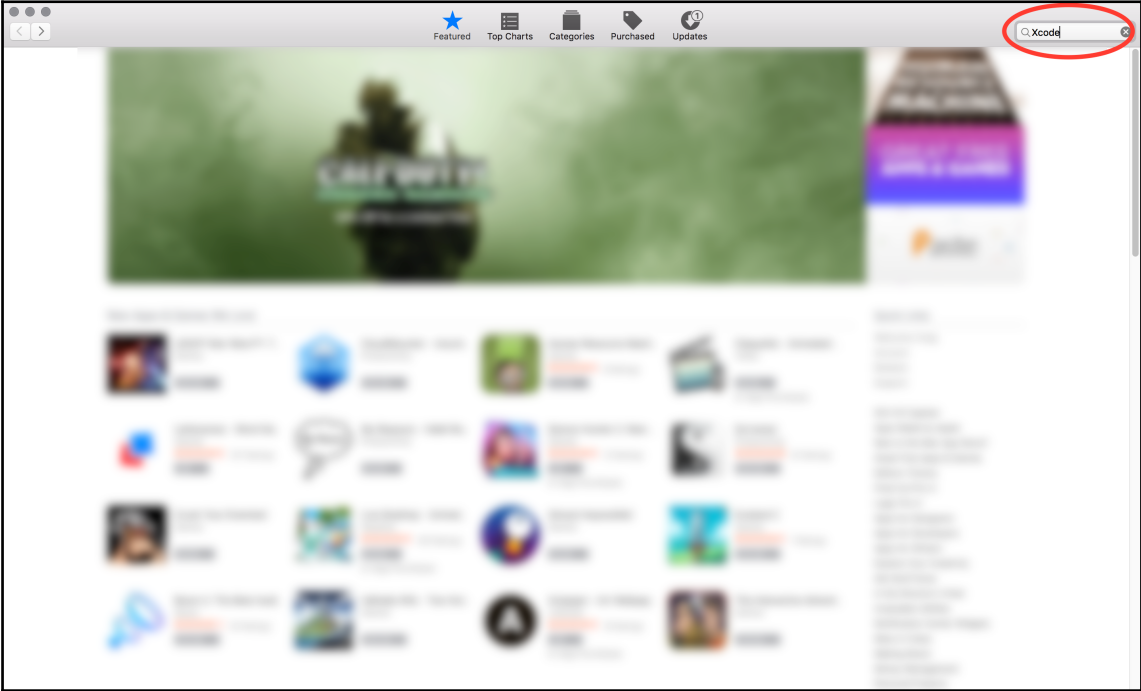
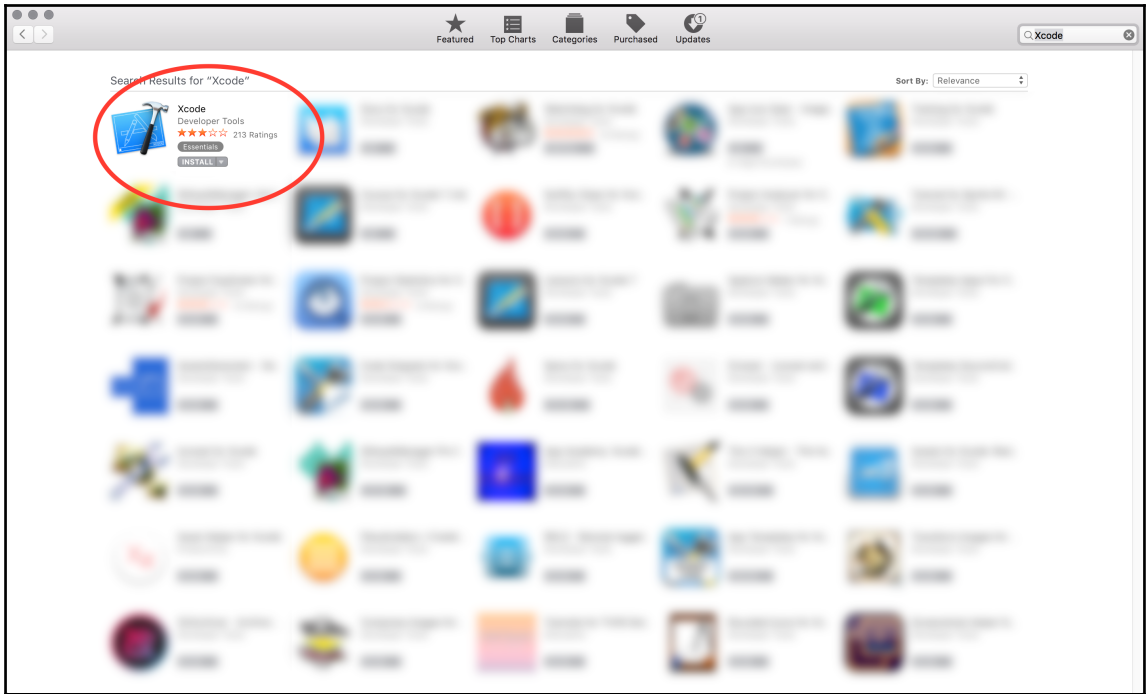
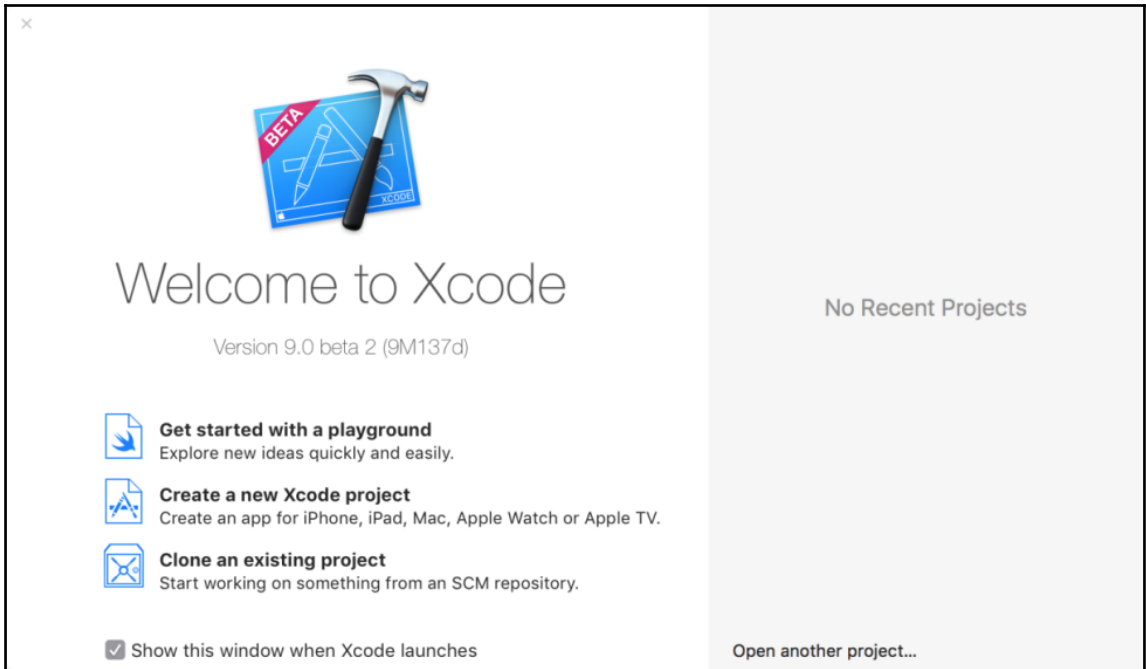
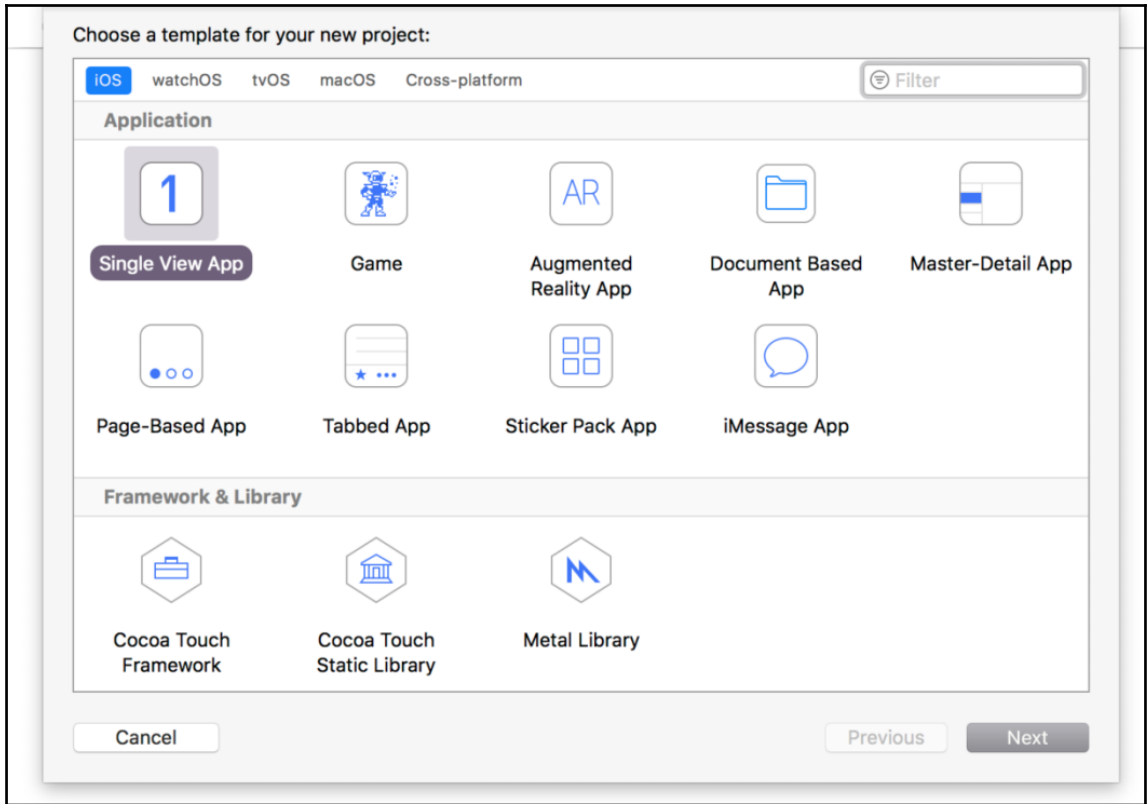


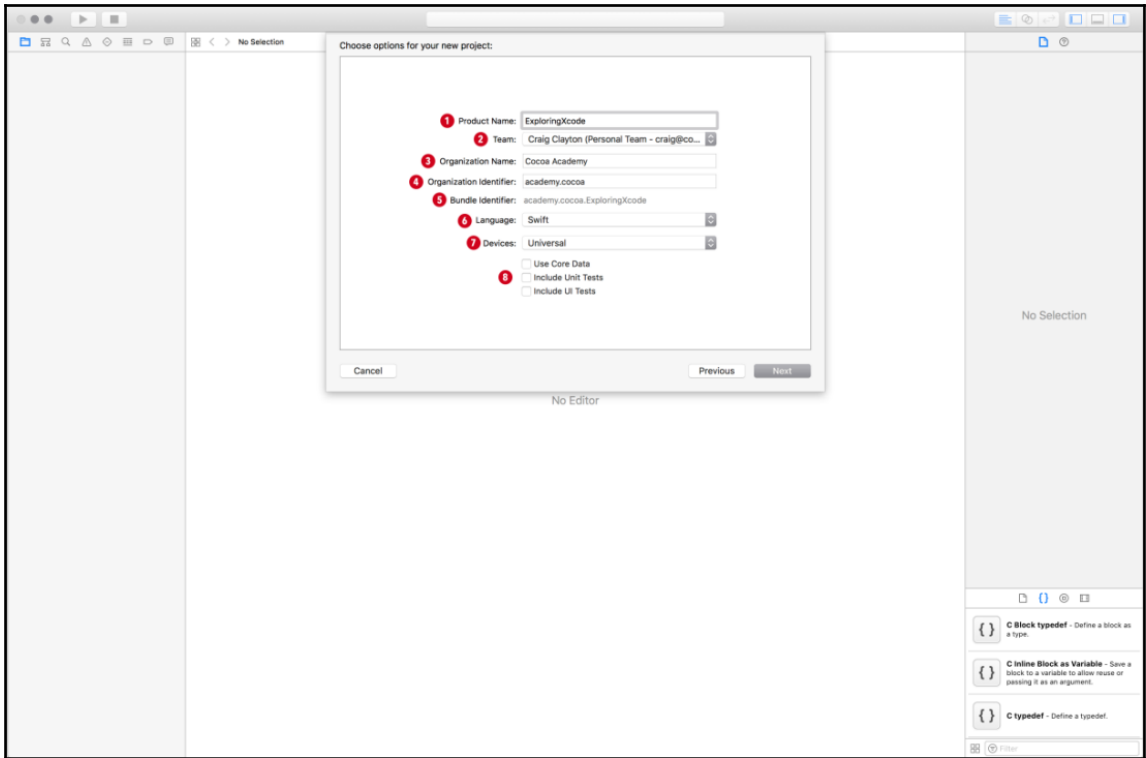
Chapter 1: Getting Familiar with Xcode

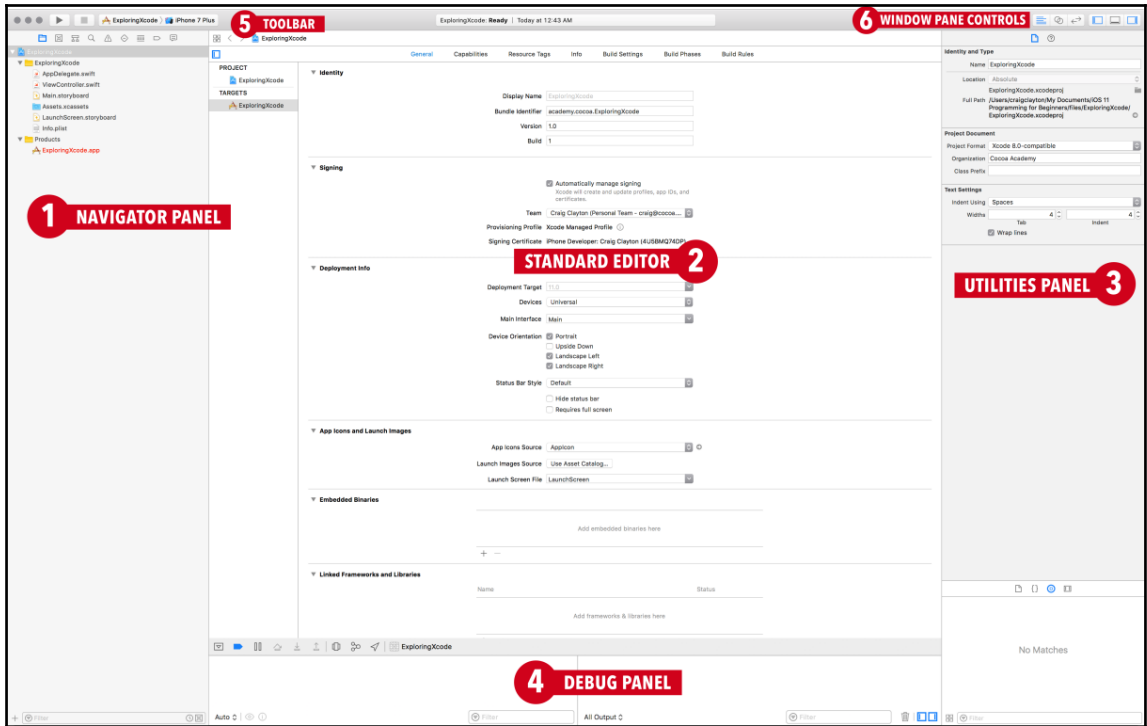


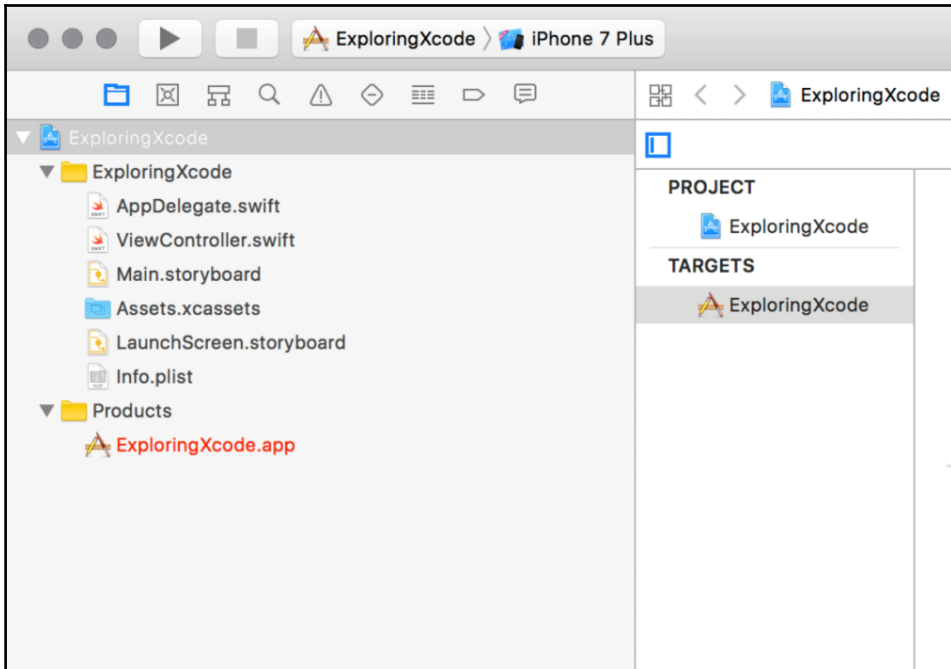


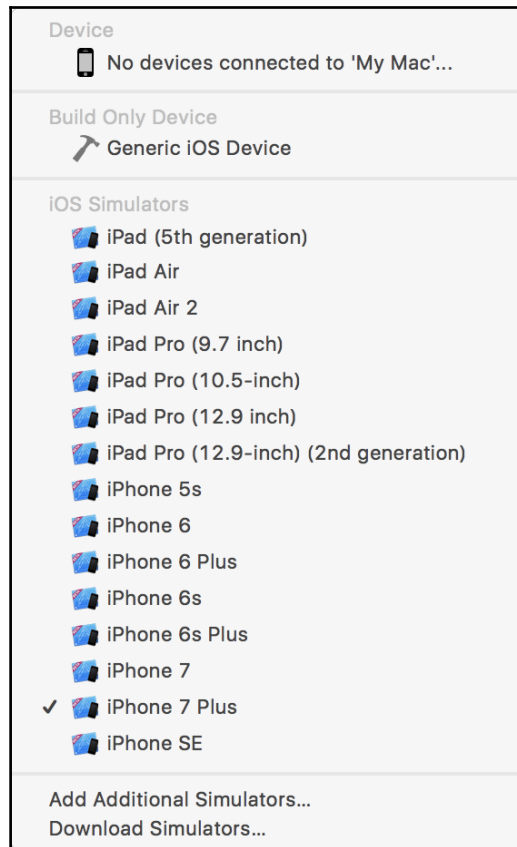


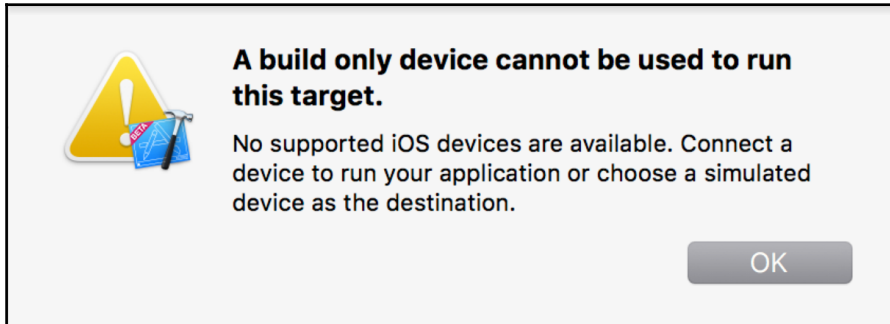
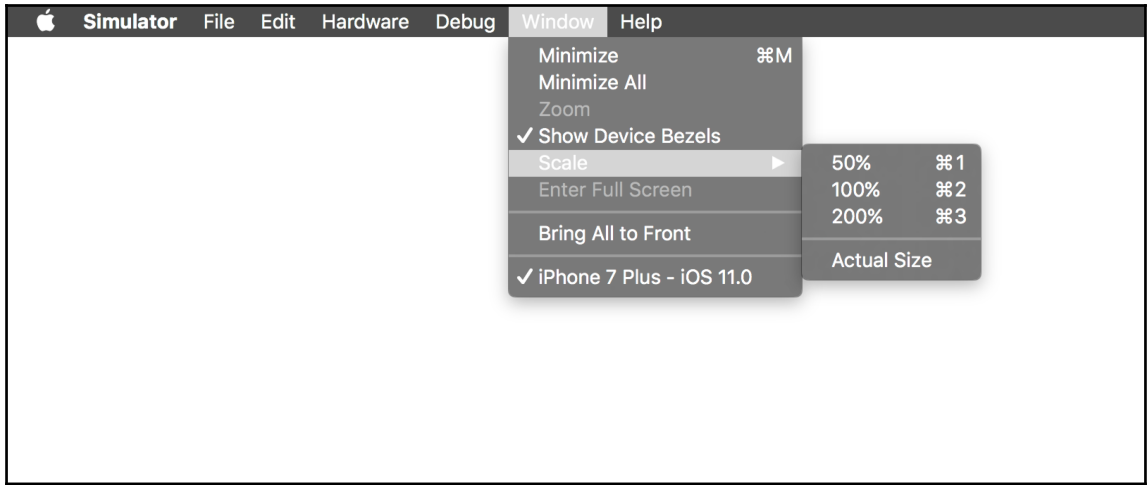


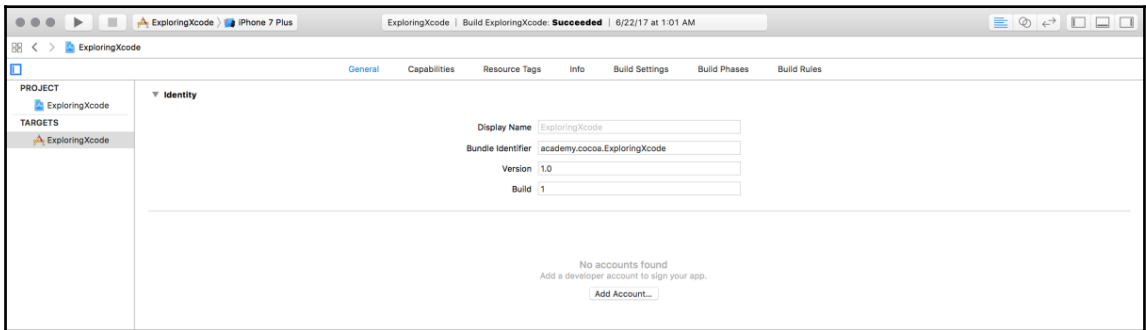
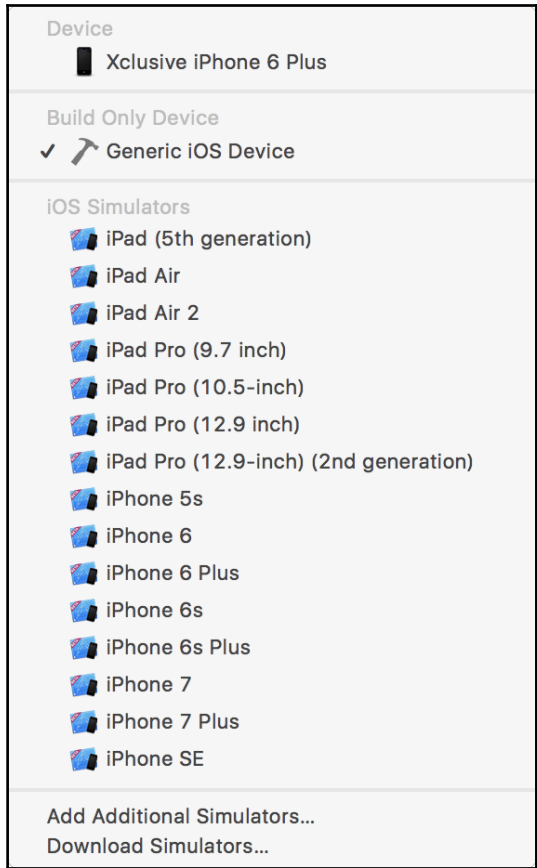


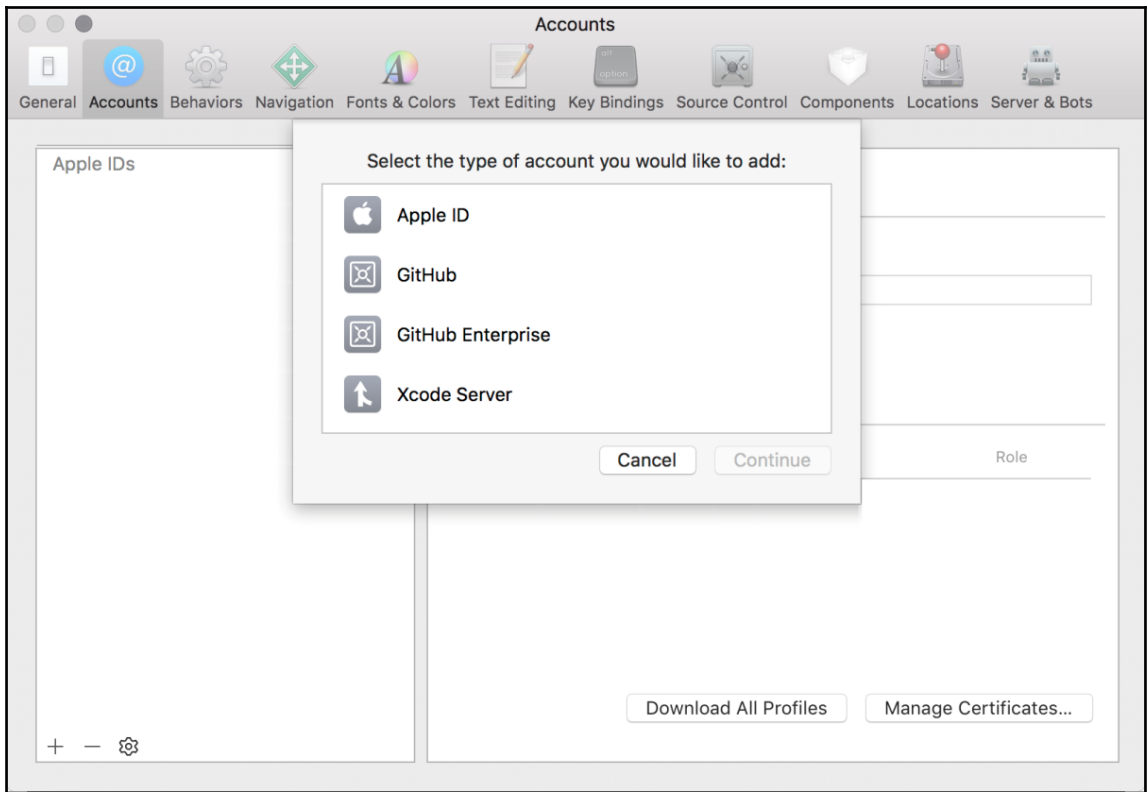


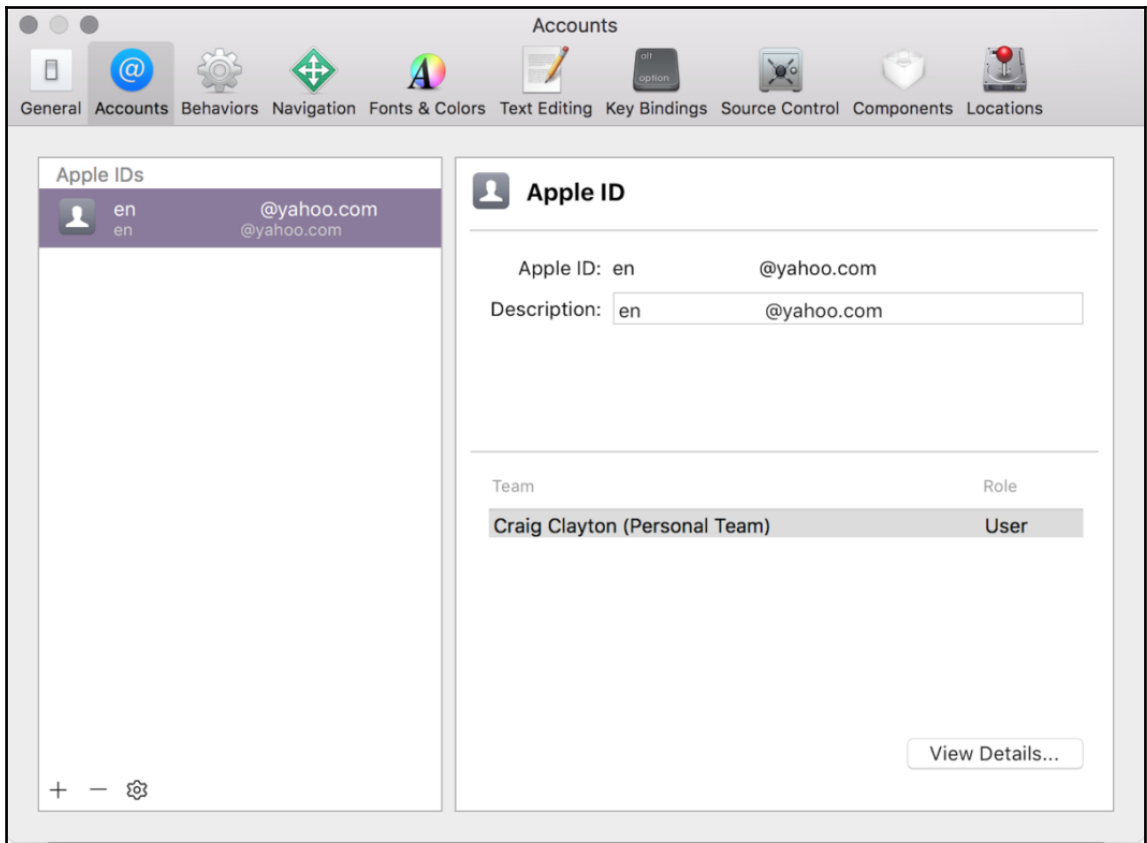


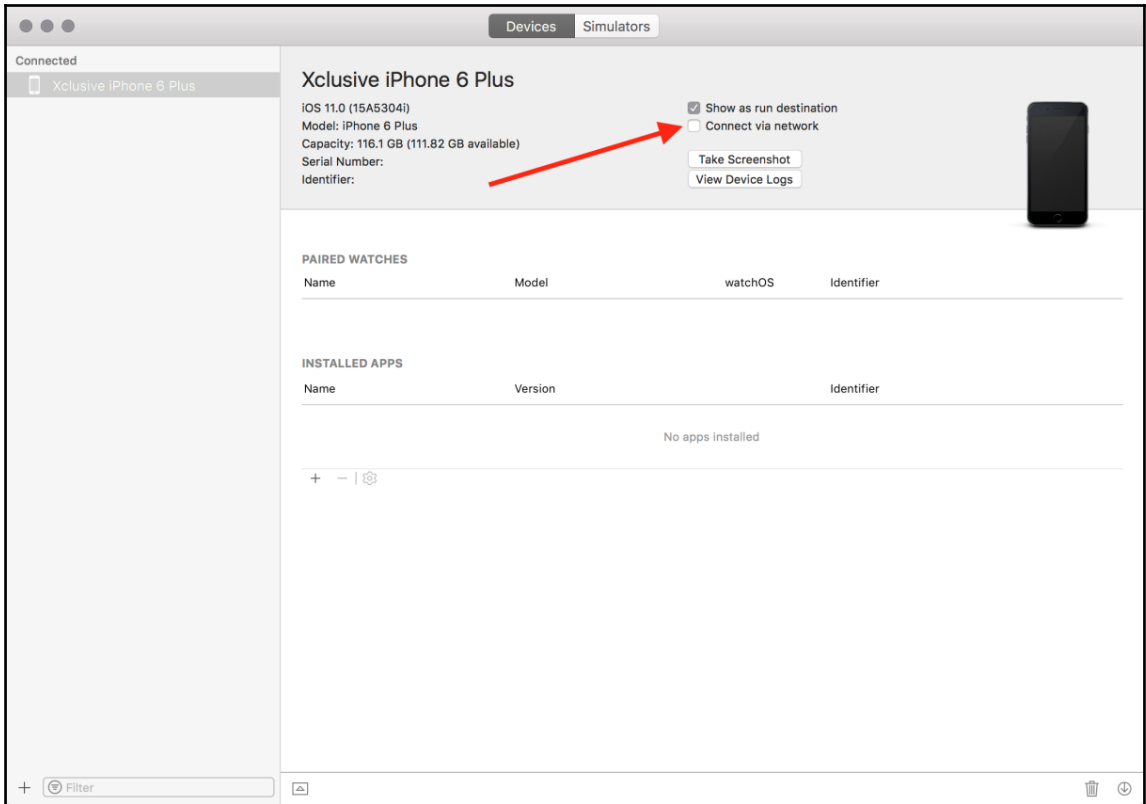


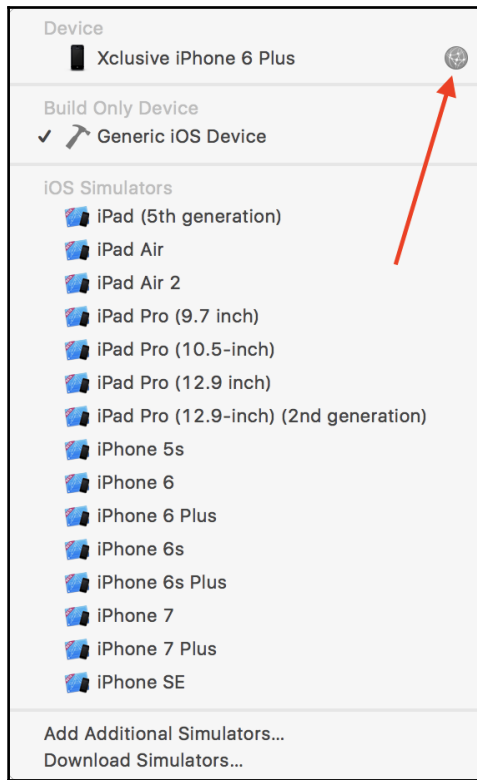


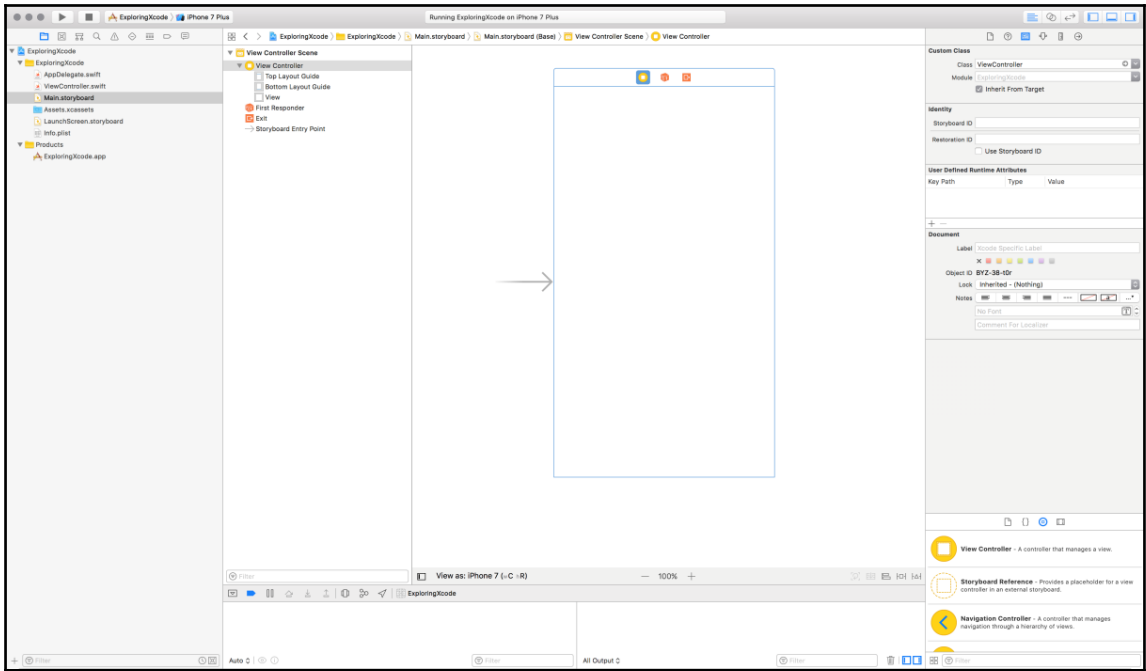


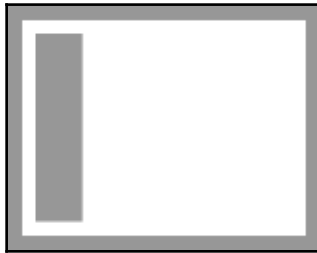
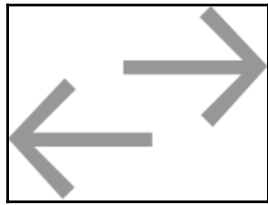
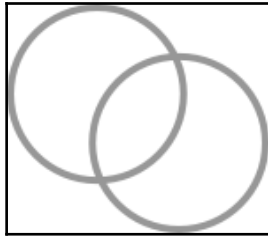






