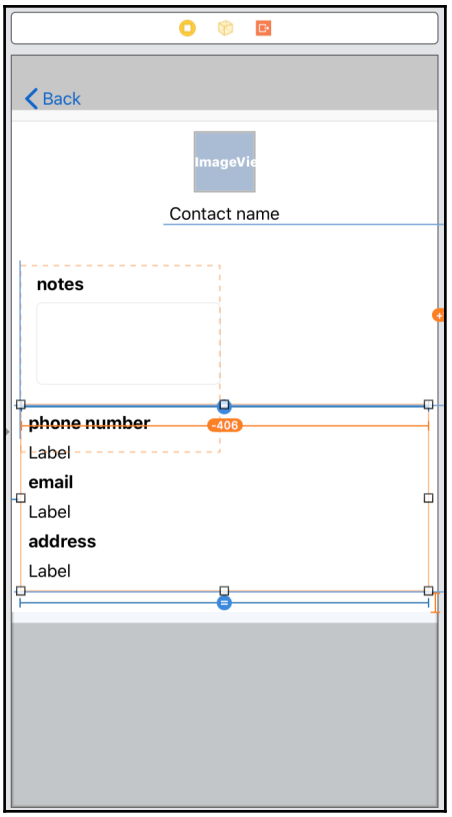

UIScrollView

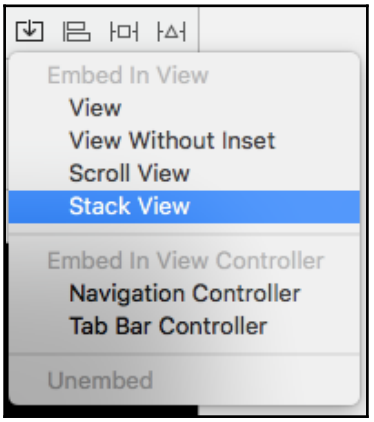
Top Space to Container
Center Horizontally in Container
Center Vertically in Container
Equal Widths
Equal Heights
Aspect Ratio
Hold Shift to select multiple
Hold Option for alternates

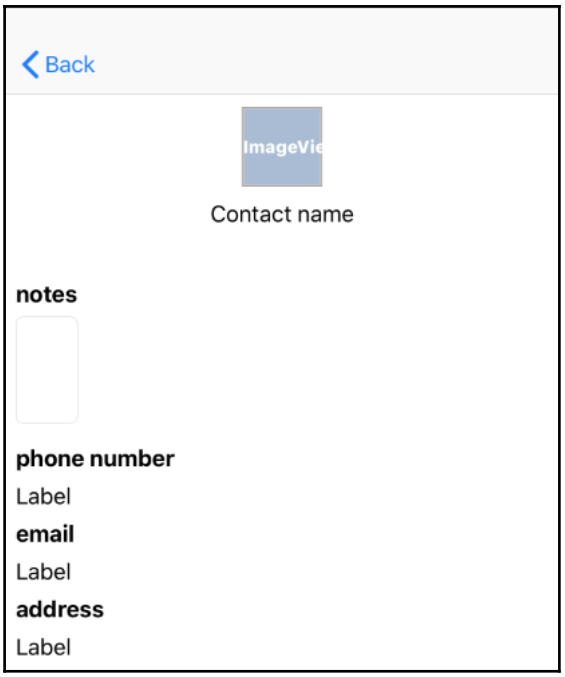

View as: iPad Pro 9.7" (wR hR)
50%
Done Varying
Varying 11 Regular Width Devices

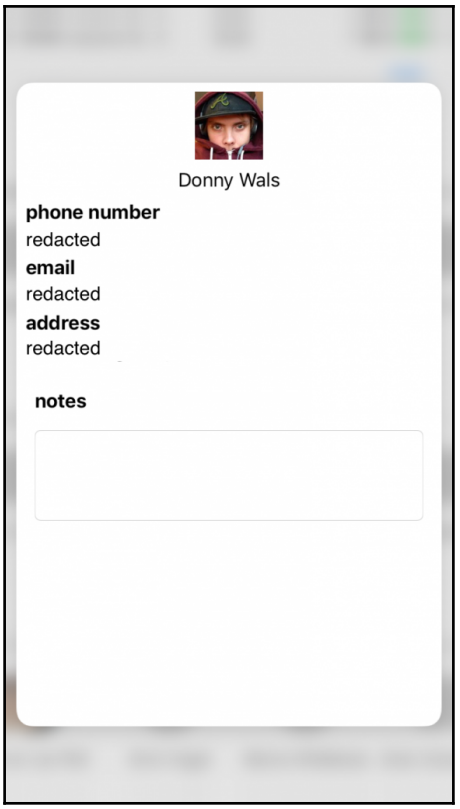

Introduce Variation Based On:
Width
Regular
Height
Regular
Gamut
Any
Add Variation

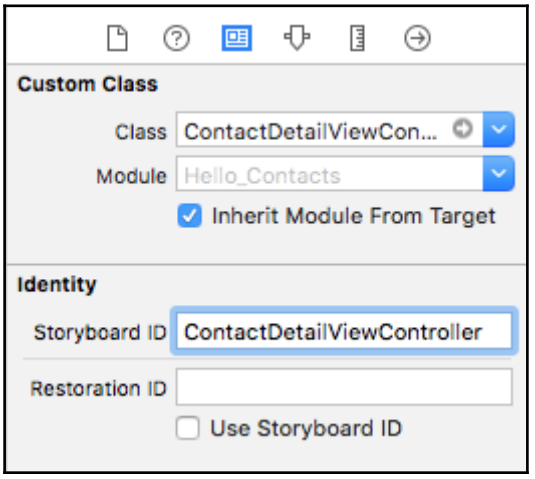

Contact Name
phone number
+31 6 12 34 56 78 90
email
+31 6 12 34 56 78 90
address
+31 6 12 34 56 78 90
notes


Back
ImageVie
Contact name
notes
phone number
-406
Label
email
Label
address
Label

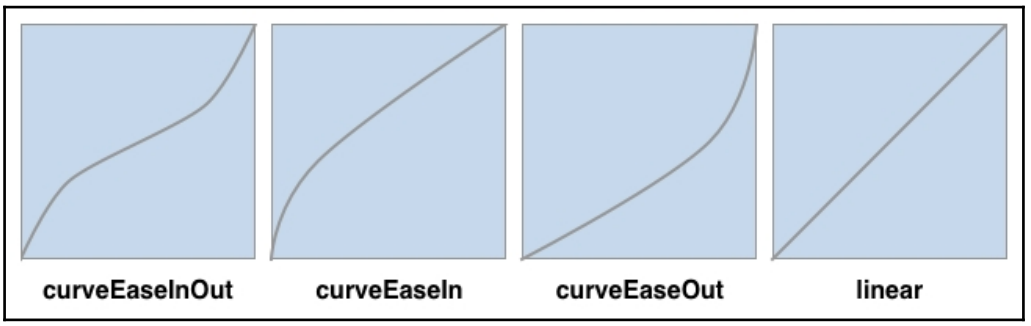

Embed In View
View
View Without Inset
Scroll View
Stack View
Embed In View Controller
Navigation Controller
Tab Bar Controller
Unembed

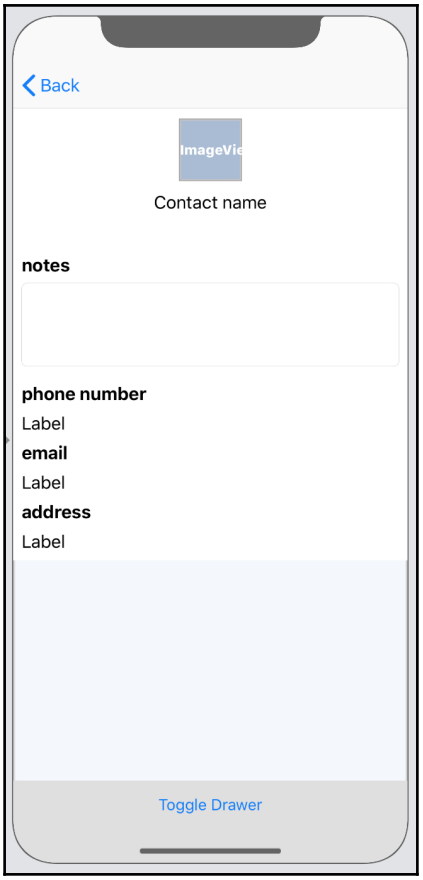

Back
ImageVie
Contact name
notes
phone number
Label
email
Label
address
Label

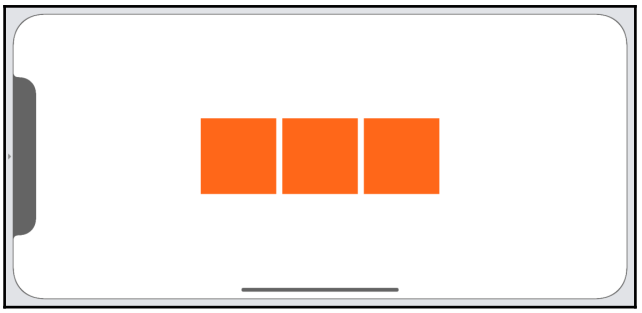

Donny Wals
phone number
redacted
email
redacted
address
redacted
notes

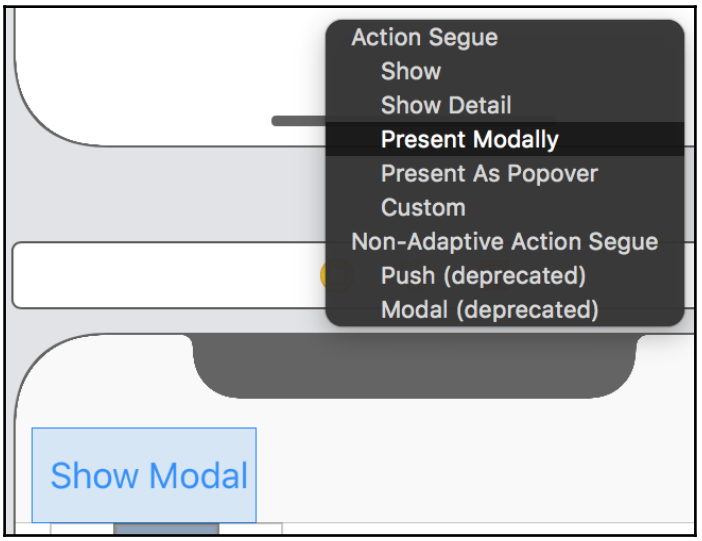

Custom Class
Class
ContactDetailViewCon...
Module
Hello_Contacts
Inherit Module From Target
Identity
Storyboard ID
ContactDetailViewController
Restoration ID
Use Storyboard ID

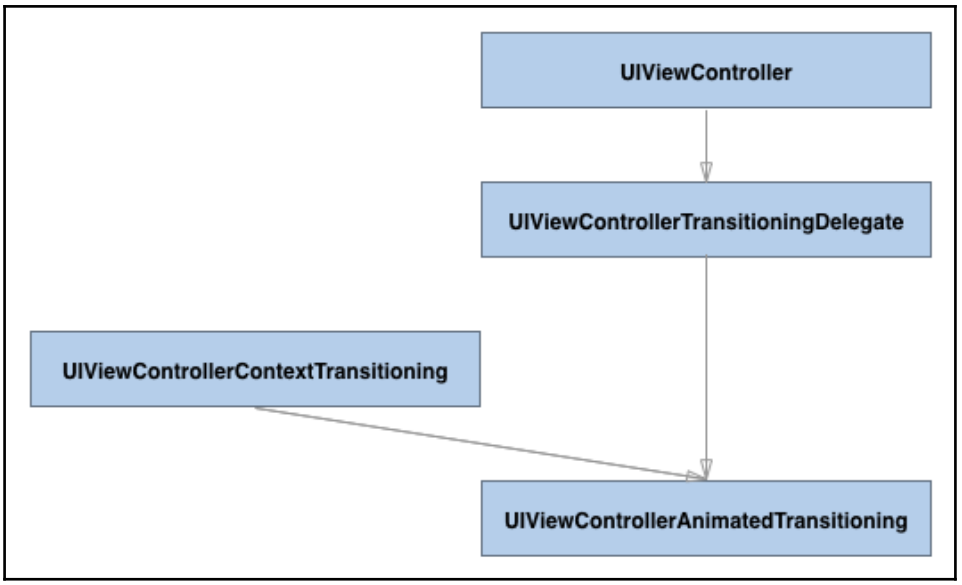
Chapter 4:
Immersing Your Users with Animation

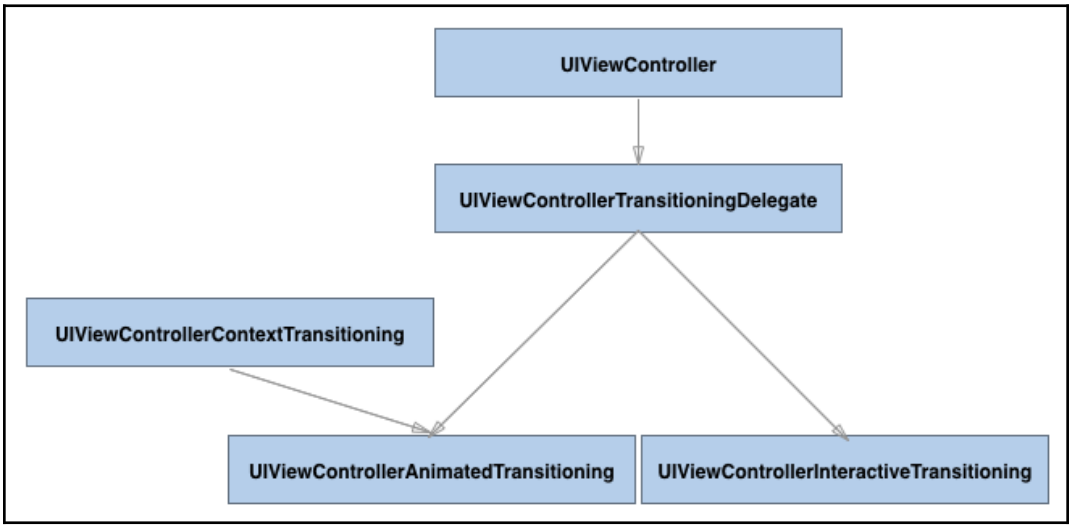


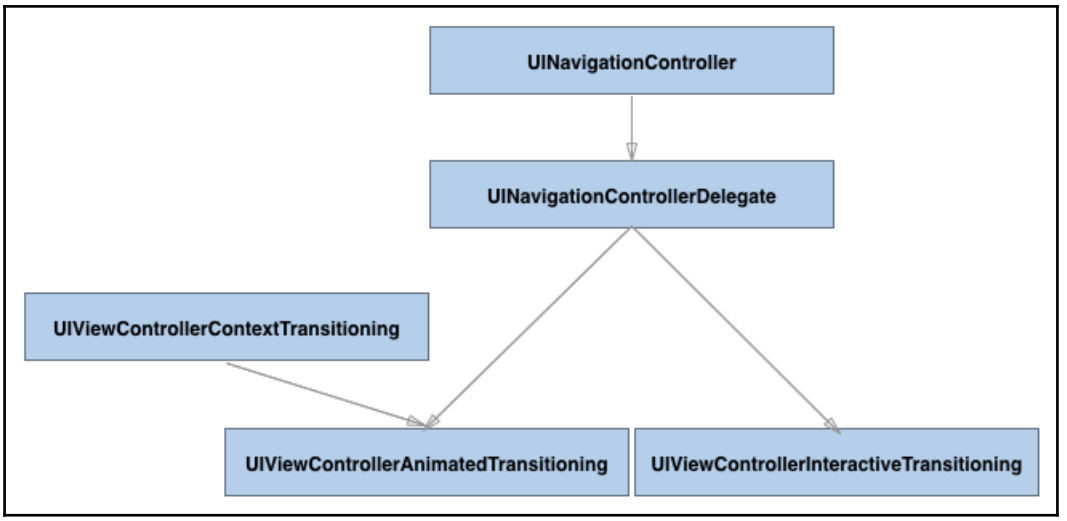




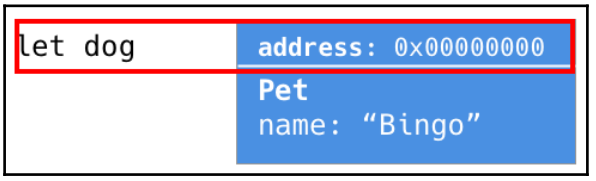

Action Segue
Show
Show Detail
Present Modally
Present As Popover
Custom
Non-Adaptive Action Segue
Push (deprecated)
Modal (deprecated)
Show Modal

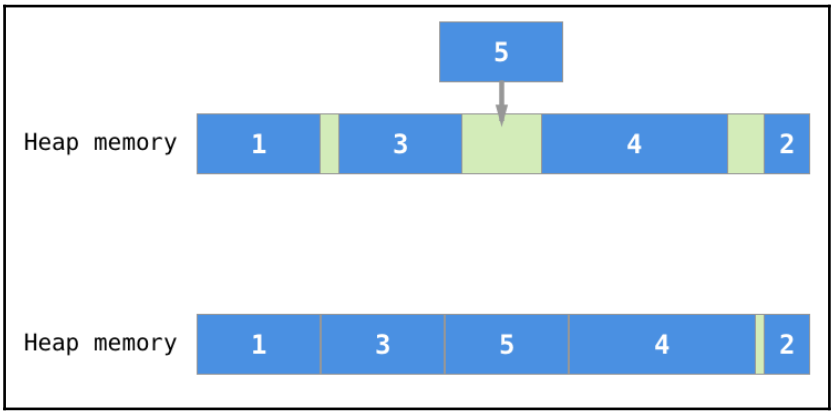

UIViewController
UIViewControllerTransitioningDelegate
UIViewControllerContextTransitioning
UIViewControllerAnimatedTransitioning


UIViewController
UIViewControllerTransitioningDelegate
UIViewControllerContextTransitioning
UIViewControllerAnimatedTransitioning
UIViewControllerInteractiveTransitioning

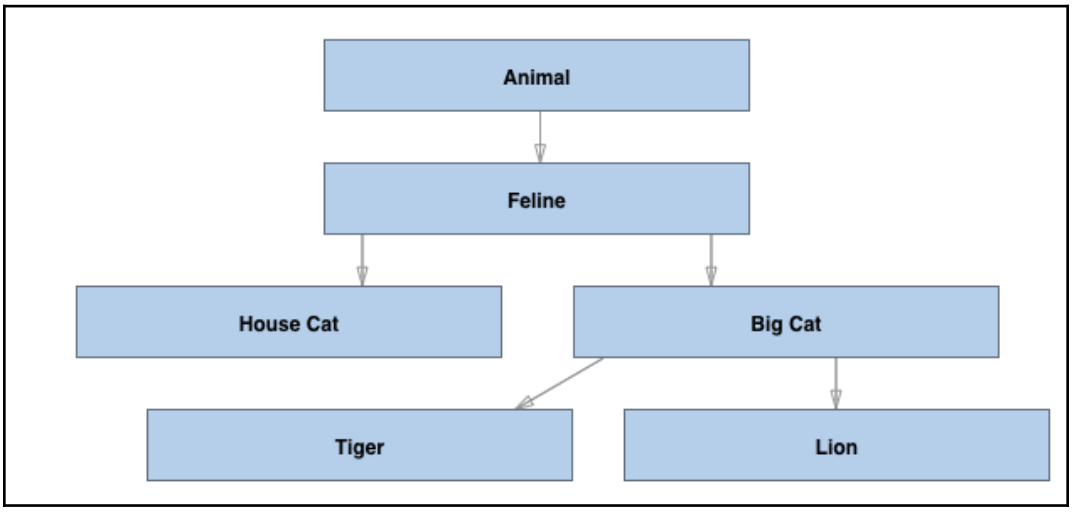


Chapter 5:
Understanding the Swift Type System

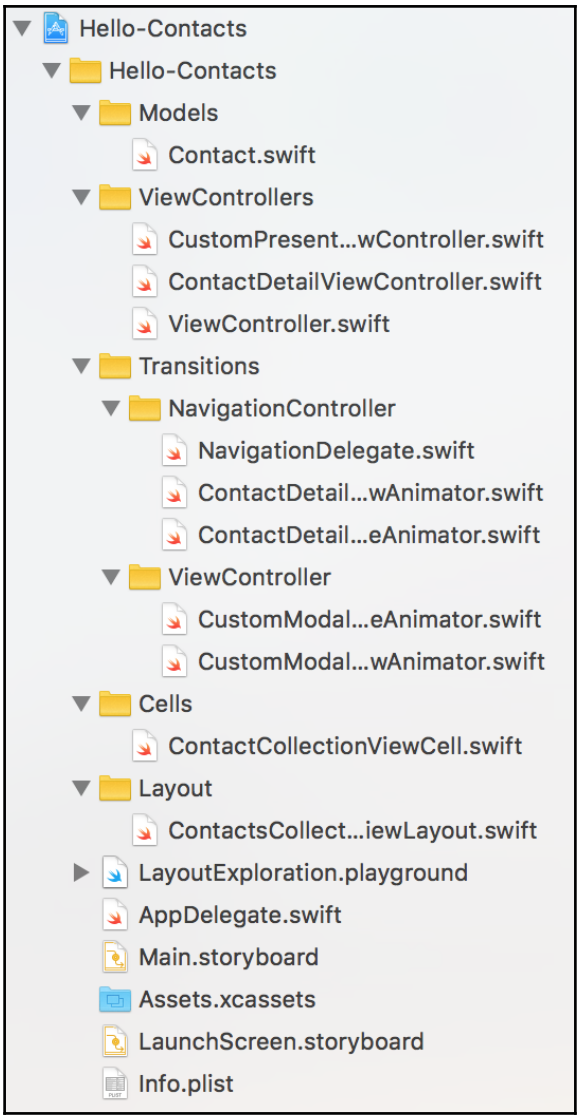




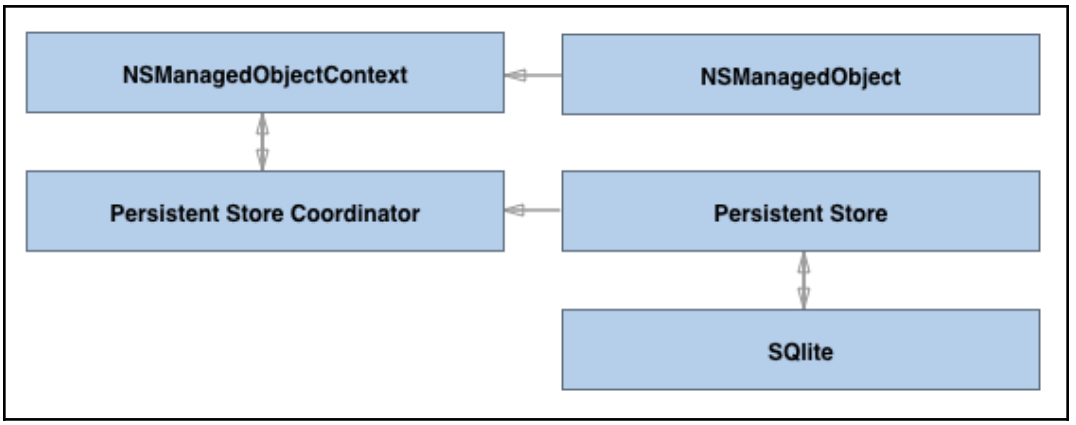
Chapter 6:
Writing Flexible Code with Protocols and Generics

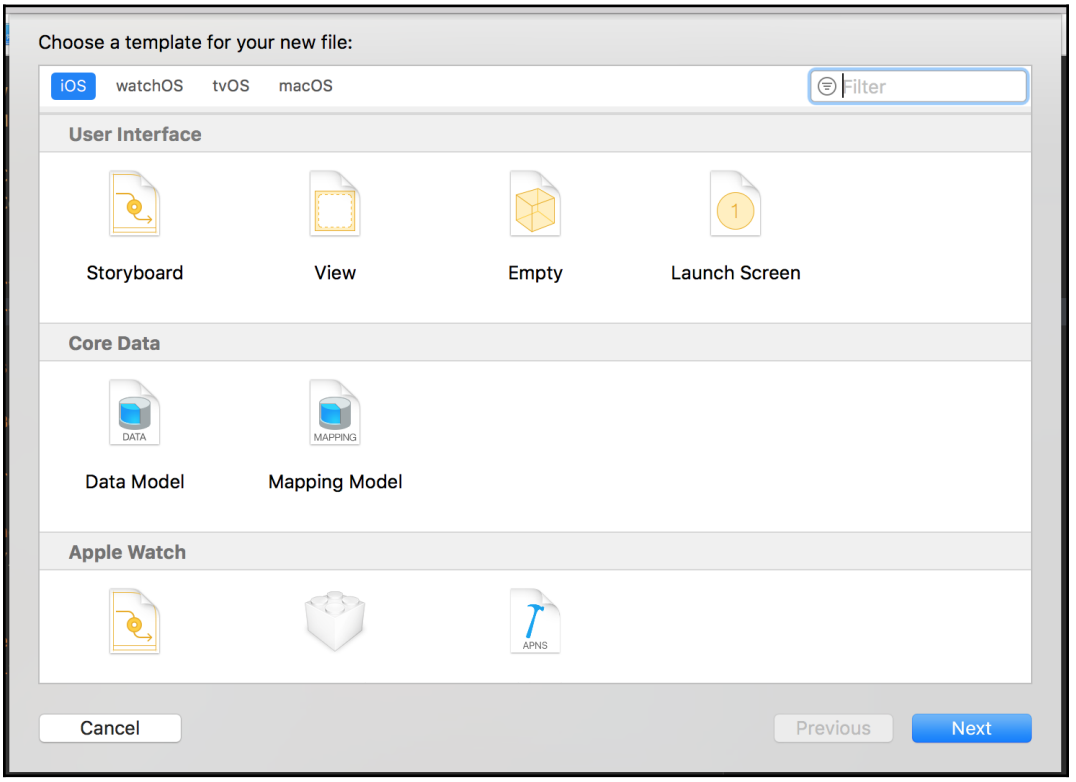


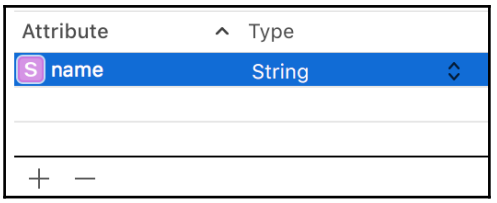
Chapter 7:
Improving the Application Structure

