Chapter 1: What is Programming?


VÍDEO
FOTO
QUADRADO


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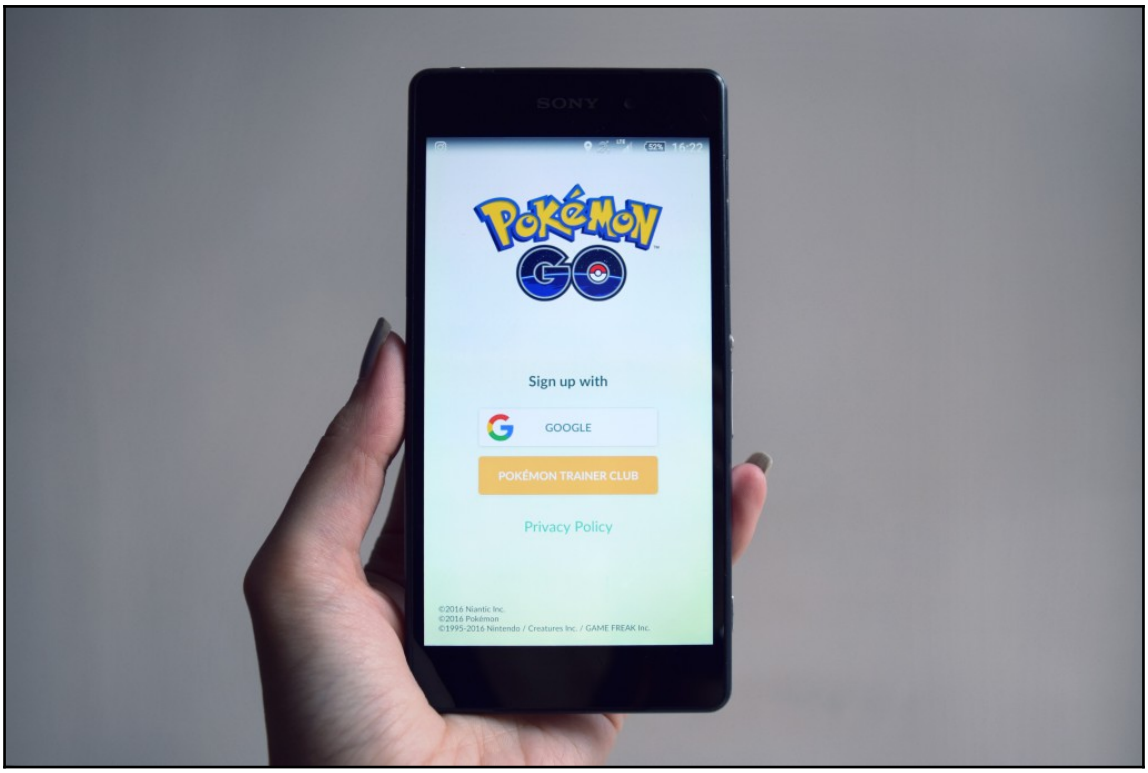
SONY
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GOOGLE
POKÉMON TRAINER CLUB
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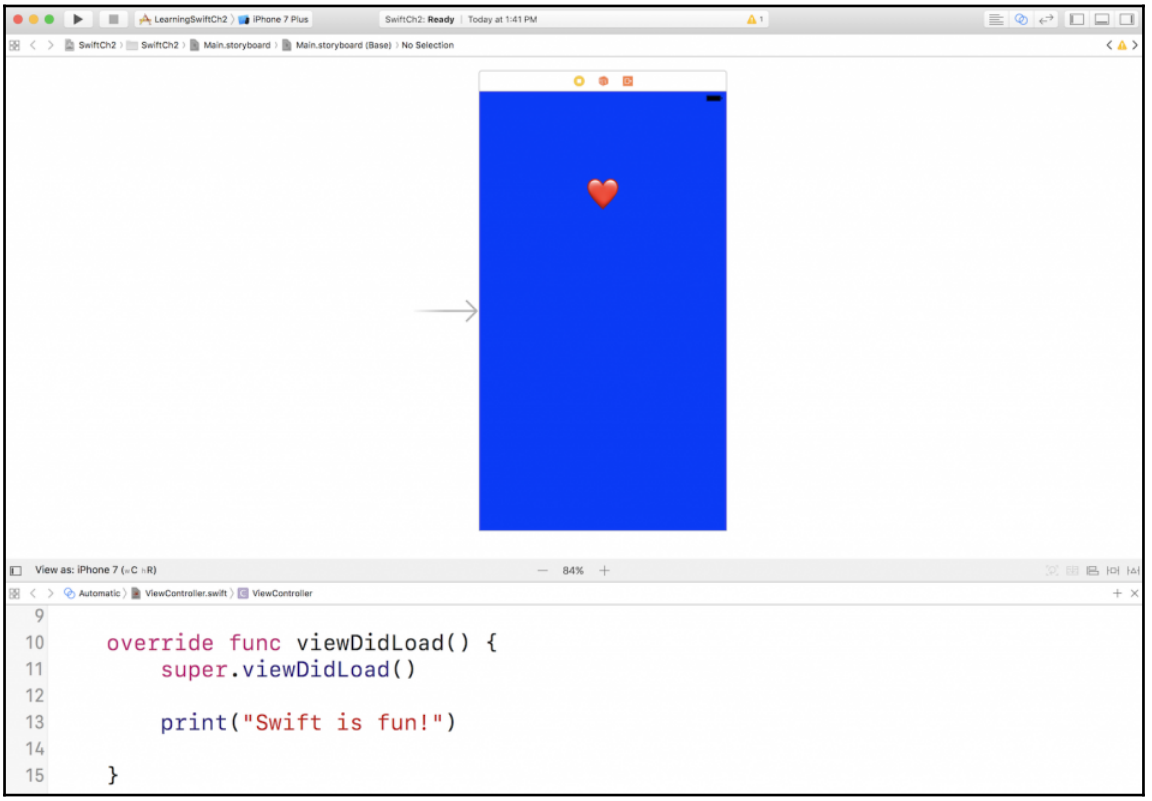
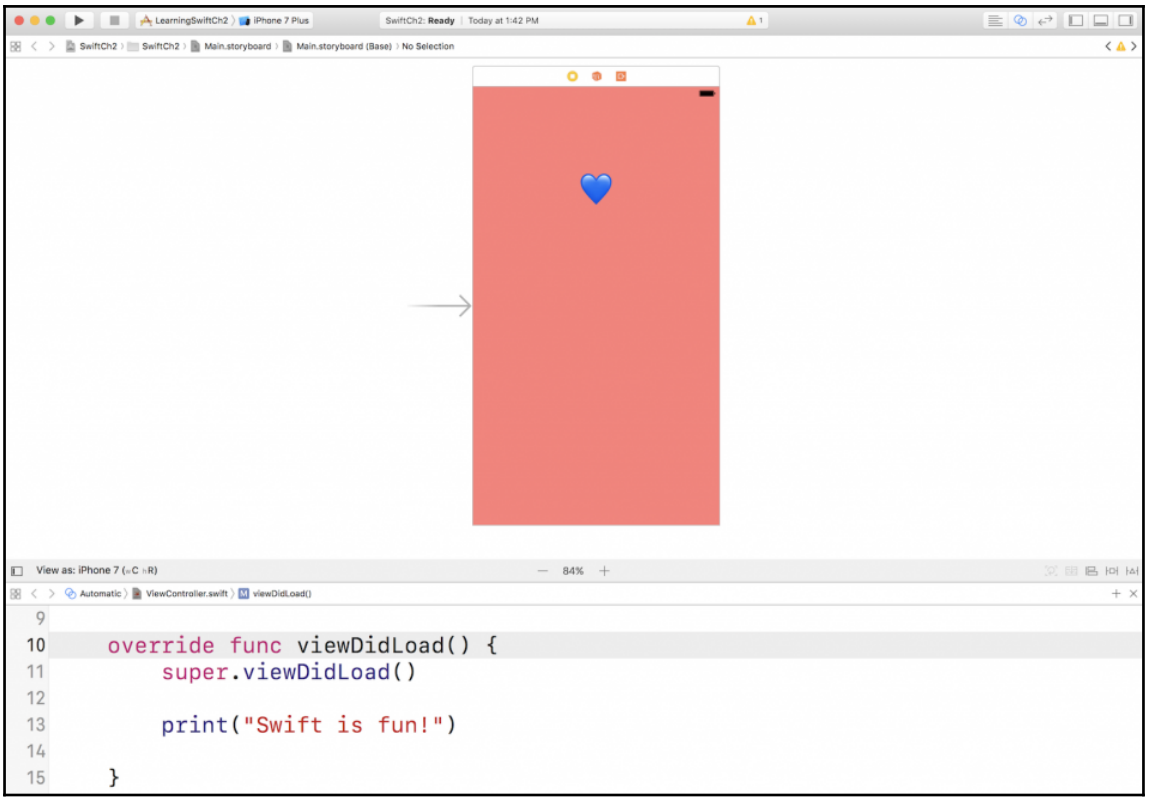
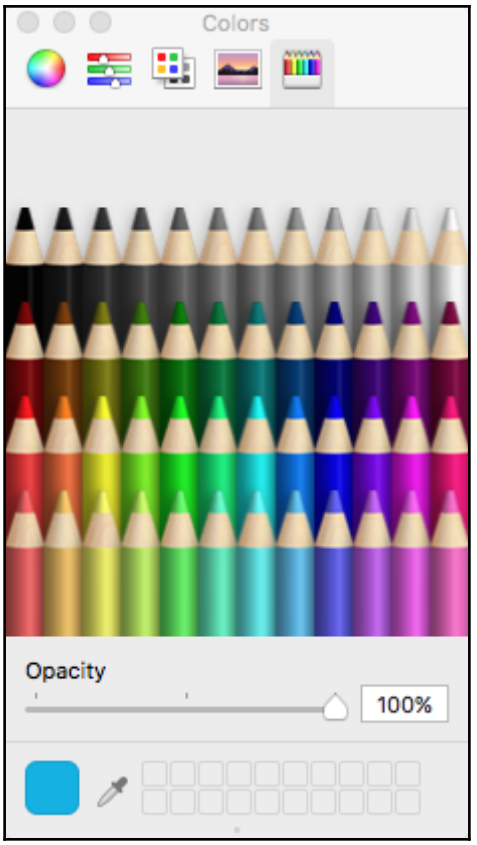
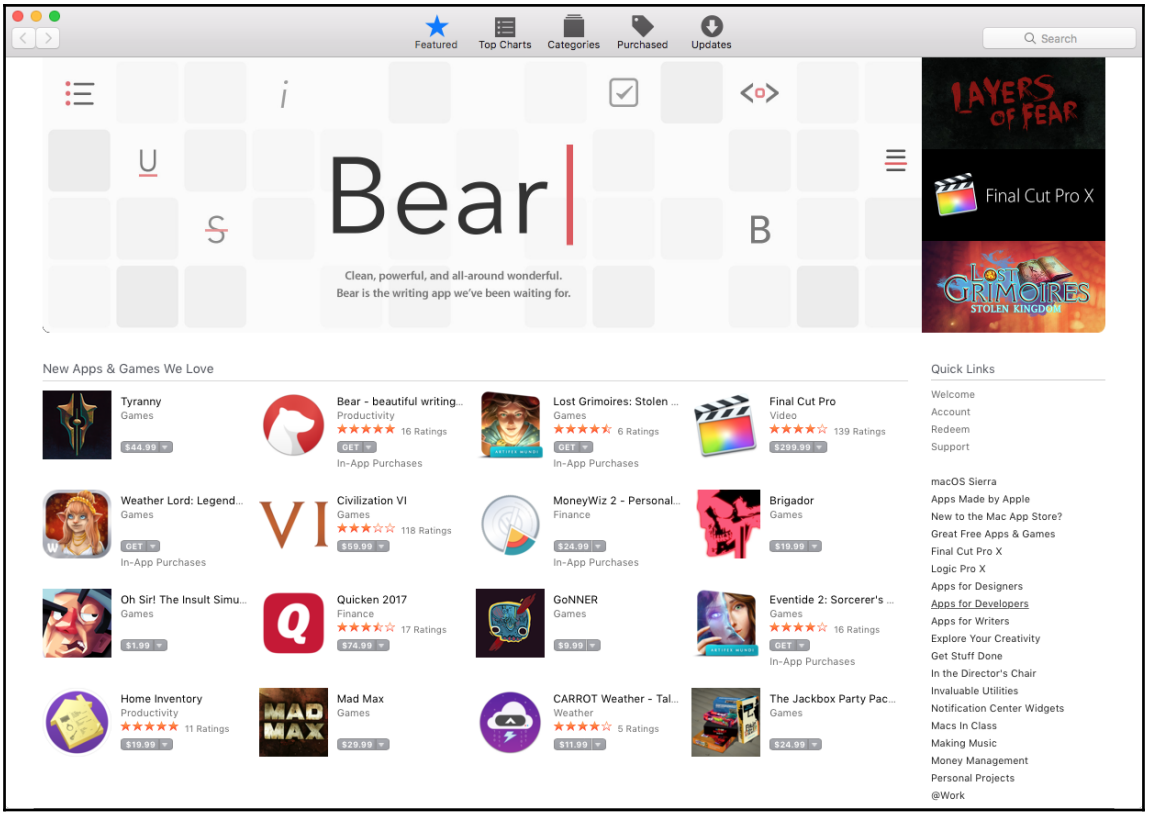
©2016 Niantic Inc.
©2016 Pokémon
©1995-2016 Nintendo / Creatures Inc. / GAME FREAK Inc.

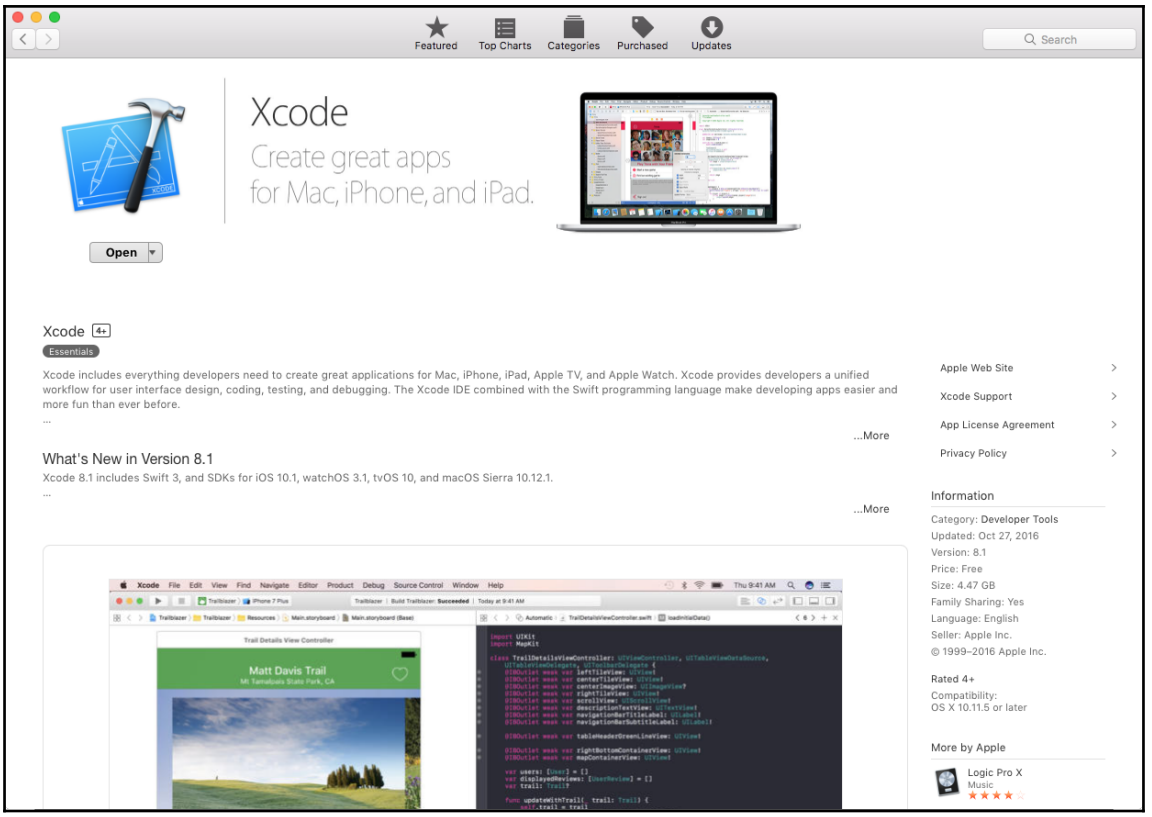
Chapter 2: Getting Set Up




LearningSwiftCh2 iPhone 7 Plus
SwiftCh2: Ready Today at 1:42 PM
SwiftCh2 SwiftCh2 Main.storyboard Main.storyboard (Base) No Selection
View as: iPhone 7 (wC hR)
84%
Automatic ViewController.swift viewDidLoad()
9
10 override func viewDidLoad() {
11 super.viewDidLoad()
12
13 print("Swift is fun!")
14
15 }


Colors
Opacity
100%


Featured
Top Charts
Categories
Purchased
Updates
Search
Bear
Clean, powerful, and all-around wonderful.
Bear is the writing app we've been waiting for.
LAYERS OF FEAR
Final Cut Pro X
LOST GRIMOIRES
STOLEN KINGDOM
New Apps & Games We Love
Tyranny
Games
$44.99
Bear - beautiful writing...
Productivity
16 Ratings
GET
In-App Purchases
Lost Grimoires: Stolen ...
Games
6 Ratings
GET
In-App Purchases
Final Cut Pro
Video
139 Ratings
$299.99
Weather Lord: Legend...
Games
GET
In-App Purchases
Civilization VI
Games
118 Ratings
$59.99
MoneyWiz 2 - Personal...
Finance
$24.99
In-App Purchases
Brigador
Games
$19.99
Oh Sir! The Insult Simu...
Games
$1.99
Quicken 2017
Finance
17 Ratings
$74.99
GoNNER
Games
$9.99
Eventide 2: Sorcerer's ...
Games
16 Ratings
GET
In-App Purchases
Home Inventory
Productivity
11 Ratings
$19.99
Mad Max
Games
$29.99
CARROT Weather - Tal...
Weather
5 Ratings
$11.99
The Jackbox Party Pac...
Games
$24.99
Quick Links
Welcome
Account
Redeem
Support
macOS Sierra
Apps Made by Apple
New to the Mac App Store?
Great Free Apps & Games
Final Cut Pro X
Logic Pro X
Apps for Designers
Apps for Developers
Apps for Writers
Explore Your Creativity
Get Stuff Done
In the Director's Chair
Invaluable Utilities
Notification Center Widgets
Macs In Class
Making Music
Money Management
Personal Projects
@Work


Featured
Top Charts
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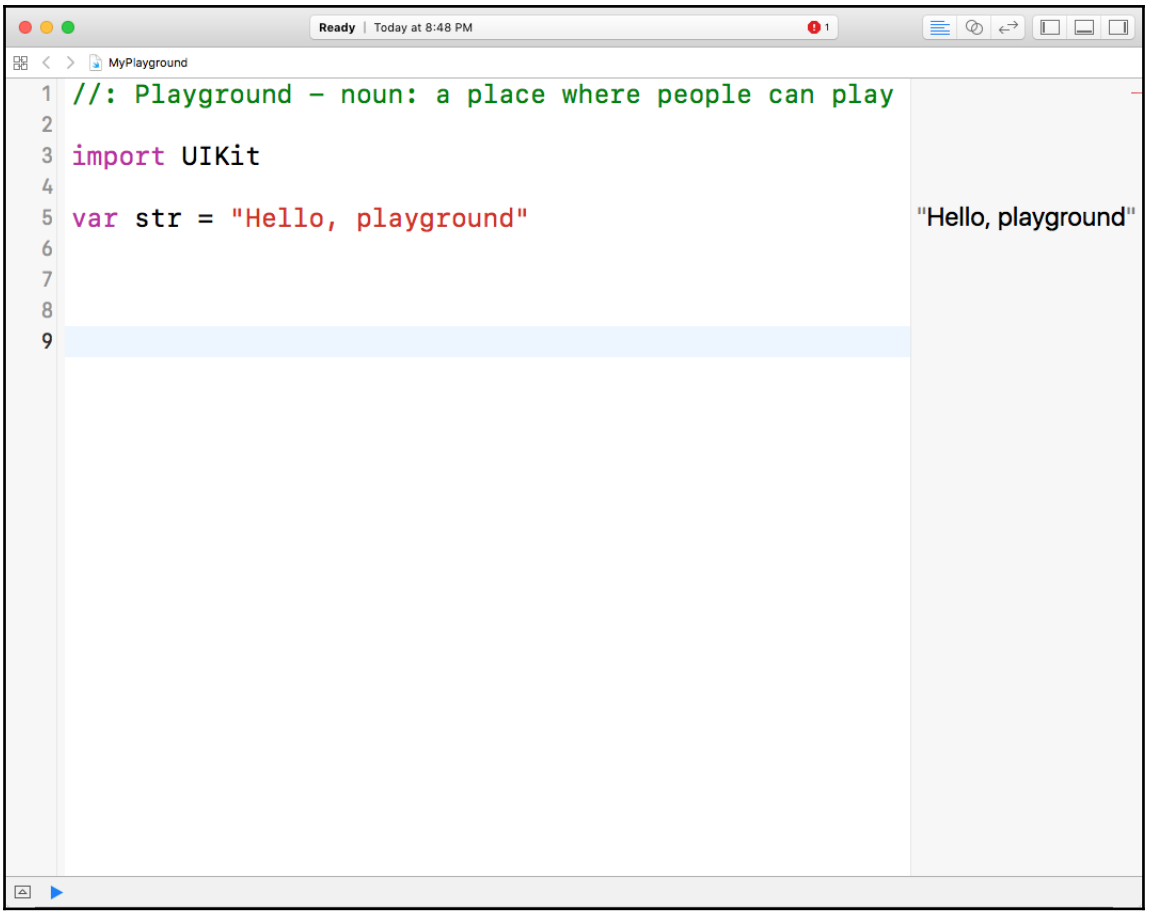
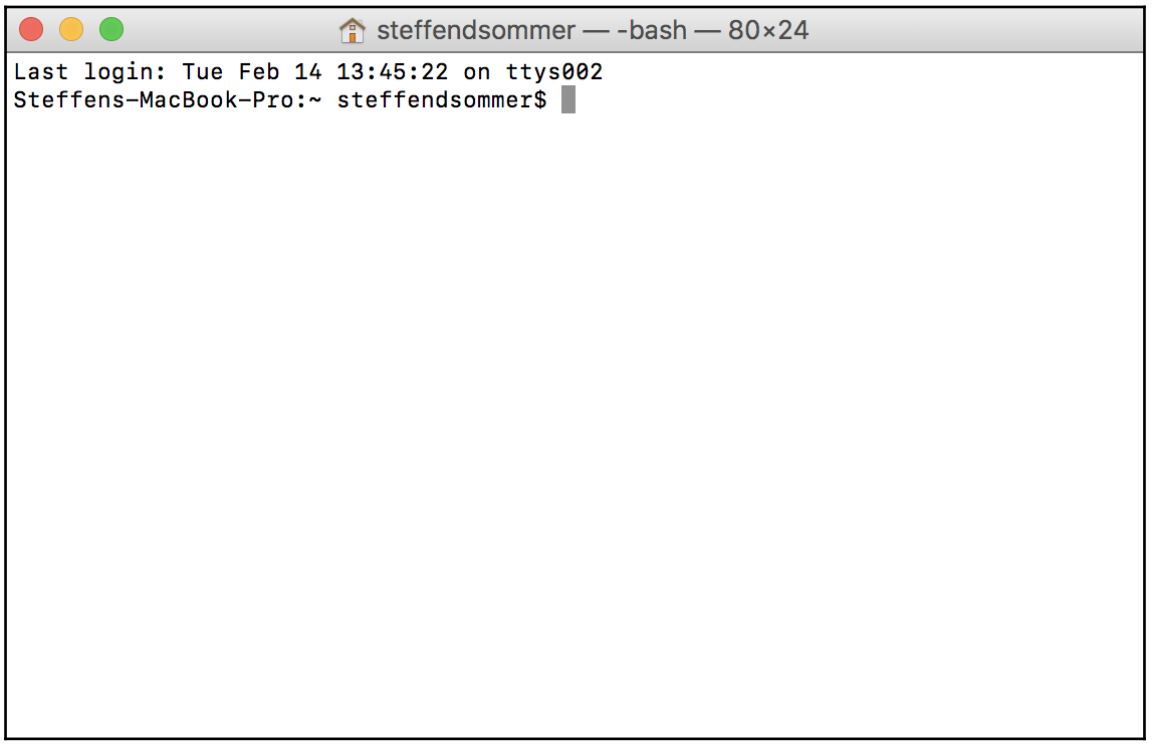
Purchased
Updates
Search
Xcode
Create great apps
for Mac, iPhone, and iPad.
Open
Xcode 4+
Essentials
Xcode includes everything developers need to create great applications for Mac, iPhone, iPad, Apple TV, and Apple Watch. Xcode provides developers a unified workflow for user interface design, coding, testing, and debugging. The Xcode IDE combined with the Swift programming language make developing apps easier and more fun than ever before.
...More
What's New in Version 8.1
Xcode 8.1 includes Swift 3, and SDKs for iOS 10.1, watchOS 3.1, tvOS 10, and macOS Sierra 10.12.1.
...More
Apple Web Site
Xcode Support
App License Agreement
Privacy Policy
Information
Category: Developer Tools
Updated: Oct 27, 2016
Version: 8.1
Price: Free
Size: 4.47 GB
Family Sharing: Yes
Language: English
Seller: Apple Inc.
© 1999–2016 Apple Inc.
Rated 4+
Compatibility:
OS X 10.11.5 or later
More by Apple
Logic Pro X
Music

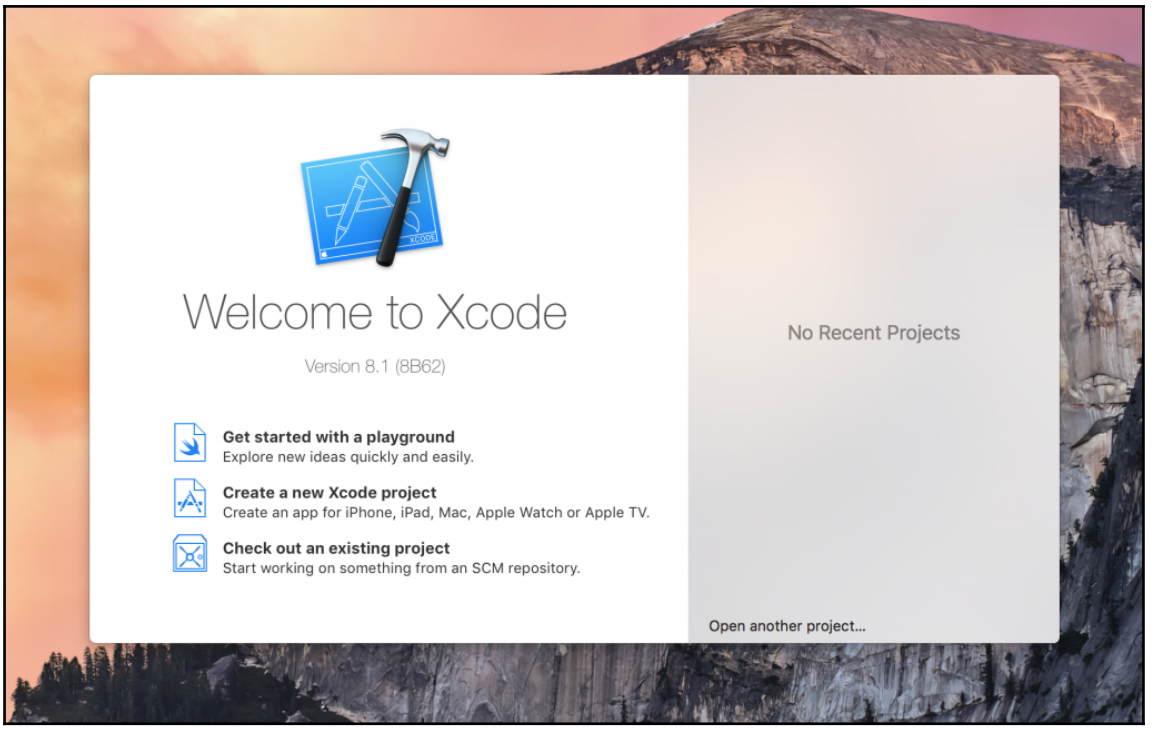

Welcome to Xcode
Version 8.1 (8B62)
Get started with a playground
Explore new ideas quickly and easily.
Create a new Xcode project
Create an app for iPhone, iPad, Mac, Apple Watch or Apple TV.
Check out an existing project
Start working on something from an SCM repository.
No Recent Projects
Open another project...

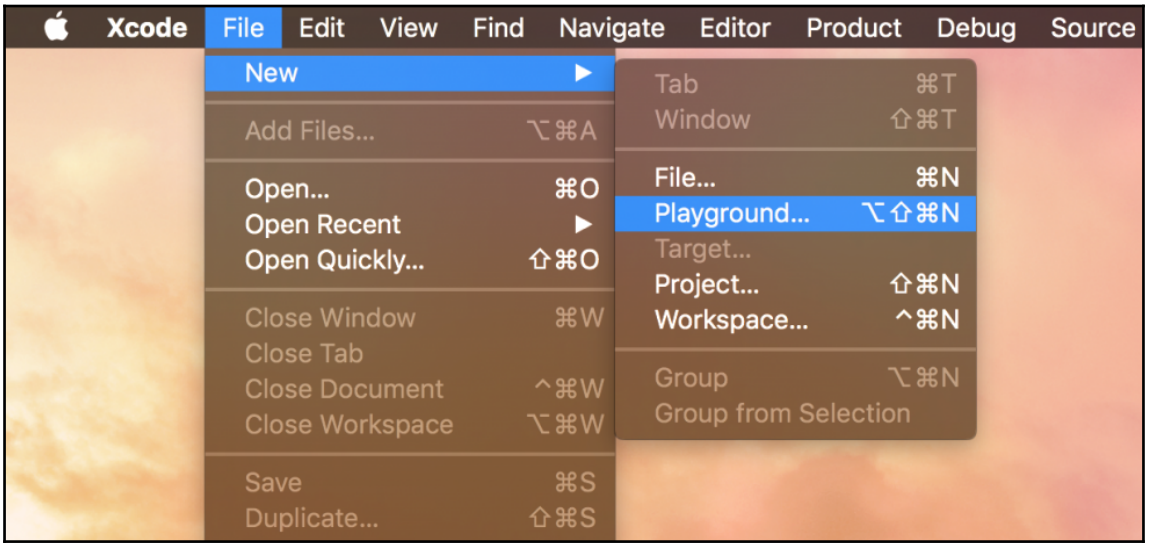

Ready | Today at 8:48 PM
MyPlayground
//: Playground - noun: a place where people can play
import UIKit
var str = "Hello, playground"
"Hello, playground"

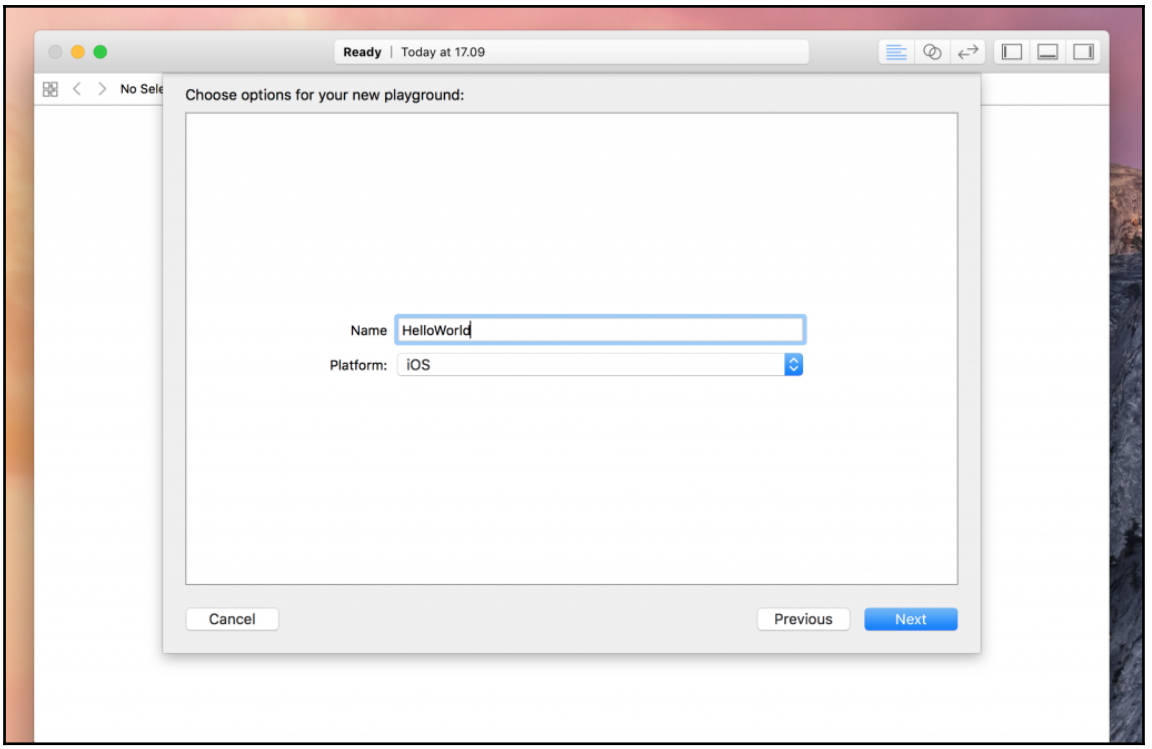

Ready | Today at 9:44 PM
MyPlayground
1 //: Playground - noun: a place where people can play
2
3 import UIKit
4
5
6
7 let favoriteColor = UIColor.blue
r 0.0 g 0.0 b 1.0 a 1.0
8
9
10
11 print("My favorite color is blue.")
"My favorite color is blue.\n"
12
13
14
15 5 + 5
10
16
17
My favorite color is blue.

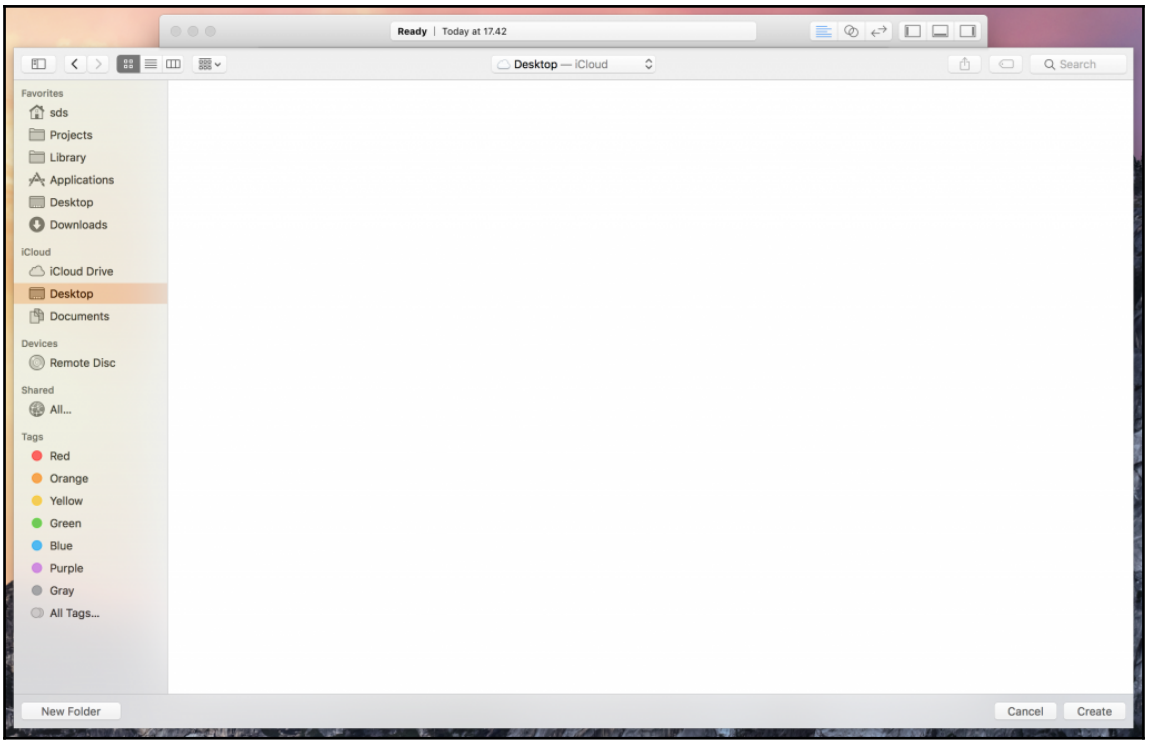
Chapter 3: Say Hello

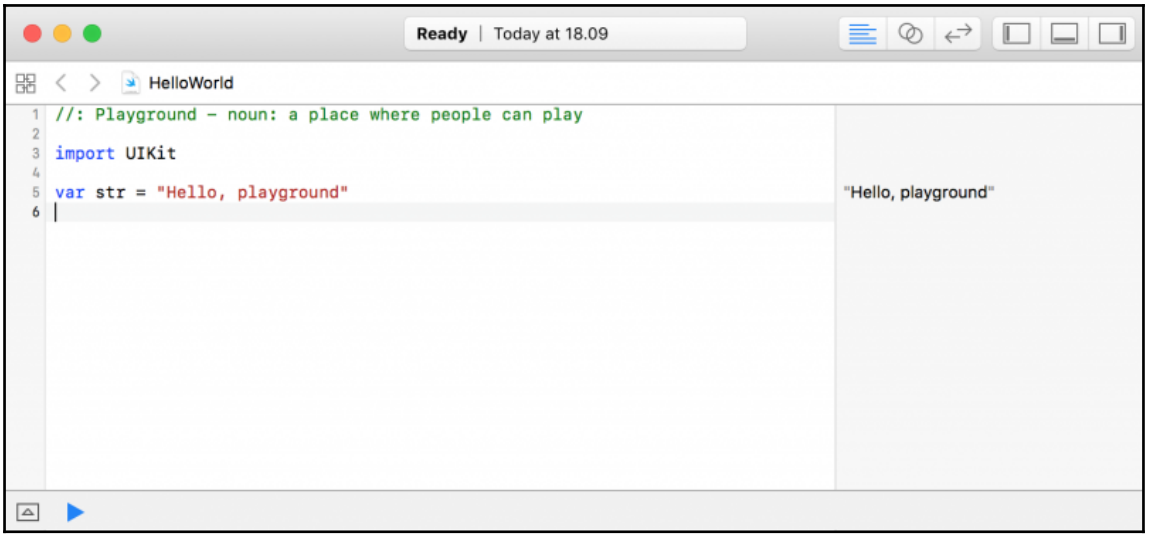


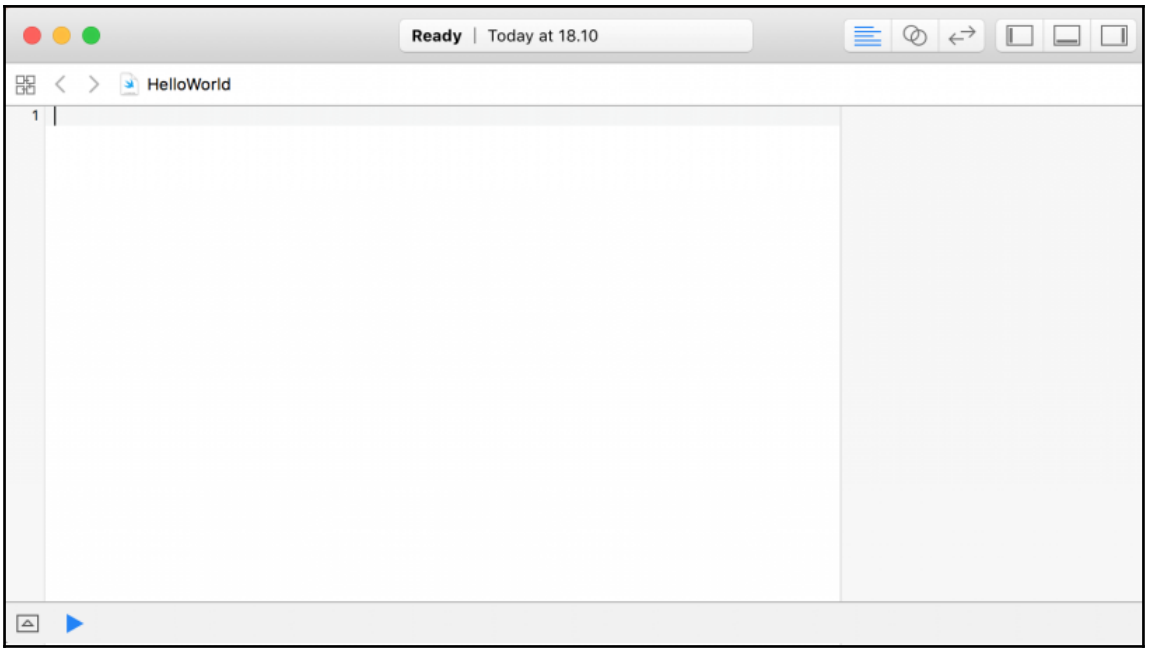

Welcome to Xcode
Version 8.1 (8B62)
Get started with a playground
Explore new ideas quickly and easily.
Create a new Xcode project
Create an app for iPhone, iPad, Mac, Apple Watch or Apple TV.
Check out an existing project
Start working on something from an SCM repository.
No Recent Projects
Open another project...

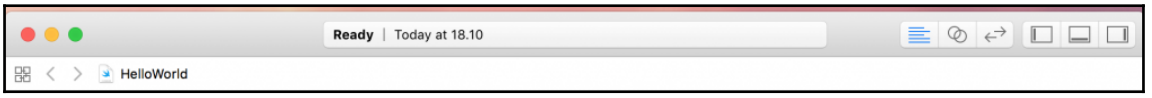

Xcode
File
Edit
View
Find
Navigate
Editor
Product
Debug
Source
New
Add Files... ⌥⌘A
Open... ⌘O
Open Recent
Open Quickly... ⇧⌘O
Close Window ⌘W
Close Tab
Close Document ^⌘W
Close Workspace ⌥⌘W
Save ⌘S
Duplicate... ⇧⌘S
Tab ⌘T
Window ⇧⌘T
File... ⌘N
Playground... ⌥⇧⌘N
Target...
Project... ⇧⌘N
Workspace... ^⌘N
Group ⌥⌘N
Group from Selection

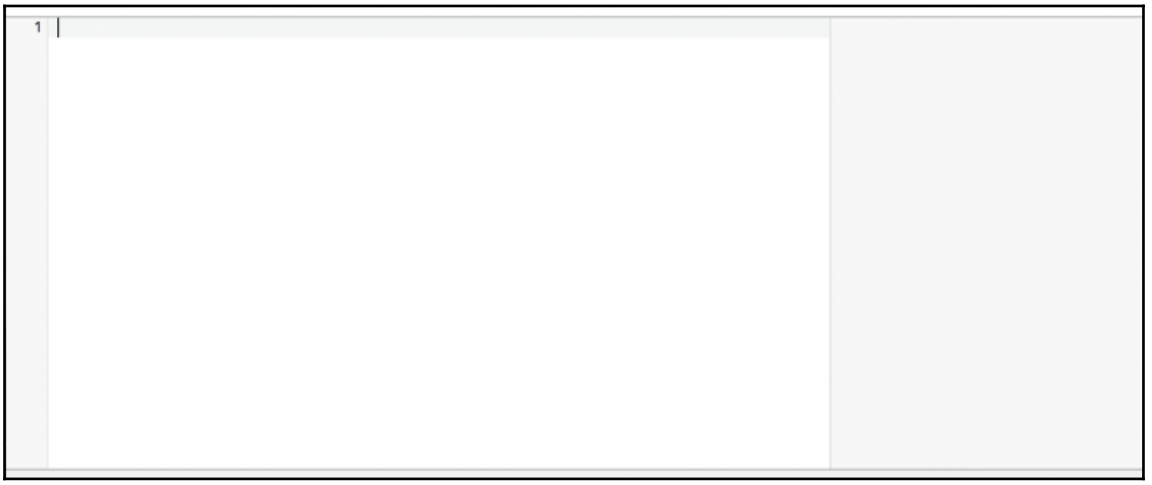

Ready | Today at 17.09
Choose options for your new playground:
Name HelloWorld
Platform: iOS
Cancel
Previous
Next


Ready | Today at 17.42
Desktop — iCloud
Search
Favorites
sds
Projects
Library
Applications
Desktop
Downloads
iCloud
iCloud Drive
Desktop
Documents
Devices
Remote Disc
Shared
All...
Tags
Red
Orange
Yellow
Green
Blue
Purple
Gray
All Tags...
New Folder
Cancel
Create

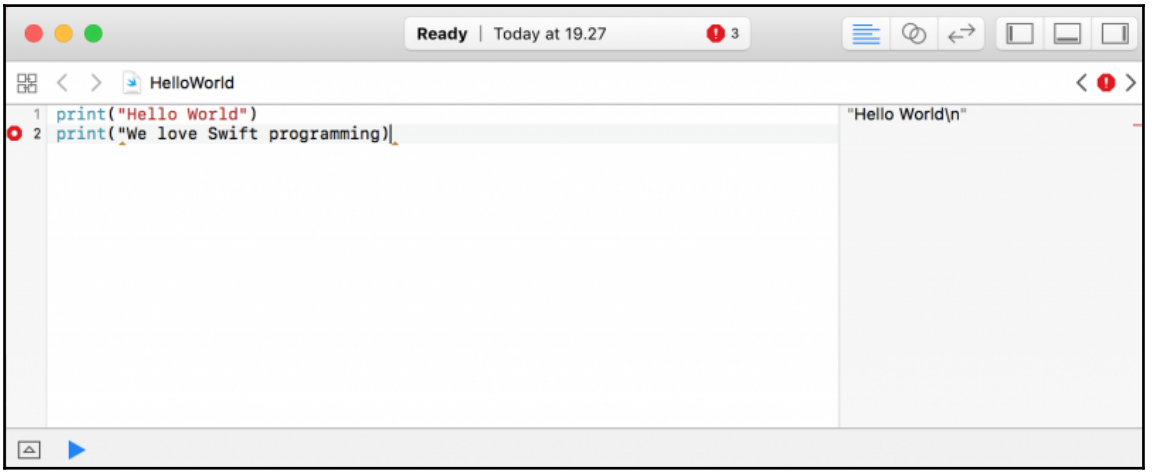

Ready | Today at 18.09
HelloWorld
//: Playground - noun: a place where people can play
import UIKit
var str = "Hello, playground"
"Hello, playground"