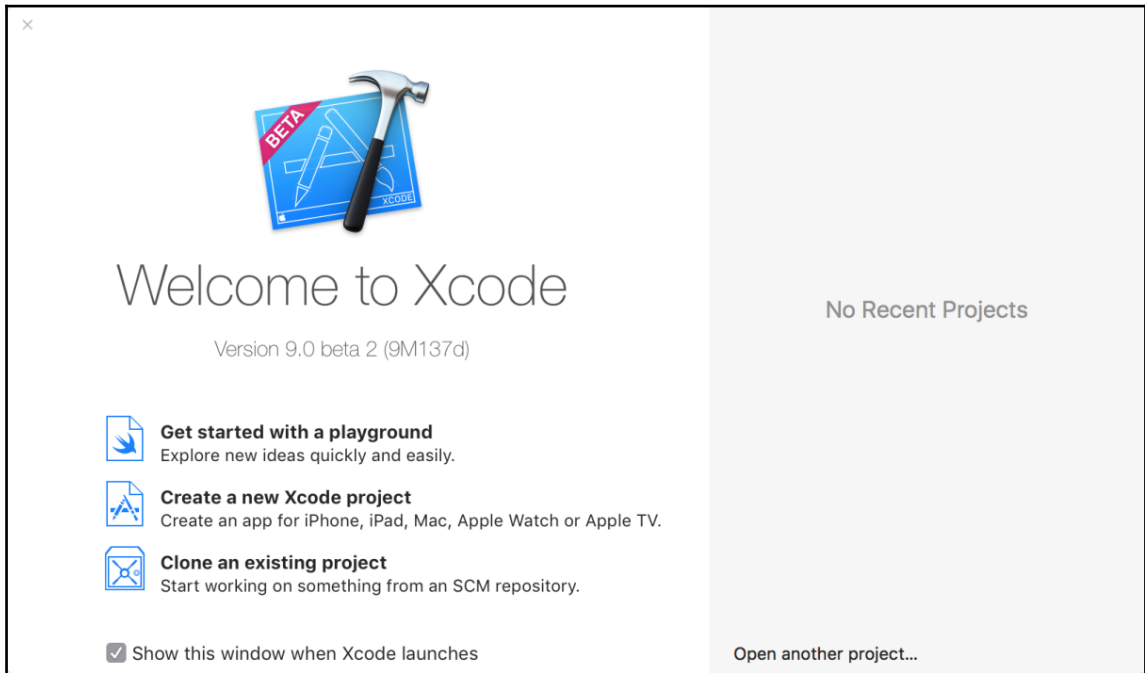


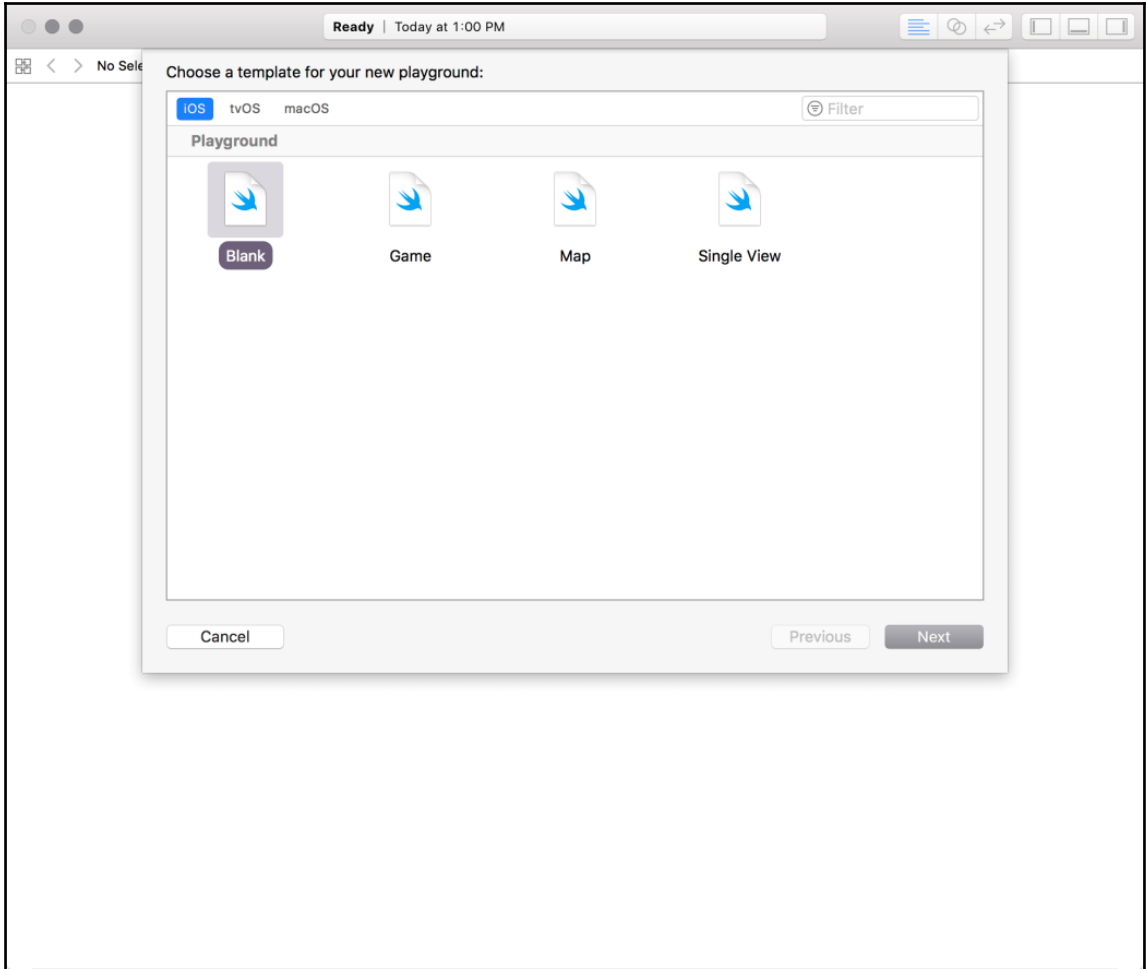


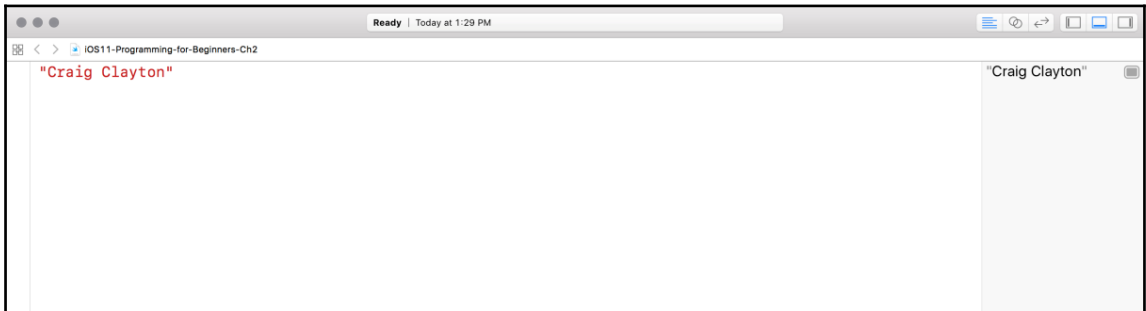
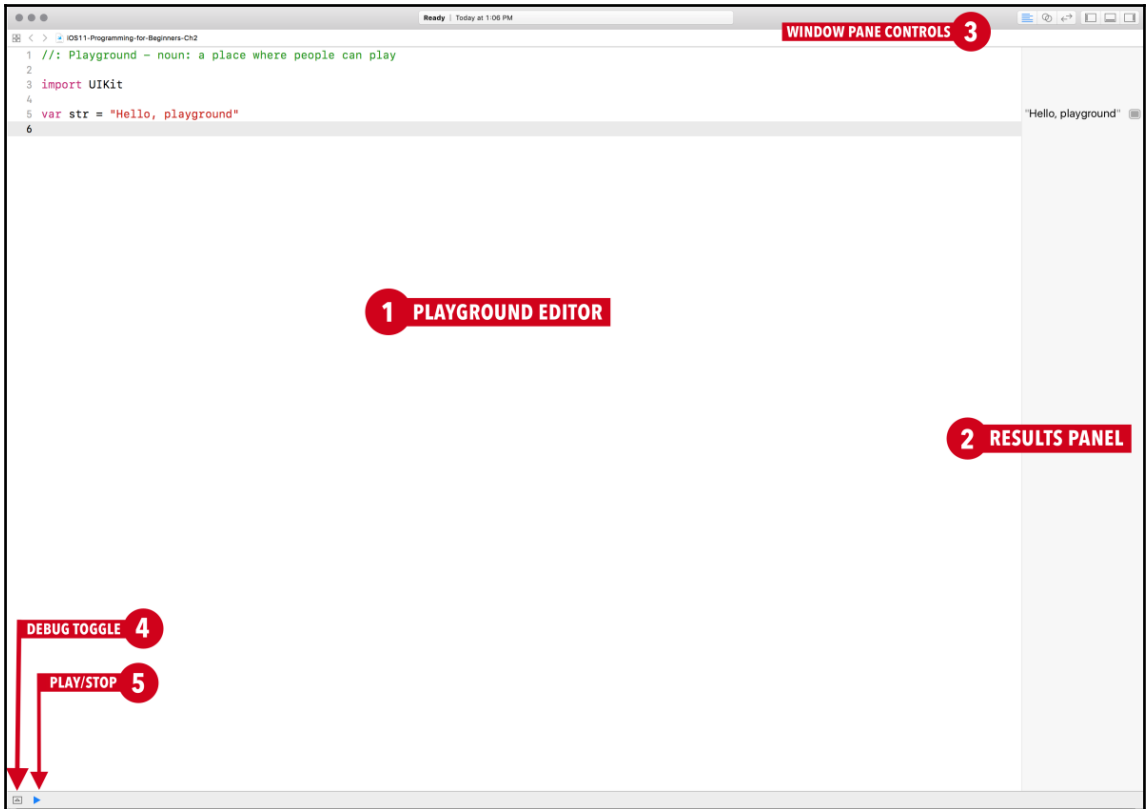




Chapter 2: Building a Foundation with Swift







```
"Craig Clayton"
32
-100
```

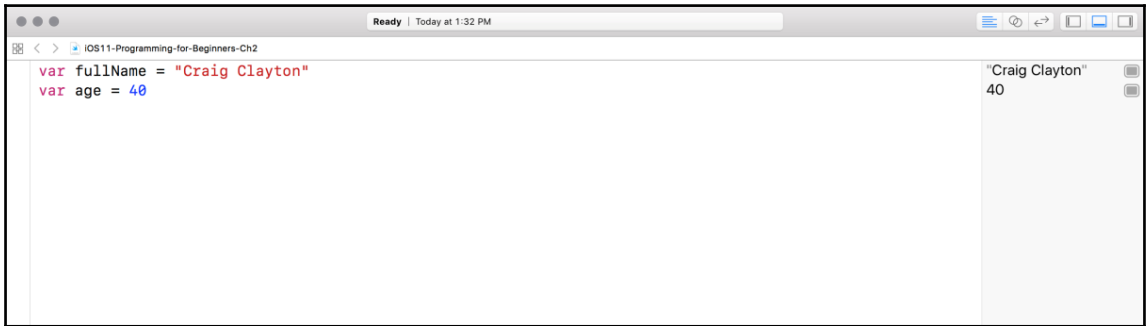
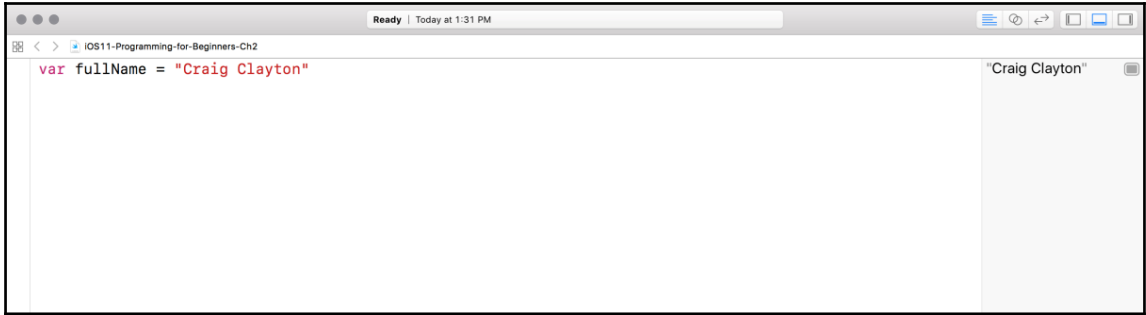
```
"Craig Clayton"
32
-100
```

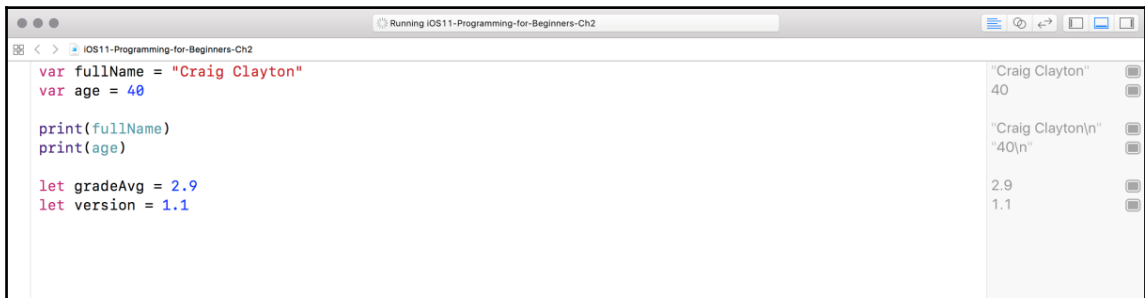
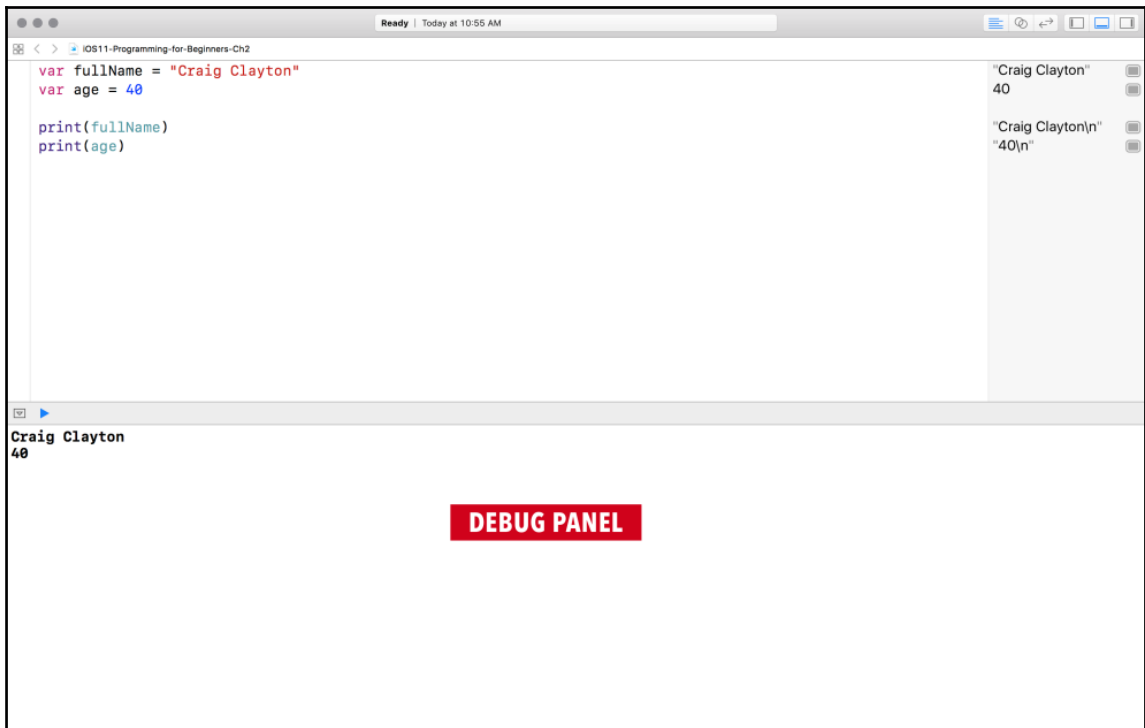
```
"Craig Clayton"
32
-100
4.993
0.5
-234.99
```

```
"Craig Clayton"
32
-100
4.993
0.5
-234.99
```

```
"Craig Clayton"
32
-100
4.993
0.5
-234.99
true
false
```

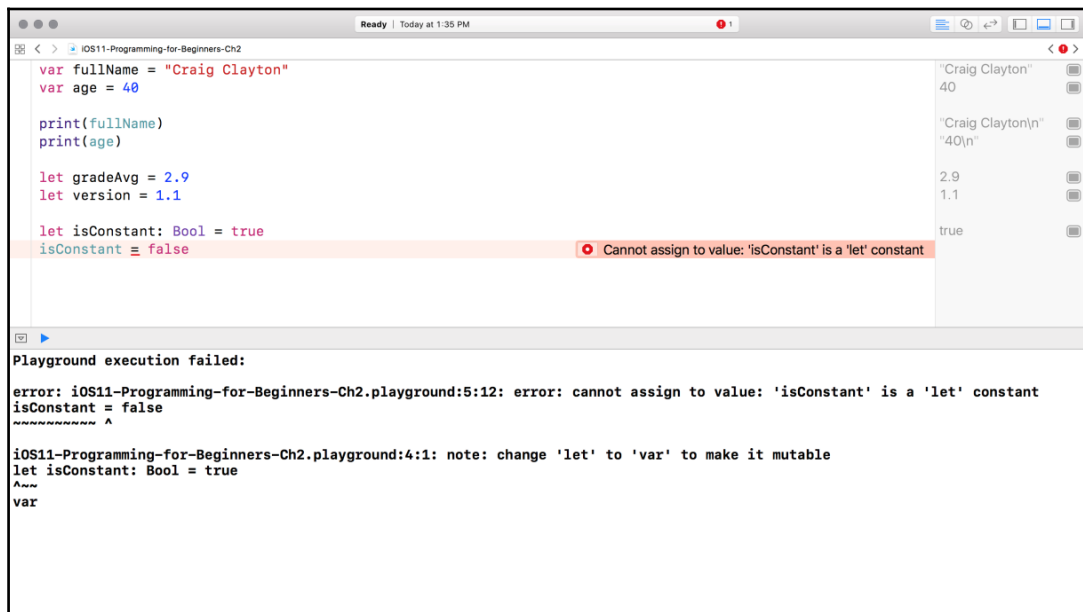
```
"Craig Clayton"
32
-100
4.993
0.5
-234.99
true
false
```

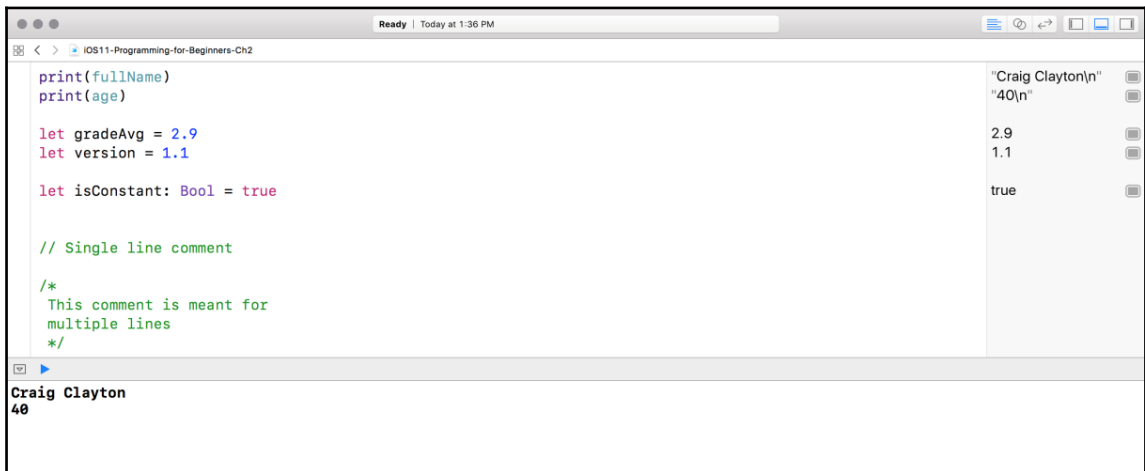
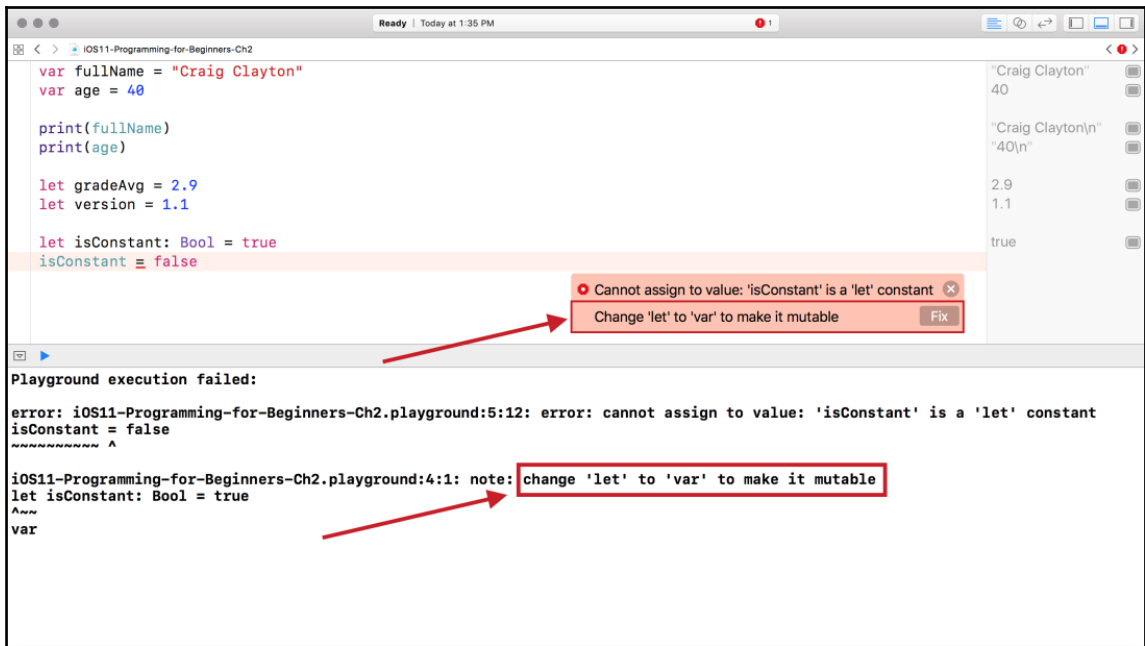




Double vs Float

```
let lessPrecisePI = Float("3.14")
let morePrecisePI = Float("3.1415926536")
```





```
let firstName = "Craig"
let lastName = "Clayton"
```

"Craig"
"Clayton"

```
let firstName = "Craig"
let lastName = "Clayton"

let full = "\(firstName) \(lastName)"
```

"Craig"
"Clayton"
"Craig Clayton"

```
let firstName = "Craig"
let lastName = "Clayton"

let full = "\(firstName) \(lastName)"
print("\(firstName) \(lastName)")
```

"Craig"
"Clayton"
"Craig Clayton"
"Craig Clayton"

Craig Clayton

```
IOS11-Programming-for-Beginners-Ch2
// (+) operator
let sum = 23 + 20
// (-) operator
let result = 32 - sum
// (*) operator
let total = result * 5
// (/) operator
let divide = total / 10
```

43
-11
-55
-5

```
IOS11-Programming-for-Beginners-Ch2
// (+) operator
let sum = 23 + 20
// (-) operator
let result = 32 - sum
// (*) operator
let total = result * 5
// (/) operator
let divide = total / 10
let divide2 = Double(total) / 10
```

43
-11
-55
-5
-5.5

```
IOS11-Programming-for-Beginners-Ch2
// (+) operator
let sum = 23 + 20
// (-) operator
let result = 32 - sum
// (*) operator
let total = result * 5
// (/) operator
let divide = total / 10
let divide2 = Double(total) / 10
let mod = 7 % 3
```

43
-11
-55
-5
-5.5
1

```
Ready | Today at 4:54 PM
IOS11-Programming-for-Beginners-Ch2

var count = 0
// Option #1
count = count + 1
count = count - 1
// Option #2
count += 1
count -= 1
```

0	<input type="checkbox"/>
1	<input type="checkbox"/>
0	<input type="checkbox"/>
1	<input type="checkbox"/>
0	<input type="checkbox"/>

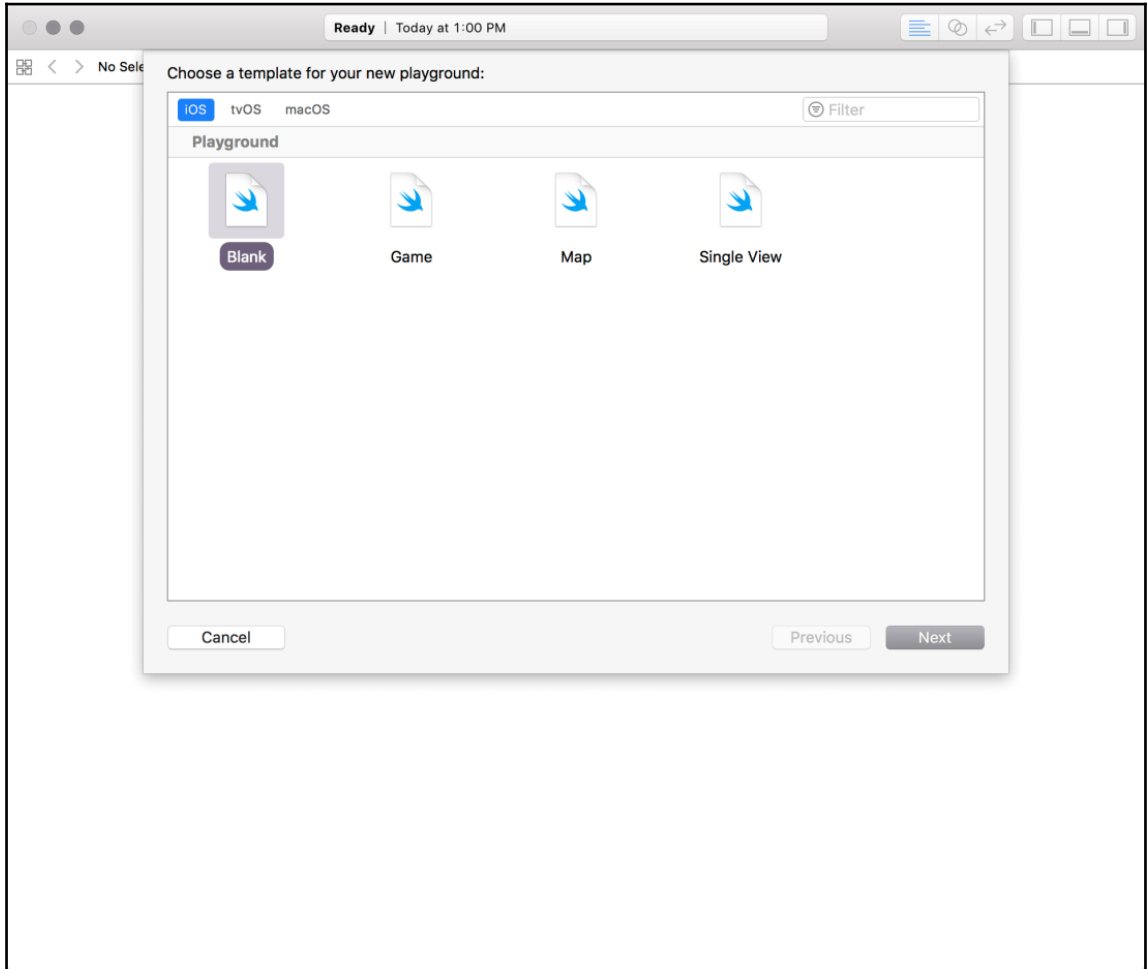
```
Ready | Today at 4:55 PM
IOS11-Programming-for-Beginners-Ch2

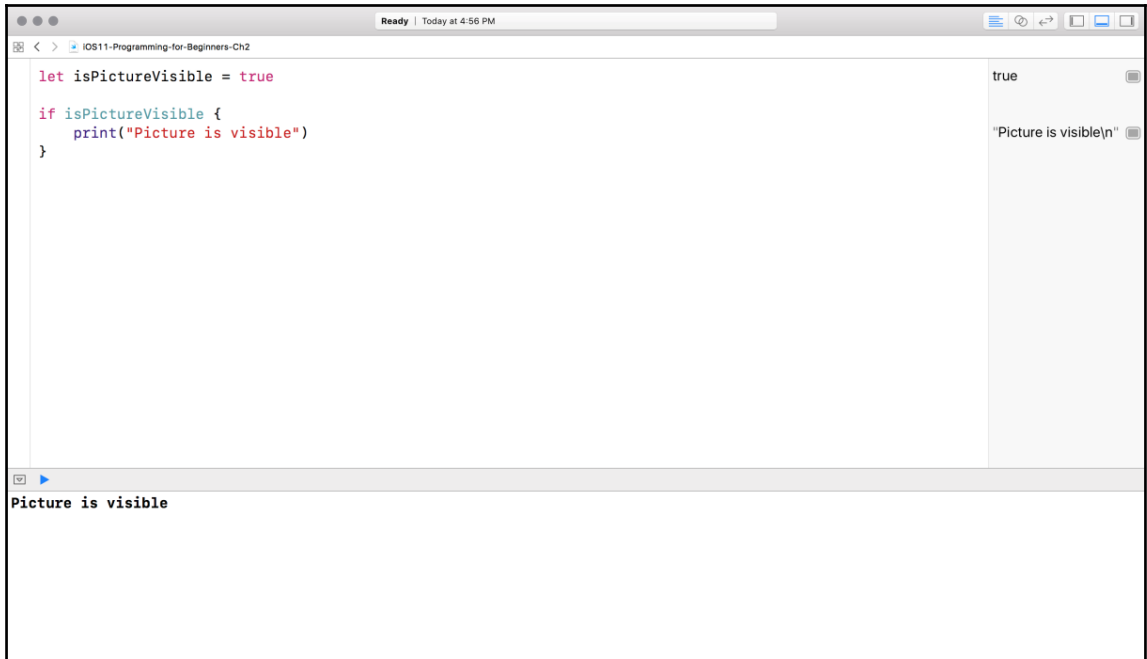
let firstValue = 1
let secondValue = 2

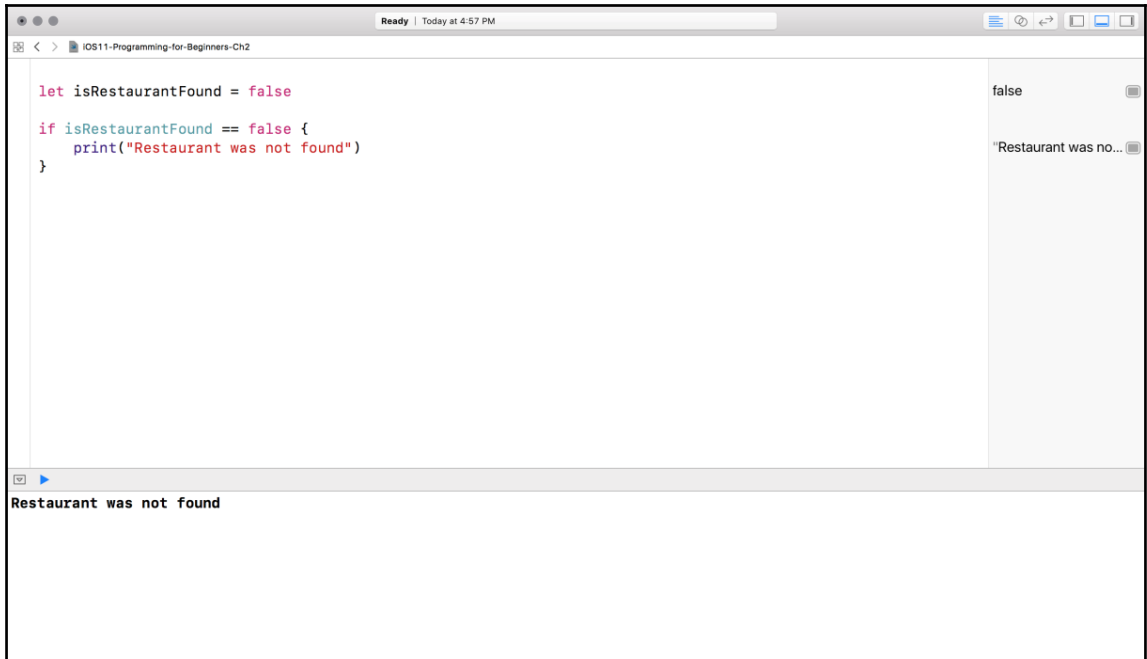
// Checking for greater than
firstValue > secondValue
// Checking for less than
firstValue < secondValue
// Checking for greater than or equal
firstValue >= secondValue
// Checking for less than or equal
firstValue <= secondValue
// Checking for equal
firstValue == secondValue
// Checking for not equal
firstValue != secondValue
```

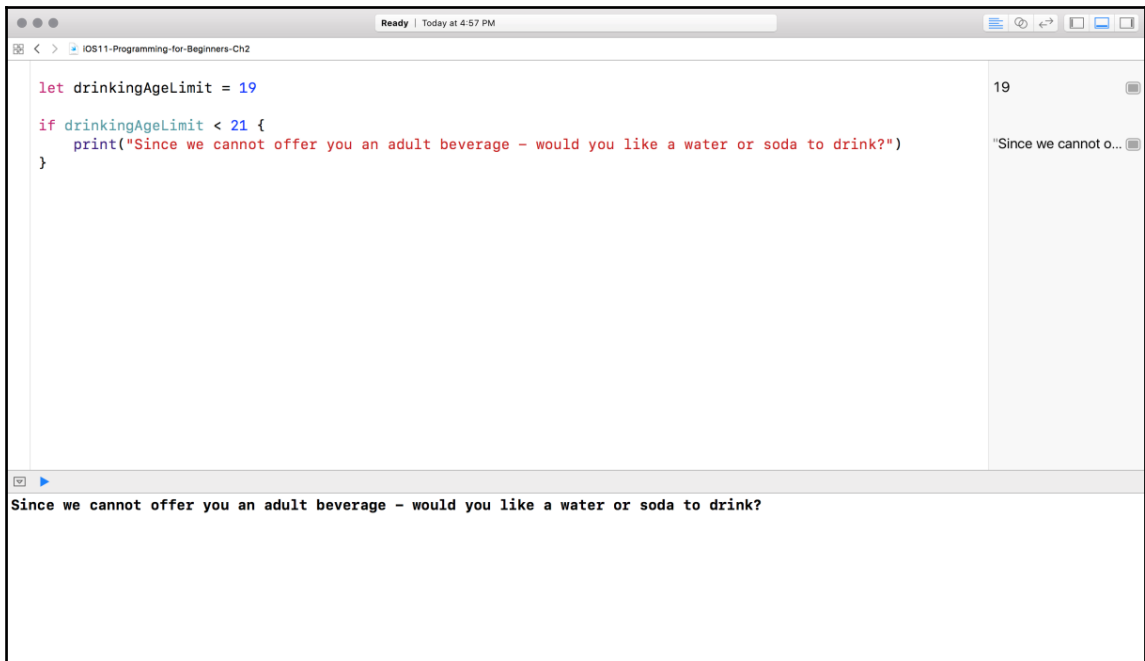
1	<input type="checkbox"/>
2	<input type="checkbox"/>
false	<input type="checkbox"/>
true	<input type="checkbox"/>
false	<input type="checkbox"/>
true	<input type="checkbox"/>
false	<input type="checkbox"/>
true	<input type="checkbox"/>