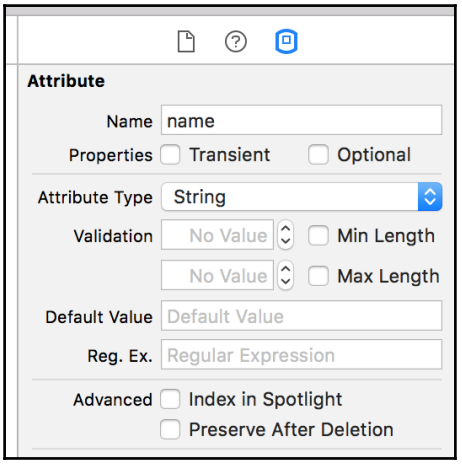


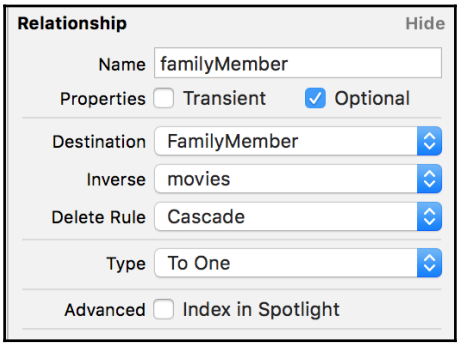
Chapter 8: Adding Core Data to Your App

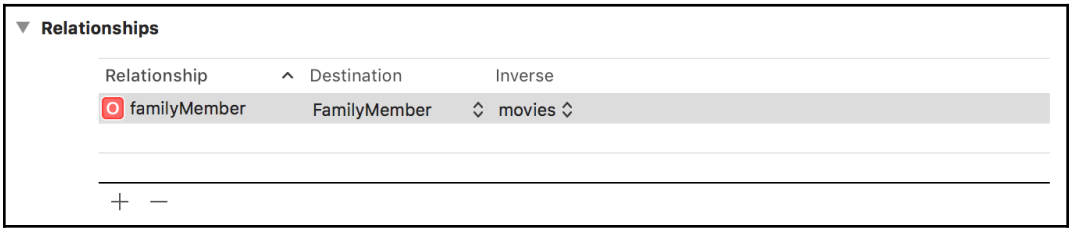

NSManagedObjectContext
NSManagedObject
Persistent Store Coordinator
Persistent Store
SQlite

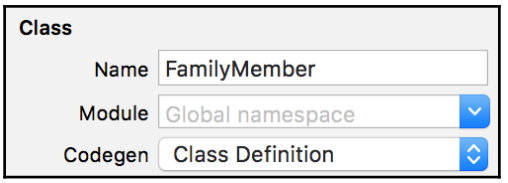

Choose a template for your new file:
iOS
watchOS
tvOS
macOS
Filter
User Interface
Storyboard
View
Empty
Launch Screen
Core Data
DATA
MAPPING
Data Model
Mapping Model
Apple Watch
APNS
Cancel
Previous
Next


Attribute
Type
name
String

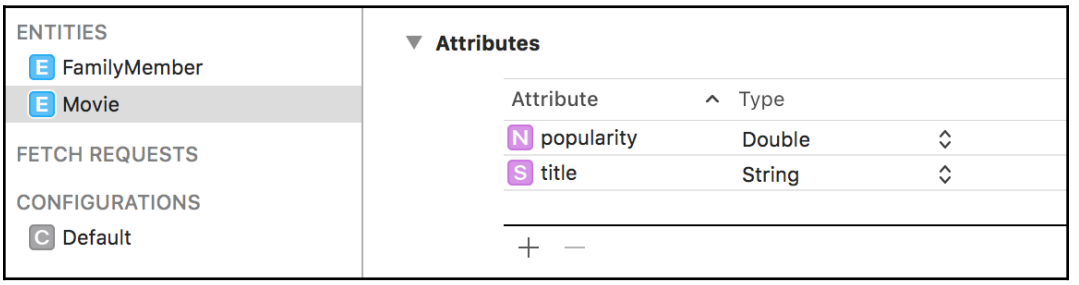

Attribute
Name
name
Properties
Transient
Optional
Attribute Type
String
Validation
No Value
Min Length
No Value
Max Length
Default Value
Default Value
Reg. Ex.
Regular Expression
Advanced
Index in Spotlight
Preserve After Deletion

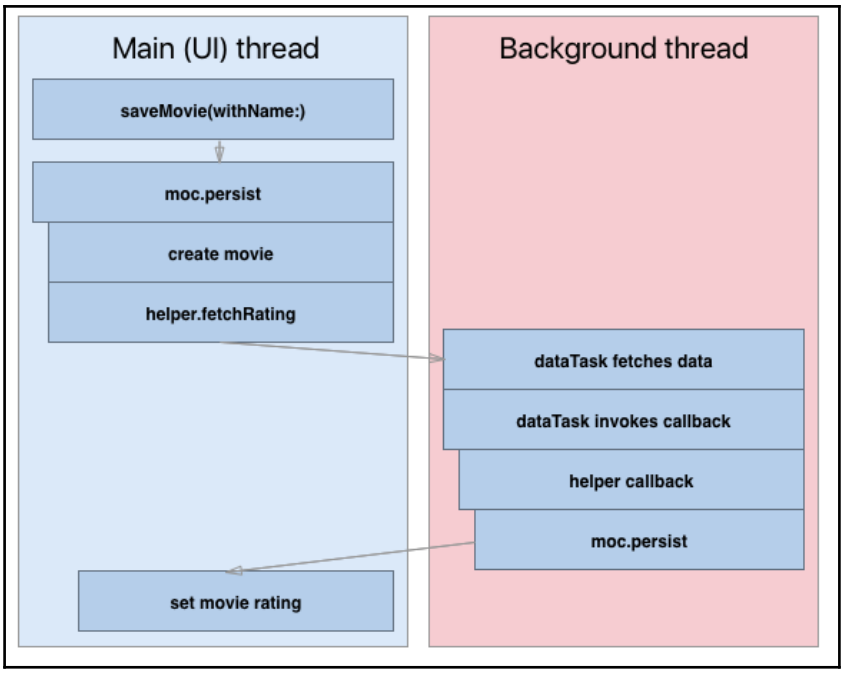

Relationship
Hide
Name
familyMember
Properties
Transient
Optional
Destination
FamilyMember
Inverse
movies
Delete Rule
Cascade
Type
To One
Advanced
Index in Spotlight


Relationships
Relationship
Destination
Inverse
familyMember
FamilyMember
movies



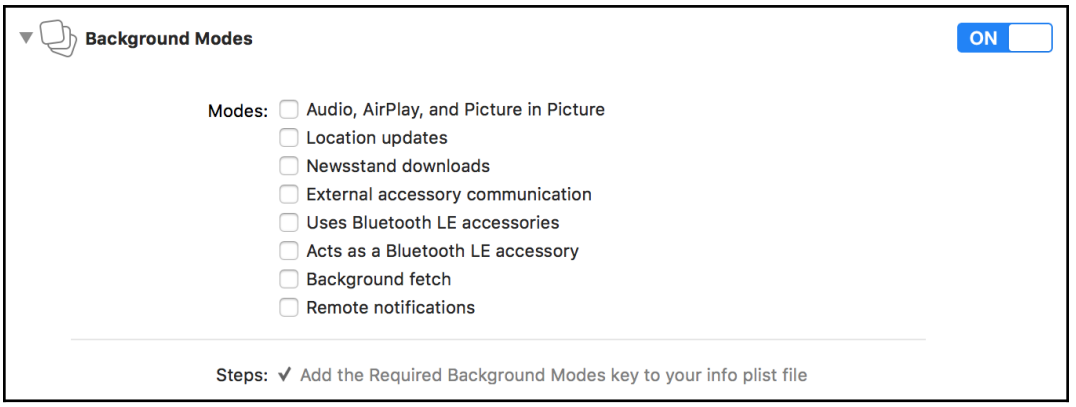
Chapter 9:
Fetching and Displaying Data from the Network

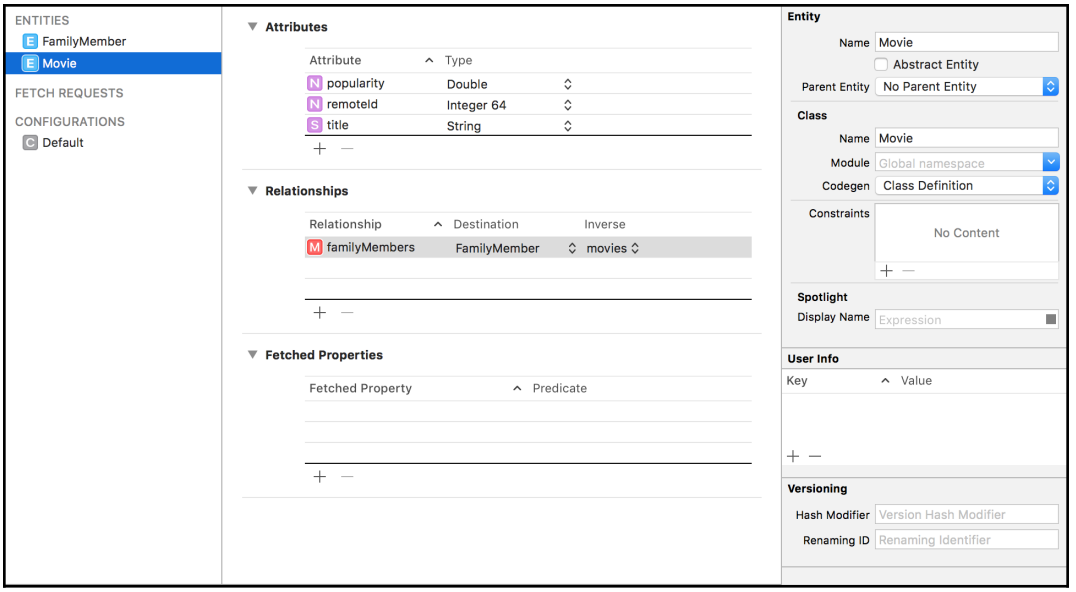




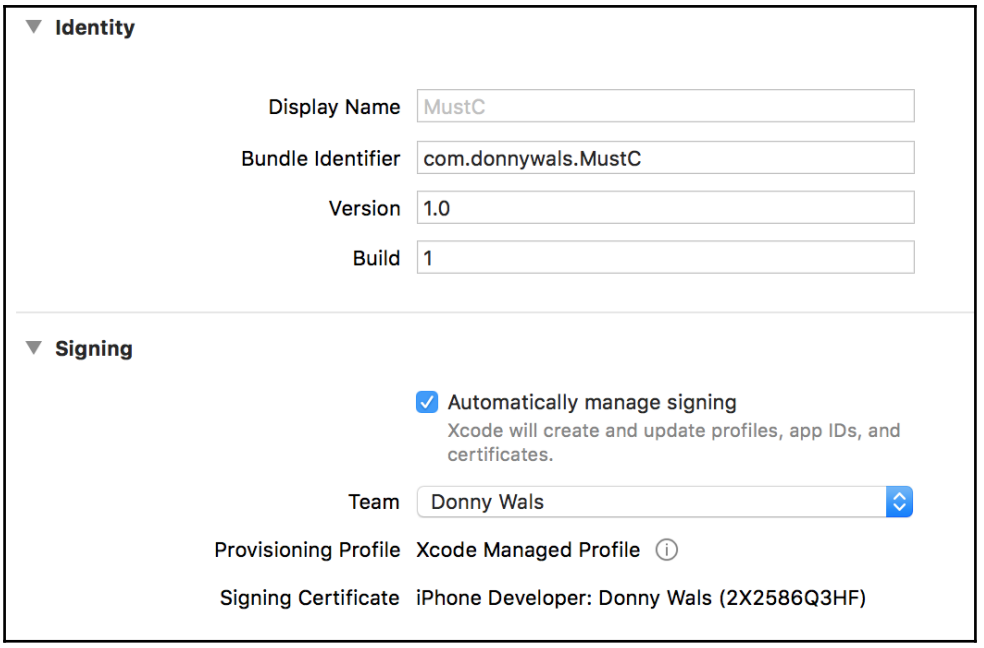
▼ App Transport Security Settings ▲▼	Dictionary	(1 item)
▼ Exception Domains ▲▼	Dictionary	(1 item)
▼ themoviedb.org	Dictionary	(2 items)
NSIncludesSubdomains	Boolean	YES
NSTemporaryExceptionAllow...	Boolean	YES

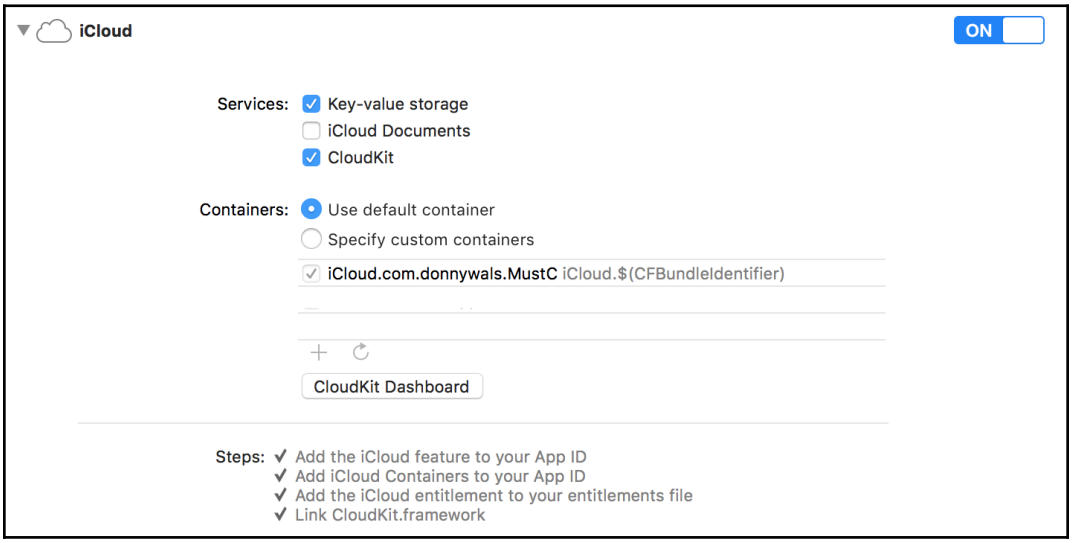
Chapter 10:
Being Proactive with Background Fetch

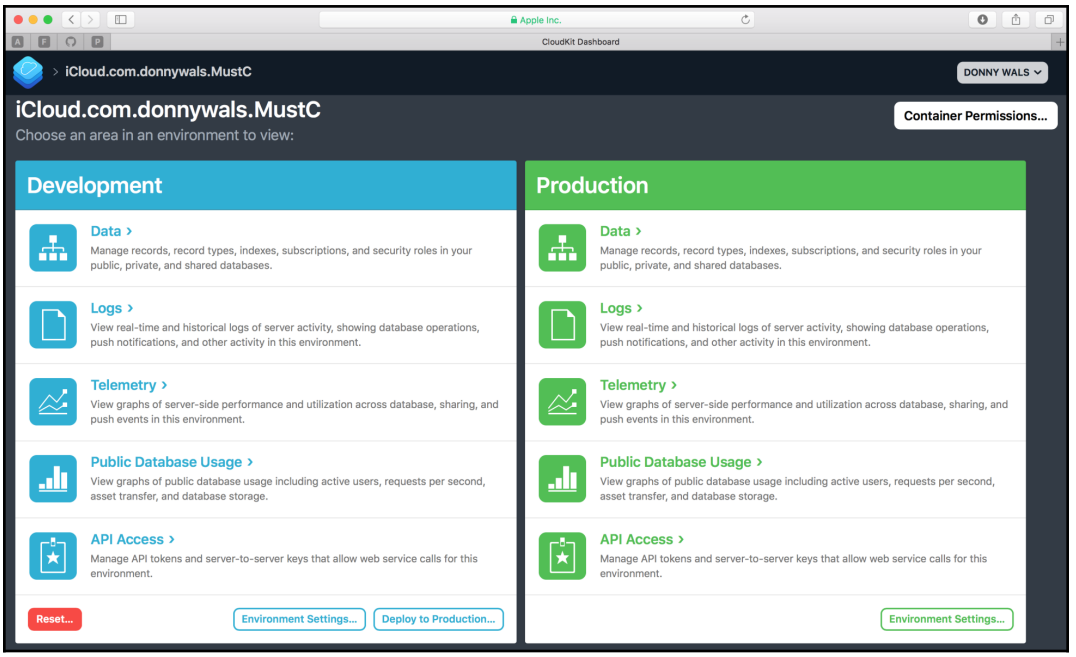


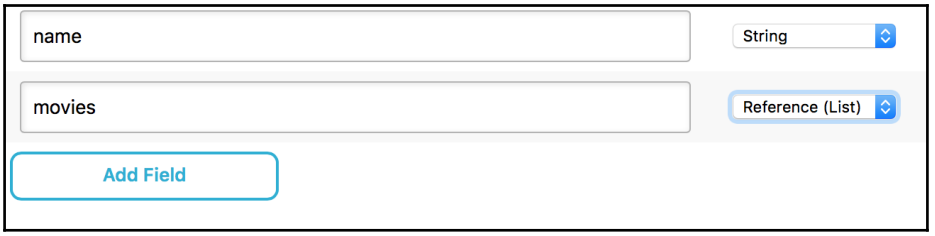


Chapter 11: Syncing Data with CloudKit

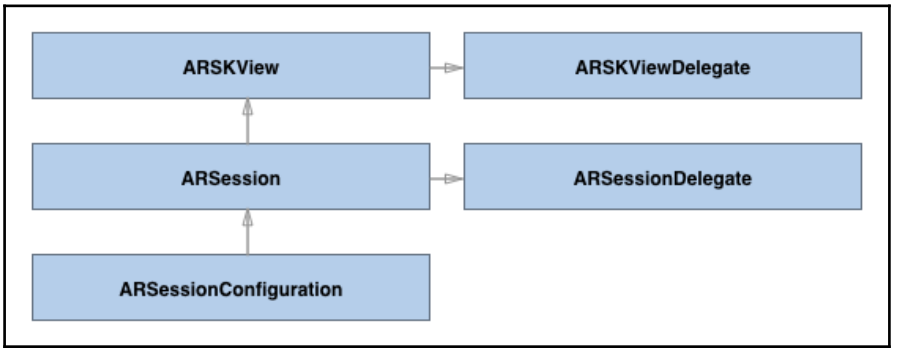

Identity
Display Name
MustC
Bundle Identifier
com.donnywals.MustC
Version
1.0
Build
1
Signing
Automatically manage signing
Xcode will create and update profiles, app IDs, and certificates.
Team
Donny Wals
Provisioning Profile
Xcode Managed Profile
Signing Certificate
iPhone Developer: Donny Wals (2X2586Q3HF)

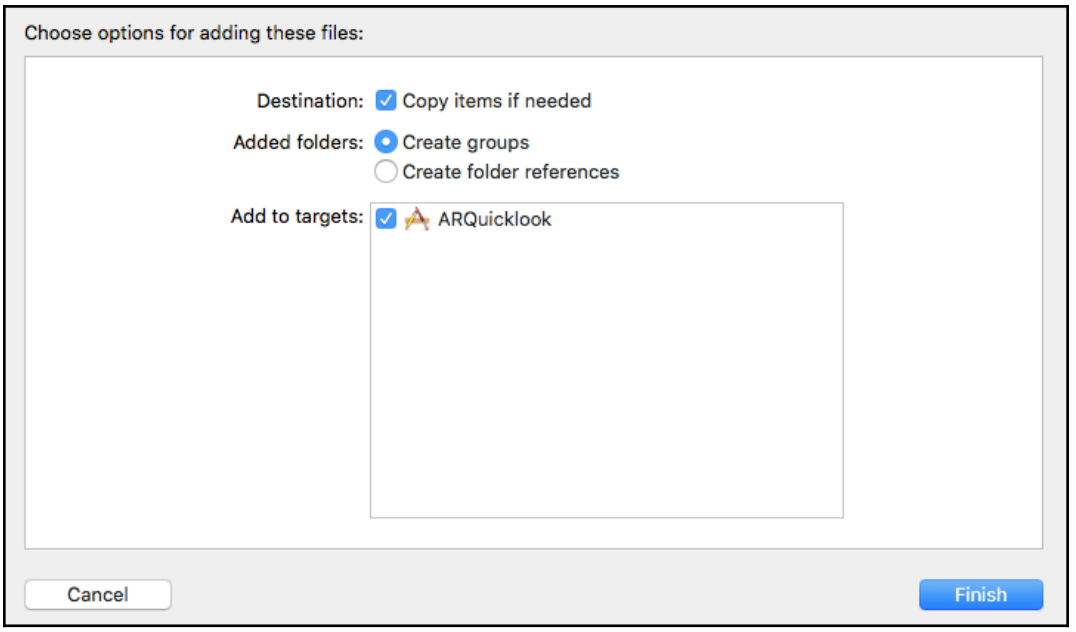

iCloud
ON
Services:
Key-value storage
iCloud Documents
CloudKit
Containers:
Use default container
Specify custom containers
iCloud.com.donnywals.MustC iCloud.$(CFBundleIdentifier)
CloudKit Dashboard
Steps:
Add the iCloud feature to your App ID
Add iCloud Containers to your App ID
Add the iCloud entitlement to your entitlements file
Link CloudKit.framework

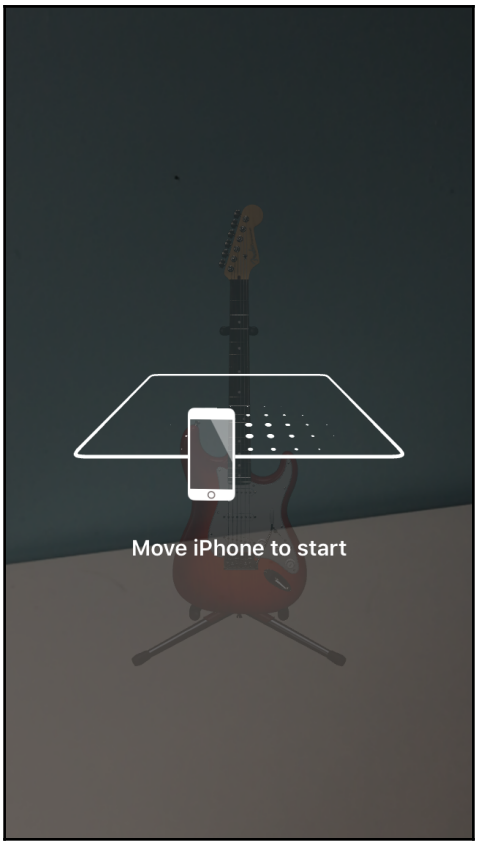


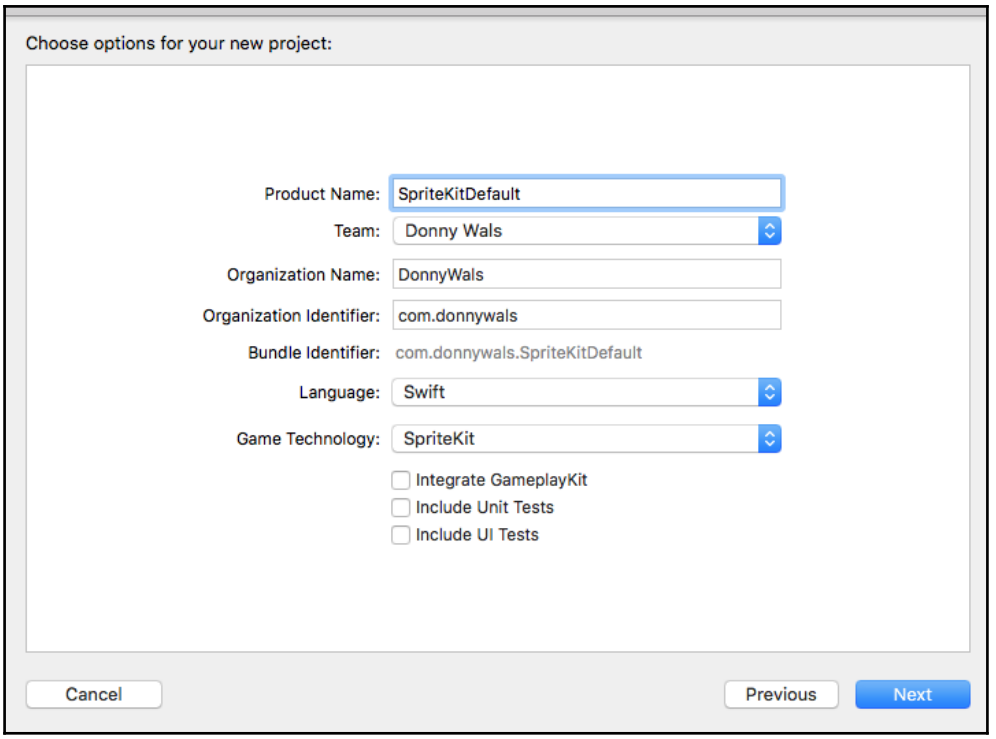


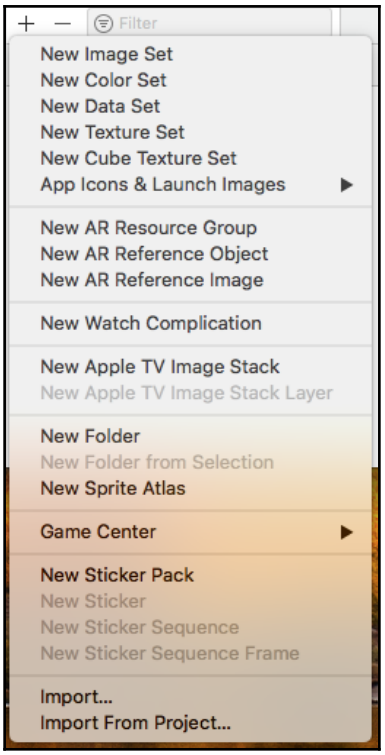
Chapter 12: Using Augmented Reality

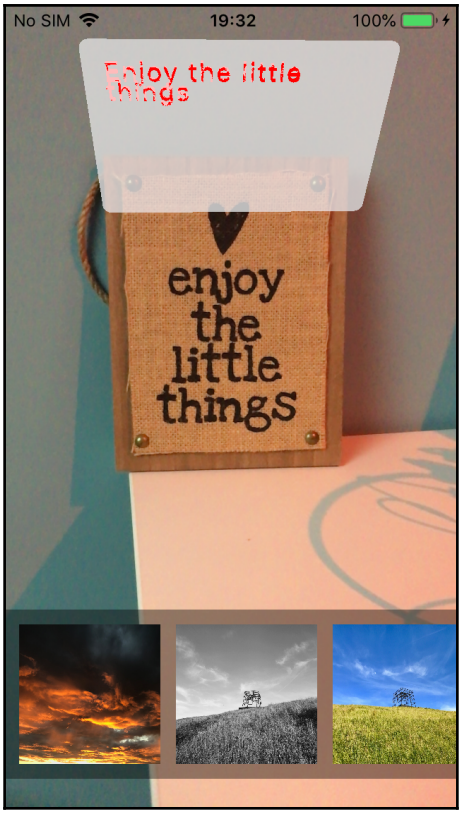



Choose options for adding these files:
Destination:
Copy items if needed
Added folders:
Create groups
Create folder references
Add to targets:
ARQuicklook
Cancel
Finish