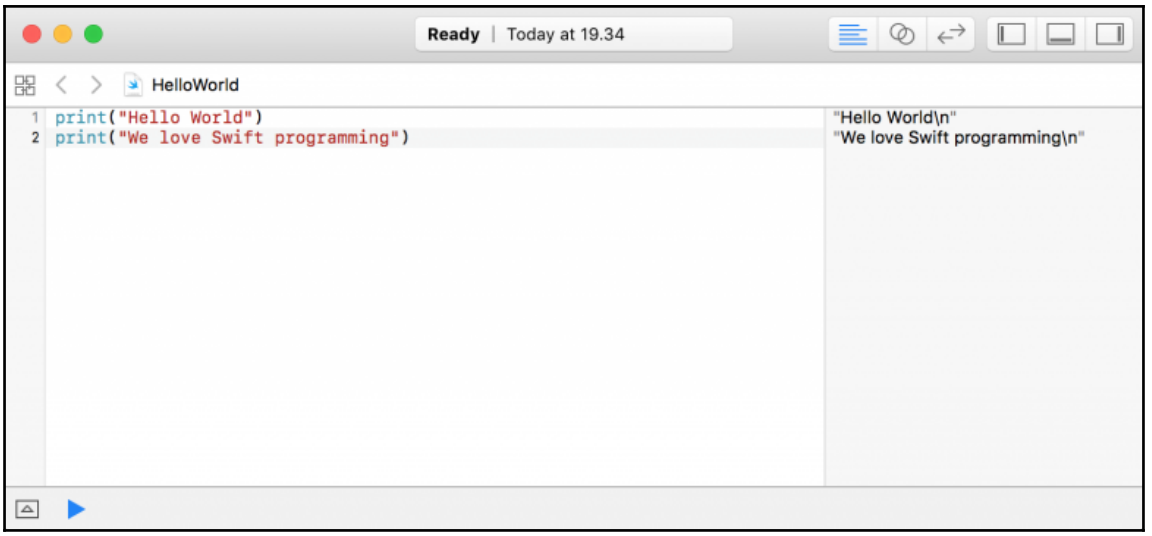

Ready | Today at 18.10
HelloWorld
1

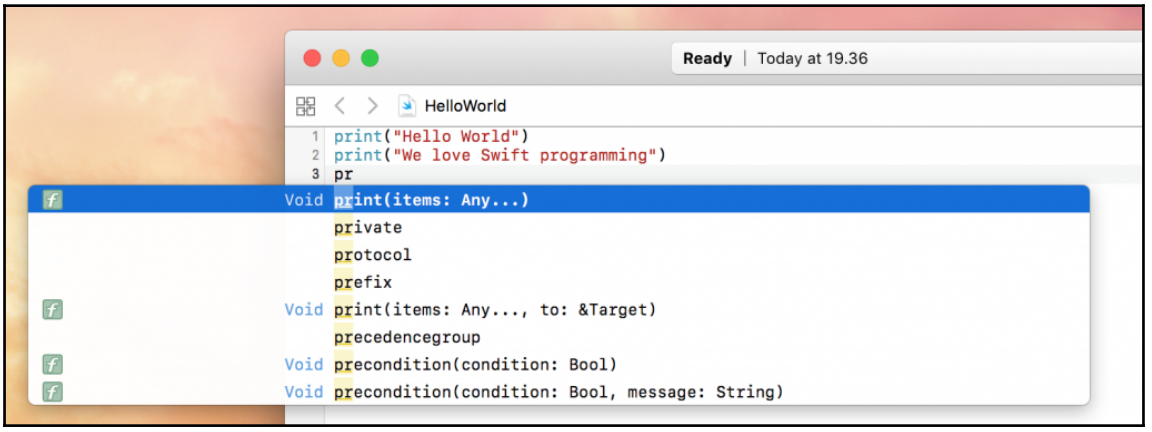

Ready | Today at 18.10
HelloWorld

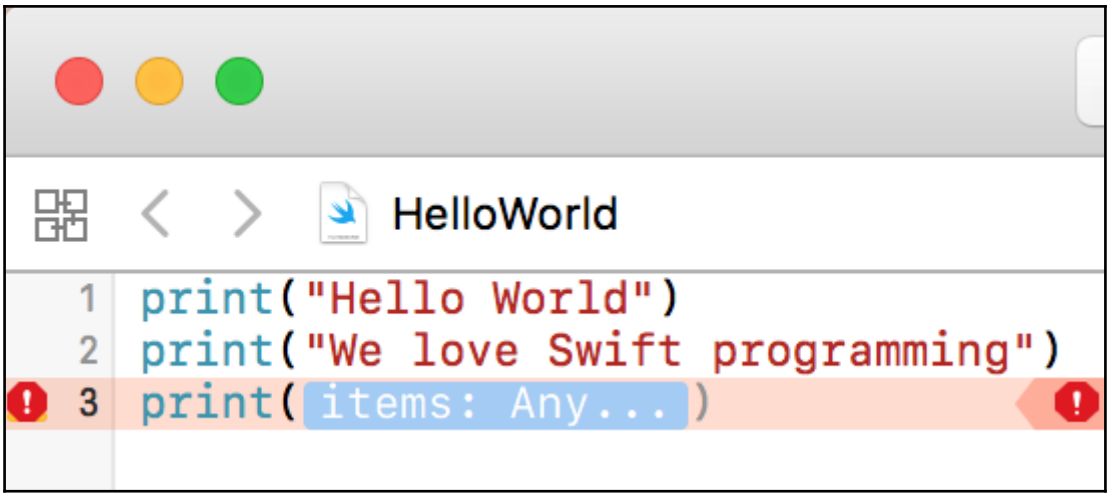

1


Ready | Today at 19.11
HelloWorld
1 print("Hello World")
"Hello World\n"


Ready | Today at 19.27
3
HelloWorld
1 print("Hello World")
2 print("We love Swift programming)
"Hello World\n"

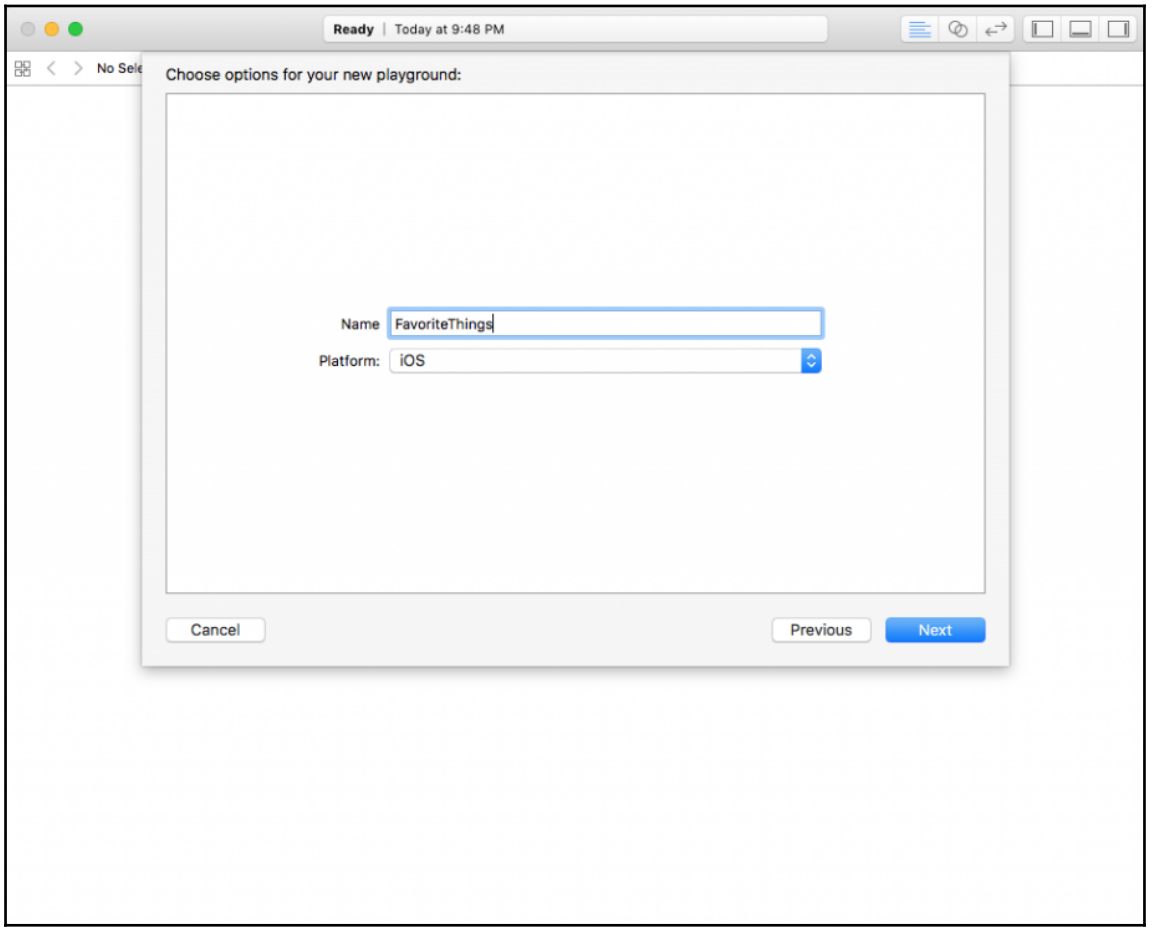

Ready | Today at 19.34
HelloWorld
1 print("Hello World")
2 print("We love Swift programming")
"Hello World\n"
"We love Swift programming\n"

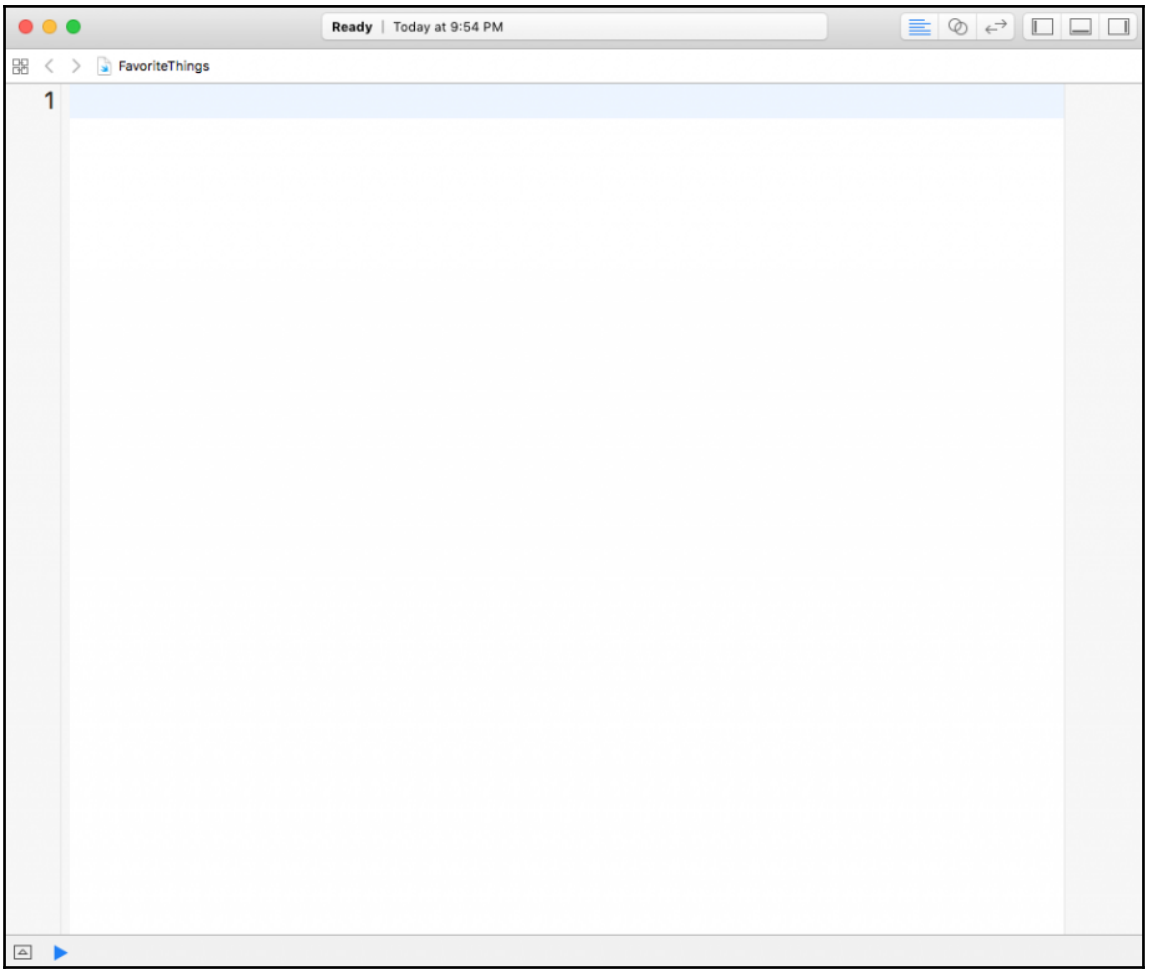

Ready | Today at 19.36
HelloWorld
1 print("Hello World")
2 print("We love Swift programming")
3 pr
Void print(items: Any...)
private
protocol
prefix
Void print(items: Any..., to: &Target)
precedencegroup
Void precondition(condition: Bool)
Void precondition(condition: Bool, message: String)

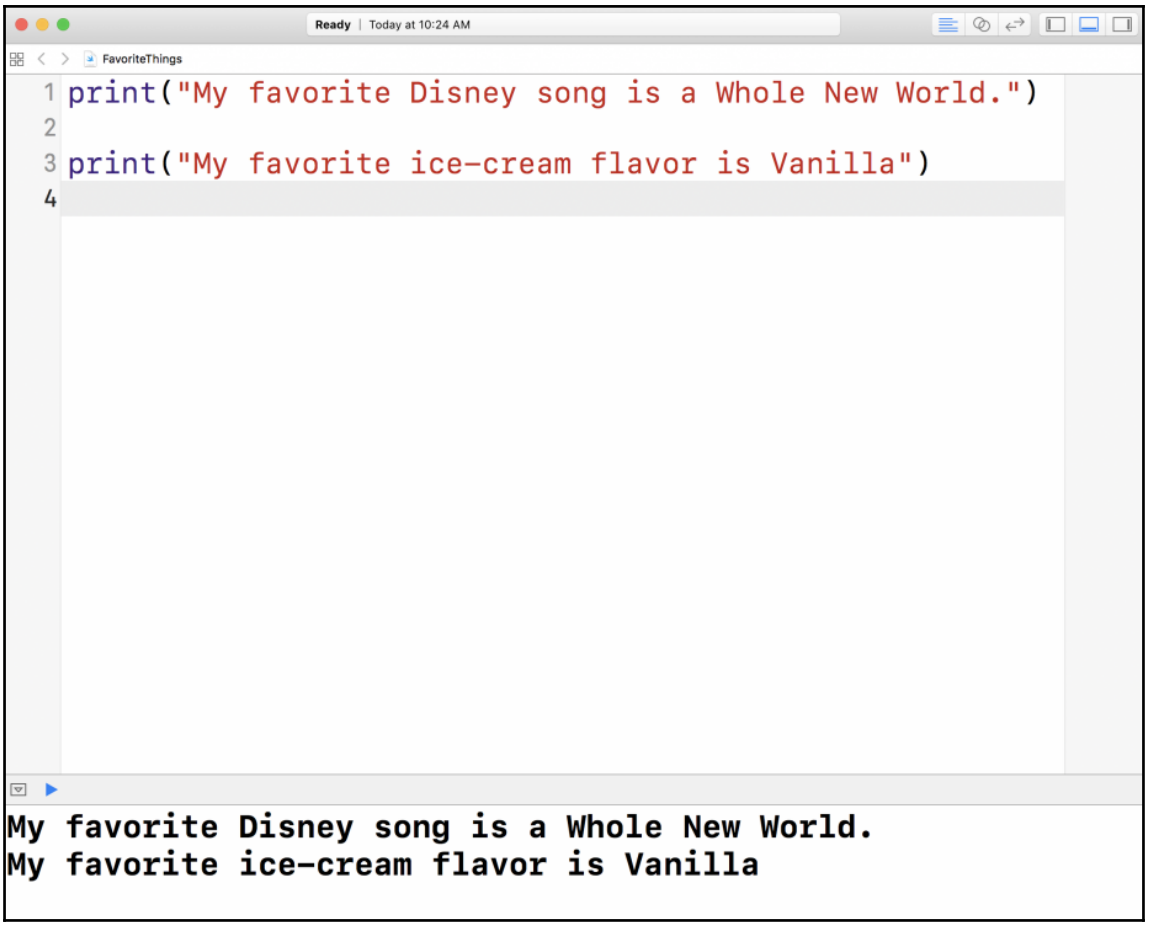


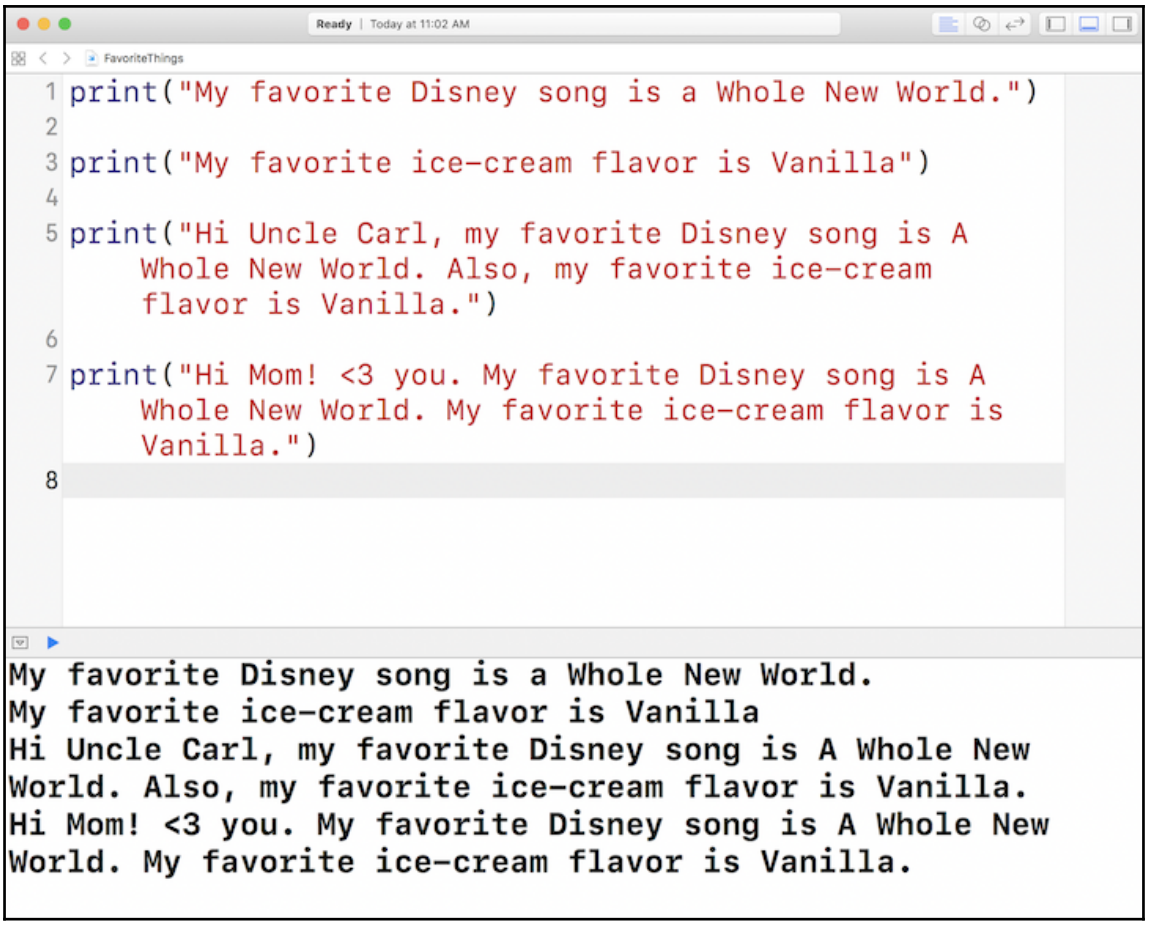

```
ming")
m is vanilla")
```

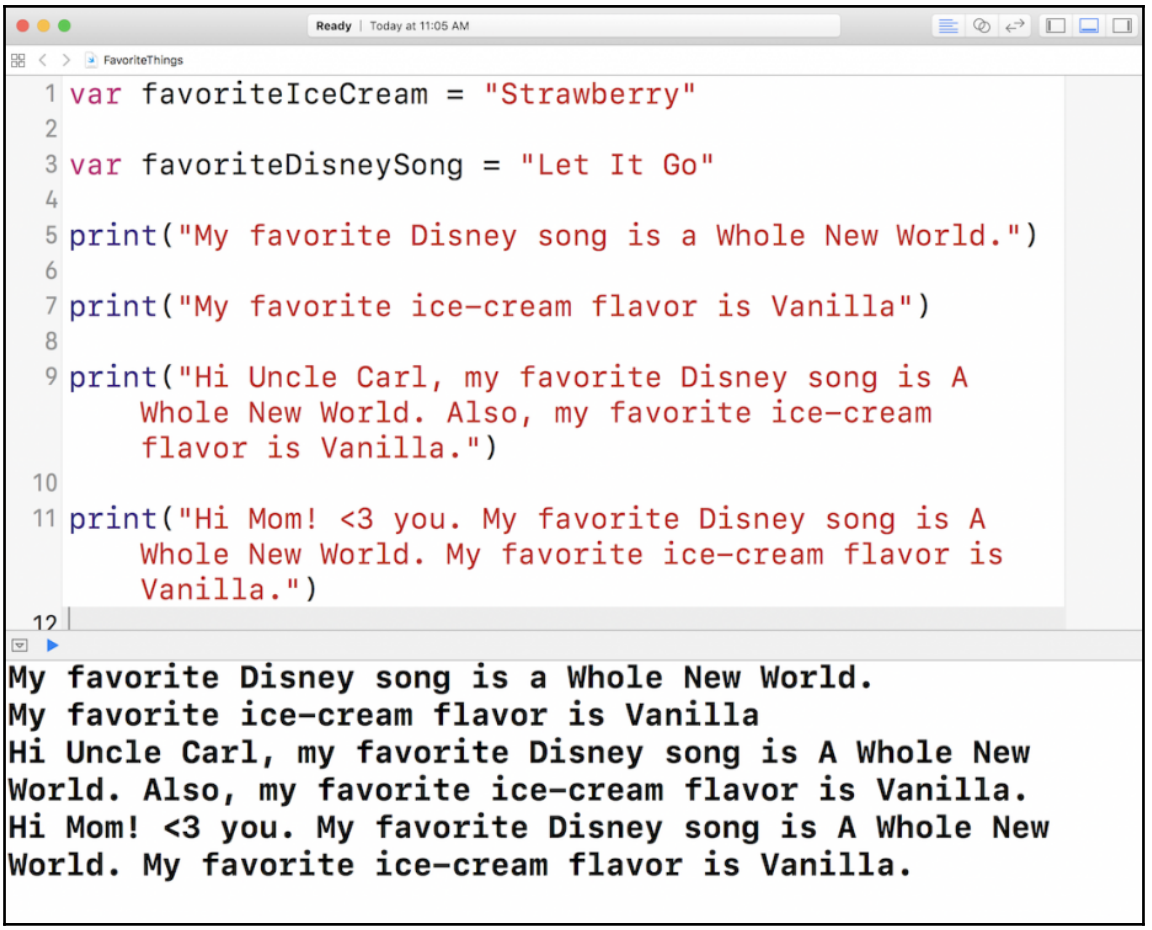
Chapter 4: Favorite Things

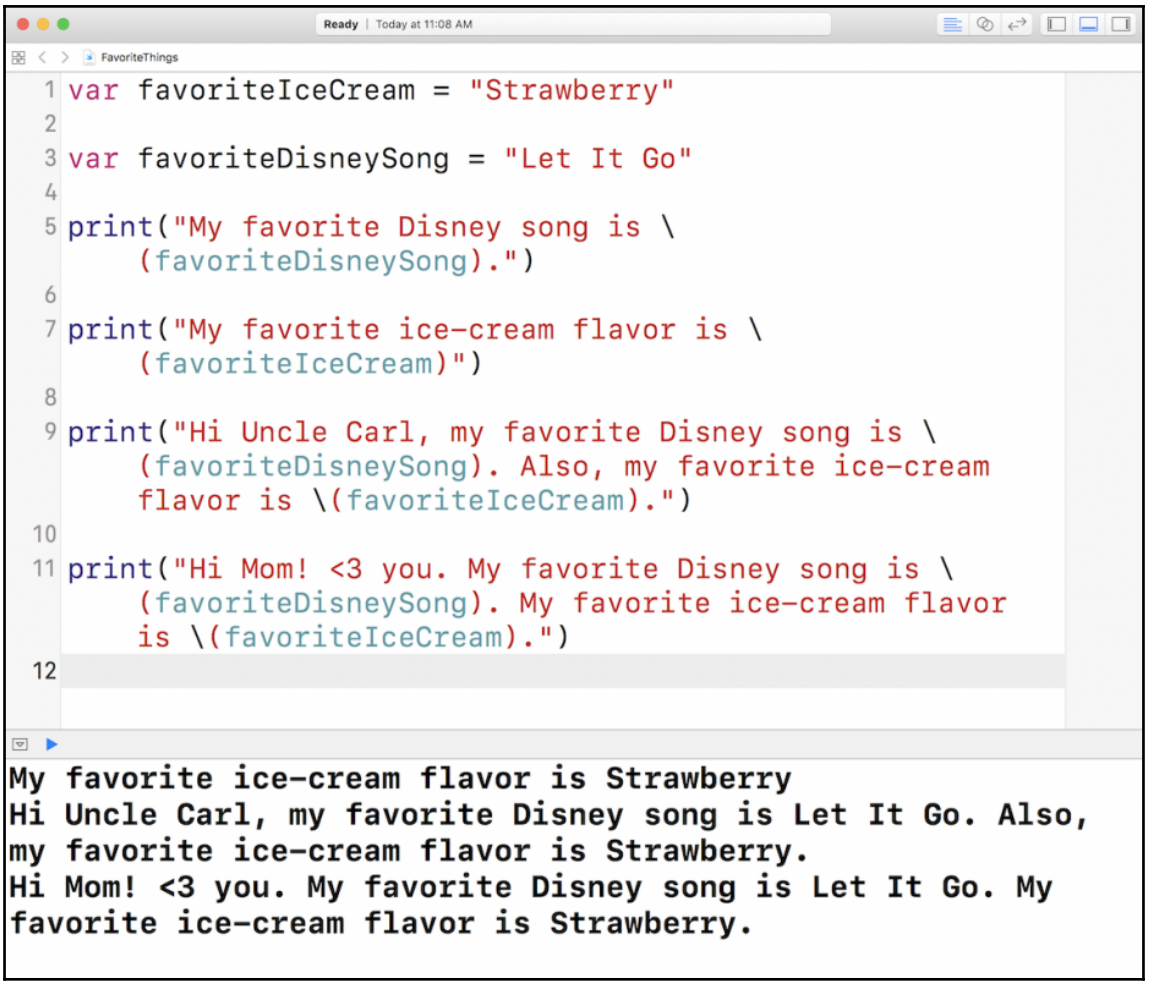


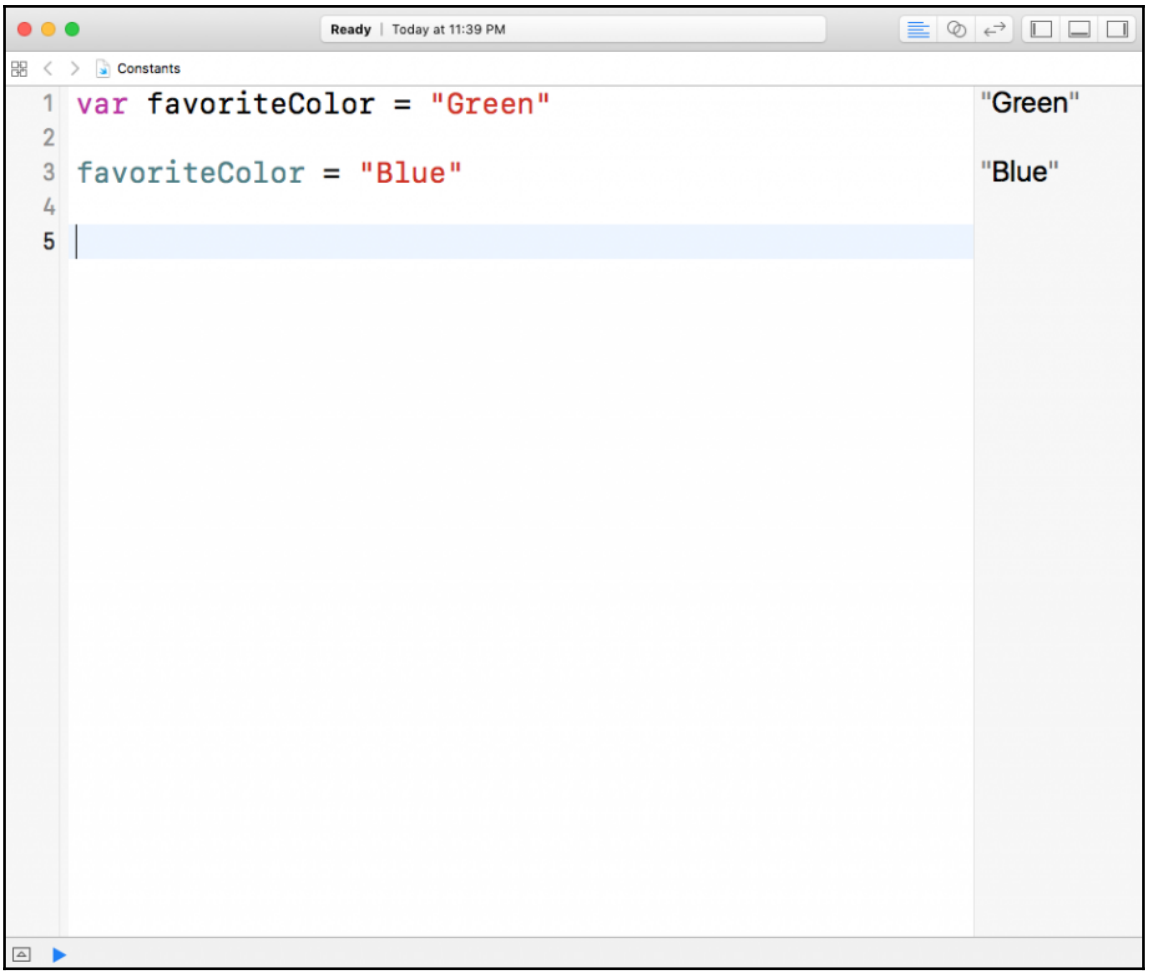

Ready | Today at 9:54 PM
FavoriteThings
1

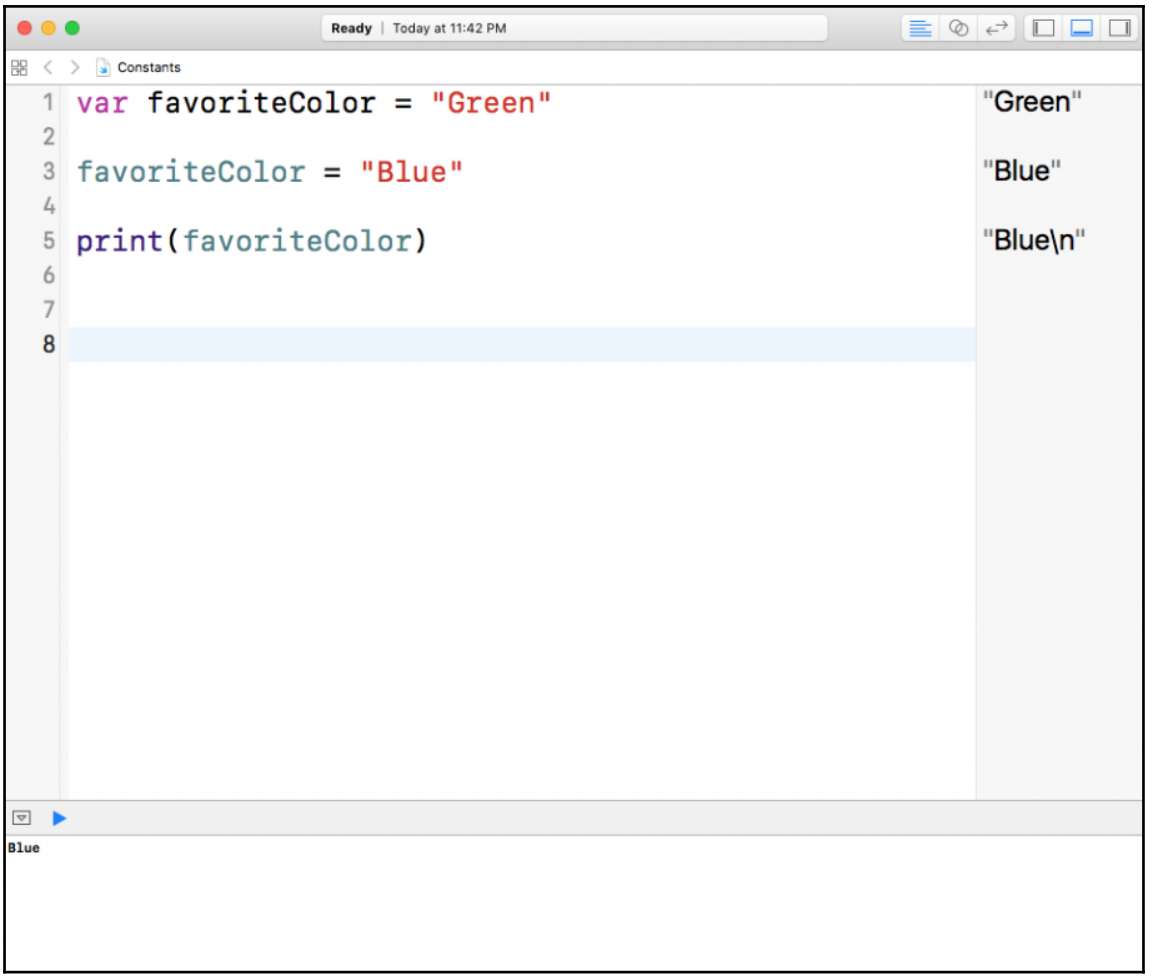

Ready | Today at 10:24 AM
FavoriteThings
1 print("My favorite Disney song is a Whole New World.")
2
3 print("My favorite ice-cream flavor is Vanilla")
4
My favorite Disney song is a Whole New World.
My favorite ice-cream flavor is Vanilla

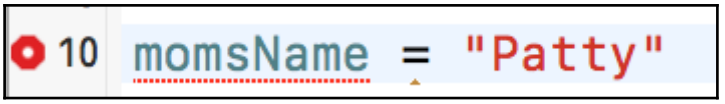

Ready | Today at 11:02 AM
FavoriteThings
1 print("My favorite Disney song is a Whole New World.")
2
3 print("My favorite ice-cream flavor is Vanilla")
4
5 print("Hi Uncle Carl, my favorite Disney song is A
Whole New World. Also, my favorite ice-cream
flavor is Vanilla.")
6
7 print("Hi Mom! <3 you. My favorite Disney song is A
Whole New World. My favorite ice-cream flavor is
Vanilla.")
8
My favorite Disney song is a Whole New World.
My favorite ice-cream flavor is Vanilla
Hi Uncle Carl, my favorite Disney song is A Whole New
World. Also, my favorite ice-cream flavor is Vanilla.
Hi Mom! <3 you. My favorite Disney song is A Whole New
World. My favorite ice-cream flavor is Vanilla.

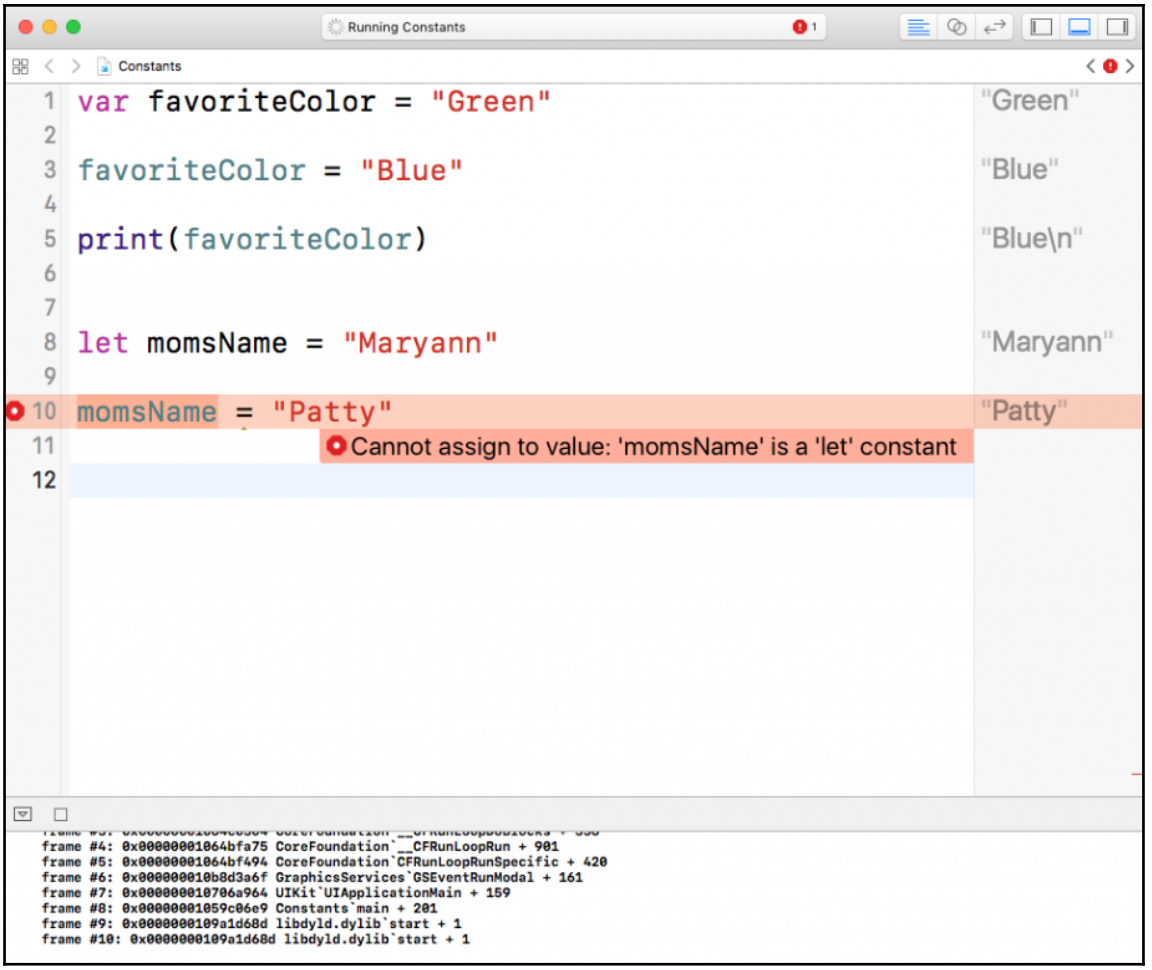

Ready | Today at 11:05 AM
FavoriteThings
1 var favoriteIceCream = "Strawberry"
2
3 var favoriteDisneySong = "Let It Go"
4
5 print("My favorite Disney song is a Whole New World.")
6
7 print("My favorite ice-cream flavor is Vanilla")
8
9 print("Hi Uncle Carl, my favorite Disney song is A
Whole New World. Also, my favorite ice-cream
flavor is Vanilla.")
10
11 print("Hi Mom! <3 you. My favorite Disney song is A
Whole New World. My favorite ice-cream flavor is
Vanilla.")
12
My favorite Disney song is a Whole New World.
My favorite ice-cream flavor is Vanilla
Hi Uncle Carl, my favorite Disney song is A Whole New
World. Also, my favorite ice-cream flavor is Vanilla.
Hi Mom! <3 you. My favorite Disney song is A Whole New
World. My favorite ice-cream flavor is Vanilla.


Ready | Today at 11:08 AM
FavoriteThings
1 var favoriteIceCream = "Strawberry"
2
3 var favoriteDisneySong = "Let It Go"
4
5 print("My favorite Disney song is \
(favoriteDisneySong).")
6
7 print("My favorite ice-cream flavor is \
(favoriteIceCream)")
8
9 print("Hi Uncle Carl, my favorite Disney song is \
(favoriteDisneySong). Also, my favorite ice-cream
flavor is \(favoriteIceCream).")
10
11 print("Hi Mom! <3 you. My favorite Disney song is \
(favoriteDisneySong). My favorite ice-cream flavor
is \(favoriteIceCream).")
12
My favorite ice-cream flavor is Strawberry
Hi Uncle Carl, my favorite Disney song is Let It Go. Also,
my favorite ice-cream flavor is Strawberry.
Hi Mom! <3 you. My favorite Disney song is Let It Go. My
favorite ice-cream flavor is Strawberry.

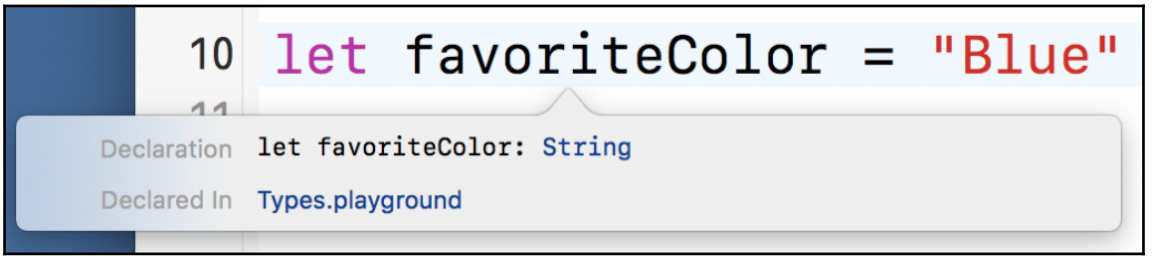

Ready | Today at 11:39 PM
Constants
1 var favoriteColor = "Green"
2
3 favoriteColor = "Blue"
4
5
"Green"
"Blue"

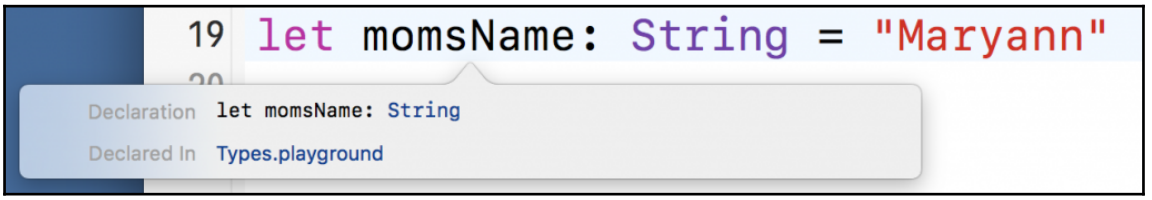

Ready | Today at 11:42 PM
Constants
1 var favoriteColor = "Green"
2
3 favoriteColor = "Blue"
4
5 print(favoriteColor)
6
7
8
"Green"
"Blue"
"Blue\n"
Blue


10 momsName = "Patty"

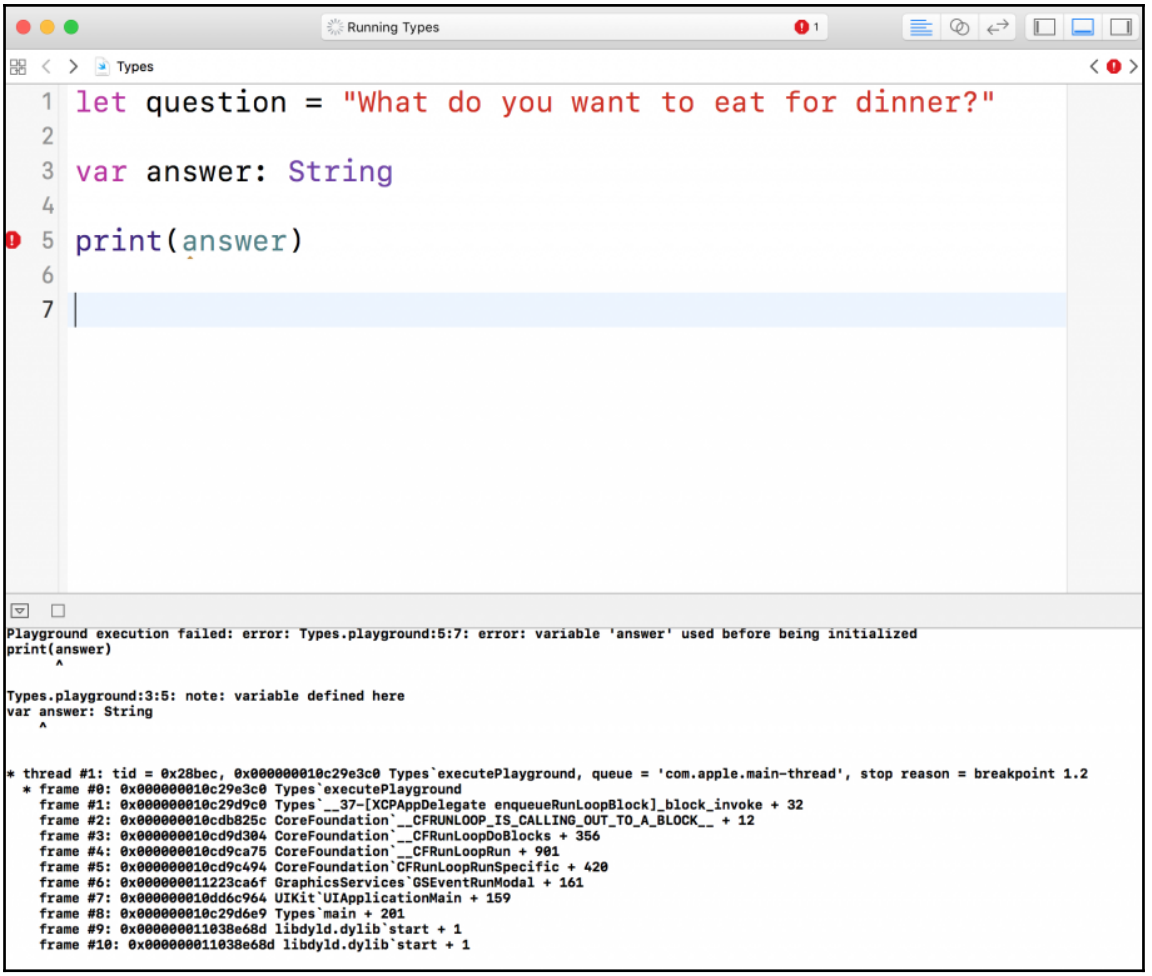

Running Constants
Constants
1 var favoriteColor = "Green"
2
3 favoriteColor = "Blue"
4
5 print(favoriteColor)
6
7
8 let momsName = "Maryann"
9
10 momsName = "Patty"
11
12
"Green"
"Blue"
"Blue\n"
"Maryann"
"Patty"
Cannot assign to value: 'momsName' is a 'let' constant
frame #4: 0x00000001064bfa75 CoreFoundation`__CFRunLoopRun + 901
frame #5: 0x00000001064bf494 CoreFoundation`CFRunLoopRunSpecific + 420
frame #6: 0x000000010b8d3a6f GraphicsServices`GSEventRunModal + 161
frame #7: 0x000000010706a964 UIKit`UIApplicationMain + 159
frame #8: 0x0000000105906e9 Constants`main + 201
frame #9: 0x0000000109a1d68d libdyld.dylib`start + 1
frame #10: 0x0000000109a1d68d libdyld.dylib`start + 1