Chapter 3: Building on the Swift Foundation









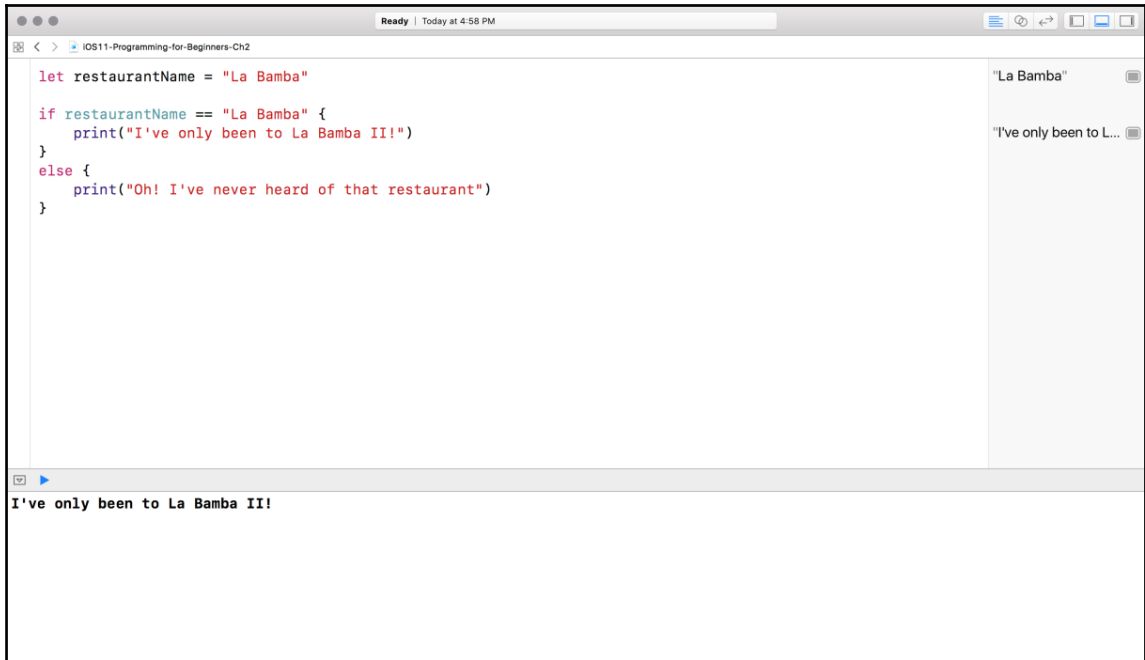

```
let drinkingAgeLimit = 19

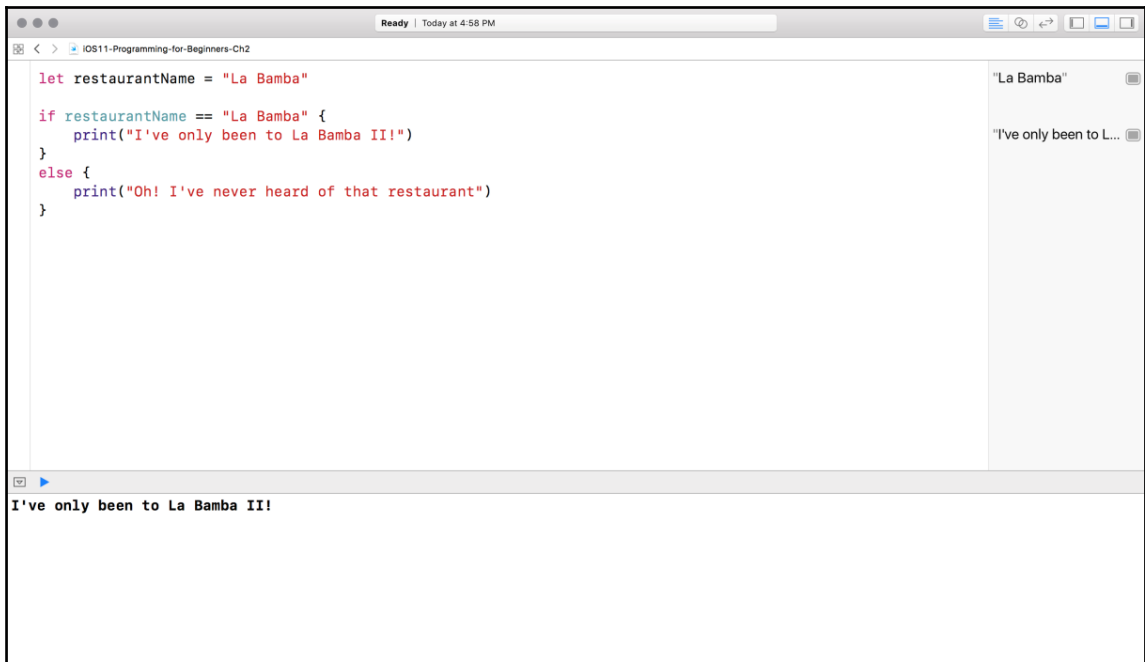
if drinkingAgeLimit < 21 {
    print("Since we cannot offer you an adult beverage - would you like a water or soda to drink?")
}
else {
    print("What type of beverage would you like? We have adult beverages along with water or soda to drink.")
}
```

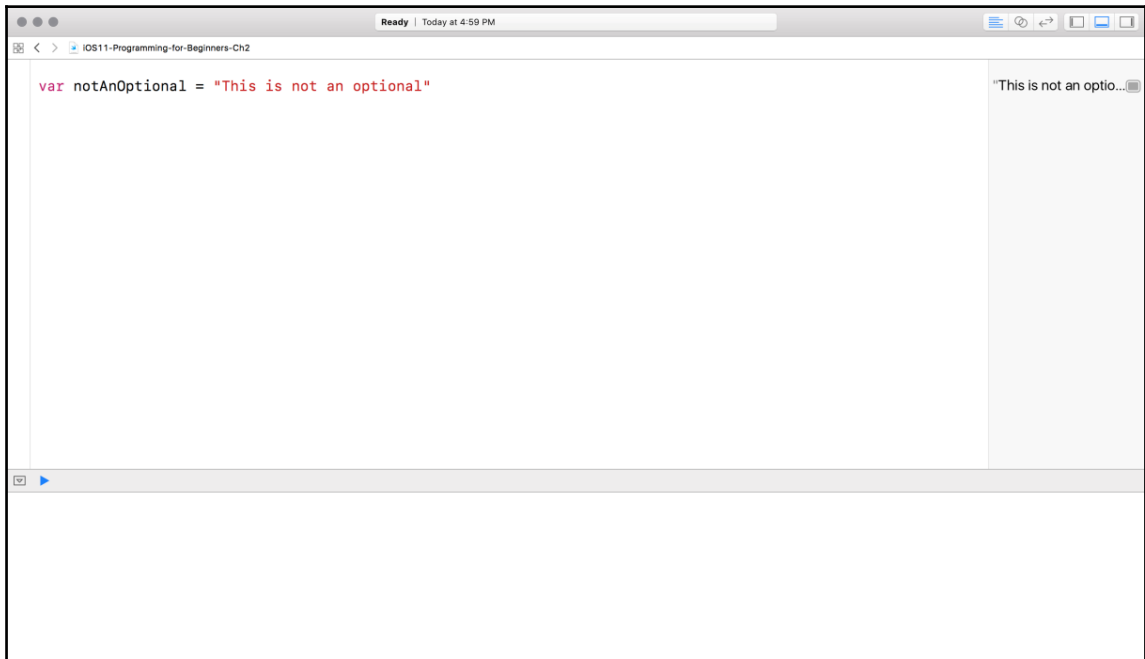
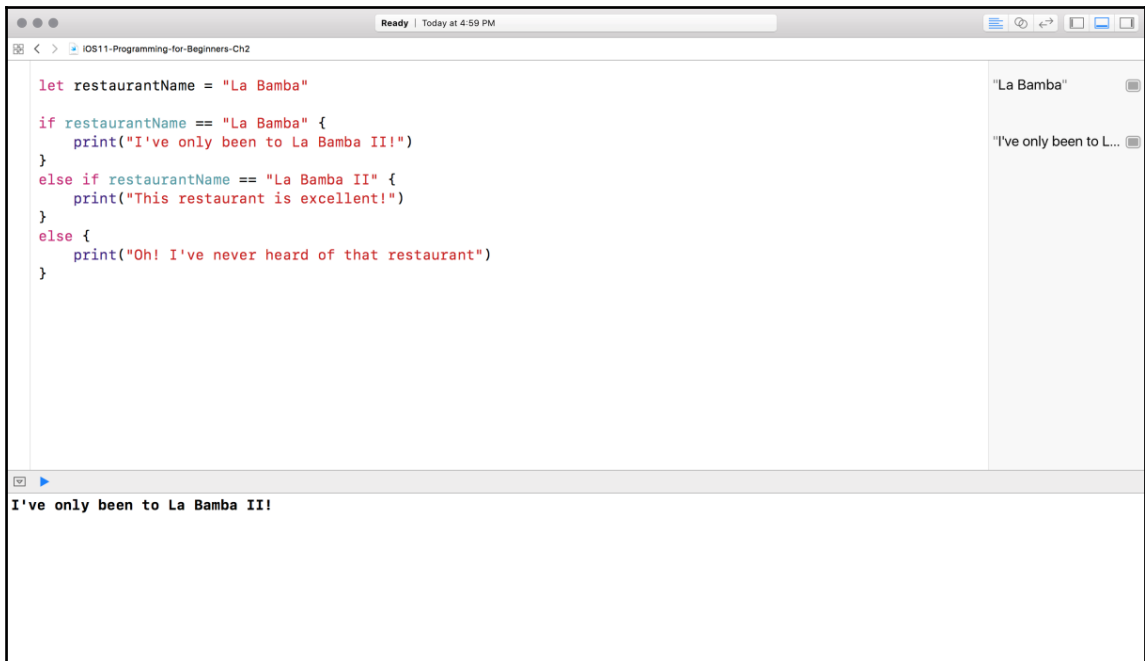
19

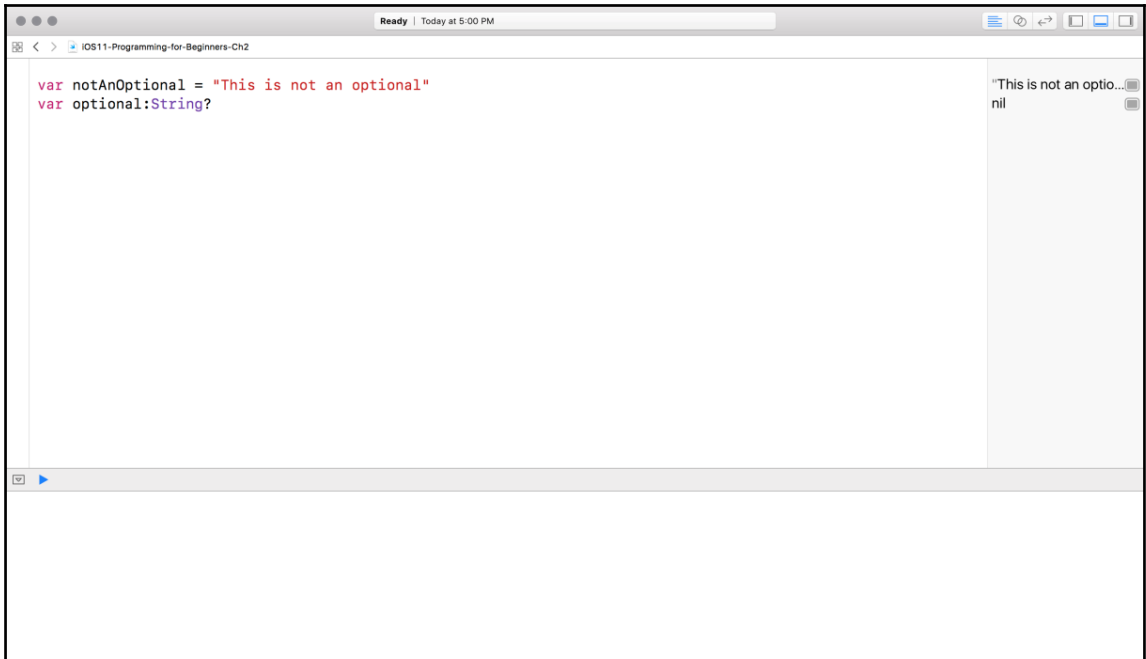
"Since we cannot o..."

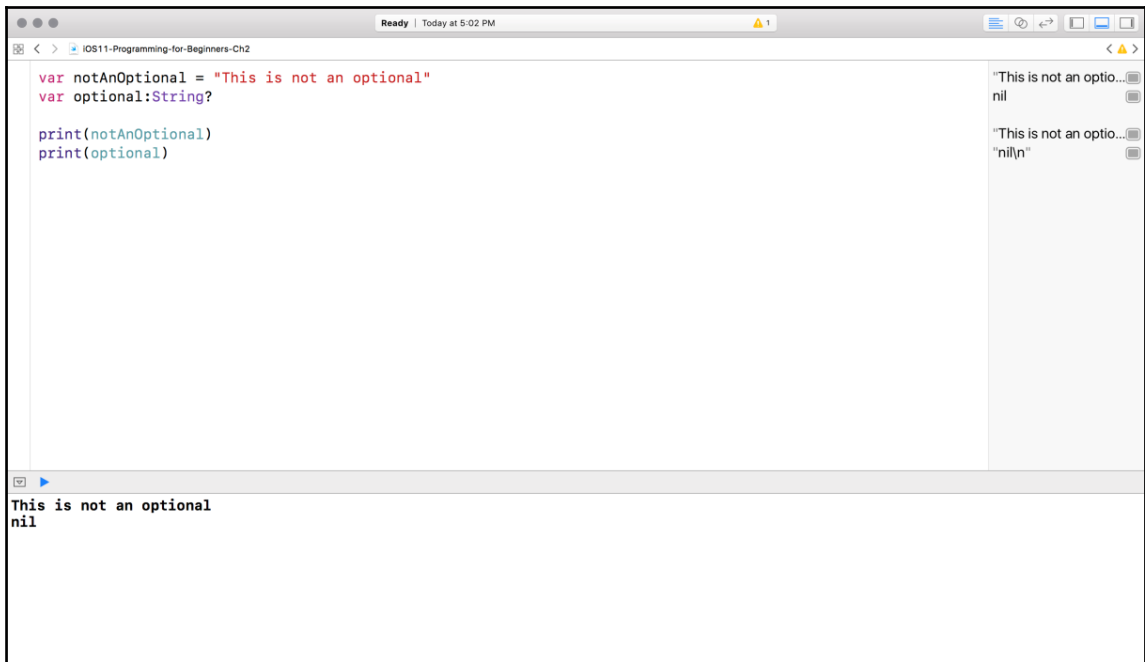
Since we cannot offer you an adult beverage - would you like a water or soda to drink?











```
var notAnOptional = "This is not an optional"
var optional:String?

print(notAnOptional)
print(optional)

optional = "This is an optional"
print(optional)
```

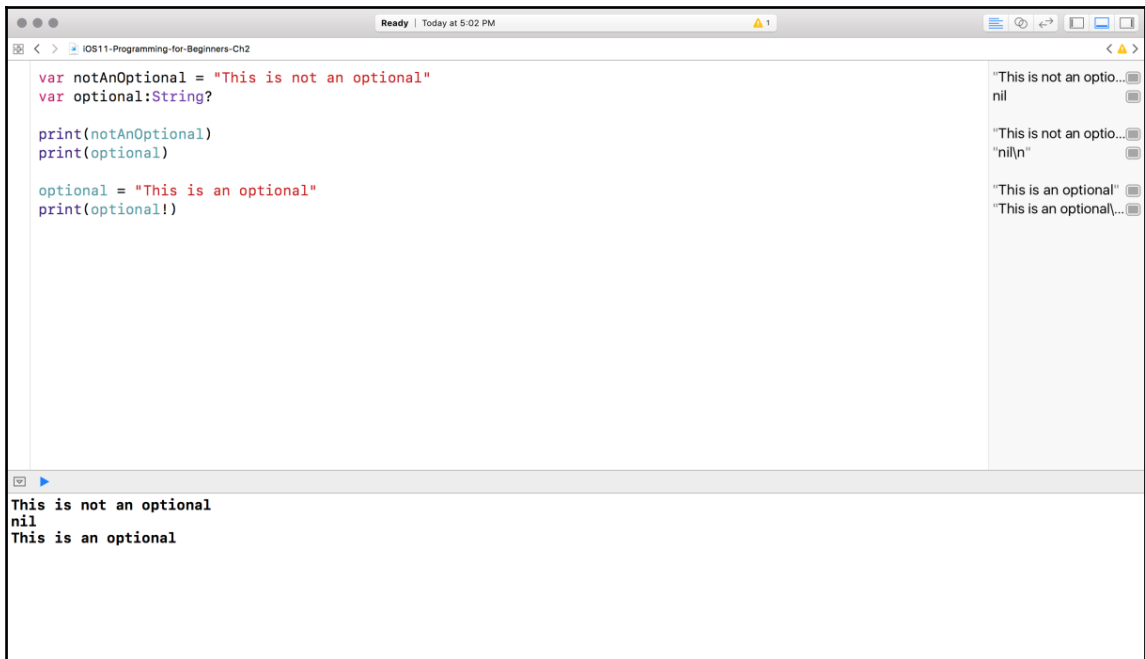
"This is not an optio...
nil
"This is not an optio...
"nil"
"This is an optional"
"Optional("This is a..."

String is not wrapped inside of an Optional

This is not an optional
nil
Optional("This is an optional")

Instead of an empty String the value is nil

Notice the String is wrapped inside of the Optional




```
var notAnOptional = "This is not an optional"
var optional:String?

print(notAnOptional)
print(optional)

optional = "This is an optional"
print(optional!)

if let value = optional {
    print("value unwrapped using if let \(value)")
}
```

This is not an optional
nil
This is an optional
value unwrapped using if let This is an optional

"This is not an optio...
nil
"This is not an optio...
"nil"
"This is an optional...
"This is an optional...
"value unwrapped..."

```
func greet() {
    print("Hello")
}
```

This is not an optional
nil
This is an optional
value unwrapped using if let This is an optional

The screenshot shows a Swift Playground window with the following code in the editor:

```
func greet() {  
    print("Hello")  
}  
  
greet()
```

The right-hand pane displays the output of the code: "Hello\n".

The bottom console pane shows the following output:

```
This is not an optional  
nil  
This is an optional  
value unwrapped using if let This is an optional  
Hello
```

```
Ready | Today at 6:08 PM
iOS11-Programming-for-Beginners-Ch3

func greet(name:String) {
    print("Hello")
}

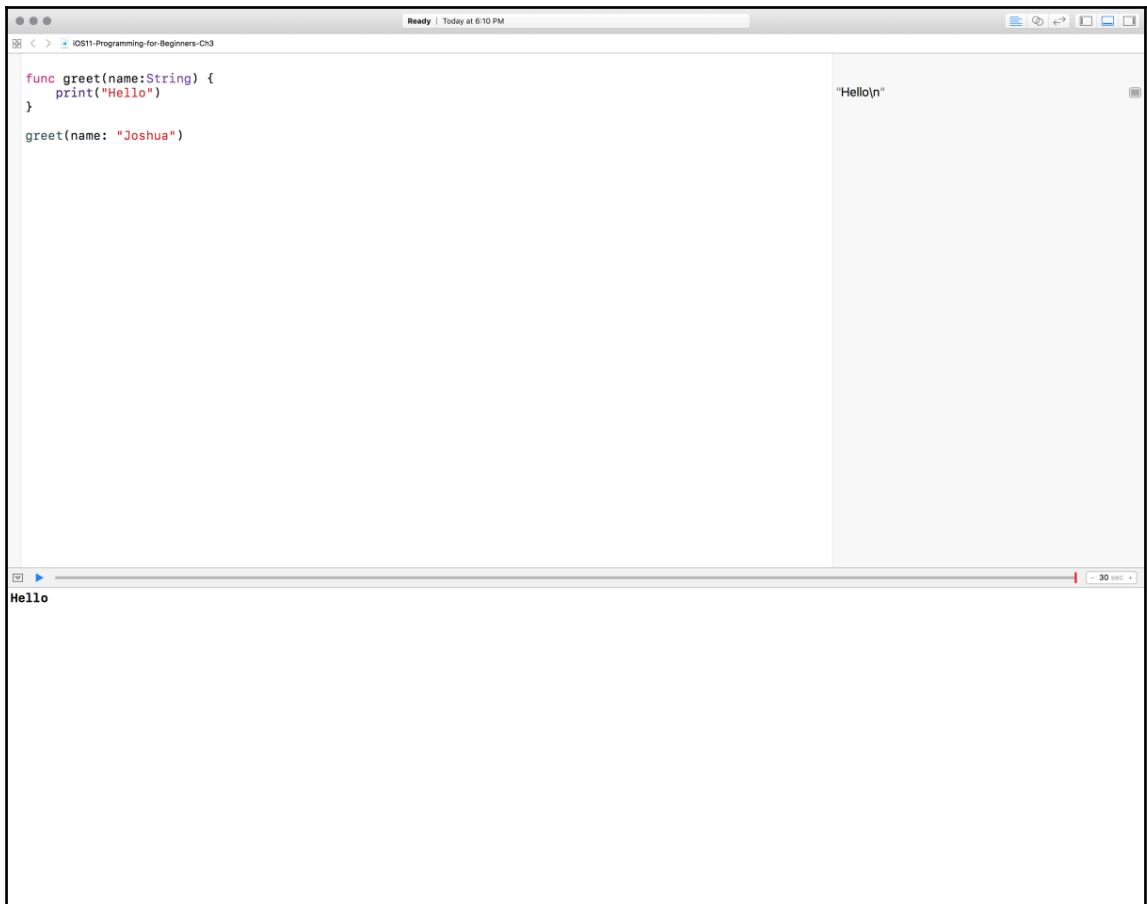
greet()

Missing argument for parameter 'name' in call error

Playground execution failed: error: iOS11-Programming-for-Beginners-Ch3.playground:87:7: error: missing argument for parameter 'name' in call
greet()
  ^
   name: <#String#>

iOS11-Programming-for-Beginners-Ch3.playground:83:6: note: 'greet(name:)' declared here
func greet(name:String) {
  ^

* thread #1, queue = 'com.apple.main-thread', stop reason = breakpoint 1.2
* frame #0: 0x000000010c4bd3b0 iOS11-Programming-for-Beginners-Ch3`executePlayground
  frame #1: 0x000000010c4bc9b0 iOS11-Programming-for-Beginners-Ch3`__37-[XCPAppDelegate enqueueRunLoopBlock]_block_invoke + 32
  frame #2: 0x000000010cfcfb5c CoreFoundation`___CFRUNLOOP_IS_CALLING_OUT_TO_A_BLOCK___ + 12
  frame #3: 0x000000010cfcfb54 CoreFoundation`___CFRunLoopDoBlocks + 356
  frame #4: 0x000000010cfc35ee CoreFoundation`___CFRunLoopRun + 894
  frame #5: 0x000000010cfc3016 CoreFoundation`CFRunLoopRunSpecific + 406
  frame #6: 0x000000011246ca24 GraphicsServices`GSEventRunModal + 62
  frame #7: 0x000000010db350d4 UIKit`UIApplicationMain + 159
  frame #8: 0x000000010c4bc6d9 iOS11-Programming-for-Beginners-Ch3`main + 281
  frame #9: 0x00000001105fe65d libdyld.dylib`start + 1
```



The image shows a screenshot of a Go IDE window. The window title is "Ready | Today at 6:11 PM". The address bar shows "ID511-Programming-for-Beginners-Ch3". The editor contains the following Go code:

```
func greet(name:String) {  
    print("Hello \(name)")  
}  
  
greet(name: "Joshua")
```

The output pane on the right shows the result of the function call: "Hello Joshua\n". The console at the bottom of the window shows the output: "Hello Joshua". A progress bar at the bottom right of the console indicates a duration of 30 seconds.

The screenshot shows an IDE window titled "IOS11-Programming-for-Beginners-Ch2". The code editor contains the following Kotlin code:

```
func greet(name:String) {  
    print("Hello \{(name)}")  
}  
  
greet(name: "Joshua")  
  
func greet(first:String, last:String) {  
    print("Hello \{(first)} \{(last)}")  
}
```

The right-hand side of the IDE shows the output of the code, with two lines of text: "Hello Joshua\n" and "Hello Jason Clayto...".

At the bottom of the IDE, there is a console window with the following output:

```
This is not an optional  
This is an optional  
value unwrapped using if let This is an optional  
Hello Joshua  
Hello Jason Clayton
```

The screenshot shows an IDE window titled "IOS11-Programming-for-Beginners-Ch2". The code editor contains the following Kotlin code:

```
func greet(name:String) {  
    print("Hello \{(name)}")  
}  
  
greet(name: "Joshua")  
  
func greet(first:String, last:String) {  
    print("Hello \{(first)} \{(last)}")  
}  
  
greet(first: "Jason", last: "Clayton")
```

The right-hand side of the IDE shows the output of the code, with two lines of text: "Hello Joshua\n" and "Hello Jason Clayto...".

At the bottom of the IDE, there is a console window with the following output:

```
This is not an optional  
This is an optional  
value unwrapped using if let This is an optional  
Hello Joshua  
Hello Jason Clayton
```

The image shows a code editor window with a title bar that reads "Ready | Today at 6:15 PM". The editor contains the following Kotlin code:

```
func greet(name:String) {  
    print("Hello \(name)")  
}  
  
greet(name: "Joshua")  
  
func greeting(with first:String, last:String) -> String {  
    return "Hello \(first) \(last)"  
}
```

The output pane on the right shows the result of the first function call: "Hello Joshua\n".

At the bottom of the editor, there is a console area with a play button icon and a timer showing "30 sec". The console output is "Hello Joshua".

The image shows a screenshot of an IDE window titled "Ready | Today at 6:18 PM". The window contains Swift code and its execution output. The code defines two functions: `greet` and `greeting`. The `greet` function takes a `String` parameter and prints "Hello \ (name)". The `greeting` function takes two `String` parameters, `first` and `last`, and returns a `String` "Hello \ (first) \ (last)". The code calls `greet` with "Joshua" and `greeting` with "Teena" and "Harris". The output shows the results of these calls: "Hello Joshua\n", "Hello Teena Harris", and "Hello Teena Harris\n".

```
func greet(name:String) {
    print("Hello \ (name)")
}
greet(name: "Joshua")

func greeting(with first:String, last:String) -> String {
    return "Hello \ (first) \ (last)"
}
print(greeting(with: "Teena", last: "Harris"))
```

"Hello Joshua\n"

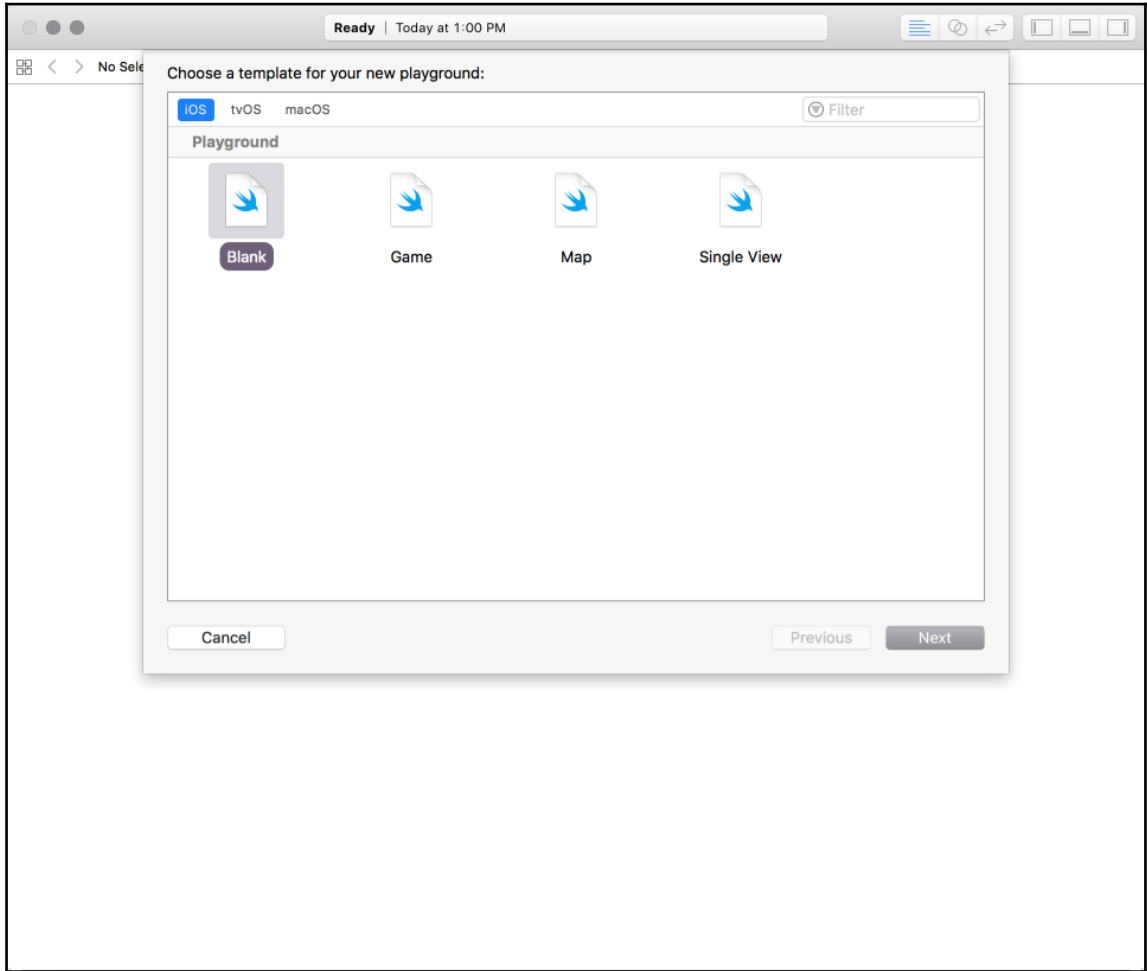
"Hello Teena Harris"

"Hello Teena Harris\n"

30 sec

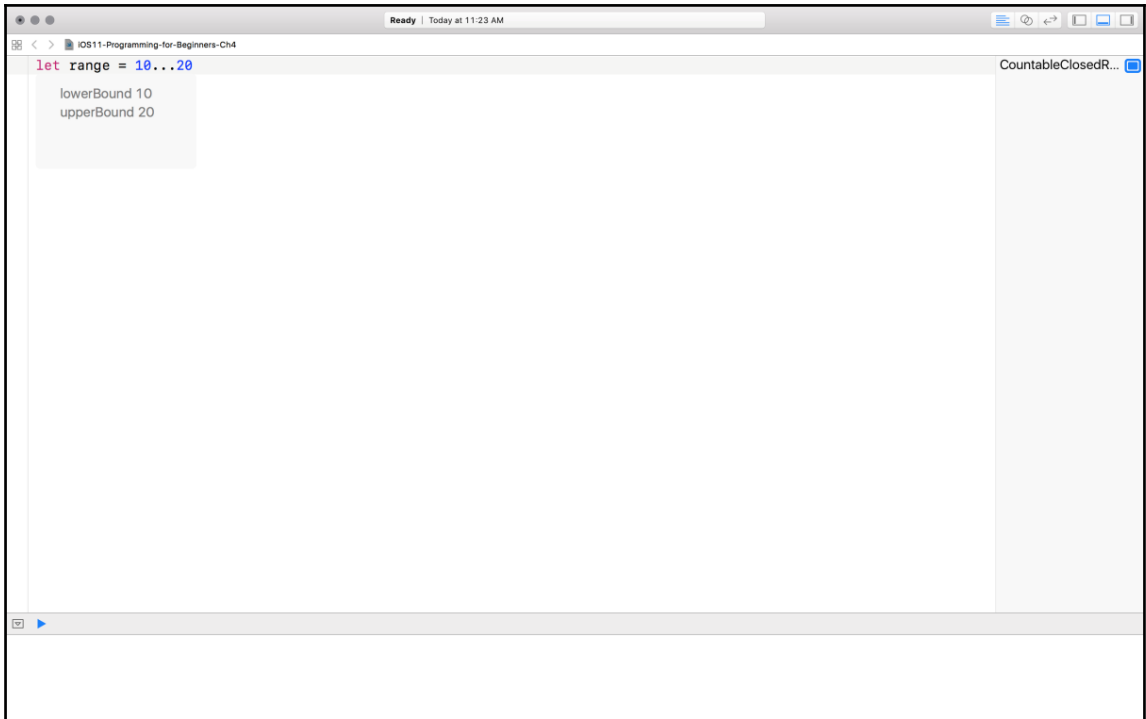
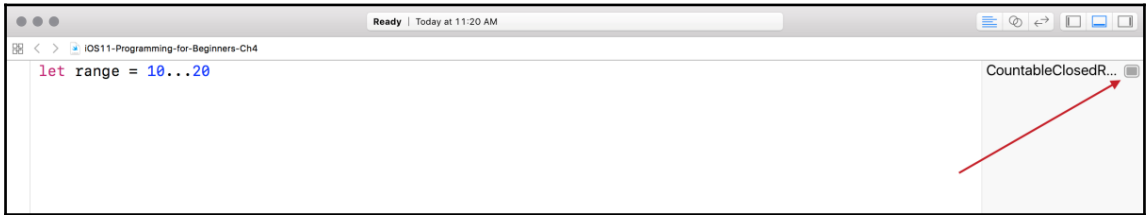
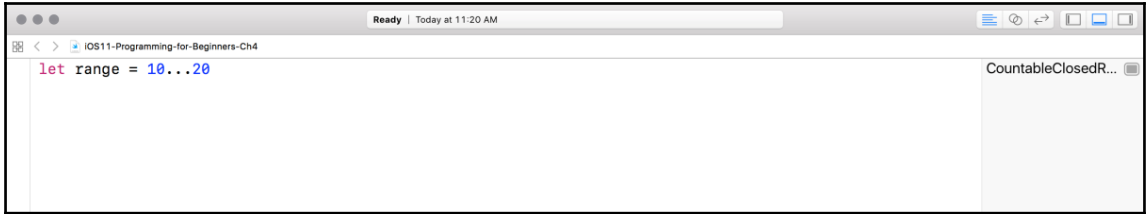
Hello Joshua
Hello Teena Harris

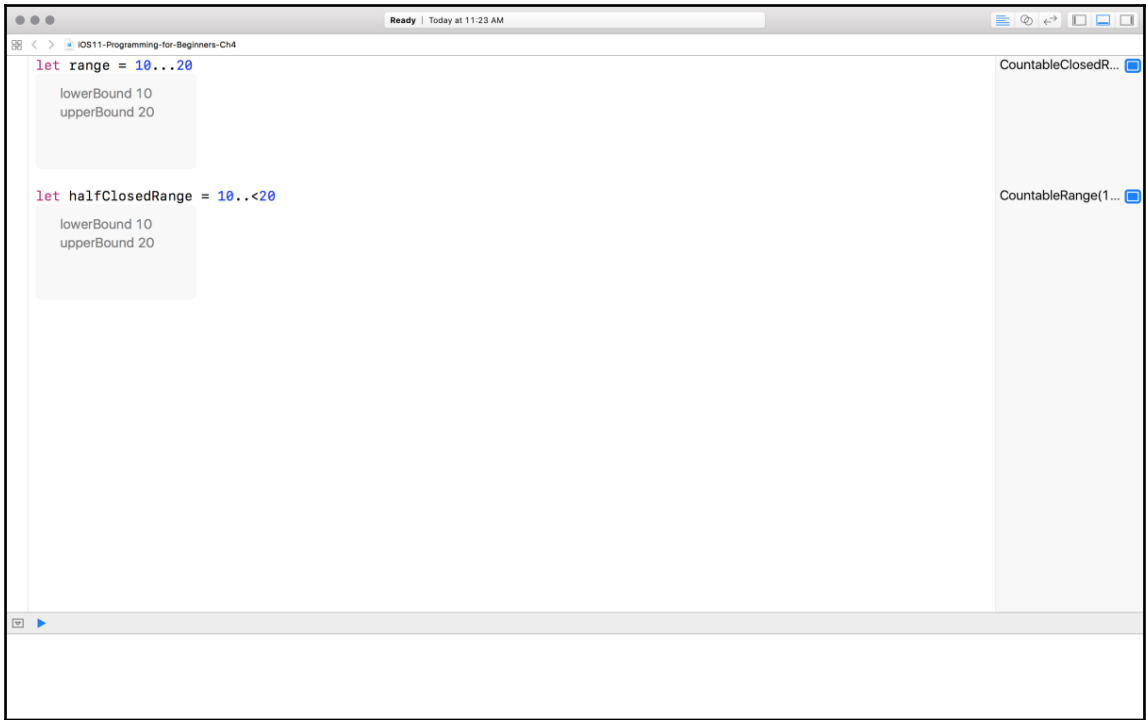
Chapter 4: Digging Deeper



10 11 12 13 14 15 16 17 18 19 20

10 11 12 13 14 15 16 17 18 19 20





The image shows a code editor window with a title bar that reads "Ready | Today at 11:26 AM". The editor's address bar contains the text "iOS11-Programming-for-Beginners-Ch4". The main editing area contains the following Go code:

```
for value in range {  
    print("closed range - \(value)")  
}
```

To the right of the code, a status bar indicates "(11 times)". Below the code editor is a terminal window with a blue play button icon. The terminal displays the output of the code, which is a list of 11 lines, each containing the text "closed range - " followed by a number from 10 to 20.

```
closed range - 10  
closed range - 11  
closed range - 12  
closed range - 13  
closed range - 14  
closed range - 15  
closed range - 16  
closed range - 16  
closed range - 17  
closed range - 18  
closed range - 18  
closed range - 19  
closed range - 20
```

The image shows a code editor window with a title bar that reads "Ready | Today at 11:27 AM". The editor contains the following Python code:

```
for index in halfClosedRange {  
    print("half closed range - \{index}")  
}
```

To the right of the code, a status indicator shows "(10 times)". Below the code editor, a terminal window displays the output of the program:

```
half closed range - 10  
half closed range - 11  
half closed range - 12  
half closed range - 13  
half closed range - 14  
half closed range - 15  
half closed range - 16  
half closed range - 17  
half closed range - 18  
half closed range - 19
```

The image shows a screenshot of a code editor window. The title bar at the top reads "Ready | Today at 11:28 AM". The address bar shows the file path "IOS11-Programming-for-Beginners-Ch4". The main editor area contains the following Go code:

```
for index in 0...3 {  
    print("range inside - \(index)")  
}
```

On the right side of the editor, there is a status bar that says "(4 times)". Below the editor is a terminal window with a blue play button icon on the left. The terminal displays the output of the code:

```
range inside - 0  
range inside - 1  
range inside - 2  
range inside - 3
```

The image shows a screenshot of a Python IDE window. The window title is "Ready | Today at 11:28 AM". The address bar shows "ID511-Programming-for-Beginners-Ch4". The code editor contains the following Python code:

```
for index in (10...20).reversed() {  
    print("reversed range - \{index}")  
}
```

On the right side of the code editor, there is a status indicator that says "(11 times)". Below the code editor, there is a console window showing the output of the code:

```
reversed range - 20  
reversed range - 19  
reversed range - 18  
reversed range - 17  
reversed range - 16  
reversed range - 15  
reversed range - 14  
reversed range - 13  
reversed range - 12  
reversed range - 11  
reversed range - 10
```


The screenshot shows a web browser window with the title "Ready | Today at 11:32 AM". The address bar contains "IOS11-Programming-for-Beginners-Ch4". The main content area displays the following JavaScript code:

```
let names = ["Craig", "Teena", "Jason", "Joshua", "Myah", "Tiffany", "Kim", "Veronica", "Mikki(KK)", "Milan", "Shelby", "Kaysey"]

for name in names[2...] {
  print(name)
}
```

On the right side of the code editor, there is a dropdown menu showing the current selection: ["Craig", "Teena", "J...". Below it, a label "(10 times)" indicates the number of iterations.