Move iPhone to start

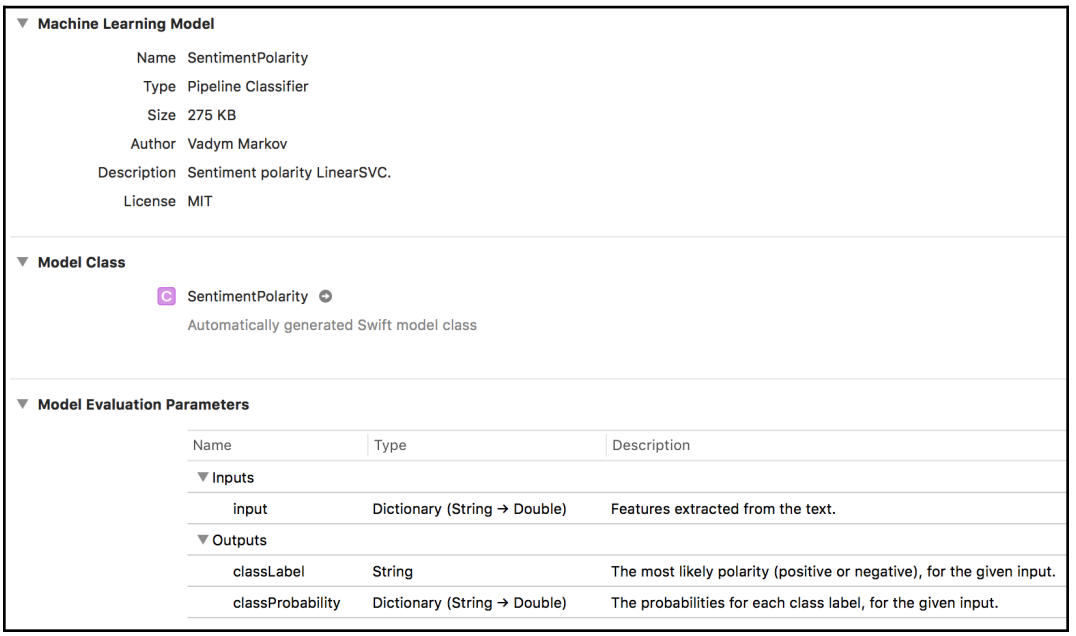

Choose options for your new project:
Product Name: SpriteKitDefault
Team: Donny Wals
Organization Name: DonnyWals
Organization Identifier: com.donnywals
Bundle Identifier: com.donnywals.SpriteKitDefault
Language: Swift
Game Technology: SpriteKit
Integrate GameplayKit
Include Unit Tests
Include UI Tests
Cancel
Previous
Next


Filter
New Image Set
New Color Set
New Data Set
New Texture Set
New Cube Texture Set
App Icons & Launch Images
New AR Resource Group
New AR Reference Object
New AR Reference Image
New Watch Complication
New Apple TV Image Stack
New Apple TV Image Stack Layer
New Folder
New Folder from Selection
New Sprite Atlas
Game Center
New Sticker Pack
New Sticker
New Sticker Sequence
New Sticker Sequence Frame
Import...
Import From Project...


No SIM
19:32
100%
Enjoy the little things
enjoy the little things

No SIM
21:00
99%

Chapter 14:
Making Smarter Apps with CoreML



Machine Learning Model

Name	SentimentPolarity
Type	Pipeline Classifier
Size	275 KB
Author	Vadym Markov
Description	Sentiment polarity LinearSVC.
License	MIT

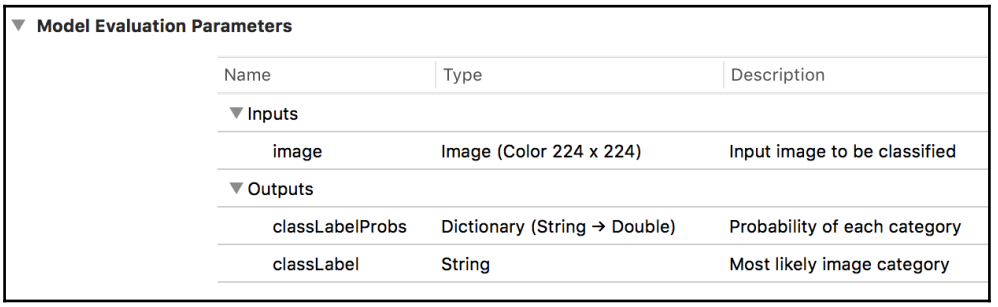
Model Class

SentimentPolarity

Automatically generated Swift model class

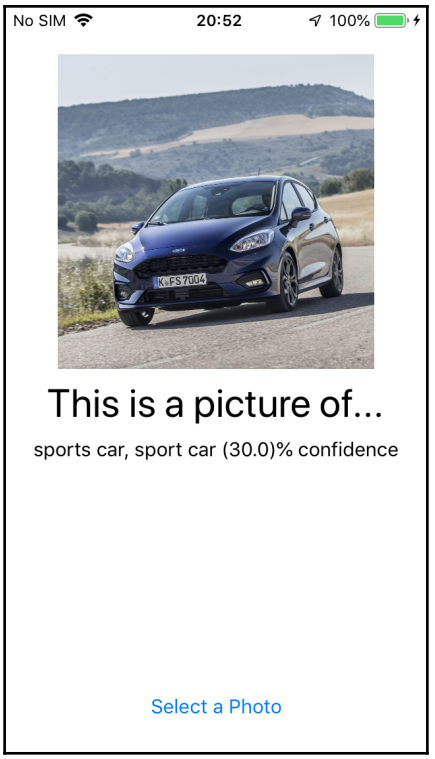
Model Evaluation Parameters

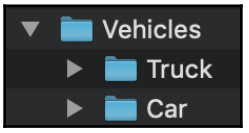
Name	Type	Description
Inputs		
input	Dictionary (String → Double)	Features extracted from the text.
Outputs		
classLabel	String	The most likely polarity (positive or negative), for the given input.
classProbability	Dictionary (String → Double)	The probabilities for each class label, for the given input.



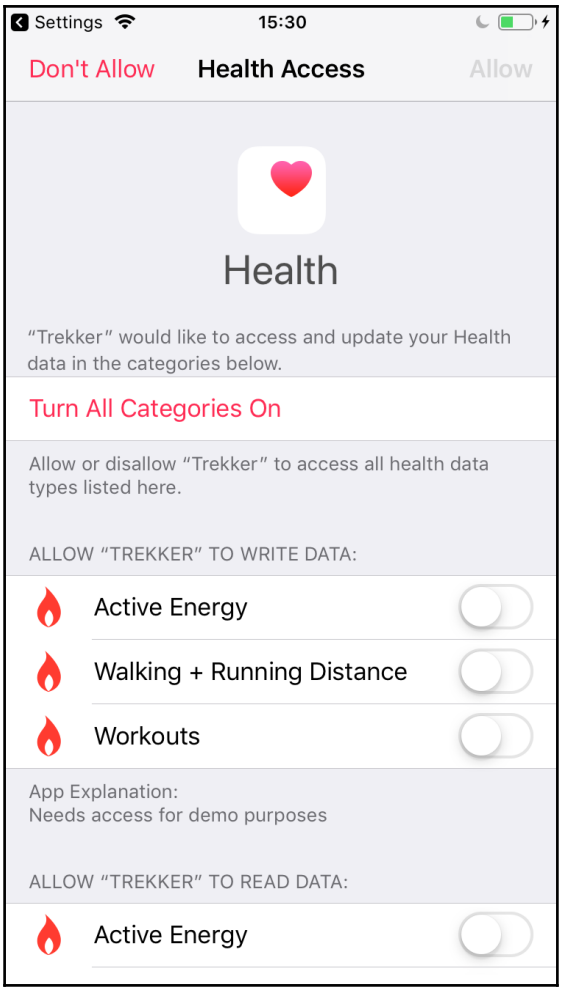
Model Evaluation Parameters

Name	Type	Description
Inputs		
image	Image (Color 224 x 224)	Input image to be classified
Outputs		
classLabelProbs	Dictionary (String → Double)	Probability of each category
classLabel	String	Most likely image category

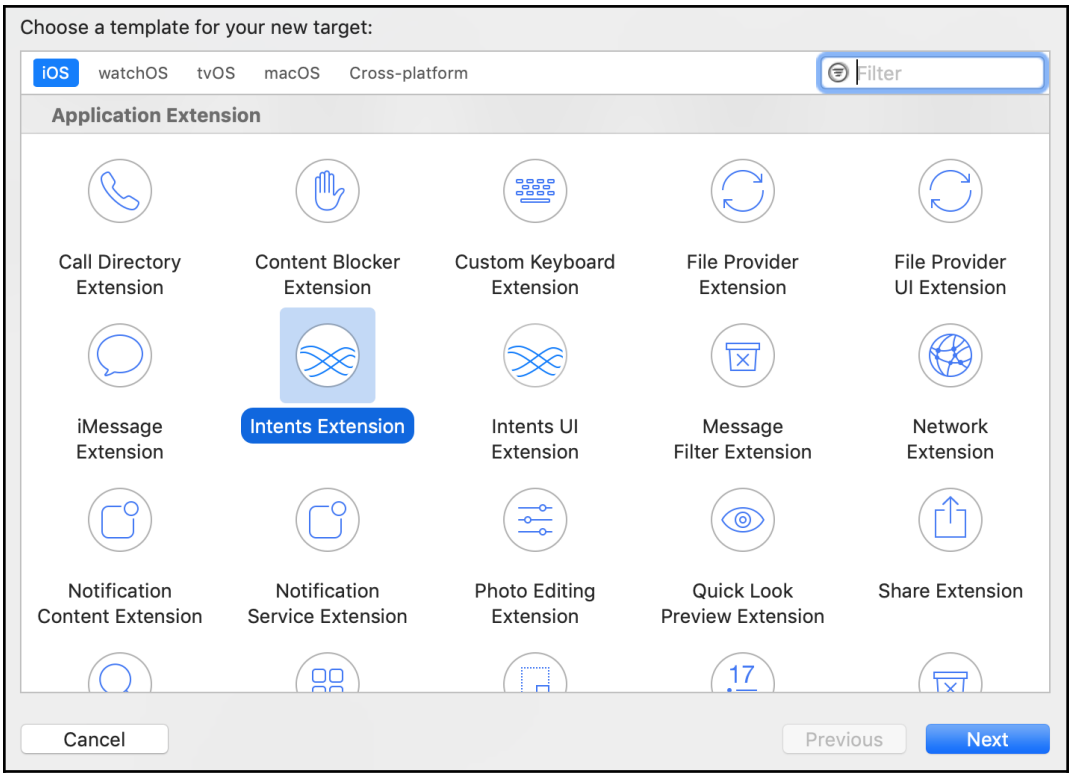


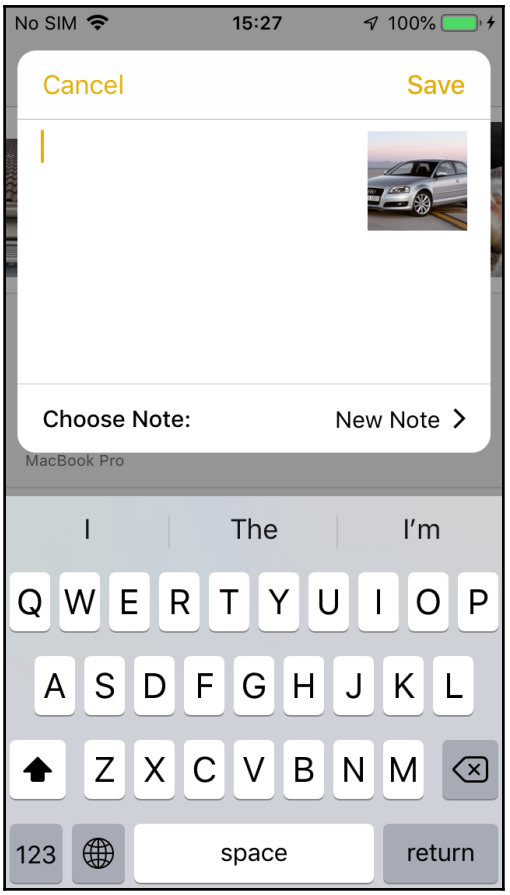


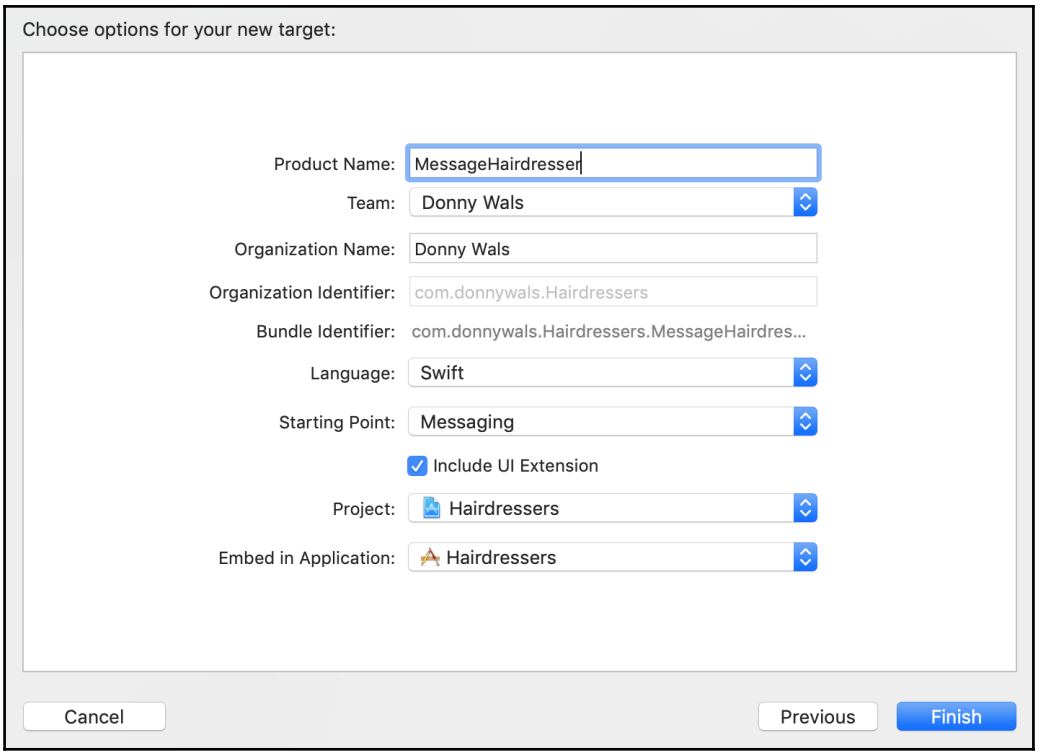
Chapter 15:
Tracking Activity Using HealthKit



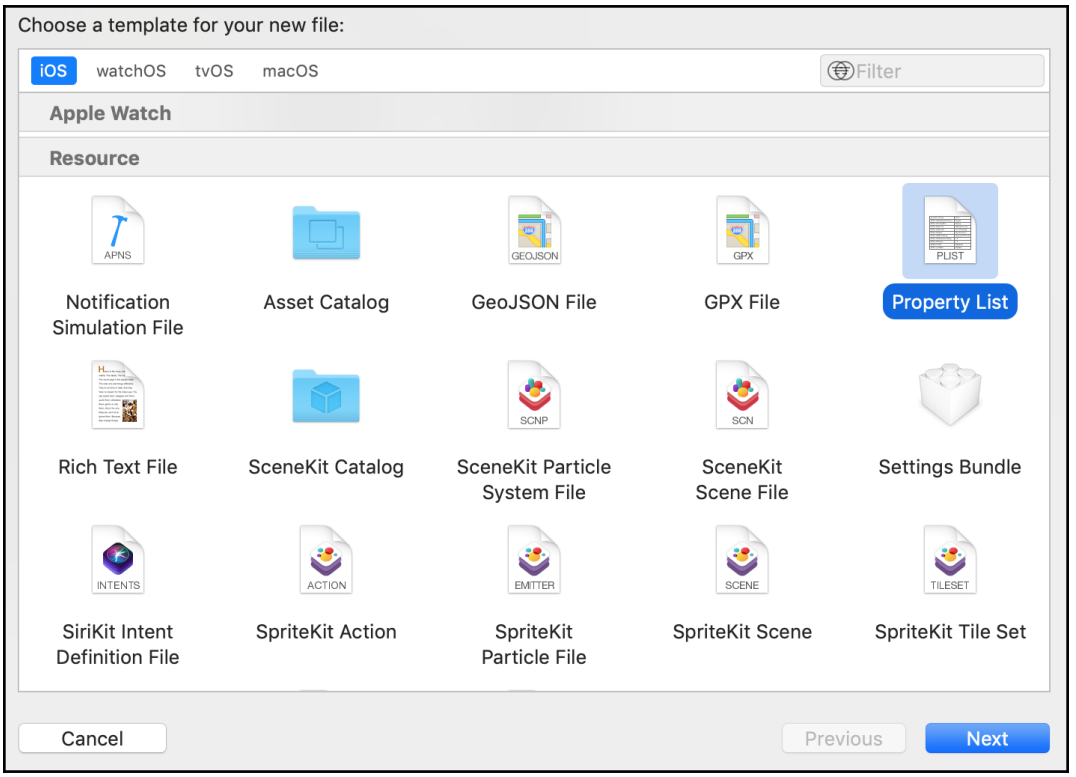
Chapter 16: Streamlining Experiences with Siri


Choose a template for your new target:
iOS
watchOS
tvOS
macOS
Cross-platform
Filter
Application Extension
Call Directory Extension
Content Blocker Extension
Custom Keyboard Extension
File Provider Extension
File Provider UI Extension
iMessage Extension
Intents Extension
Intents UI Extension
Message Filter Extension
Network Extension
Notification Content Extension
Notification Service Extension
Photo Editing Extension
Quick Look Preview Extension
Share Extension
Cancel
Previous
Next

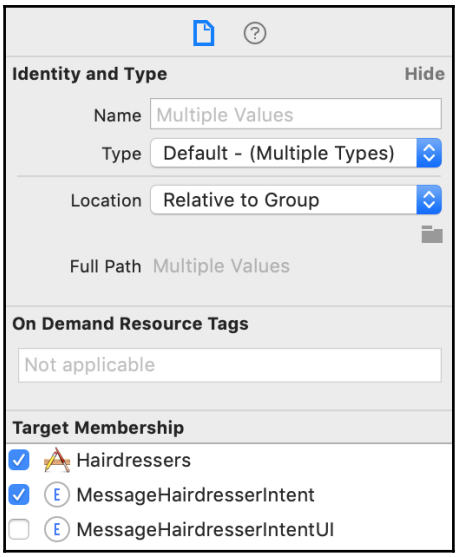

No SIM
15:27
100%
Cancel
Save
Choose Note:
New Note
MacBook Pro
I
The
I'm
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
123
space
return

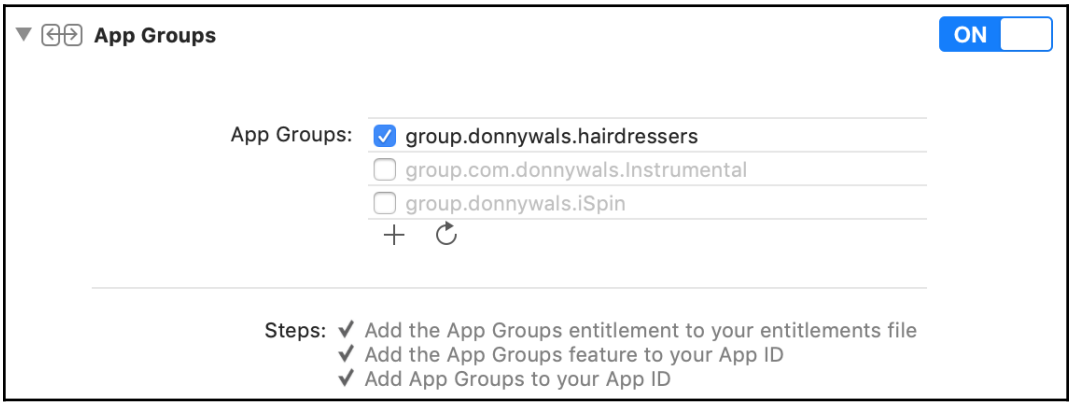


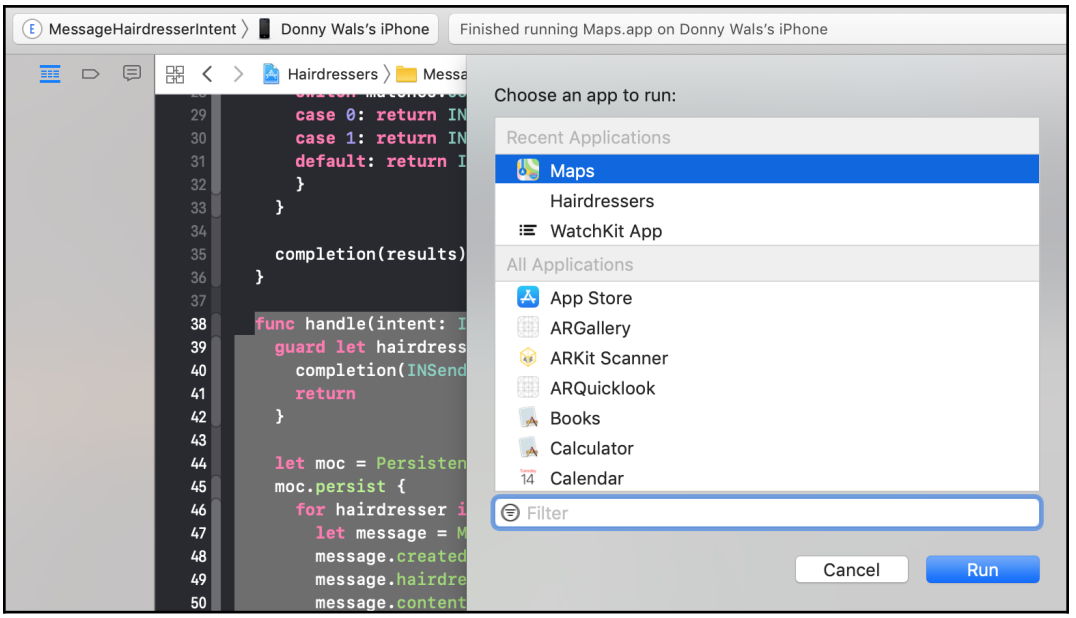
NSExtension	Dictionary	(3 items)
NSExtensionAttributes	Dictionary	(2 items)
IntentsRestrictedWhileLocked	Array	(0 items)
IntentsSupported	Array	(3 items)
Item 0	String	INSendMessageIntent
Item 1	String	INSearchForMessagesIntent
Item 2	String	INSetMessageAttributeIntent

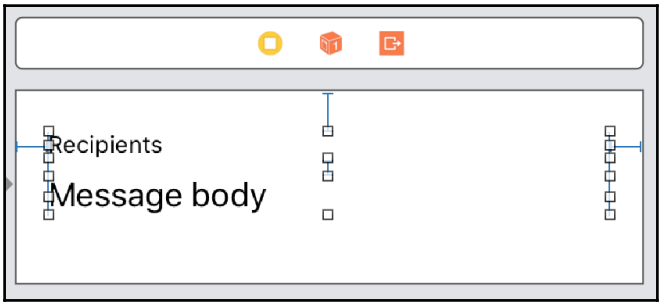


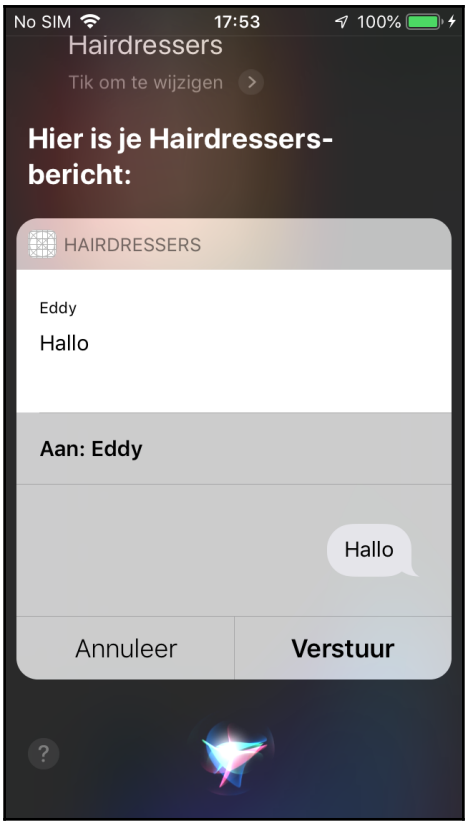
▼ App Intent Vocabulary Property List	Dictionary	(1 item)
▼ Parameter Vocabularies	Array	(1 item)
▼ Item 0 (Parameter Vocabulary)	Dictionary	(2 items)
▼ Parameter Names	Array	(1 item)
Item 0 (Parameter Name)	String	INStartWorkoutIntent.workoutName
▼ Parameter Vocabulary	Array	(1 item)
▼ Item 0 (Parameter Vocabulary)	Dictionary	(2 items)
Vocabulary Item Identifier	String	ultimate run
▼ Vocabulary Item Synonyms	Array	(1 item)
▼ Item 0 (Vocabulary Item Synonym)	Dictionary	(3 items)
▼ Vocabulary Item Examples	Array	(1 item)
Item 0 (Vocabulary Item Example)	String	Start an Ultimate Run with RunPotato
Vocabulary Item Phrase	String	Ultimate Run
Vocabulary Item Pronunciation	String	ultemit run