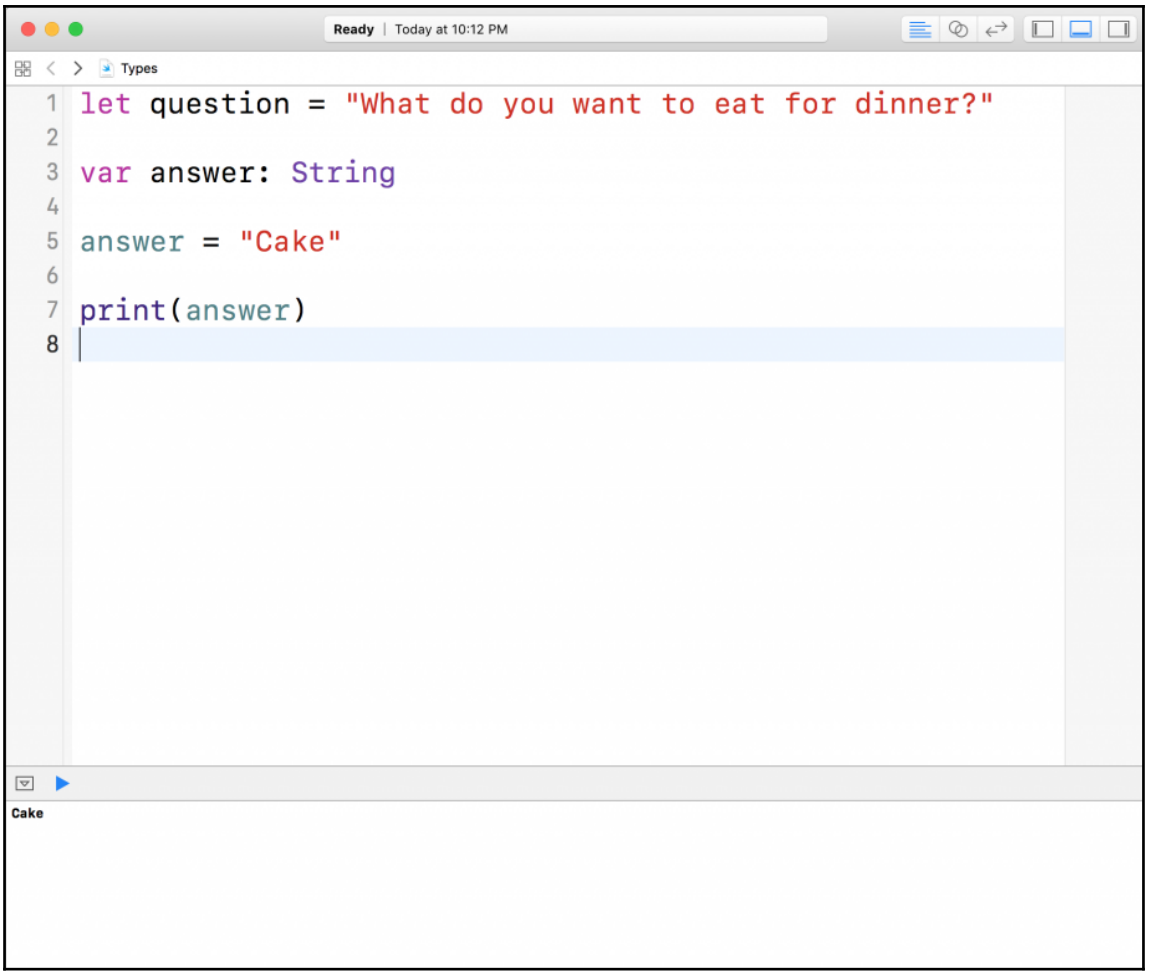
Chapter 5: Factories

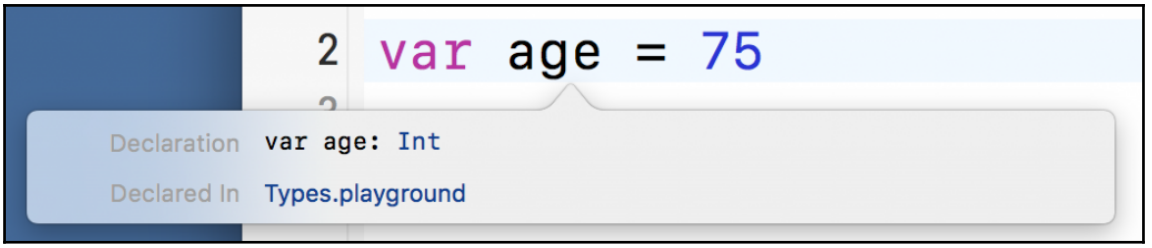


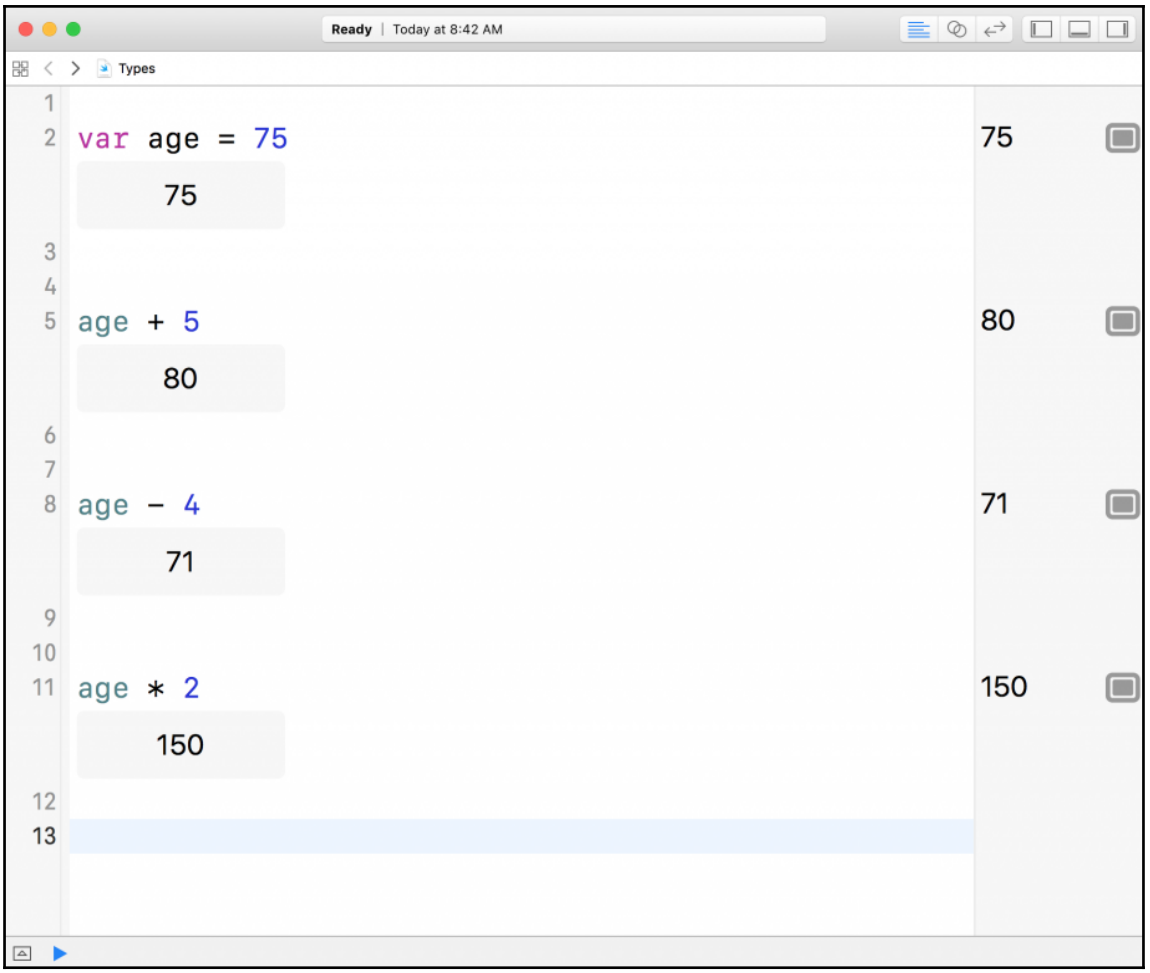


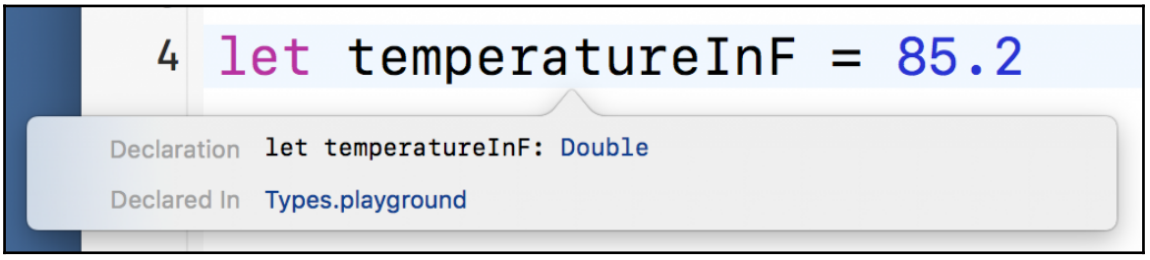

```
Playground execution failed: error: Types.playground:5:7: error: variable 'answer' used before being initialized
print(answer)
      ^
```


Running Types
Types
1 let question = "What do you want to eat for dinner?"
2
3 var answer: String
4
5 print(answer)
6
7
Playground execution failed: error: Types.playground:5:7: error: variable 'answer' used before being initialized
print(answer)
^
Types.playground:3:5: note: variable defined here
var answer: String
^
* thread #1: tid = 0x28bec, 0x000000010c29e3c0 Types`executePlayground, queue = 'com.apple.main-thread', stop reason = breakpoint 1.2
* frame #0: 0x000000010c29e3c0 Types`executePlayground
frame #1: 0x000000010c29d9c0 Types`__37-[XCPAppDelegate enqueueRunLoopBlock]_block_invoke + 32
frame #2: 0x000000010cdb825c CoreFoundation`__CFRUNLOOP_IS_CALLING_OUT_TO_A_BLOCK__ + 12
frame #3: 0x000000010cd9d304 CoreFoundation`__CFRunLoopDoBlocks + 356
frame #4: 0x000000010cd9ca75 CoreFoundation`__CFRunLoopRun + 901
frame #5: 0x000000010cd9c494 CoreFoundation`CFRunLoopRunSpecific + 420
frame #6: 0x000000011223ca6f GraphicsServices`GSEventRunModal + 161
frame #7: 0x000000010dd6c964 UIKit`UIApplicationMain + 159
frame #8: 0x000000010c29d6e9 Types`main + 201
frame #9: 0x000000011038e68d libdyld.dylib`start + 1
frame #10: 0x000000011038e68d libdyld.dylib`start + 1

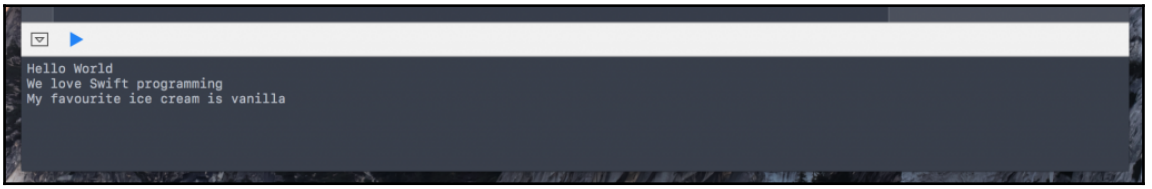

Ready | Today at 10:12 PM
Types
1 let question = "What do you want to eat for dinner?"
2
3 var answer: String
4
5 answer = "Cake"
6
7 print(answer)
8
Cake

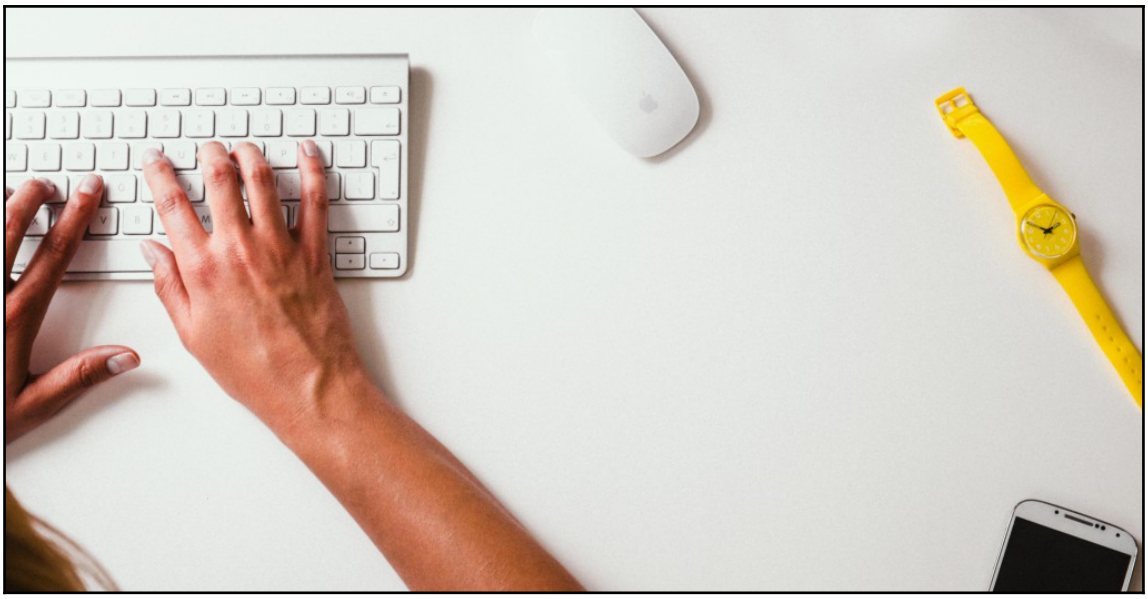

2 var age = 75
Declaration var age: Int
Declared In Types.playground

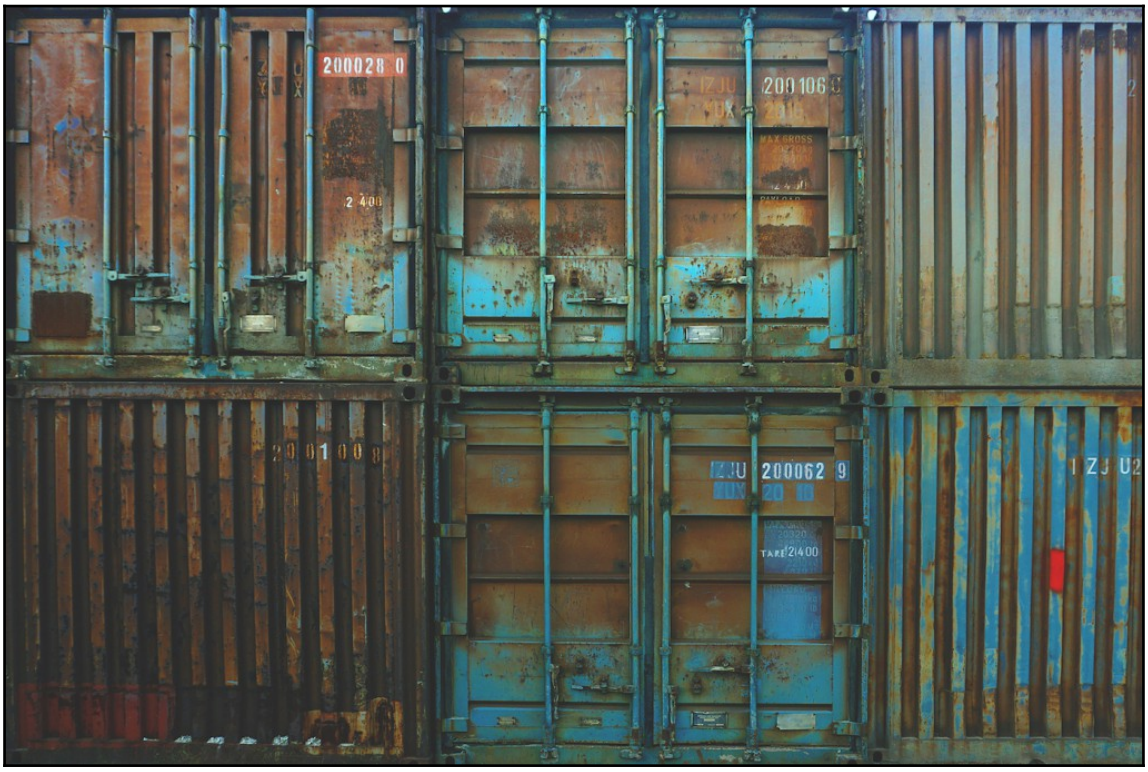

Ready | Today at 8:42 AM
Types
1
2 var age = 75
75
75
3
4
5 age + 5
80
80
6
7
8 age - 4
71
71
9
10
11 age * 2
150
150
12
13


4 let temperatureInF = 85.2
Declaration let temperatureInF: Double
Declared In Types.playground

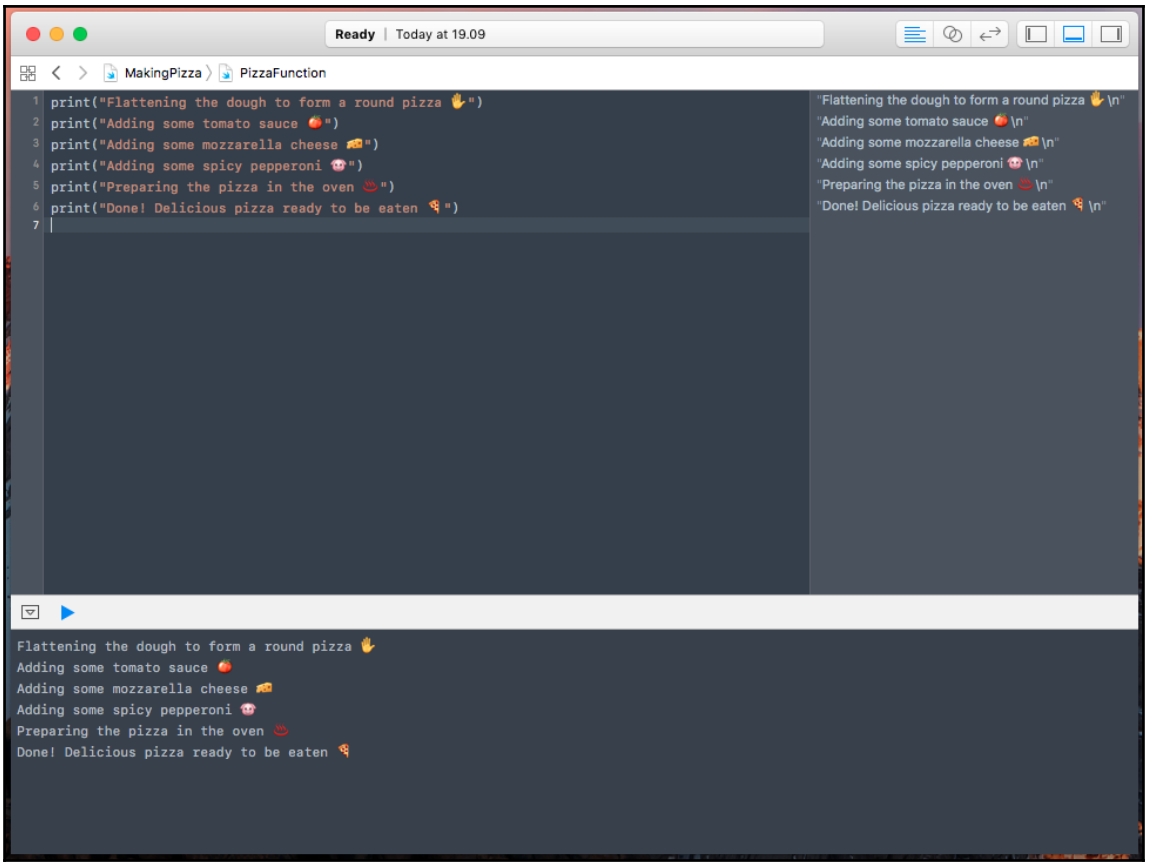
Chapter 6: Making Pizza

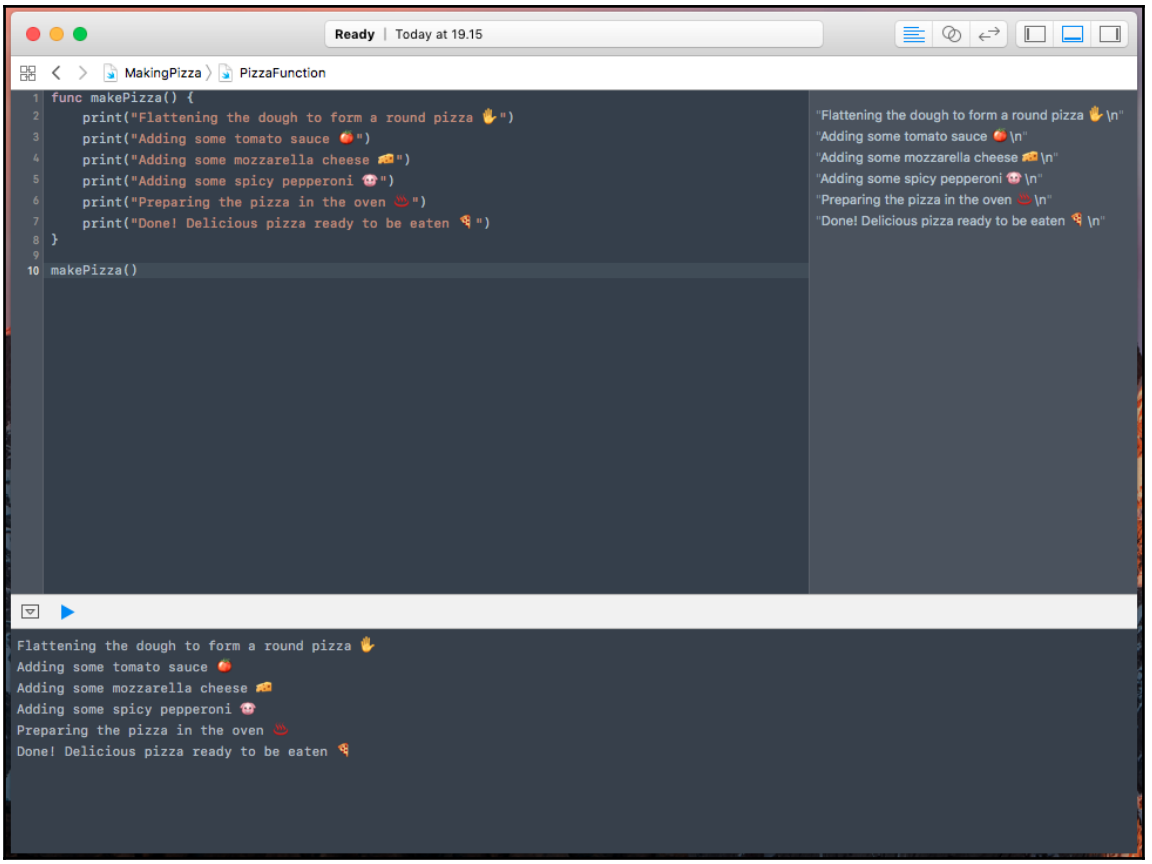


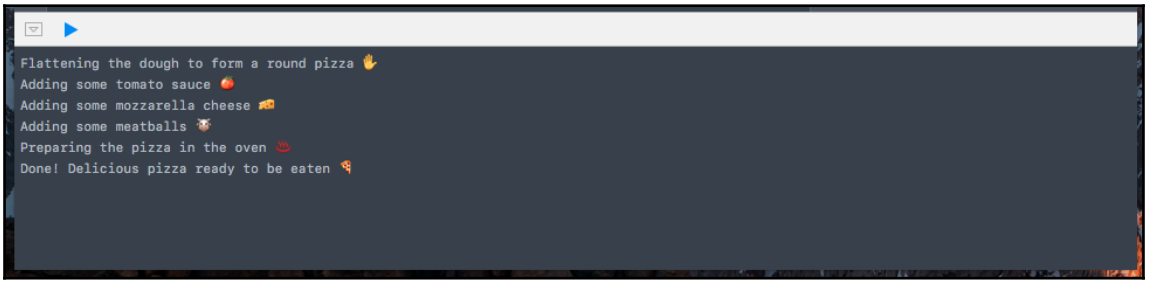





Coffee

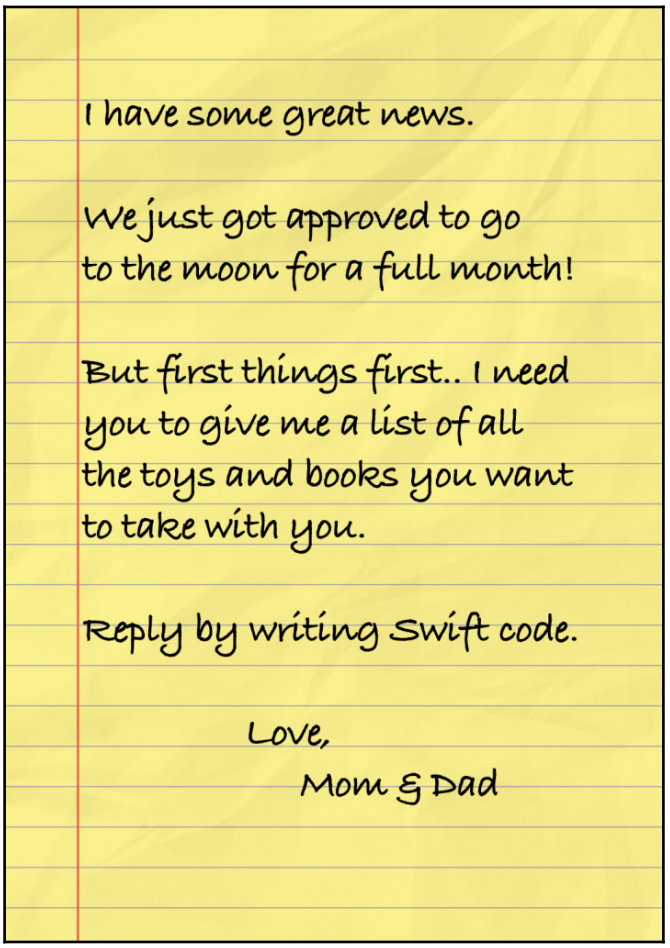

Ready | Today at 19.09
MakingPizza
PizzaFunction
print("Flattening the dough to form a round pizza ")
print("Adding some tomato sauce ")
print("Adding some mozzarella cheese ")
print("Adding some spicy pepperoni ")
print("Preparing the pizza in the oven ")
print("Done! Delicious pizza ready to be eaten ")
"Flattening the dough to form a round pizza \n"
"Adding some tomato sauce \n"
"Adding some mozzarella cheese \n"
"Adding some spicy pepperoni \n"
"Preparing the pizza in the oven \n"
"Done! Delicious pizza ready to be eaten \n"
Flattening the dough to form a round pizza
Adding some tomato sauce
Adding some mozzarella cheese
Adding some spicy pepperoni
Preparing the pizza in the oven
Done! Delicious pizza ready to be eaten

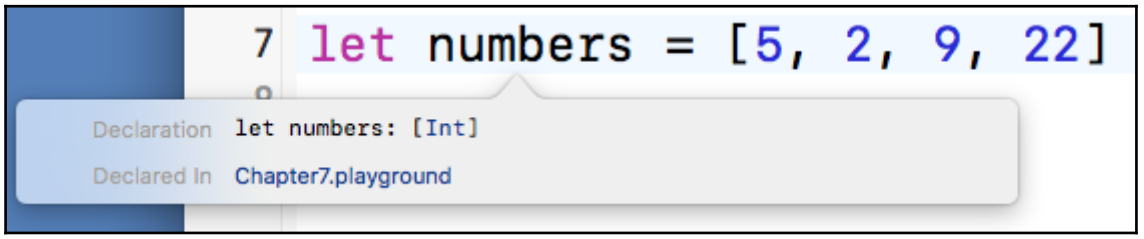

Ready | Today at 19.15
MakingPizza
PizzaFunction
func makePizza() {
print("Flattening the dough to form a round pizza ✋")
print("Adding some tomato sauce 🍅")
print("Adding some mozzarella cheese 🧀")
print("Adding some spicy pepperoni 🥶")
print("Preparing the pizza in the oven ♨️")
print("Done! Delicious pizza ready to be eaten 🍕")
}
makePizza()
"Flattening the dough to form a round pizza ✋\n"
"Adding some tomato sauce 🍅\n"
"Adding some mozzarella cheese 🧀\n"
"Adding some spicy pepperoni 🥶\n"
"Preparing the pizza in the oven ♨️\n"
"Done! Delicious pizza ready to be eaten 🍕\n"
Flattening the dough to form a round pizza ✋
Adding some tomato sauce 🍅
Adding some mozzarella cheese 🧀
Adding some spicy pepperoni 🥶
Preparing the pizza in the oven ♨️
Done! Delicious pizza ready to be eaten 🍕

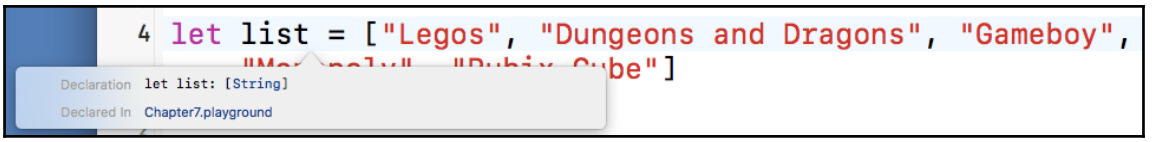

Flattening the dough to form a round pizza ✋
Adding some tomato sauce 🍅
Adding some mozzarella cheese 🧀
Adding some meatballs 🧌
Preparing the pizza in the oven ♨️
Done! Delicious pizza ready to be eaten 🍕


Pizza with meatballs 🧌
Pizza with sliced ham 🥶
Pizza with shrimps 🍤

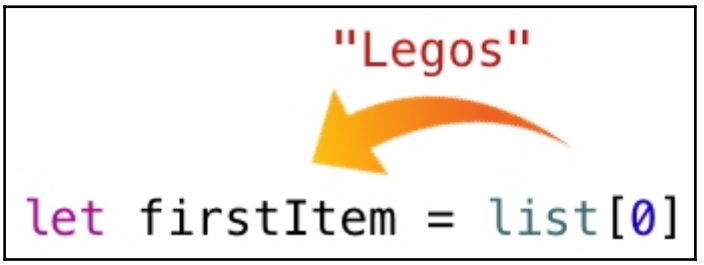
Chapter 7: Toy Bin

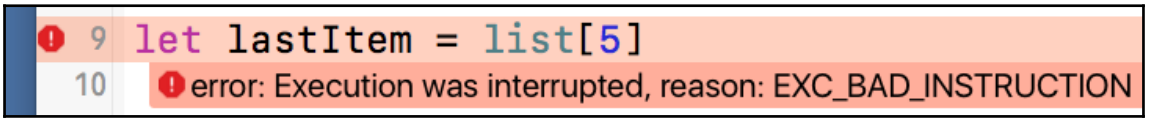


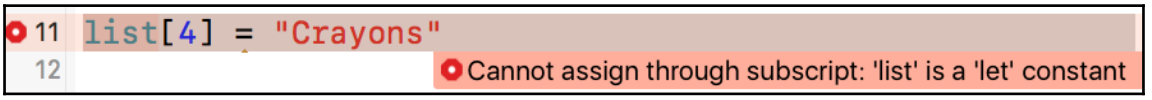


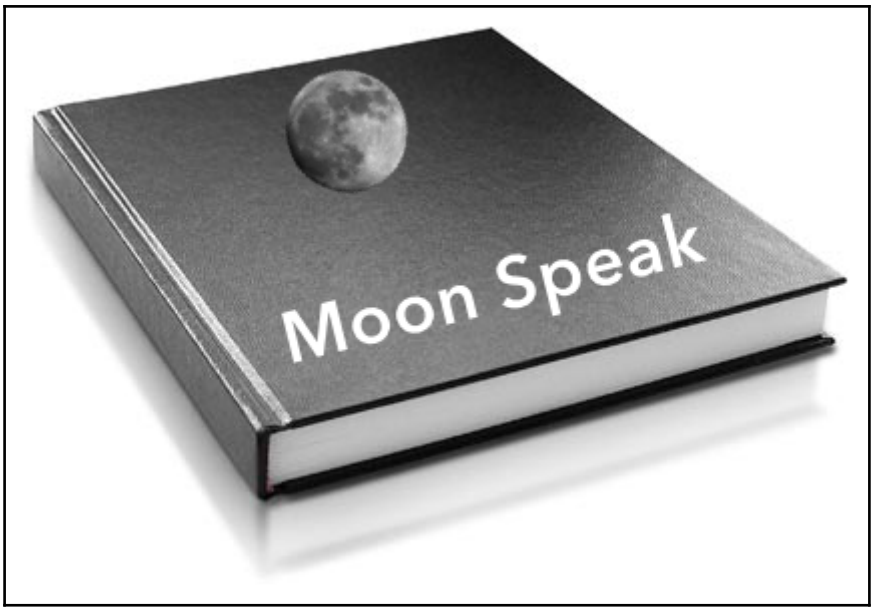

4 let list = ["Legos", "Dungeons and Dragons", "Gameboy",
Declaration let list: [String]
Declared In Chapter7.playground


Index: 0 1 2 3 4
let list = ["Legos", "Dungeons and Dragons", "Gameboy", "Monopoly", "Rubix Cube"]


"Legos"
let firstItem = list[0]


9 let lastItem = list[5]
10 error: Execution was interrupted, reason: EXC_BAD_INSTRUCTION


11 list[4] = "Crayons"
12 Cannot assign through subscript: 'list' is a 'let' constant

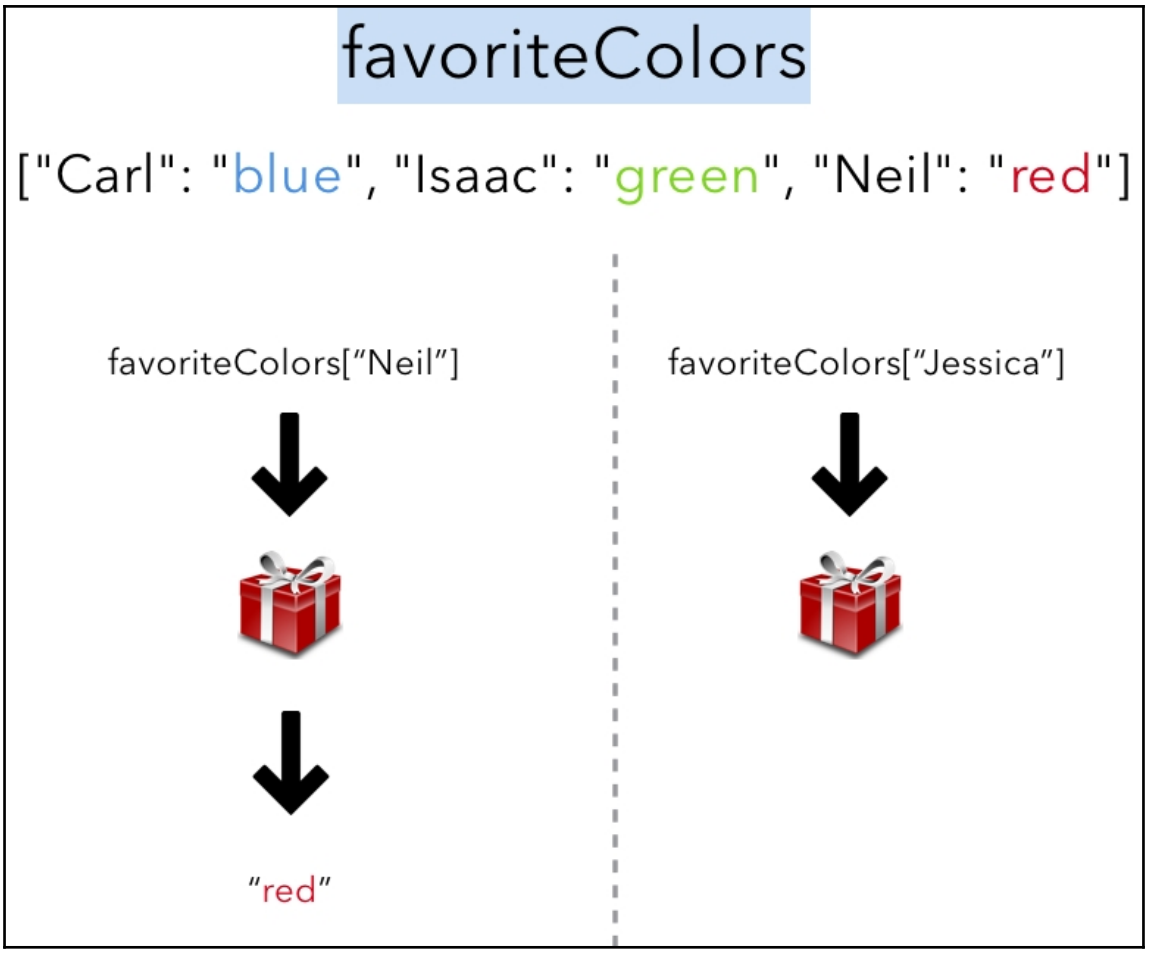


KEY VALUE

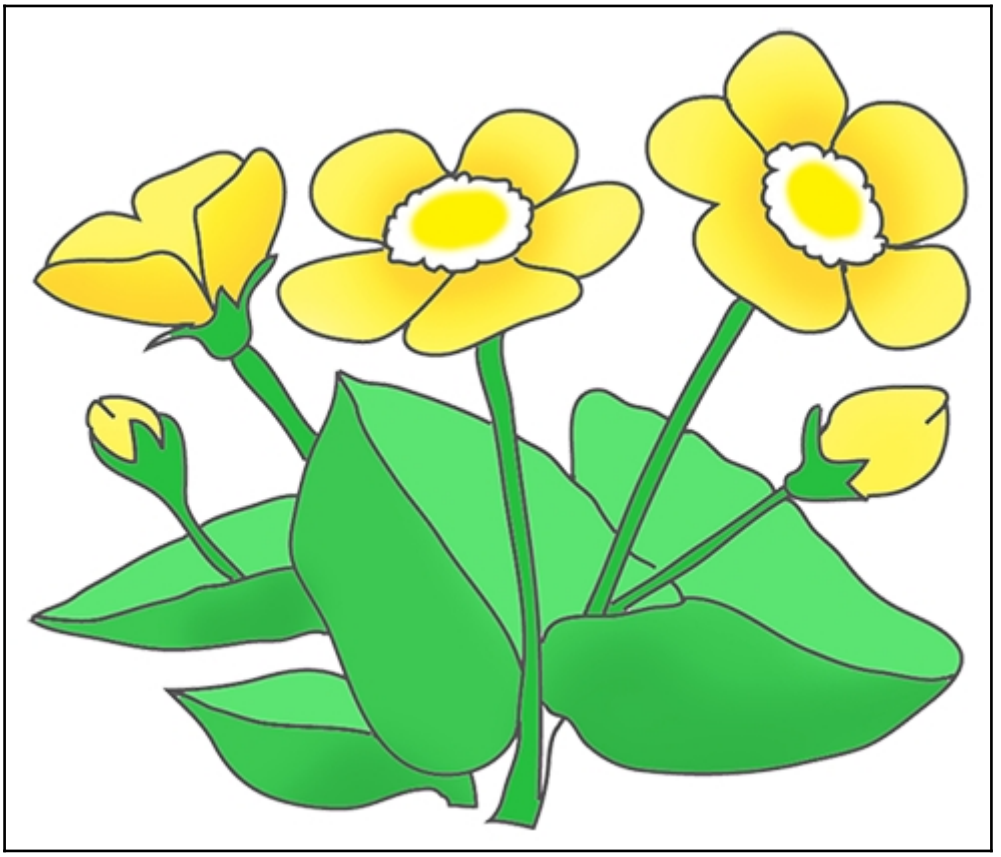
Coffee : A drink made from the roasted and ground beanlike seeds of a tropical shrub, served hot or iced.

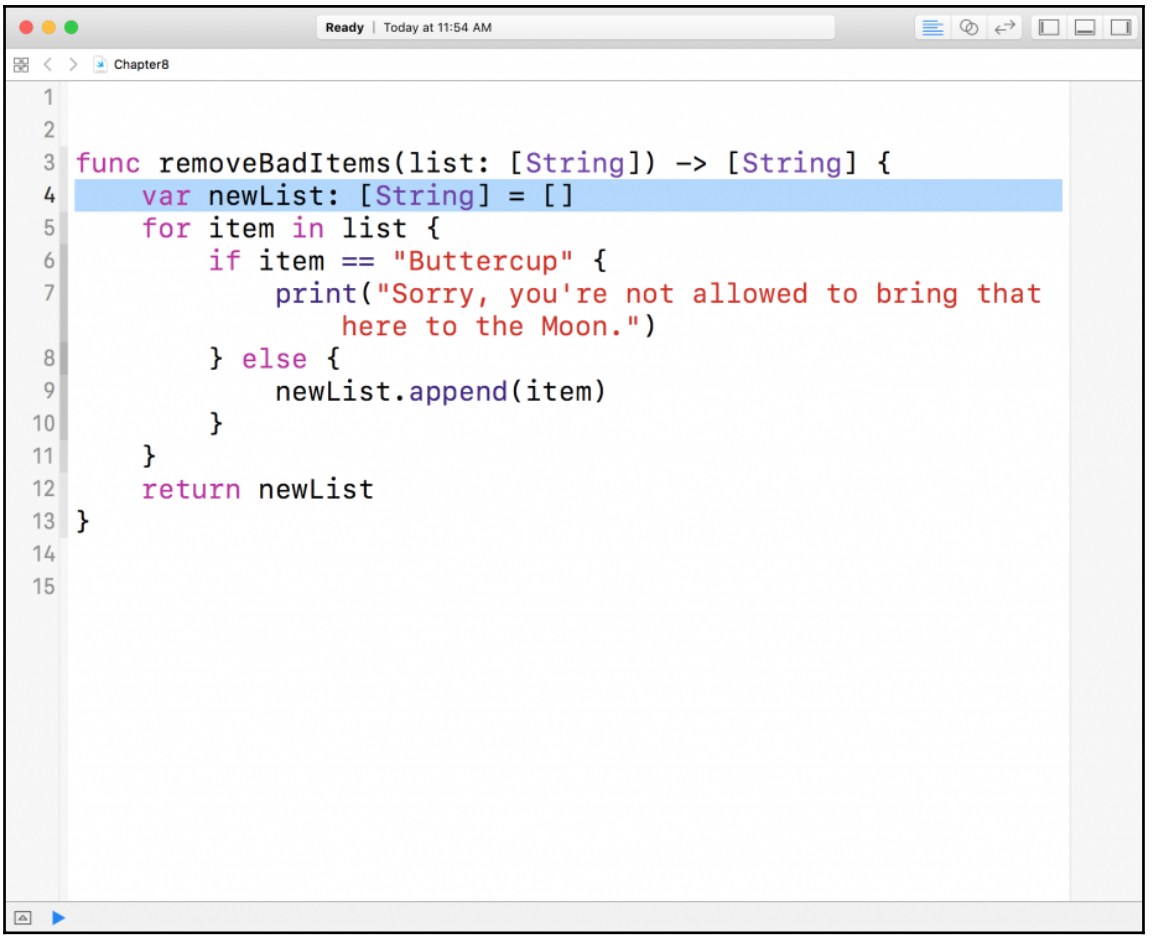
```
36 let words = ["Coffee" : "A drink made from the roasted
                                    seeds of a tropical shrub,
                                                    "]
```

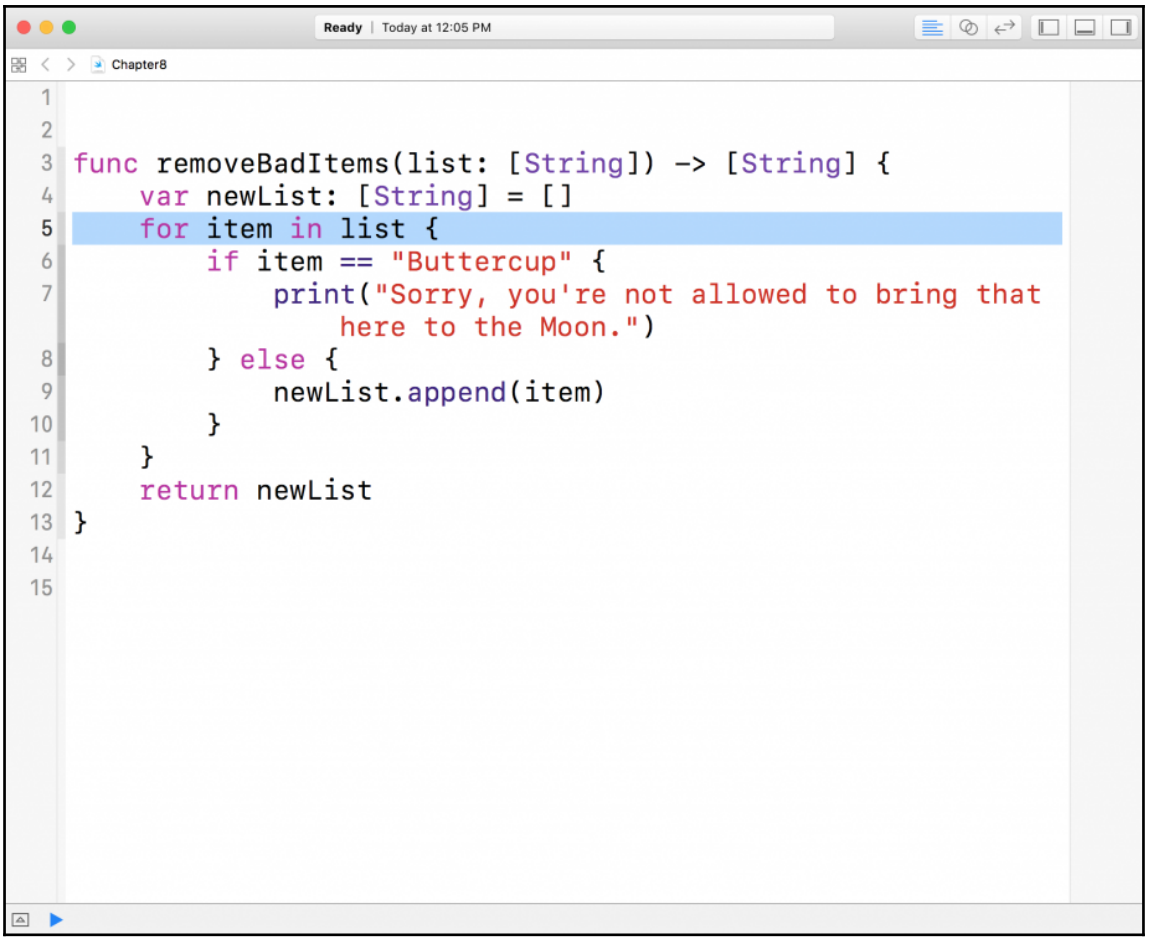
Declaration let words: [String : String]
Declared In Chapter7.playground


favoriteColors
["Carl": "blue", "Isaac": "green", "Neil": "red"]
favoriteColors["Neil"]
"red"
favoriteColors["Jessica"]

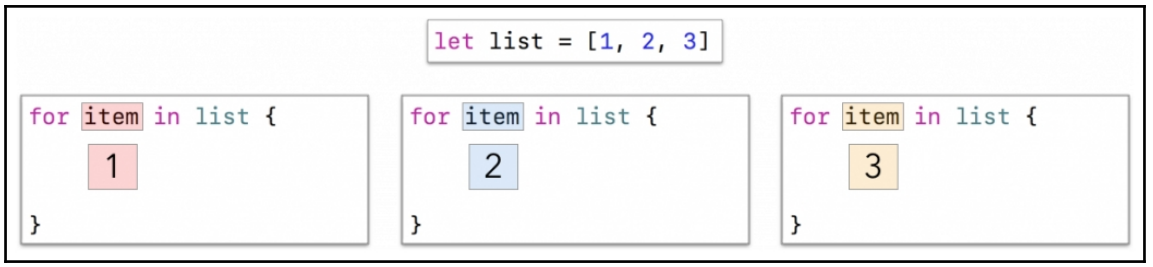
Chapter 8: Smarter Toy Bin



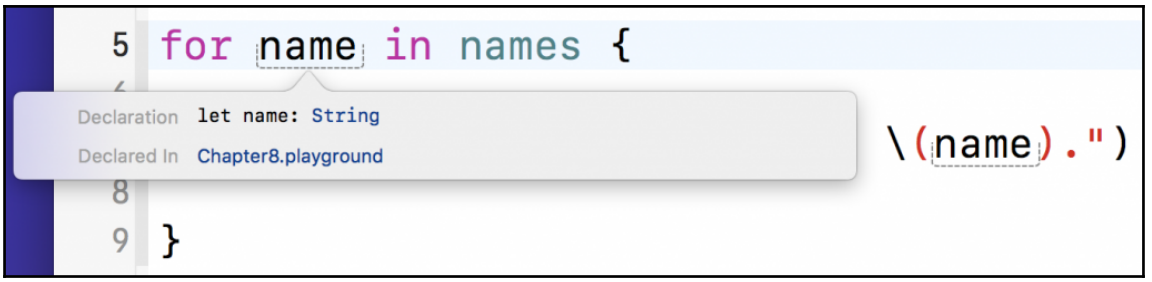

Ready | Today at 11:54 AM
Chapter8
1
2
3 func removeBadItems(list: [String]) -> [String] {
4 var newList: [String] = []
5 for item in list {
6 if item == "Buttercup" {
7 print("Sorry, you're not allowed to bring that here to the Moon.")
8 } else {
9 newList.append(item)
10 }
11 }
12 return newList
13 }
14
15

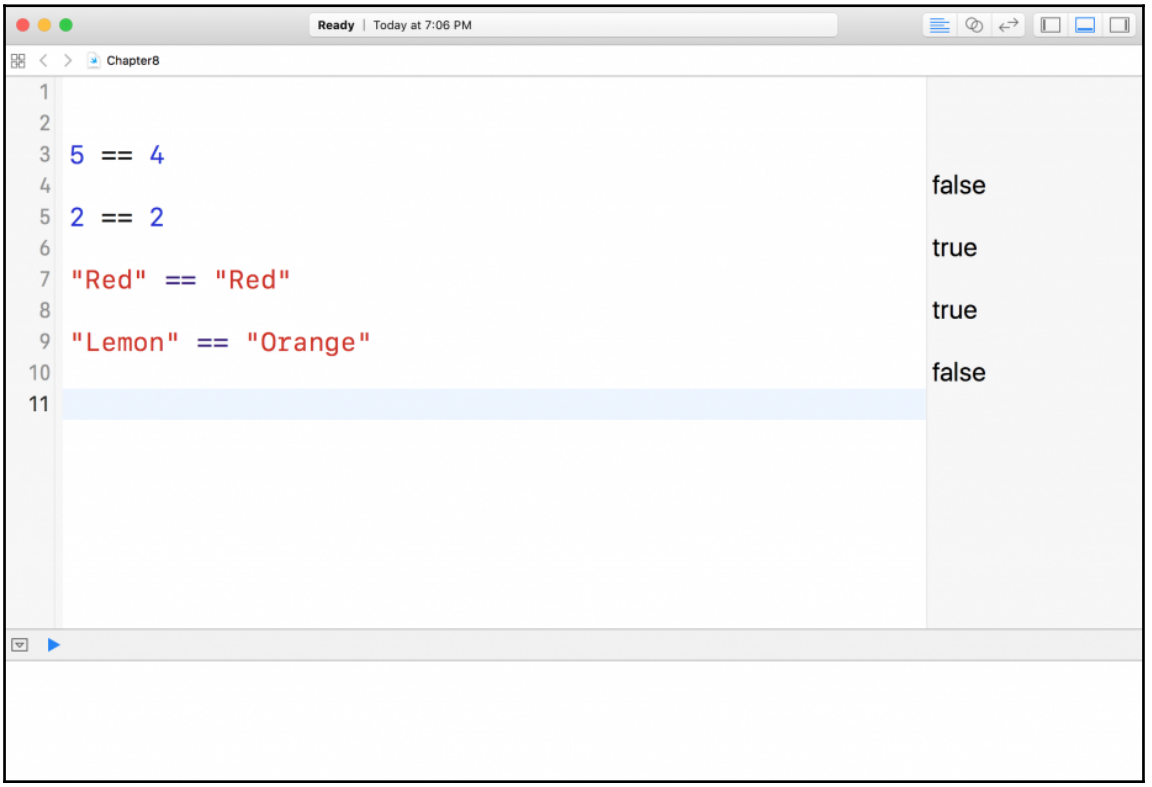


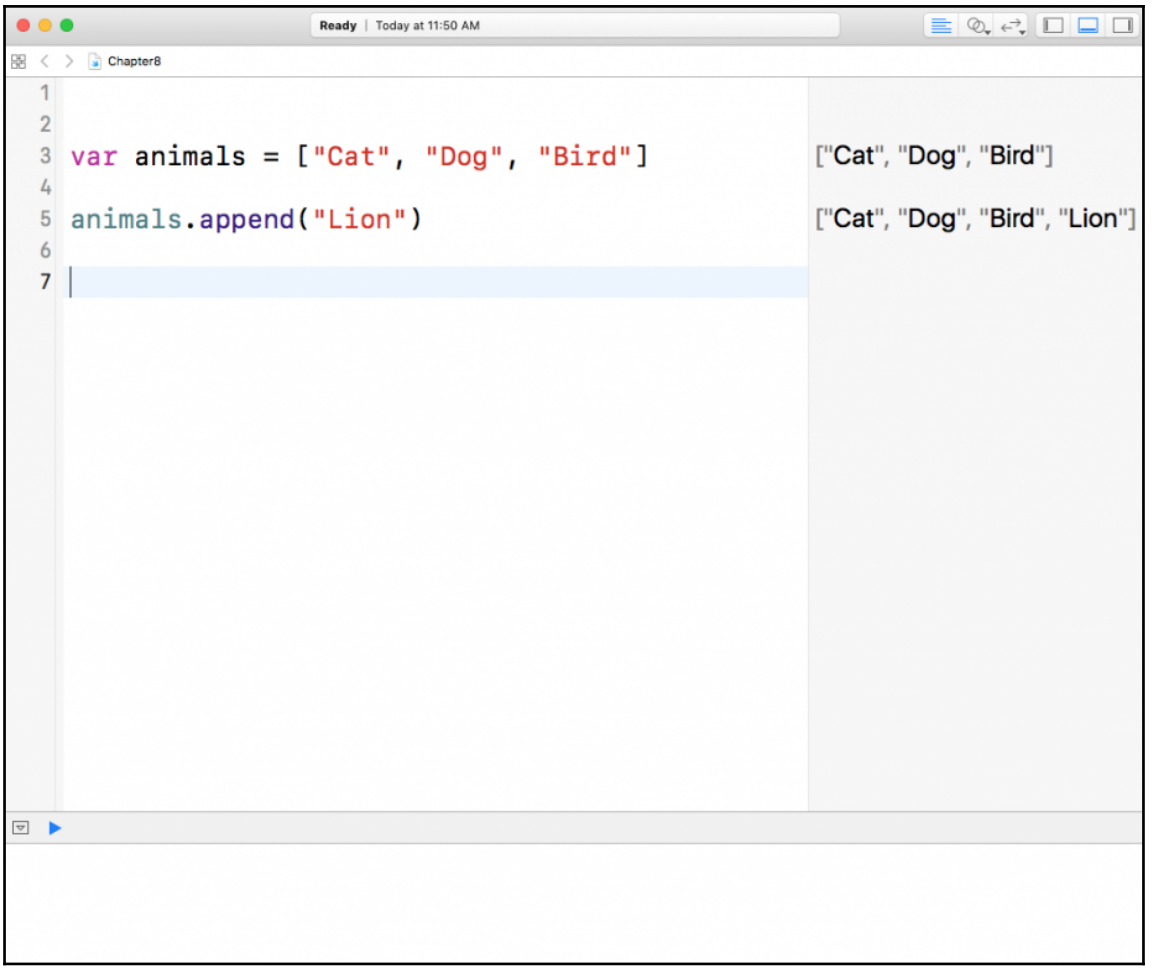

```
let list = [1, 2, 3]

for item in list {

    // Within the scope of the for-in loop

}

// NOT within the scope
```


let list = [1, 2, 3]
for item in list {
1
}
for item in list {
2
}
for item in list {
3
}


Ready | Today at 1:21 PM
Chapter8
let names = ["Jessica", "Beth", "Rebecca"]
for name in names {
print("My best friend is \(name).")
}
My best friend is Jessica.
My best friend is Beth.
My best friend is Rebecca.