At the bottom of the browser window, the output of the code is displayed as a list of names:

```
Jason
Joshua
Myah
Tiffany
Kim
Veronica
Mikki(KK)
Milan
Shelby
Kaysey
```

The image shows a web browser window with a title bar that says "Ready | Today at 11:33 AM". The address bar contains "IOS11-Programming-for-Beginners-Ch4". The main content area displays a Python code snippet:

```
for name in names[...6] {  
    print(name)  
}
```

To the right of the code, there is a button labeled "(7 times)". Below the code, there is a blue play button icon. The output area below the play button shows the following text:

```
Craig  
Teena  
Jason  
Joshua  
Myah  
Tiffany  
Kim
```

The image shows a code editor window with a title bar that says "Ready | Today at 11:29 AM". The editor contains the following JavaScript code:

```
var y = 0

while y < 50 {
  y += 5
  print("y:\(y)")
}
```

On the right side of the editor, there is a console or output pane showing the value of the variable `y` at each iteration of the loop:

- 0
- (10 times)
- (10 times)

Below the code editor, there is a terminal or output window showing the output of the `print` statements:

```
y:5
y:10
y:15
y:20
y:25
y:30
y:35
y:40
y:45
y:50
```

The image shows a code editor window with the following content:

```
var y = 0

while y < 50 {
  y += 5
  print("y:\(y)")
}

while y < 50 {
  y += 5
  print("y:\(y)")
}
```

On the right side of the editor, there is a console output area showing the value of `y` at each iteration:

```
0
(10 times)
(10 times)
```

Below the code editor, there is a terminal window showing the output of the program:

```
y:5
y:10
y:15
y:20
y:25
y:30
y:35
y:40
y:45
y:50
```

```
var x = 0

repeat {
    x += 5
    print("x: \({x}")
} while x < 100

print("repeat completed x: \({x}")
```

0
(20 times)
(20 times)
"repeat completed..."

```
x: 5
x: 10
x: 15
x: 20
x: 25
x: 30
x: 35
x: 40
x: 45
x: 50
x: 55
x: 60
x: 65
x: 70
x: 75
x: 80
x: 85
x: 90
x: 95
x: 100
repeat completed x: 100
```

```
var x = 0

repeat {
  x += 5
  print("x: \({x}")
} while x < 100

print("repeat completed x: \({x}")

repeat {
  x += 5
  print("x: \({x}")
} while x < 100
```


0
(20 times)
(20 times)
"repeat completed..."
105
"x: 105\n"

```
x: 5
x: 10
x: 15
x: 20
x: 25
x: 30
x: 35
x: 40
x: 45
x: 50
x: 55
x: 60
x: 65
x: 70
x: 75
x: 80
x: 85
x: 90
x: 95
x: 100
repeat completed x: 100
x: 105
```

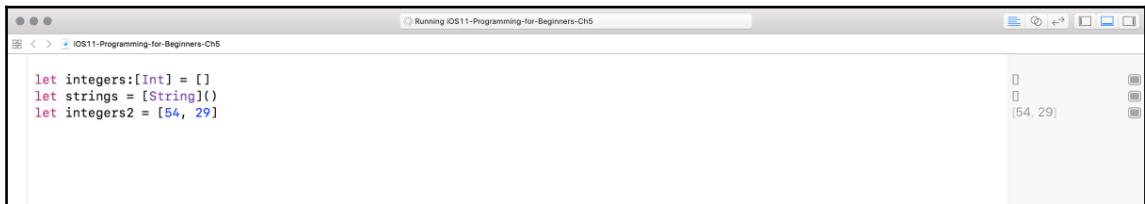
Chapter 5: Digging into Collections

0	Florida	0	45	0	Florida
1	Ohio	1	66	1	California
2	California	2	23	2	32
3	North Carolina	3	10	3	New York
4	Colorado	4	88	4	99
5	Nevada			5	true
6	New York			6	9.0

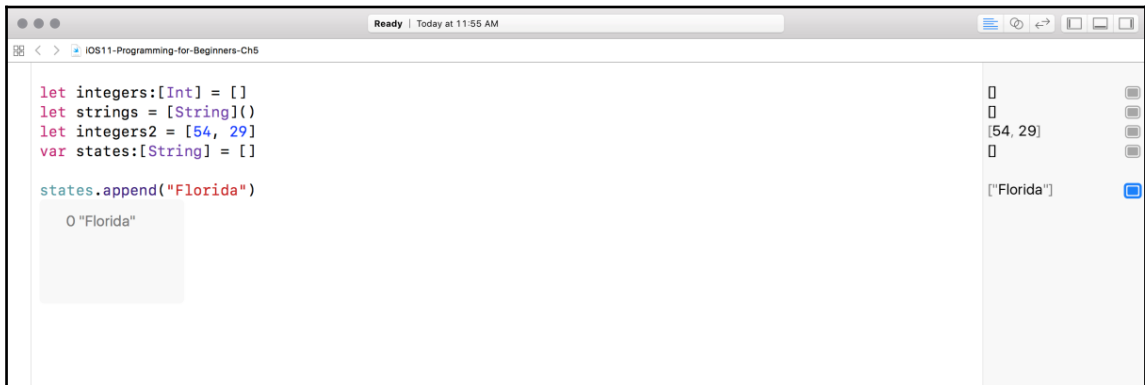
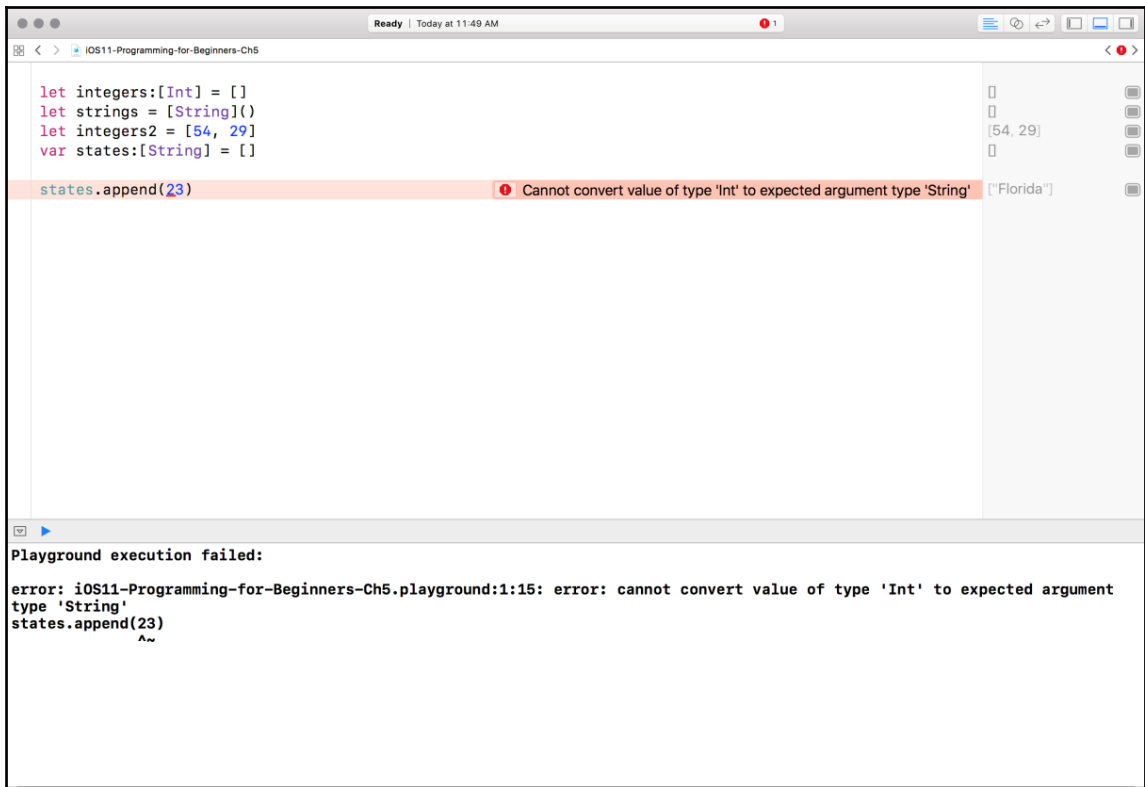
0	Florida
1	California
2	32
3	New York
4	99
5	true
6	9.0



```
Running iOS11-Programming-for-Beginners-Ch5  
iOS11-Programming-for-Beginners-Ch5  
let integers:[Int] = []  
let strings = [String]()
```



```
Running iOS11-Programming-for-Beginners-Ch5  
iOS11-Programming-for-Beginners-Ch5  
let integers:[Int] = []  
let strings = [String]()  
let integers2 = [54, 29]
```




```
Running iOS11-Programming-for-Beginners-Ch5
iOS11-Programming-for-Beginners-Ch5

let integers:[Int] = []
let strings = [String]()
let integers2 = [54, 29]
var states:[String] = []

states.append("Florida")
0 "Florida"

states.append(contentsOf: ["California", "New York"])
0 "Florida"
1 "California"
2 "New York"
```



```
Ready | Today at 11:56 AM
iOS11-Programming-for-Beginners-Ch5

let integers:[Int] = []
let strings = [String]()
let integers2 = [54, 29]
var states:[String] = []

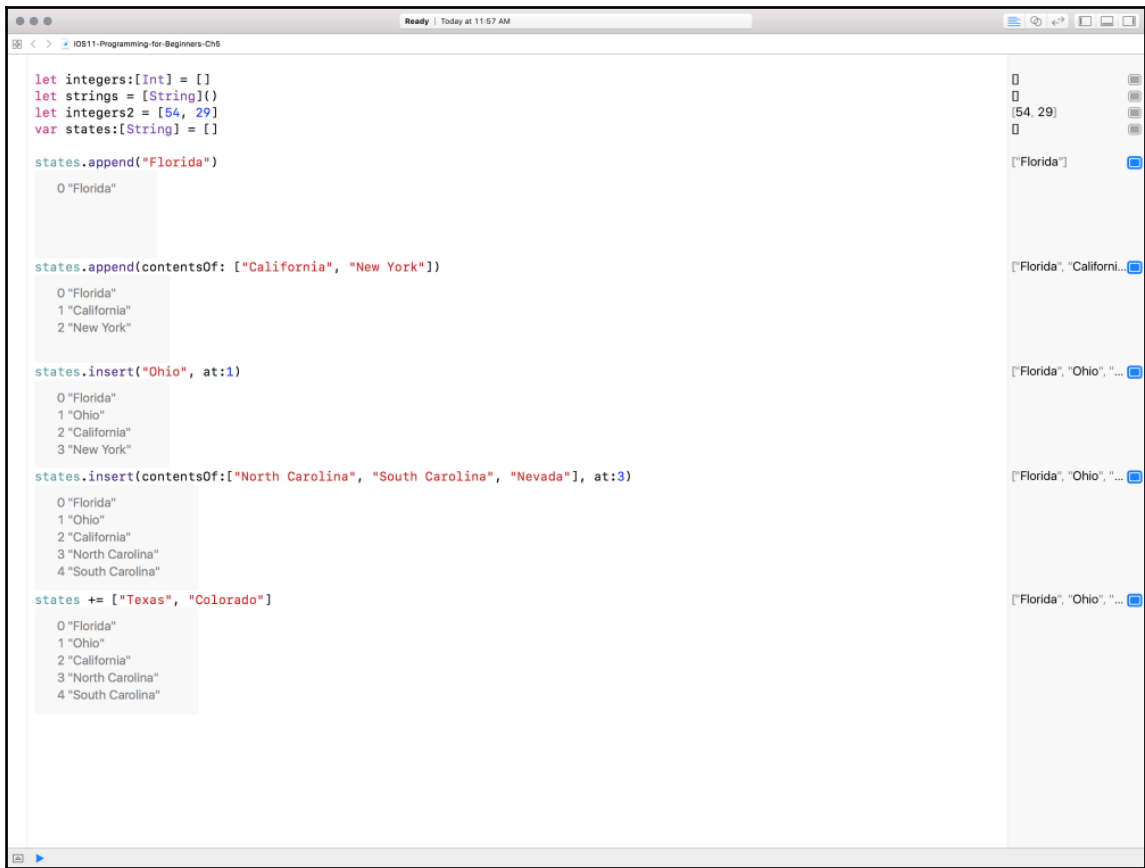
states.append("Florida")
0 "Florida"

states.append(contentsOf: ["California", "New York"])
0 "Florida"
1 "California"
2 "New York"

states.insert("Ohio", at:1)
0 "Florida"
1 "Ohio"
2 "California"
3 "New York"

states.insert(contentsOf:["North Carolina", "South Carolina", "Nevada"], at:3)
0 "Florida"
1 "Ohio"
2 "California"
3 "North Carolina"
4 "South Carolina"
```





```
Ready | Today at 11:57 AM
IOS11-Programming-for-Beginners-Ch5

let integers:[Int] = []
let strings = [String]()
let integers2 = [54, 29]
var states:[String] = []

states.append("Florida")
0 "Florida"

states.append(contentsOf: ["California", "New York"])
0 "Florida"
1 "California"
2 "New York"

states.insert("Ohio", at:1)
0 "Florida"
1 "Ohio"
2 "California"
3 "New York"

states.insert(contentsOf:["North Carolina", "South Carolina", "Nevada"], at:3)
0 "Florida"
1 "Ohio"
2 "California"
3 "North Carolina"
4 "South Carolina"

states += ["Texas", "Colorado"]
0 "Florida"
1 "Ohio"
2 "California"
3 "North Carolina"
4 "South Carolina"

states.count
9
```

```
[]
[]
[54, 29]
[]
["Florida"]
["Florida", "Californi..."]
["Florida", "Ohio", "..."]
["Florida", "Ohio", "..."]
["Florida", "Ohio", "..."]
9
```

The screenshot shows a code editor window titled "Ready | Today at 11:59 AM" with the file path "IOS11-Programming-for-Beginners-CH5". The code defines an array of integers, a function for strings, another array of integers, and a mutable array of strings. It demonstrates various array operations: appending, inserting, and concatenating. A conditional statement checks if the array is empty and prints the current count of items.

```
let integers:[Int] = []
let strings = [String]()
let integers2 = [54, 29]
var states:[String] = []

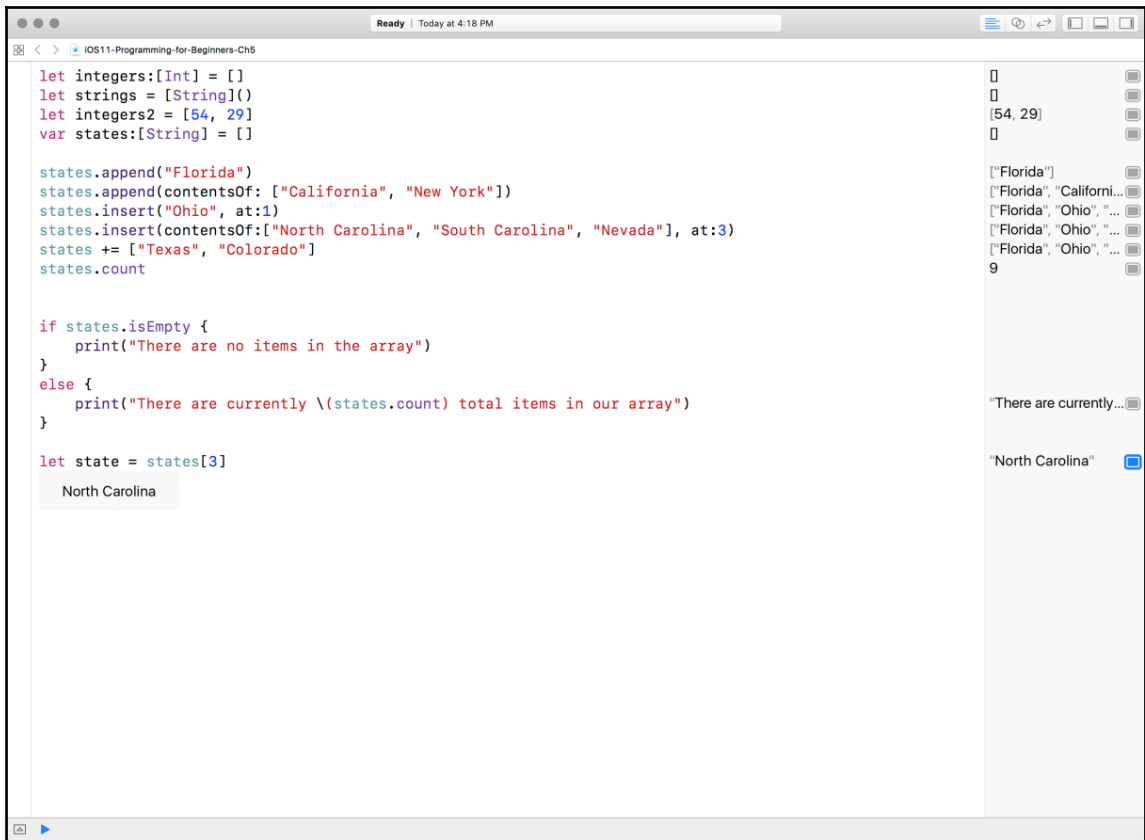
states.append("Florida")
states.append(contentsOf: ["California", "New York"])
states.insert("Ohio", at:1)
states.insert(contentsOf:["North Carolina", "South Carolina", "Nevada"], at:3)
states += ["Texas", "Colorado"]
states.count

if states.isEmpty {
    print("There are no items in the array")
} else {
    print("There are currently \(states.count) total items in our array")
}
```

The output at the bottom of the editor is: **There are currently 9 total items in our array**

The right-hand side of the editor shows a variable inspector with the following values:

- `integers`: []
- `strings`: []
- `integers2`: [54, 29]
- `states`: ["Florida", "California", "New York", "Ohio", "North Carolina", "South Carolina", "Nevada", "Texas", "Colorado"]



```
Ready | Today at 4:19 PM
IOS11-Programming-for-Beginners-Ch5

let integers:[Int] = []
let strings = [String]()
let integers2 = [54, 29]
var states:[String] = []

states.append("Florida")
states.append(contentsOf: ["California", "New York"])
states.insert("Ohio", at:1)
states.insert(contentsOf:["North Carolina", "South Carolina", "Nevada"], at:3)
states += ["Texas", "Colorado"]
states.count

if states.isEmpty {
    print("There are no items in the array")
} else {
    print("There are currently \(states.count) total items in our array")
}

let state = states[2]
California
```

Debugger Console Output:

- []
- []
- [54, 29]
- []
- ["Florida"]
- ["Florida", "California", "New York"]
- ["Florida", "Ohio", "New York"]
- ["Florida", "Ohio", "New York", "North Carolina", "South Carolina", "Nevada"]
- ["Florida", "Ohio", "New York", "North Carolina", "South Carolina", "Nevada", "Texas", "Colorado"]
- 9
- "There are currently 9 total items in our array"
- "California"

```
Ready | Today at 12:04 PM
IOS11-Programming-for-Beginners-Ch5

let integers:[Int] = []
let strings = [String]()
let integers2 = [54, 29]
var states:[String] = []

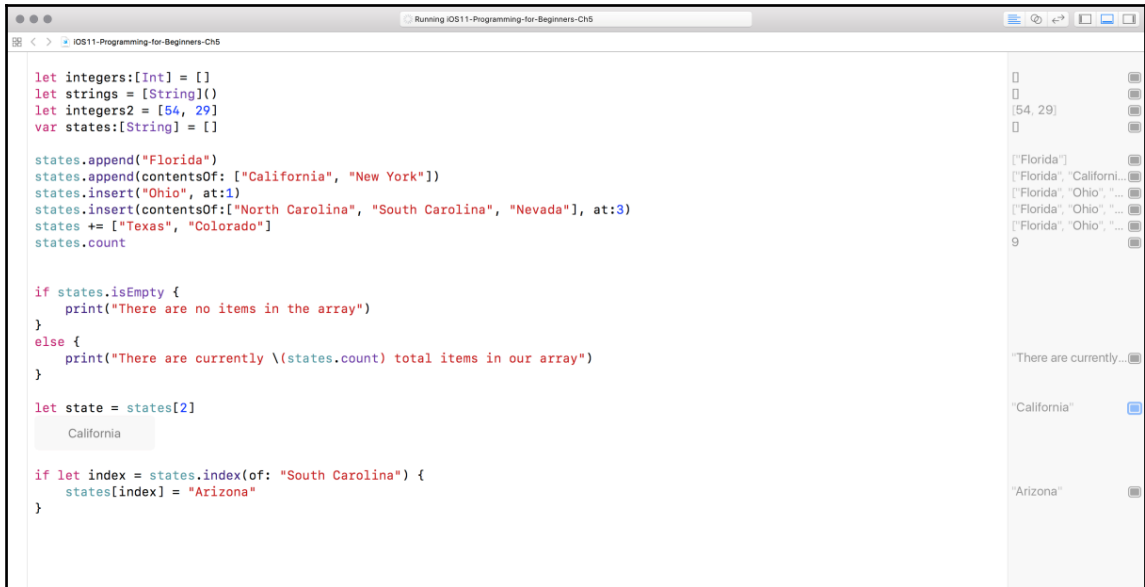
states.append("Florida")
states.append(contentsOf: ["California", "New York"])
states.insert("Ohio", at:1)
states.insert(contentsOf:["North Carolina", "South Carolina", "Nevada"], at:3)
states += ["Texas", "Colorado"]
states.count

if states.isEmpty {
    print("There are no items in the array")
} else {
    print("There are currently \(states.count) total items in our array")
}

let state = states[2]
California

if let index = states.index(of: "South Carolina") {
    print("Current index position of South Carolina is \(index)")
}

There are currently 9 total items in our array
Current index position of South Carolina is 4
```

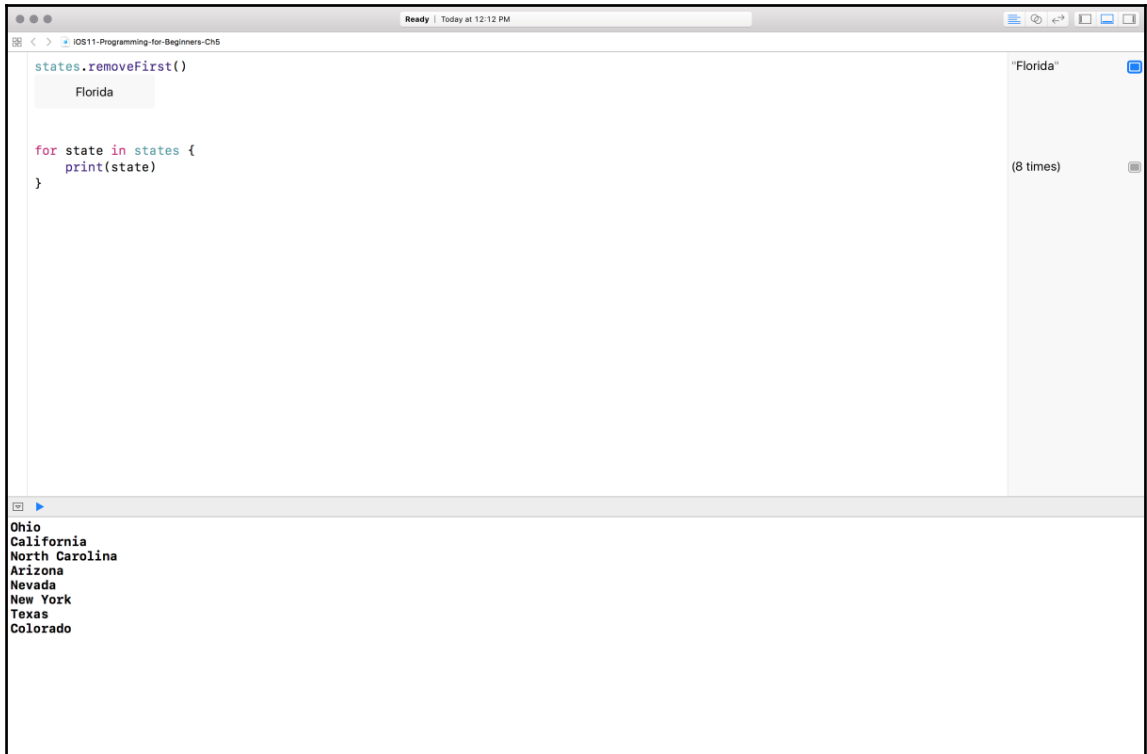


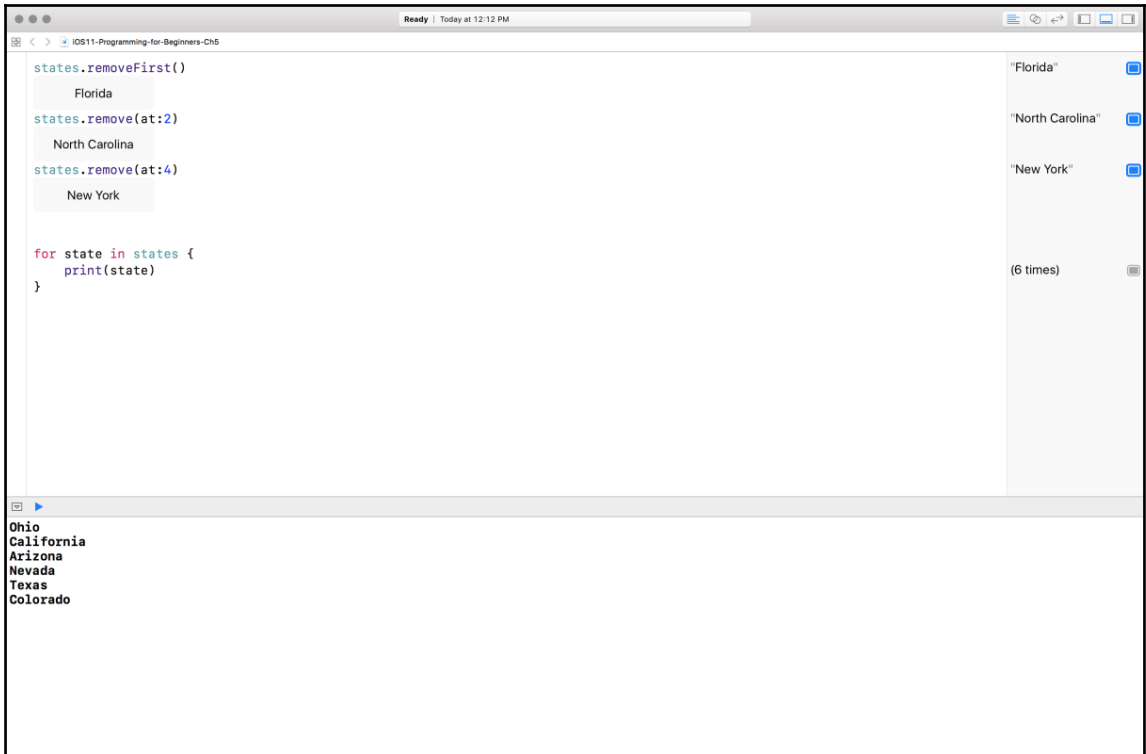
The image shows a screenshot of a code editor window. The window title is "Ready | Today at 4:46 PM". The address bar shows "IOS11-Programming-for-Beginners-Ch5". The code editor contains the following Python code:

```
for state in states {  
    print(state)  
}
```

On the right side of the code editor, there is a button labeled "(9 times)". Below the code editor, there is a console window showing the output of the code:

```
Florida  
Ohio  
California  
North Carolina  
South Carolina  
Nevada  
New York  
Texas  
Colorado
```

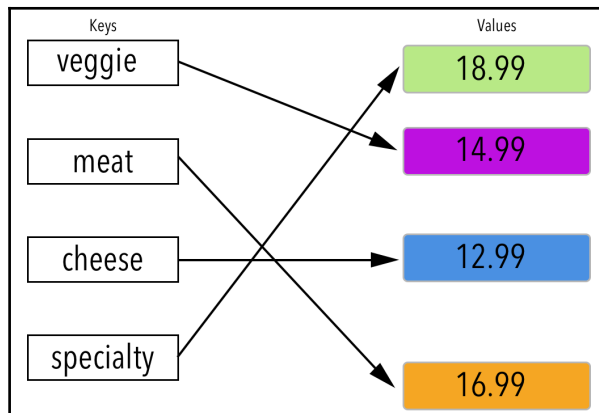




```
states.removeFirst()
  Florida
states.remove(at:2)
  North Carolina
states.remove(at:4)
  New York
states.removeAll()
  []

for state in states {
  print(state)
}
```

"Florida" [x]
"North Carolina" [x]
"New York" [x]
[] [x]



This screenshot shows the Xcode editor with a single line of Swift code: `let dictFirstExample = Dictionary<String, String>()`. The right-hand side of the editor displays the Swift REPL output, which is an empty dictionary: `{}.`

This screenshot shows the Xcode editor with two lines of Swift code: `let dictFirstExample = Dictionary<String, String>()` and `let dictSecondExample = [String: Int]()`. The right-hand side of the editor displays the Swift REPL output, showing two empty dictionaries: `{}.` and `{}.`

This screenshot shows the Xcode editor with three lines of Swift code. The first two lines are `let dictFirstExample = Dictionary<String, String>()` and `let dictSecondExample = [String: Int]()`. The third line is `var dictThirdExample = Dictionary<String, Double>(dictionaryLiteral: ("veggie", 14.99), ("meat", 16.99))`. Below the code, there is a tooltip showing the dictionary's contents: `▶ (key "meat", value 16.99)` and `▶ (key "veggie", value 14.99)`. The right-hand side of the editor displays the Swift REPL output, showing three dictionaries: `{}.`, `{}.`, and `["meat": 16.99, "ve...]`.

```
Ready | Today at 12:34 PM
iOS11-Programming-for-Beginners-Ch5
let dictFirstExample = Dictionary<String, String>()
let dictSecondExample = [String: Int]()

var dictThirdExample = Dictionary<String, Double>(dictionaryLiteral: ("veggie", 14.99), ("meat", 16.99))
    ▶ (key "meat", value 16.99)
    ▶ (key "veggie", value 14.99)

var dictPizzas = ["veggie": 14.99]
    ▶ (key "veggie", value 14.99)
```

```
Ready | Today at 12:34 PM
iOS11-Programming-for-Beginners-Ch5
let dictFirstExample = Dictionary<String, String>()
let dictSecondExample = [String: Int]()

var dictThirdExample = Dictionary<String, Double>(dictionaryLiteral: ("veggie", 14.99), ("meat", 16.99))
    ▶ (key "meat", value 16.99)
    ▶ (key "veggie", value 14.99)

var dictPizzas = ["veggie": 14.99]
    ▶ (key "veggie", value 14.99)

dictPizzas["meat"] = 17.99
17.989999999999999...
```

```
Ready | Today at 12:35 PM
< > iOS11-Programming-for-Beginners-CH5
let dictFirstExample = Dictionary<String, String>()
let dictSecondExample = [String: Int]()

var dictThirdExample = Dictionary<String, Double>(dictionaryLiteral: ("veggie", 14.99), ("meat", 16.99))
    ▶ (key "meat", value 16.99)
    ▶ (key "veggie", value 14.99)

var dictPizzas = ["veggie": 14.99]
    ▶ (key "veggie", value 14.99)

dictPizzas["meat"] = 17.99
17.989999999999999...

dictPizzas["meat"] = 16.99
16.989999999999999...

[]
[]
["meat": 16.99, "ve...
["veggie": 14.99]
17.99
16.99
```

```
Ready | Today at 12:36 PM
< > iOS11-Programming-for-Beginners-CH5
let dictFirstExample = Dictionary<String, String>()
let dictSecondExample = [String: Int]()

var dictThirdExample = Dictionary<String, Double>(dictionaryLiteral: ("veggie", 14.99), ("meat", 16.99))
    ▶ (key "meat", value 16.99)
    ▶ (key "veggie", value 14.99)

var dictPizzas = ["veggie": 14.99]
    ▶ (key "veggie", value 14.99)

dictPizzas["meat"] = 17.99
17.989999999999999...

dictPizzas["meat"] = 16.99
16.989999999999999...

if let oldValue = dictPizzas.updateValue(15.99, forKey: "meat") {
    print("old value \(oldValue)")
}

old value 16.99

[]
[]
["meat": 16.99, "ve...
["veggie": 14.99]
17.99
16.99
"old value 16.99"
```

```
Ready | Today at 12:37 PM
IOS11-Programming-for-Beginners-Ch5
let dictFirstExample = Dictionary<String, String>()
let dictSecondExample = [String: Int]()

var dictThirdExample = Dictionary<String, Double>(dictionaryLiteral: ("veggie", 14.99), ("meat", 16.99))
  ▶ (key "meat", value 16.99)
  ▶ (key "veggie", value 14.99)

var dictPizzas = ["veggie": 14.99]
  ▶ (key "veggie", value 14.99)

dictPizzas["meat"] = 17.99
17.989999999999999...

dictPizzas["meat"] = 16.99
16.989999999999999...

if let oldValue = dictPizzas.updateValue(15.99, forKey: "meat") {
  print("old value \(oldValue)")
}

dictPizzas["specialty"] = 18.99
18.989999999999999...
dictPizzas["chicken"] = 16.99
16.989999999999999...

old value 16.99
```



```
Ready | Today at 12:38 PM
iOS11-Programming-for-Beginners-Ch5

let dictFirstExample = Dictionary<String, String>()
let dictSecondExample = [String: Int]()

var dictThirdExample = Dictionary<String, Double>(dictionaryLiteral: ("veggie", 14.99), ("meat", 16.99))
var dictPizzas = ["veggie": 14.99]
dictPizzas["meat"] = 17.99
dictPizzas["meat"] = 16.99

if let oldValue = dictPizzas.updateValue(15.99, forKey: "meat") {
    print("old value \(oldValue)")
}

dictPizzas["specialty"] = 18.99
dictPizzas["chicken"] = 16.99

if let numChickenPrice = dictPizzas["chicken"] {
    print(numChickenPrice)
}

old value 16.99
16.99
```

```
Ready | Today at 12:38 PM
iOS11-Programming-for-Beginners-Ch5

let dictFirstExample = Dictionary<String, String>()
let dictSecondExample = [String: Int]()

var dictThirdExample = Dictionary<String, Double>(dictionaryLiteral: ("veggie", 14.99), ("meat", 16.99))
var dictPizzas = ["veggie": 14.99]
dictPizzas["meat"] = 17.99
dictPizzas["meat"] = 16.99

if let oldValue = dictPizzas.updateValue(15.99, forKey: "meat") {
    print("old value \(oldValue)")
}

dictPizzas["specialty"] = 18.99
dictPizzas["chicken"] = 16.99

if let numChickenPrice = dictPizzas["chicken"] {
    print(numChickenPrice)
}

for value in dictPizzas.values {
    print(value)
}

old value 16.99
16.99
16.99
15.99
14.99
18.99
```

```
Ready | Today at 12:39 PM
IOS11-Programming-for-Beginners-Ch5
let dictFirstExample = Dictionary<String, String>()
let dictSecondExample = [String: Int]()

var dictThirdExample = Dictionary<String, Double>(dictionaryLiteral: ("veggie", 14.99), ("meat", 16.99))
var dictPizzas = ["veggie": 14.99]
dictPizzas["meat"] = 17.99
dictPizzas["meat"] = 16.99

if let oldValue = dictPizzas.updateValue(15.99, forKey: "meat") {
    print("old value \(oldValue)")
}

dictPizzas["specialty"] = 18.99
dictPizzas["chicken"] = 16.99

if let numChickenPrice = dictPizzas["chicken"] {
    print(numChickenPrice)
}

for value in dictPizzas.values {
    print(value)
}

for value in dictPizzas.keys {
    print(value)
}

old value 16.99
16.99
16.99
15.99
14.99
18.99
chicken
meat
veggie
specialty
```

```
Ready | Today at 1:12 PM
iOS11-Programming-for-Beginners-Ch5
let dictFirstExample = Dictionary<String, String>()
let dictSecondExample = [String: Int]()

var dictThirdExample = Dictionary<String, Double>(dictionaryLiteral: ("veggie", 14.99), ("meat", 16.99))
var dictPizzas = ["veggie": 14.99]
dictPizzas["meat"] = 17.99
dictPizzas["meat"] = 16.99

if let oldValue = dictPizzas.updateValue(15.99, forKey: "meat") {
    print("old value \(oldValue)")
}

dictPizzas["specialty"] = 18.99
dictPizzas["chicken"] = 16.99

if let numChickenPrice = dictPizzas["chicken"] {
    print(numChickenPrice)
}

for value in dictPizzas.values {
    print(value)
}

for value in dictPizzas.keys {
    print(value)
}

for (key, value) in dictPizzas {
    print("\(key): \(value)")
}

old value 16.99
16.99
16.99
15.99
14.99
18.99
chicken
meat
veggie
specialty
chicken: 16.99
meat: 15.99
veggie: 14.99
specialty: 18.99
```

```
Ready | Today at 1:14 PM
iOS11-Programming-for-Beginners-Ch5

let dictFirstExample = Dictionary<String, String>()
let dictSecondExample = [String: Int]()

var dictThirdExample = Dictionary<String, Double>(dictionaryLiteral: ("veggie", 14.99), ("meat", 16.99))
var dictPizzas = ["veggie": 14.99]
dictPizzas["meat"] = 17.99
dictPizzas["meat"] = 16.99

if let oldValue = dictPizzas.updateValue(15.99, forKey: "meat") {
    print("old value \(oldValue)")
}

dictPizzas["specialty"] = 18.99
dictPizzas["chicken"] = 16.99

if let numChickenPrice = dictPizzas["chicken"] {
    print(numChickenPrice)
}

for value in dictPizzas.values {
    print(value)
}

for value in dictPizzas.keys {
    print(value)
}

for (key, value) in dictPizzas {
    print("\(key): \(value)")
}

print("There are \(dictPizzas.count) total pizzas.")

old value 16.99
16.99
16.99
15.99
14.99
18.99
chicken
meat
veggie
specialty
chicken: 16.99
meat: 15.99
veggie: 14.99
specialty: 18.99
There are 4 total pizzas.
```