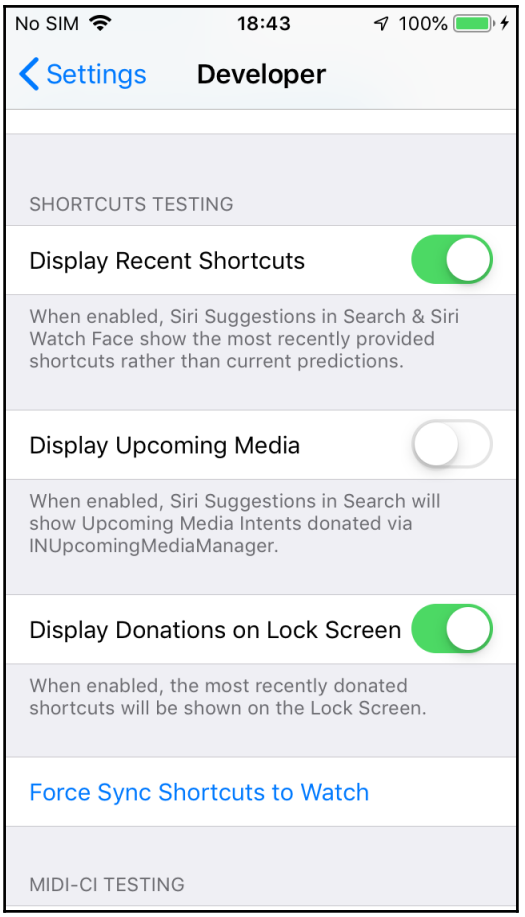

Identity and Type
Hide
Name
Multiple Values
Type
Default - (Multiple Types)
Location
Relative to Group
Full Path
Multiple Values
On Demand Resource Tags
Not applicable
Target Membership
Hairdressers
MessageHairdresserIntent
MessageHairdresserIntentUI


App Groups
ON
App Groups:
group.donnywals.hairdressers
group.com.donnywals.Instrumental
group.donnywals.iSpin
Steps:
Add the App Groups entitlement to your entitlements file
Add the App Groups feature to your App ID
Add App Groups to your App ID

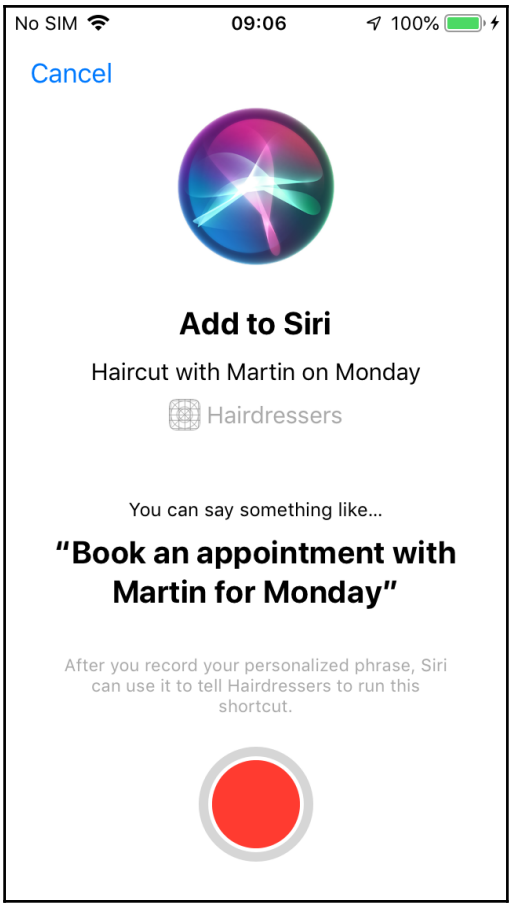

MessageHairdresserIntent
Donny Wals's iPhone
Finished running Maps.app on Donny Wals's iPhone
Hairdressers
Messa
case 0: return IN
case 1: return IN
default: return I
}
}
completion(results)
}
func handle(intent: I
guard let hairdress
completion(INSend
return
}
let moc = Persisten
moc.persist {
for hairdresser i
let message = M
message.created
message.hairdre
message.content
Choose an app to run:
Recent Applications
Maps
Hairdressers
WatchKit App
All Applications
App Store
ARGallery
ARKit Scanner
ARQuicklook
Books
Calculator
Calendar
Filter
Cancel
Run

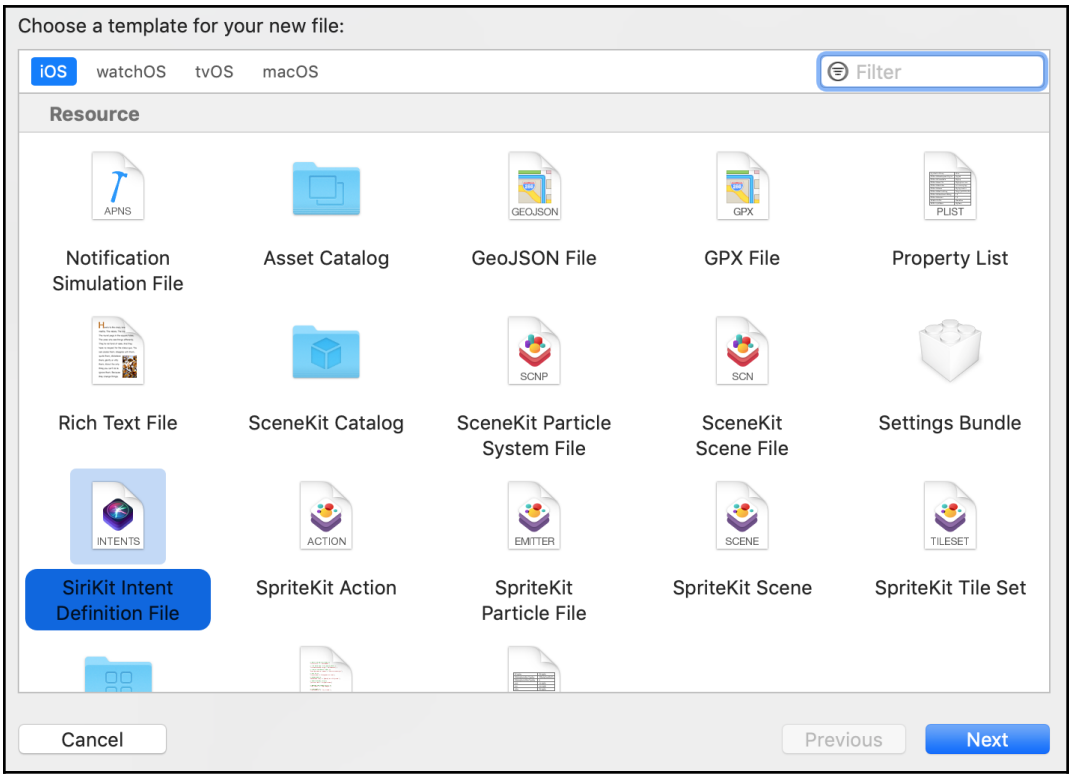

Recipients
Message body

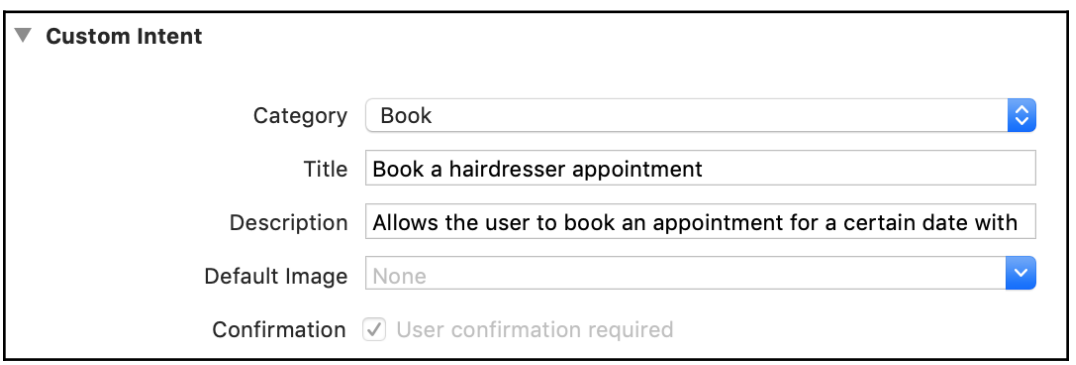

No SIM
17:53
100%
Hairdressers
Tik om te wijzigen
Hier is je Hairdressers-bericht:
HAIRDRESSERS
Eddy
Hallo
Aan: Eddy
Hallo
Annuleer
Verstuur

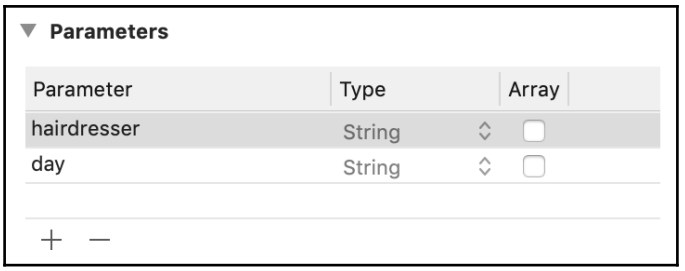

No SIM
18:43
100%
Settings
Developer
SHORTCUTS TESTING
Display Recent Shortcuts
When enabled, Siri Suggestions in Search & Siri Watch Face show the most recently provided shortcuts rather than current predictions.
Display Upcoming Media
When enabled, Siri Suggestions in Search will show Upcoming Media Intents donated via INUpcomingMediaManager.
Display Donations on Lock Screen
When enabled, the most recently donated shortcuts will be shown on the Lock Screen.
Force Sync Shortcuts to Watch
MIDI-CI TESTING

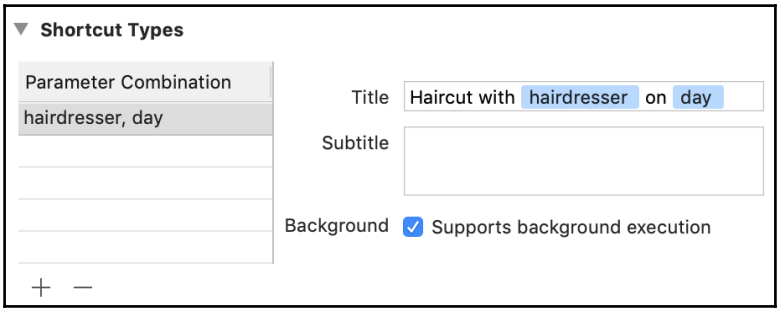
No SIM
100%
20:23
100% Charged
HAIRDRESSERS | SIRI SUGGESTION
Haircut with Martin on Monday
No SIM
20:23
100%
Search
Cancel
SIRI SUGGESTIONS
Show More
ARGallery
Settings
Photos
Messages
Haircut with Martin on Monday
Hairdressers
q w e r t y u i o p
a s d f g h j k l
z x c v b n m
123
space
Search

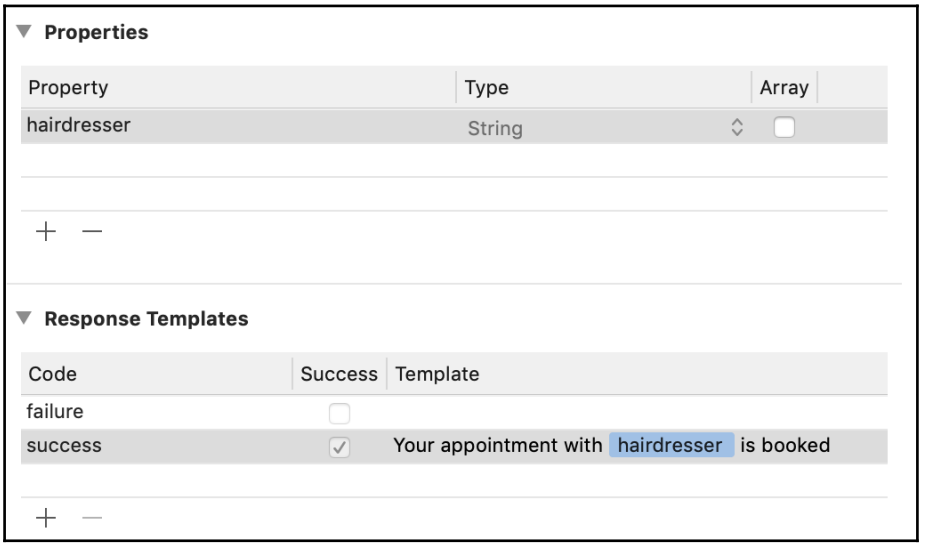

No SIM
09:06
100%
Cancel
Add to Siri
Haircut with Martin on Monday
Hairdressers
You can say something like...
“Book an appointment with Martin for Monday”
After you record your personalized phrase, Siri can use it to tell Hairdressers to run this shortcut.


Choose a template for your new file:
iOS
watchOS
tvOS
macOS
Filter
Resource
Notification Simulation File
Asset Catalog
GeoJSON File
GPX File
Property List
Rich Text File
SceneKit Catalog
SceneKit Particle System File
SceneKit Scene File
Settings Bundle
SiriKit Intent Definition File
SpriteKit Action
SpriteKit Particle File
SpriteKit Scene
SpriteKit Tile Set
Cancel
Previous
Next

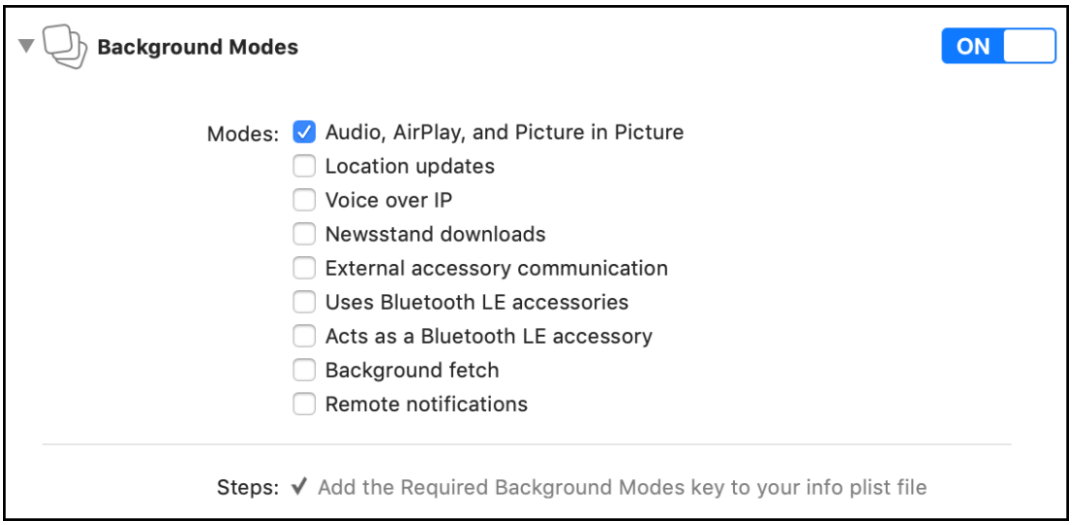

Custom Intent
Category
Book
Title
Book a hairdresser appointment
Description
Allows the user to book an appointment for a certain date with
Default Image
None
Confirmation
User confirmation required

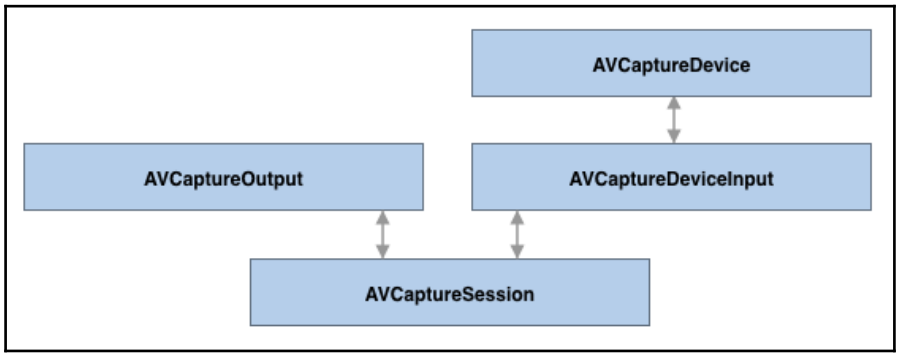


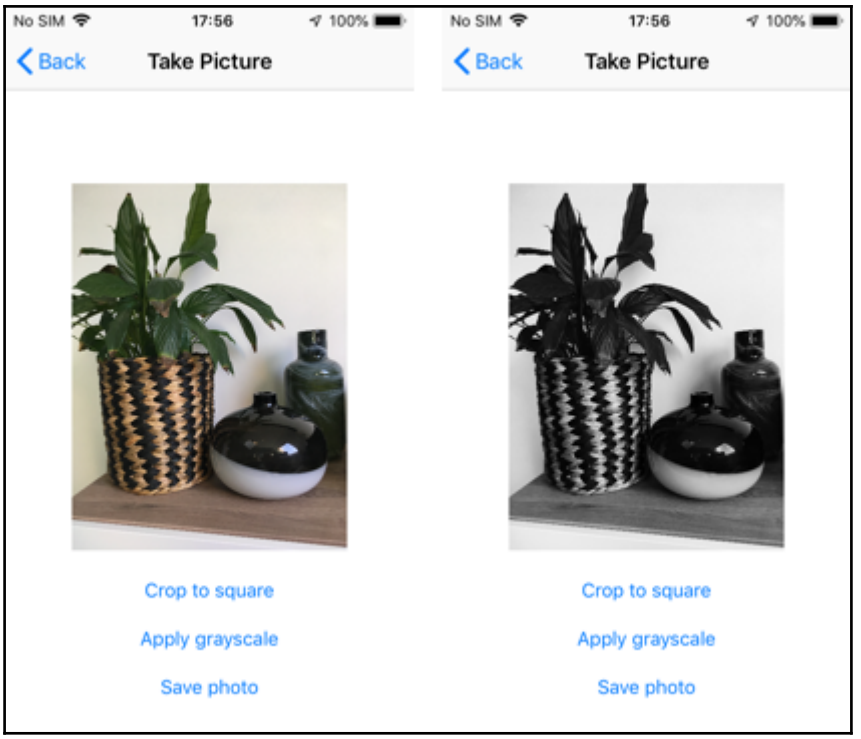


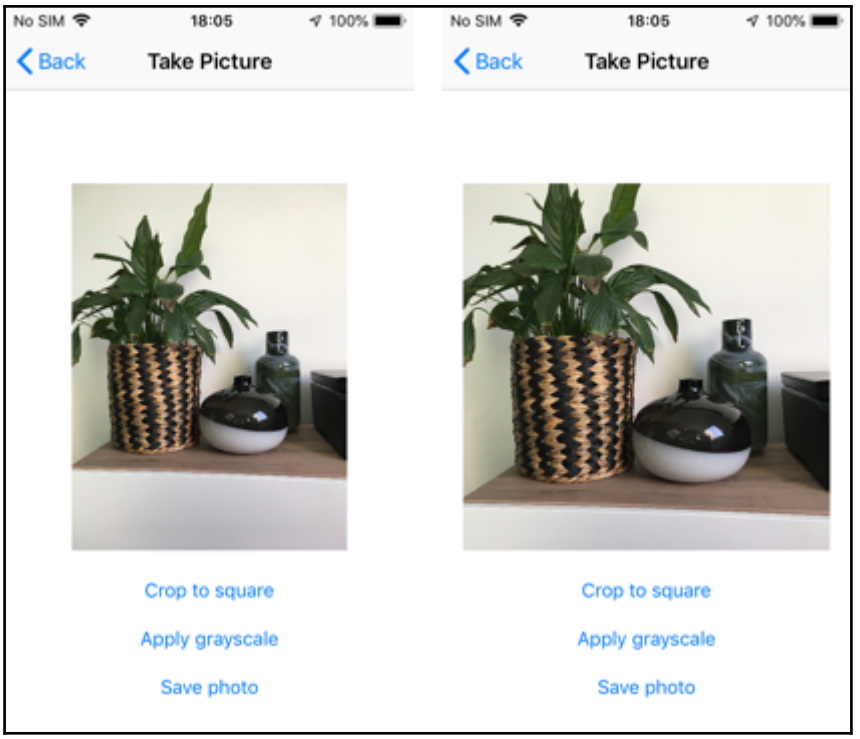


Chapter 17: Using Media in Your App

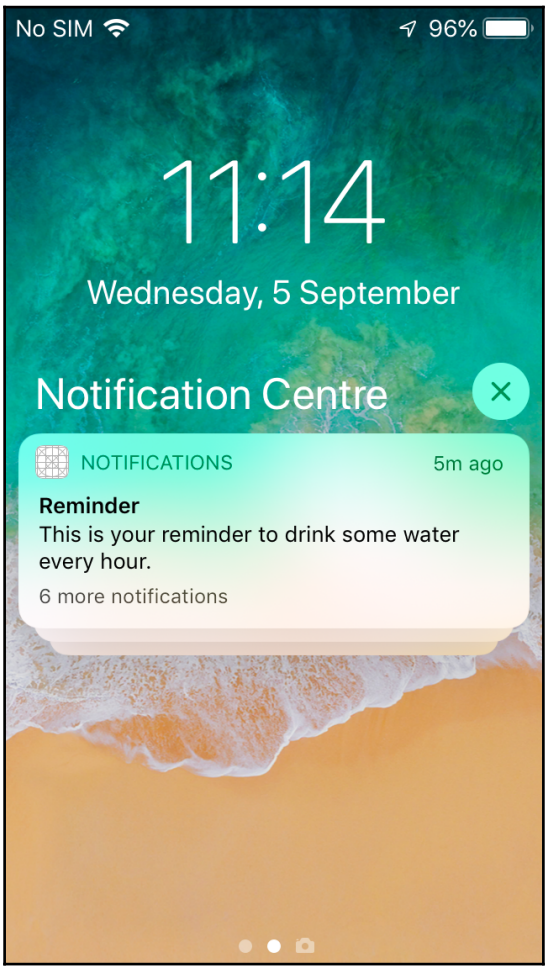

Background Modes
ON
Modes:
Audio, AirPlay, and Picture in Picture
Location updates
Voice over IP
Newsstand downloads
External accessory communication
Uses Bluetooth LE accessories
Acts as a Bluetooth LE accessory
Background fetch
Remote notifications
Steps:
Add the Required Background Modes key to your info plist file

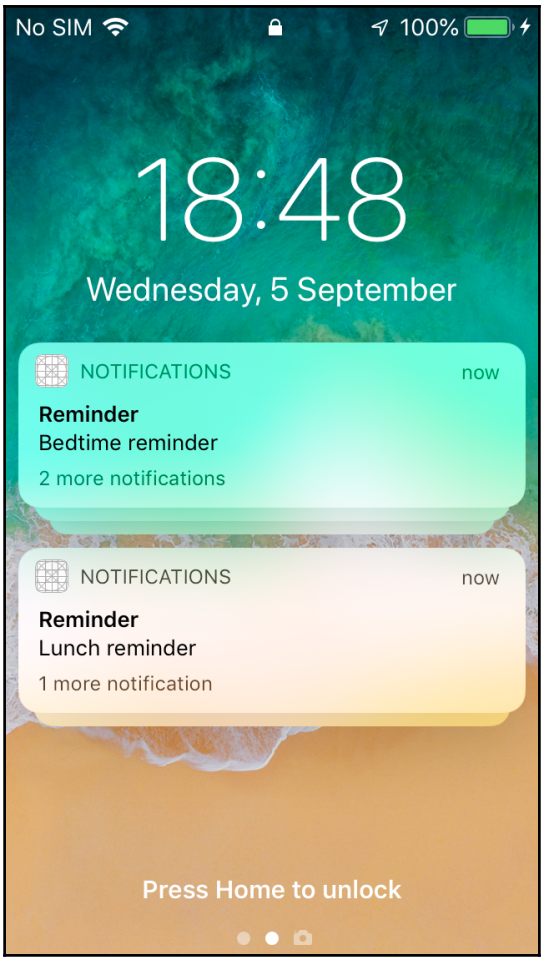

AVCaptureDevice
AVCaptureOutput
AVCaptureDeviceInput
AVCaptureSession


No SIM
17:56
100%
Back
Take Picture
Crop to square
Apply grayscale
Save photo
No SIM
17:56
100%
Back
Take Picture
Crop to square
Apply grayscale
Save photo

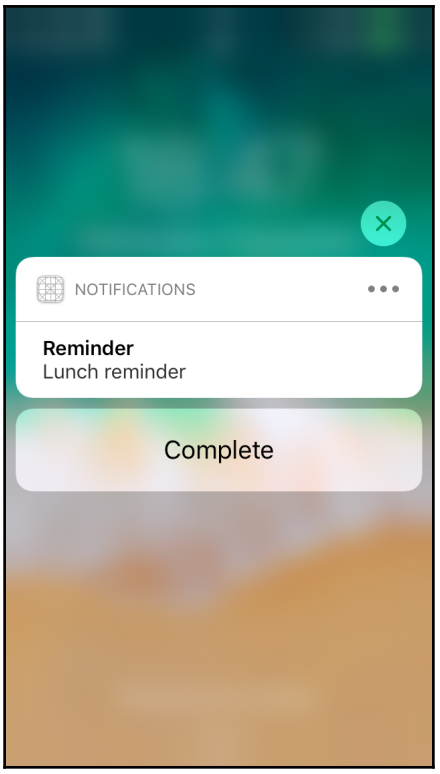

No SIM
18:05
100%
Back
Take Picture
Crop to square
Apply grayscale
Save photo
No SIM
18:05
100%
Back
Take Picture
Crop to square
Apply grayscale
Save photo