5 for name in names {
Declaration let name: String
Declared In Chapter8.playground
\(name).")
9 }

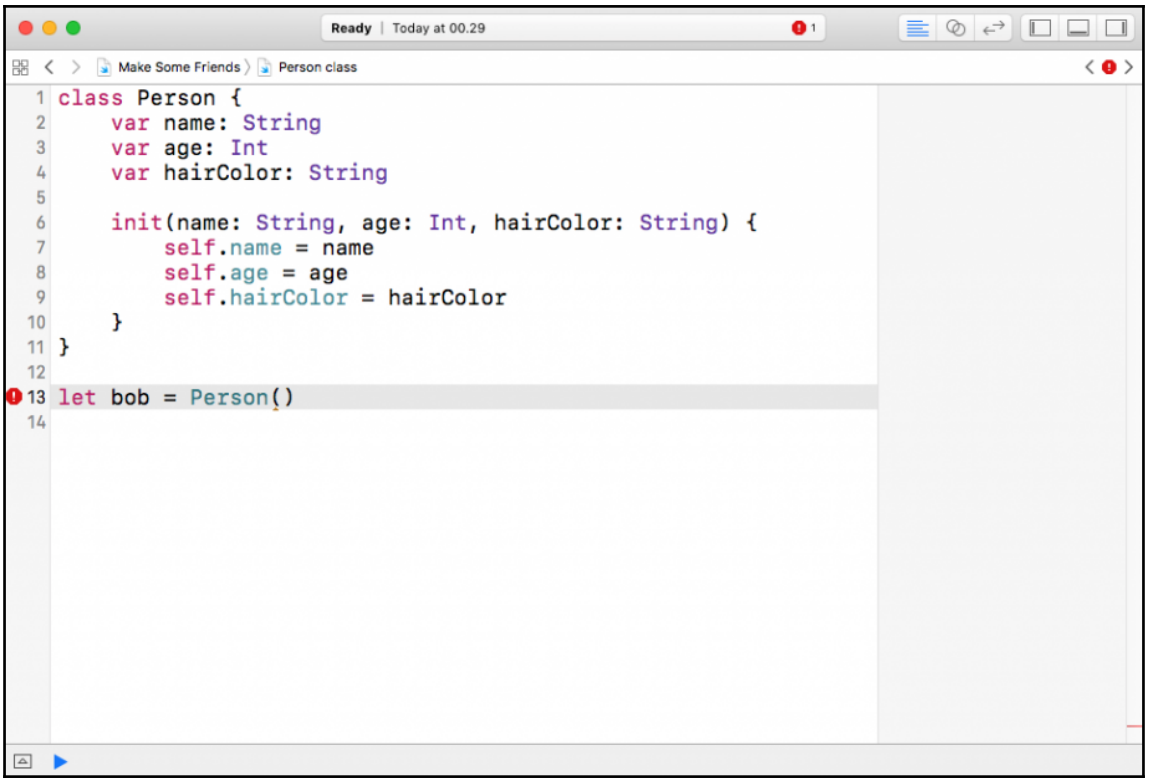

Ready | Today at 7:06 PM
Chapter8
5 == 4
false
2 == 2
true
"Red" == "Red"
true
"Lemon" == "Orange"
false


Ready | Today at 11:50 AM
Chapter8
1
2
3 var animals = ["Cat", "Dog", "Bird"]
4
5 animals.append("Lion")
6
7
["Cat", "Dog", "Bird"]
["Cat", "Dog", "Bird", "Lion"]

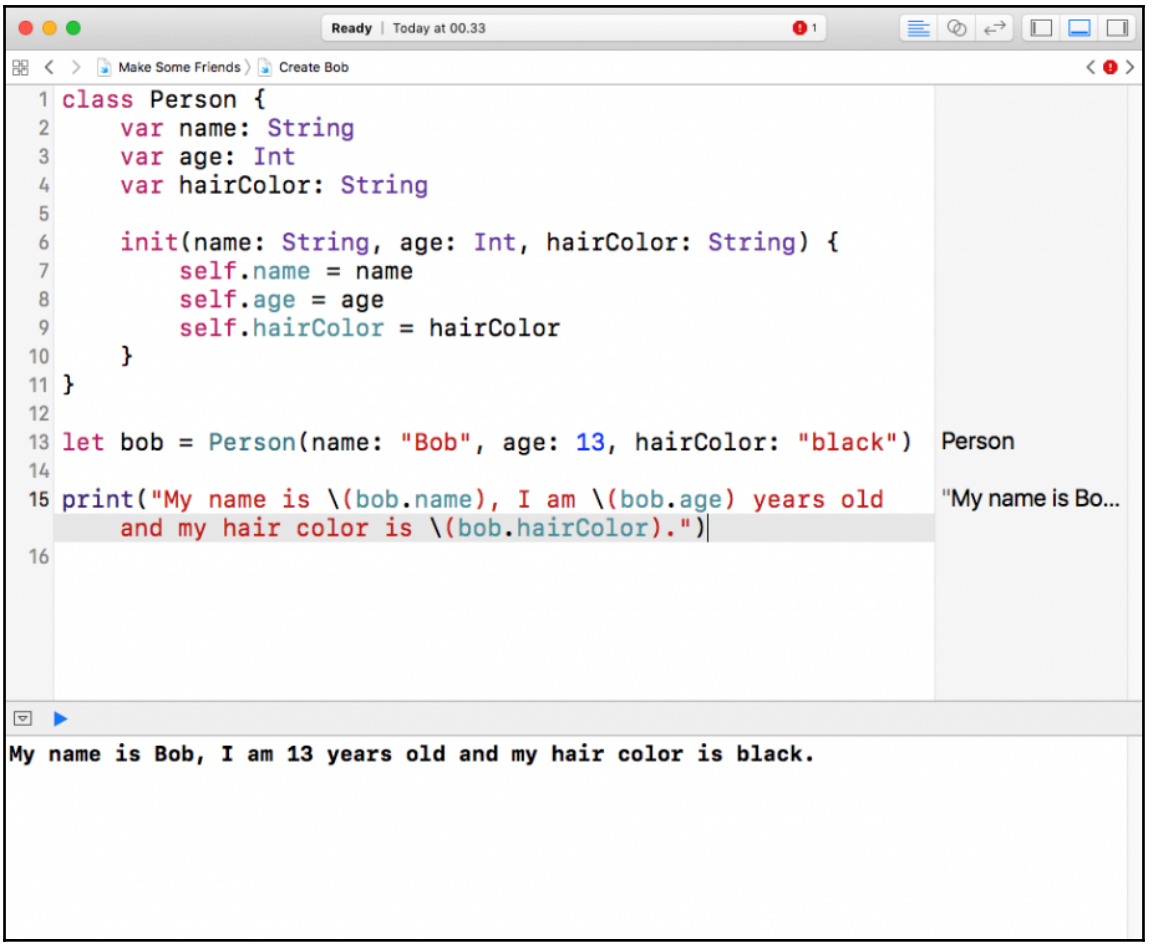

Ready | Today at 1:25 PM
Chapter8
1 let stuff = ["Coloring Book", "Marvel Comic", "Buttercup", "Moby Dick"]
0 "Coloring Book"
1 "Marvel Comic"
2 "Buttercup"
3 "Moby Dick"
2
3 func removeBadItems(list: [String]) -> [String] {
4 var newList: [String] = []
5 for item in list {
6 if item == "Buttercup" {
7 print("Sorry, you're not allowed to bring that here to the Moon.")
8 } else {
9 newList.append(item)
10 }
11 }
12 return newList
13 }
14
15 let validStuff = removeBadItems(list: stuff)
0 "Coloring Book"
1 "Marvel Comic"
2 "Moby Dick"
Sorry, you're not allowed to bring that here to the Moon.

Chapter 9: Making Some Friends

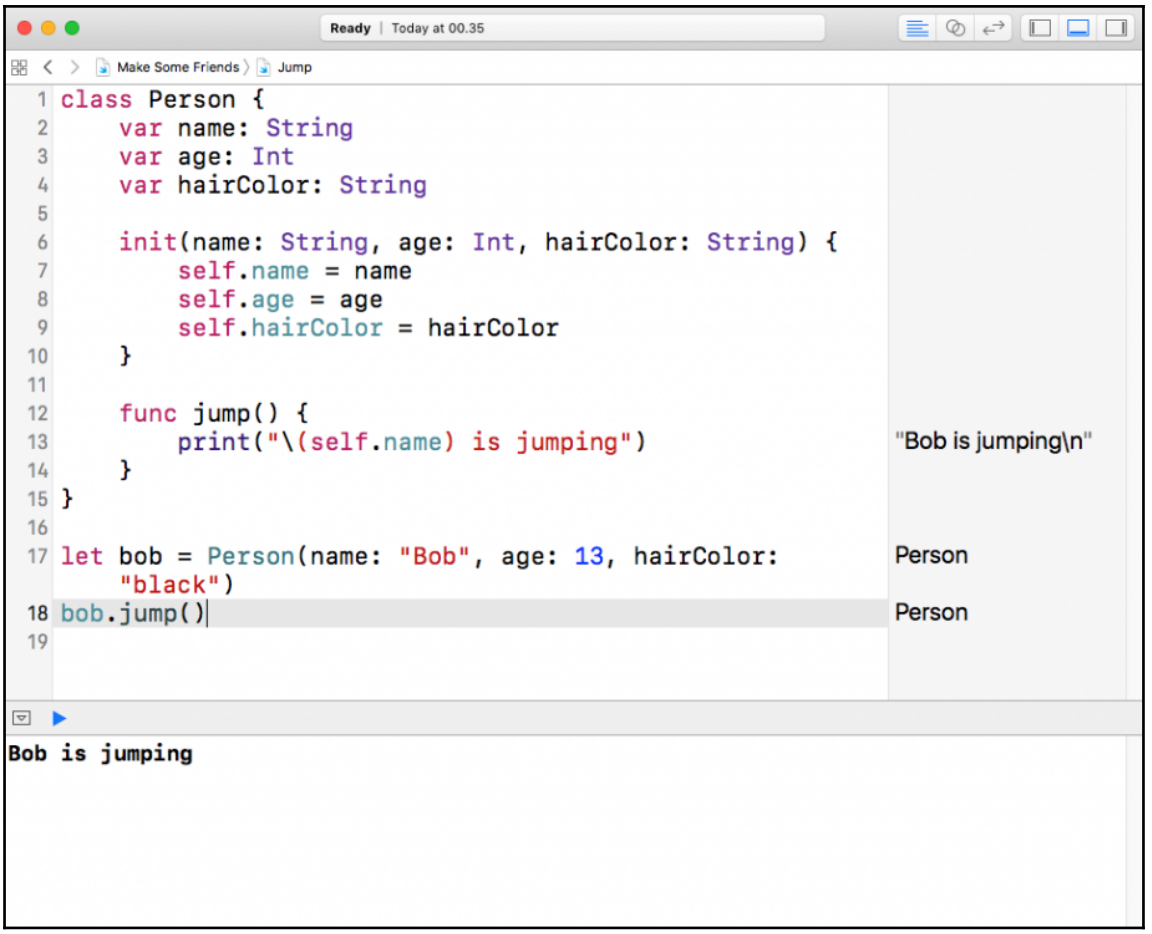

CUBA
1c

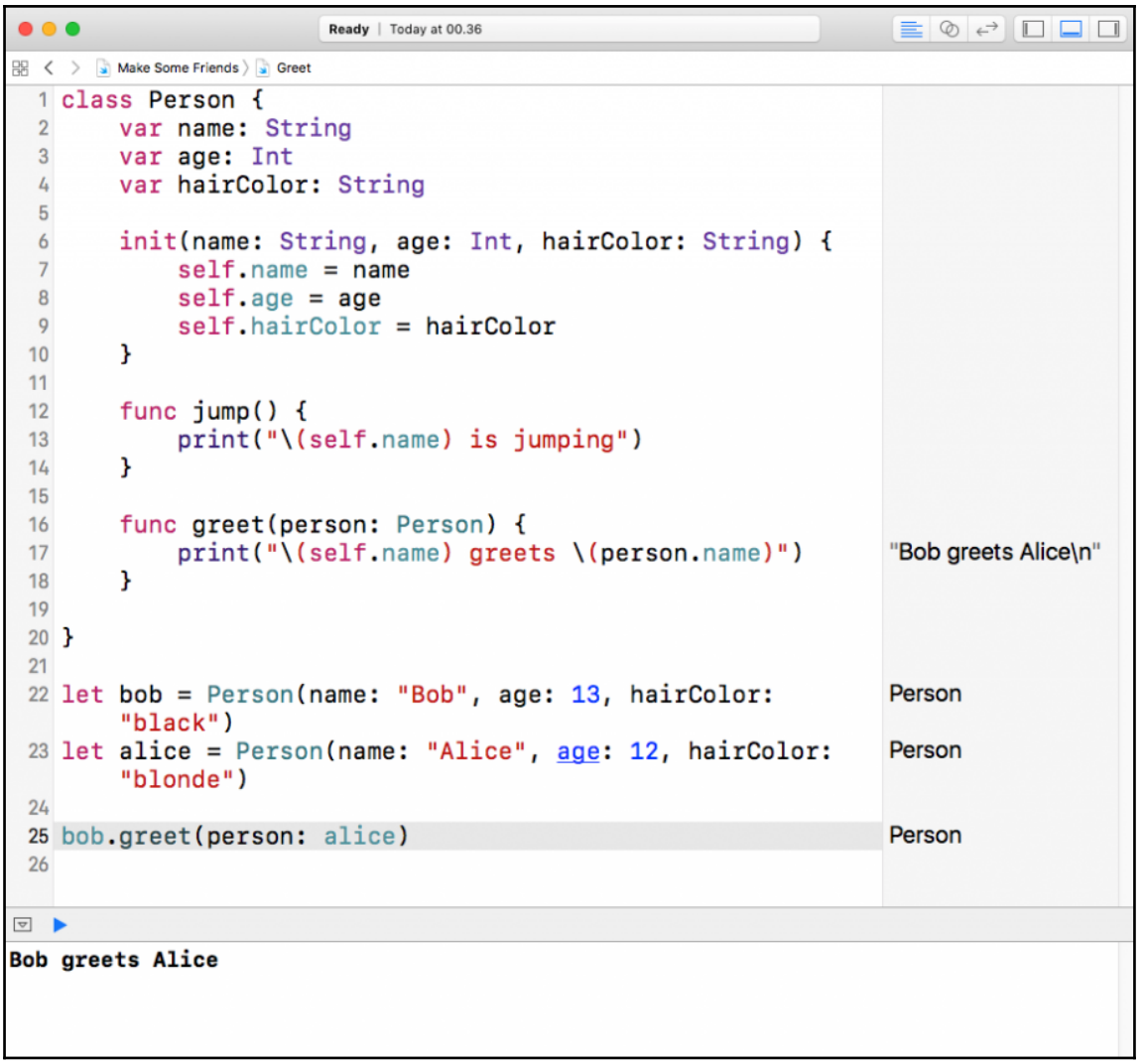

Ready | Today at 00.29
Make Some Friends
Person class
1 class Person {
2 var name: String
3 var age: Int
4 var hairColor: String
5
6 init(name: String, age: Int, hairColor: String) {
7 self.name = name
8 self.age = age
9 self.hairColor = hairColor
10 }
11 }
12
13 let bob = Person()
14

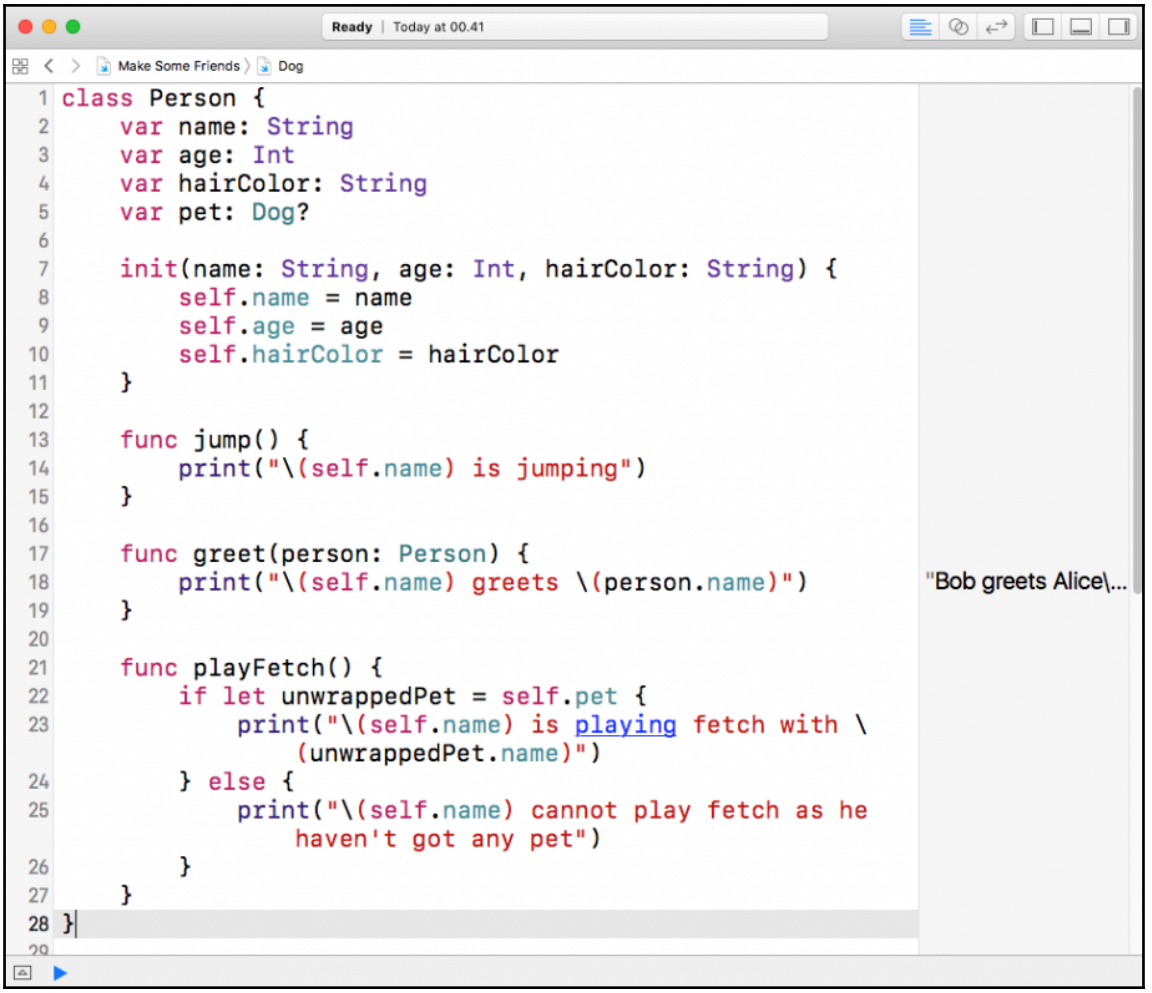

13 let bob = Person()
Missing argument for parameter 'name' in call

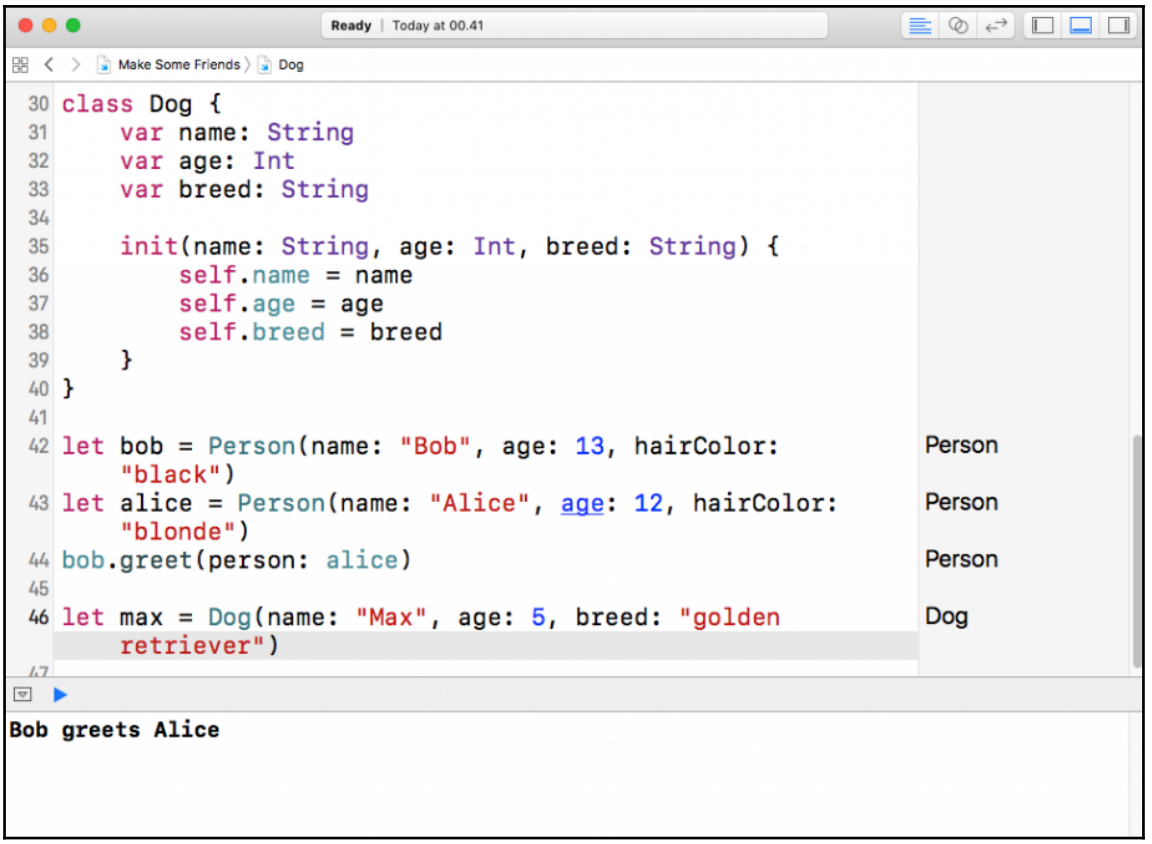

Ready | Today at 00.33
Make Some Friends
Create Bob
class Person {
var name: String
var age: Int
var hairColor: String
init(name: String, age: Int, hairColor: String) {
self.name = name
self.age = age
self.hairColor = hairColor
}
}
let bob = Person(name: "Bob", age: 13, hairColor: "black")
print("My name is \(bob.name), I am \(bob.age) years old and my hair color is \(bob.hairColor).")
Person
"My name is Bo...
My name is Bob, I am 13 years old and my hair color is black.

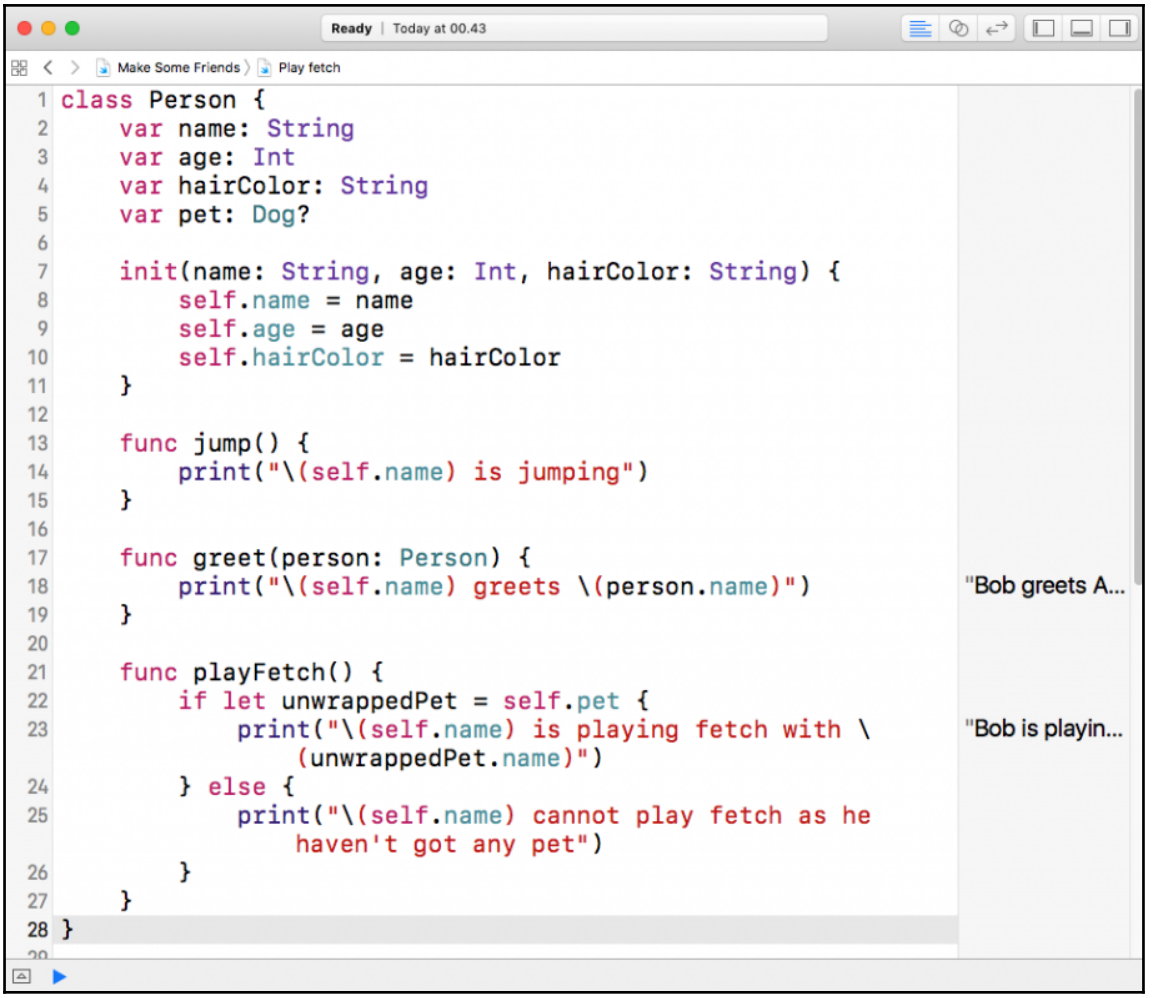

19 jump()
Use of unresolved identifier 'jump'

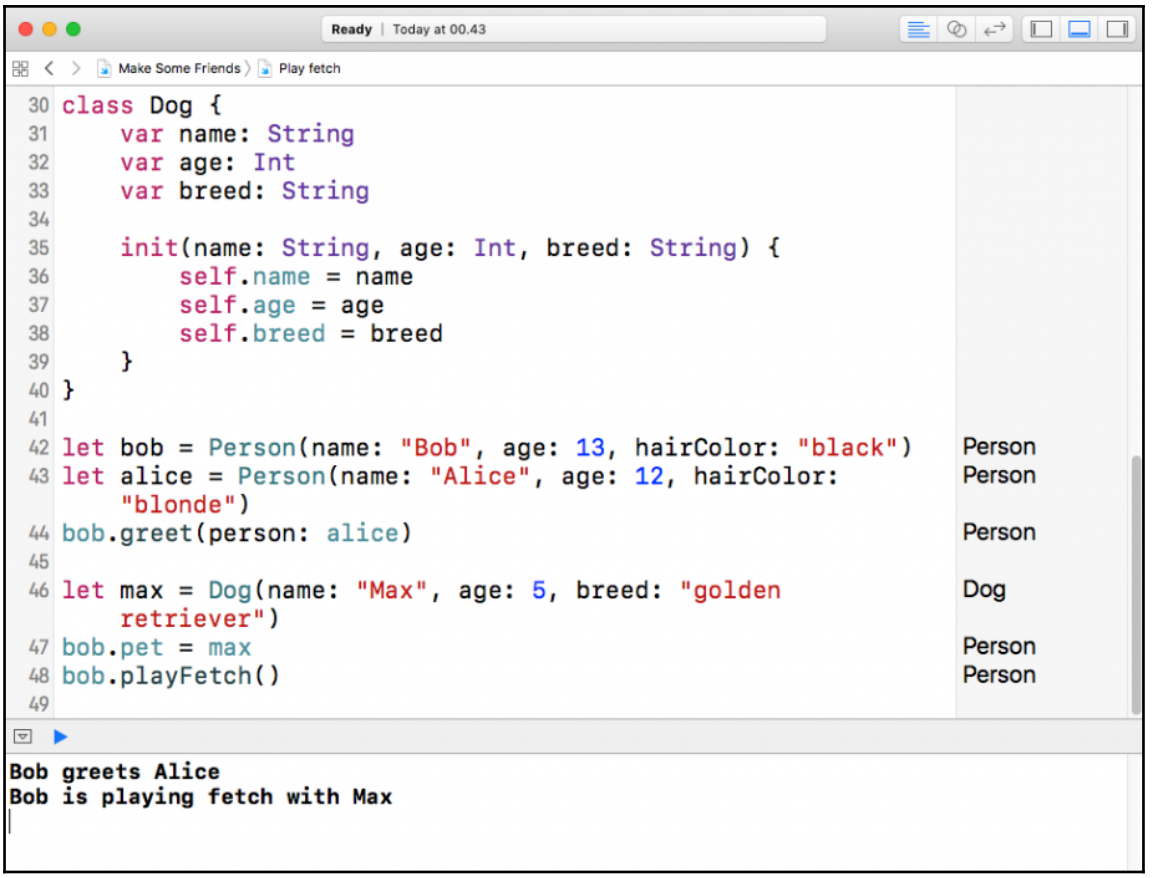

Ready | Today at 00.35
Make Some Friends
Jump
class Person {
var name: String
var age: Int
var hairColor: String
init(name: String, age: Int, hairColor: String) {
self.name = name
self.age = age
self.hairColor = hairColor
}
func jump() {
print("\(self.name) is jumping")
}
}
let bob = Person(name: "Bob", age: 13, hairColor: "black")
bob.jump()
"Bob is jumping\n"
Person
Person
Bob is jumping


Ready | Today at 00.36
Make Some Friends
Greet
class Person {
var name: String
var age: Int
var hairColor: String
init(name: String, age: Int, hairColor: String) {
self.name = name
self.age = age
self.hairColor = hairColor
}
func jump() {
print("\(self.name) is jumping")
}
func greet(person: Person) {
print("\(self.name) greets \(person.name)")
}
}
let bob = Person(name: "Bob", age: 13, hairColor: "black")
let alice = Person(name: "Alice", age: 12, hairColor: "blonde")
bob.greet(person: alice)
"Bob greets Alice\n"
Person
Person
Person
Bob greets Alice

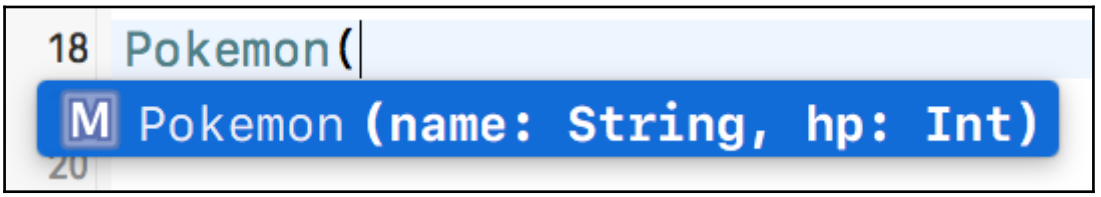

Ready | Today at 00.41
Make Some Friends
Dog
class Person {
var name: String
var age: Int
var hairColor: String
var pet: Dog?
init(name: String, age: Int, hairColor: String) {
self.name = name
self.age = age
self.hairColor = hairColor
}
func jump() {
print("\(self.name) is jumping")
}
func greet(person: Person) {
print("\(self.name) greets \(person.name)")
}
func playFetch() {
if let unwrappedPet = self.pet {
print("\(self.name) is playing fetch with \
(unwrappedPet.name)")
} else {
print("\(self.name) cannot play fetch as he
haven't got any pet")
}
}
}
"Bob greets Alice\...

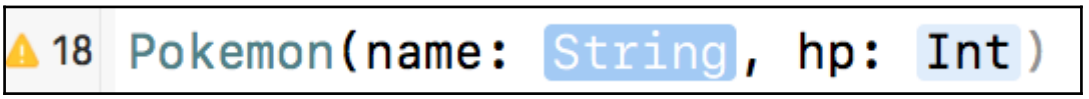

Ready | Today at 00.41
Make Some Friends
Dog
30 class Dog {
31 var name: String
32 var age: Int
33 var breed: String
34
35 init(name: String, age: Int, breed: String) {
36 self.name = name
37 self.age = age
38 self.breed = breed
39 }
40 }
41
42 let bob = Person(name: "Bob", age: 13, hairColor: "black")
43 let alice = Person(name: "Alice", age: 12, hairColor: "blonde")
44 bob.greet(person: alice)
45
46 let max = Dog(name: "Max", age: 5, breed: "golden retriever")
Person
Person
Person
Dog
Bob greets Alice

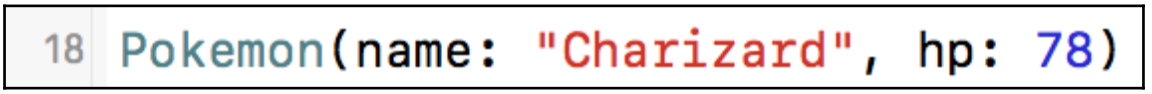

Ready | Today at 00.43
Make Some Friends
Play fetch
class Person {
var name: String
var age: Int
var hairColor: String
var pet: Dog?
init(name: String, age: Int, hairColor: String) {
self.name = name
self.age = age
self.hairColor = hairColor
}
func jump() {
print("\(self.name) is jumping")
}
func greet(person: Person) {
print("\(self.name) greets \(person.name)")
}
func playFetch() {
if let unwrappedPet = self.pet {
print("\(self.name) is playing fetch with \
(unwrappedPet.name)")
} else {
print("\(self.name) cannot play fetch as he
haven't got any pet")
}
}
}
"Bob greets A...
"Bob is playin...

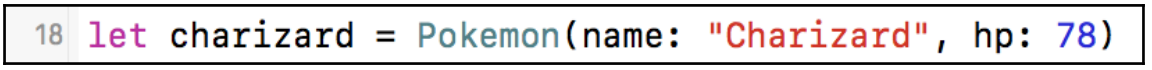

Ready | Today at 00.43
Make Some Friends
Play fetch
30 class Dog {
31 var name: String
32 var age: Int
33 var breed: String
34
35 init(name: String, age: Int, breed: String) {
36 self.name = name
37 self.age = age
38 self.breed = breed
39 }
40 }
41
42 let bob = Person(name: "Bob", age: 13, hairColor: "black") Person
43 let alice = Person(name: "Alice", age: 12, hairColor: "blonde") Person
44 bob.greet(person: alice) Person
45
46 let max = Dog(name: "Max", age: 5, breed: "golden retriever") Dog
47 bob.pet = max Person
48 bob.playFetch() Person
49
Bob greets Alice
Bob is playing fetch with Max

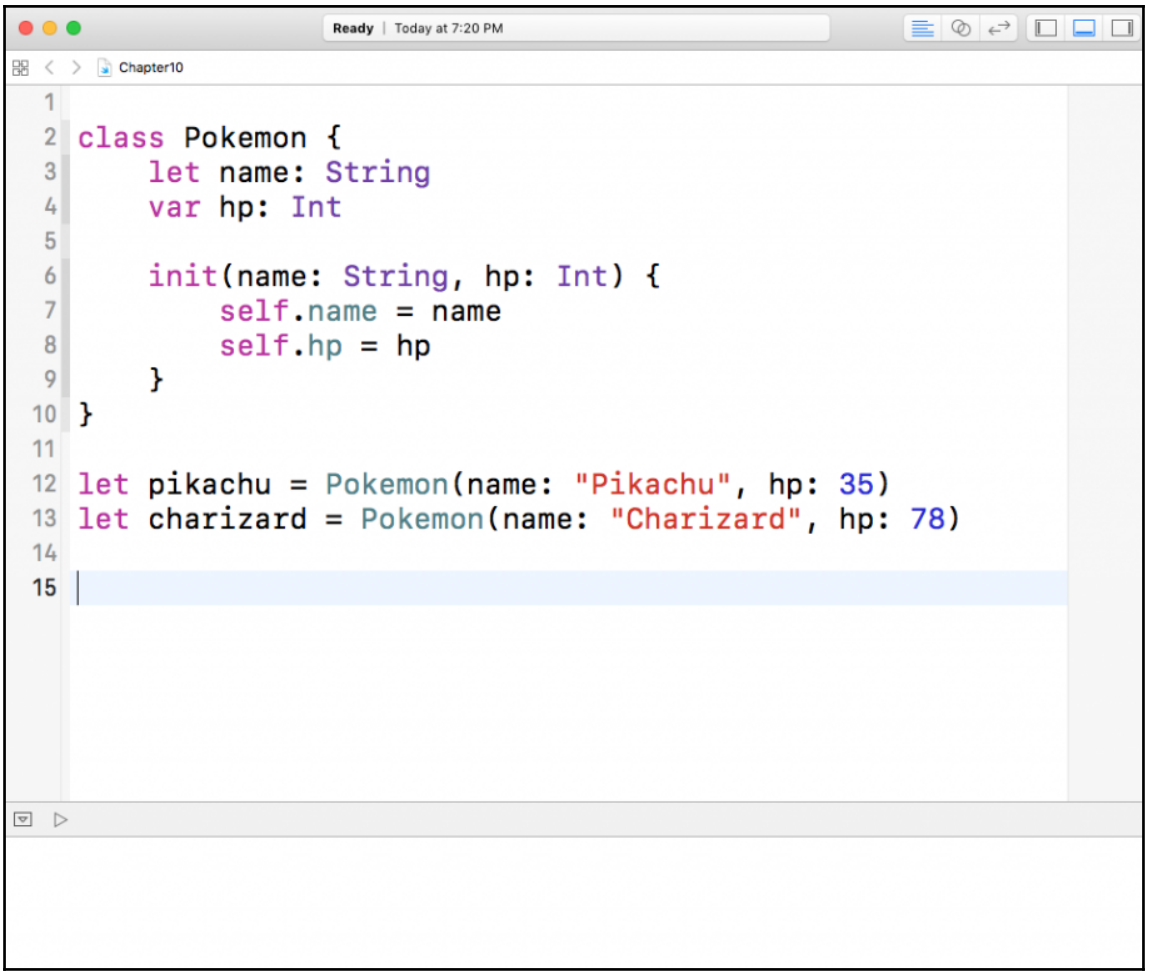
Chapter 10: Pokemon Battle

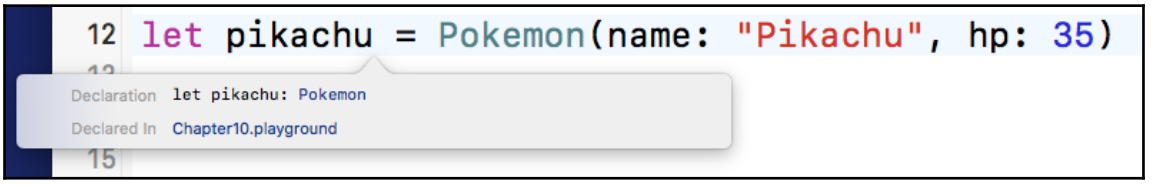


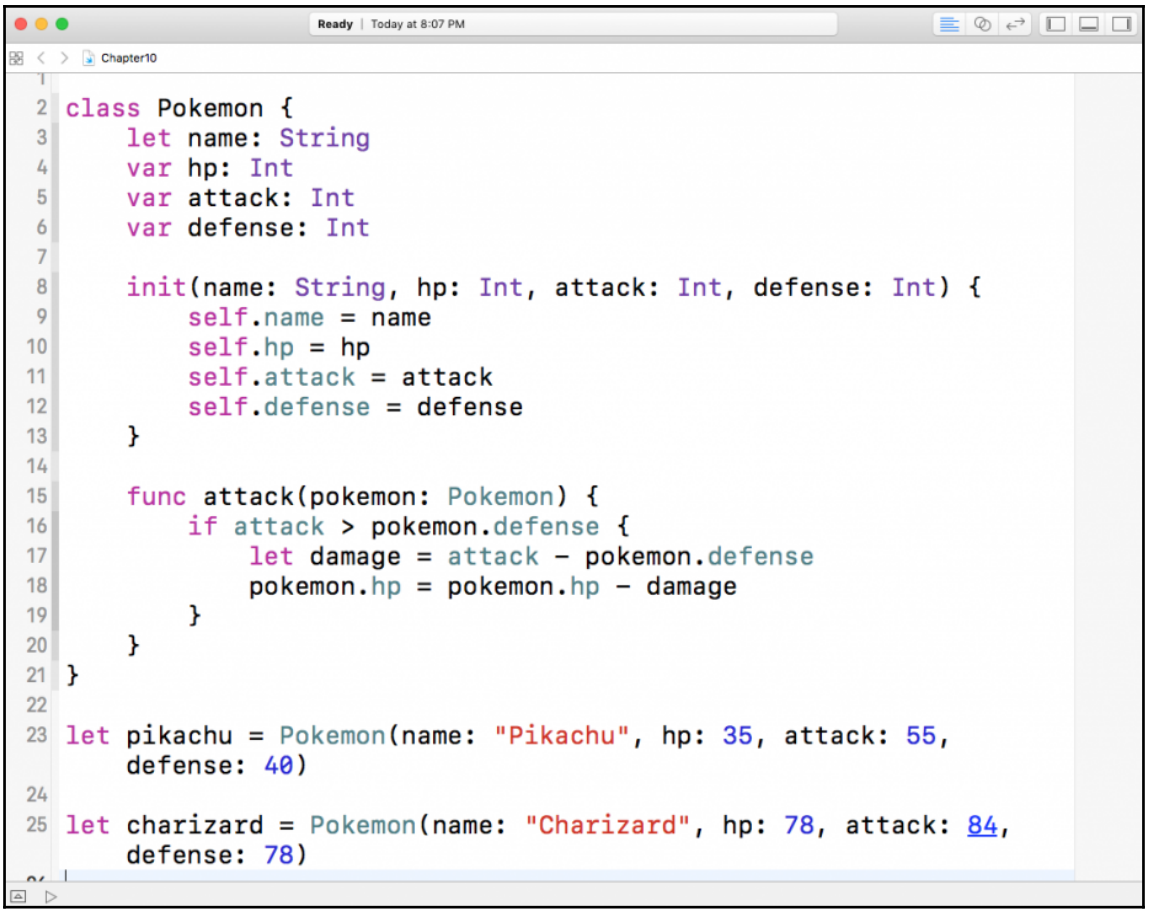




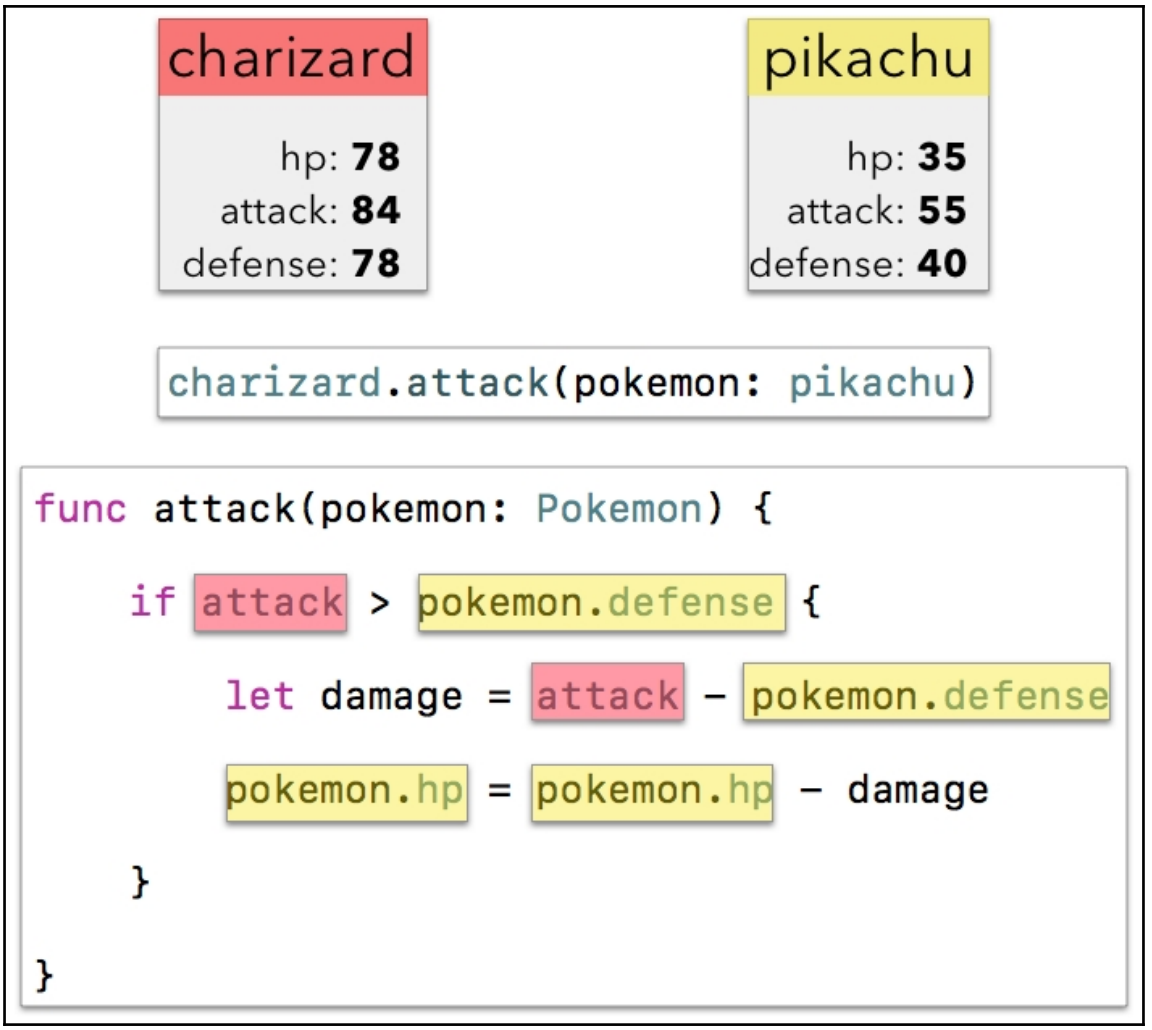


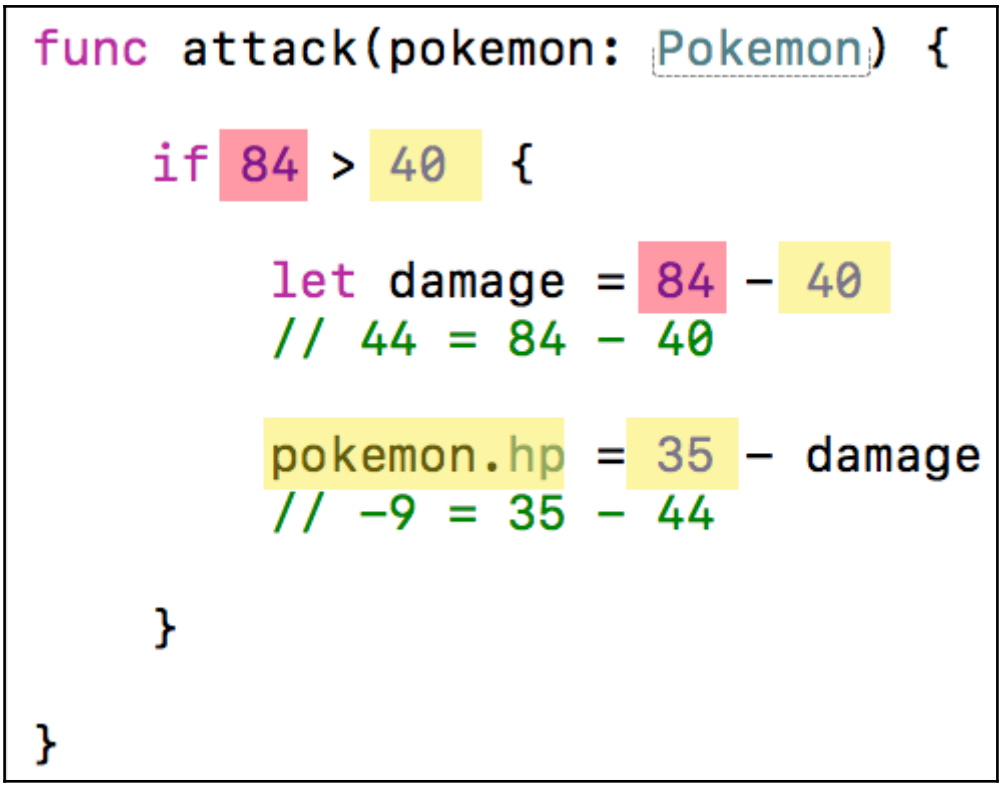

Ready | Today at 7:20 PM
Chapter10
1
2 class Pokemon {
3 let name: String
4 var hp: Int
5
6 init(name: String, hp: Int) {
7 self.name = name
8 self.hp = hp
9 }
10 }
11
12 let pikachu = Pokemon(name: "Pikachu", hp: 35)
13 let charizard = Pokemon(name: "Charizard", hp: 78)
14
15