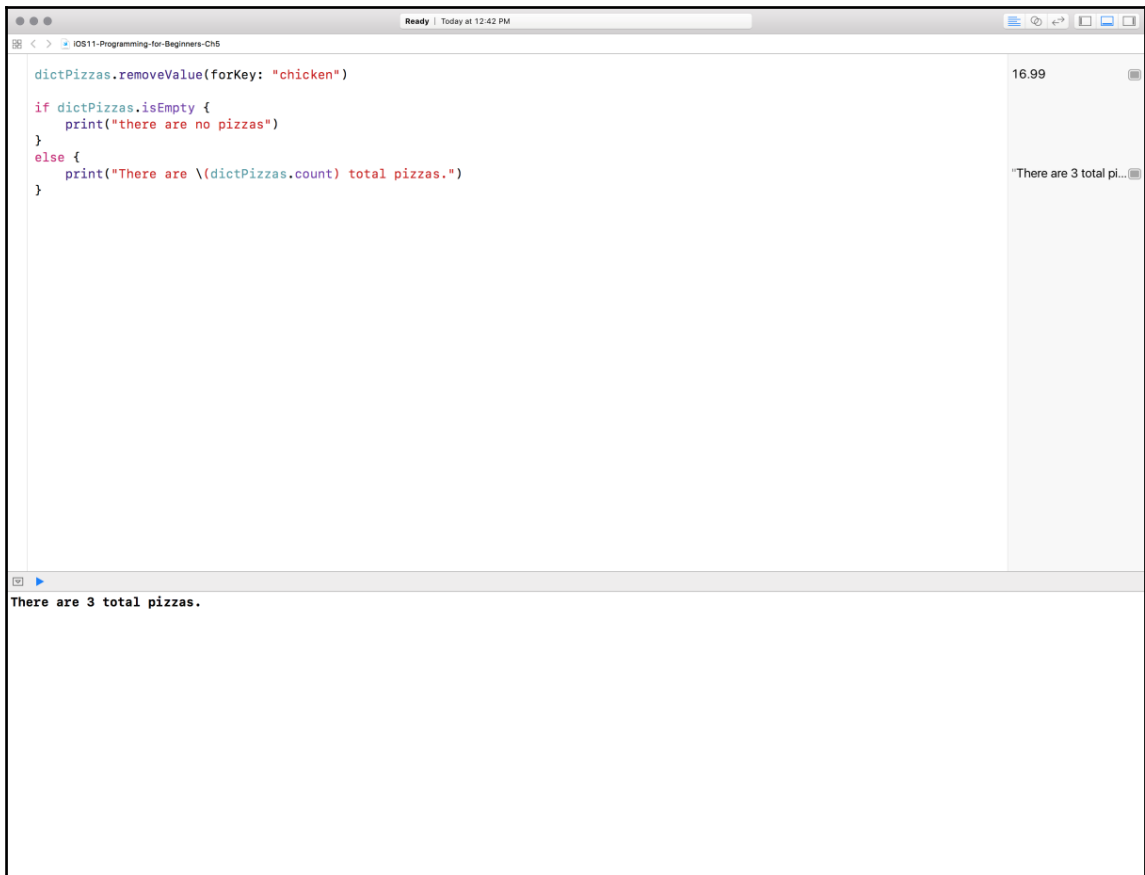
The screenshot shows a web browser window with a code editor and an output console. The code editor contains the following JavaScript code:

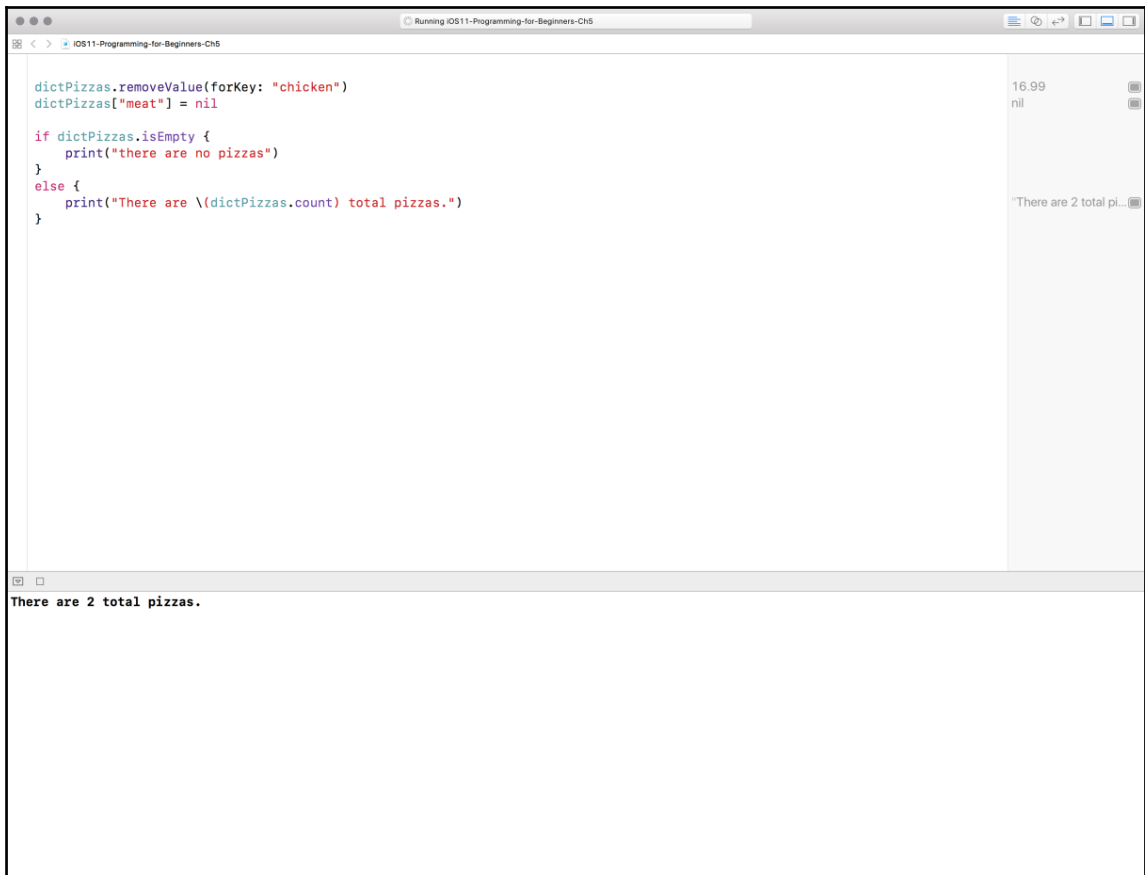
```
if dictPizzas.isEmpty {
  print("there are no pizzas")
}
else {
  print("There are \${dictPizzas.count} total pizzas.")
}
```

The output console displays the result of the code execution:

```
There are 4 total pizzas.
```

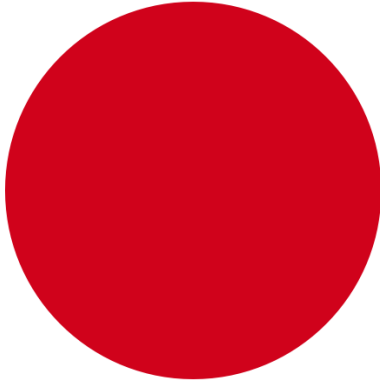
The browser's address bar shows the URL: `IOS11-Programming-for-Beginners-CH5`. The status bar at the top indicates "Ready | Today at 12:41 PM".



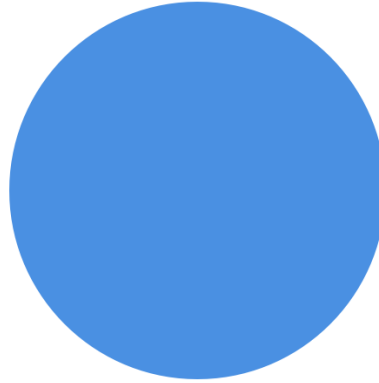


2 SETS

Craig's Favorite Movies

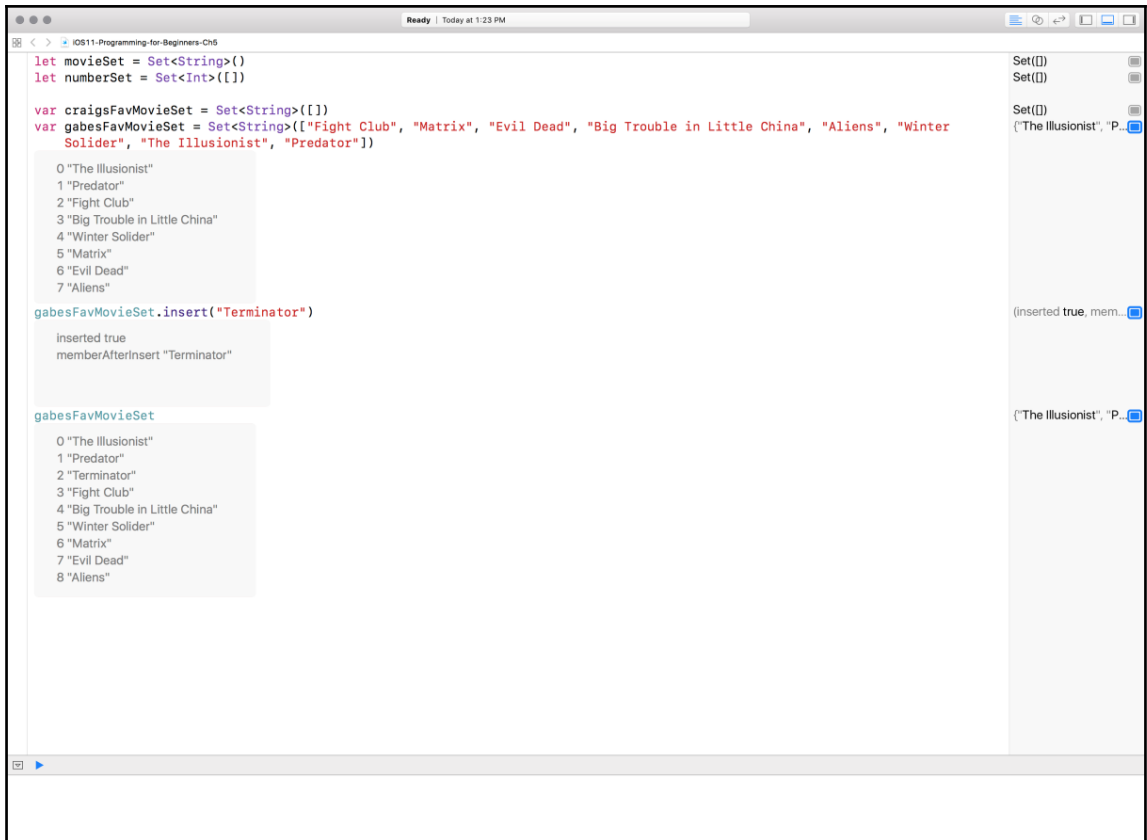


Gabe's Favorite Movies



```
Ready | Today at 1:19 PM
IOS11-Programming-for-Beginners-Ch5
let movieSet = Set<String>()
Set()
```

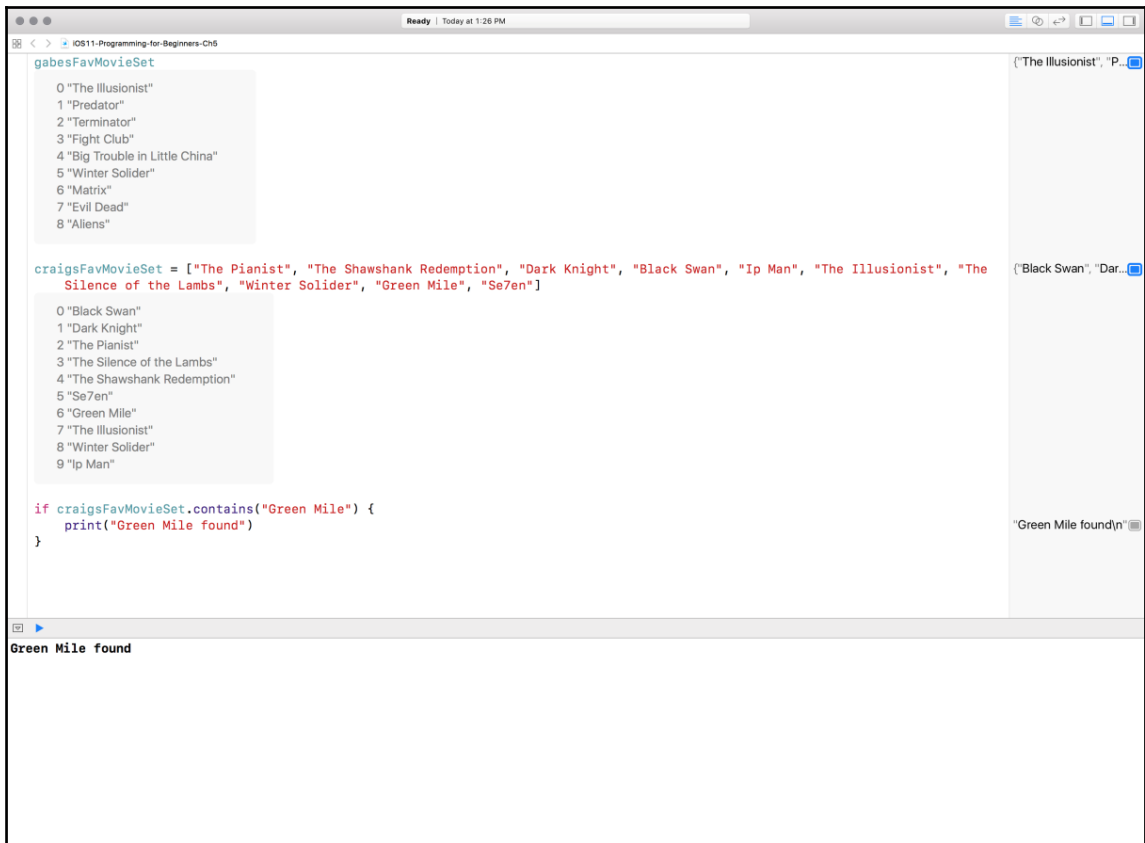
```
Ready | Today at 1:19 PM
IOS11-Programming-for-Beginners-Ch5
let movieSet = Set<String>()
let numberSet = Set<Int>([])
Set()
Set()
```



```
Ready | Today at 1:25 PM
iOS11-Programming-for-Beginners-Ch5
gabesFavMovieSet
0 "The Illusionist"
1 "Predator"
2 "Terminator"
3 "Fight Club"
4 "Big Trouble in Little China"
5 "Winter Solider"
6 "Matrix"
7 "Evil Dead"
8 "Aliens"

craigsFavMovieSet = ["The Pianist", "The Shawshank Redemption", "Dark Knight", "Black Swan", "Ip Man", "The Illusionist", "The
Silence of the Lambs", "Winter Solider", "Green Mile", "Se7en"]

0 "Black Swan"
1 "Dark Knight"
2 "The Pianist"
3 "The Silence of the Lambs"
4 "The Shawshank Redemption"
5 "Se7en"
6 "Green Mile"
7 "The Illusionist"
8 "Winter Solider"
9 "Ip Man"
```



```
Ready | Today at 1:27 PM
iOS11-Programming-for-Beginners-Ch5
let movieSet = Set<String>()
let numberSet = Set<Int>([])

var craigsFavMovieSet = Set<String>([])
var gagesFavMovieSet = Set<String>(["Fight Club", "Matrix", "Evil Dead", "Big Trouble in Little China", "Aliens", "Winter Solider", "The Illusionist", "Predator"])
gagesFavMovieSet.insert("Terminator")
gagesFavMovieSet

craigsFavMovieSet = ["The Pianist", "The Shawshank Redemption", "Dark Knight", "Black Swan", "Ip Man", "The Illusionist", "The Silence of the Lambs", "Winter Solider", "Green Mile", "Se7en"]

if craigsFavMovieSet.contains("Green Mile") {
    print("Green Mile found")
}

for movie in gagesFavMovieSet {
    print("Gabe's movie - \(movie)")
}

Gabe's movie - The Illusionist
Gabe's movie - Predator
Gabe's movie - Terminator
Gabe's movie - Fight Club
Gabe's movie - Big Trouble in Little China
Gabe's movie - Winter Solider
Gabe's movie - Matrix
Gabe's movie - Evil Dead
Gabe's movie - Aliens
```

```
Ready | Today at 1:28 PM
< > iOS11-Programming-for-Beginners-Ch5
let movieSet = Set<String>()
let numberSet = Set<Int>({})

var craigsFavMovieSet = Set<String>({})
var gagesFavMovieSet = Set<String>(["Fight Club", "Matrix", "Evil Dead", "Big Trouble in Little China", "Aliens", "Winter Solider", "The Illusionist", "Predator"])
gagesFavMovieSet.insert("Terminator")
gagesFavMovieSet

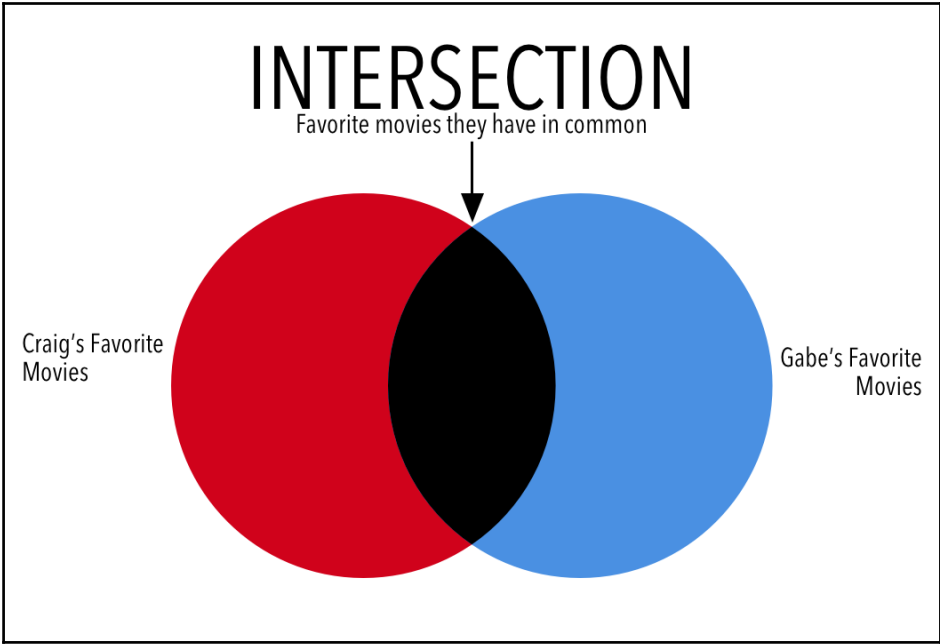
craigsFavMovieSet = ["The Pianist", "The Shawshank Redemption", "Dark Knight", "Black Swan", "Ip Man", "The Illusionist", "The Silence of the Lambs", "Winter Solider", "Green Mile", "Se7en"]

if craigsFavMovieSet.contains("Green Mile") {
    print("Green Mile found")
}

for movie in gagesFavMovieSet {
    print("Gabe's movie - \(movie)")
}

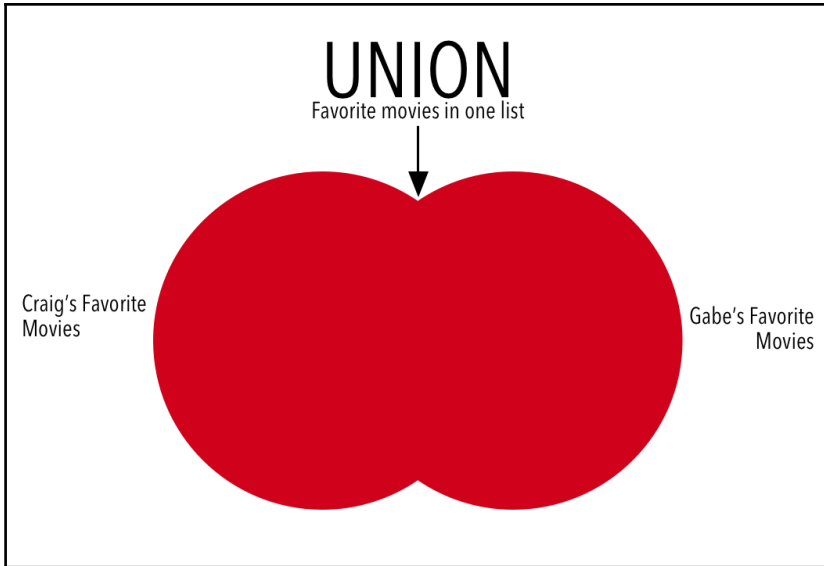
for movie in craigsFavMovieSet.sorted() {
    print("Craig's movie - \(movie)")
}

Craig's movie - Black Swan
Craig's movie - Dark Knight
Craig's movie - Green Mile
Craig's movie - Ip Man
Craig's movie - Se7en
Craig's movie - The Illusionist
Craig's movie - The Pianist
Craig's movie - The Shawshank Redemption
Craig's movie - The Silence of the Lambs
Craig's movie - Winter Solider
```



```
Ready | Today at 1:28 PM
iOS11-Programming-for-Beginners-Ch5
craigsFavMovieSet.intersection(gabesFavMovieSet)
0 "The Illusionist"
1 "Winter Solider"

Craig's movie - The Illusionist
Craig's movie - The Shawshank Redemption
Craig's movie - The Silence of the Lambs
Craig's movie - Winter Solider
```

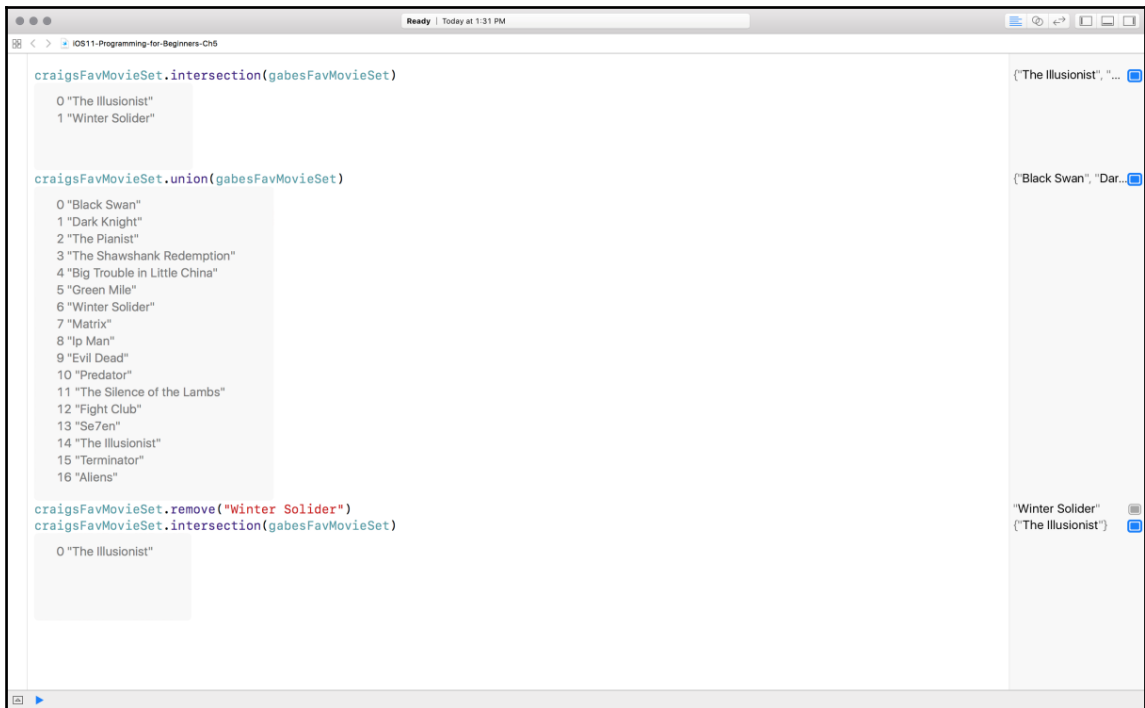



```
Ready | Today at 1:29 PM
iOS11-Programming-for-Beginners-Ch5

craigsFavMovieSet.intersection(gabesFavMovieSet)
0 "The Illusionist"
1 "Winter Solider"

craigsFavMovieSet.union(gabesFavMovieSet)
0 "Black Swan"
1 "Dark Knight"
2 "The Pianist"
3 "The Shawshank Redemption"
4 "Big Trouble in Little China"
5 "Green Mile"
6 "Winter Solider"
7 "Matrix"
8 "Ip Man"
9 "Evil Dead"
10 "Predator"
11 "The Silence of the Lambs"
12 "Fight Club"
13 "Se7en"
14 "The Illusionist"
15 "Terminator"
16 "Aliens"

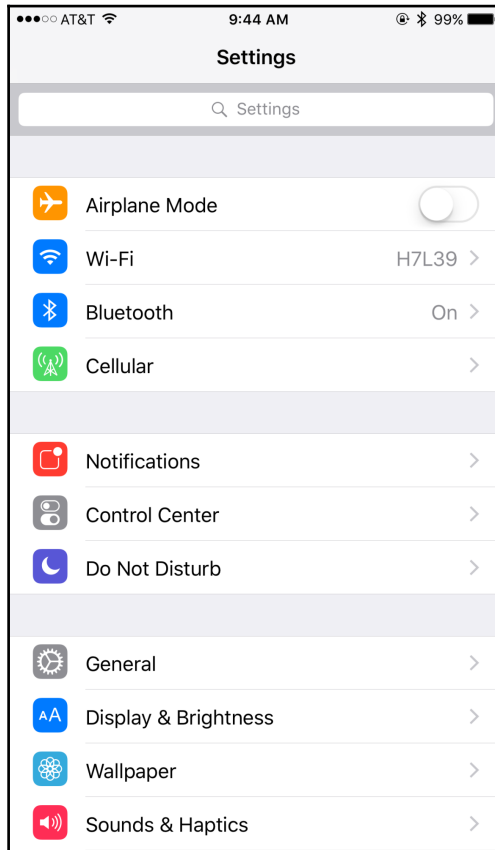
{"The Illusionist", "..."}
{"Black Swan", "Dar..."}
```

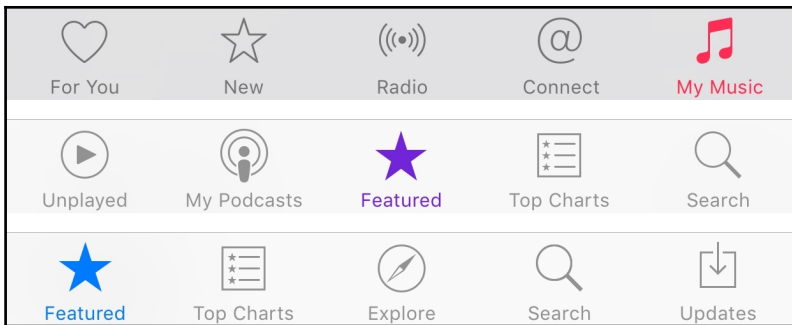
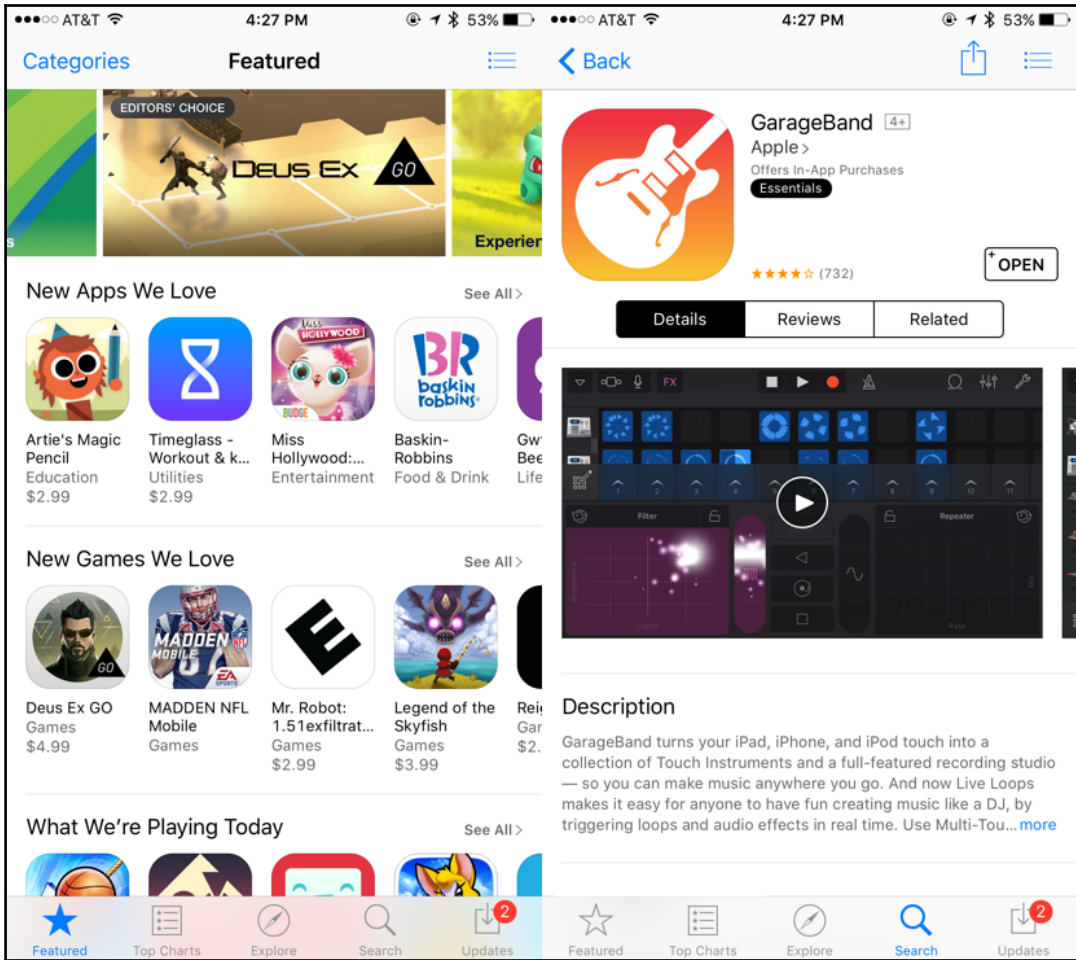


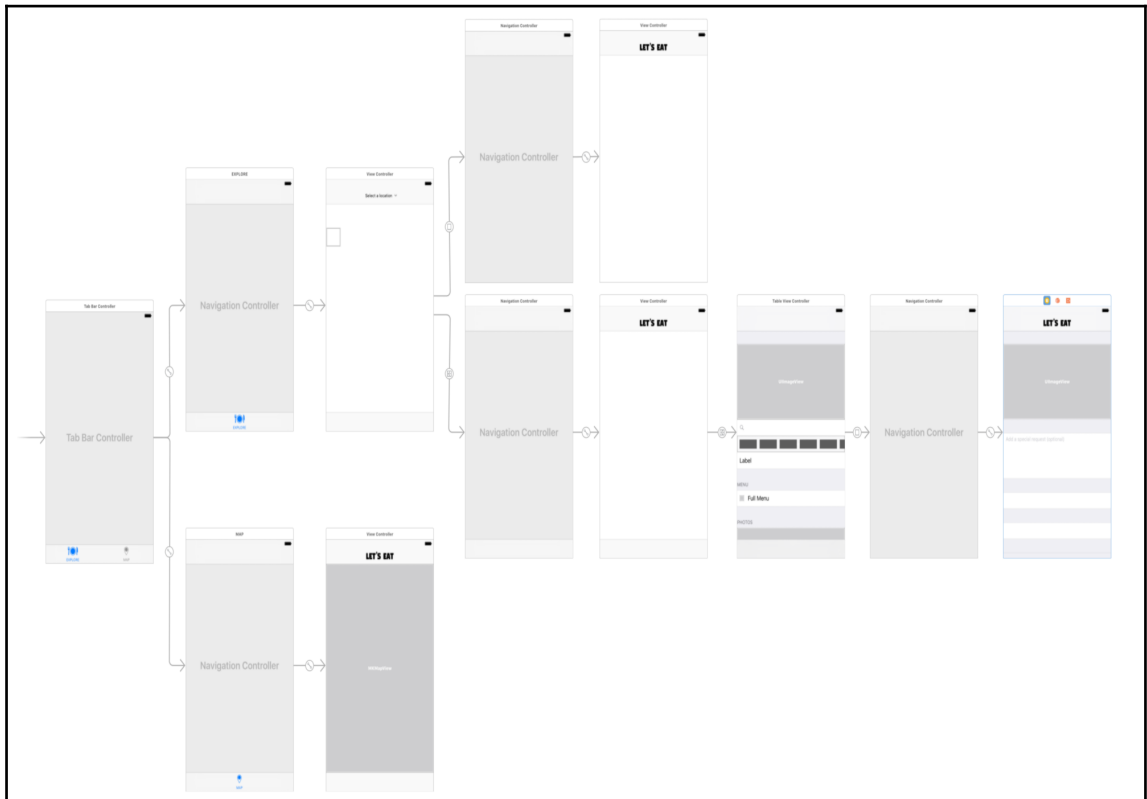
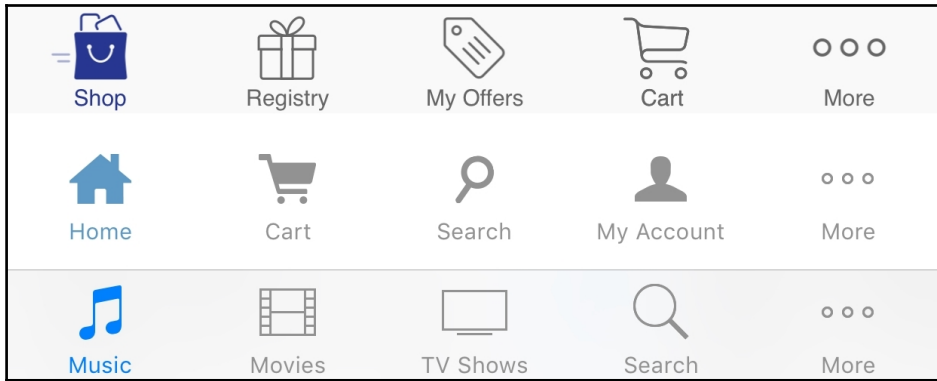
```
Ready | Today at 1:33 PM
iOS11-Programming-for-Beginners-Ch5
craigsFavMovieSet.intersection(gabesFavMovieSet)
craigsFavMovieSet.union(gabesFavMovieSet)
craigsFavMovieSet.remove("Winter Solider")
craigsFavMovieSet.intersection(gabesFavMovieSet)
craigsFavMovieSet.removeAll()
Set()
gabesFavMovieSet = []
Set()
```