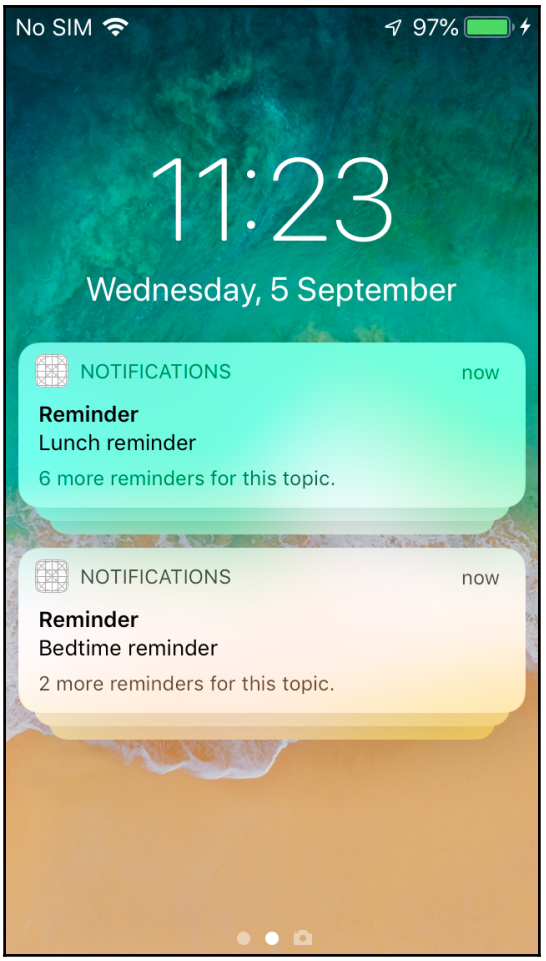
Chapter 18:
Implementing Rich Notifications



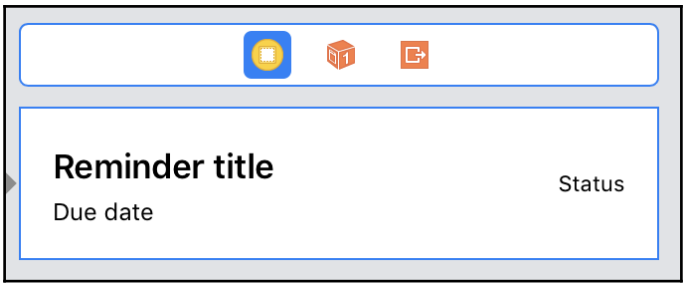

No SIM
100%
18:48
Wednesday, 5 September
NOTIFICATIONS
now
Reminder
Bedtime reminder
2 more notifications
NOTIFICATIONS
now
Reminder
Lunch reminder
1 more notification
Press Home to unlock

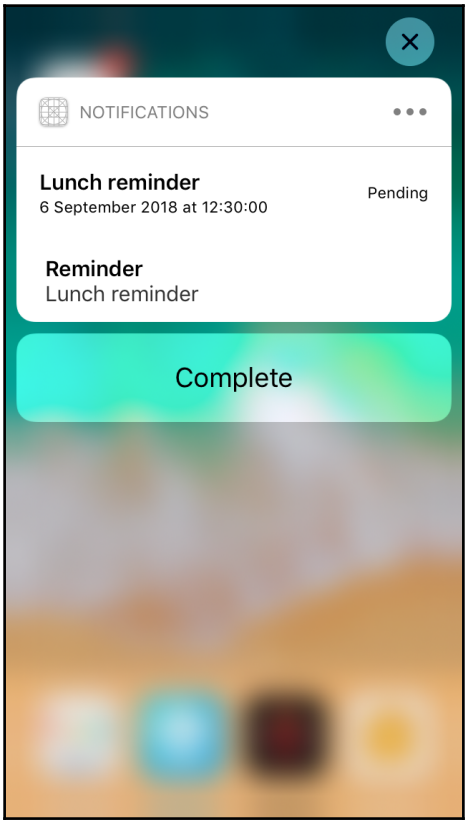
No SIM
100%
21:48
100% Charged
NOTIFICATIONS
now
Reminder
Lunch reminder


NOTIFICATIONS
Reminder
Lunch reminder
Complete



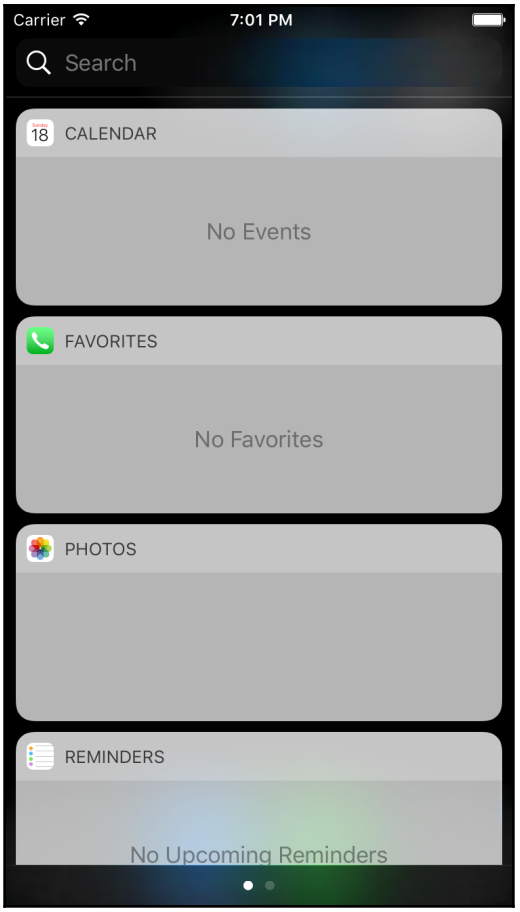
Key	Type	Value
▼ Strings Dictionary	Dictionary	(1 item)
▼ REMINDER_SUMMARY	Dictionary	(2 items)
NSStringLocalizedFormatKey	String	%#@reminders@
▼ reminders	Dictionary	(4 items)
NSStringFormatSpecTypeKey	String	NSStringPluralRuleType
NSStringFormatValueTypeKey	String	u
one	String	%u more reminder for this topic.
other	String	%u more reminders for this topic.

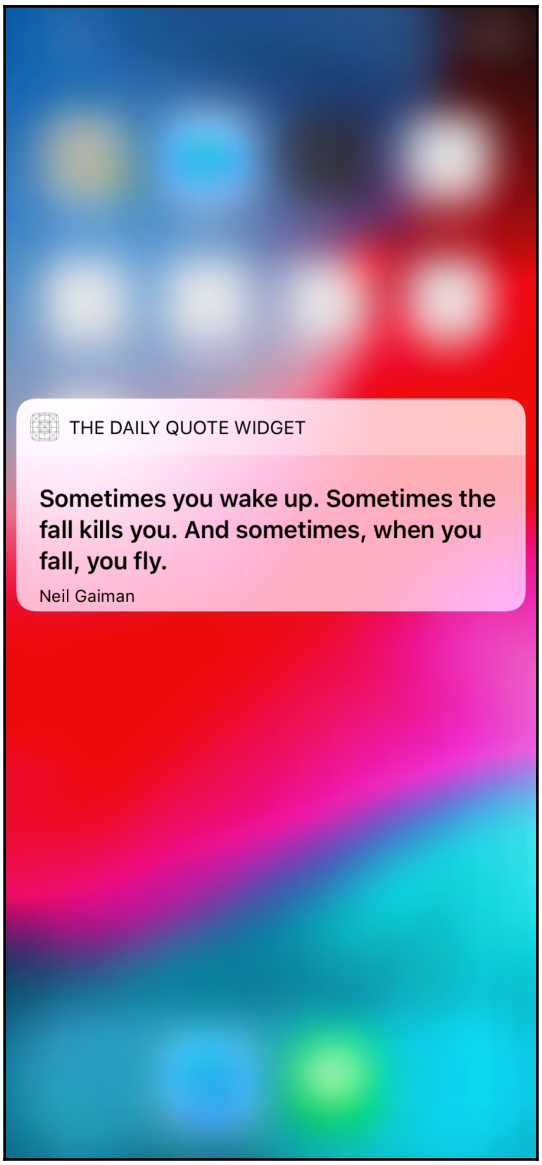

Reminder title
Due date
Status

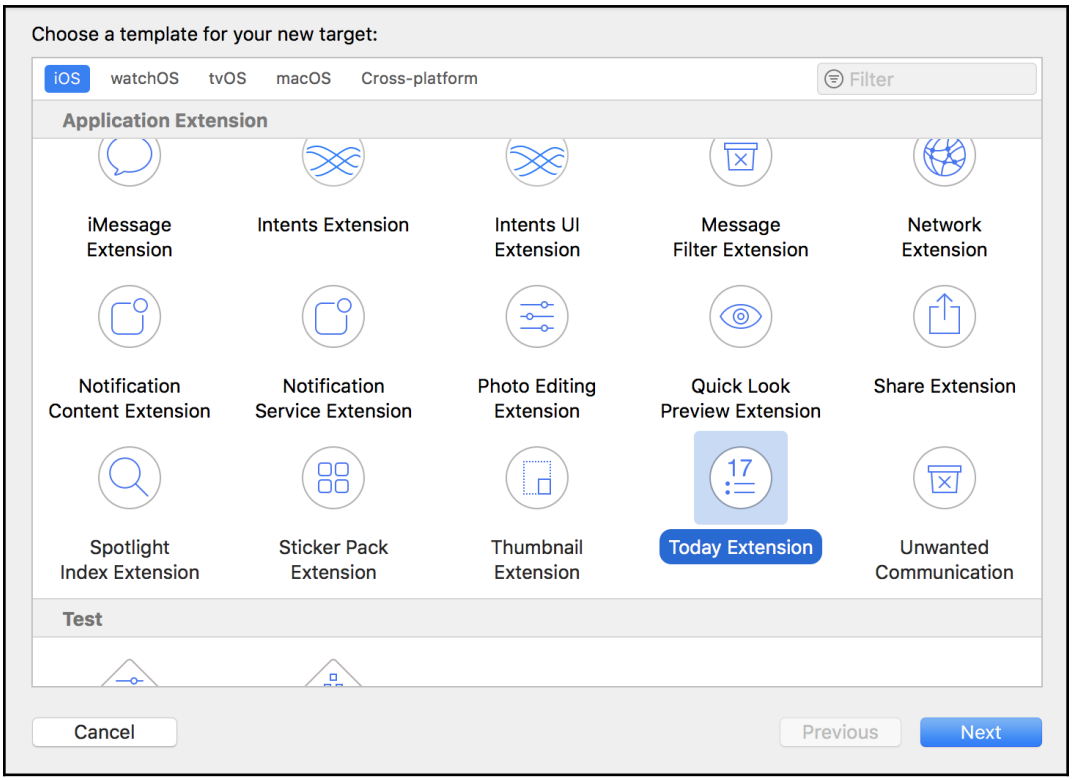

NOTIFICATIONS
Lunch reminder
6 September 2018 at 12:30:00
Pending
Reminder
Lunch reminder
Complete

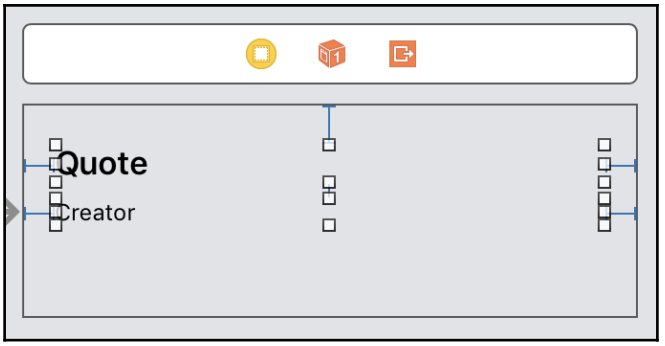
▼ NSExtension	Dictionary	(3 items)
▼ NSExtensionAttributes	Dictionary	(3 items)
UNNotificationExtensionDefault...	Boolean	YES
UNNotificationExtensionCategory	String	reminder
UNNotificationExtensionInitialC...	Number	0.2
NSExtensionMainStoryboard	String	MainInterface
NSExtensionPointIdentifier	String	com.apple.usernotifications.content-extension

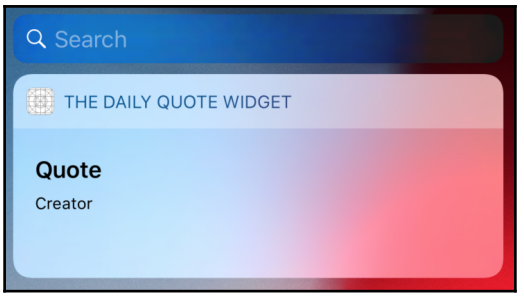
Chapter 19:
Instant Information with a Today Extensio n

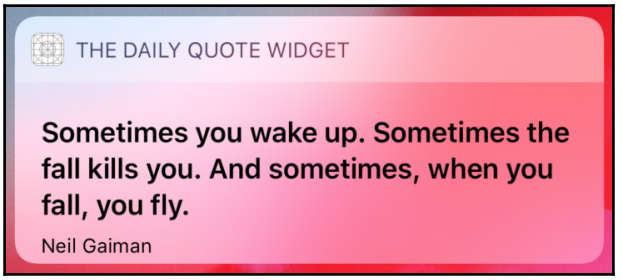

Carrier
7:01 PM
Search
CALENDAR
No Events
FAVORITES
No Favorites
PHOTOS
REMINDERS
No Upcoming Reminders


THE DAILY QUOTE WIDGET
Sometimes you wake up. Sometimes the fall kills you. And sometimes, when you fall, you fly.
Neil Gaiman

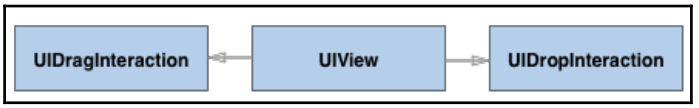

Choose a template for your new target:
iOS
watchOS
tvOS
macOS
Cross-platform
Filter
Application Extension
iMessage Extension
Intents Extension
Intents UI Extension
Message Filter Extension
Network Extension
Notification Content Extension
Notification Service Extension
Photo Editing Extension
Quick Look Preview Extension
Share Extension
Spotlight Index Extension
Sticker Pack Extension
Thumbnail Extension
Today Extension
Unwanted Communication
Test
Cancel
Previous
Next

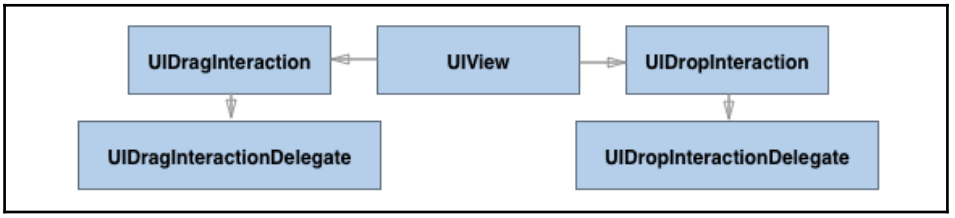

Quote
Creator

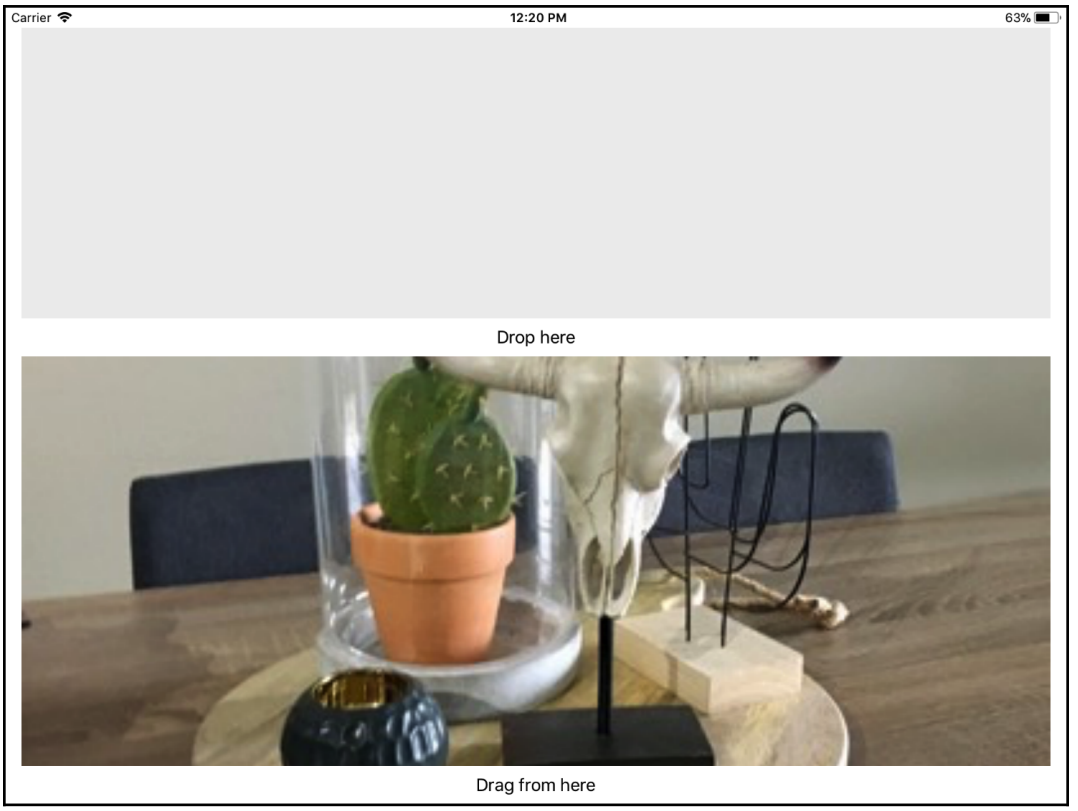




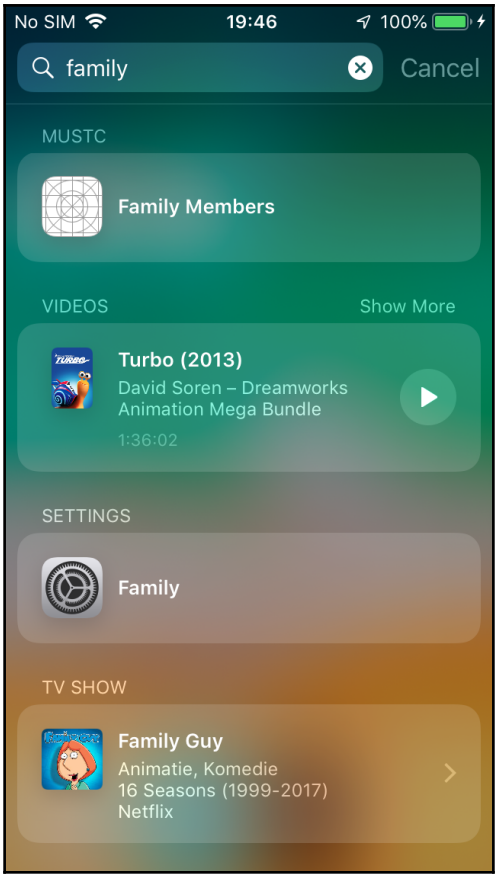
Chapter 20: Exchanging Data With Drag And Drop

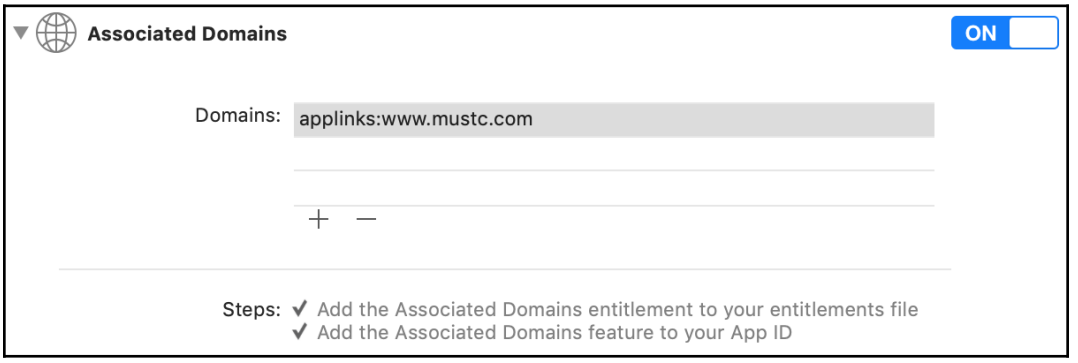




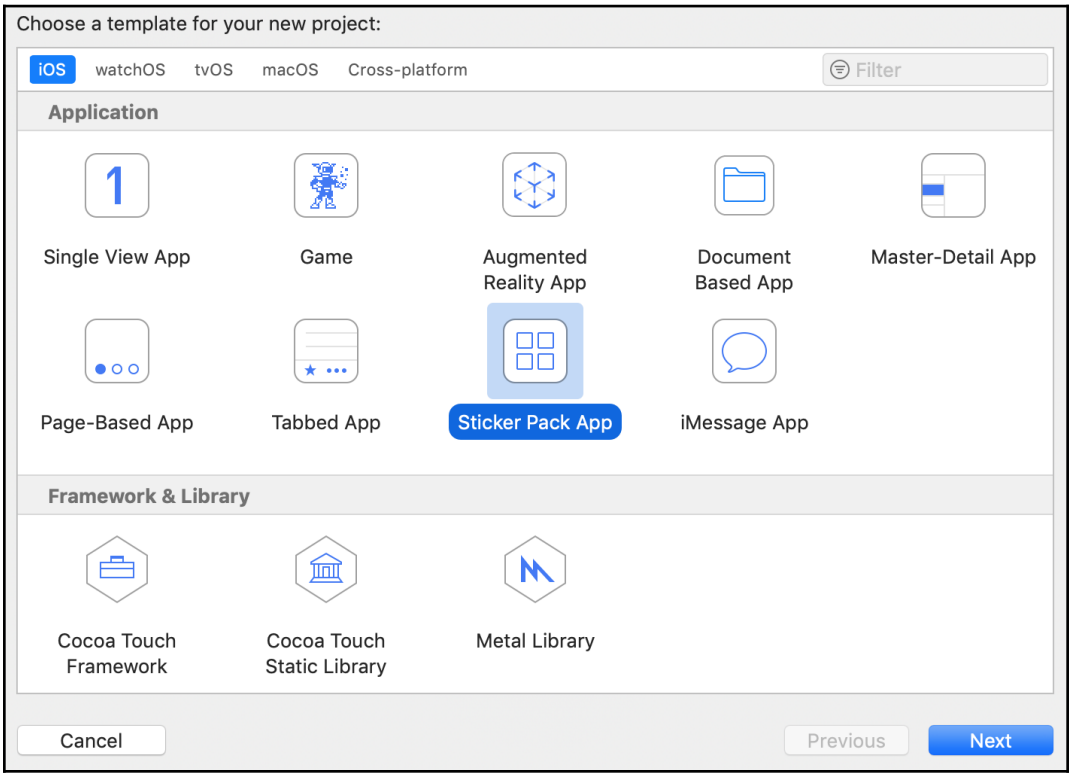


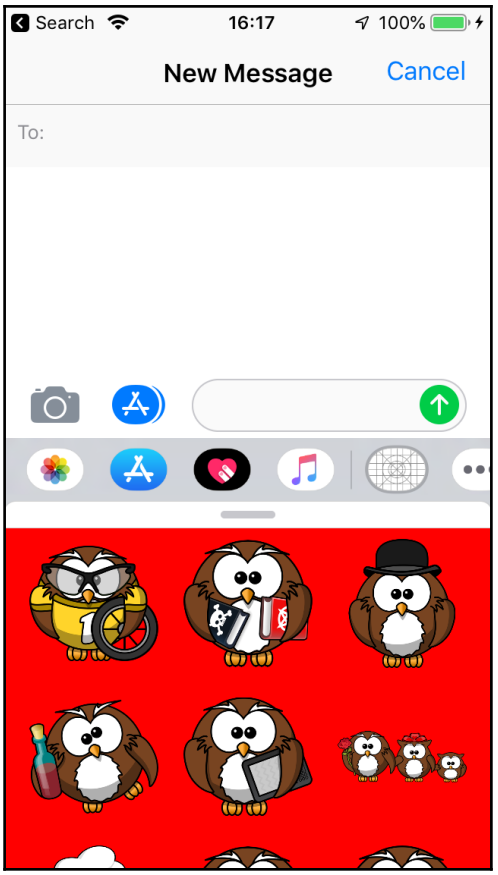
Chapter 21:
Improved Discoverability with Spotlight a nd Universal Links

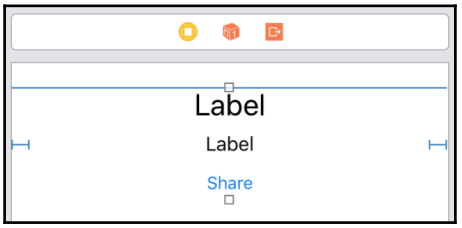

No SIM
19:46
100%
family
Cancel
MUSTC
Family Members
VIDEOS
Show More
Turbo (2013)
David Soren – Dreamworks
Animation Mega Bundle
1:36:02
SETTINGS
Family
TV SHOW
Family Guy
Animatie, Komedie
16 Seasons (1999-2017)
Netflix

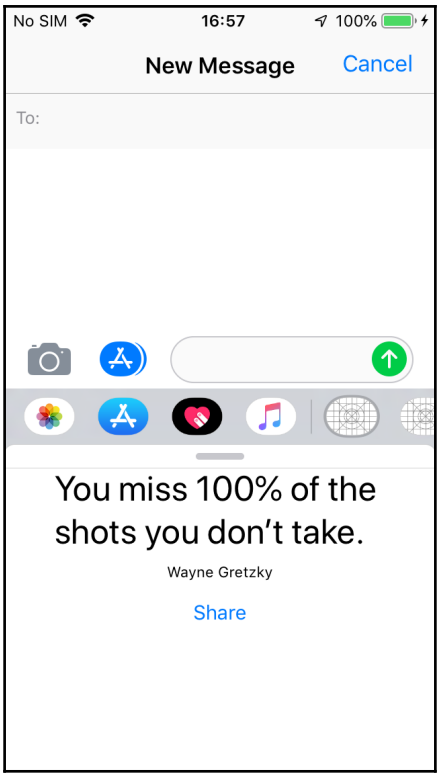

Associated Domains
ON
Domains:
applinks:www.mustc.com
Steps:
Add the Associated Domains entitlement to your entitlements file
Add the Associated Domains feature to your App ID