12 let pikachu = Pokemon(name: "Pikachu", hp: 35)
Declaration let pikachu: Pokemon
Declared In Chapter10.playground
15

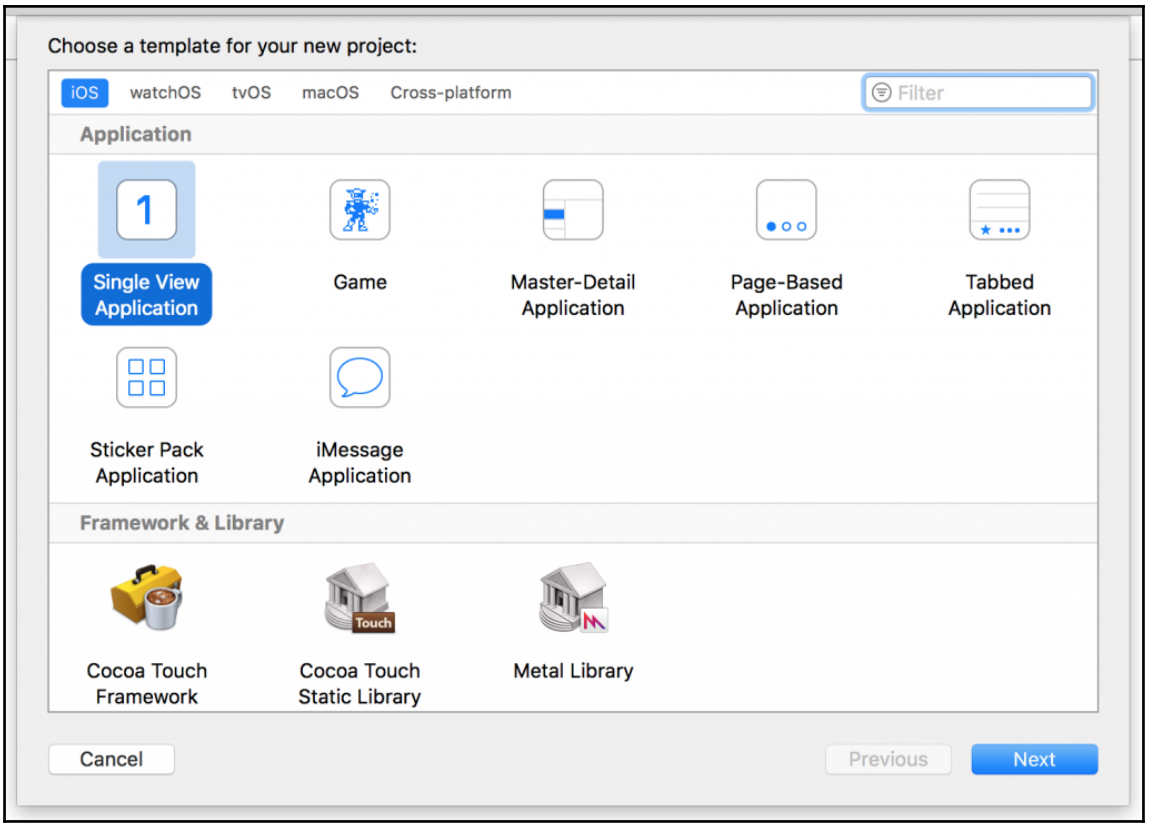


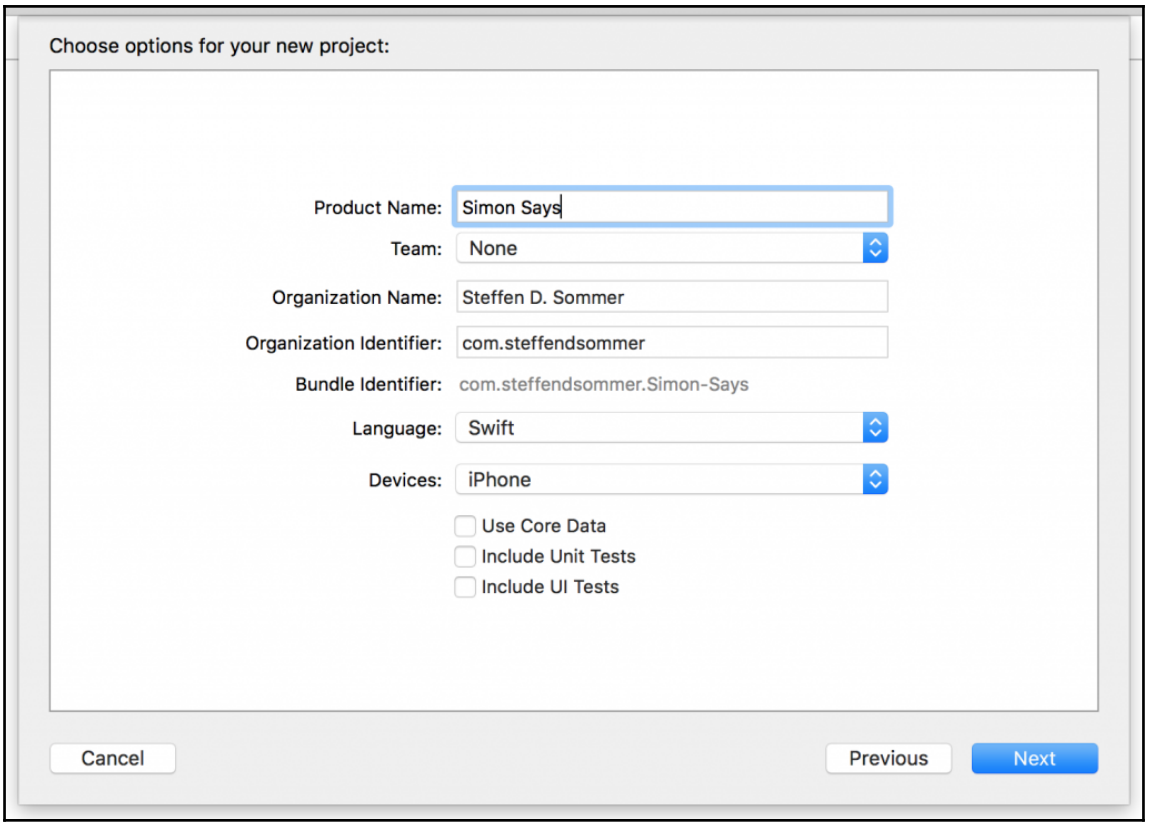

```
class Pokemon {
    let name: String
    var hp: Int
    var attack: Int
    var defense: Int

    init(name: String, hp: Int, attack: Int, defense: Int) {
        self.name = name
        self.hp = hp
        self.attack = attack
        self.defense = defense
    }

    func attack(pokemon: Pokemon) {
        if attack > pokemon.defense {
            let damage = attack - pokemon.defense
            pokemon.hp = pokemon.hp - damage
        }
    }
}

let pikachu = Pokemon(name: "Pikachu", hp: 35, attack: 55,
    defense: 40)

let charizard = Pokemon(name: "Charizard", hp: 78, attack: 84,
    defense: 78)
```

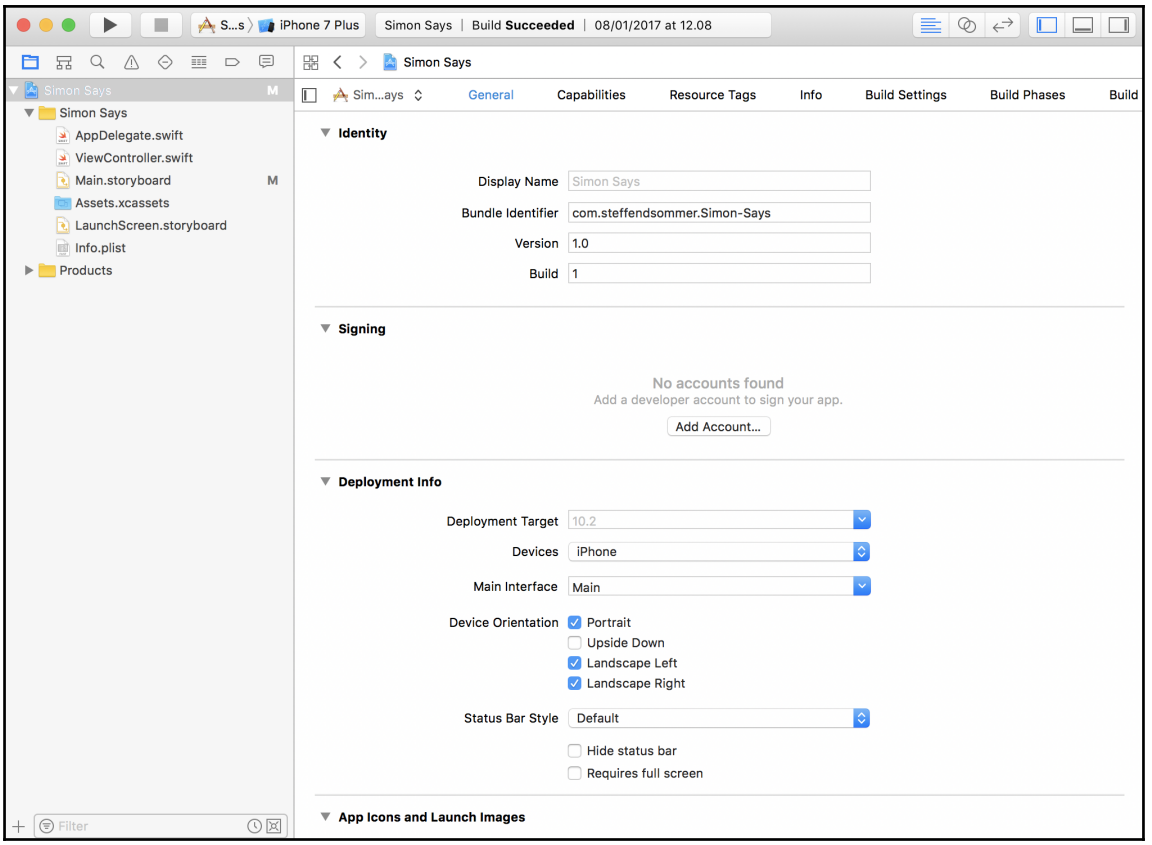

charizard
hp: 78
attack: 84
defense: 78
pikachu
hp: 35
attack: 55
defense: 40
charizard.attack(pokemon: pikachu)
func attack(pokemon: Pokemon) {
if attack > pokemon.defense {
let damage = attack - pokemon.defense
pokemon.hp = pokemon.hp - damage
}
}

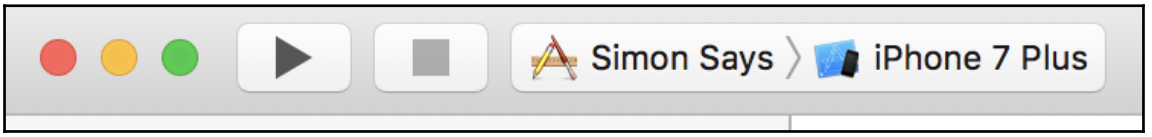

func attack(pokemon: Pokemon) {
if 84 > 40 {
let damage = 84 - 40
// 44 = 84 - 40
pokemon.hp = 35 - damage
// -9 = 35 - 44
}
}

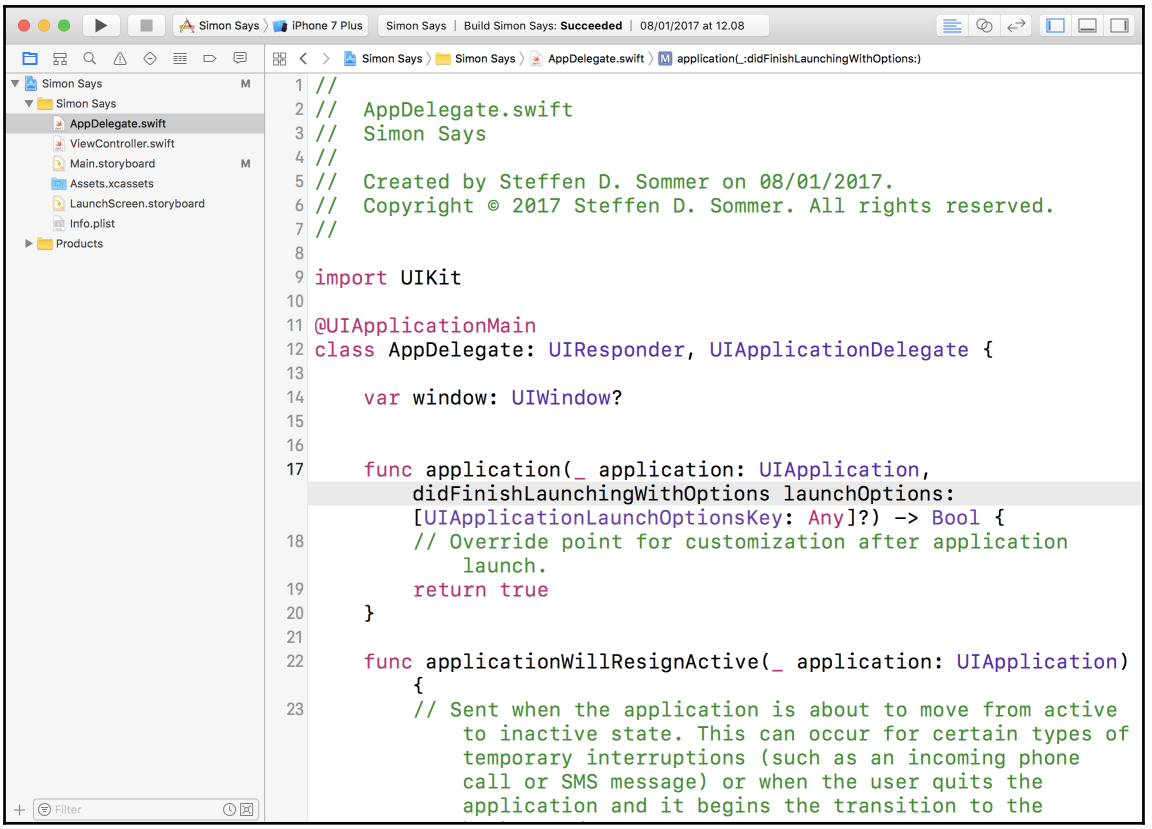
Chapter 11: Simon Says

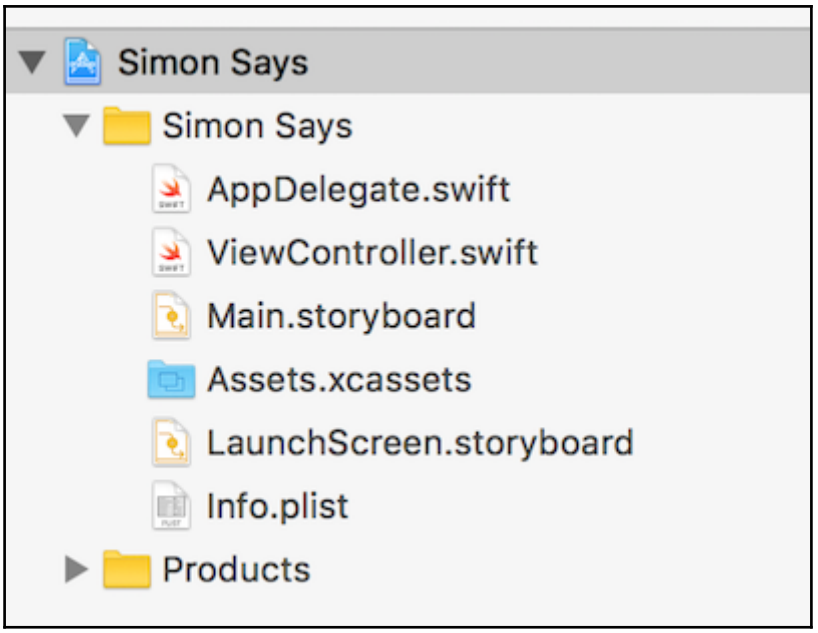

Choose a template for your new project:
iOS
watchOS
tvOS
macOS
Cross-platform
Filter
Application
Single View Application
Game
Master-Detail Application
Page-Based Application
Tabbed Application
Sticker Pack Application
iMessage Application
Framework & Library
Cocoa Touch Framework
Cocoa Touch Static Library
Metal Library
Cancel
Previous
Next

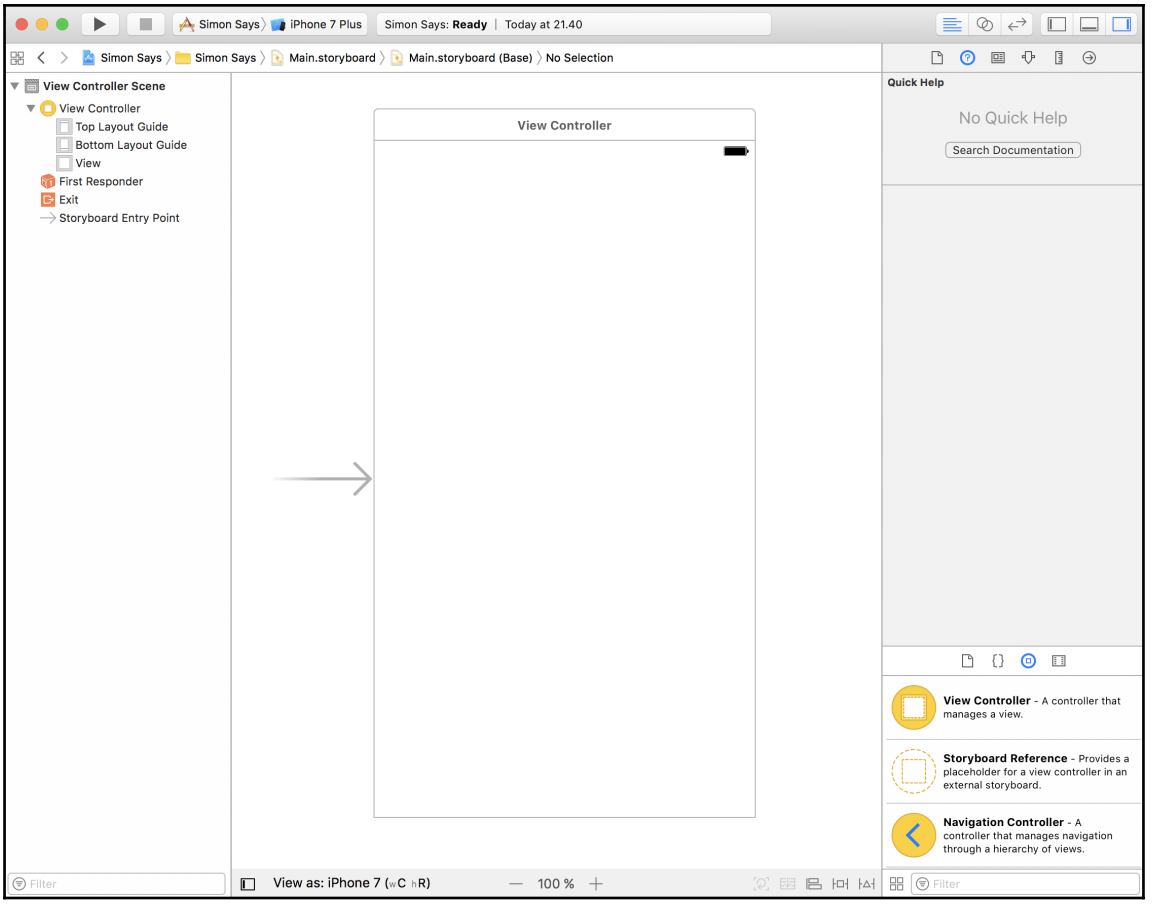

Choose options for your new project:
Product Name: Simon Says
Team: None
Organization Name: Steffen D. Sommer
Organization Identifier: com.steffendsommer
Bundle Identifier: com.steffendsommer.Simon-Says
Language: Swift
Devices: iPhone
Use Core Data
Include Unit Tests
Include UI Tests
Cancel
Previous
Next

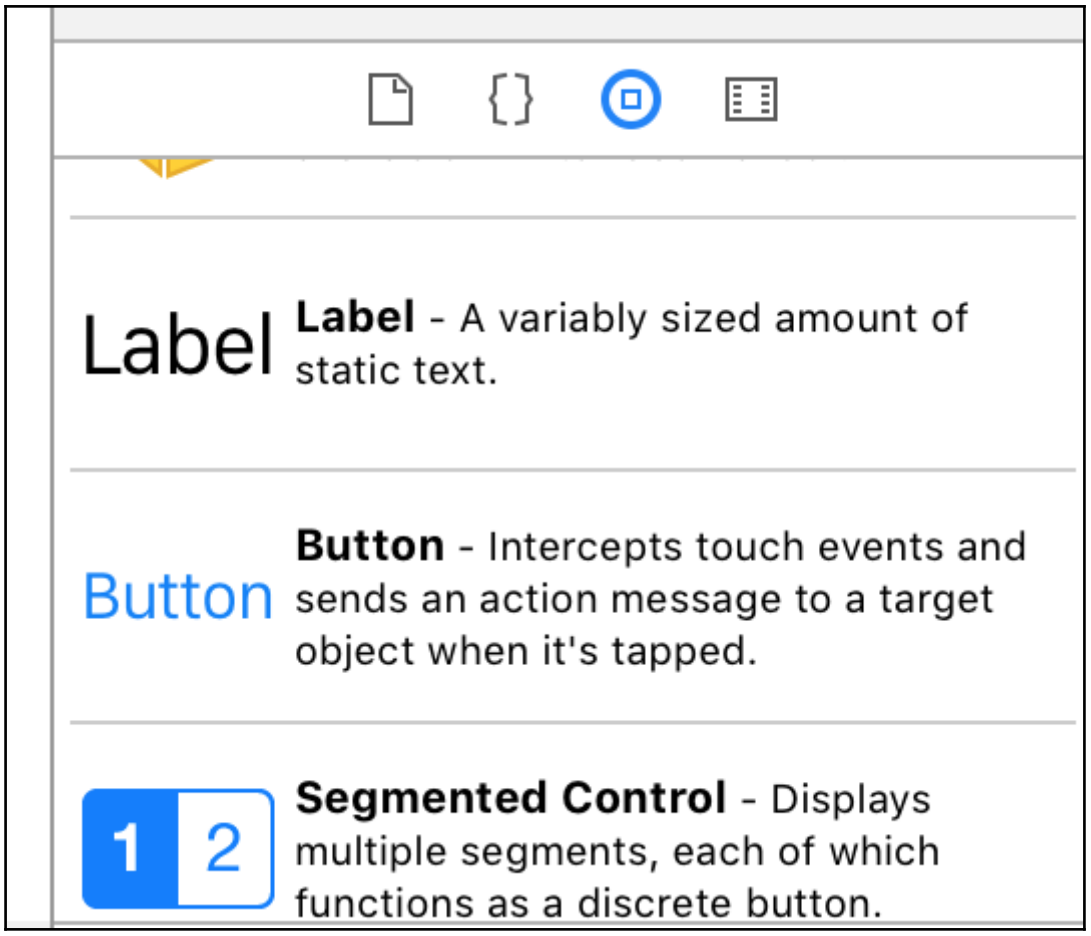

S...s
iPhone 7 Plus
Simon Says | Build Succeeded | 08/01/2017 at 12.08
Simon Says
Simon Says
AppDelegate.swift
ViewController.swift
Main.storyboard
Assets.xcassets
LaunchScreen.storyboard
Info.plist
Products
Filter
Sim...ays
General
Capabilities
Resource Tags
Info
Build Settings
Build Phases
Build
Identity
Display Name
Simon Says
Bundle Identifier
com.steffendsommer.Simon-Says
Version
1.0
Build
1
Signing
No accounts found
Add a developer account to sign your app.
Add Account...
Deployment Info
Deployment Target
10.2
Devices
iPhone
Main Interface
Main
Device Orientation
Portrait
Upside Down
Landscape Left
Landscape Right
Status Bar Style
Default
Hide status bar
Requires full screen
App Icons and Launch Images

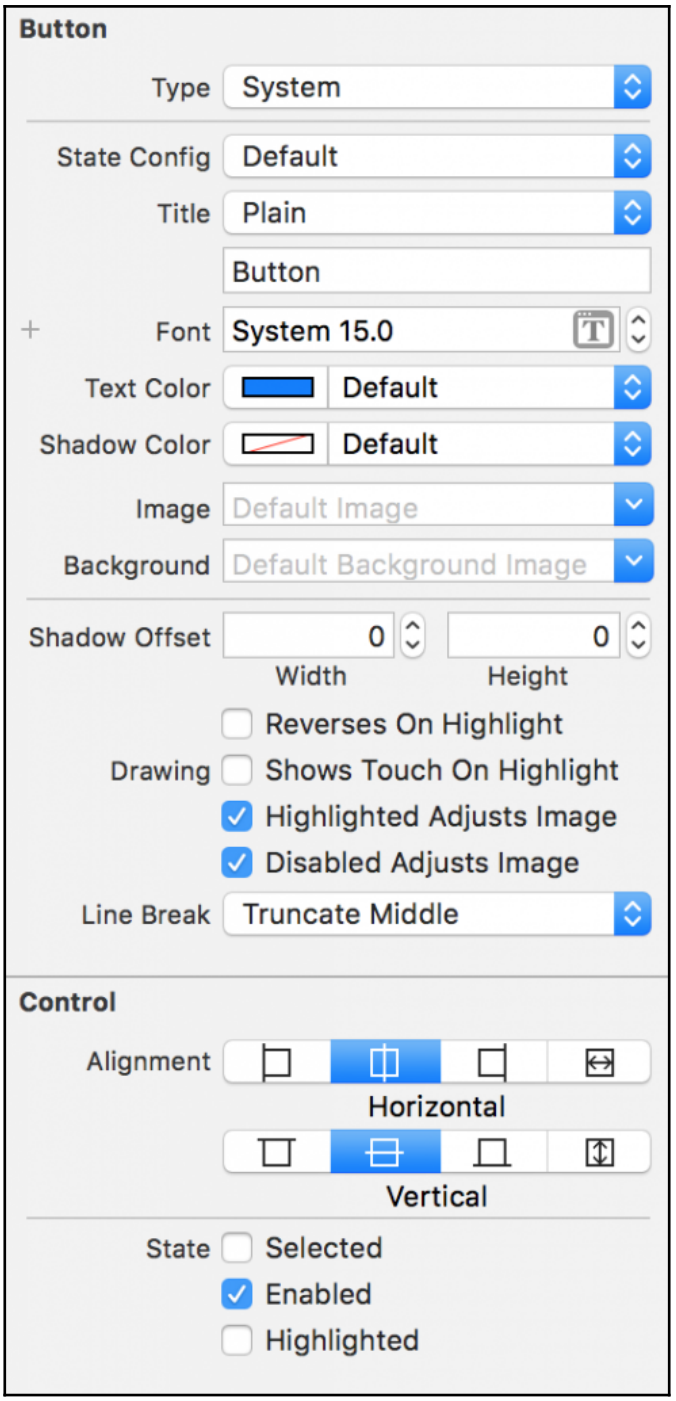

Simon Says
iPhone 7 Plus

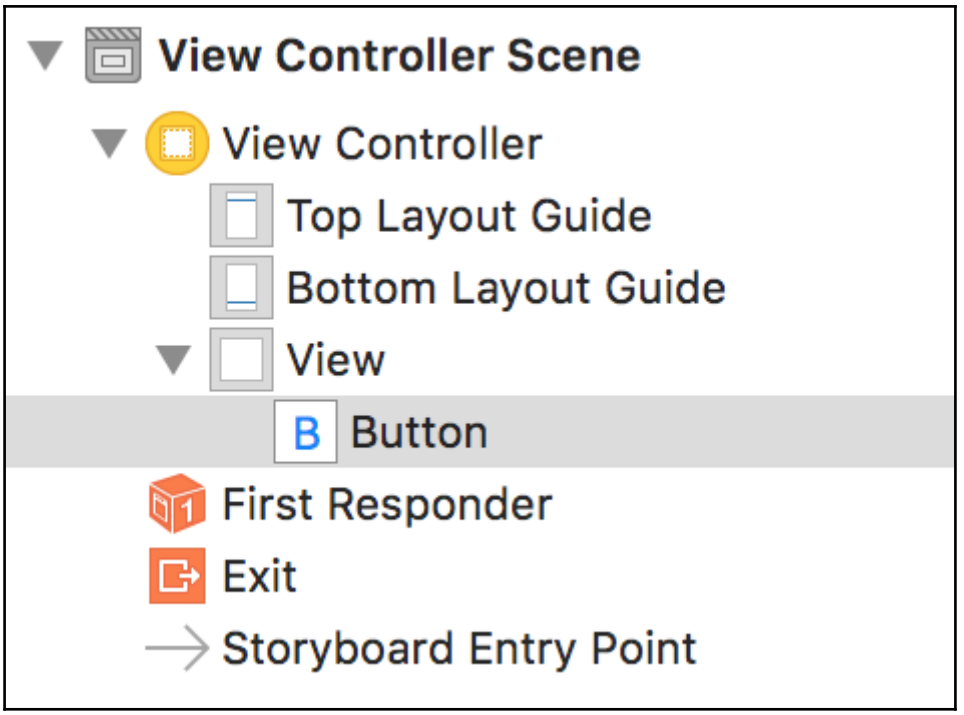

Simon Says
iPhone 7 Plus
Simon Says | Build Simon Says: Succeeded | 08/01/2017 at 12.08
Simon Says
Simon Says
AppDelegate.swift
ViewController.swift
Main.storyboard
Assets.xcassets
LaunchScreen.storyboard
Info.plist
Products
Simon Says
Simon Says
AppDelegate.swift
application(_:didFinishLaunchingWithOptions:)
//
// AppDelegate.swift
// Simon Says
//
// Created by Steffen D. Sommer on 08/01/2017.
// Copyright © 2017 Steffen D. Sommer. All rights reserved.
//
import UIKit
@UIApplicationMain
class AppDelegate: UIResponder, UIApplicationDelegate {
var window: UIWindow?
func application(_ application: UIApplication,
didFinishLaunchingWithOptions launchOptions:
[UIApplicationLaunchOptionsKey: Any]?) -> Bool {
// Override point for customization after application
launch.
return true
}
func applicationWillResignActive(_ application: UIApplication)
{
// Sent when the application is about to move from active
to inactive state. This can occur for certain types of
temporary interruptions (such as an incoming phone
call or SMS message) or when the user quits the
application and it begins the transition to the

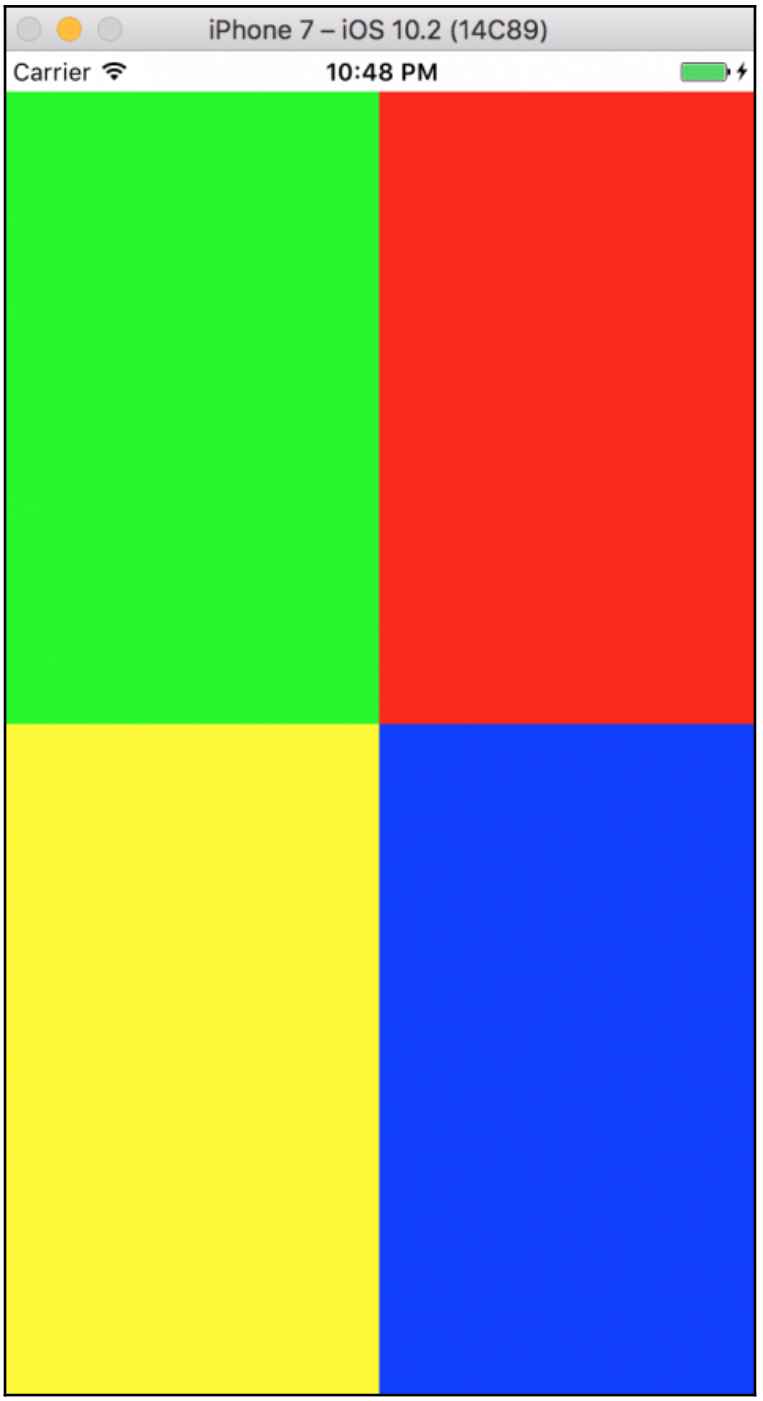

Simon Says
Simon Says
AppDelegate.swift
ViewController.swift
Main.storyboard
Assets.xcassets
LaunchScreen.storyboard
Info.plist
Products

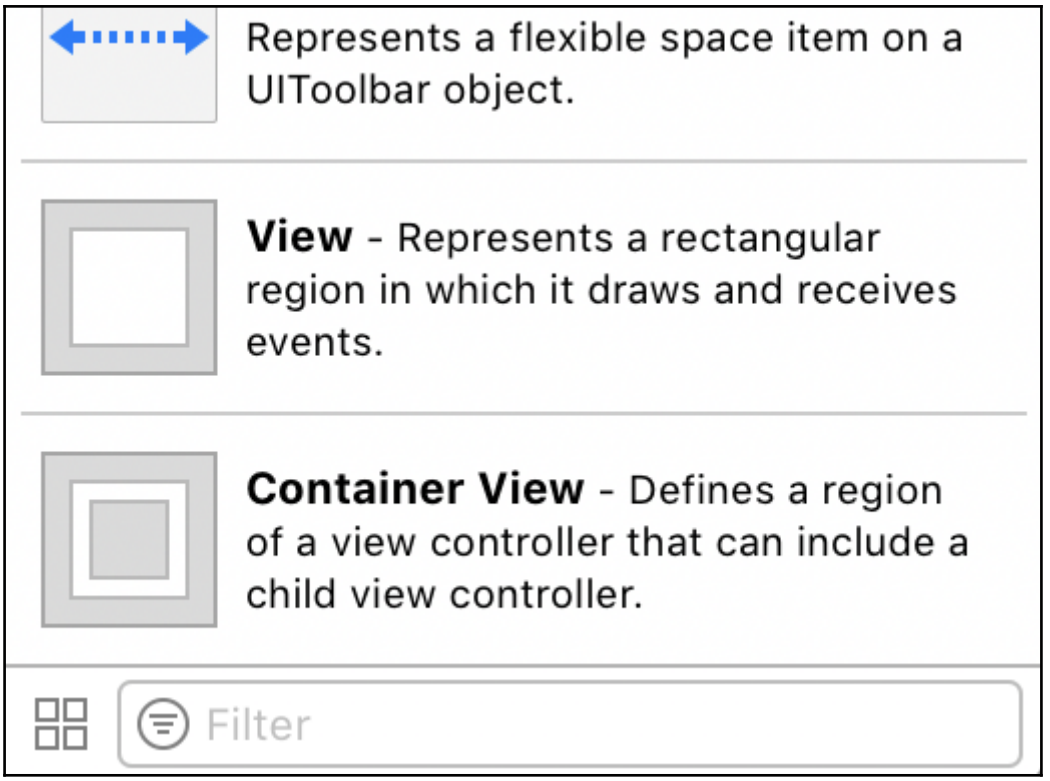

Simon Says
iPhone 7 Plus
Simon Says: Ready | Today at 21.40
Simon Says
Simon Says
Main.storyboard
Main.storyboard (Base)
No Selection
View Controller Scene
View Controller
Top Layout Guide
Bottom Layout Guide
View
First Responder
Exit
Storyboard Entry Point
View Controller
Quick Help
No Quick Help
Search Documentation
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.
Filter
View as: iPhone 7 (wC hR)
100 %
Filter

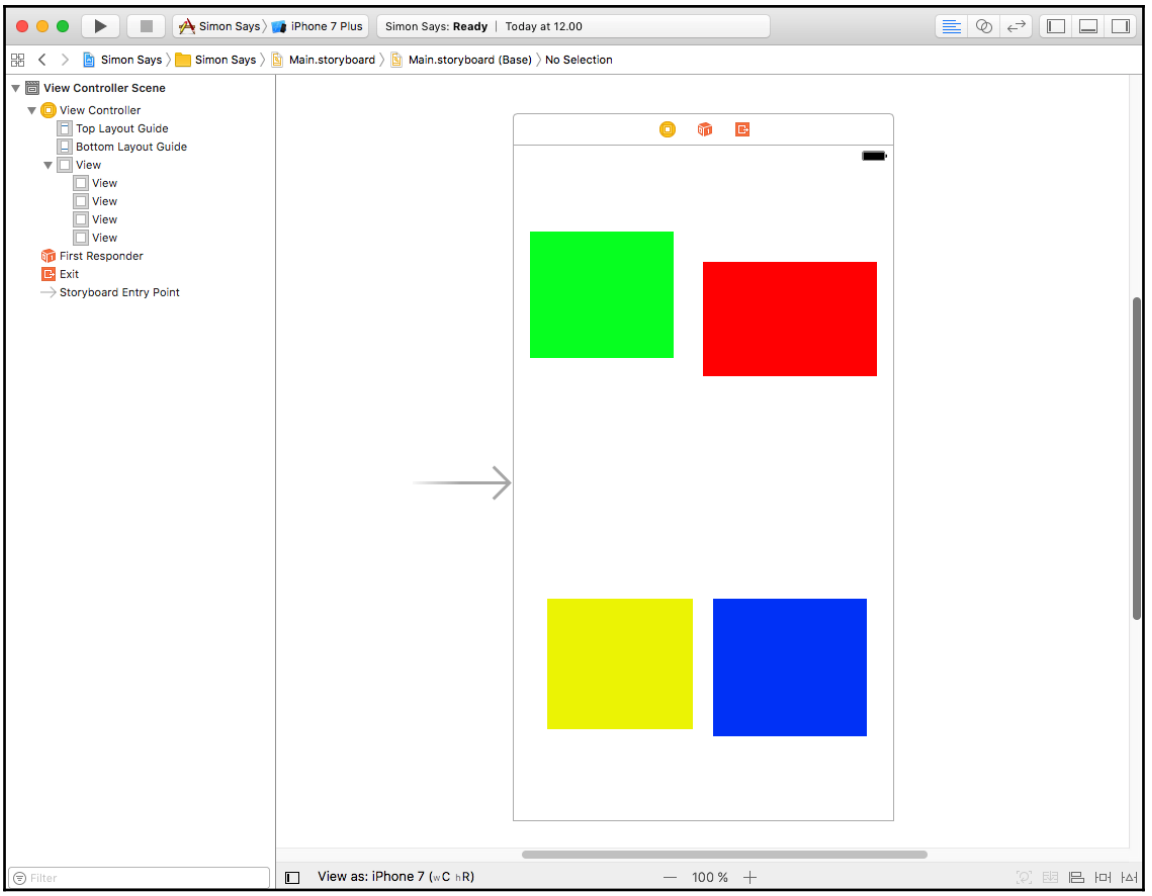

Label
Label - A variably sized amount of static text.
Button
Button - Intercepts touch events and sends an action message to a target object when it's tapped.
1
2
Segmented Control - Displays multiple segments, each of which functions as a discrete button.