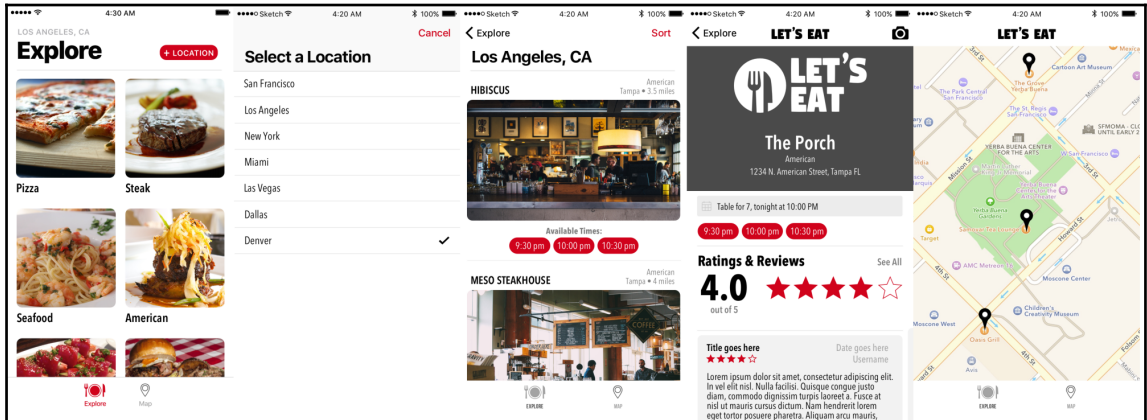
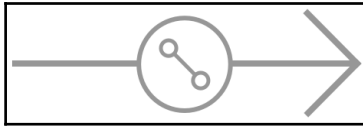
{ "The Illusionist", "Dar..."
{ "Black Swan", "Dar...
"Winter Solider"
{ "The Illusionist"
Set()
Set()

Chapter 6: Starting the UI Setup

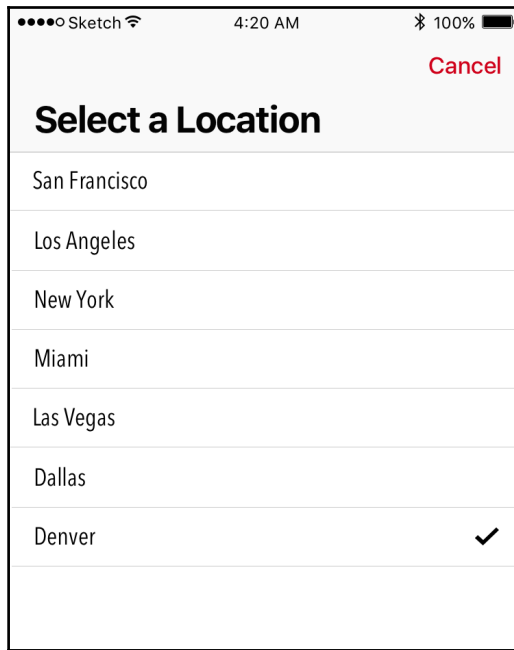


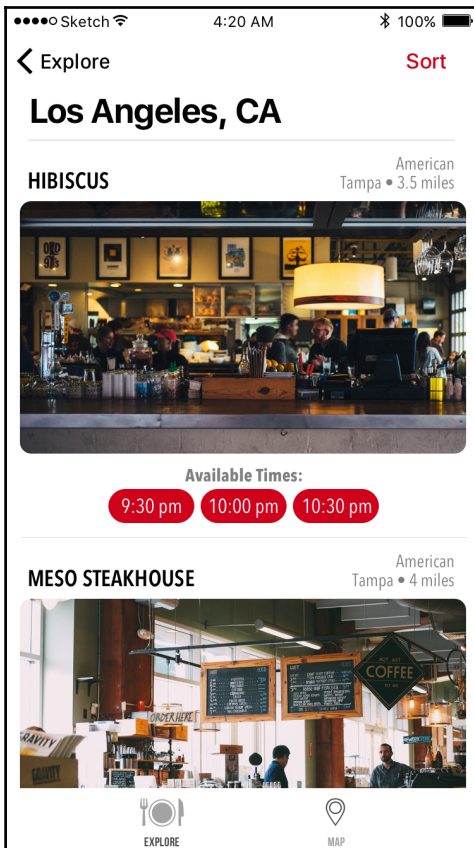


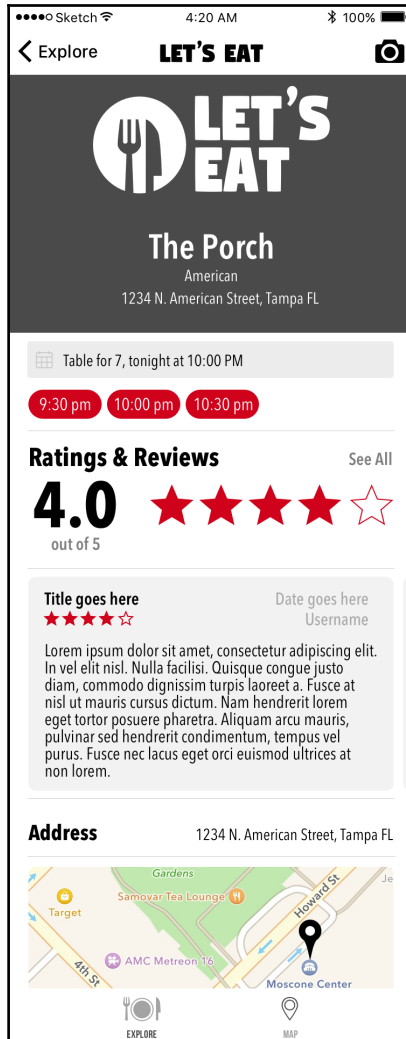


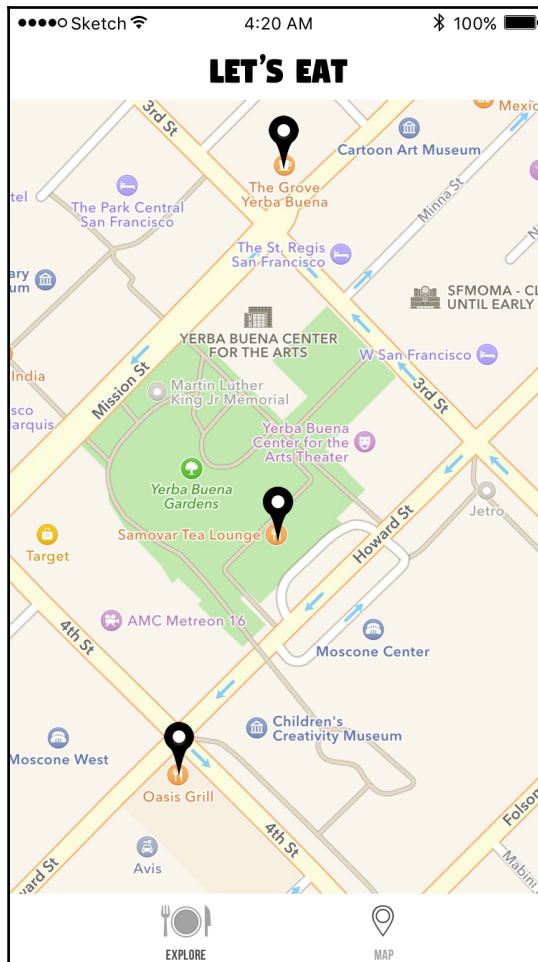


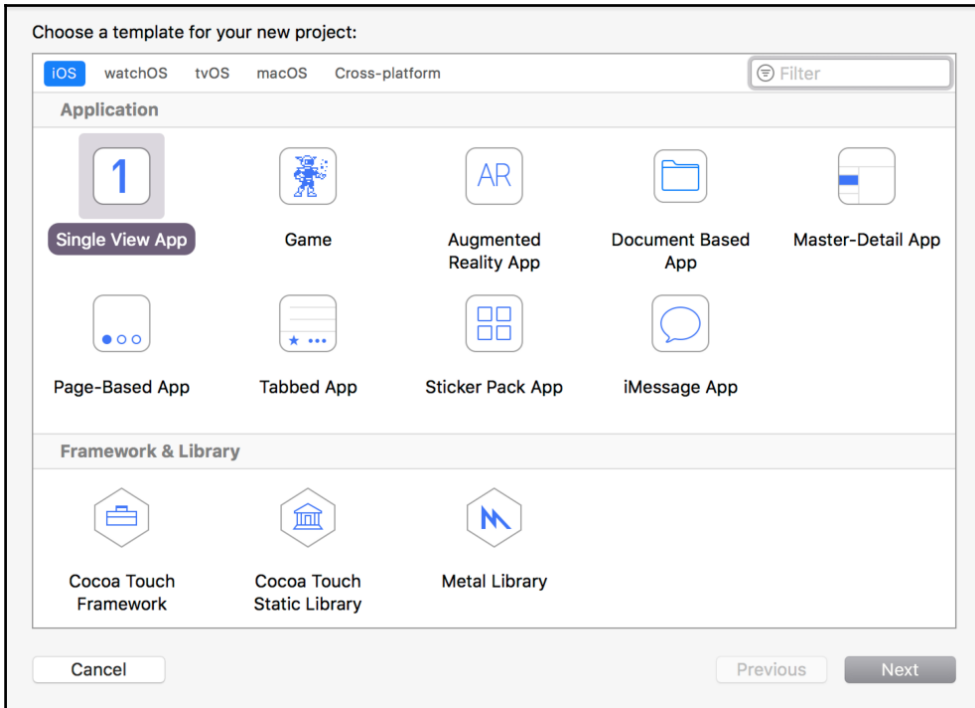


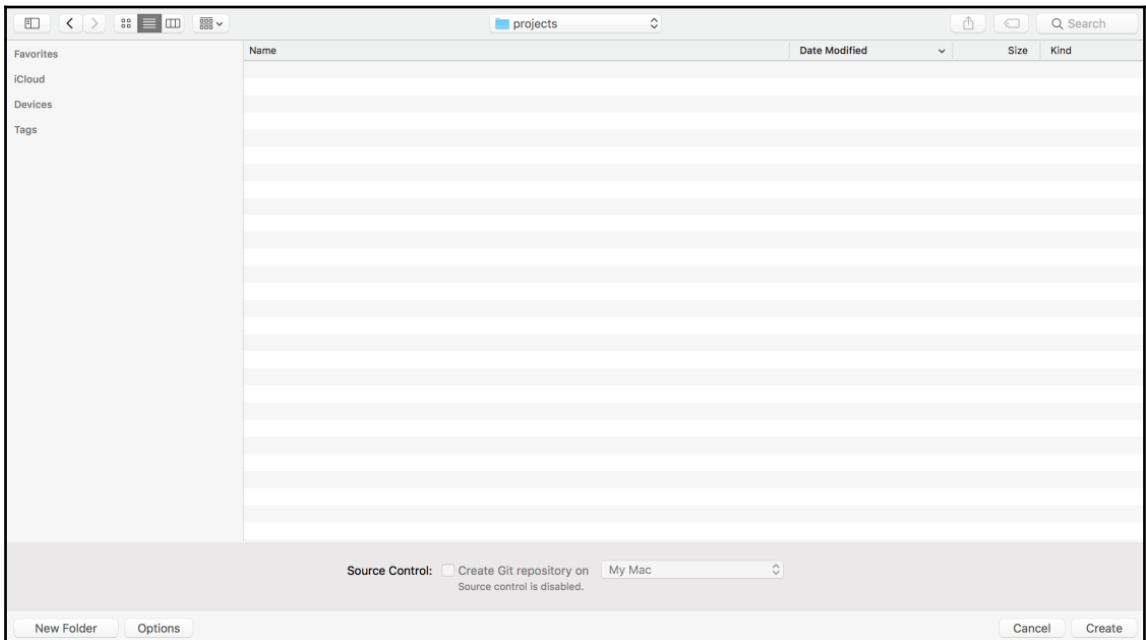
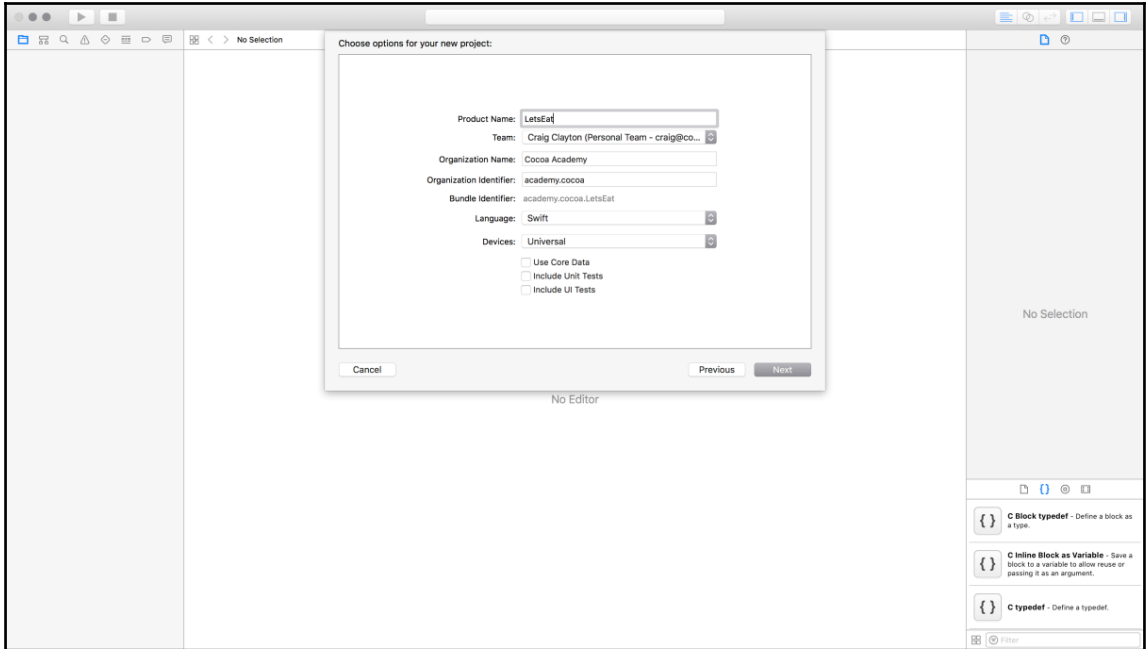


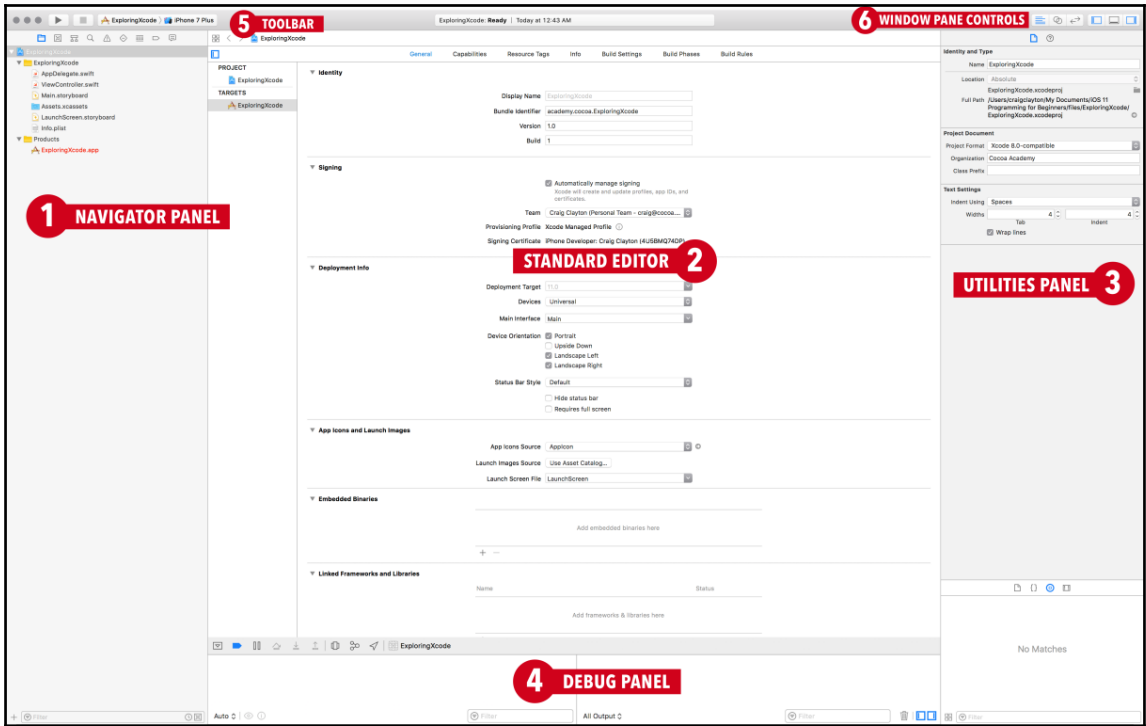




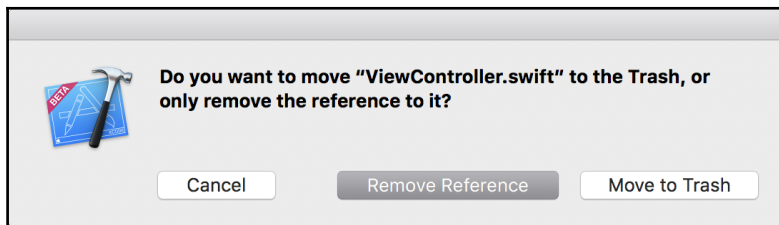
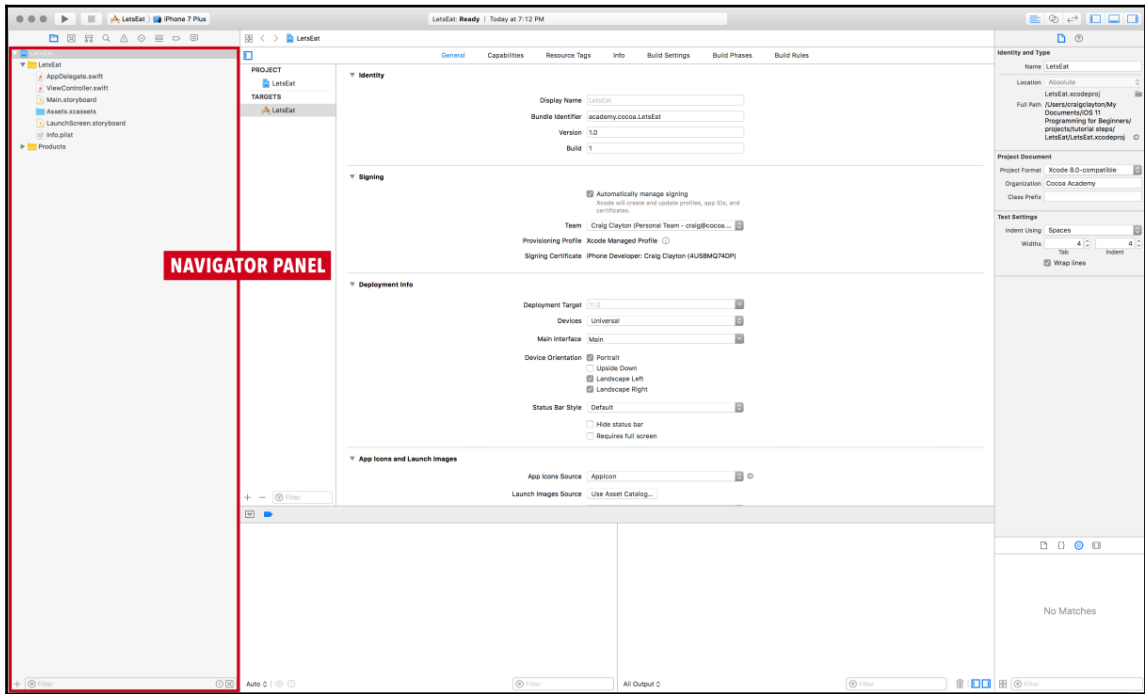


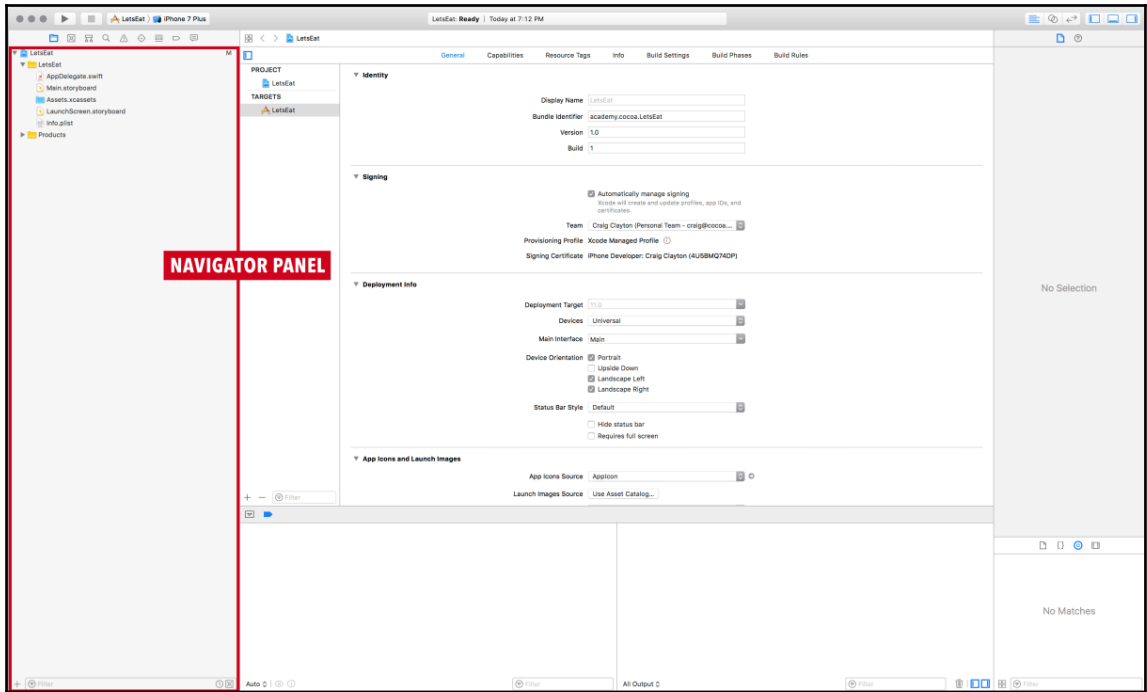


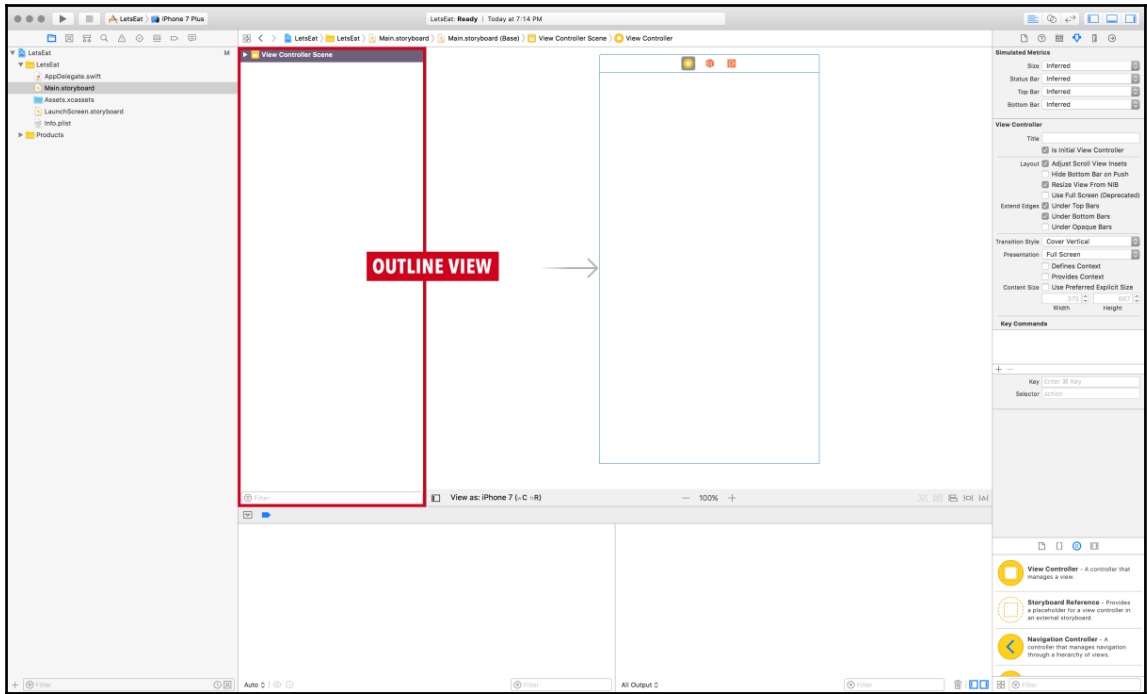


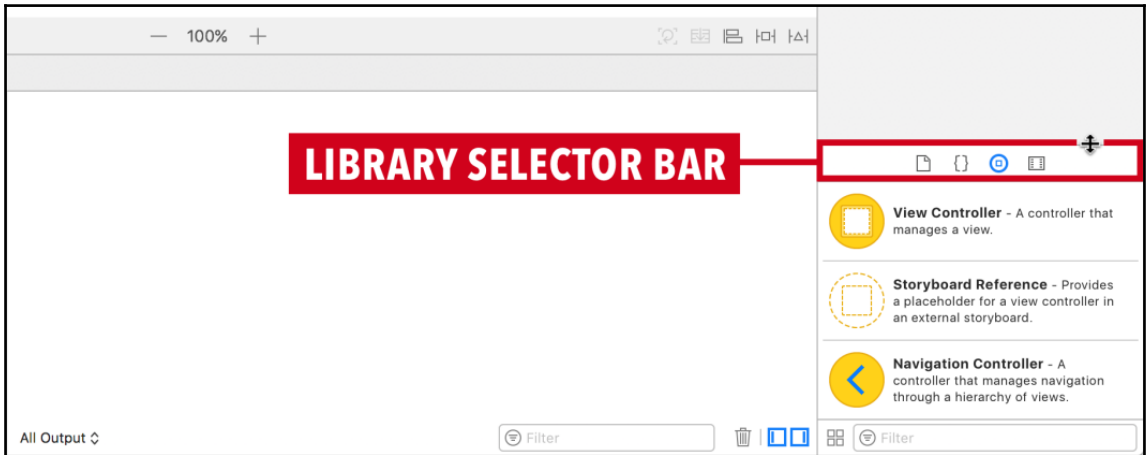
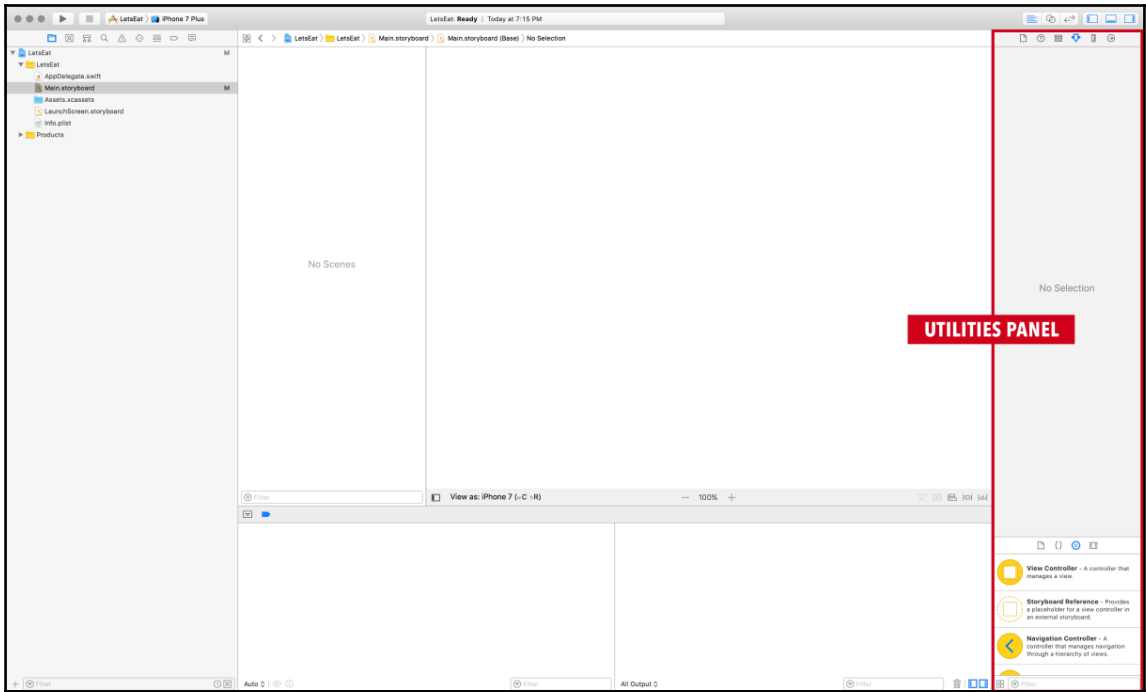


Chapter 7: Setting Up the Basic Structure












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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 ite...




Split View Controller - A composite view controller that manages left and right view controle...




Page View Controller - Presents a sequence of view controllers as pages.



GLKit View Controller - A controller that manages a GLKit view.



AVKit Player View Controller - A view controller that manages a AVPlayer object.



Object - Provides a template for objects and controllers not directly available in Interface Builder.

Label - A variably sized amount of static text.

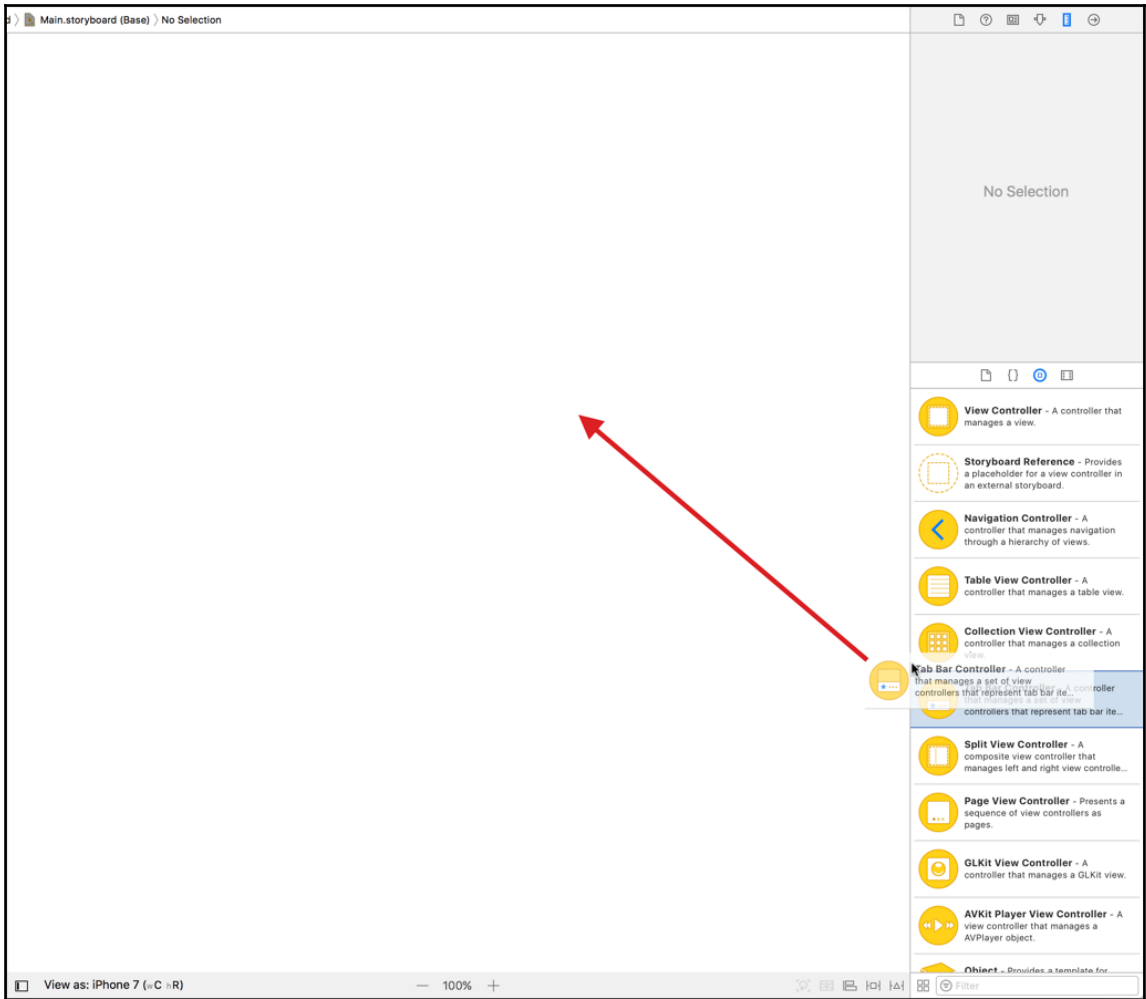
Button - Intercepts touch events and sends an action message to a target object when it's tapped.

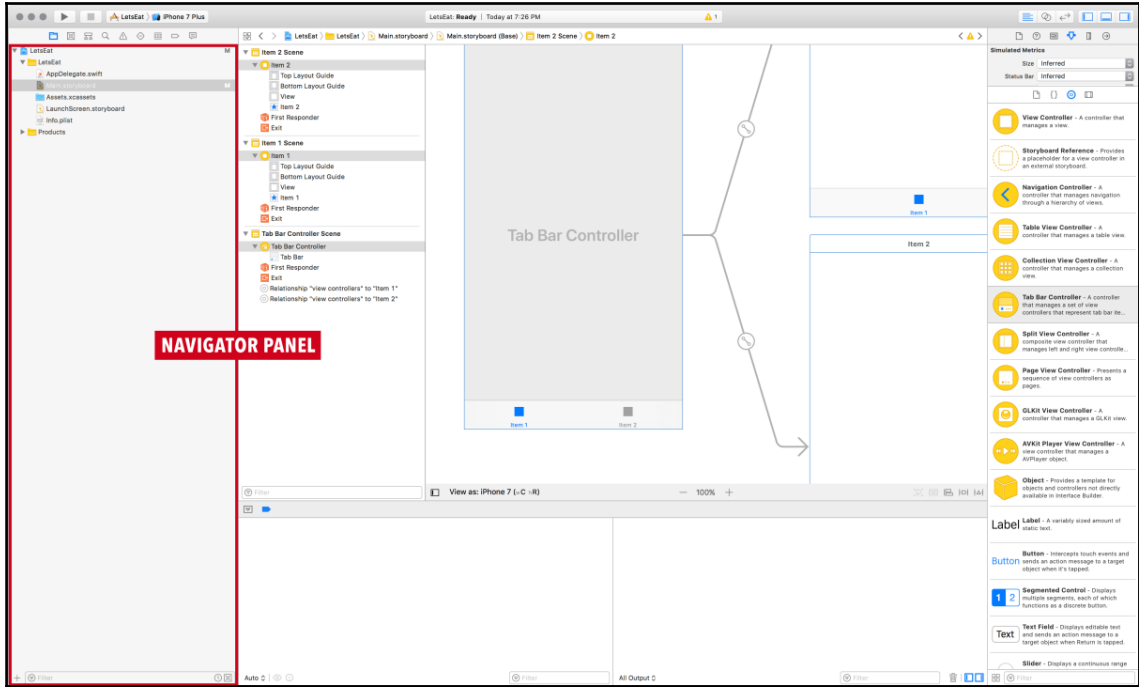
Segmented Control - Displays multiple segments, each of which functions as a discrete button.

Text Field - Displays editable text and sends an action message to a target object when Return is tapped.