Chapter 22: Extending iMessage

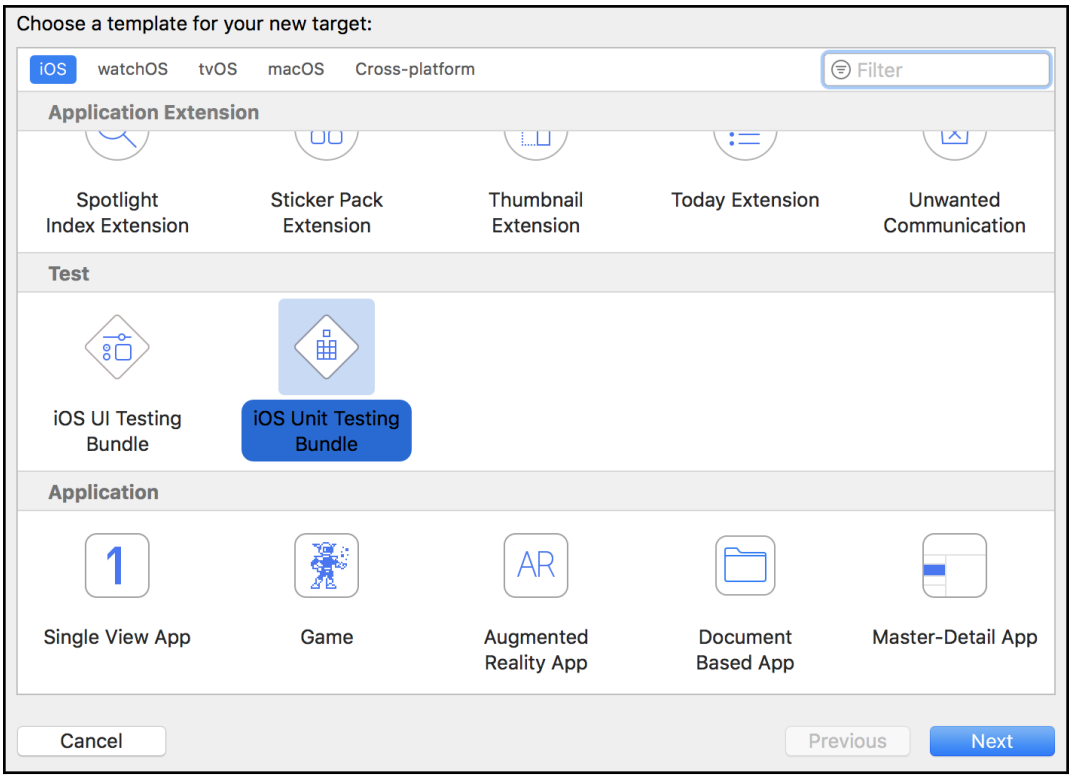


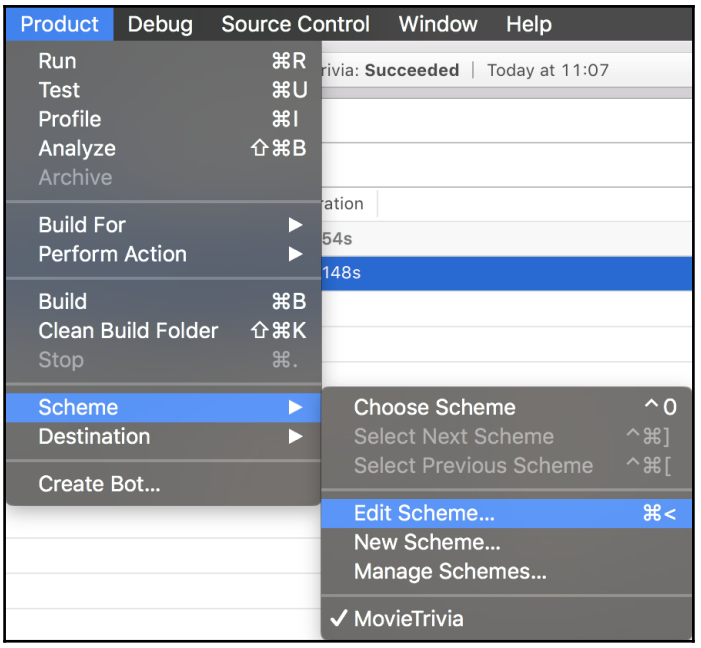

Search
16:17
100%
New Message
Cancel
To:

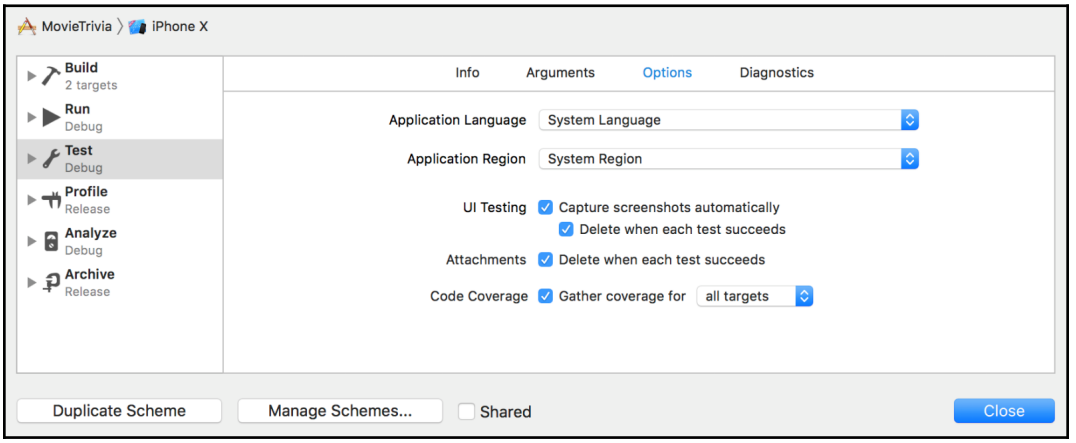

Label
Label
Share

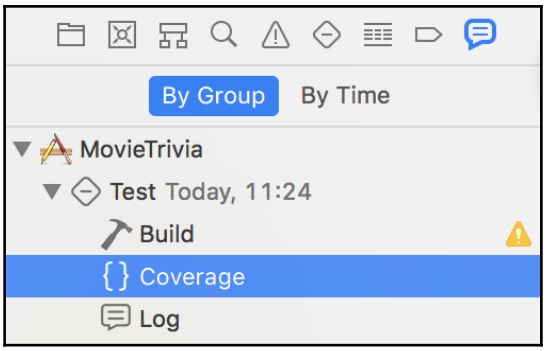


Chapter 23: Ensuring App Quality with Tests


Choose a template for your new target:
iOS
watchOS
tvOS
macOS
Cross-platform
Filter
Application Extension
Spotlight Index Extension
Sticker Pack Extension
Thumbnail Extension
Today Extension
Unwanted Communication
Test
iOS UI Testing Bundle
iOS Unit Testing Bundle
Application
Single View App
Game
Augmented Reality App
Document Based App
Master-Detail App
Cancel
Previous
Next

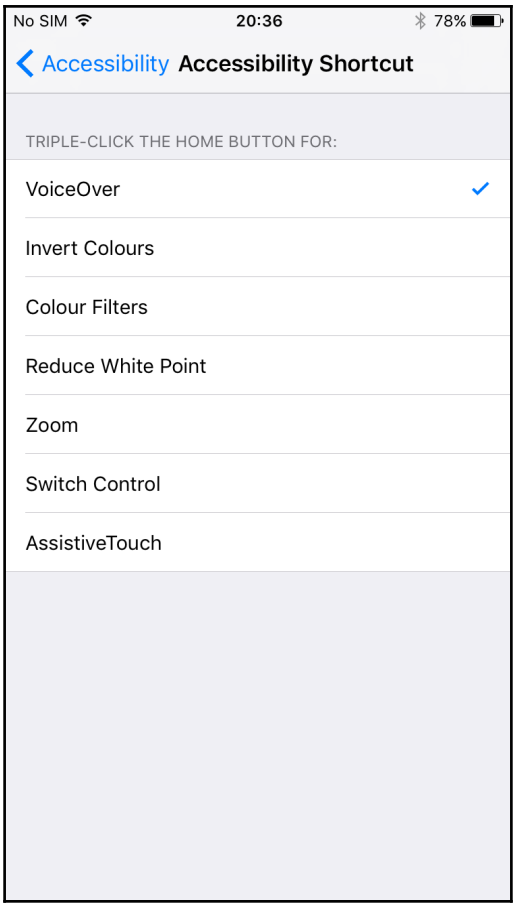

Product
Debug
Source Control
Window
Help
Run ⌘R
Test ⌘U
Profile ⌘I
Analyze ⇧⌘B
Archive
Build For
Perform Action
Build ⌘B
Clean Build Folder ⇧⌘K
Stop ⌘.
Scheme
Destination
Create Bot...
rivia: Succeeded | Today at 11:07
ration
54s
148s
Choose Scheme ^0
Select Next Scheme ^⌘]
Select Previous Scheme ^⌘[
Edit Scheme... ⌘<
New Scheme...
Manage Schemes...
✓ MovieTrivia

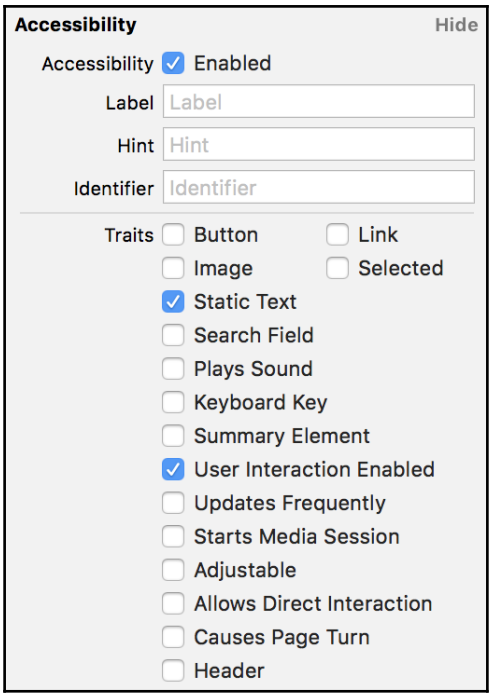

MovieTrivia 〉 iPhone X
Build
2 targets
Run
Debug
Test
Debug
Profile
Release
Analyze
Debug
Archive
Release
Info
Arguments
Options
Diagnostics
Application Language
System Language
Application Region
System Region
UI Testing
Capture screenshots automatically
Delete when each test succeeds
Attachments
Delete when each test succeeds
Code Coverage
Gather coverage for
all targets
Duplicate Scheme
Manage Schemes...
Shared
Close

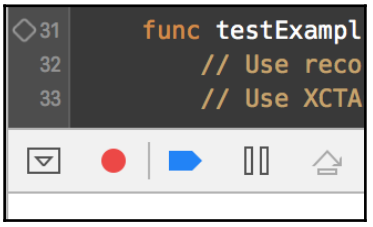


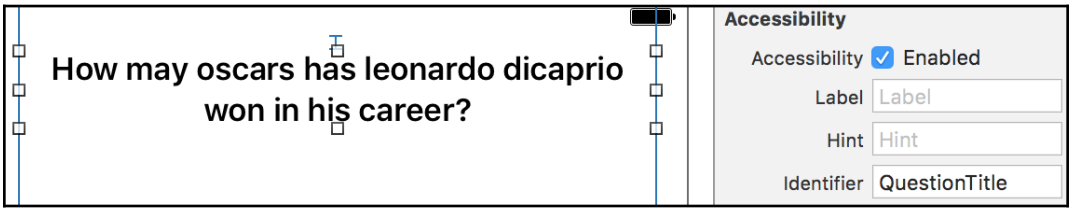
Name	Coverage
MovieTrivia.app	37,39%
AppDelegate.swift	100%
LoadTriviaViewController.swift	47,62%
QuestionViewController.swift	0%
QuestionsLoader.swift	100%
TriviaAPI.swift	64,71%

```
9  import Foundation
10
11 typealias QuestionsLoadedCallback = ([Question]) -> Void
12
13 struct QuestionsLoader {
14   let apiProvider: TriviaAPIProviding
15
16   func loadQuestions(callback: @escaping QuestionsLoadedCallback) {
17     apiProvider.loadTriviaQuestions { data in
18       let decoder = JSONDecoder()
19       decoder.keyDecodingStrategy = .convertFromSnakeCase
20       guard let questionsResponse = try? decoder.decode(QuestionsFetchResponse.self, from: data)
21         else { return }
22
23       callback(questionsResponse.questions)
24     }
25   }
26 }
27
```

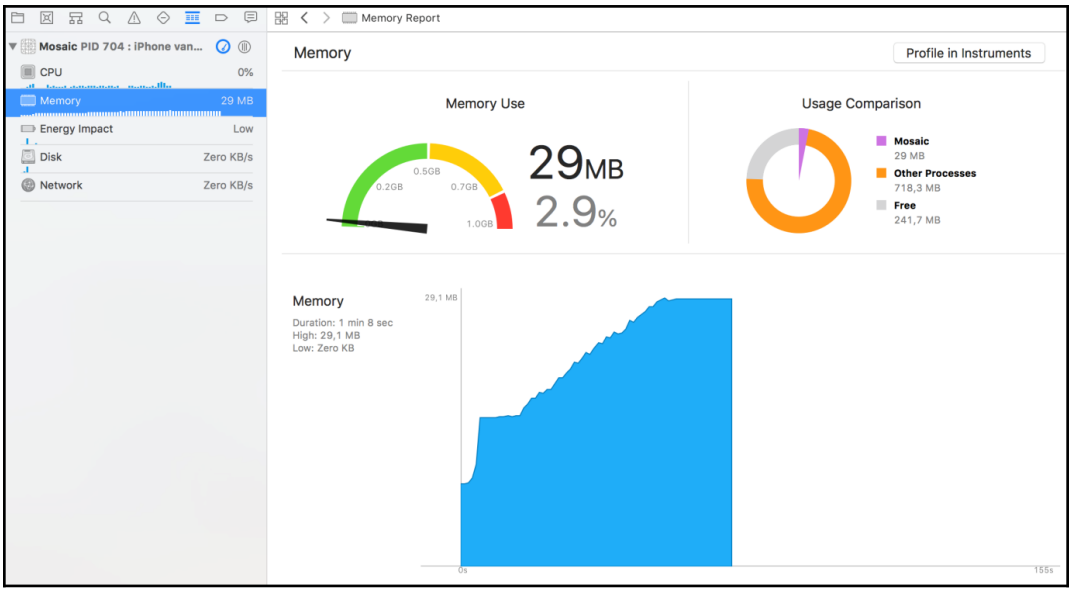

No SIM
20:36
78%
Accessibility
Accessibility Shortcut
TRIPLE-CLICK THE HOME BUTTON FOR:
VoiceOver
Invert Colours
Colour Filters
Reduce White Point
Zoom
Switch Control
AssistiveTouch

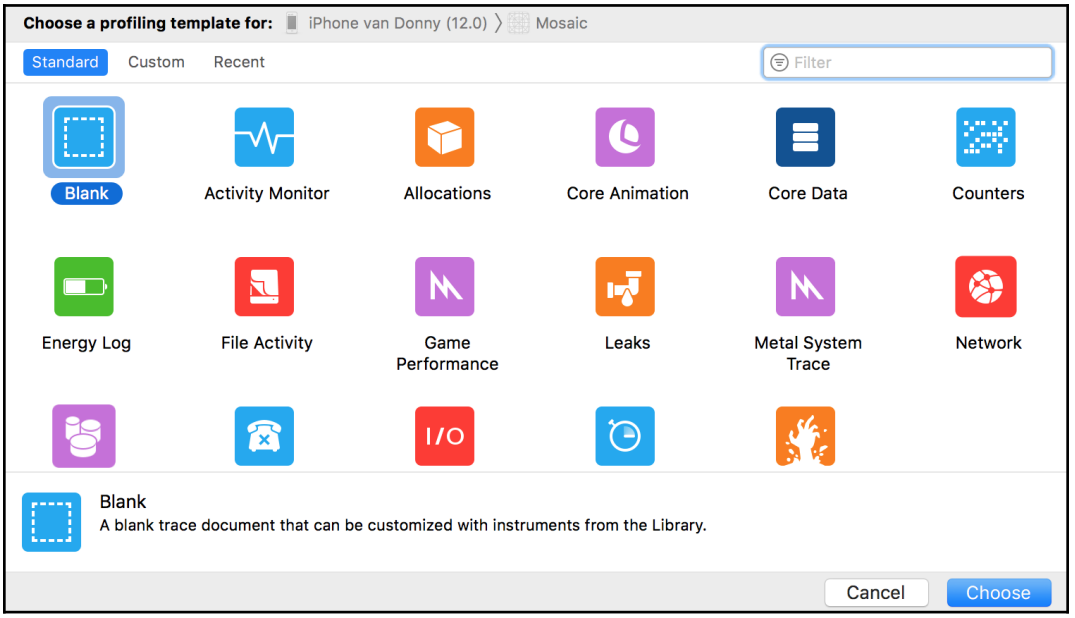


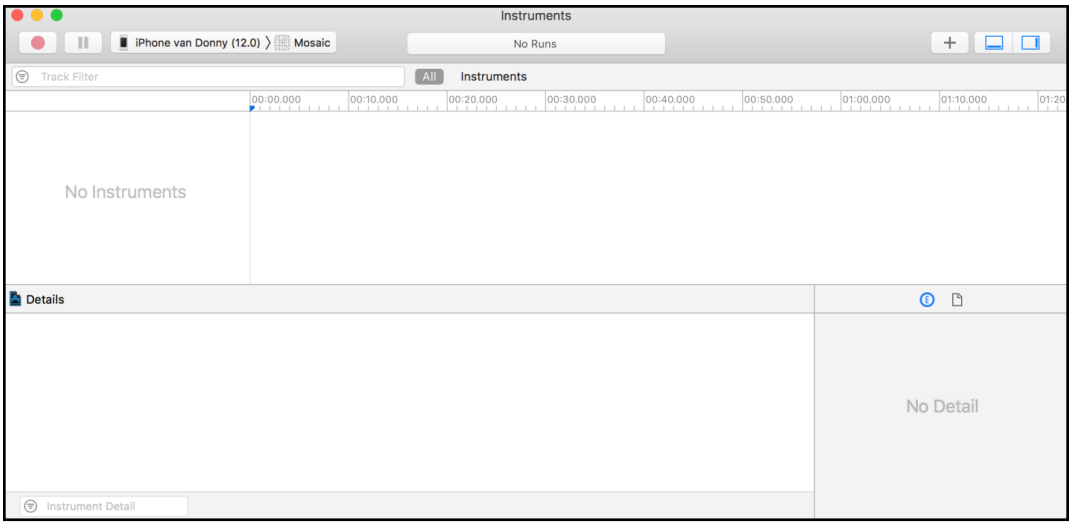


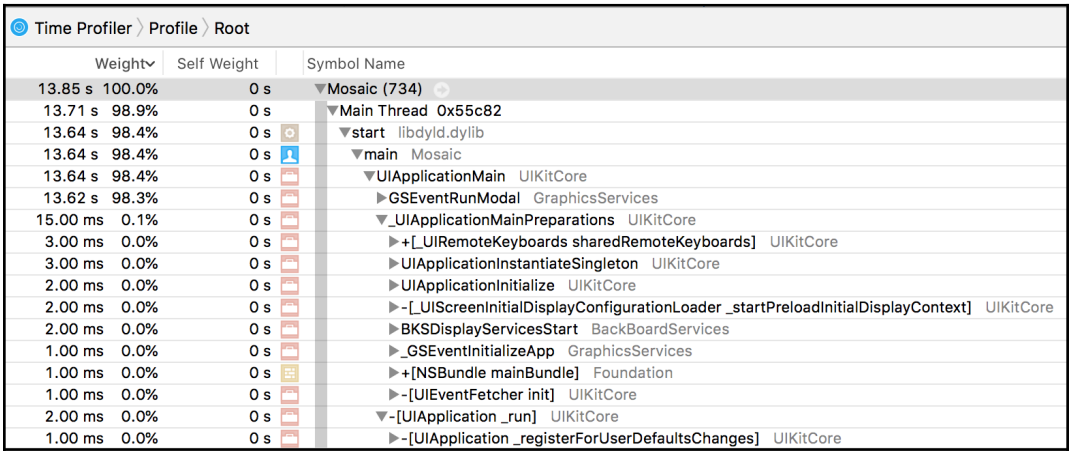


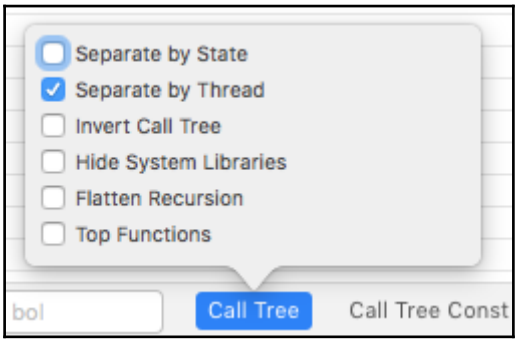
Chapter 24: Discovering Bottlenecks with Instruments


Memory Report
Mosaic PID 704 : iPhone van...
CPU 0%
Memory 29 MB
Energy Impact Low
Disk Zero KB/s
Network Zero KB/s
Memory
Profile in Instruments
Memory Use
0.2GB
0.5GB
0.7GB
1.0GB
29MB
2.9%
Usage Comparison
Mosaic
29 MB
Other Processes
718,3 MB
Free
241,7 MB
Memory
Duration: 1 min 8 sec
High: 29,1 MB
Low: Zero KB
29,1 MB
0s
155s


Choose a profiling template for: iPhone van Donny (12.0) Mosaic
Standard
Custom
Recent
Filter
Blank
Activity Monitor
Allocations
Core Animation
Core Data
Counters
Energy Log
File Activity
Game Performance
Leaks
Metal System Trace
Network
I/O
Blank
A blank trace document that can be customized with instruments from the Library.
Cancel
Choose

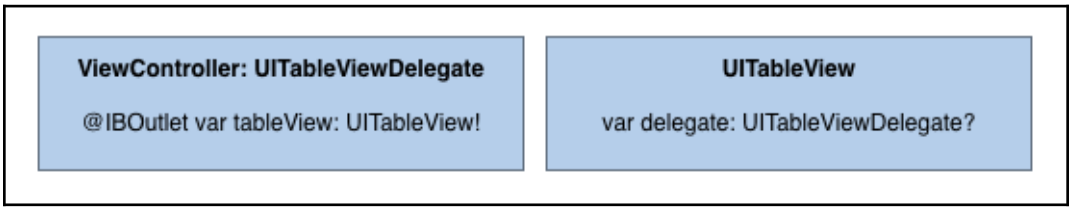

Instruments
iPhone van Donny (12.0) 〉 Mosaic
No Runs
Track Filter
All
Instruments
00:00.000
00:10.000
00:20.000
00:30.000
00:40.000
00:50.000
01:00.000
01:10.000
No Instruments
Details
No Detail
Instrument Detail

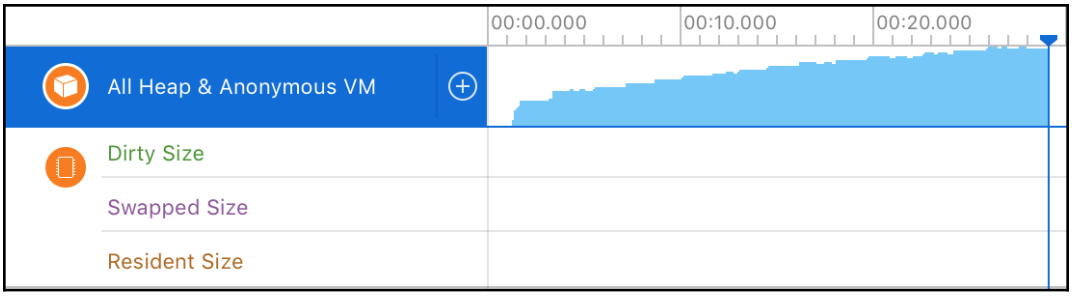

Time Profiler 〉 Profile 〉 Root
Weight
Self Weight
Symbol Name
13.85 s 100.0% 0 s Mosaic (734)
13.71 s 98.9% 0 s Main Thread 0x55c82
13.64 s 98.4% 0 s start libdyld.dylib
13.64 s 98.4% 0 s main Mosaic
13.64 s 98.4% 0 s UIApplicationMain UIKitCore
13.62 s 98.3% 0 s GSEventRunModal GraphicsServices
15.00 ms 0.1% 0 s _UIApplicationMainPreparations UIKitCore
3.00 ms 0.0% 0 s +[_UIRemoteKeyboards sharedRemoteKeyboards] UIKitCore
3.00 ms 0.0% 0 s UIApplicationInstantiateSingleton UIKitCore
2.00 ms 0.0% 0 s UIApplicationInitialize UIKitCore
2.00 ms 0.0% 0 s -[_UIScreenInitialDisplayConfigurationLoader _startPreloadInitialDisplayContext] UIKitCore
2.00 ms 0.0% 0 s BKSDisplayServicesStart BackBoardServices
1.00 ms 0.0% 0 s _GSEventInitializeApp GraphicsServices
1.00 ms 0.0% 0 s +[NSBundle mainBundle] Foundation
1.00 ms 0.0% 0 s -[UIEventFetcher init] UIKitCore
2.00 ms 0.0% 0 s -[UIApplication _run] UIKitCore
1.00 ms 0.0% 0 s -[UIApplication _registerForUserDefaultsChanges] UIKitCore


Separate by State
Separate by Thread
Invert Call Tree
Hide System Libraries
Flatten Recursion
Top Functions
bol
Call Tree
Call Tree Const