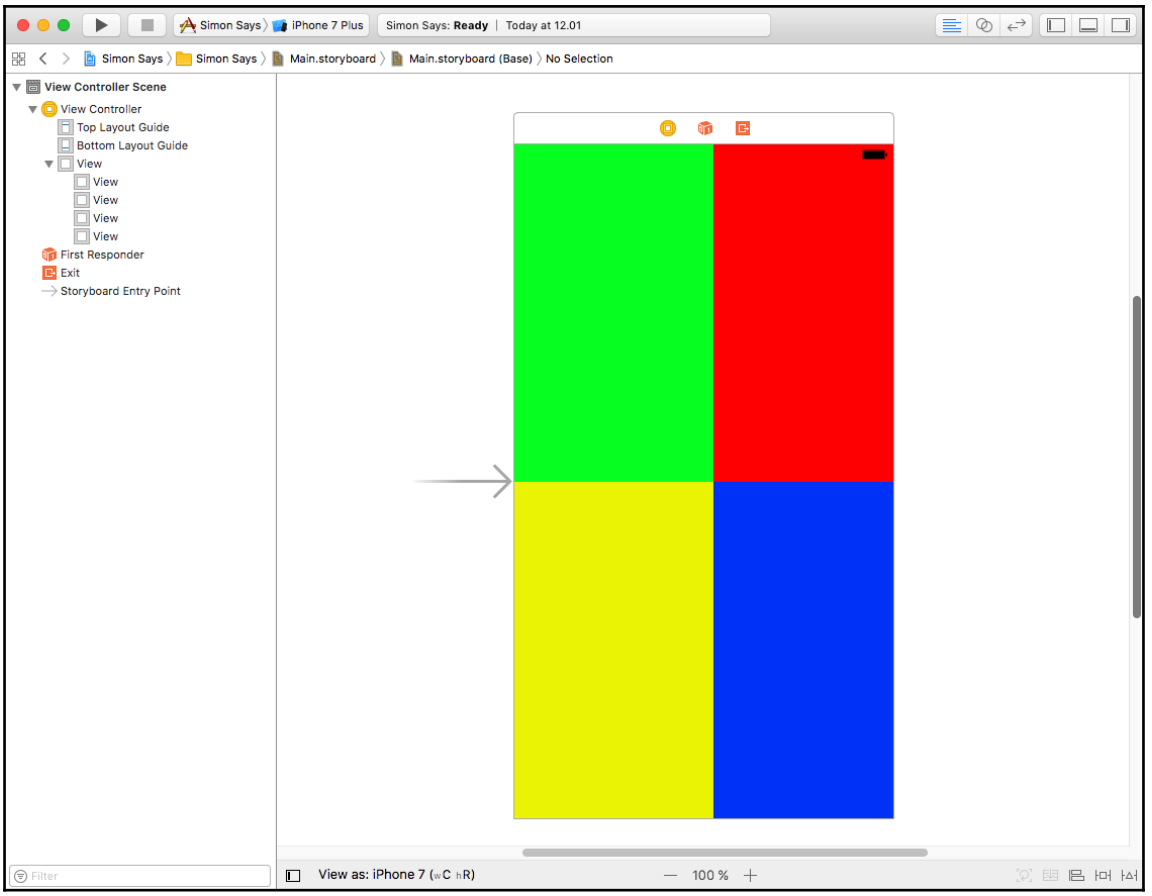

Button
Type
System
State Config
Default
Title
Plain
Button
Font
System 15.0
Text Color
Default
Shadow Color
Default
Image
Default Image
Background
Default Background Image
Shadow Offset
0
0
Width
Height
Reverses On Highlight
Drawing
Shows Touch On Highlight
Highlighted Adjusts Image
Disabled Adjusts Image
Line Break
Truncate Middle
Control
Alignment
Horizontal
Vertical
State
Selected
Enabled
Highlighted

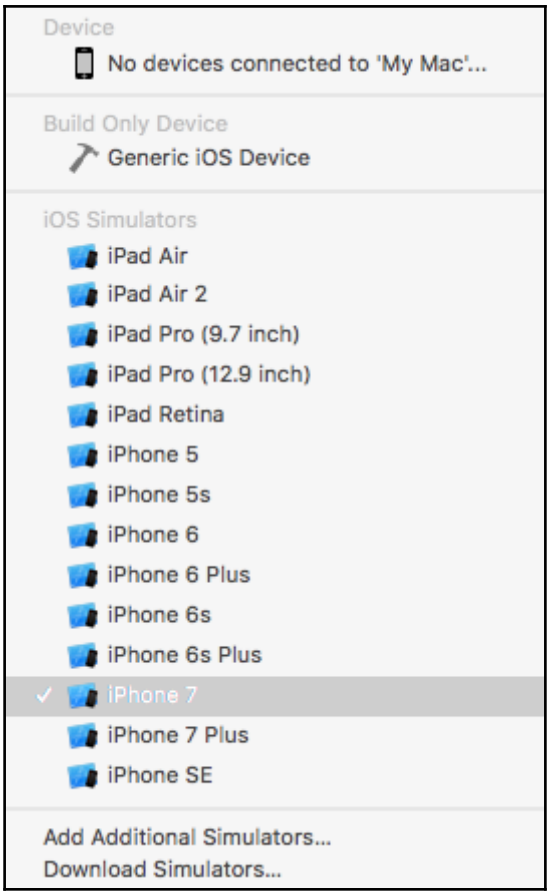

View Controller Scene
View Controller
Top Layout Guide
Bottom Layout Guide
View
Button
First Responder
Exit
Storyboard Entry Point

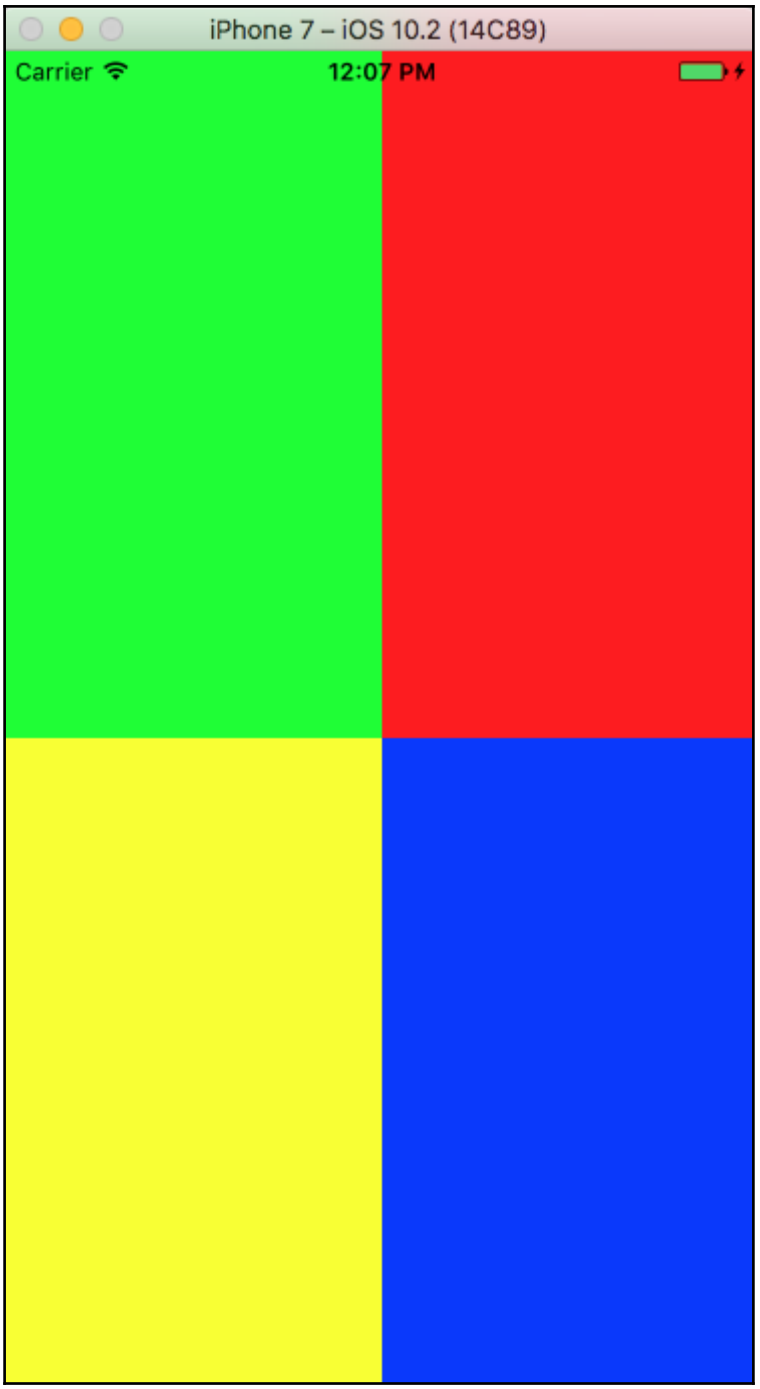

iPhone 7 – iOS 10.2 (14C89)
Carrier
10:48 PM

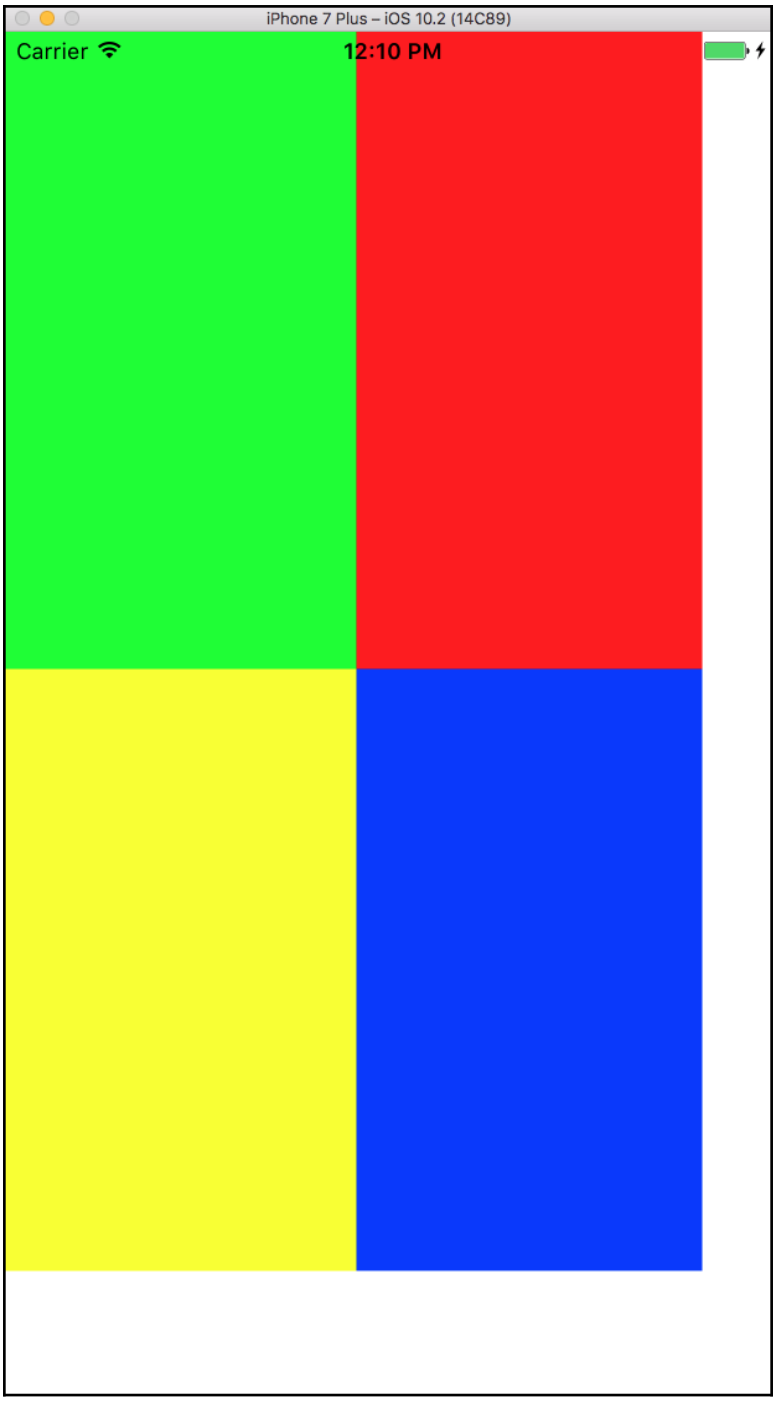

Represents a flexible space item on a UIToolbar object.
View - Represents a rectangular region in which it draws and receives events.
Container View - Defines a region of a view controller that can include a child view controller.
Filter

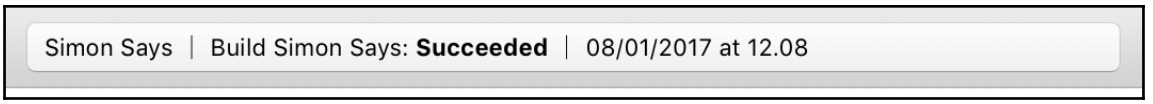

Simon Says
iPhone 7 Plus
Simon Says: Ready | Today at 12.00
Simon Says
Simon Says
Main.storyboard
Main.storyboard (Base)
No Selection
View Controller Scene
View Controller
Top Layout Guide
Bottom Layout Guide
View
View
View
View
View
First Responder
Exit
Storyboard Entry Point
Filter
View as: iPhone 7 (wC hR)
100 %


Simon Says
iPhone 7 Plus
Simon Says: Ready | Today at 12.01
Simon Says
Simon Says
Main.storyboard
Main.storyboard (Base)
No Selection
View Controller Scene
View Controller
Top Layout Guide
Bottom Layout Guide
View
View
View
View
View
First Responder
Exit
Storyboard Entry Point
Filter
View as: iPhone 7 (wC hR)
100 %

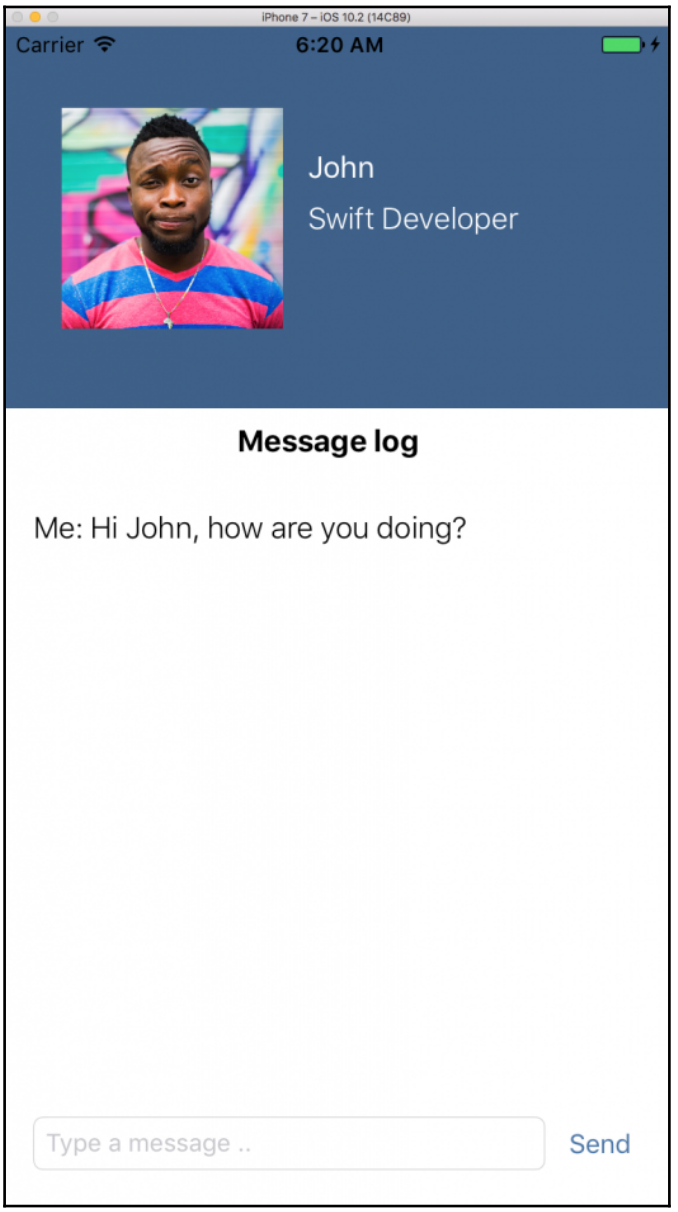

Device
No devices connected to 'My Mac'...
Build Only Device
Generic iOS Device
iOS Simulators
iPad Air
iPad Air 2
iPad Pro (9.7 inch)
iPad Pro (12.9 inch)
iPad Retina
iPhone 5
iPhone 5s
iPhone 6
iPhone 6 Plus
iPhone 6s
iPhone 6s Plus
iPhone 7
iPhone 7 Plus
iPhone SE
Add Additional Simulators...
Download Simulators...

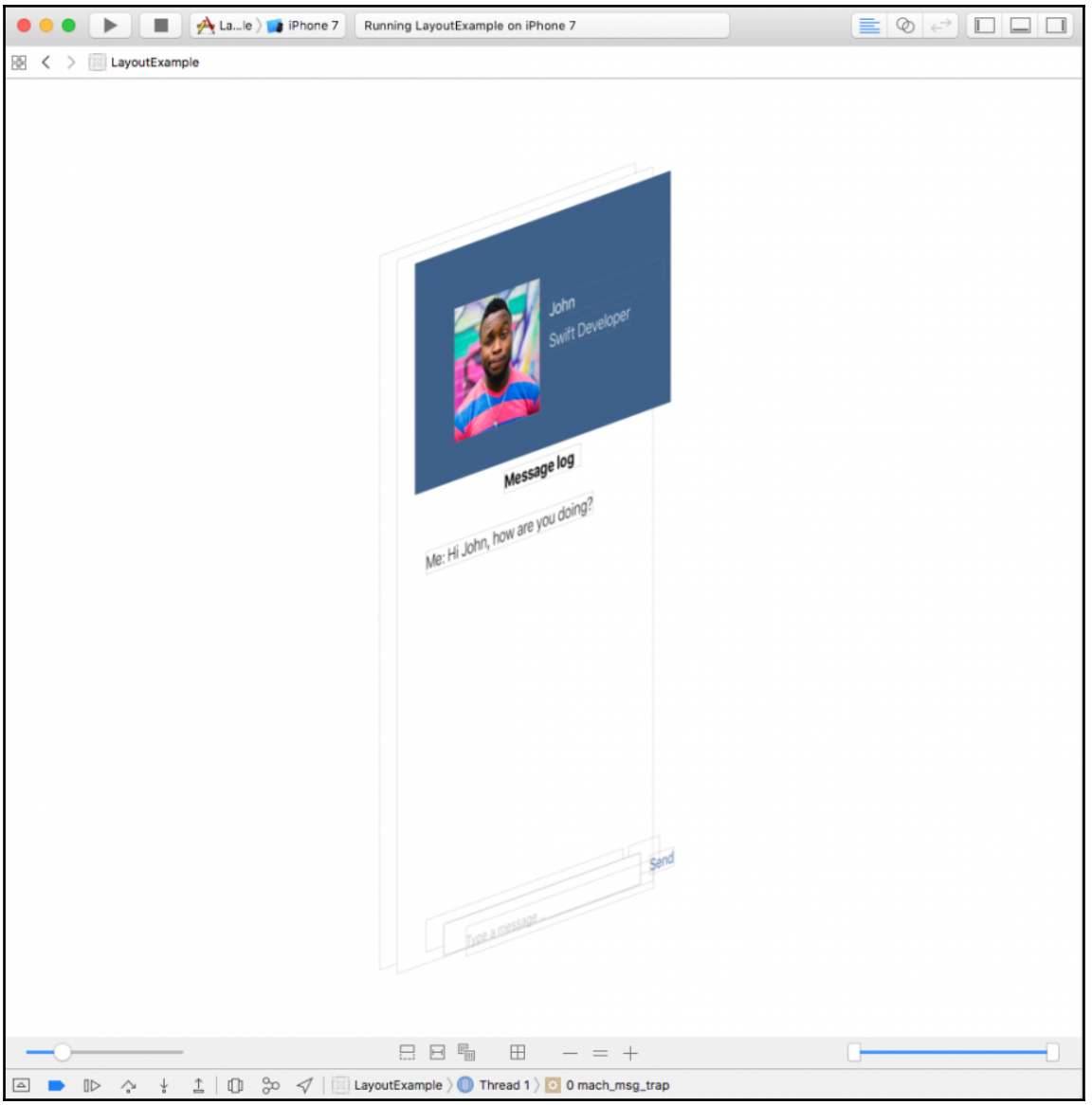

iPhone 7 – iOS 10.2 (14C89)
Carrier
12:07 PM

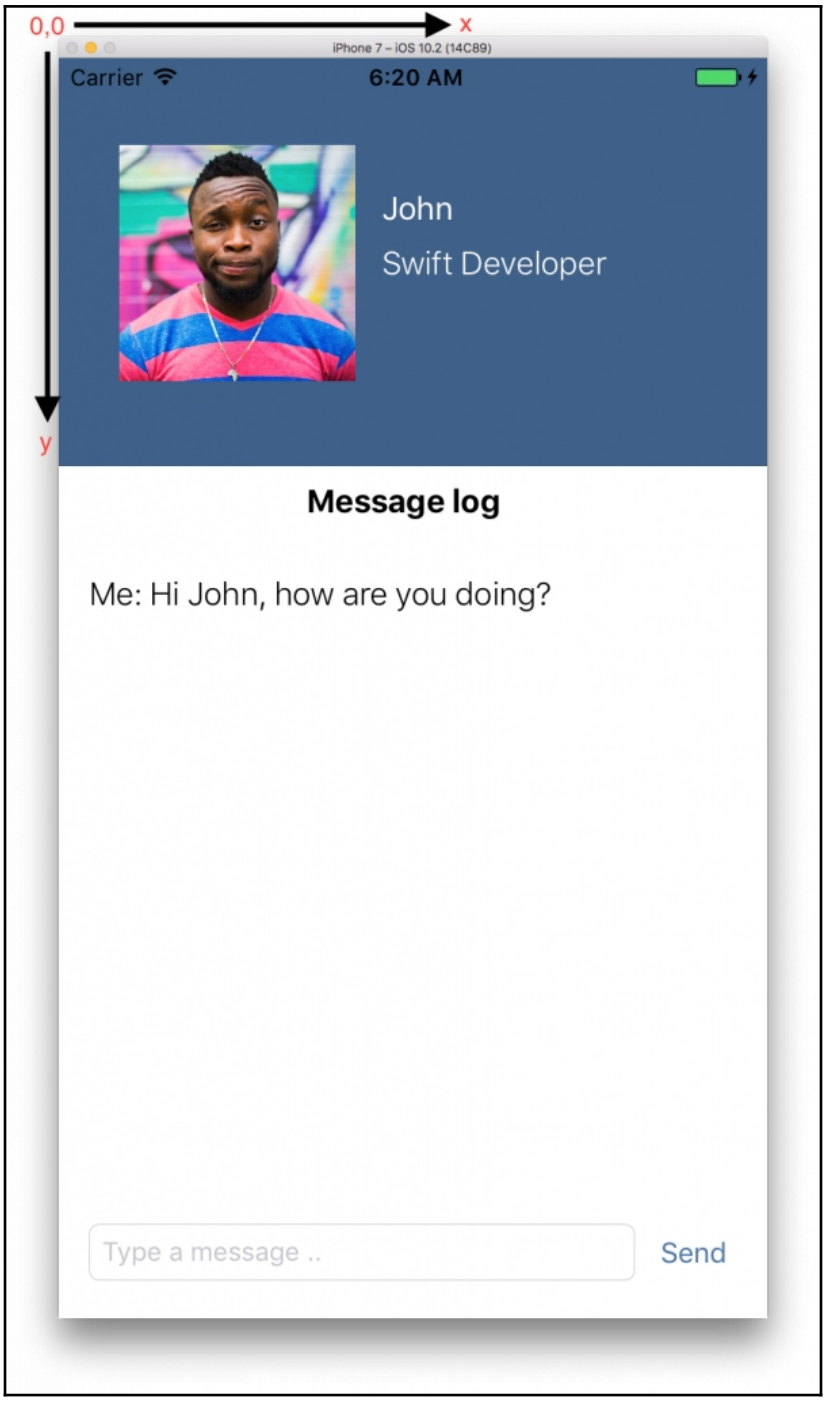

iPhone 7 Plus – iOS 10.2 (14C89)
Carrier
12:10 PM

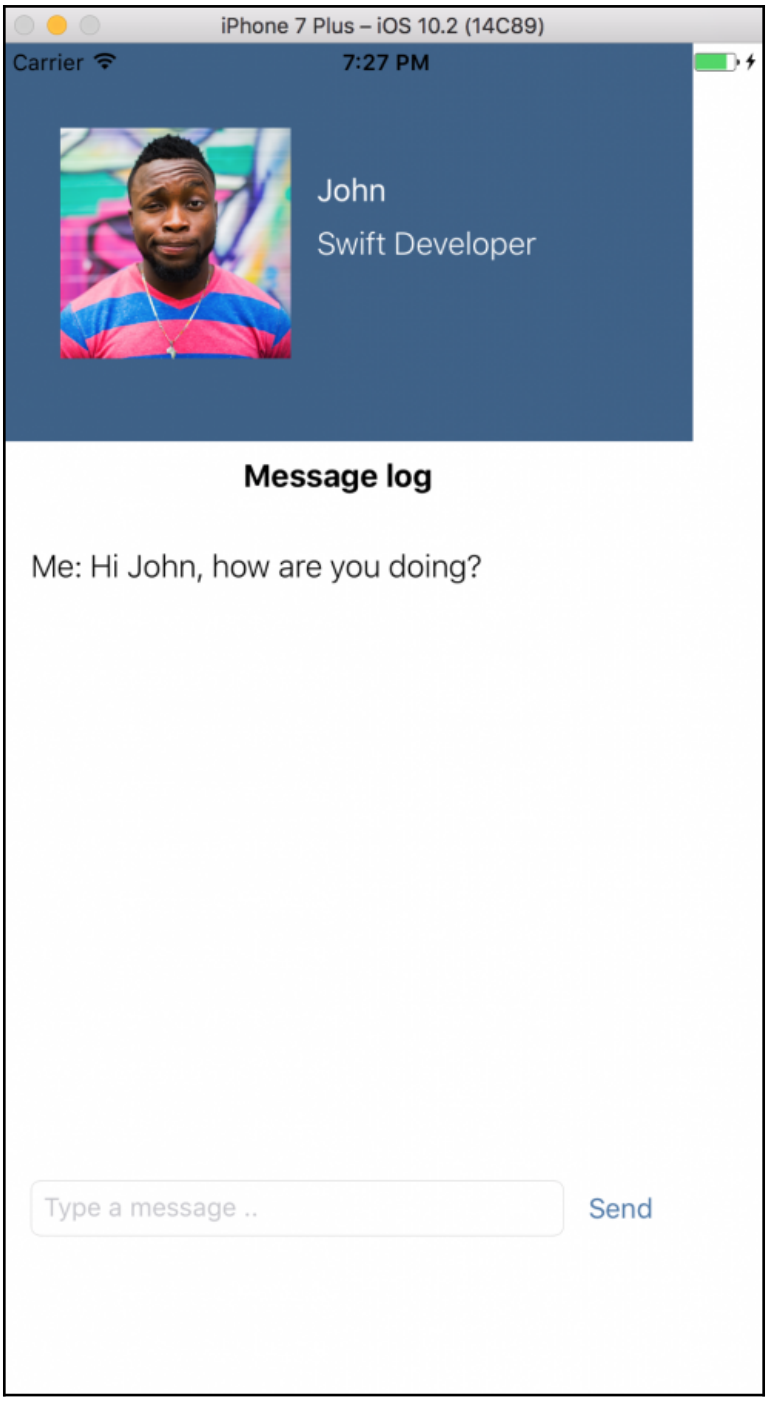

Simon Says | Build Simon Says: **Succeeded** | 08/01/2017 at 12.08

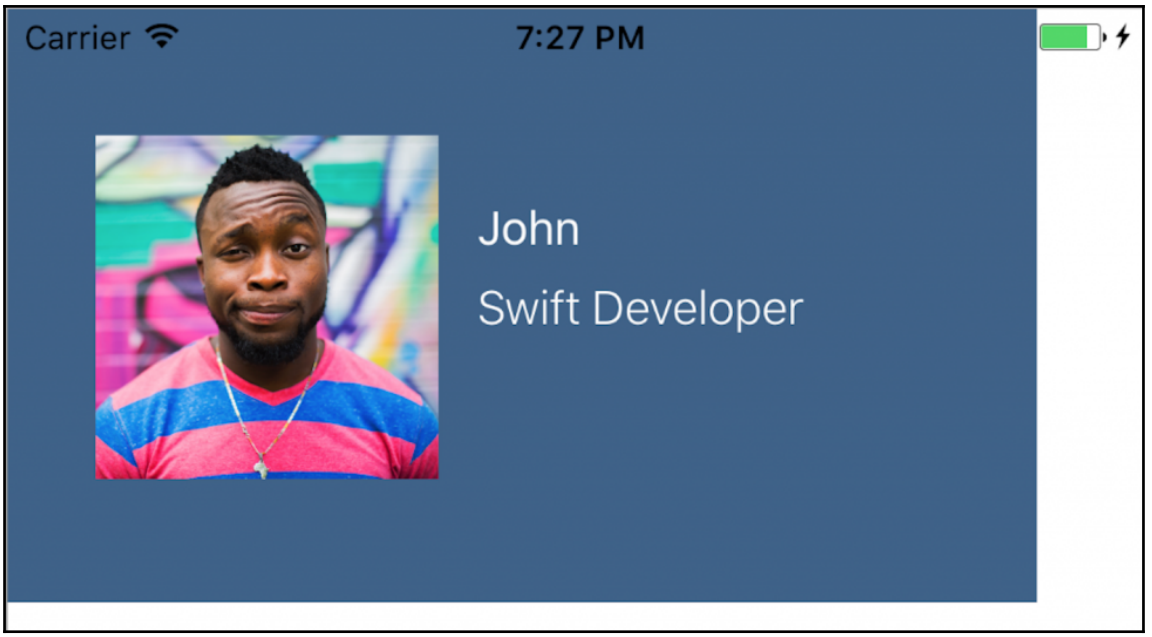
Chapter 12: Starry Night

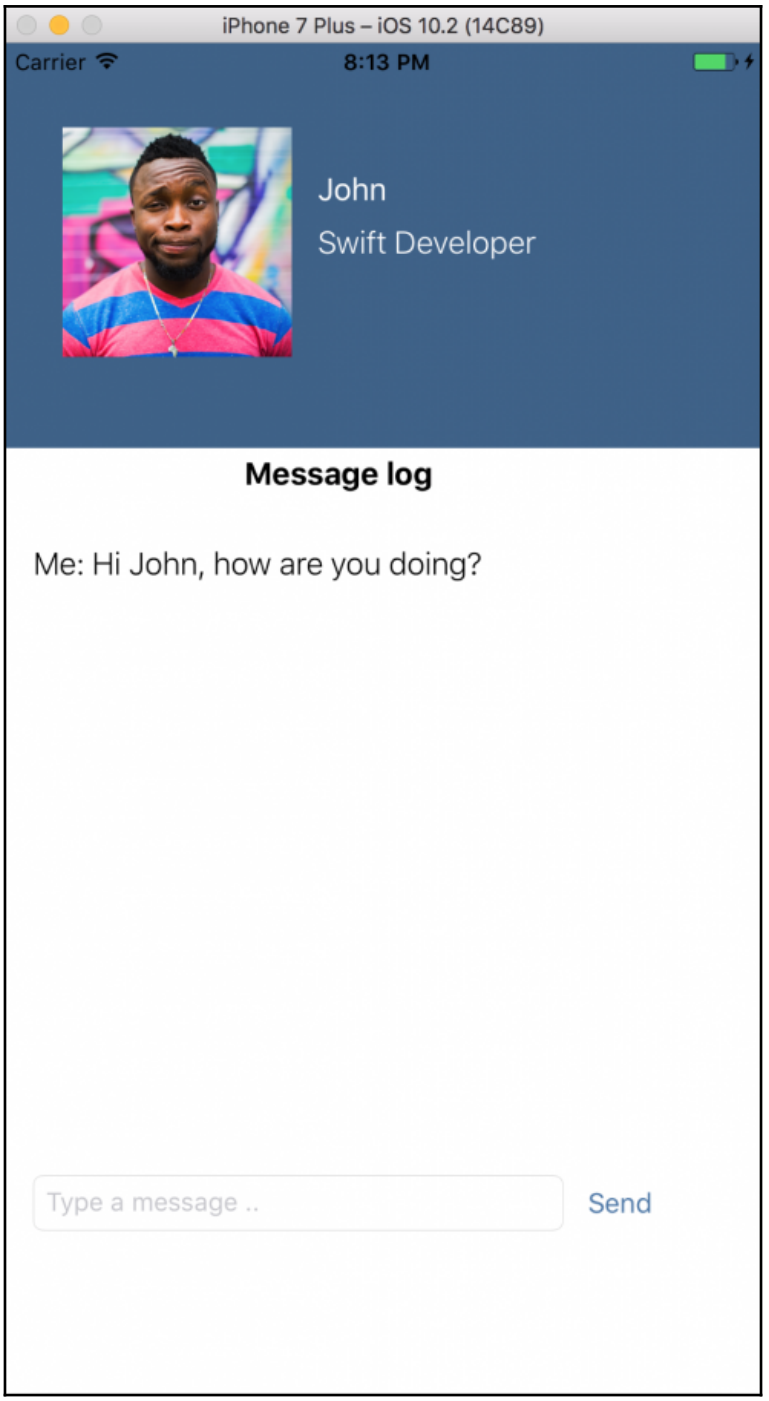


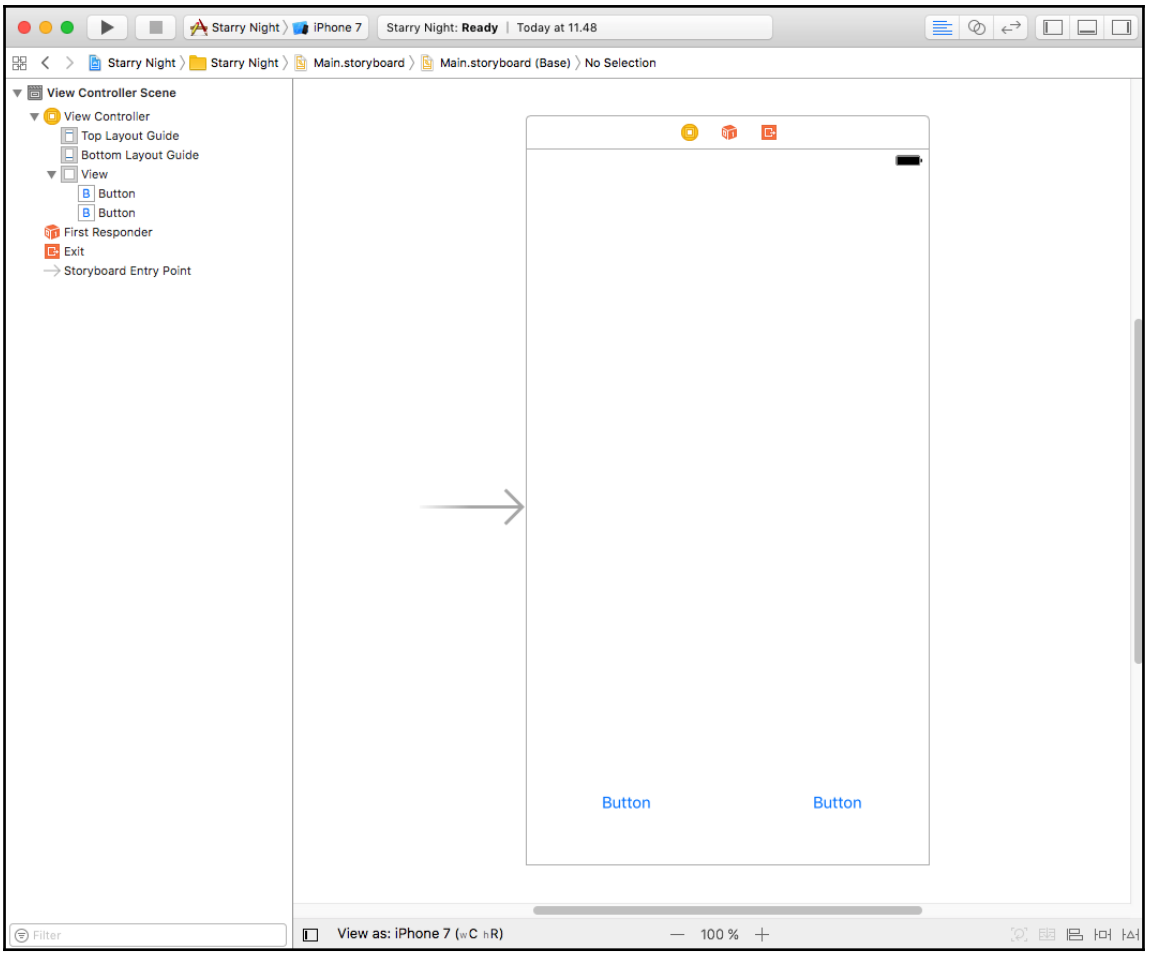

La...le
iPhone 7
Running LayoutExample on iPhone 7
LayoutExample
John
Swift Developer
Message log
Me: Hi John, how are you doing?
Send
Type a message...
LayoutExample
Thread 1
0 mach_msg_trap

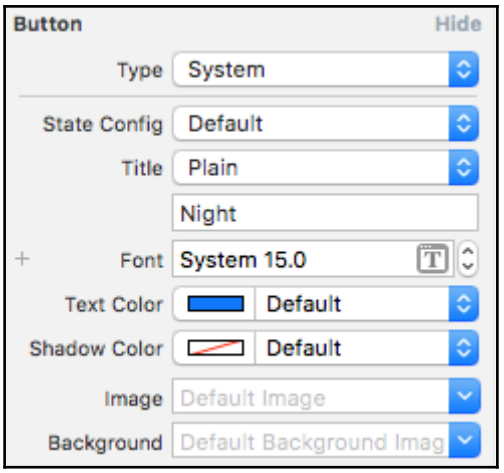

0,0
x
y
iPhone 7 – iOS 10.2 (14C89)
Carrier
6:20 AM
John
Swift Developer
Message log
Me: Hi John, how are you doing?
Type a message ..
Send

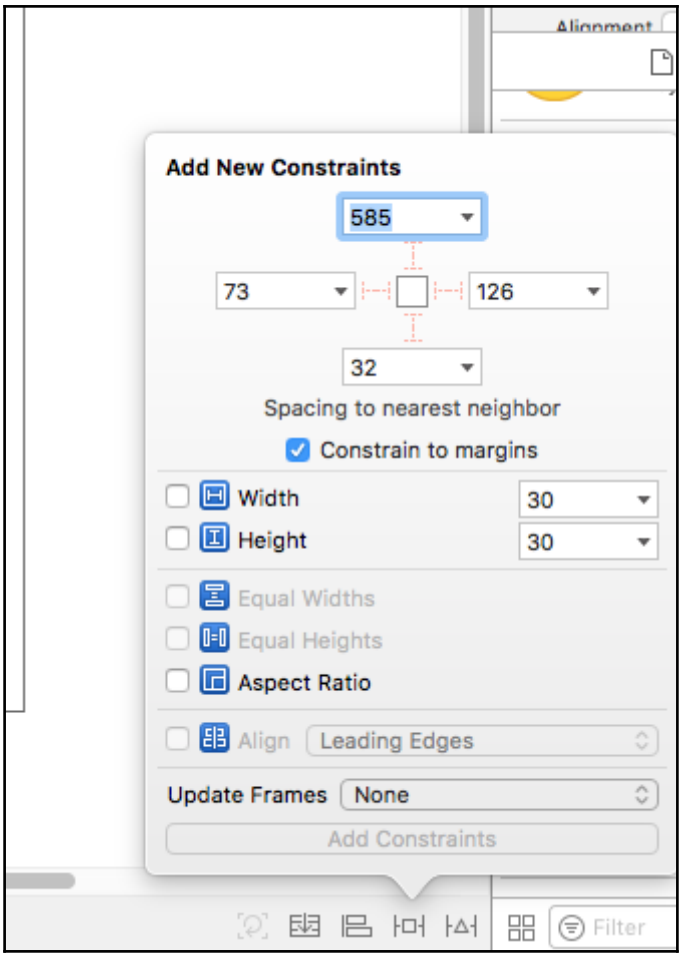

iPhone 7 Plus – iOS 10.2 (14C89)
Carrier
7:27 PM
John
Swift Developer
Message log
Me: Hi John, how are you doing?
Type a message ..
Send

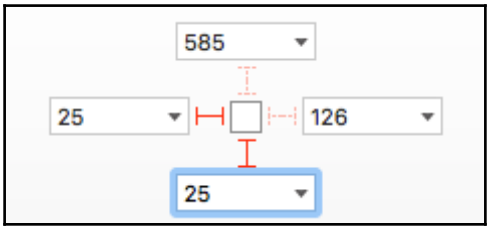

Carrier
7:27 PM
John
Swift Developer

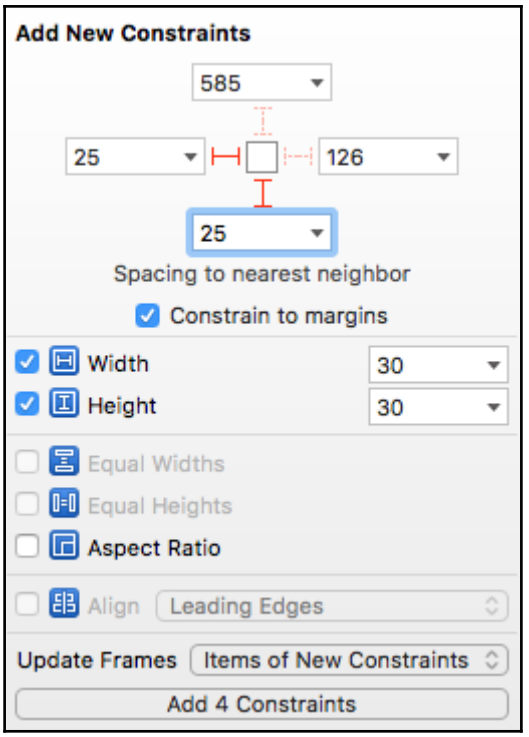

iPhone 7 Plus – iOS 10.2 (14C89)
Carrier
8:13 PM
John
Swift Developer
Message log
Me: Hi John, how are you doing?
Type a message ..
Send

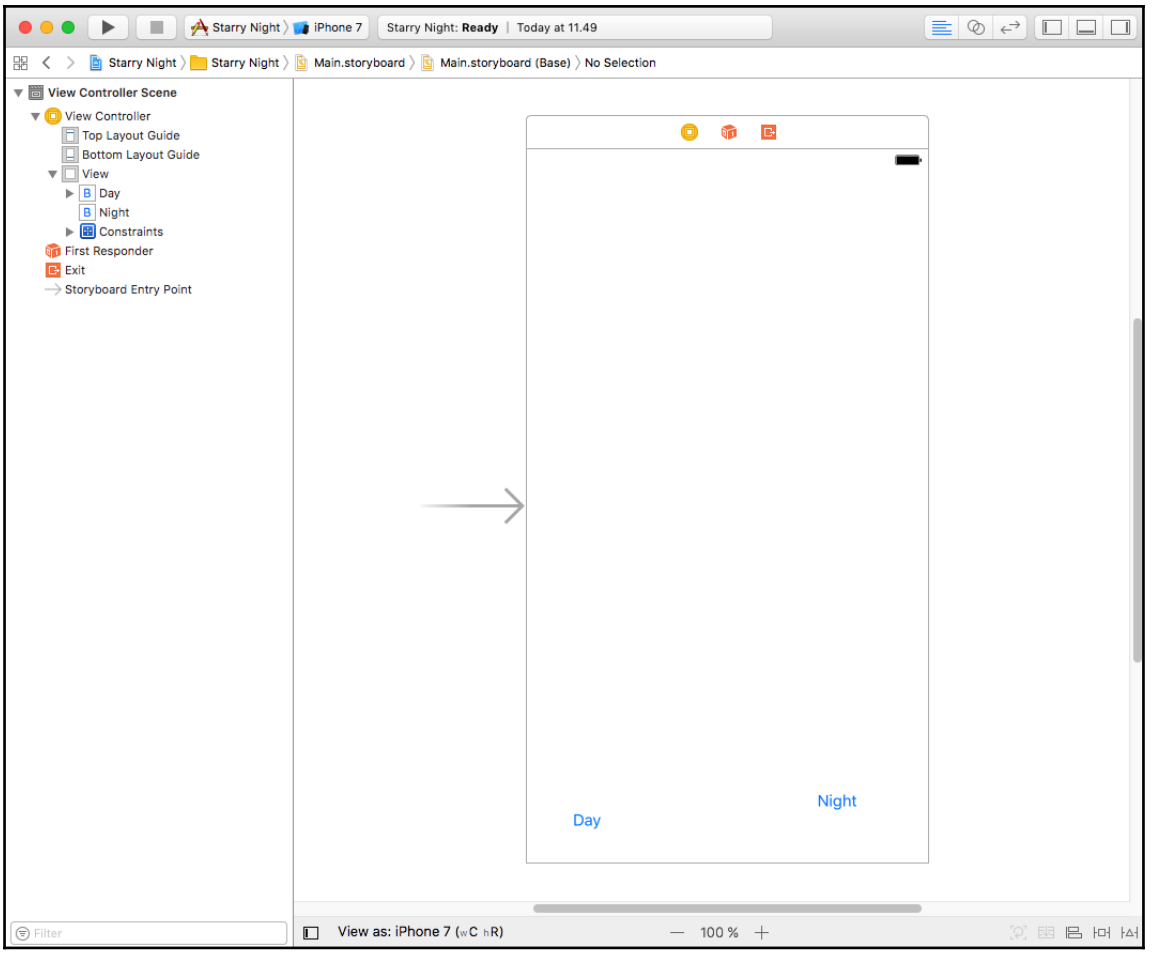

Starry Night
iPhone 7
Starry Night: Ready | Today at 11.48
Starry Night
Starry Night
Main.storyboard
Main.storyboard (Base)
No Selection
View Controller Scene
View Controller
Top Layout Guide
Bottom Layout Guide
View
Button
Button
First Responder
Exit
Storyboard Entry Point
Button
Button
Filter
View as: iPhone 7 (wC hR)
100 %

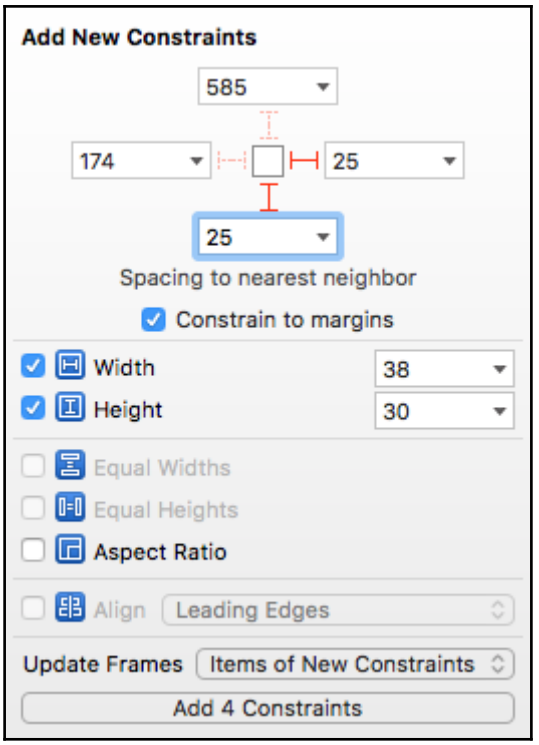

Button
Hide
Type
System
State Config
Default
Title
Plain
Night
Font
System 15.0
Text Color
Default
Shadow Color
Default
Image
Default Image
Background
Default Background Imag

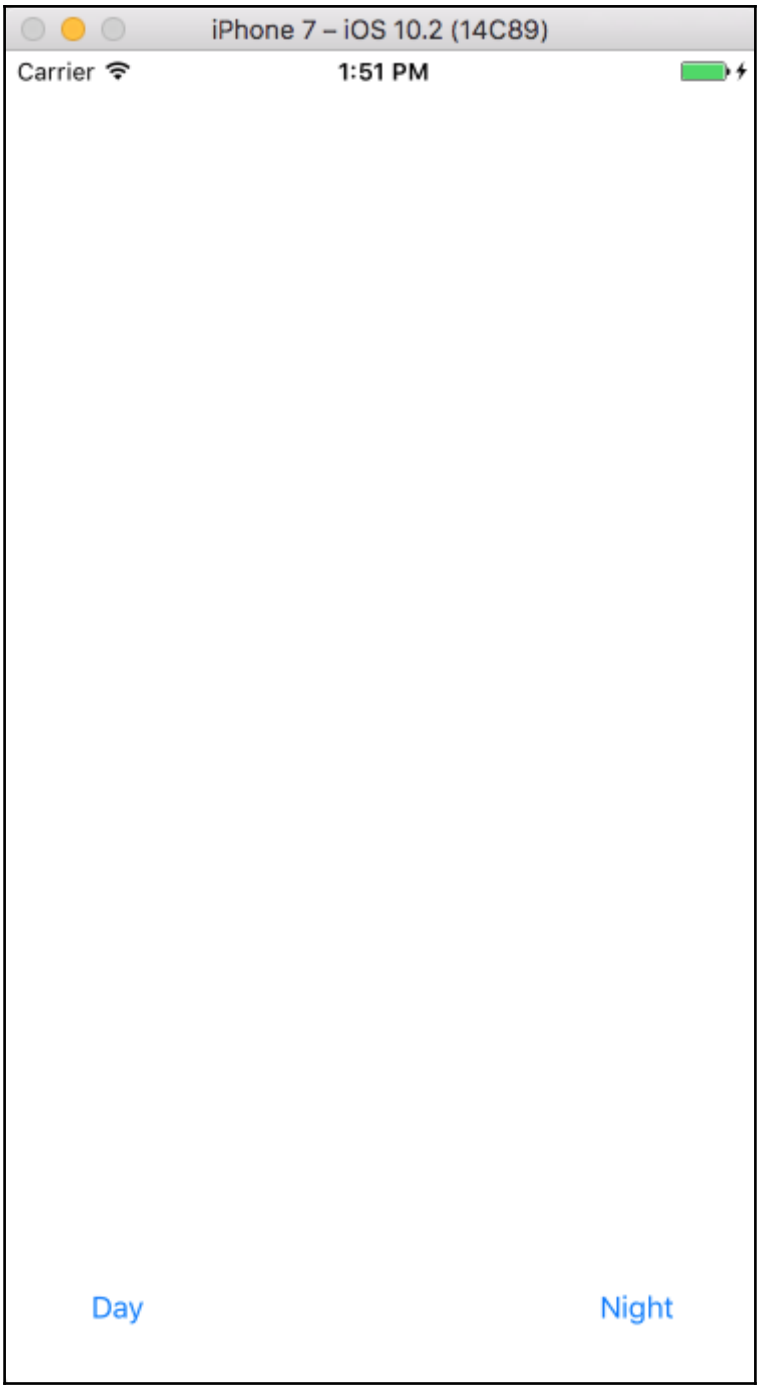

Add New Constraints
585
73
126
32
Spacing to nearest neighbor
Constrain to margins
Width
30
Height
30
Equal Widths
Equal Heights
Aspect Ratio
Align
Leading Edges
Update Frames
None
Add Constraints
Filter


585
25
126
25

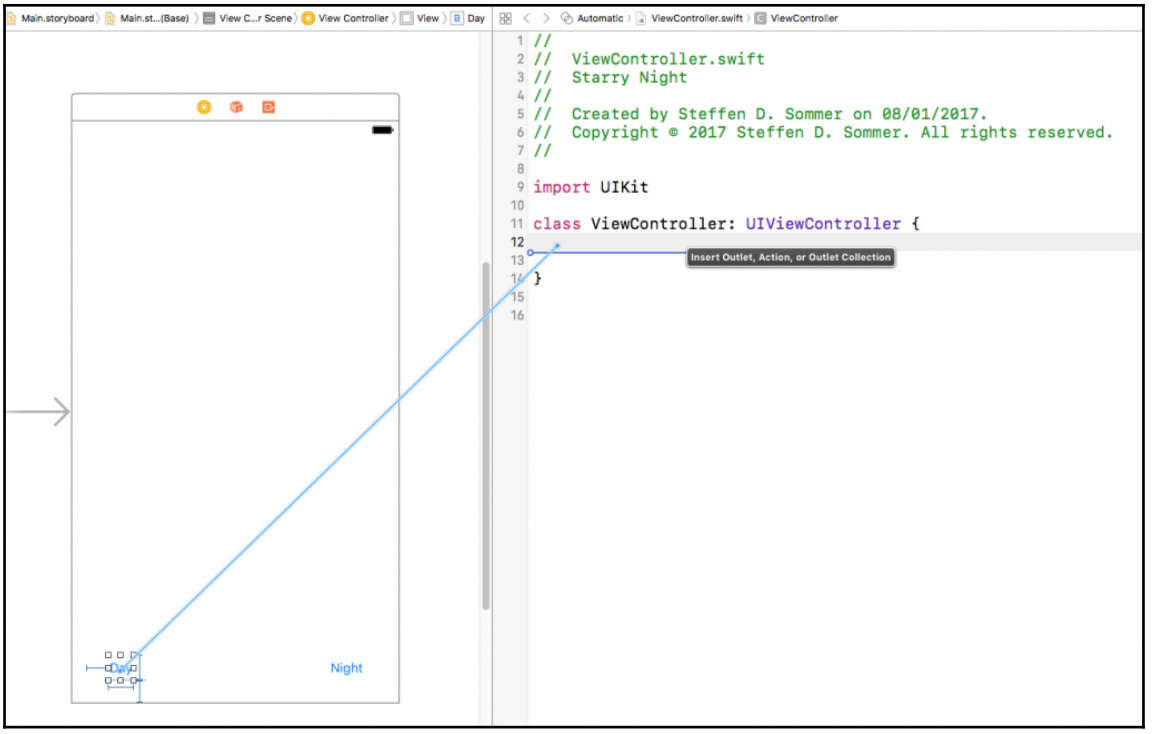

Add New Constraints
585
25
126
25
Spacing to nearest neighbor
Constrain to margins
Width
30
Height
30
Equal Widths
Equal Heights
Aspect Ratio
Align
Leading Edges
Update Frames
Items of New Constraints
Add 4 Constraints

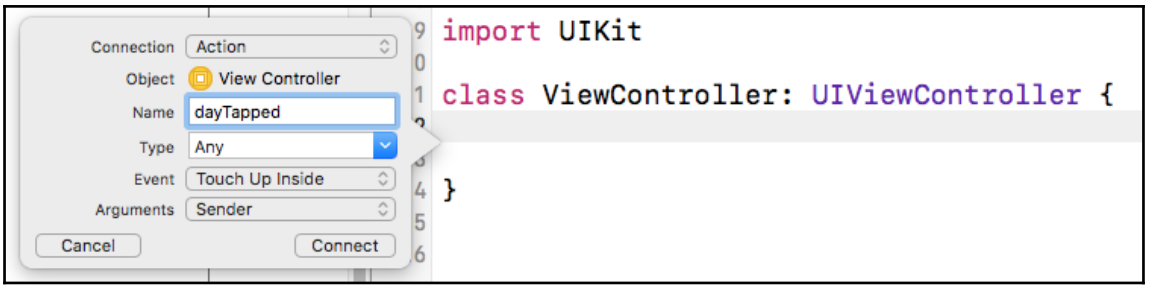

Starry Night
iPhone 7
Starry Night: Ready | Today at 11.49
Starry Night
Starry Night
Main.storyboard
Main.storyboard (Base)
No Selection
View Controller Scene
View Controller
Top Layout Guide
Bottom Layout Guide
View
Day
Night
Constraints
First Responder
Exit
Storyboard Entry Point
Night
Day
Filter
View as: iPhone 7 (wC hR)
100 %