Slider - Displays a continuous range

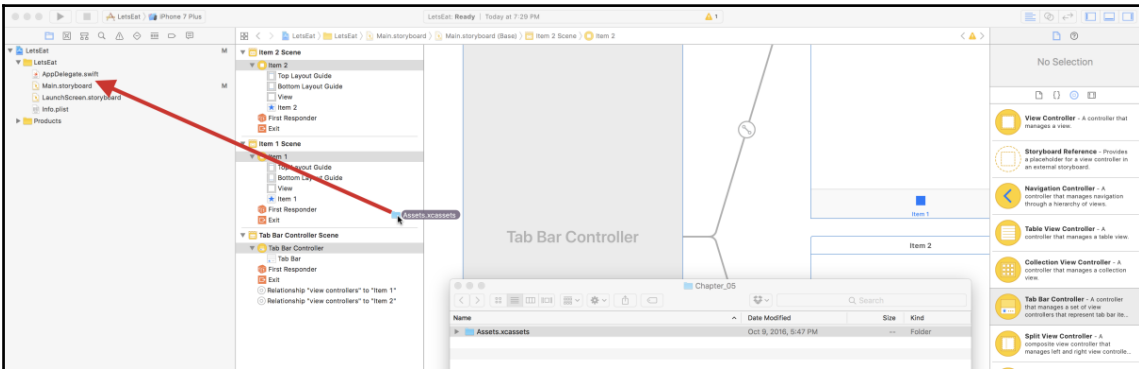
🔍

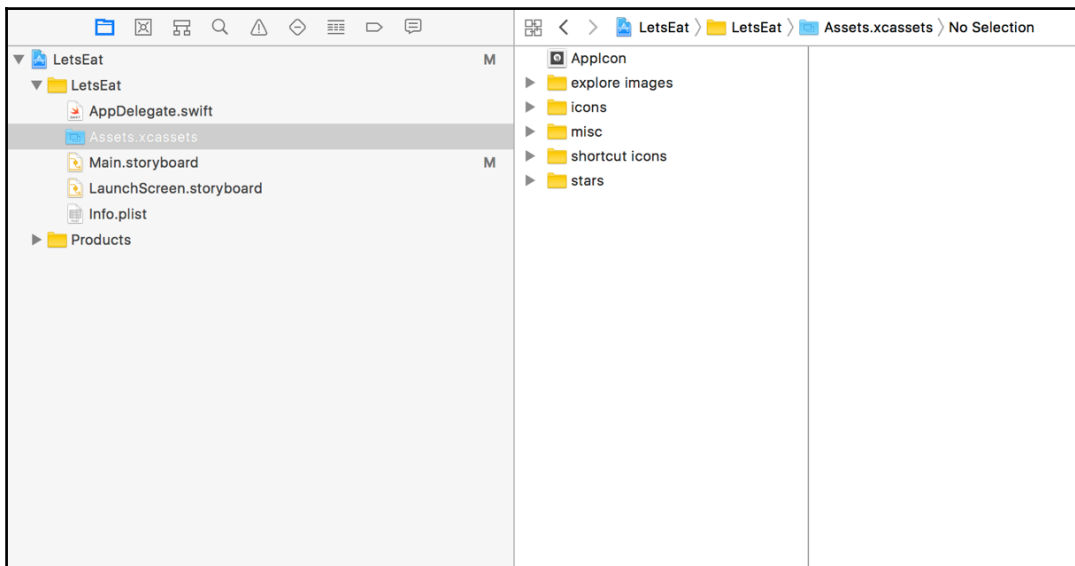
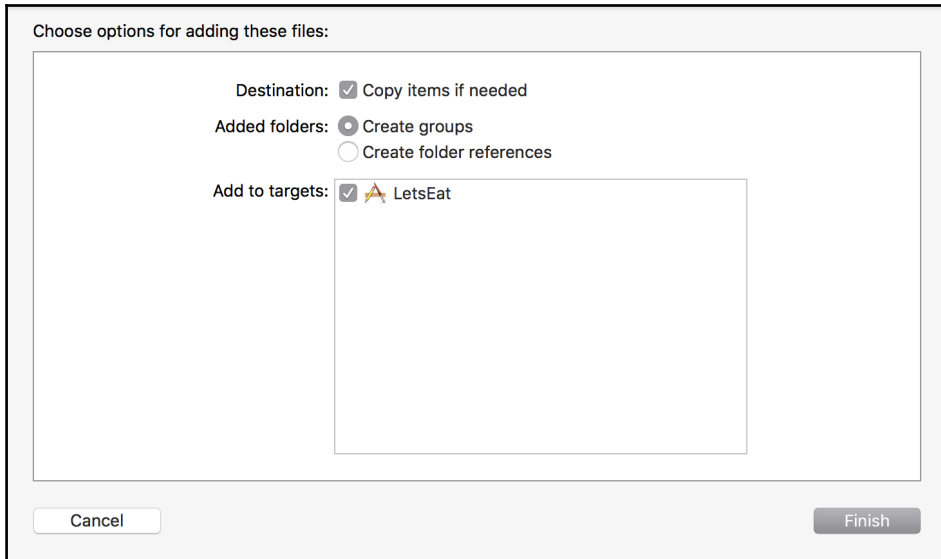


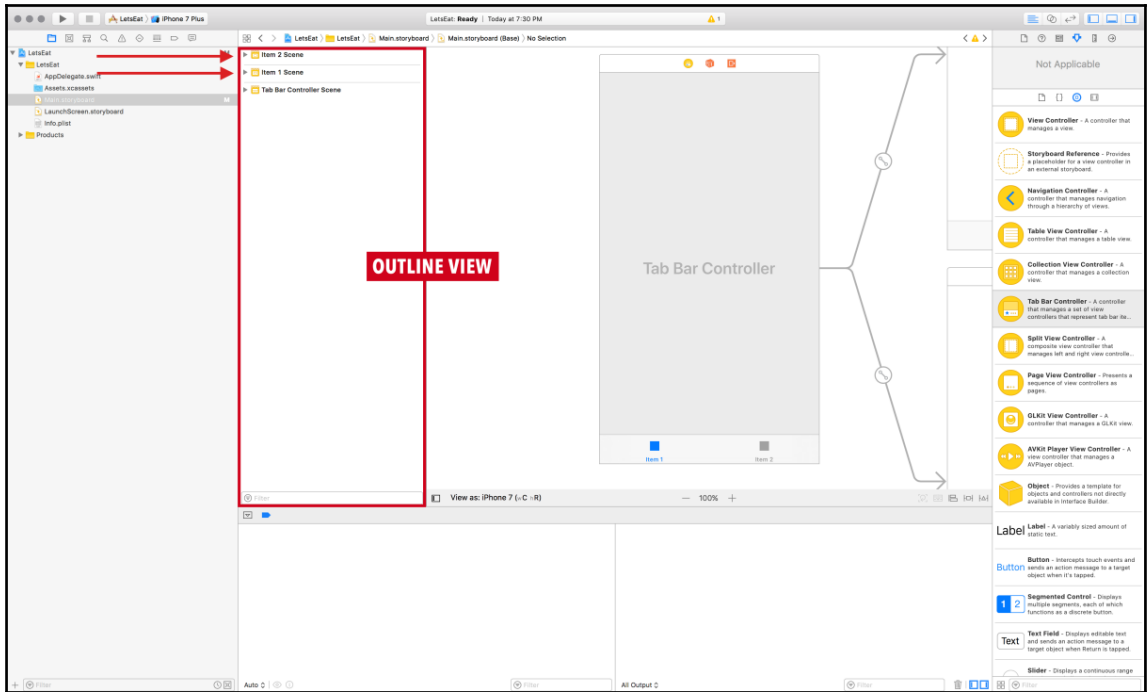


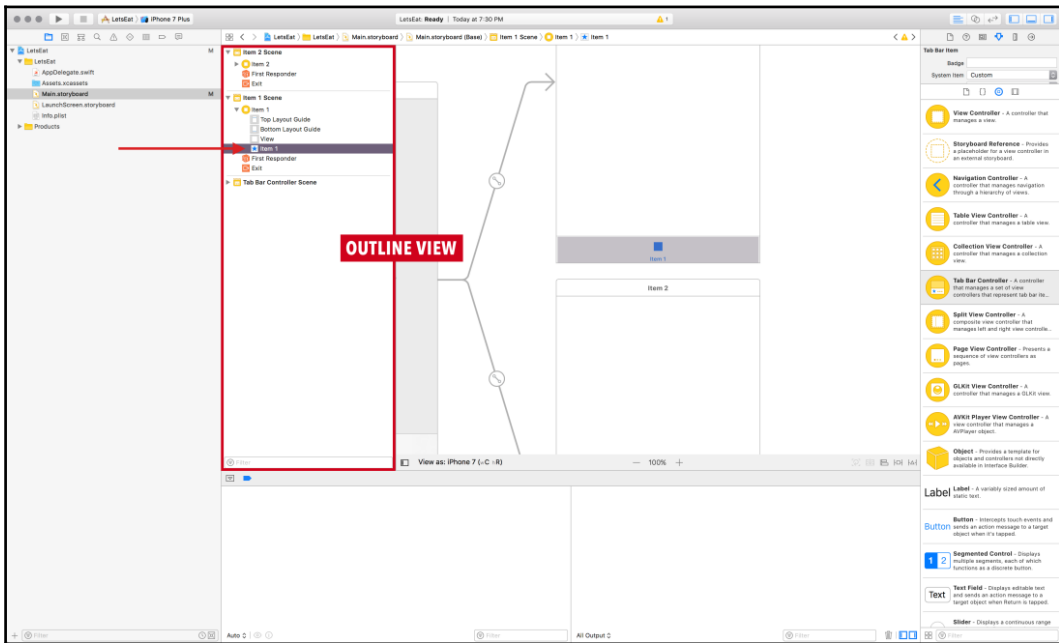
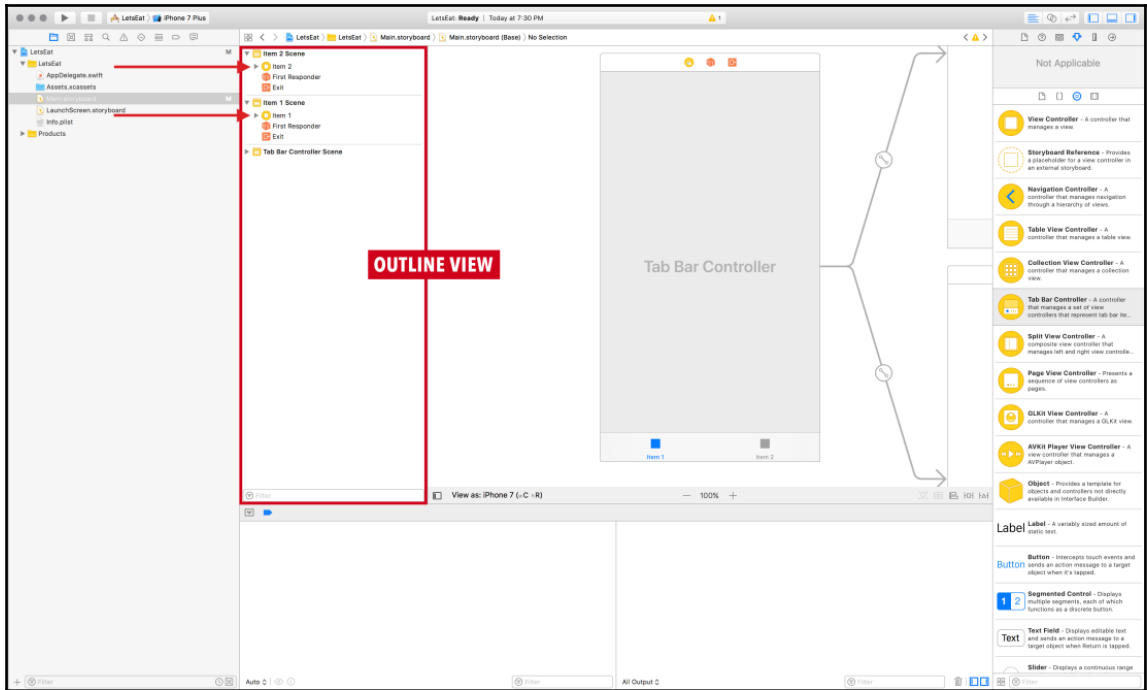
Do you want to move "Assets.xcassets" to the Trash, or only remove the reference to it?

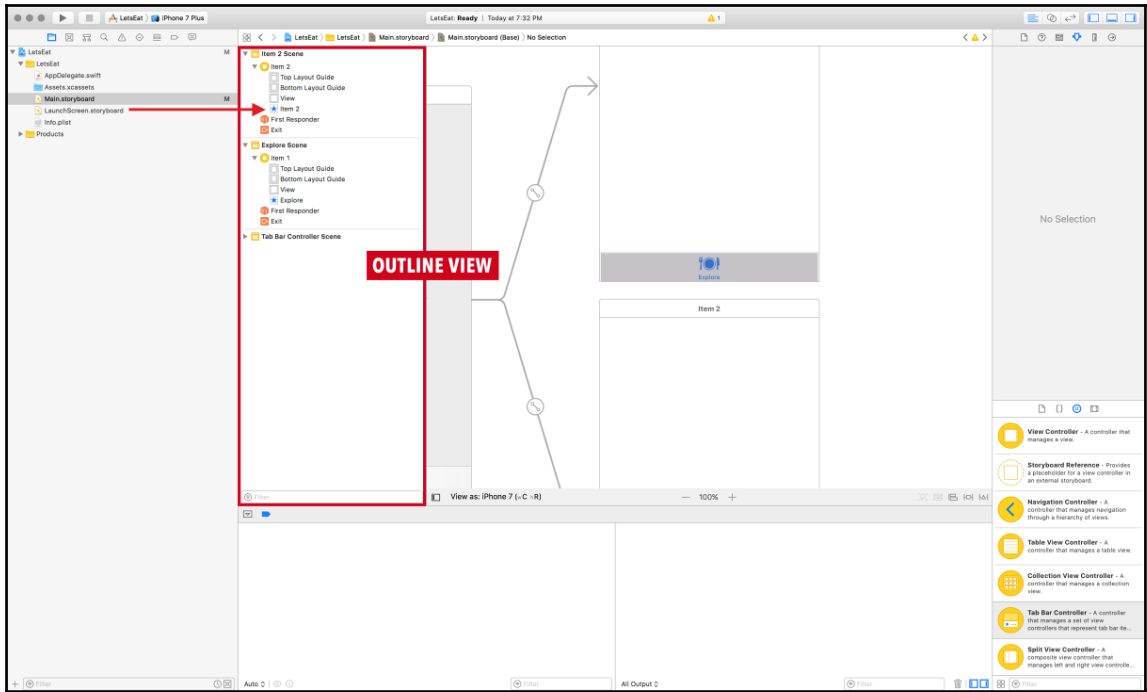
Cancel Remove Reference Move to Trash

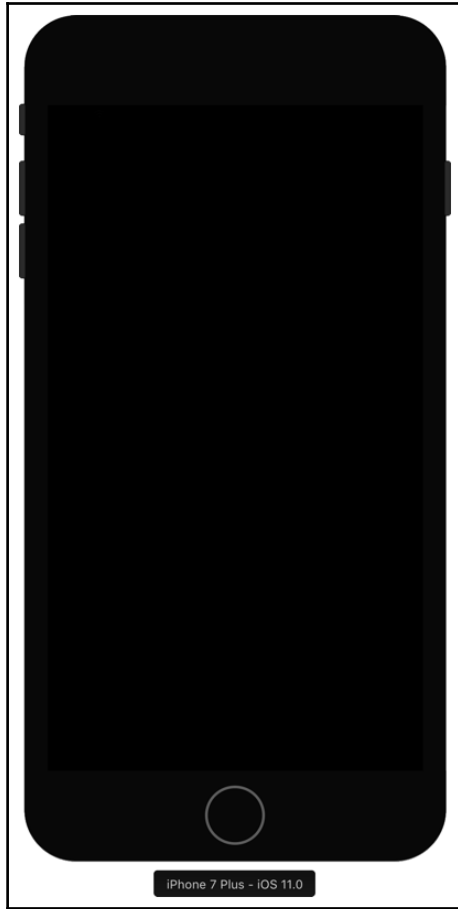


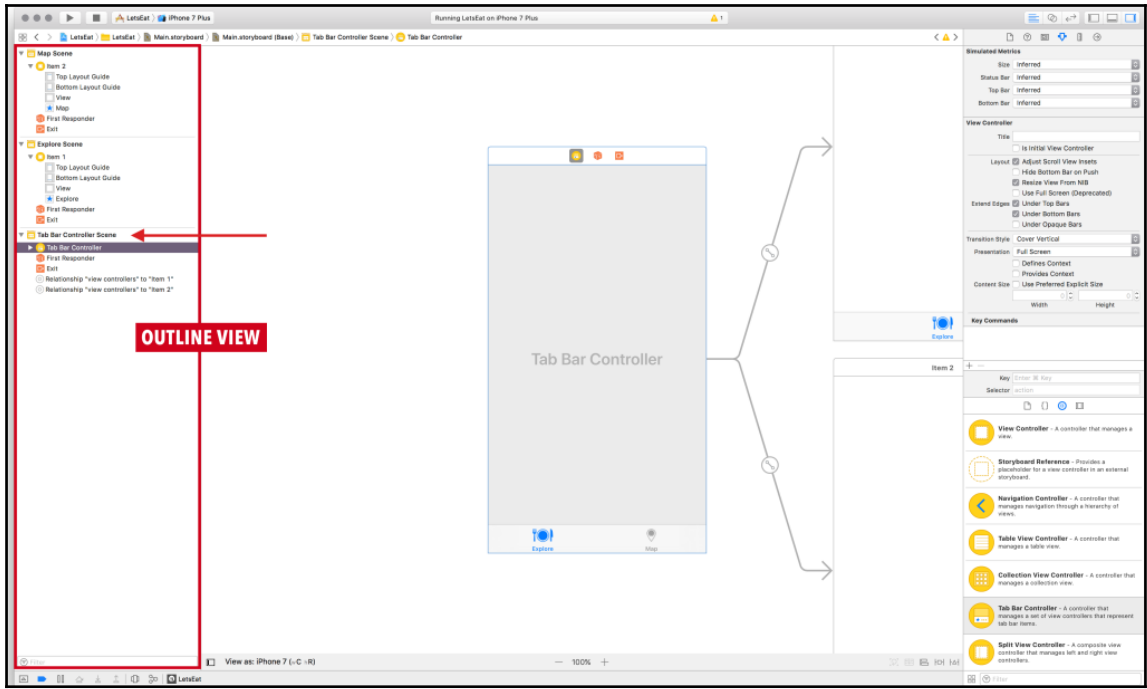


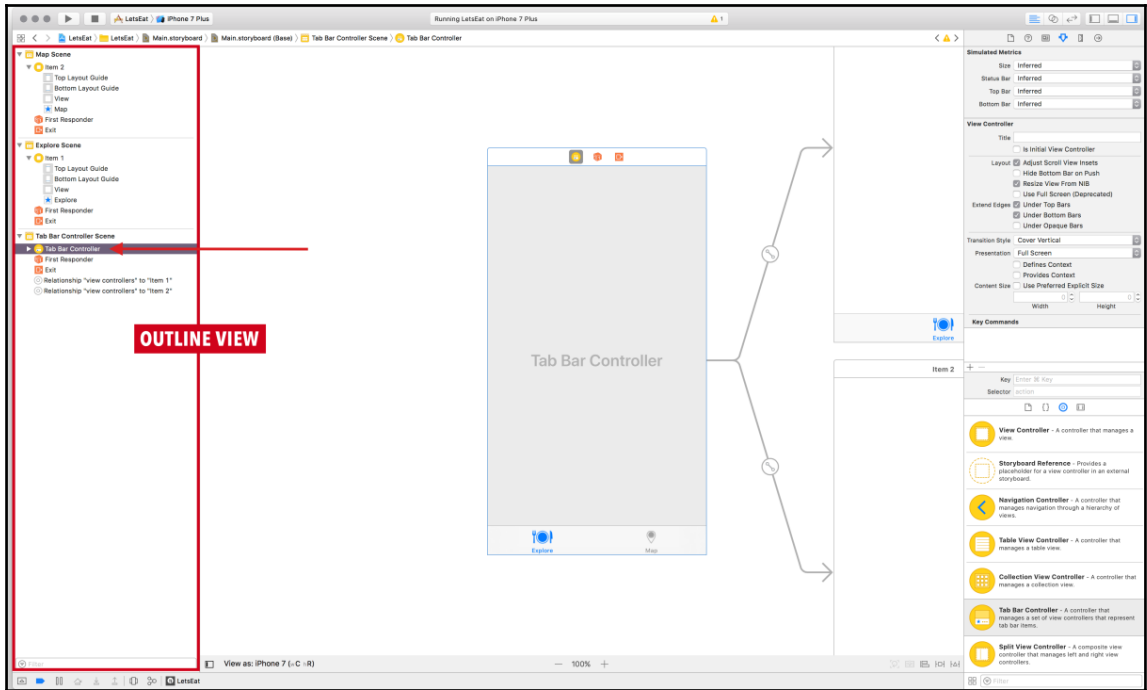


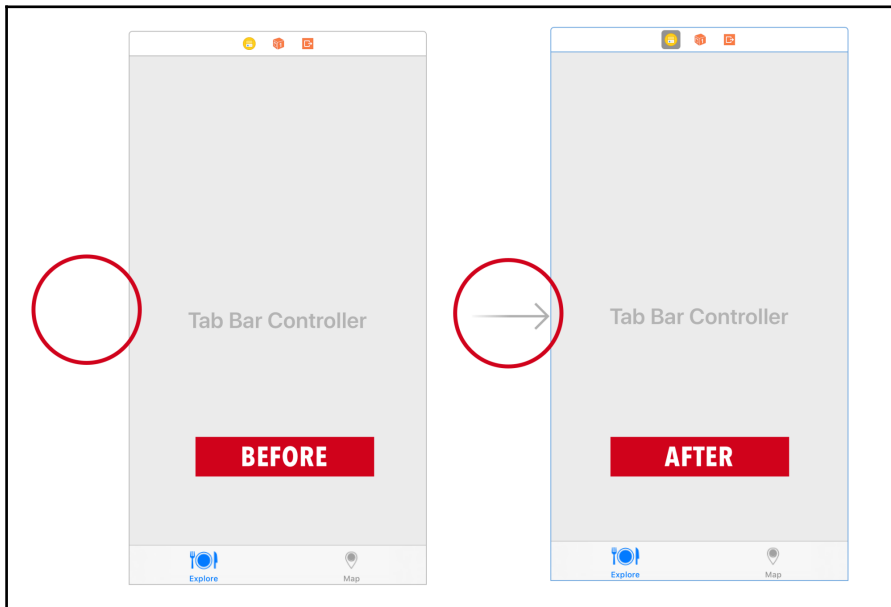
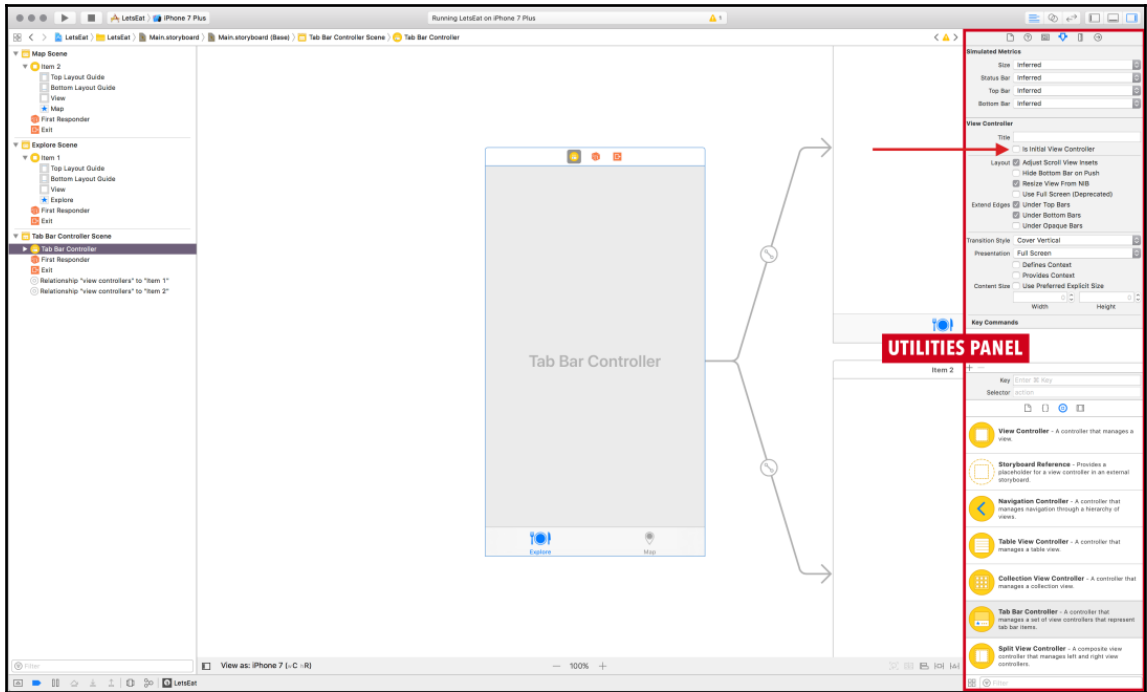


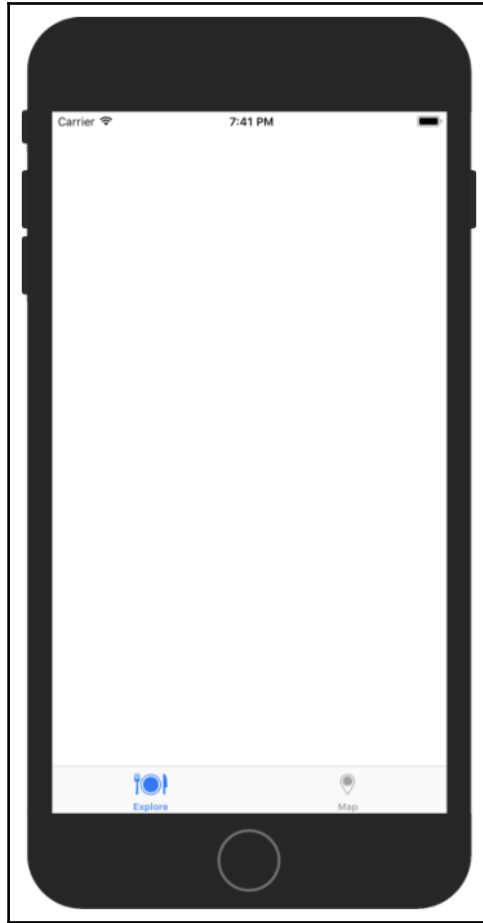


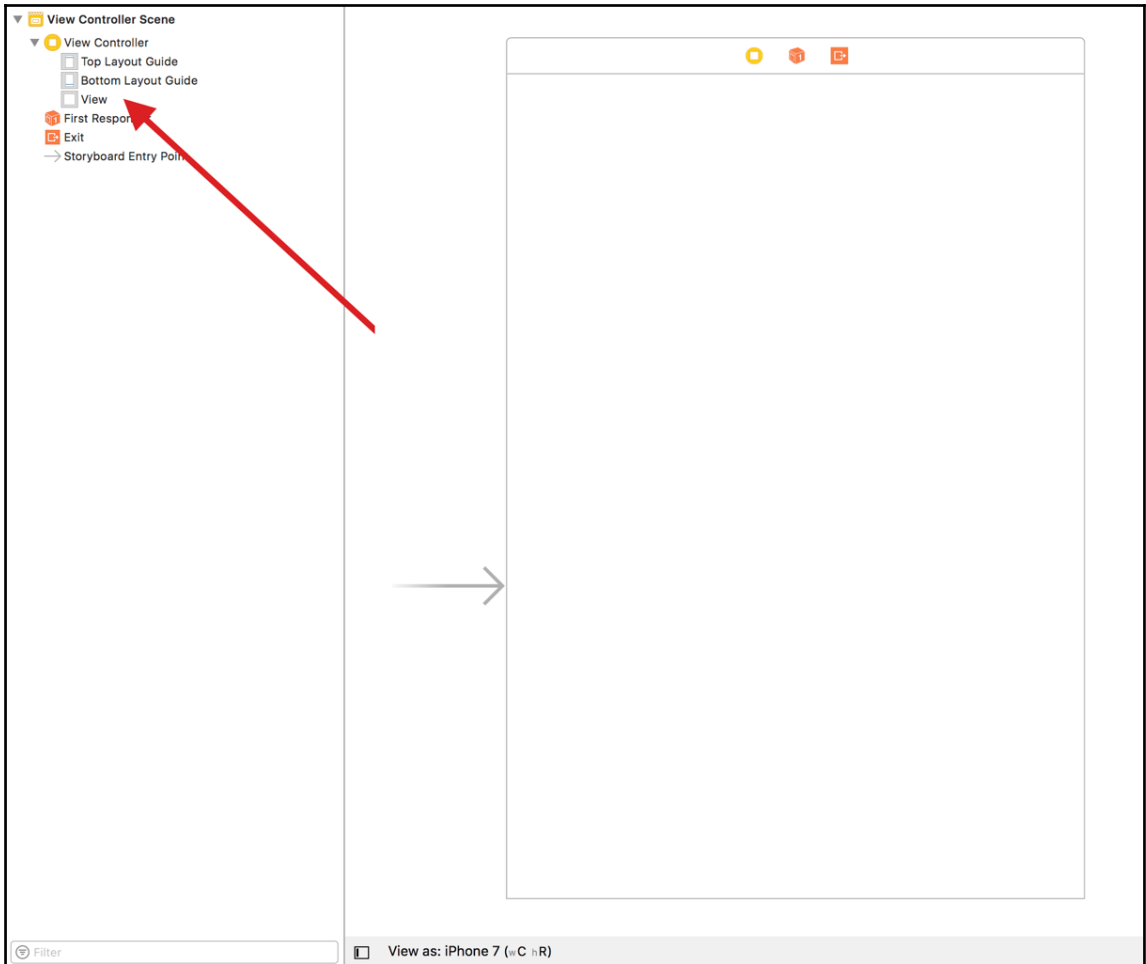


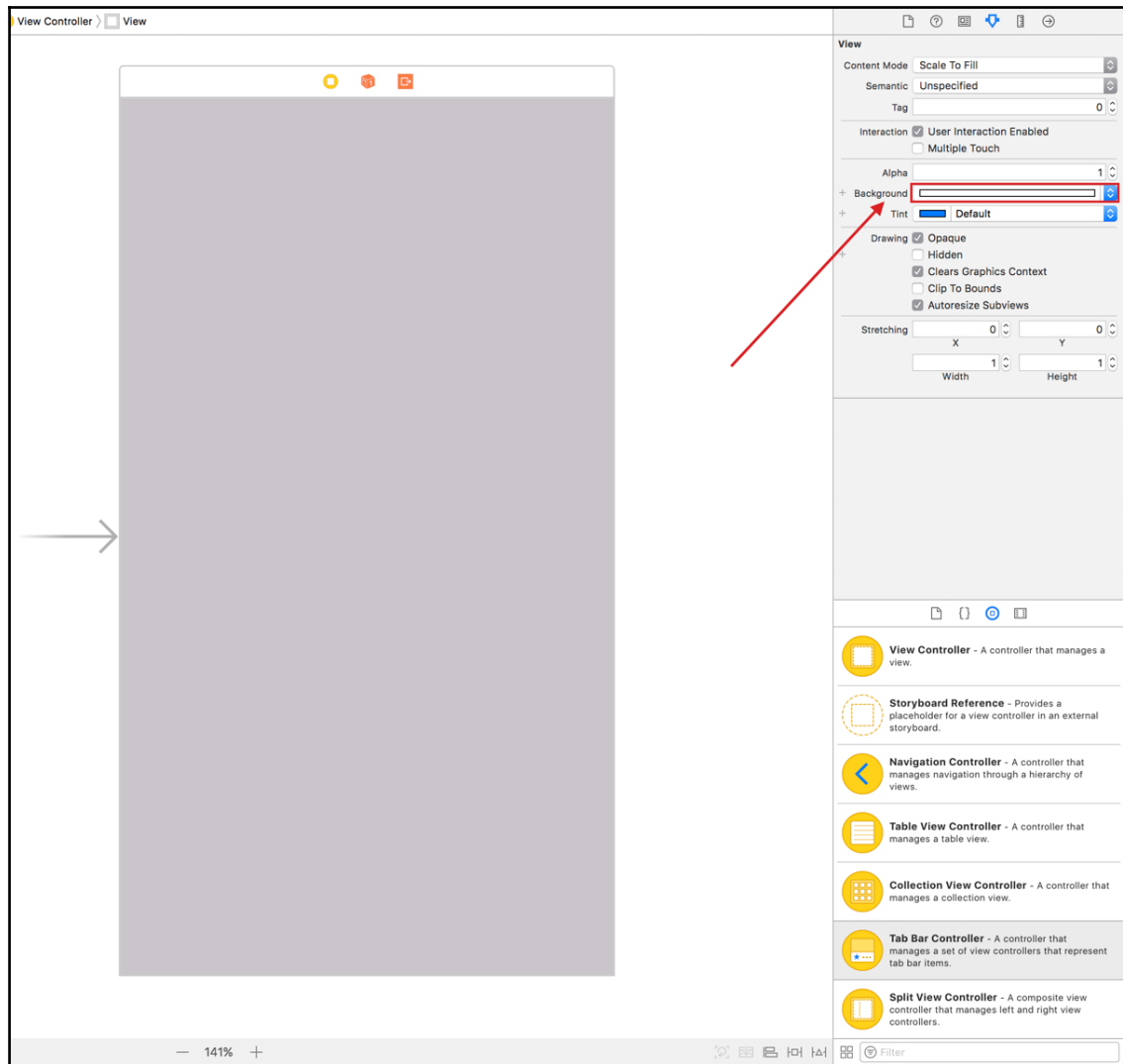




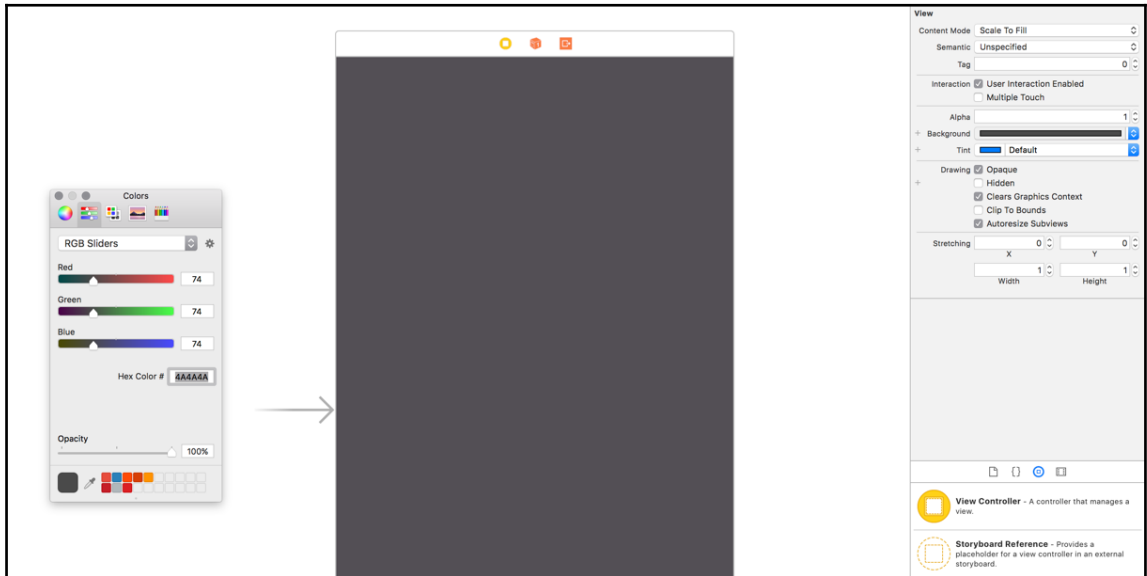
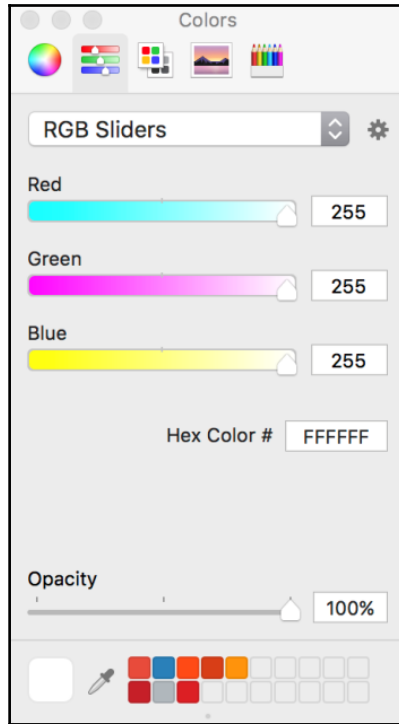