Time Profiler 〉 Profile 〉 Root

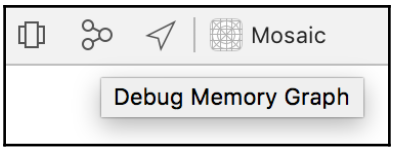
Weight	Self Weight	Symbol Name
13.77 s 99.3%	0 s	▼Mosaic (734)
13.64 s 98.4%	0 s	▼Main Thread 0x55c82
5.07 s 36.6%	5.07 s	▶ListCollectionViewLayout.createSizeLookup() Mosaic
3.01 s 21.7%	0 s	main Mosaic
2.80 s 20.2%	2.80 s	▶specialized _VariantDictionaryBuffer.nativeUpdateValue(_:forKey:) Mosaic
1.24 s 8.9%	1.24 s	▶protocol witness for Hashable.hash(into:) in conformance CGFloat Mosaic
370.00 ms 2.6%	370.00 ms	▶specialized _VariantDictionaryBuffer.ensureUniqueNativeBuffer(withBucketCount:) Mosaic
258.00 ms 1.8%	0 s	▶ListCollectionViewController.collectionView(_:cellForItemAt:) Mosaic
141.00 ms 1.0%	0 s	▶@objc ListCollectionViewCell.init(coder:) Mosaic
123.00 ms 0.8%	0 s	▶@objc ListCollectionViewController.scrollViewDidScroll(_:) Mosaic
87.00 ms 0.6%	87.00 ms	▶DYLD-STUB$$swift_release Mosaic
85.00 ms 0.6%	85.00 ms	▶ListCollectionViewLayout.prepare() Mosaic
50.00 ms 0.3%	0 s	▶@nonobjc UICollectionViewLayoutAttributes.__allocating_init(forCellWith:) Mosaic
40.00 ms 0.2%	40.00 ms	▶outlined consume of _VariantDictionaryBuffer<A, B><A, B> Mosaic
40.00 ms 0.2%	40.00 ms	▶specialized Dictionary.subscript.setter Mosaic
39.00 ms 0.2%	39.00 ms	▶DYLD-STUB$$swift_retain_n Mosaic
38.00 ms 0.2%	38.00 ms	▶DYLD-STUB$$Hasher.init(_seed:) Mosaic

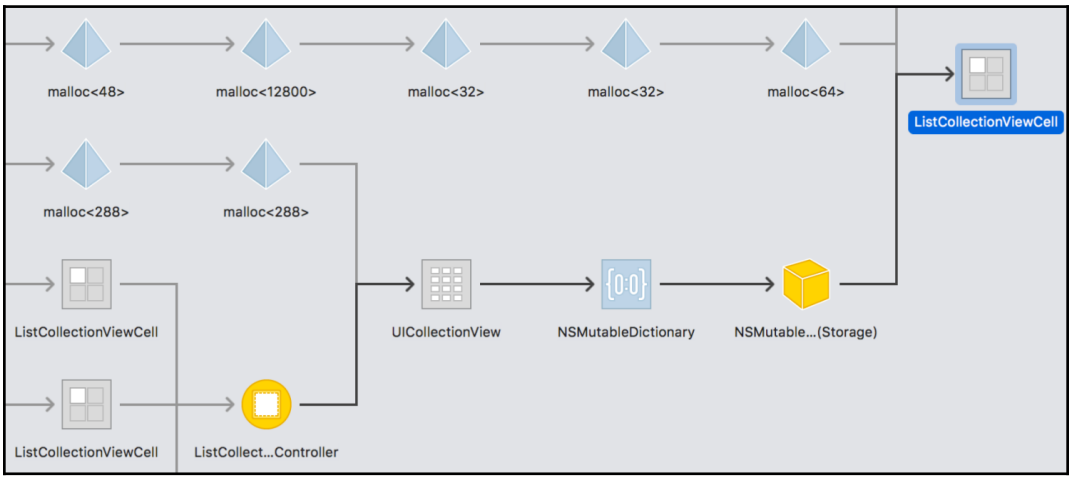


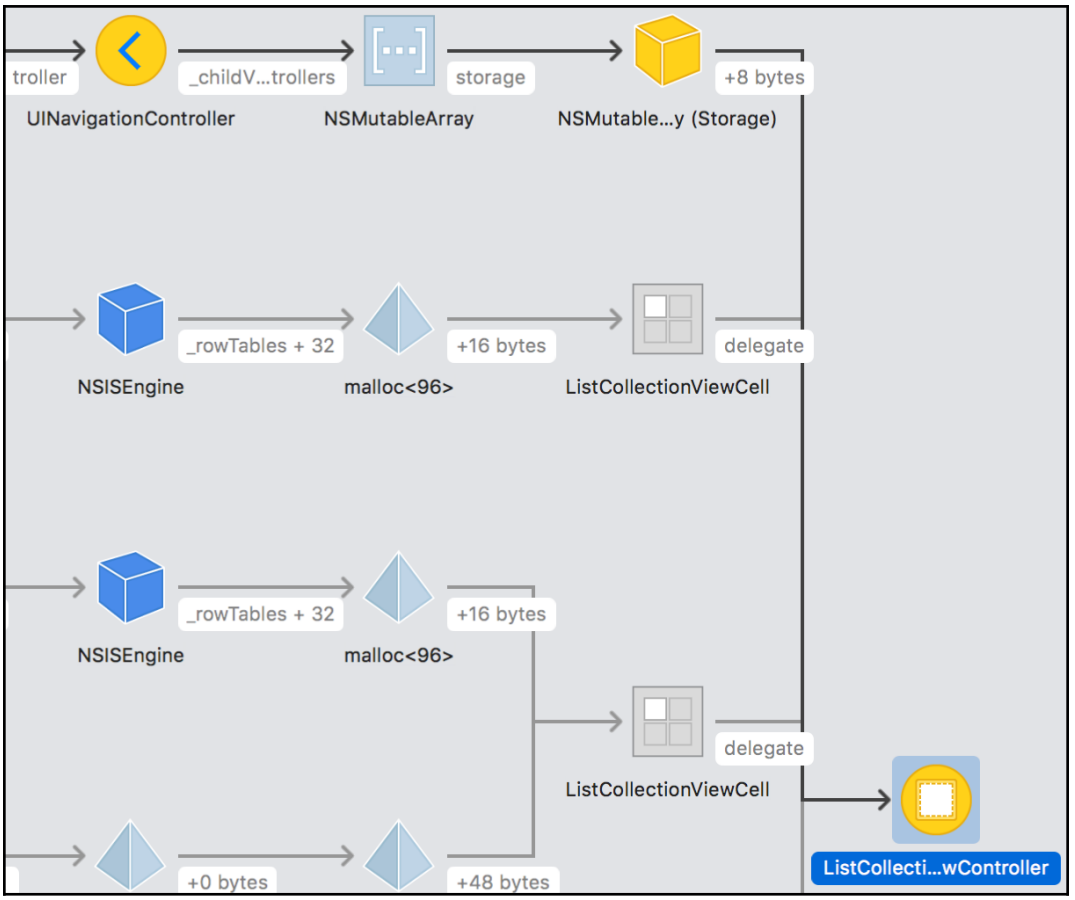


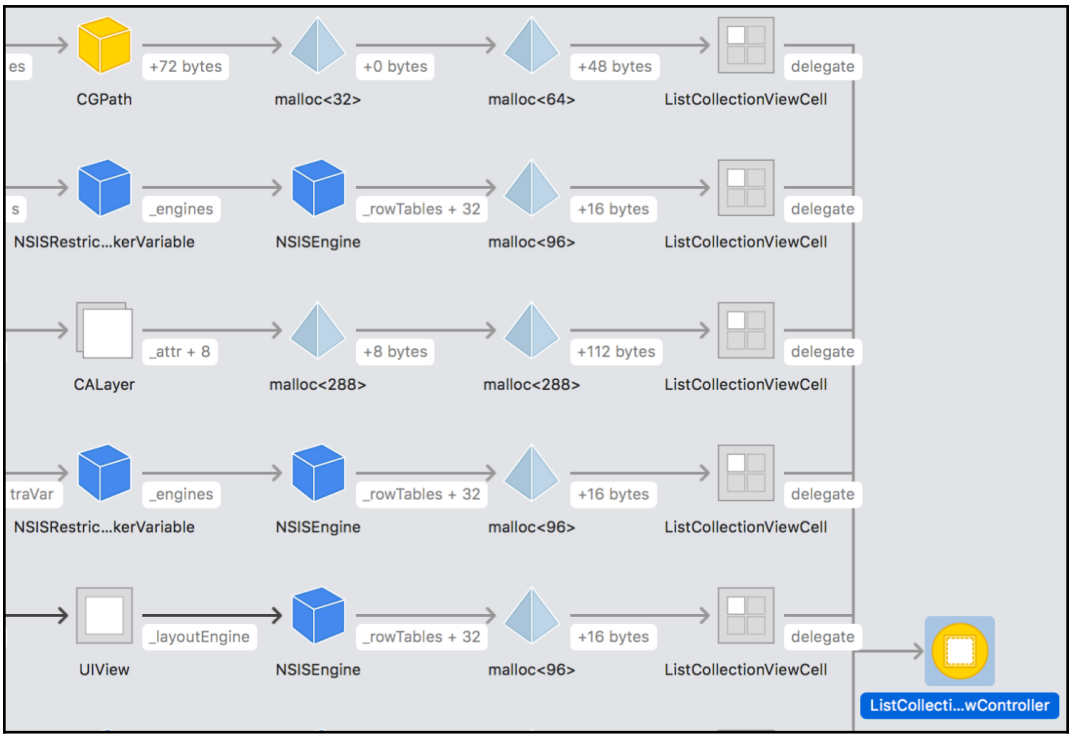
Allocations 〉 Statistics 〉 Allocation Summary

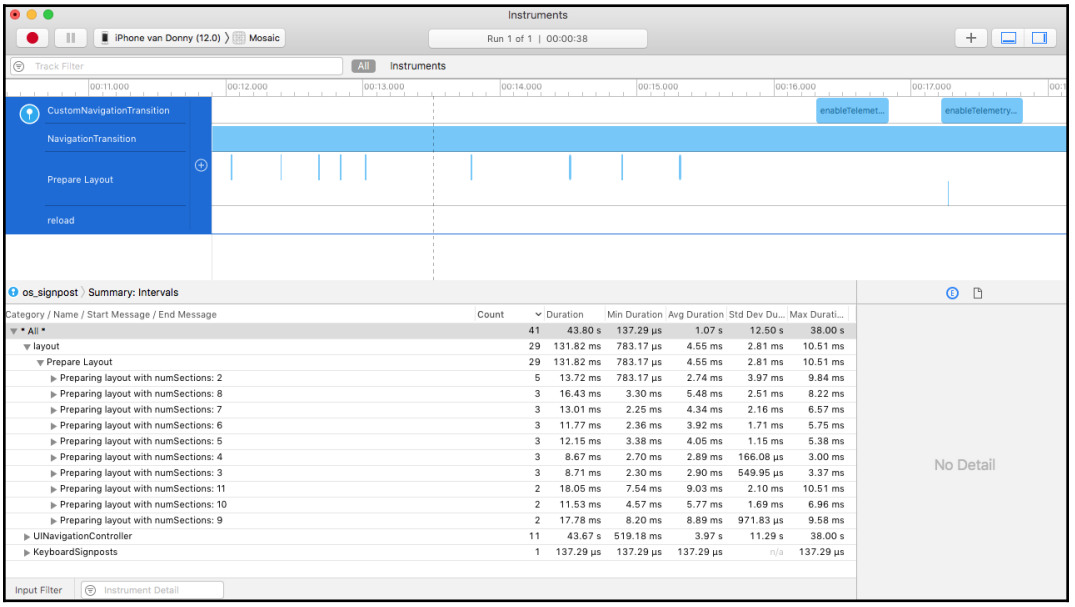
Graph	Category	Persistent B...	# Persistent	# Transient	Total Bytes	# Total
☐	Mosaic.ListCollectionViewCell	134,53 KiB	210	0	134,53 KiB	210
☐	Mosaic.ListCollectionViewController	12,69 KiB	14	0	12,69 KiB	14
☐	Mosaic.ListCollectionViewLayout	4,59 KiB	14	0	4,59 KiB	14
☐	Mosaic.ListViewController	880 Bytes	1	0	880 Bytes	1
☐	Mosaic.AppDelegate	32 Bytes	1	0	32 Bytes	1

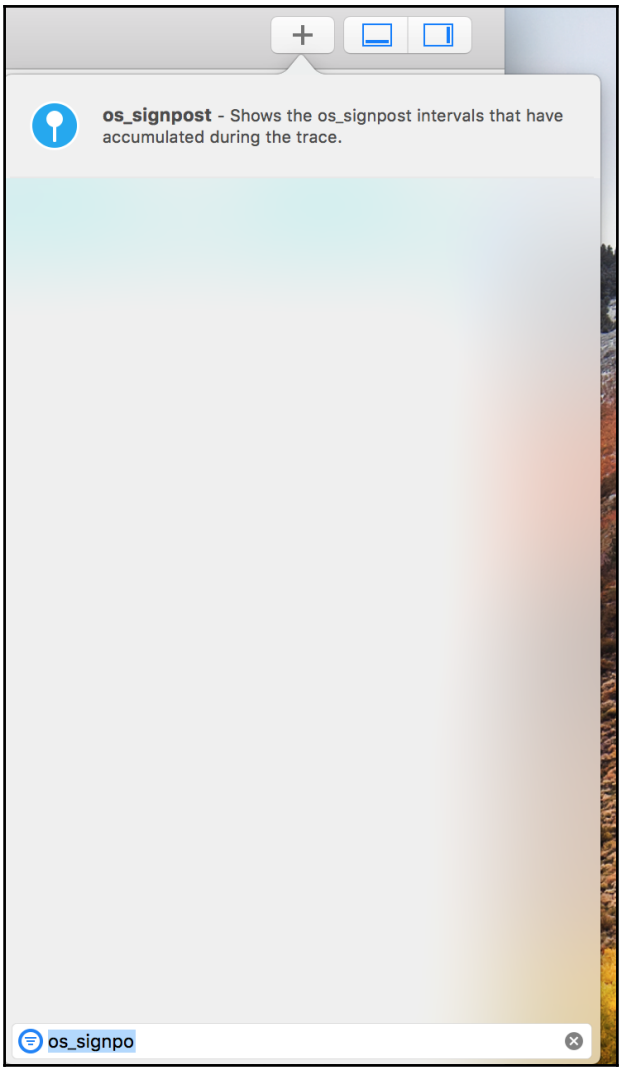

Mosaic
Debug Memory Graph

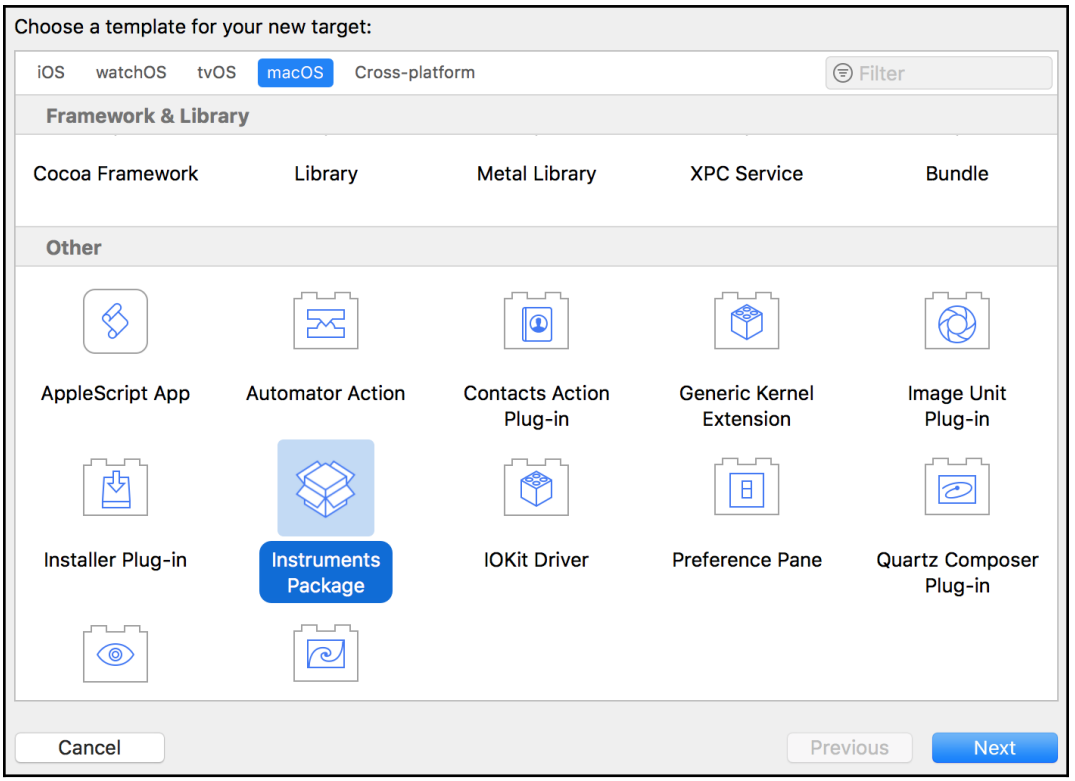

malloc<48>
malloc<12800>
malloc<32>
malloc<32>
malloc<64>
ListCollectionViewCell
malloc<288>
malloc<288>
ListCollectionViewCell
UICollectionView
NSMutableDictionary
NSMutable...(Storage)
ListCollectionViewCell
ListCollect...Controller

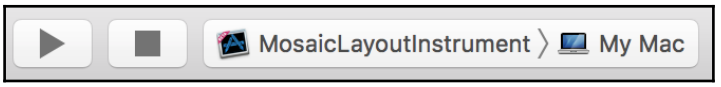

troller
_childV...trollers
storage
+8 bytes
UINavigationController
NSMutableArray
NSMutable...y (Storage)
_rowTables + 32
+16 bytes
delegate
NSISEngine
malloc<96>
ListCollectionViewCell
_rowTables + 32
+16 bytes
NSISEngine
malloc<96>
delegate
ListCollectionViewCell
+0 bytes
+48 bytes
ListCollecti...wController

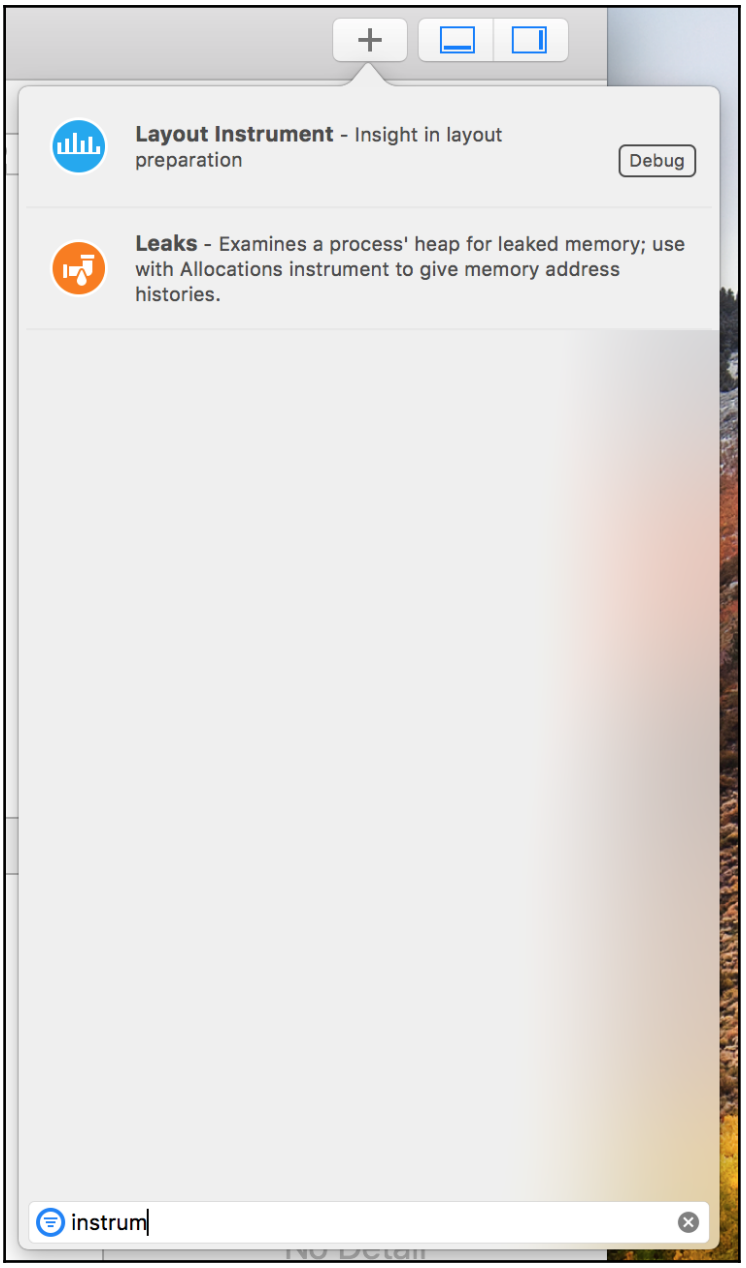

es
+72 bytes
+0 bytes
+48 bytes
delegate
CGPath
malloc<32>
malloc<64>
ListCollectionViewCell
s
_engines
_rowTables + 32
+16 bytes
delegate
NSISRestric...kerVariable
NSISEngine
malloc<96>
ListCollectionViewCell
_attr + 8
+8 bytes
+112 bytes
delegate
CALayer
malloc<288>
malloc<288>
ListCollectionViewCell
traVar
_engines
_rowTables + 32
+16 bytes
delegate
NSISRestric...kerVariable
NSISEngine
malloc<96>
ListCollectionViewCell
_layoutEngine
_rowTables + 32
+16 bytes
delegate
UIView
NSISEngine
malloc<96>
ListCollectionViewCell
ListCollecti...wController

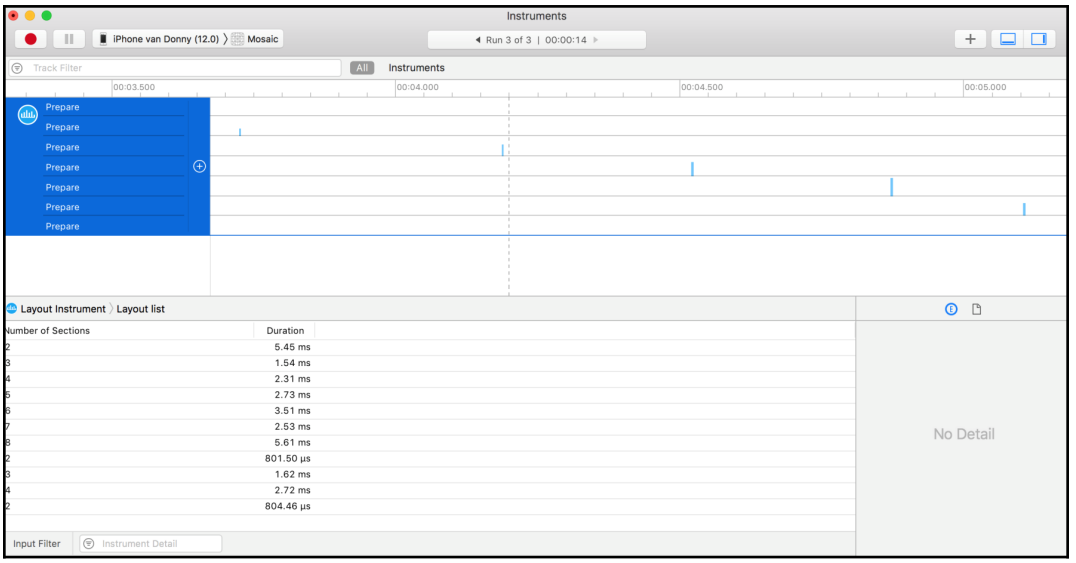

Instruments
iPhone van Donny (12.0) 〉 Mosaic
Run 1 of 1 | 00:00:38
Track Filter
All
Instruments
00:11.000
00:12.000
00:13.000
00:14.000
00:15.000
00:16.000
00:17.000
CustomNavigationTransition
NavigationTransition
Prepare Layout
reload
enableTelemet...
enableTelemetry...
os_signpost 〉 Summary: Intervals
Category / Name / Start Message / End Message
Count
Duration
Min Duration
Avg Duration
Std Dev Du...
Max Durati...
• All •
41
43.80 s
137.29 µs
1.07 s
12.50 s
38.00 s
layout
29
131.82 ms
783.17 µs
4.55 ms
2.81 ms
10.51 ms
Prepare Layout
29
131.82 ms
783.17 µs
4.55 ms
2.81 ms
10.51 ms
Preparing layout with numSections: 2
5
13.72 ms
783.17 µs
2.74 ms
3.97 ms
9.84 ms
Preparing layout with numSections: 8
3
16.43 ms
3.30 ms
5.48 ms
2.51 ms
8.22 ms
Preparing layout with numSections: 7
3
13.01 ms
2.25 ms
4.34 ms
2.16 ms
6.57 ms
Preparing layout with numSections: 6
3
11.77 ms
2.36 ms
3.92 ms
1.71 ms
5.75 ms
Preparing layout with numSections: 5
3
12.15 ms
3.38 ms
4.05 ms
1.15 ms
5.38 ms
Preparing layout with numSections: 4
3
8.67 ms
2.70 ms
2.89 ms
166.08 µs
3.00 ms
Preparing layout with numSections: 3
3
8.71 ms
2.30 ms
2.90 ms
549.95 µs
3.37 ms
Preparing layout with numSections: 11
2
18.05 ms
7.54 ms
9.03 ms
2.10 ms
10.51 ms
Preparing layout with numSections: 10
2
11.53 ms
4.57 ms
5.77 ms
1.69 ms
6.96 ms
Preparing layout with numSections: 9
2
17.78 ms
8.20 ms
8.89 ms
971.83 µs
9.58 ms
UINavigationController
11
43.67 s
519.18 ms
3.97 s
11.29 s
38.00 s
KeyboardSignposts
1
137.29 µs
137.29 µs
137.29 µs
n/a
137.29 µs
No Detail
Input Filter
Instrument Detail


os_signpost - Shows the os_signpost intervals that have accumulated during the trace.
os_signpo