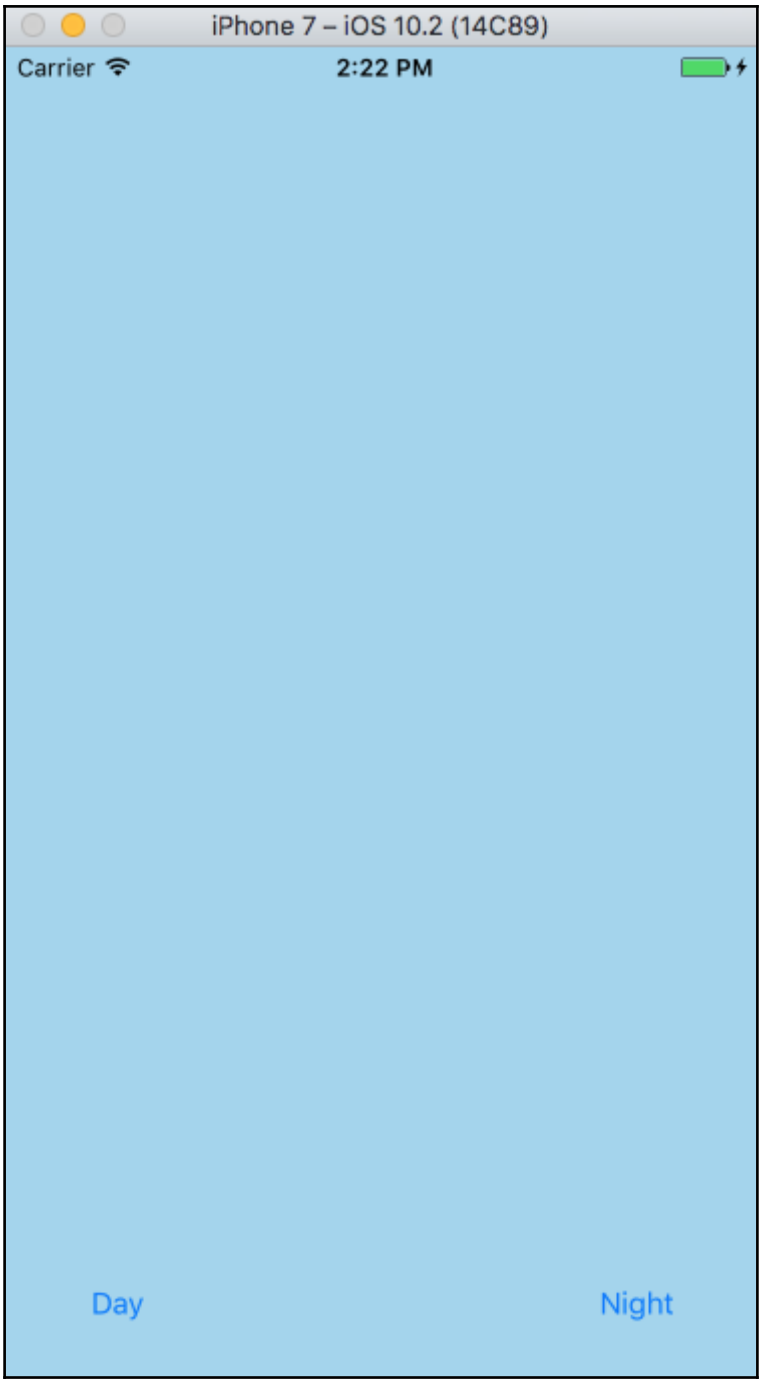

Add New Constraints
585
174
25
25
Spacing to nearest neighbor
Constrain to margins
Width
38
Height
30
Equal Widths
Equal Heights
Aspect Ratio
Align
Leading Edges
Update Frames
Items of New Constraints
Add 4 Constraints


iPhone 7 – iOS 10.2 (14C89)
Carrier
1:51 PM
Day
Night

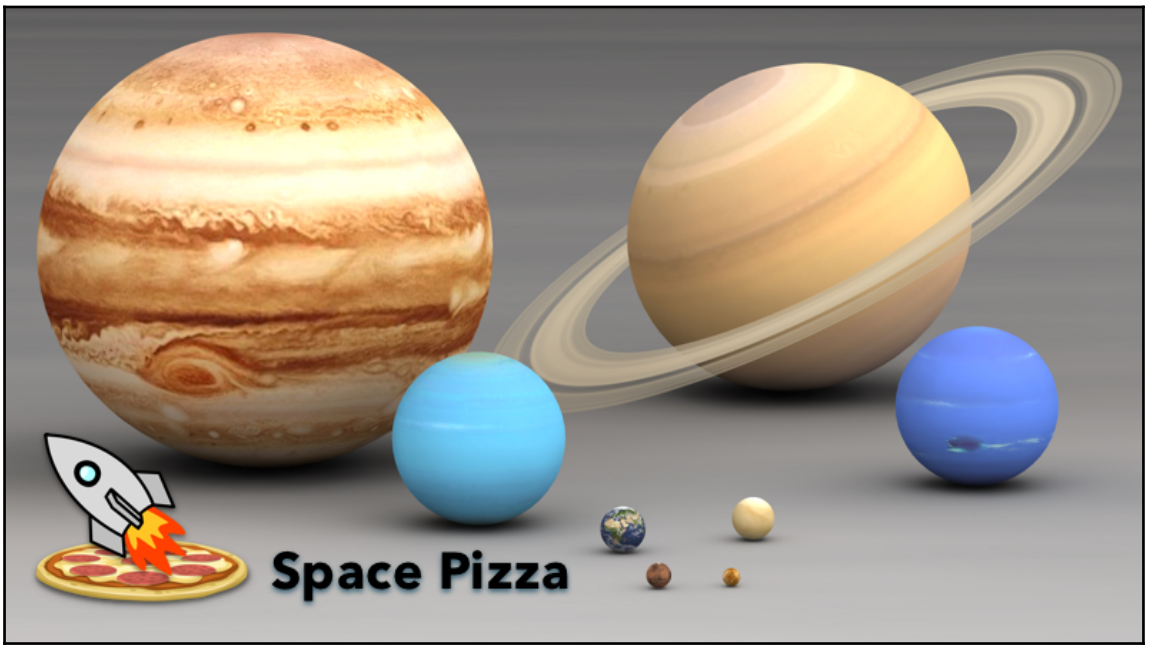

Automatic
ViewController.swift
ViewController
1 //
2 // ViewController.swift
3 // Starry Night

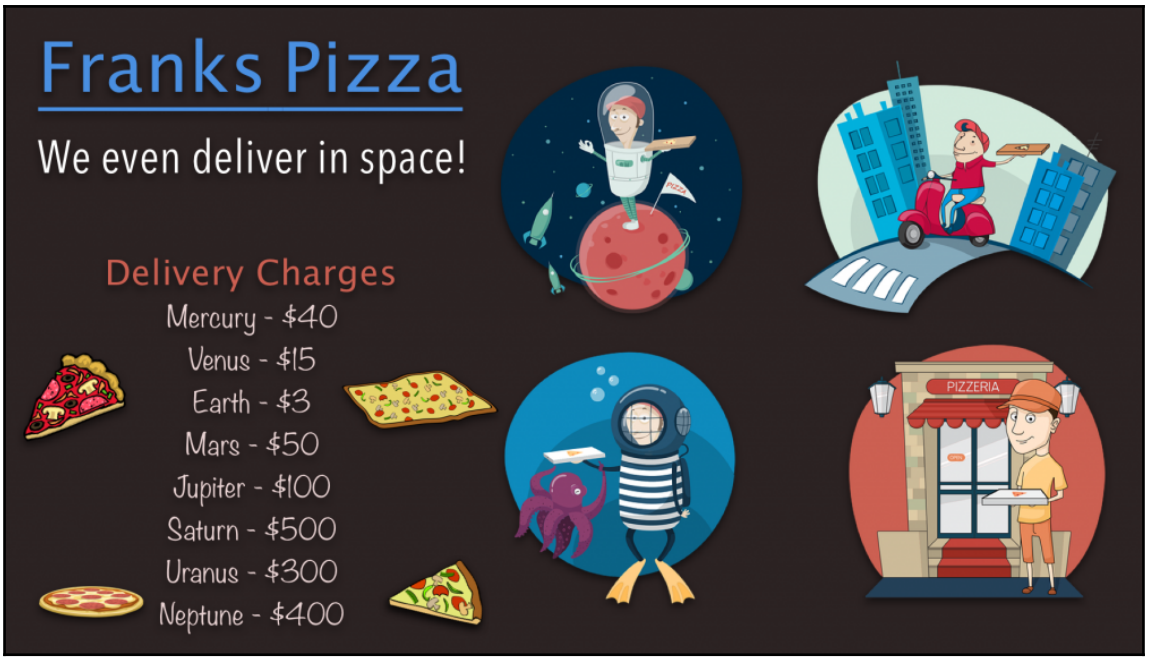

Main.storyboard
Main.st...(Base)
View C...r Scene
View Controller
View
Day
Night
Automatic
ViewController.swift
ViewController
1 //
2 // ViewController.swift
3 // Starry Night
4 //
5 // Created by Steffen D. Sommer on 08/01/2017.
6 // Copyright © 2017 Steffen D. Sommer. All rights reserved.
7 //
8
9 import UIKit
10
11 class ViewController: UIViewController {
12
13
14 }
15
16
Insert Outlet, Action, or Outlet Collection

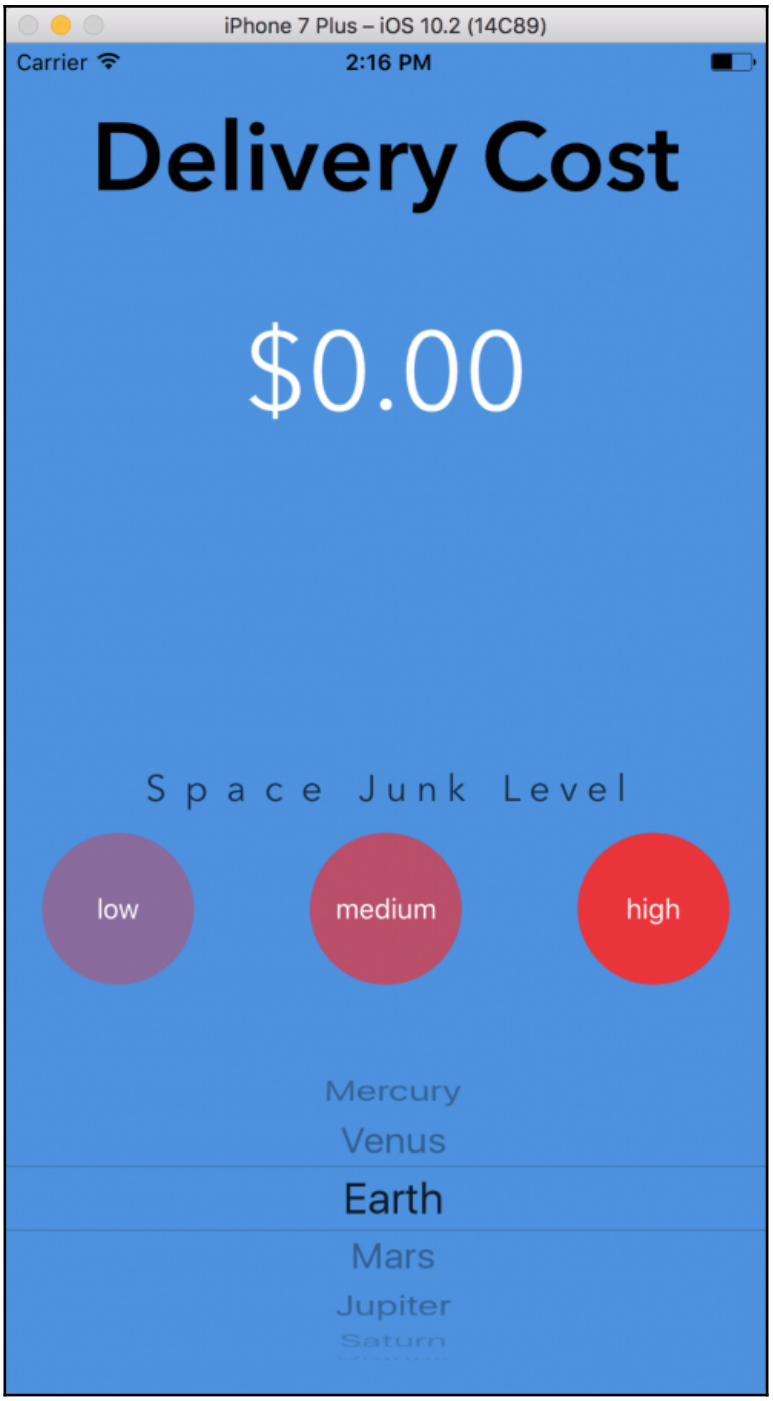

Connection
Action
Object
View Controller
Name
dayTapped
Type
Any
Event
Touch Up Inside
Arguments
Sender
Cancel
Connect
import UIKit
class ViewController: UIViewController {
}

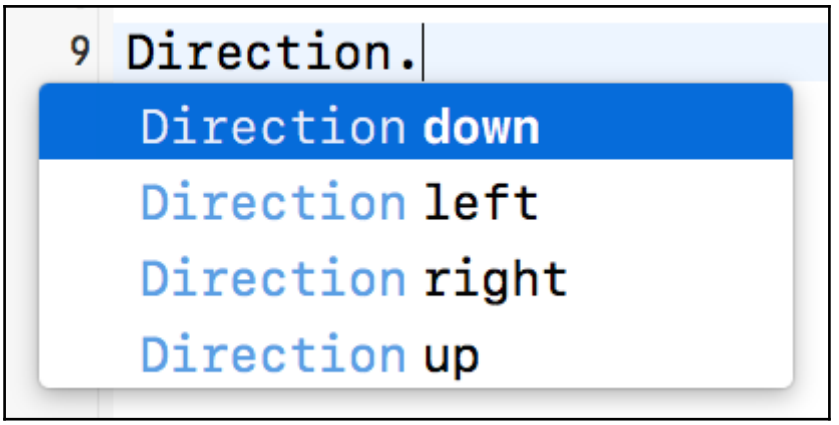

iPhone 7 – iOS 10.2 (14C89)
Carrier
2:22 PM
Day
Night

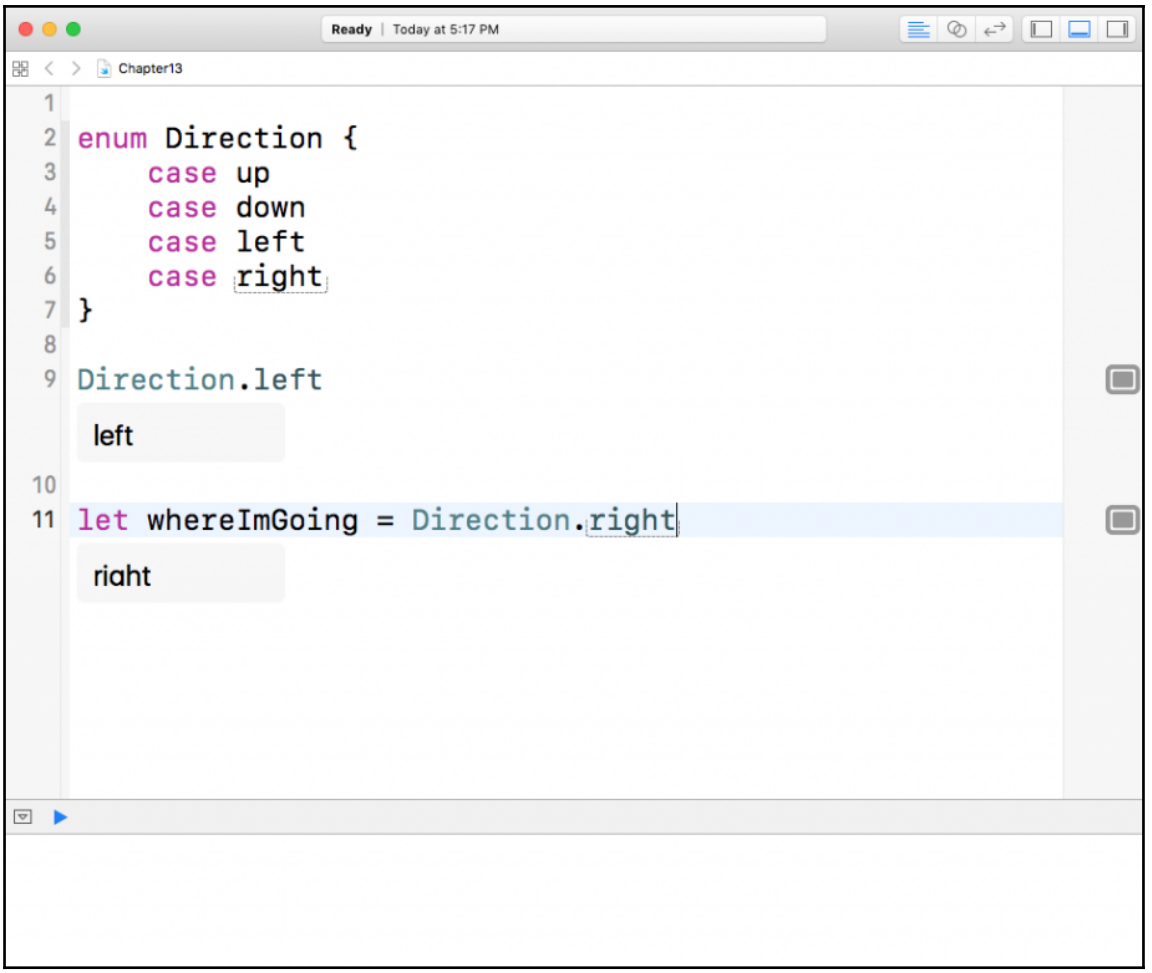
Chapter 13: Space Pizza Delivery




Franks Pizza
We even deliver in space!
Delivery Charges
Mercury - $40
Venus - $15
Earth - $3
Mars - $50
Jupiter - $100
Saturn - $500
Uranus - $300
Neptune - $400
PIZZERIA


iPhone 7 Plus – iOS 10.2 (14C89)
Carrier
2:16 PM
Delivery Cost
$0.00
Space Junk Level
low
medium
high
Mercury
Venus
Earth
Mars
Jupiter
Saturn

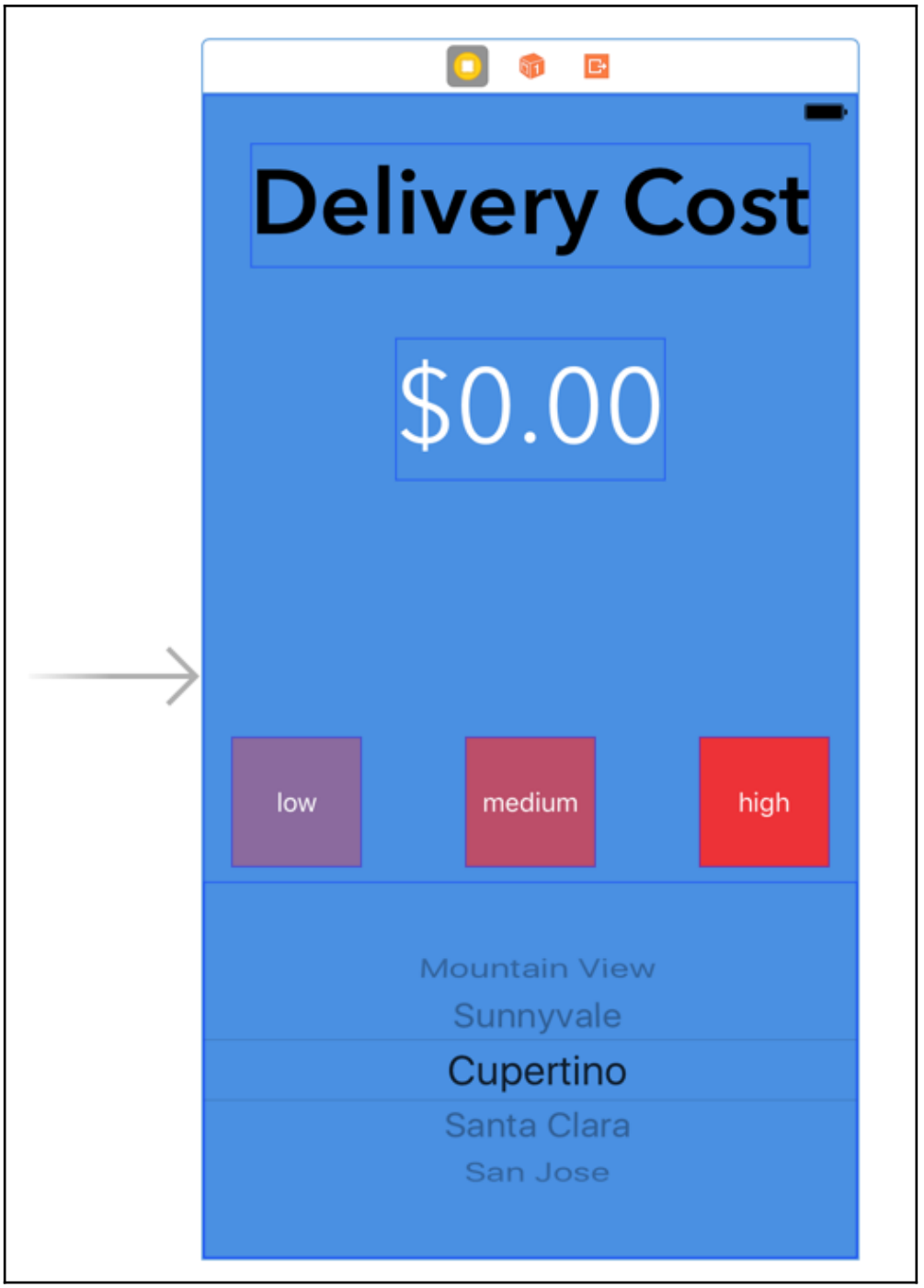

9 Direction.
Direction down
Direction left
Direction right
Direction up

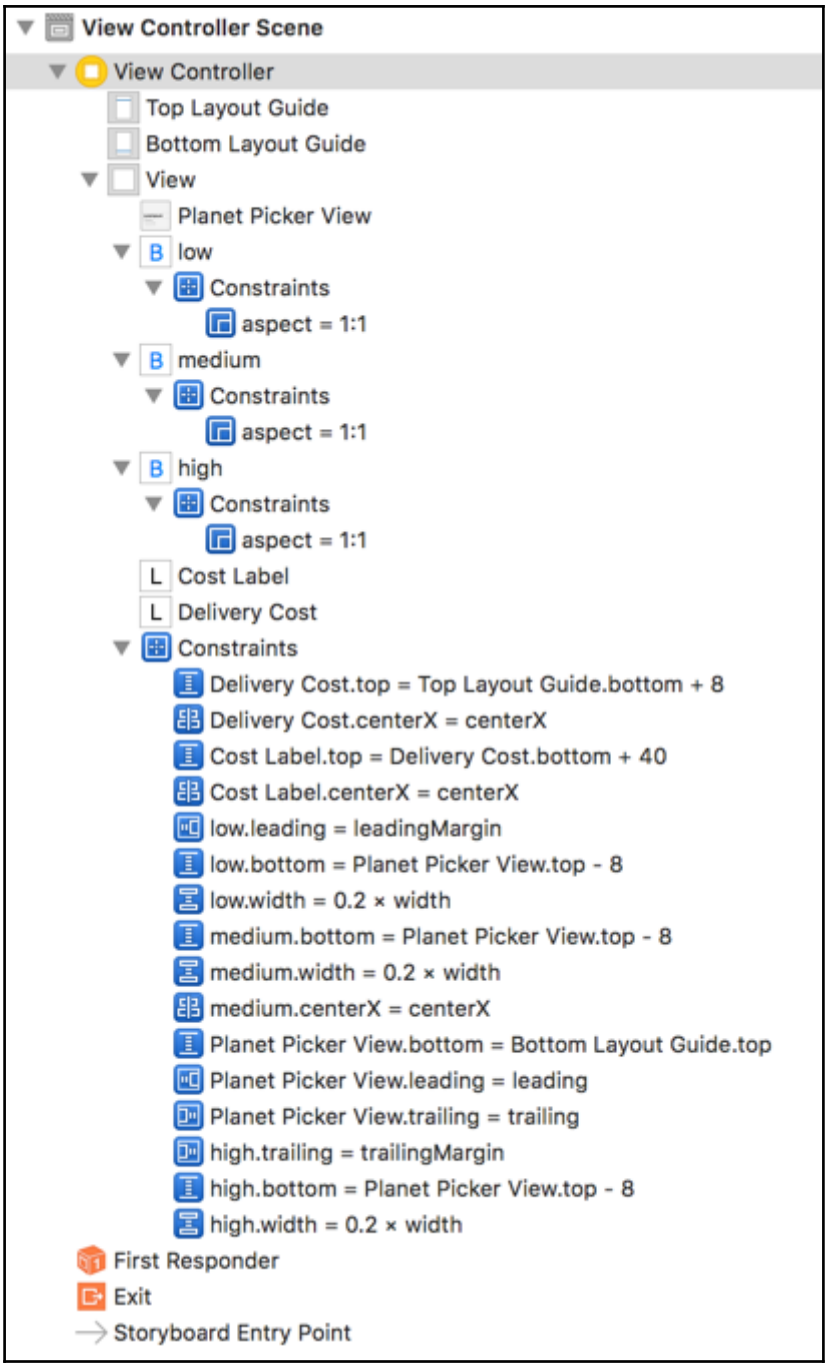

Ready | Today at 5:17 PM
Chapter13
1
2 enum Direction {
3 case up
4 case down
5 case left
6 case right
7 }
8
9 Direction.left
left
10
11 let whereImGoing = Direction.right
right

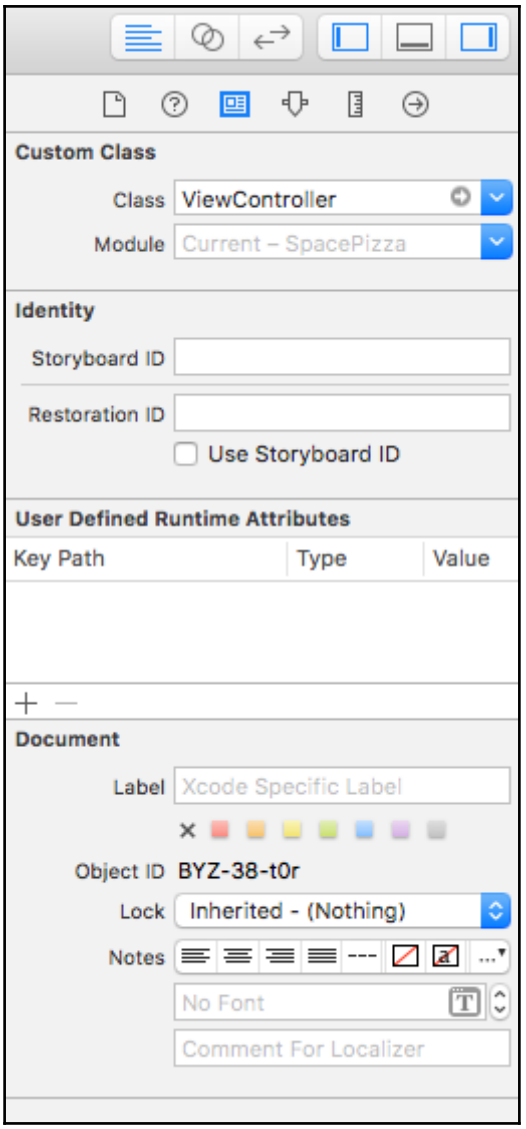

Franks Pizza
We know you want a slice.
Give us a call @ 1-800-Space-Slice


```
let testService = PizzaService(name: "Jessica's Pizza Palace")
testService.
```

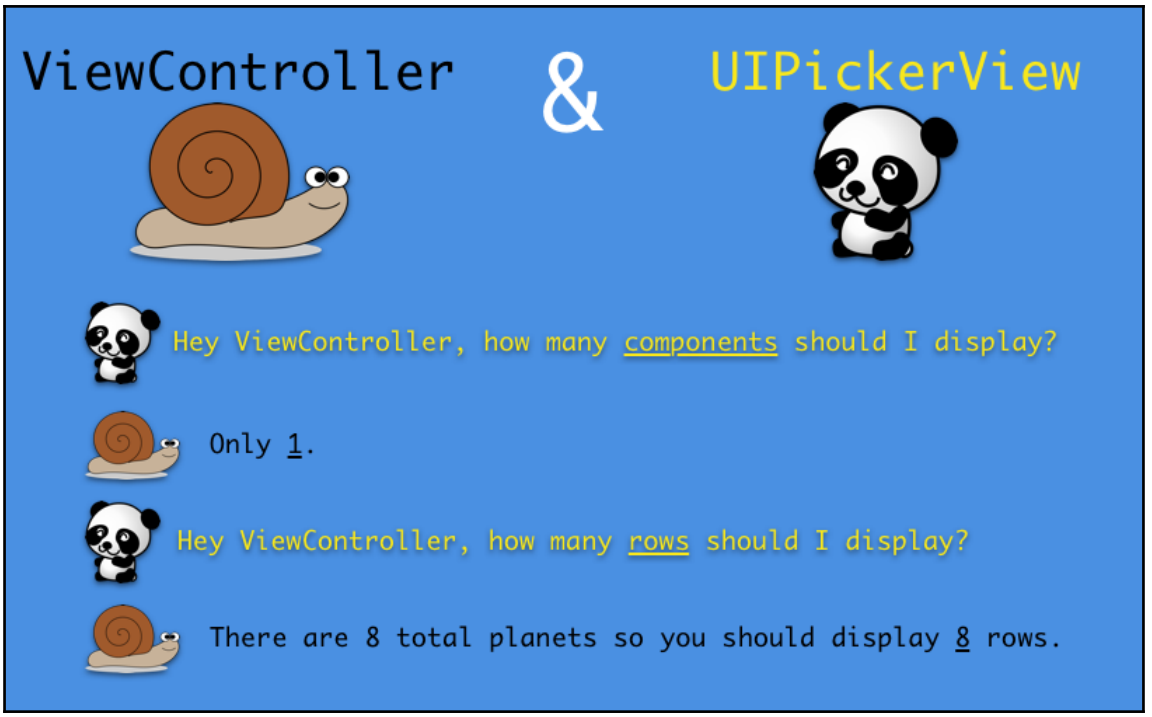
V String **name**

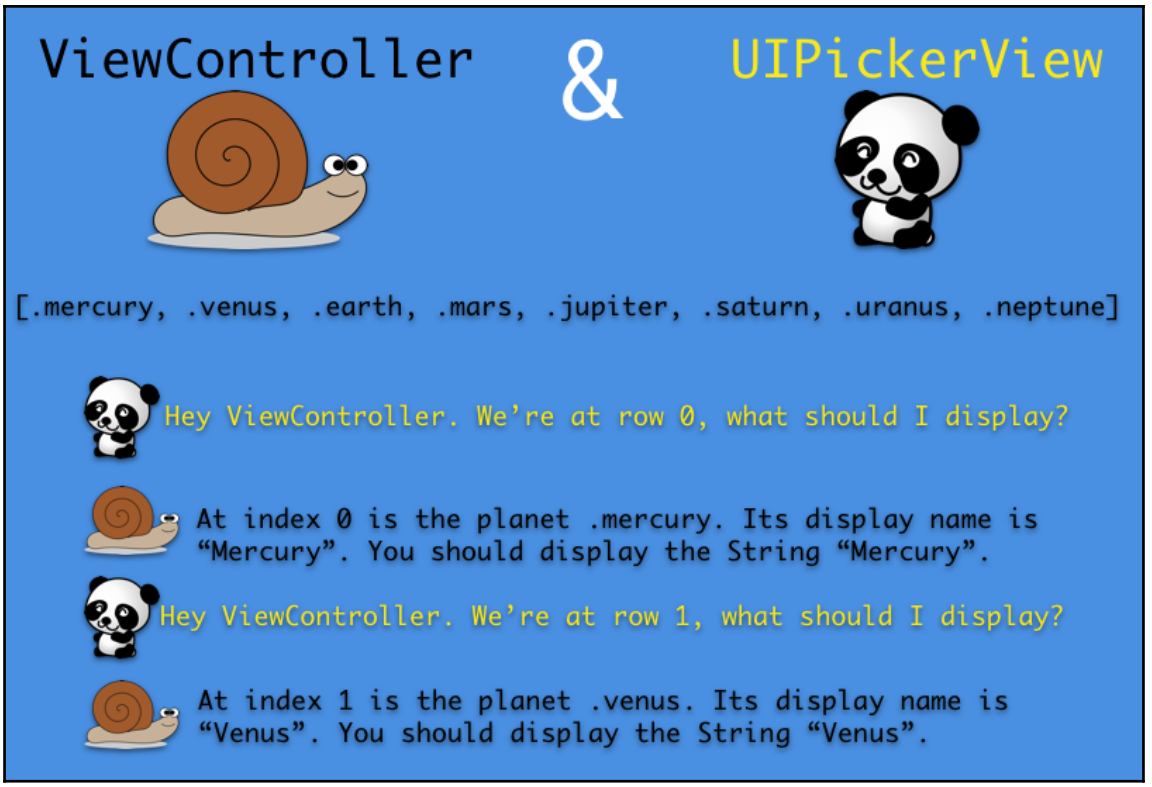

Delivery Cost
$0.00
low
medium
high
Mountain View
Sunnyvale
Cupertino
Santa Clara
San Jose


View Controller Scene
View Controller
Top Layout Guide
Bottom Layout Guide
View
Planet Picker View
low
Constraints
aspect = 1:1
medium
Constraints
aspect = 1:1
high
Constraints
aspect = 1:1
Cost Label
Delivery Cost
Constraints
Delivery Cost.top = Top Layout Guide.bottom + 8
Delivery Cost.centerX = centerX
Cost Label.top = Delivery Cost.bottom + 40
Cost Label.centerX = centerX
low.leading = leadingMargin
low.bottom = Planet Picker View.top - 8
low.width = 0.2 × width
medium.bottom = Planet Picker View.top - 8
medium.width = 0.2 × width
medium.centerX = centerX
Planet Picker View.bottom = Bottom Layout Guide.top
Planet Picker View.leading = leading
Planet Picker View.trailing = trailing
high.trailing = trailingMargin
high.bottom = Planet Picker View.top - 8
high.width = 0.2 × width
First Responder
Exit
Storyboard Entry Point

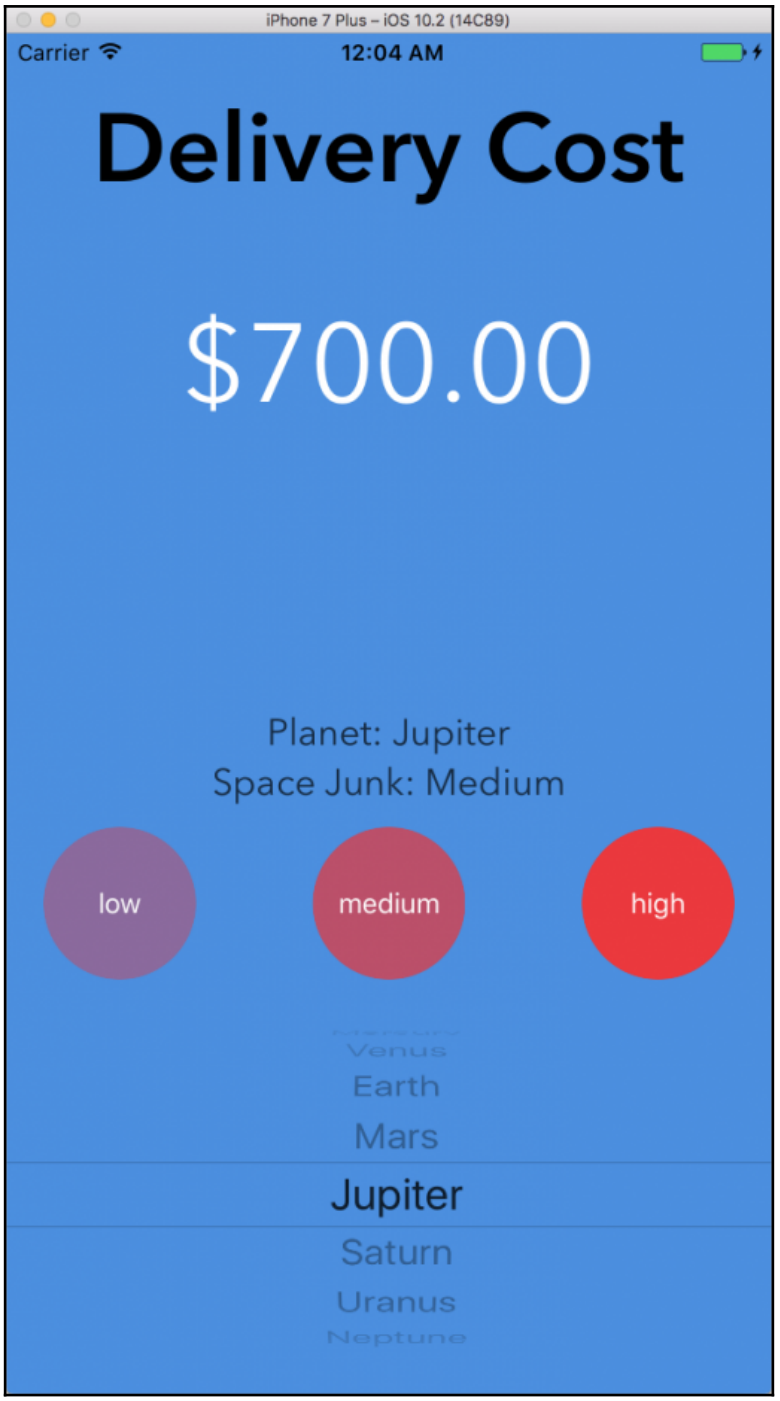


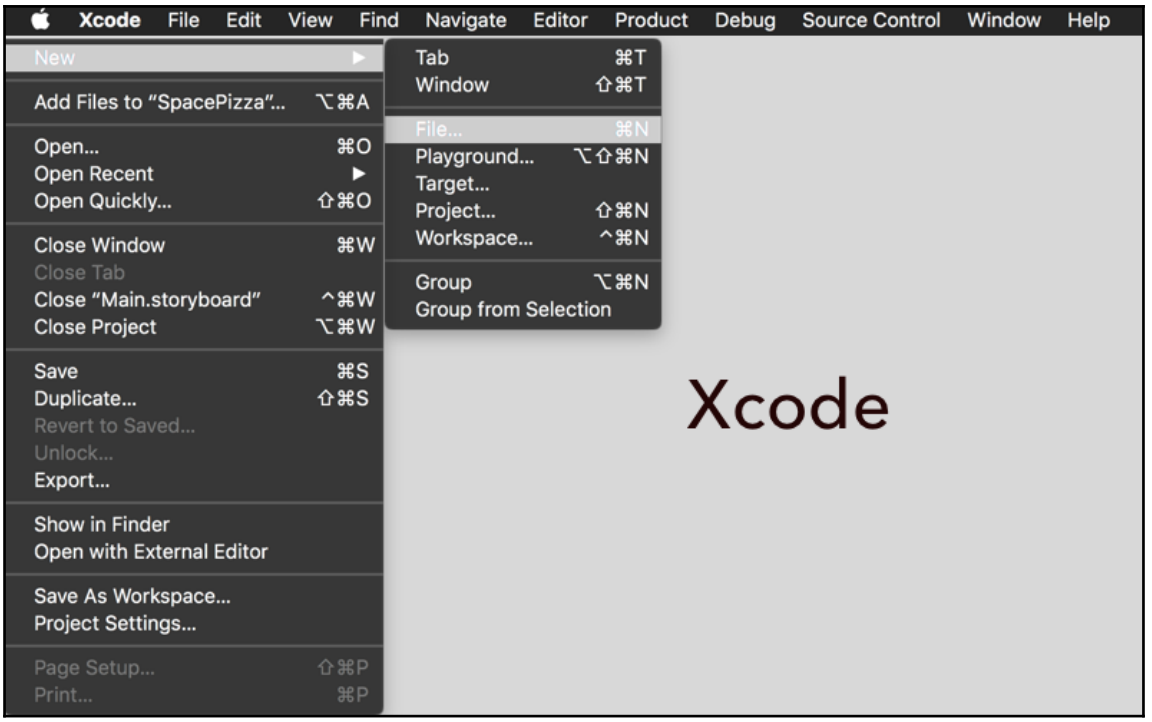

```
class ViewController: UIViewController, UIPickerViewDataSource, UIPickerViewDelegate {
```

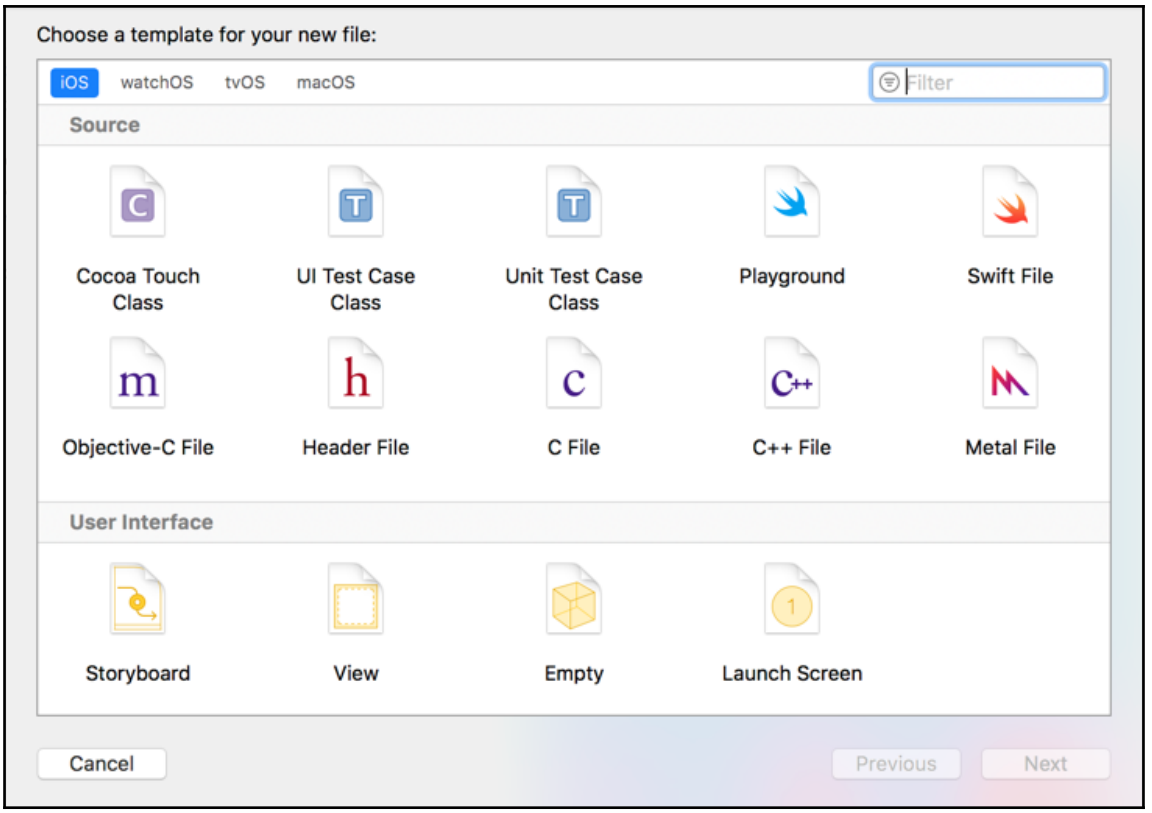

ViewController
&
UIPickerView
Hey ViewController, how many components should I display?
Only 1.
Hey ViewController, how many rows should I display?
There are 8 total planets so you should display 8 rows.

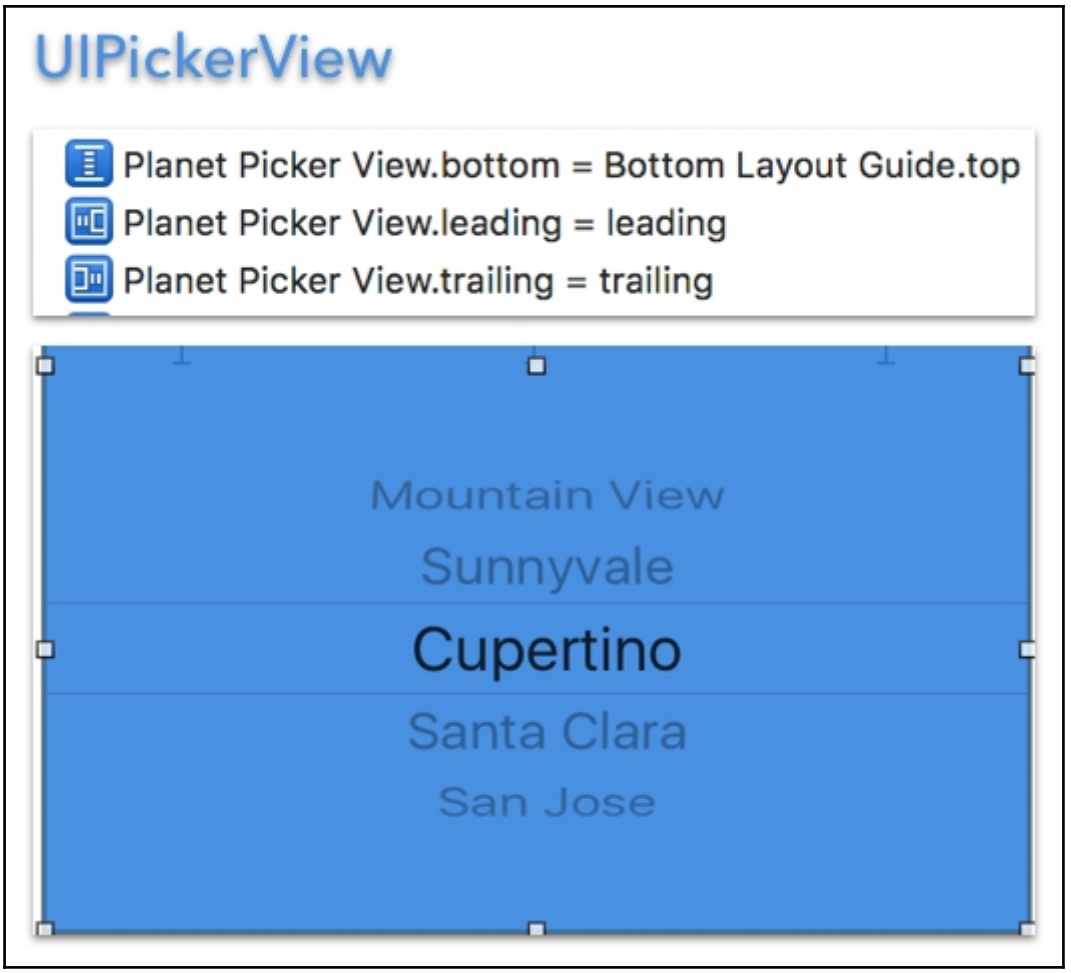


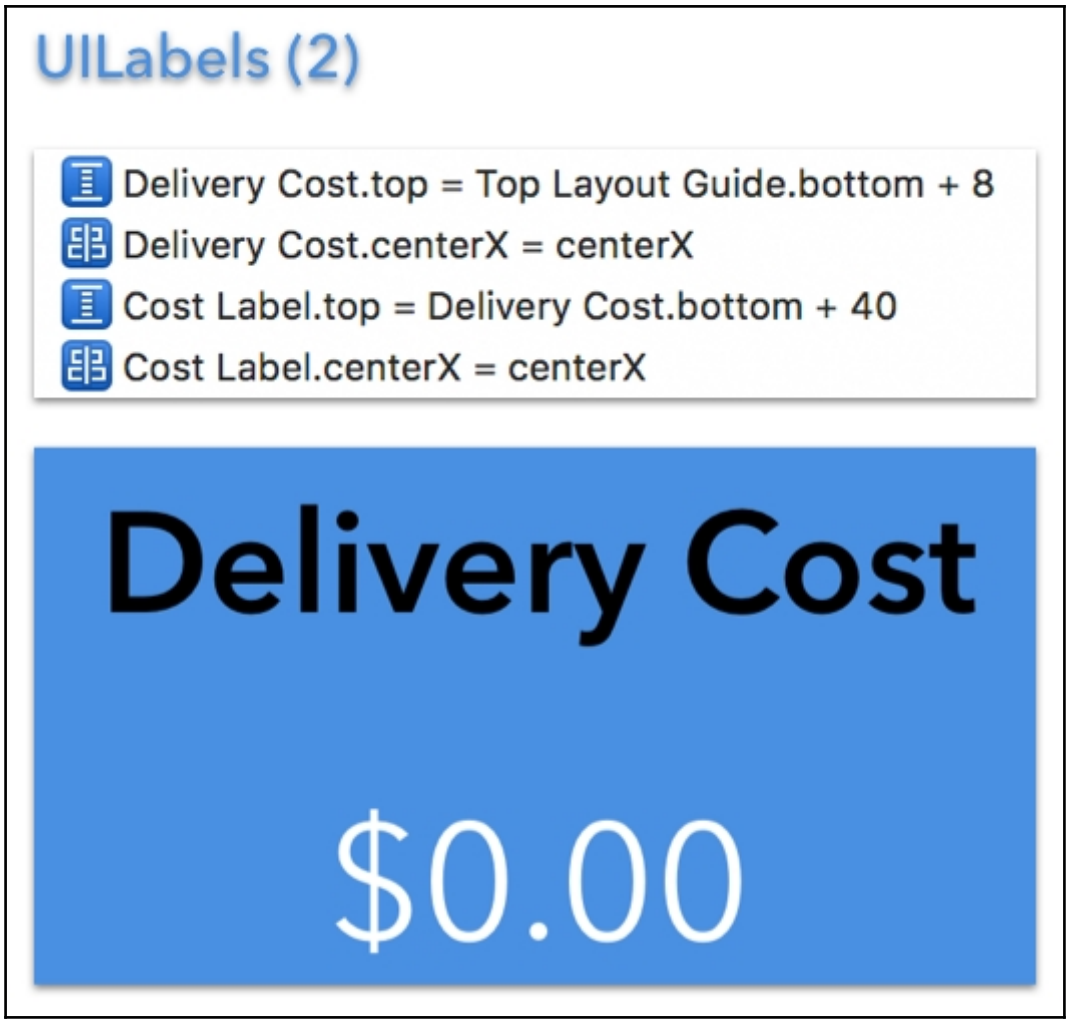

```
59      @IBAction func lowSpaceJunkChange(_ sender: Any) {
60          franksPizza.spaceJunk = .low
61      }
62
63      @IBAction func mediumSpaceJunkChange(_ sender: Any) {
64          franksPizza.spaceJunk = .
65      }                              SpaceJunk high
66                                     SpaceJunk low
67      @IBAction func h               SpaceJunk medium  er: Any) {
68      }
69
```

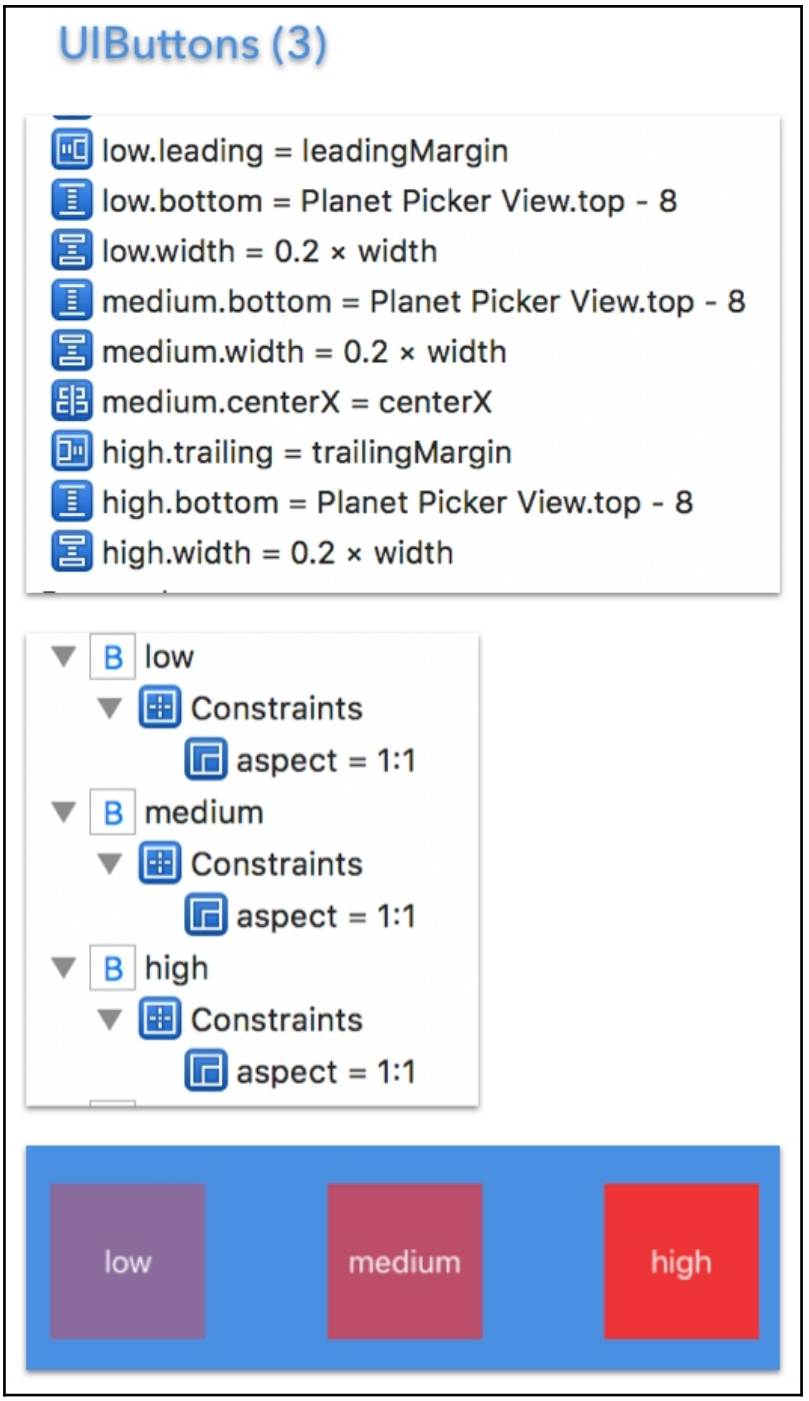

iPhone 7 Plus – iOS 10.2 (14C89)
Carrier
12:04 AM
Delivery Cost
$700.00
Planet: Jupiter
Space Junk: Medium
low
medium
high
Venus
Earth
Mars
Jupiter
Saturn
Uranus
Neptune


Xcode File Edit View Find Navigate Editor Product Debug Source Control Window Help
New
Add Files to "SpacePizza"... ⌥⌘A
Open... ⌘O
Open Recent
Open Quickly... ⇧⌘O
Close Window ⌘W
Close Tab
Close "Main.storyboard" ^⌘W
Close Project ⌥⌘W
Save ⌘S
Duplicate... ⇧⌘S
Revert to Saved...
Unlock...
Export...
Show in Finder
Open with External Editor
Save As Workspace...
Project Settings...
Page Setup... ⇧⌘P
Print... ⌘P
Tab ⌘T
Window ⇧⌘T
File... ⌘N
Playground... ⌥⇧⌘N
Target...
Project... ⇧⌘N
Workspace... ^⌘N
Group ⌥⌘N
Group from Selection
Xcode

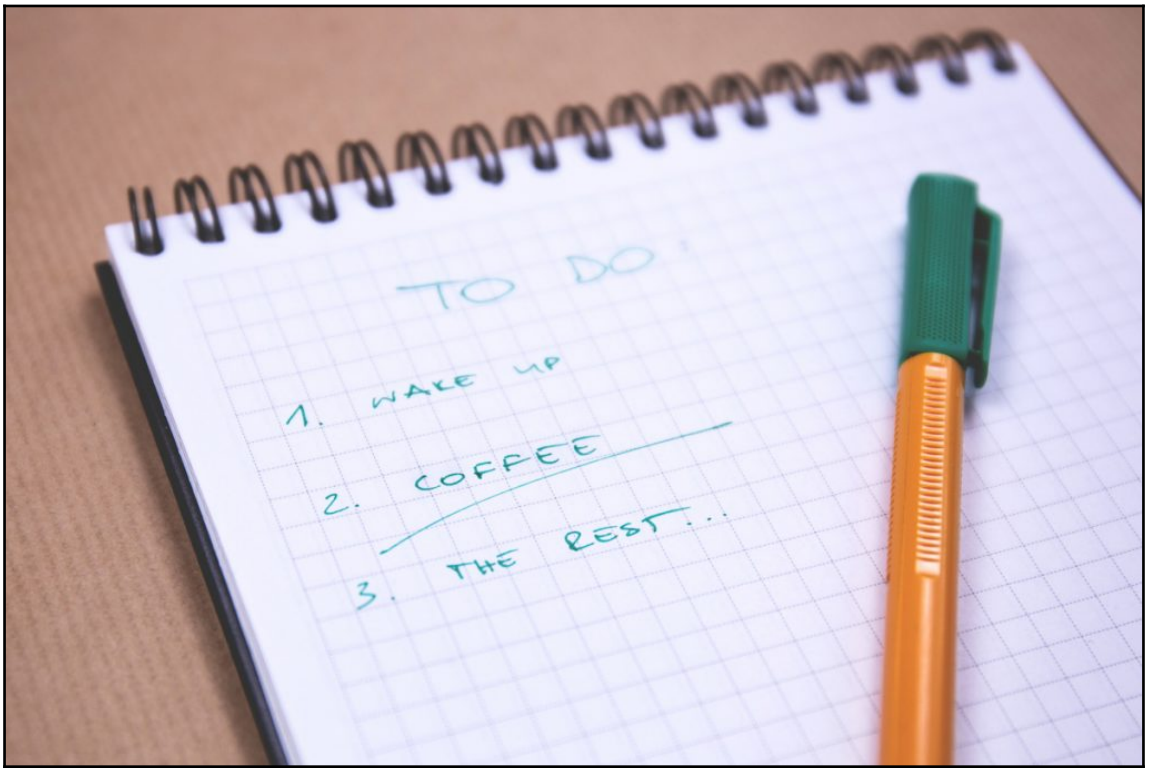

Choose a template for your new file:
iOS
watchOS
tvOS
macOS
Filter
Source
Cocoa Touch Class
UI Test Case Class
Unit Test Case Class
Playground
Swift File
Objective-C File
Header File
C File
C++ File
Metal File
User Interface
Storyboard
View
Empty
Launch Screen
Cancel
Previous
Next

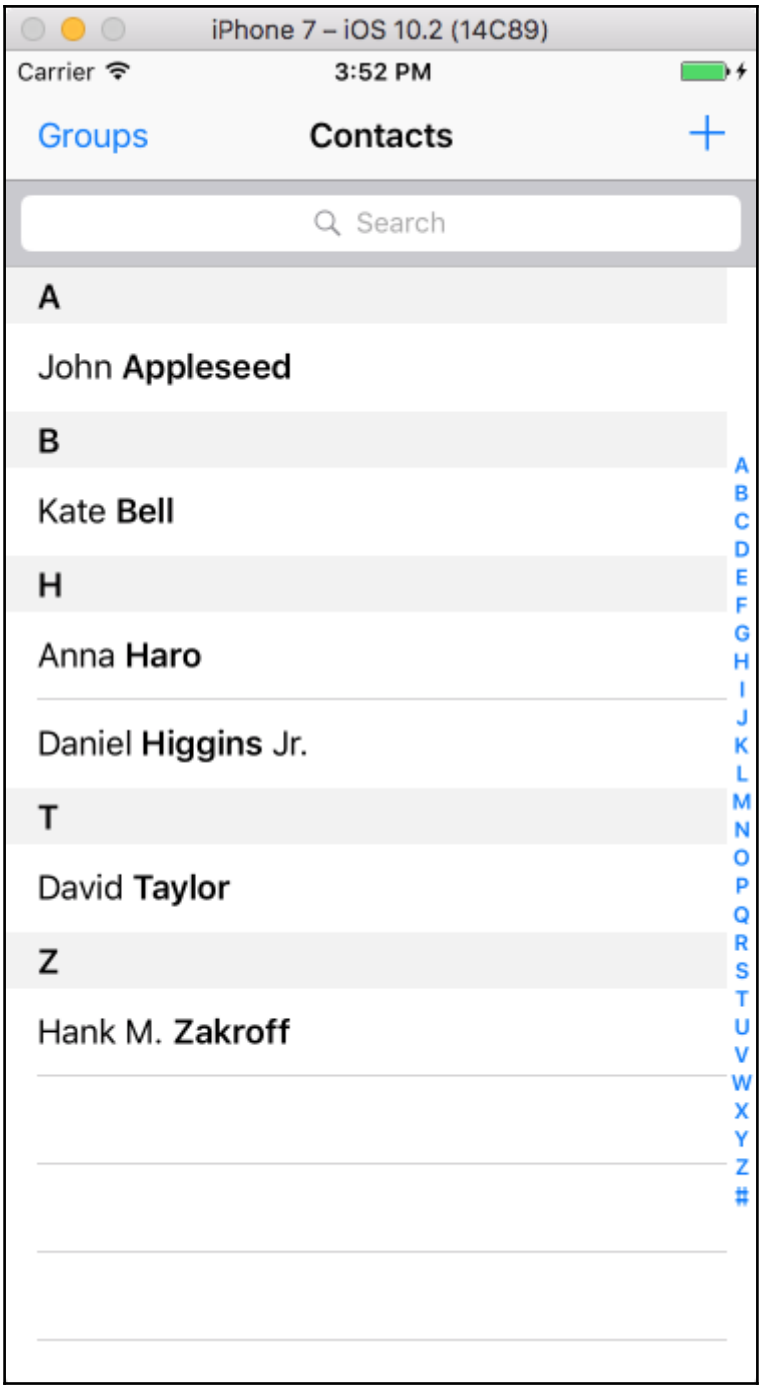

UIPickerView
Planet Picker View.bottom = Bottom Layout Guide.top
Planet Picker View.leading = leading
Planet Picker View.trailing = trailing
Mountain View
Sunnyvale
Cupertino
Santa Clara
San Jose

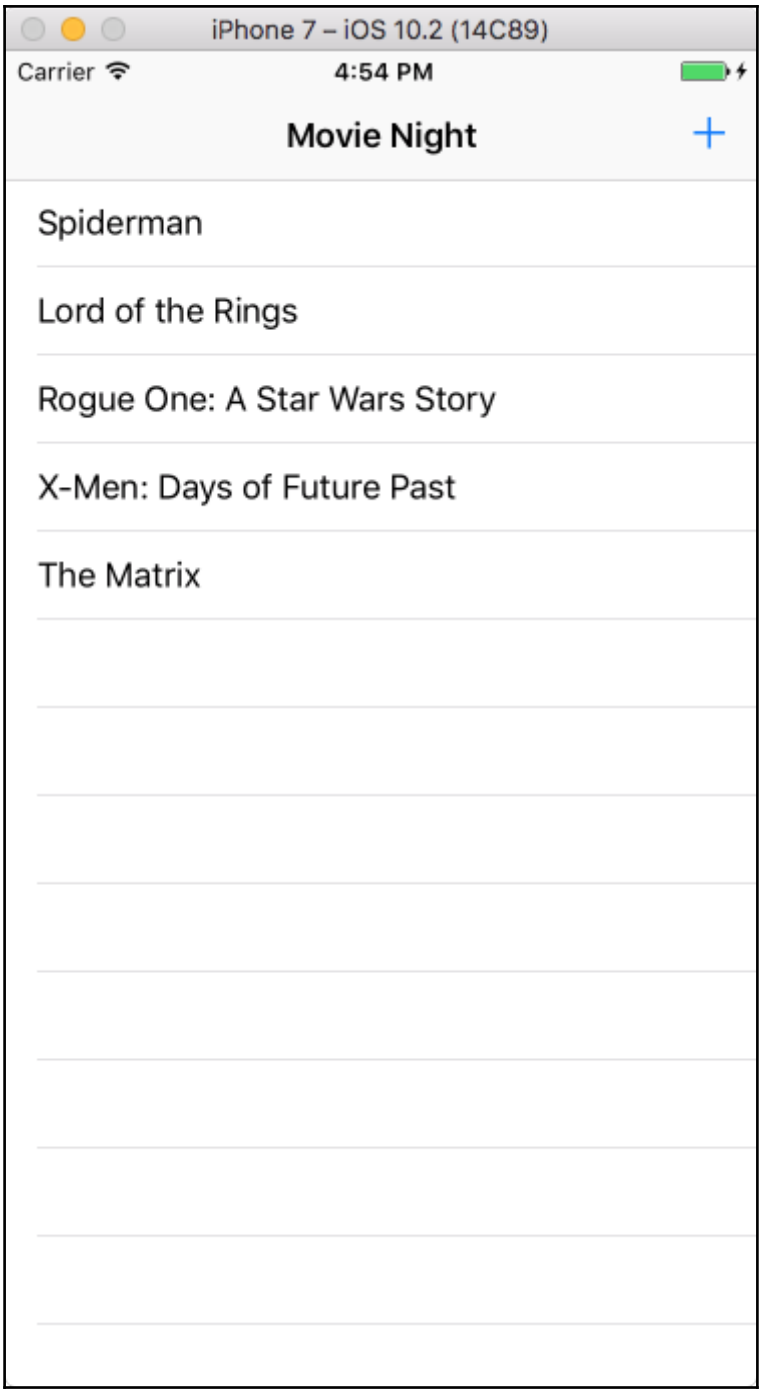

UILabels (2)
Delivery Cost.top = Top Layout Guide.bottom + 8
Delivery Cost.centerX = centerX
Cost Label.top = Delivery Cost.bottom + 40
Cost Label.centerX = centerX
Delivery Cost
$0.00

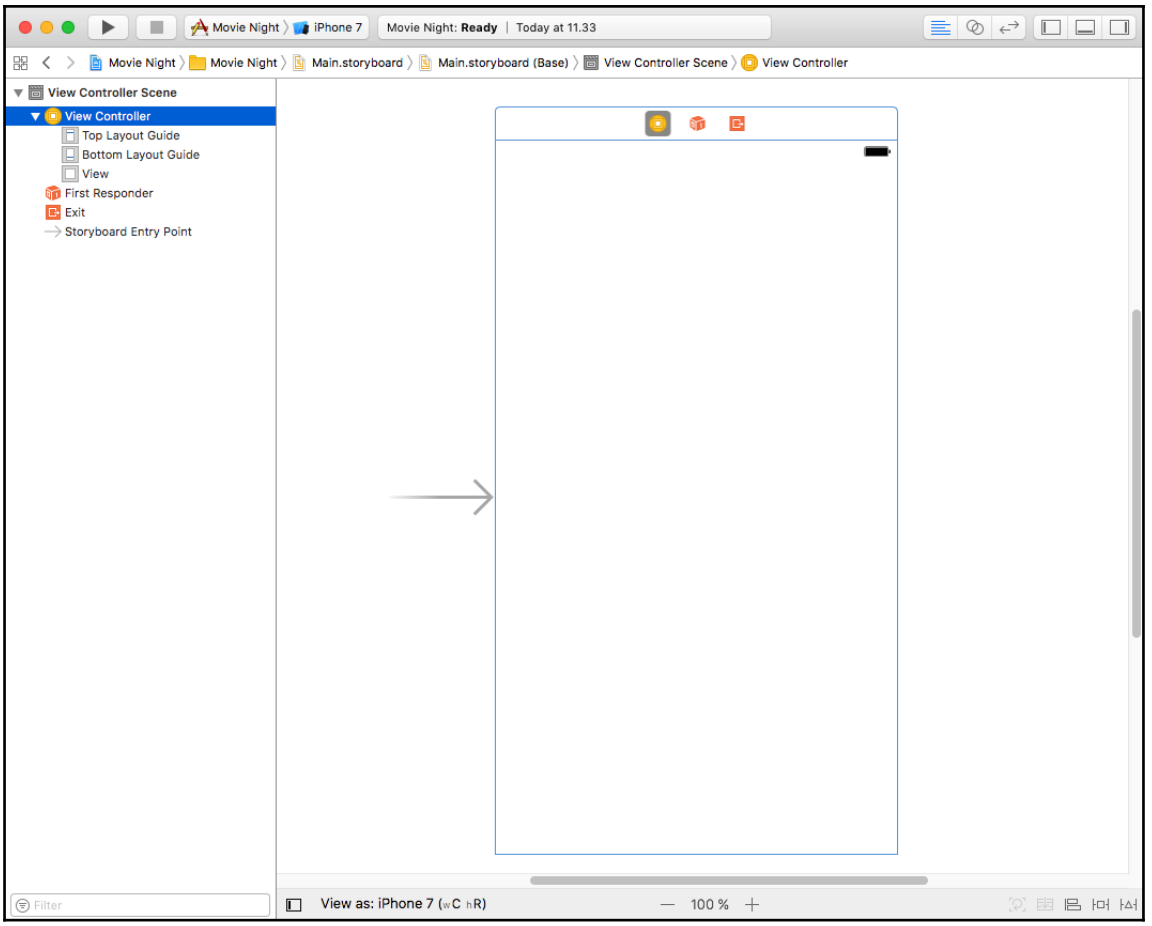

UIButtons (3)
low.leading = leadingMargin
low.bottom = Planet Picker View.top - 8
low.width = 0.2 × width
medium.bottom = Planet Picker View.top - 8
medium.width = 0.2 × width
medium.centerX = centerX
high.trailing = trailingMargin
high.bottom = Planet Picker View.top - 8
high.width = 0.2 × width
low
Constraints
aspect = 1:1
medium
Constraints
aspect = 1:1
high
Constraints
aspect = 1:1
low
medium
high

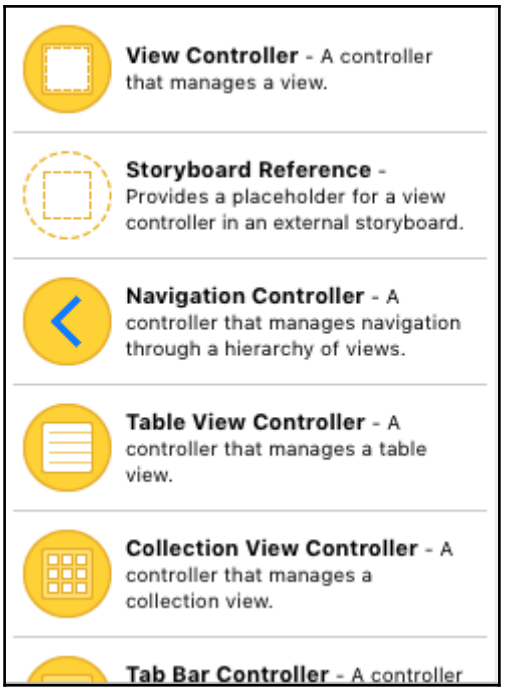
Chapter 14: Movie Night - iOS App

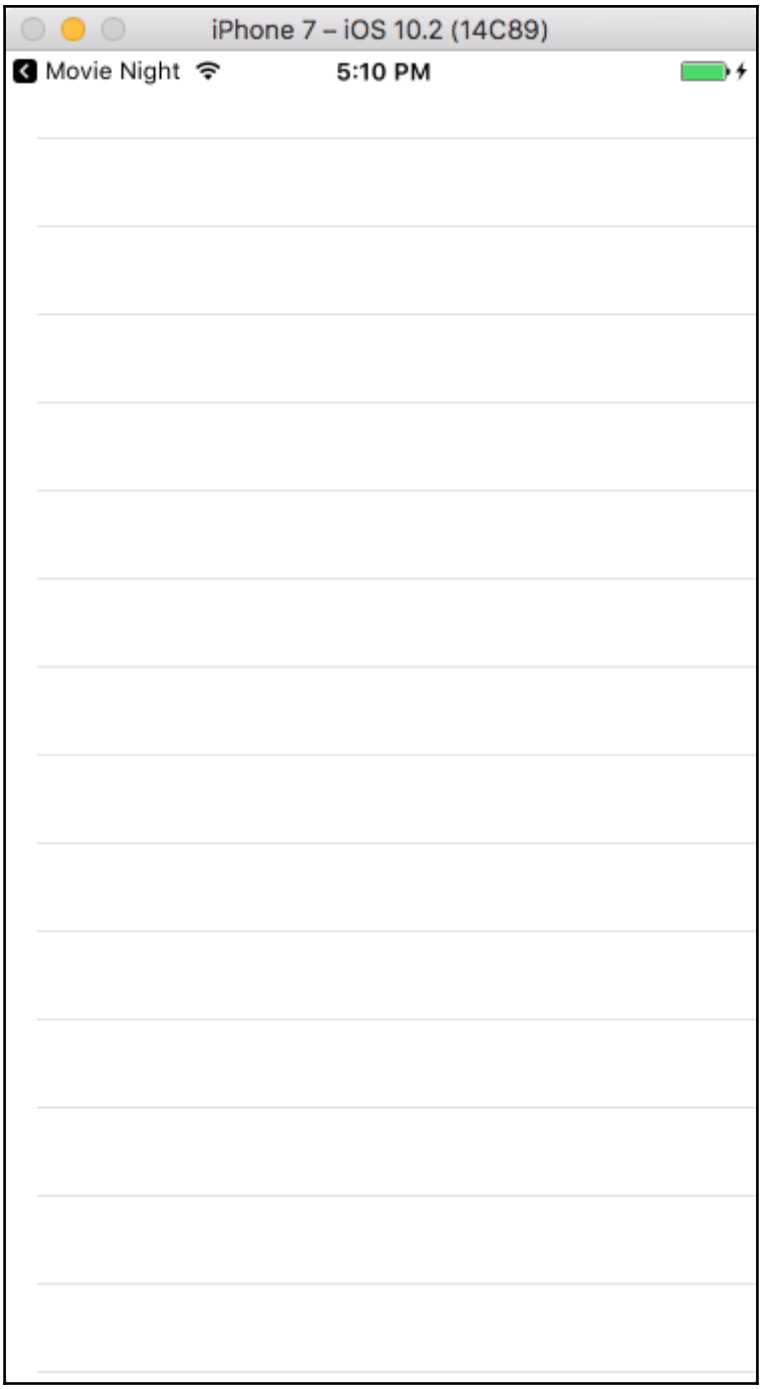



iPhone 7 – iOS 10.2 (14C89)
Carrier
3:52 PM
Groups
Contacts
Search
A
John Appleseed
B
Kate Bell
H
Anna Haro
Daniel Higgins Jr.
T
David Taylor
Z
Hank M. Zakroff
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z #


iPhone 7 – iOS 10.2 (14C89)
Carrier
4:54 PM
Movie Night
Spiderman
Lord of the Rings
Rogue One: A Star Wars Story
X-Men: Days of Future Past
The Matrix


Movie Night
iPhone 7
Movie Night: Ready | Today at 11.33
Movie Night
Movie Night
Main.storyboard
Main.storyboard (Base)
View Controller Scene
View Controller
View Controller Scene
View Controller
Top Layout Guide
Bottom Layout Guide
View
First Responder
Exit
Storyboard Entry Point
Filter
View as: iPhone 7 (wC hR)
100 %


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


iPhone 7 – iOS 10.2 (14C89)
Movie Night
5:10 PM

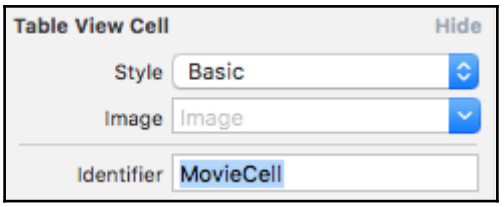
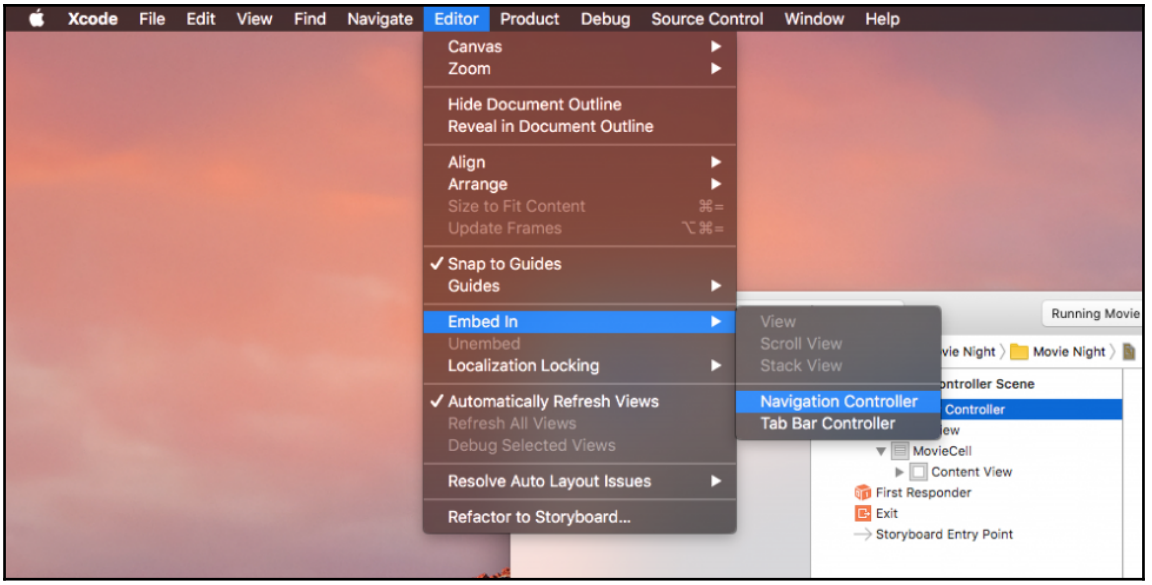
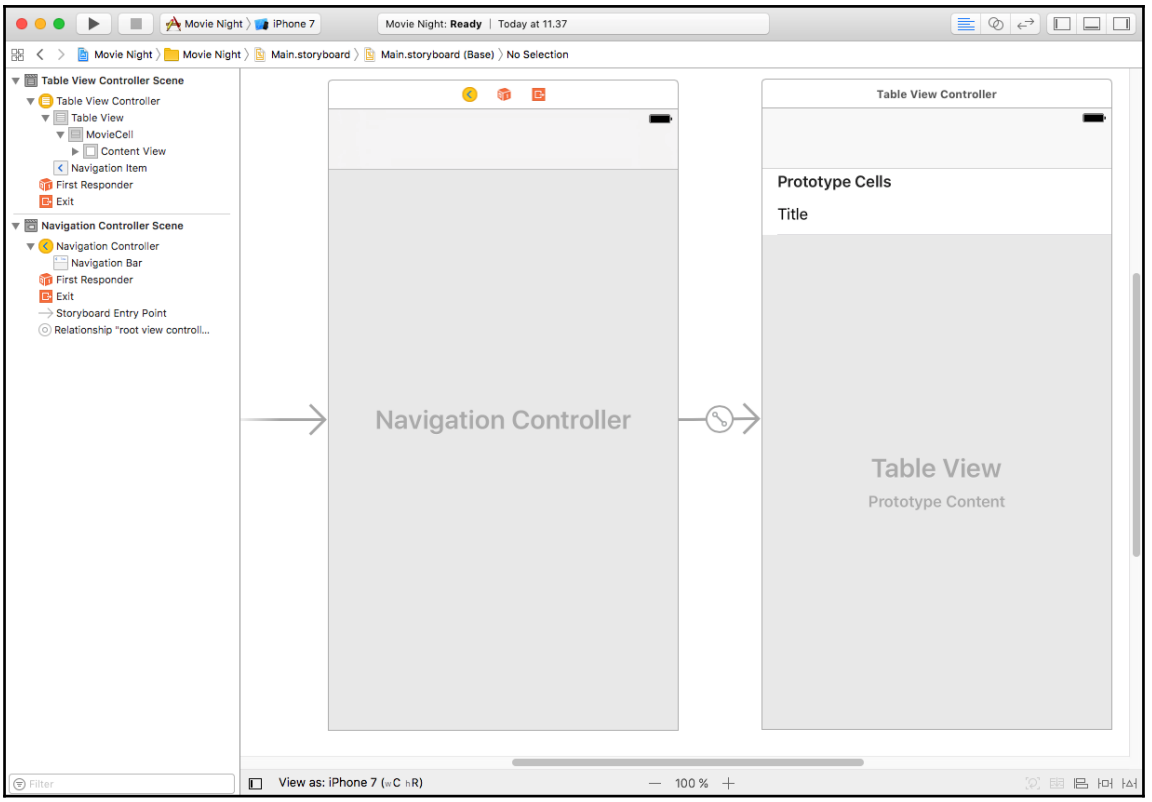
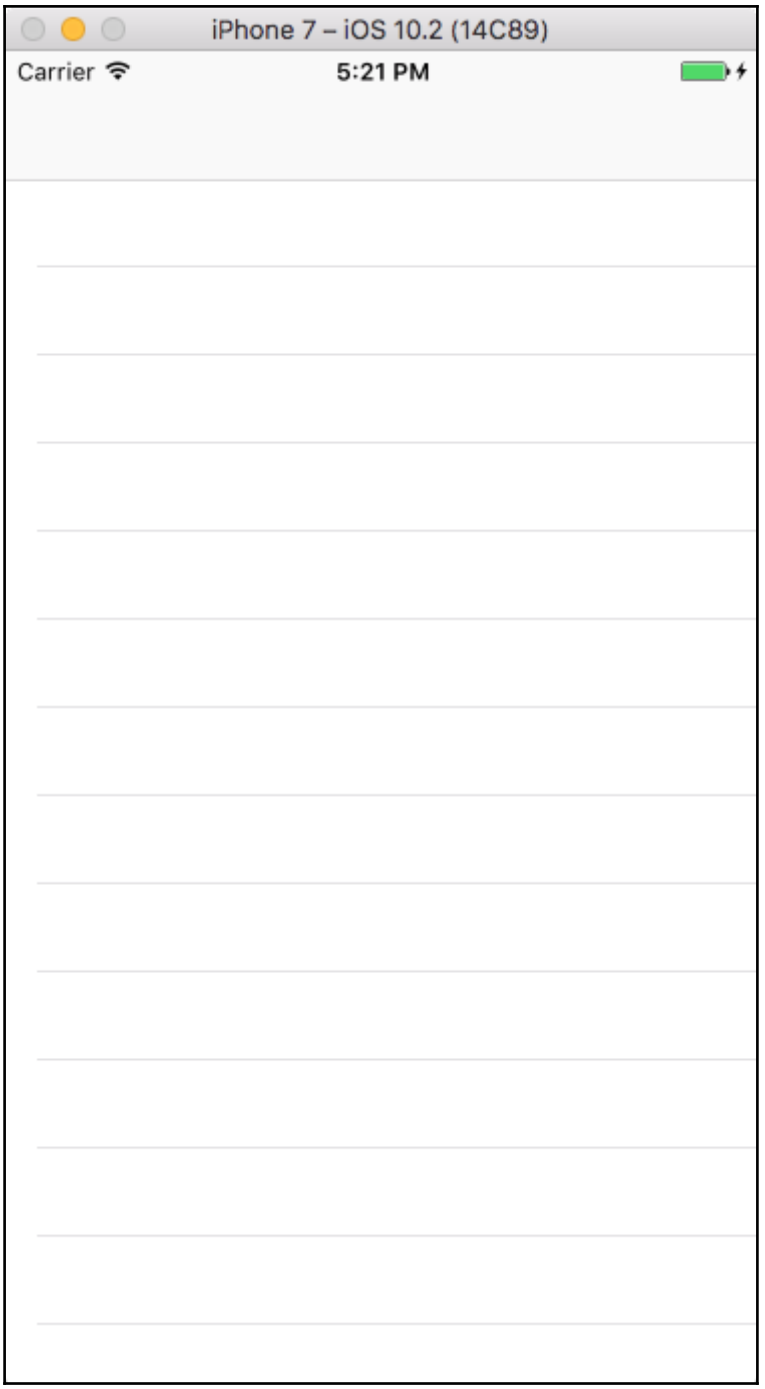
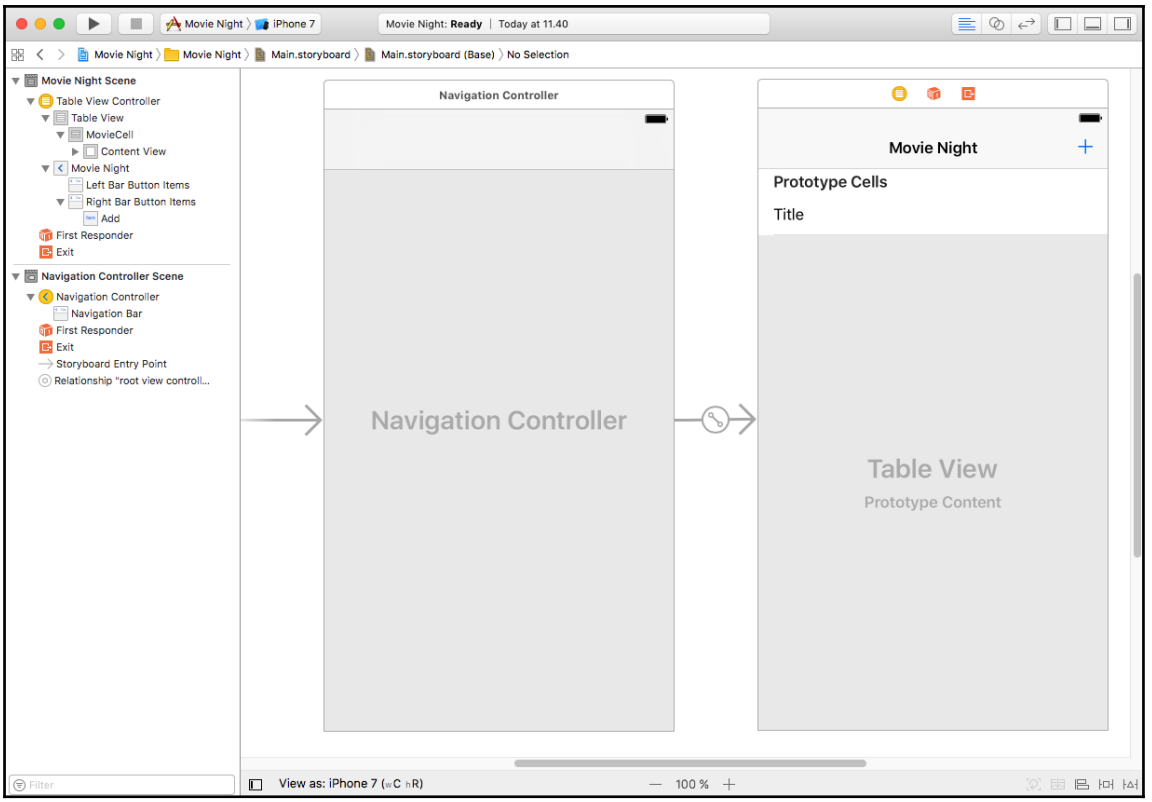


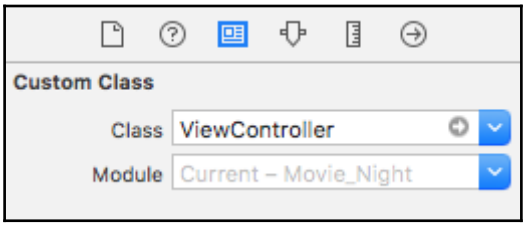
Table View Cell
Hide
Style
Basic
Image
Image
Identifier
MovieCell

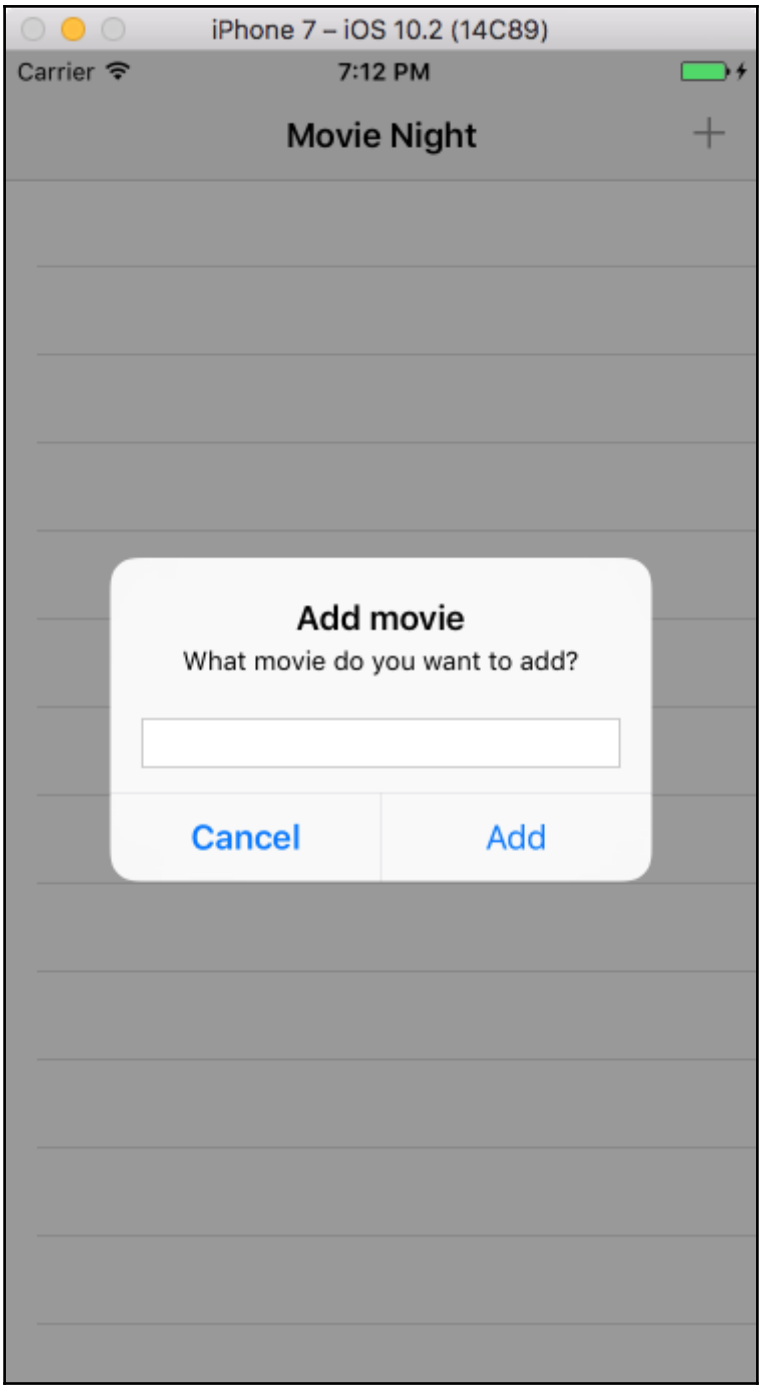

Xcode
File
Edit
View
Find
Navigate
Editor
Product
Debug
Source Control
Window
Help
Canvas
Zoom
Hide Document Outline
Reveal in Document Outline
Align
Arrange
Size to Fit Content
Update Frames
Snap to Guides
Guides
Embed In
Unembed
Localization Locking
Automatically Refresh Views
Refresh All Views
Debug Selected Views
Resolve Auto Layout Issues
Refactor to Storyboard...
View
Scroll View
Stack View
Navigation Controller
Tab Bar Controller
Running Movie
Movie Night
Controller Scene
Controller
MovieCell
Content View
First Responder
Exit
Storyboard Entry Point

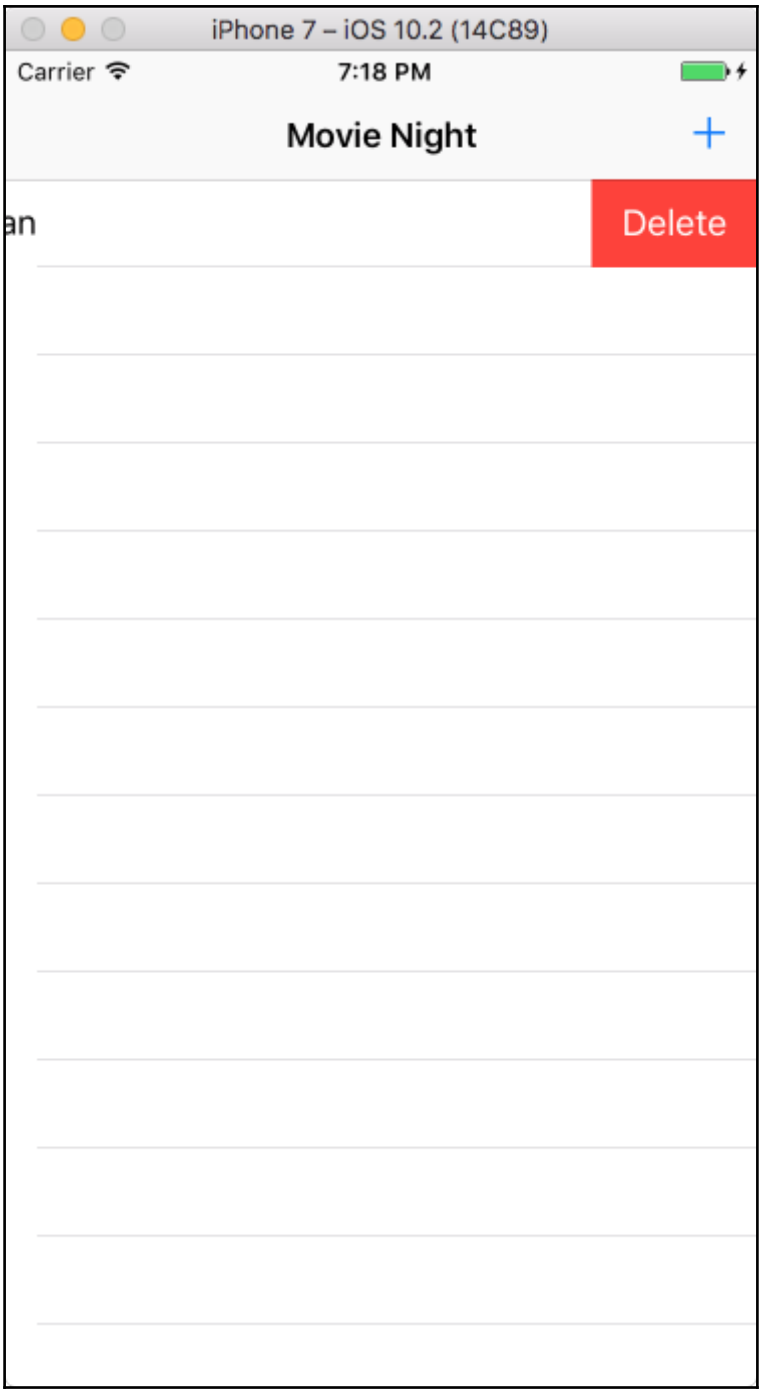

Movie Night
iPhone 7
Movie Night: Ready | Today at 11.37
Movie Night
Movie Night
Main.storyboard
Main.storyboard (Base)
No Selection
Table View Controller Scene
Table View Controller
Table View
MovieCell
Content View
Navigation Item
First Responder
Exit
Navigation Controller Scene
Navigation Controller
Navigation Bar
First Responder
Exit
Storyboard Entry Point
Relationship "root view controll...
Navigation Controller
Table View Controller
Prototype Cells
Title
Table View
Prototype Content
Filter
View as: iPhone 7 (wC hR)
100 %

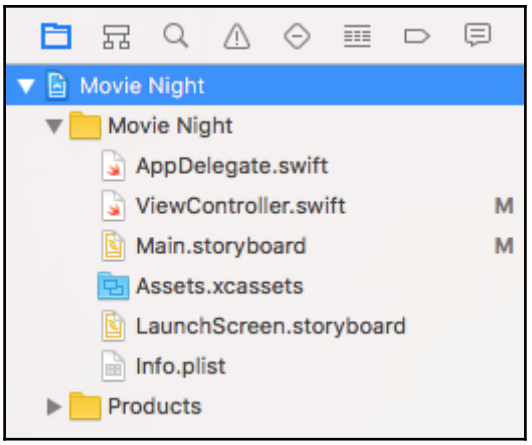

iPhone 7 – iOS 10.2 (14C89)
Carrier
5:21 PM

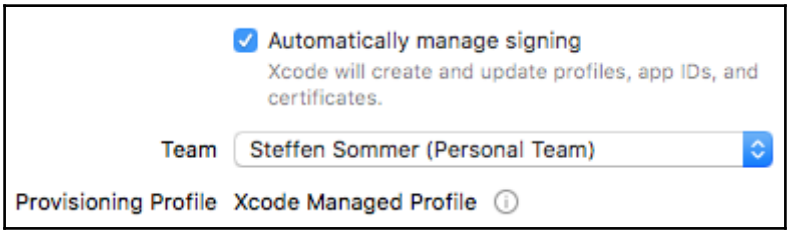

Movie Night
iPhone 7
Movie Night: Ready | Today at 11.40
Movie Night
Movie Night
Main.storyboard
Main.storyboard (Base)
No Selection
Movie Night Scene
Table View Controller
Table View
MovieCell
Content View
Movie Night
Left Bar Button Items
Right Bar Button Items
Add
First Responder
Exit
Navigation Controller Scene
Navigation Controller
Navigation Bar
First Responder
Exit
Storyboard Entry Point
Relationship "root view controll...
Navigation Controller
Navigation Controller
Movie Night
Prototype Cells
Title
Table View
Prototype Content
View as: iPhone 7 (wC hR)
100 %


Custom Class
Class
ViewController
Module
Current – Movie_Night


iPhone 7 – iOS 10.2 (14C89)
Carrier
7:12 PM
Movie Night
Add movie
What movie do you want to add?
Cancel
Add


iPhone 7 – iOS 10.2 (14C89)
Carrier
7:18 PM
Movie Night
an
Delete


Movie Night
Movie Night
AppDelegate.swift
ViewController.swift
M
Main.storyboard
M
Assets.xcassets
LaunchScreen.storyboard
Info.plist
Products


Automatically manage signing
Xcode will create and update profiles, app IDs, and certificates.
Team
Steffen Sommer (Personal Team)
Provisioning Profile
Xcode Managed Profile