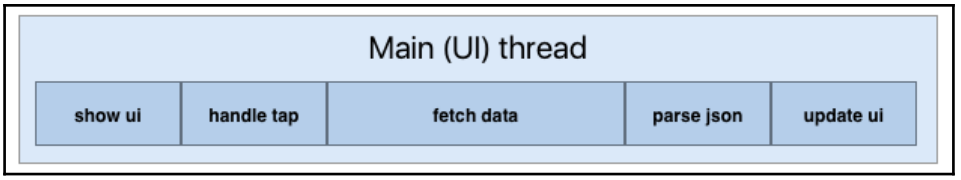

Choose a template for your new target:
iOS
watchOS
tvOS
macOS
Cross-platform
Filter
Framework & Library
Cocoa Framework
Library
Metal Library
XPC Service
Bundle
Other
AppleScript App
Automator Action
Contacts Action Plug-in
Generic Kernel Extension
Image Unit Plug-in
Installer Plug-in
Instruments Package
IOKit Driver
Preference Pane
Quartz Composer Plug-in
Cancel
Previous
Next

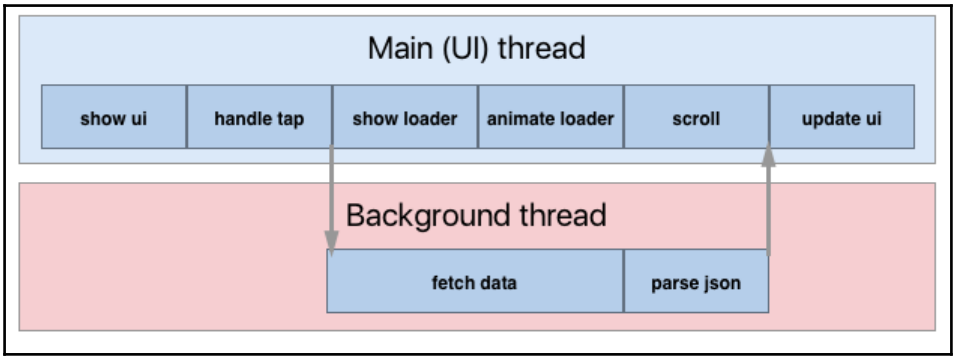

MosaicLayoutInstrument
My Mac

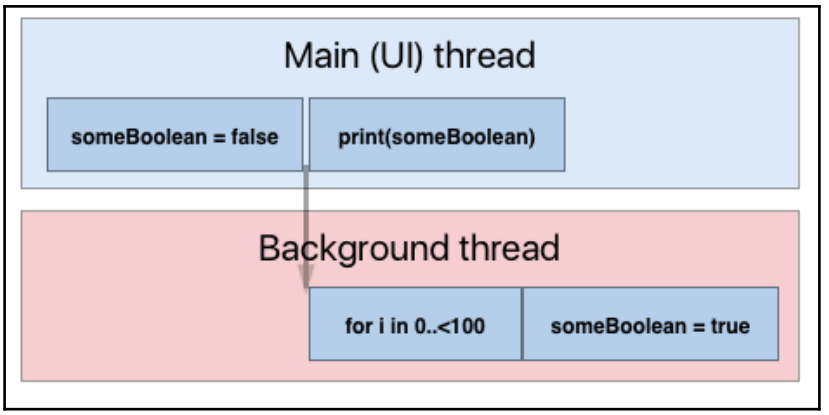

Layout Instrument - Insight in layout preparation
Debug
Leaks - Examines a process' heap for leaked memory; use with Allocations instrument to give memory address histories.
instrum



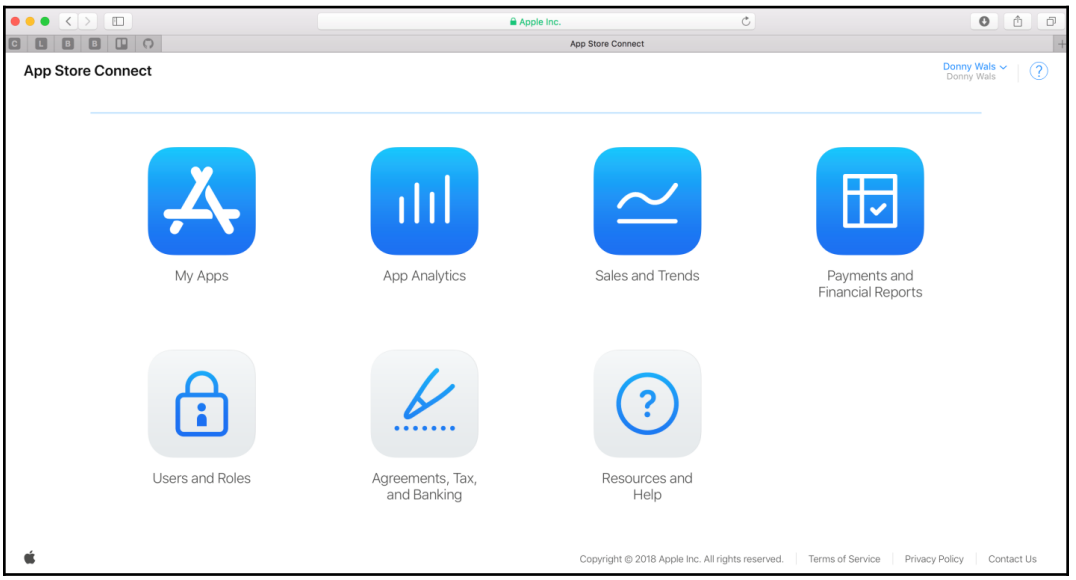
Chapter 25: Offloading Tasks with Operations and GC D

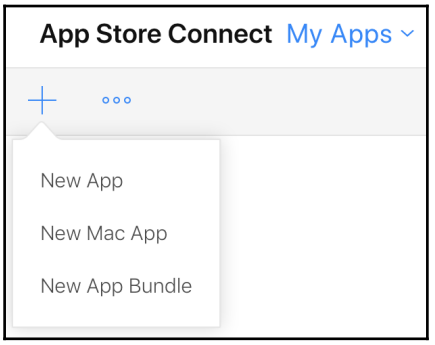


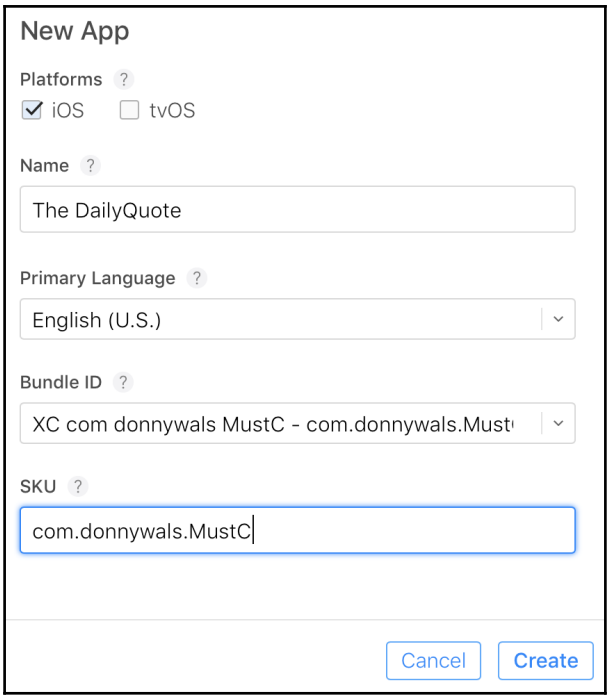


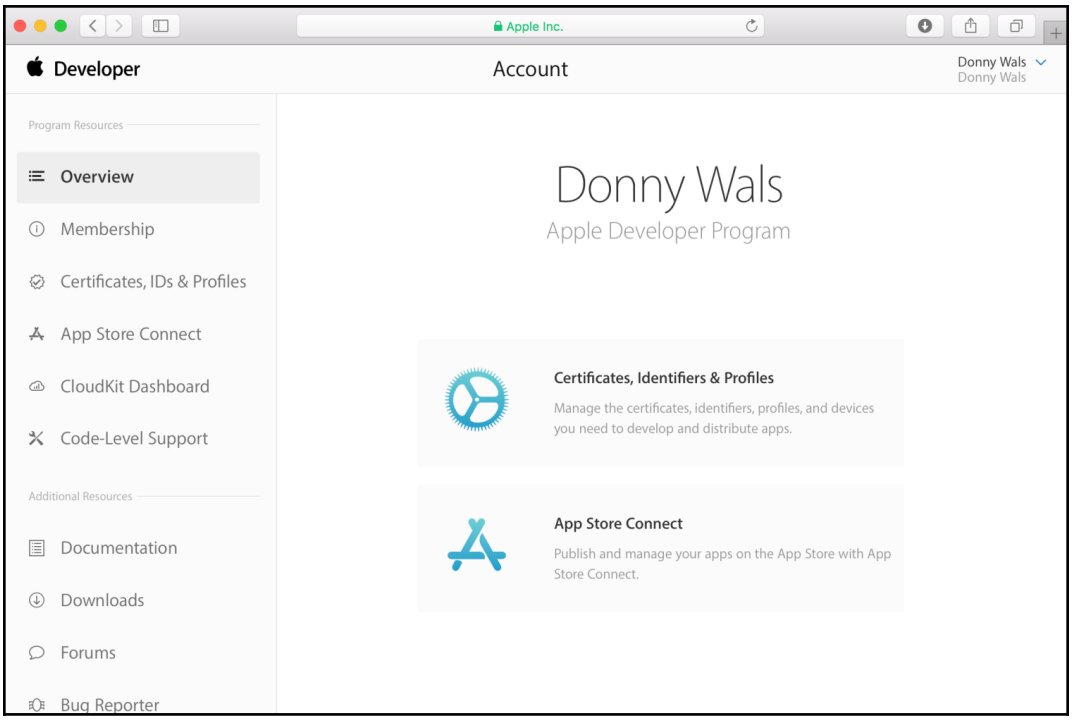

Main (UI) thread
someBoolean = false
print(someBoolean)
Background thread
for i in 0..<100
someBoolean = true

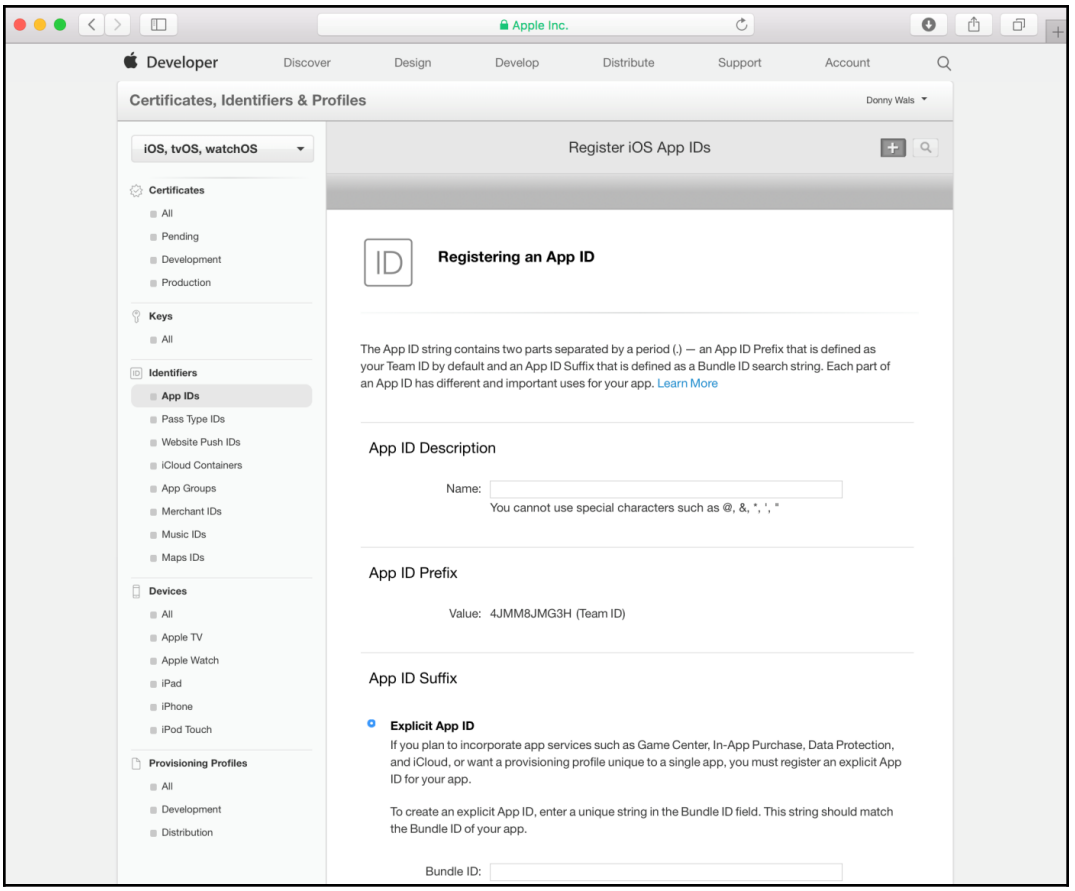
Chapter 26:
Submitting Your App to the App Store

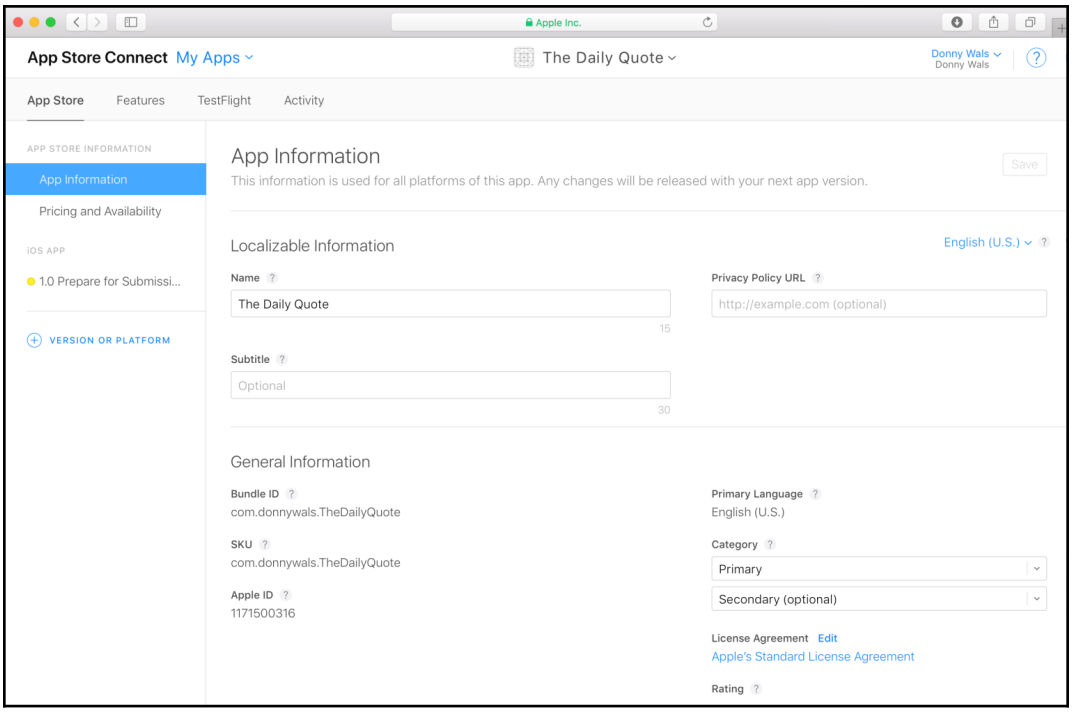


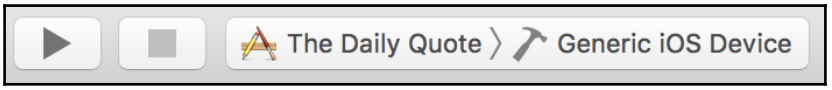


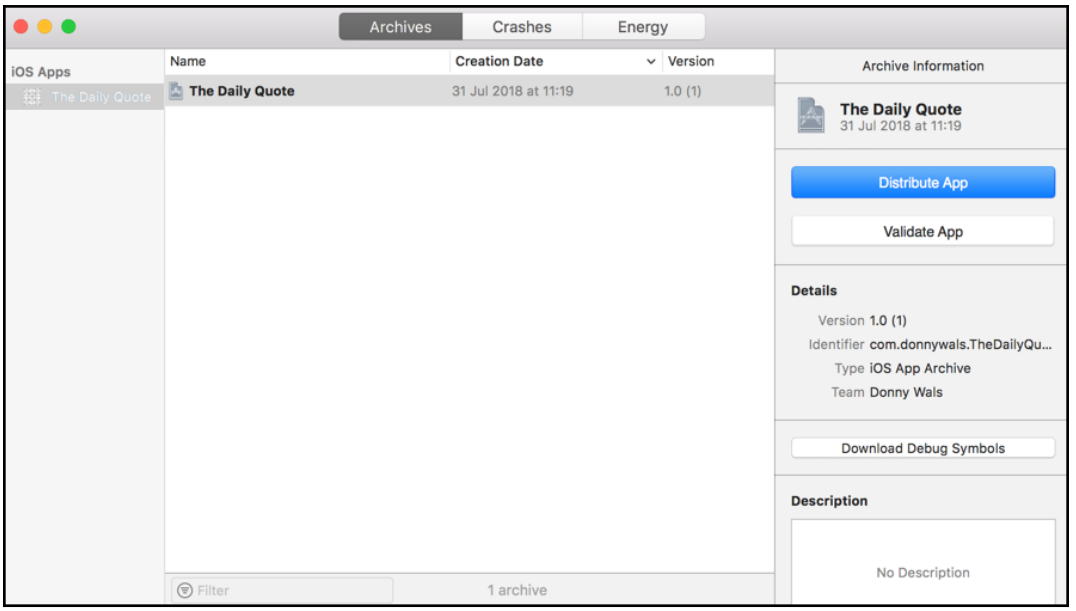

New App
Platforms
iOS
tvOS
Name
The DailyQuote
Primary Language
English (U.S.)
Bundle ID
XC com donnywals MustC - com.donnywals.Must
SKU
com.donnywals.MustC
Cancel
Create

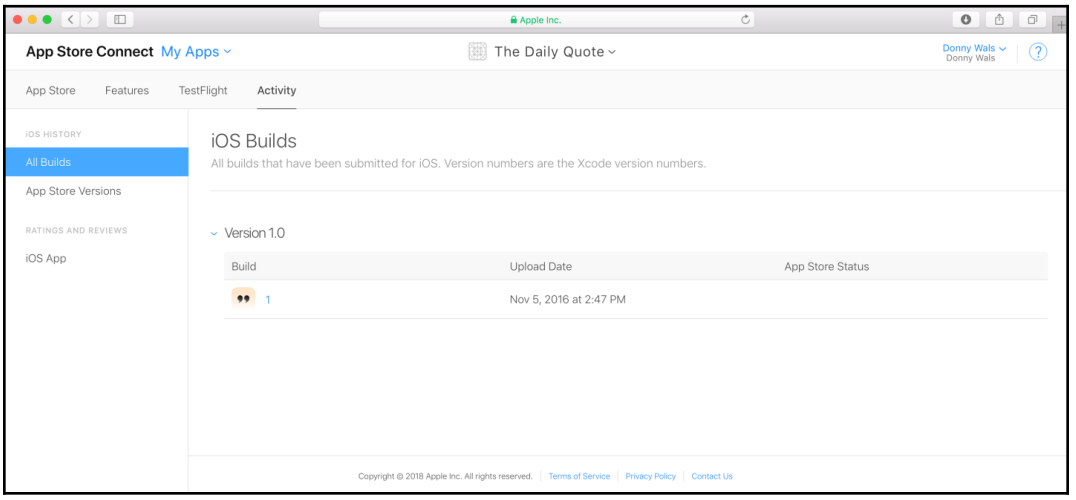

Apple Inc.
Developer
Account
Donny Wals
Donny Wals
Program Resources
Overview
Membership
Certificates, IDs & Profiles
App Store Connect
CloudKit Dashboard
Code-Level Support
Additional Resources
Documentation
Downloads
Forums
Bug Reporter
Donny Wals
Apple Developer Program
Certificates, Identifiers & Profiles
Manage the certificates, identifiers, profiles, and devices you need to develop and distribute apps.
App Store Connect
Publish and manage your apps on the App Store with App Store Connect.


Apple Inc.
Developer
Discover
Design
Develop
Distribute
Support
Account
Certificates, Identifiers & Profiles
Donny Wals
iOS, tvOS, watchOS
Certificates
All
Pending
Development
Production
Keys
All
Identifiers
App IDs
Pass Type IDs
Website Push IDs
iCloud Containers
App Groups
Merchant IDs
Music IDs
Maps IDs
Devices
All
Apple TV
Apple Watch
iPad
iPhone
iPod Touch
Provisioning Profiles
All
Development
Distribution
Register iOS App IDs
ID
Registering an App ID
The App ID string contains two parts separated by a period (.) — an App ID Prefix that is defined as your Team ID by default and an App ID Suffix that is defined as a Bundle ID search string. Each part of an App ID has different and important uses for your app. Learn More
App ID Description
Name:
You cannot use special characters such as @, &, *, ', "
App ID Prefix
Value: 4JMM8JMG3H (Team ID)
App ID Suffix
Explicit App ID
If you plan to incorporate app services such as Game Center, In-App Purchase, Data Protection, and iCloud, or want a provisioning profile unique to a single app, you must register an explicit App ID for your app.
To create an explicit App ID, enter a unique string in the Bundle ID field. This string should match the Bundle ID of your app.
Bundle ID:


Apple Inc.
App Store Connect
My Apps
The Daily Quote
Donny Wals
Donny Wals
App Store
Features
TestFlight
Activity
APP STORE INFORMATION
App Information
Pricing and Availability
iOS APP
1.0 Prepare for Submissi...
VERSION OR PLATFORM
App Information
This information is used for all platforms of this app. Any changes will be released with your next app version.
Save
Localizable Information
English (U.S.)
Name
The Daily Quote
15
Privacy Policy URL
http://example.com (optional)
Subtitle
Optional
30
General Information
Bundle ID
com.donnywals.TheDailyQuote
SKU
com.donnywals.TheDailyQuote
Apple ID
1171500316
Primary Language
English (U.S.)
Category
Primary
Secondary (optional)
License Agreement
Edit
Apple's Standard License Agreement
Rating

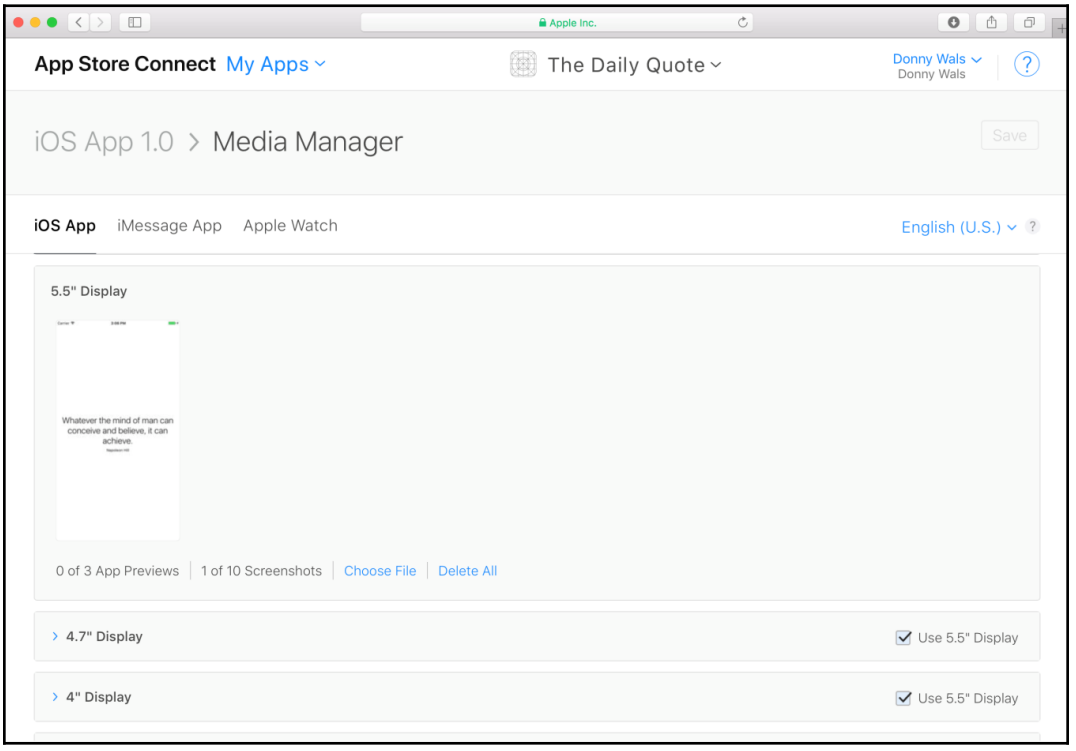

The Daily Quote
Generic iOS Device


Archives
Crashes
Energy
iOS Apps
The Daily Quote
Name
Creation Date
Version
The Daily Quote
31 Jul 2018 at 11:19
1.0 (1)
Filter
1 archive
Archive Information
The Daily Quote
31 Jul 2018 at 11:19
Distribute App
Validate App
Details
Version 1.0 (1)
Identifier com.donnywals.TheDailyQu...
Type iOS App Archive
Team Donny Wals
Download Debug Symbols
Description
No Description


Apple Inc.
App Store Connect
My Apps
The Daily Quote
Donny Wals
Donny Wals
App Store
Features
TestFlight
Activity
iOS HISTORY
All Builds
App Store Versions
RATINGS AND REVIEWS
iOS App
iOS Builds
All builds that have been submitted for iOS. Version numbers are the Xcode version numbers.
Version 1.0
Build
Upload Date
App Store Status
1
Nov 5, 2016 at 2:47 PM
Copyright © 2018 Apple Inc. All rights reserved.
Terms of Service
Privacy Policy
Contact Us

Select an iOS version to test.

Internal testers have access to the latest build for the selected version. They'll also have access to any new builds that you upload for this version.

	Version	Latest Build	Upload Date	Export Compliance
○	1.0	1	Nov 5, 2016 at 2:47 PM	Missing

Cancel OK