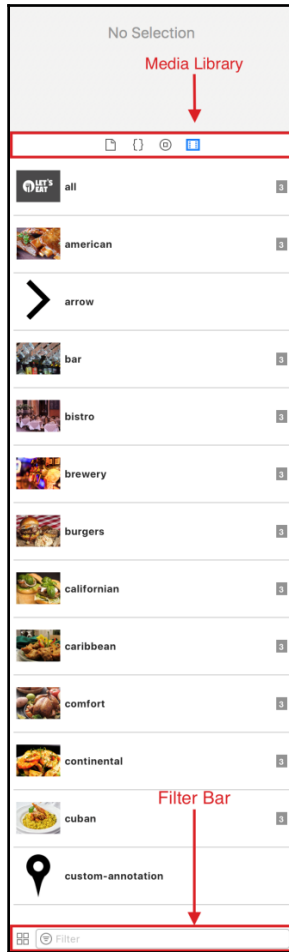


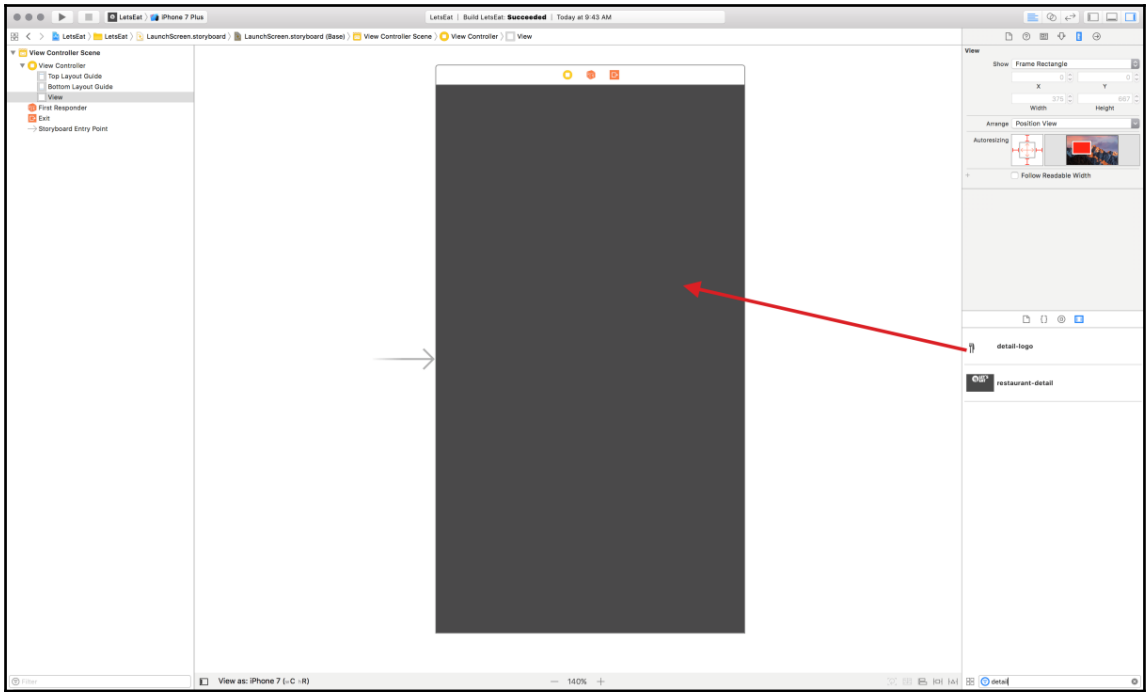


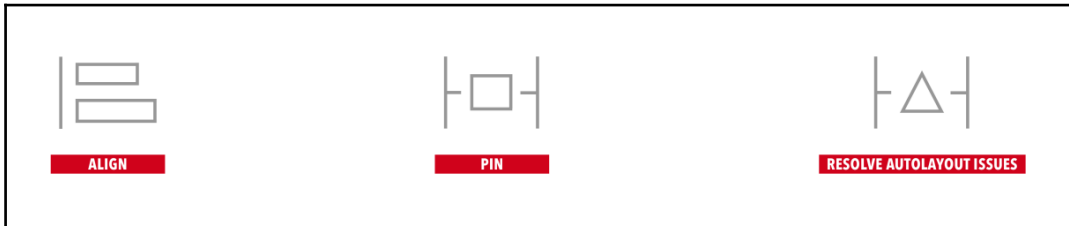
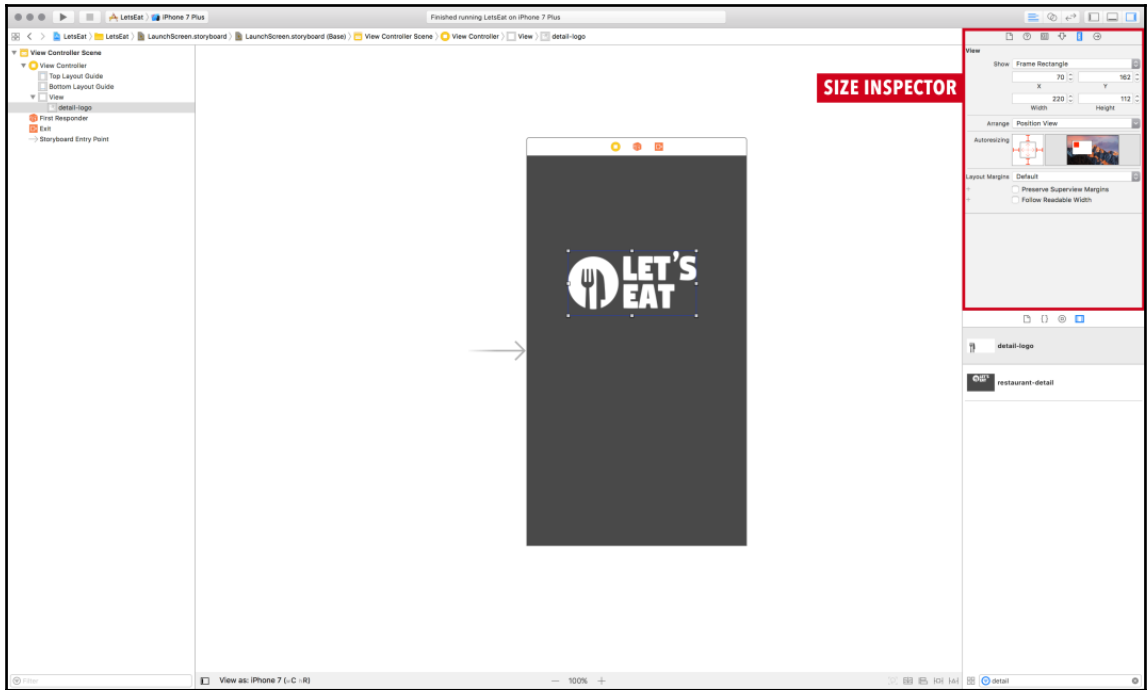




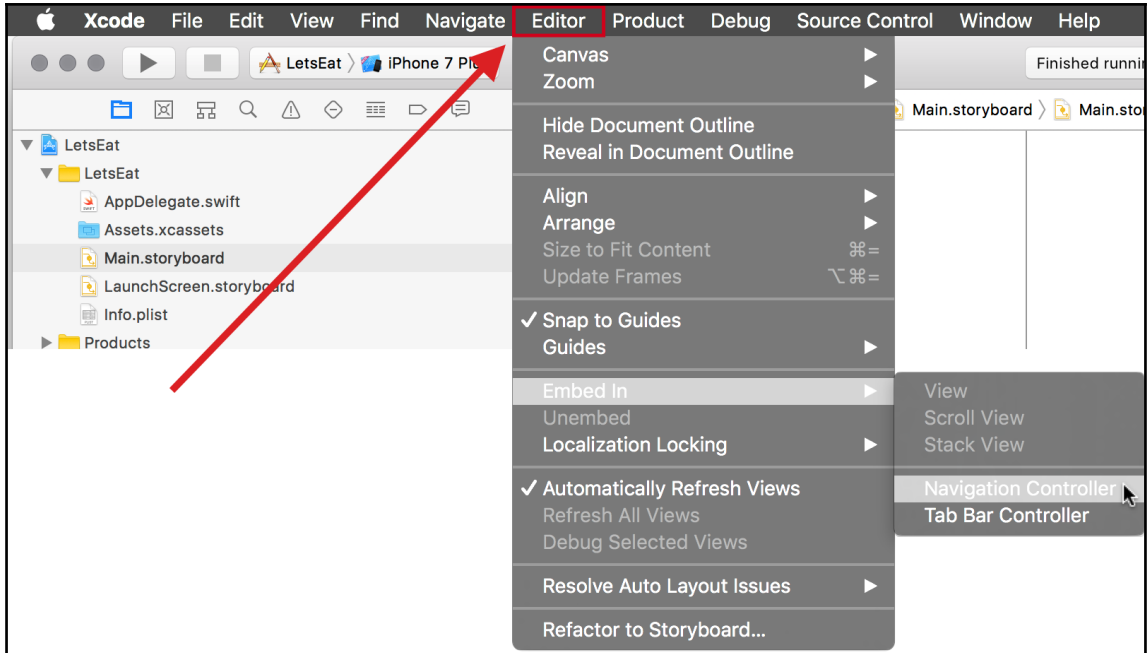
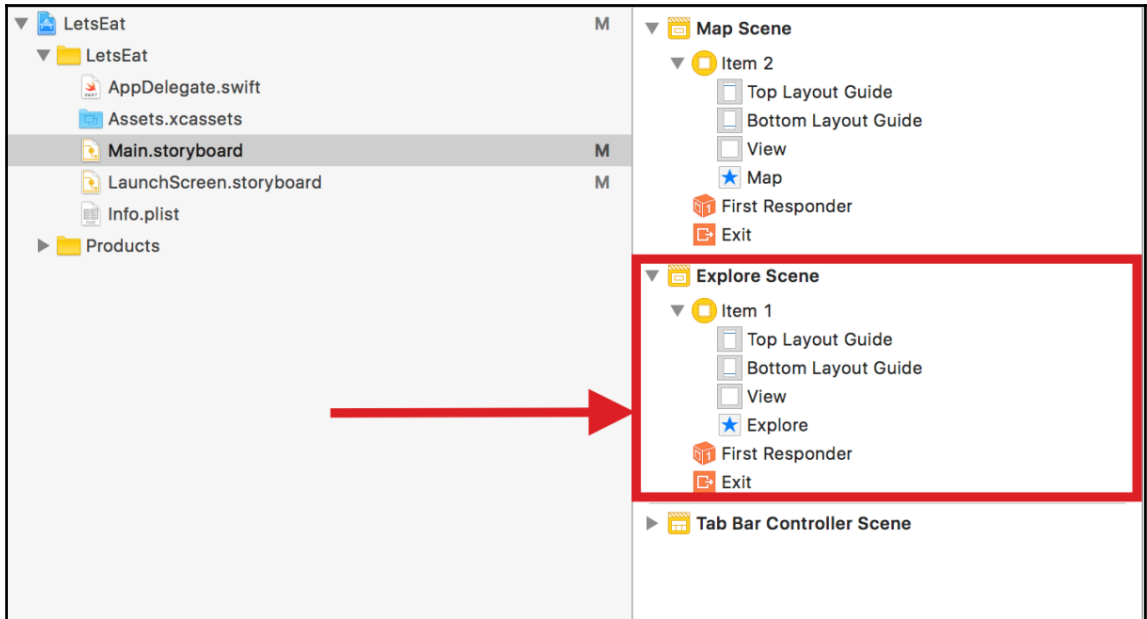


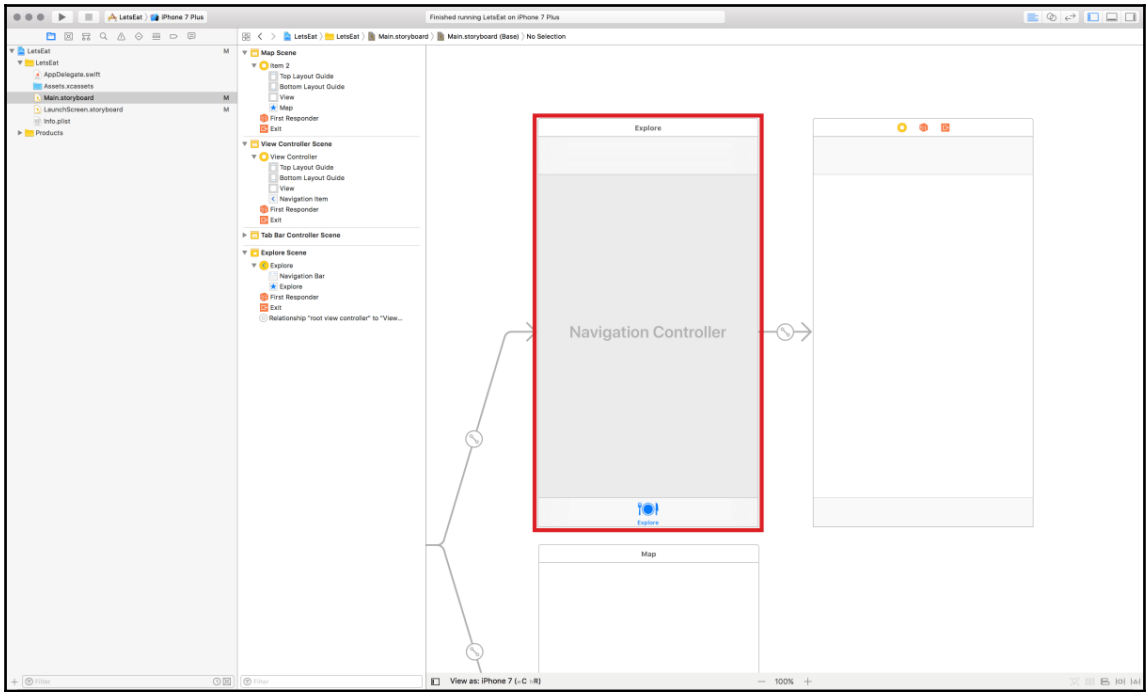


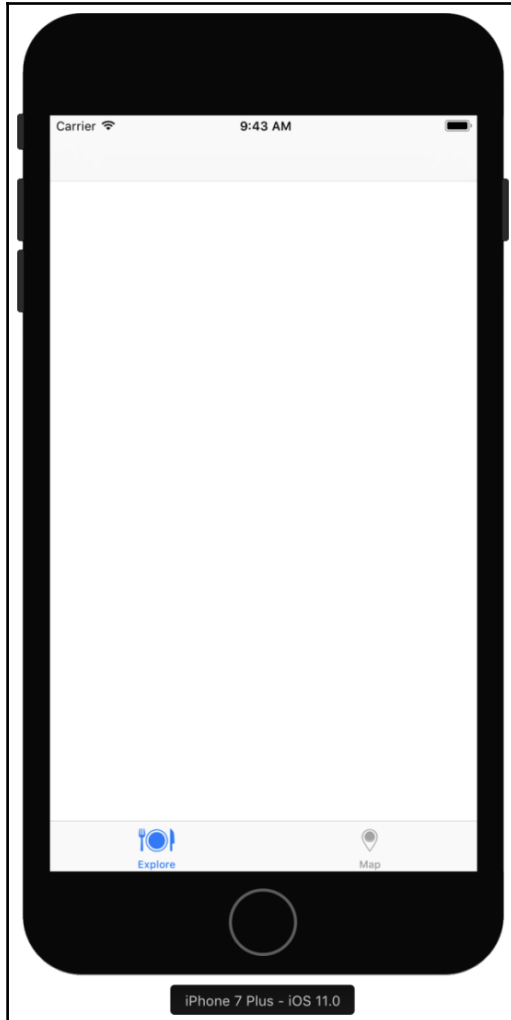




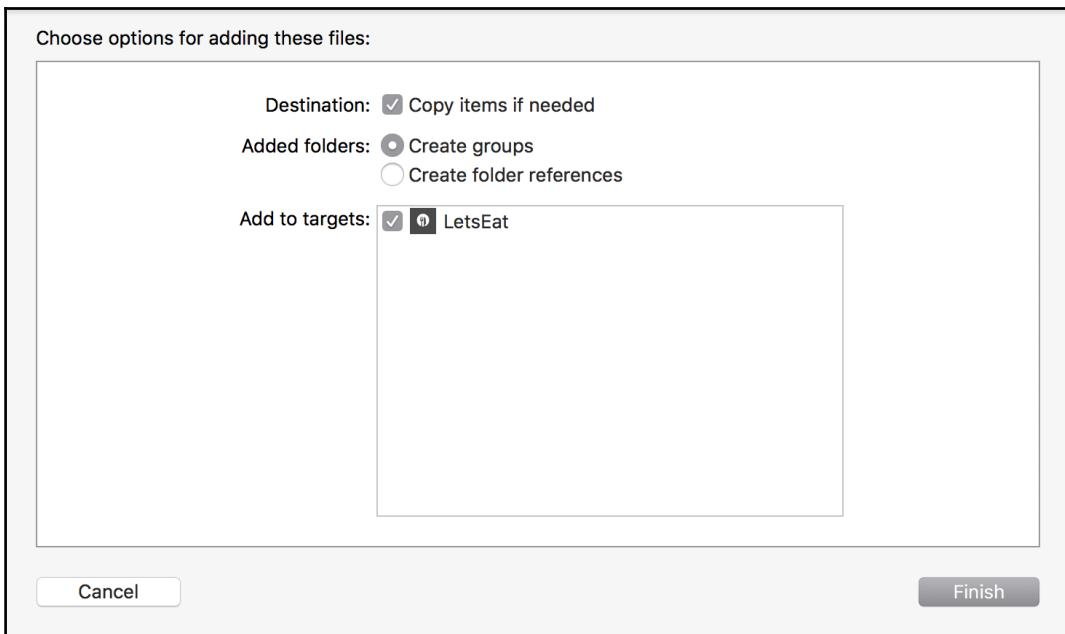
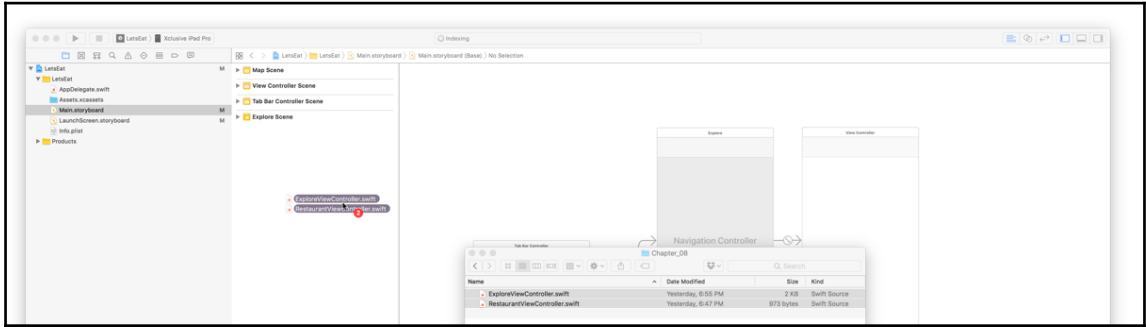








Chapter 8: Building Our App Structure in Storyboard



```
ViewController.swift
CollectionViewTest
// Created by Craig Clayton on 6/30/17.
// Copyright © 2017 Cocoa Academy. All rights reserved.
//

import UIKit

class ExploreViewController: UIViewController {

    @IBOutlet weak var collectionView: UICollectionView!

    override func viewDidLoad() {
        super.viewDidLoad()

        let layout = UICollectionViewFlowLayout()
        layout.headerReferenceSize = CGSize(width: 0, height: 100)
        layout.sectionHeadersPinToVisibleBounds = true
        collectionView.collectionViewLayout = layout
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }

    func collectionView(_ collectionView: UICollectionView, viewForSupplementaryElementOfKind kind: String, at indexPath: IndexPath) -> UICollectionViewReusableView {
        let headerView = collectionView.dequeueReusableSupplementaryView(ofKind: kind, withReuseIdentifier: "header", for: indexPath)
        return headerView
    }

    func collectionView(_ collectionView: UICollectionView, cellForItemAt indexPath: IndexPath) -> UICollectionViewCell {
        return collectionView.dequeueReusableCell(withReuseIdentifier: "exploreCell", for: indexPath)
    }

    func numberOfSections(in collectionView: UICollectionView) -> Int {
        return 1
    }

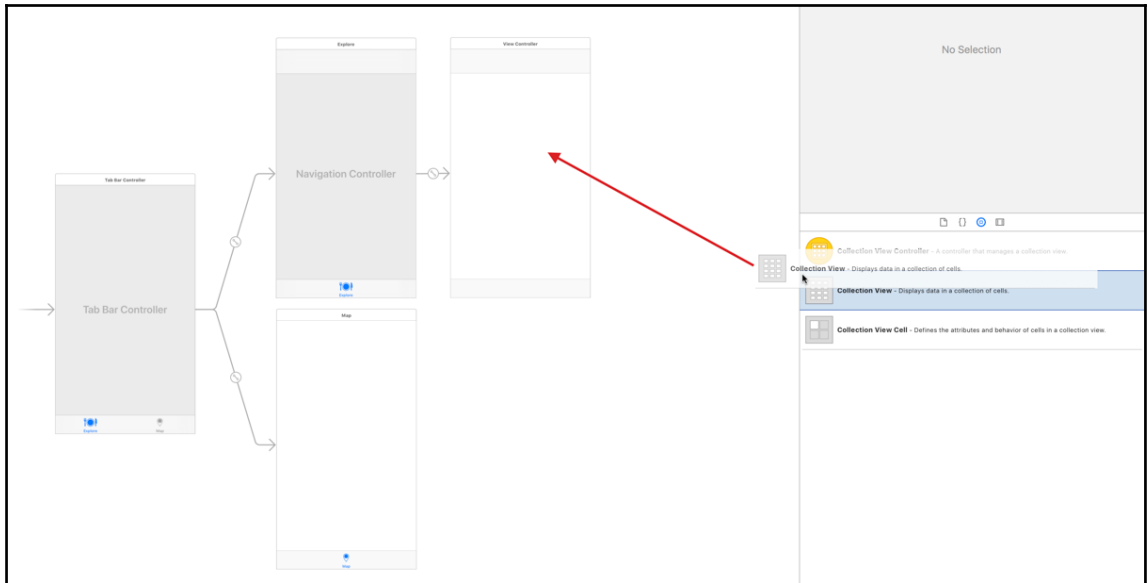
    func collectionView(_ collectionView: UICollectionView, numberOfItemsInSection section: Int) -> Int {
        return 20
    }

    // Add Unwind here
}
}
```

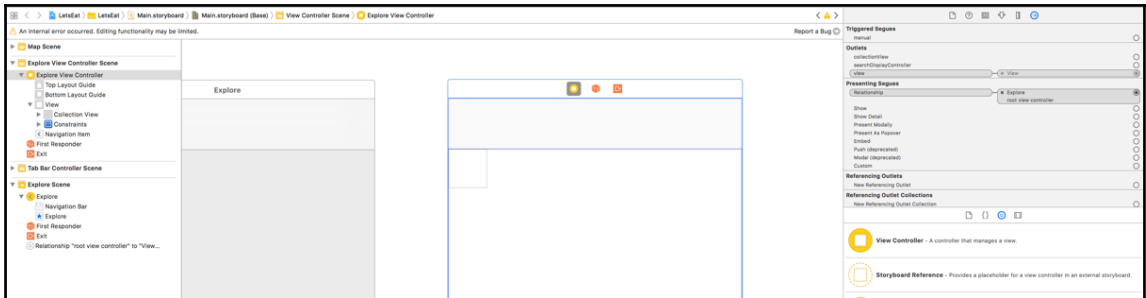
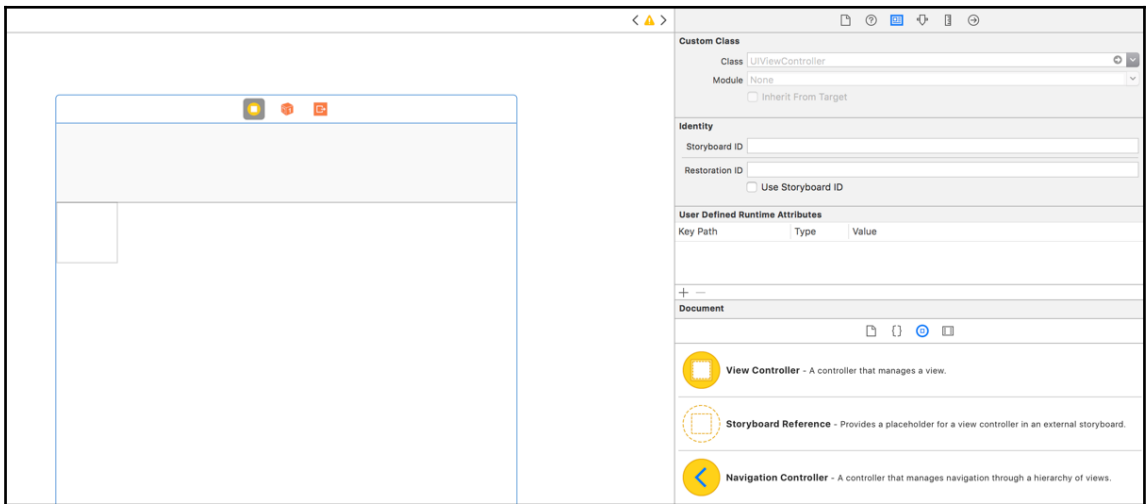
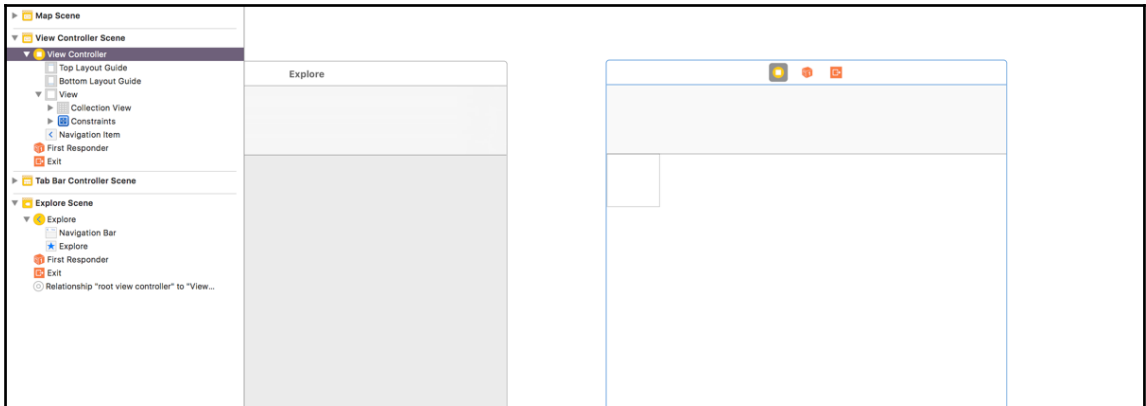
The screenshot shows a documentation page with a top navigation bar containing icons for a document, code, a search icon, and a list. The main content area is divided into three sections:

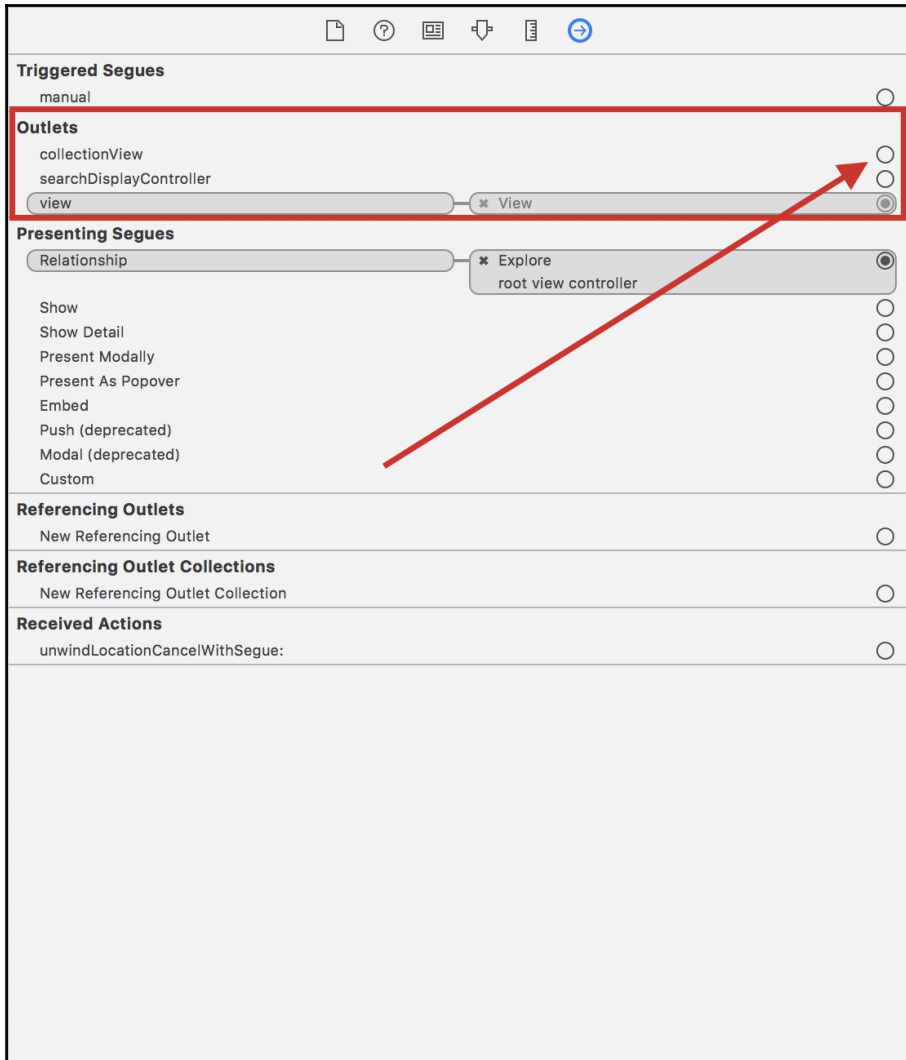
- Collection View Controller** - A controller that manages a collection view. (Icon: Yellow circle with a grid)
- Collection View** - Displays data in a collection of cells. (Icon: Gray grid)
- Collection View Cell** - Defines the attributes and behavior of cells in a collection view. (Icon: Gray grid with a white square)

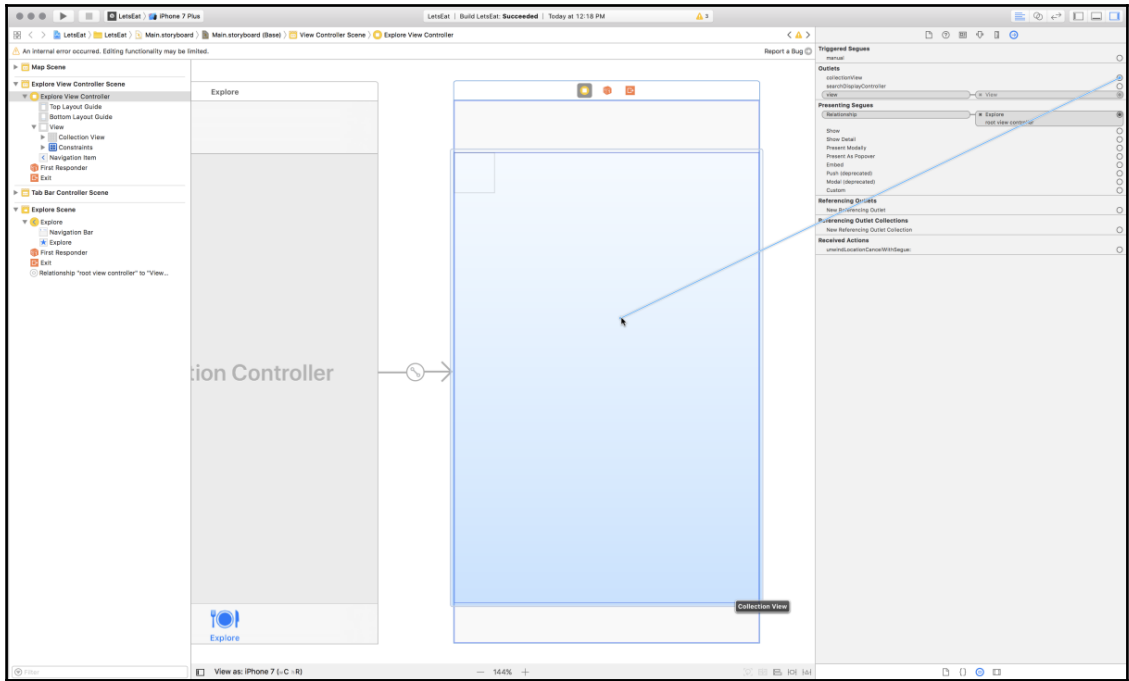
At the bottom, there is a search bar with a grid icon on the left, the text "collectionview" in the center, and a close icon on the right.



The screenshot displays the Xcode Interface Builder environment. On the left, a storyboard is shown with a collection view element highlighted by a blue border and handles. On the right, the 'Collection View' inspector is visible, showing settings for 'Items' (1), 'Layout' (Flow), and 'Scroll Direction' (Vertical). Below the inspector is a list of view controller types: View Controller, Storyboard Reference, Navigation Controller, Table View Controller, Collection View Controller, and Tab Bar Controller. In the foreground, the 'Add New Constraints' dialog box is open, showing a width constraint of 240 and a height constraint of 128. The dialog also includes options for 'Spacing to nearest neighbor', 'Constrain to margins', and 'Equal Widths/Heights/Aspect Ratio'. The 'Add 4 Constraints' button is highlighted.







Triggered Segues
manual

Outlets

collectionView * Collection View

searchDisplayController

view * View

Presenting Segues

Relationship * Explore root view controller

Show

Show Detail

Present Modally

Present As Popover

Embed

Push (deprecated)

Modal (deprecated)

Custom

Referencing Outlets

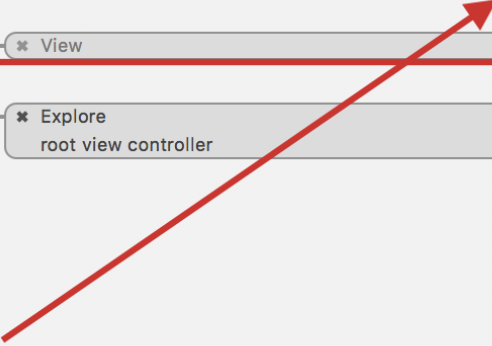
New Referencing Outlet

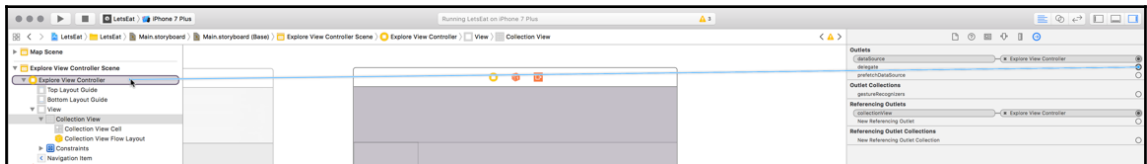
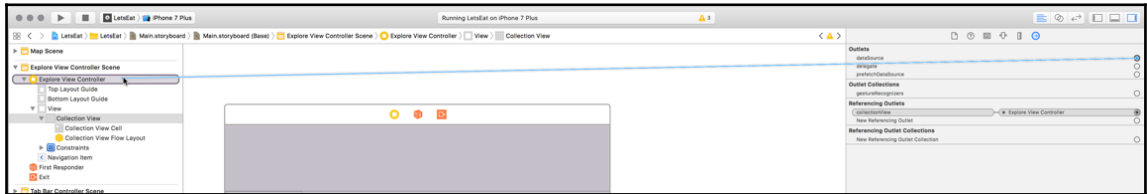
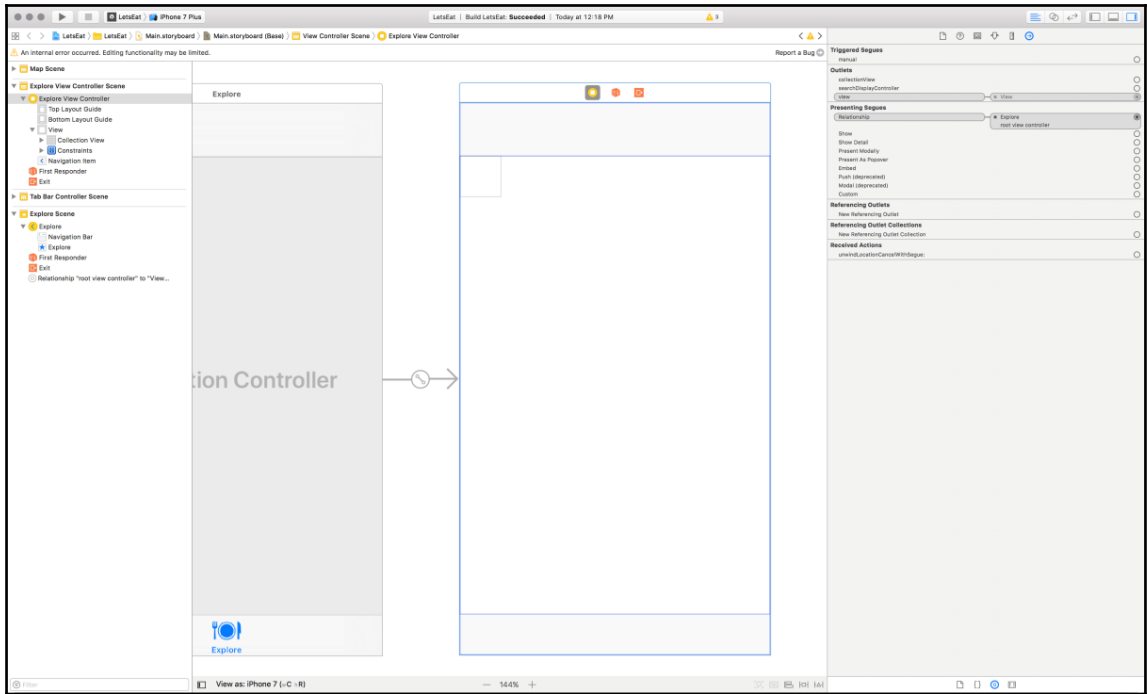
Referencing Outlet Collections

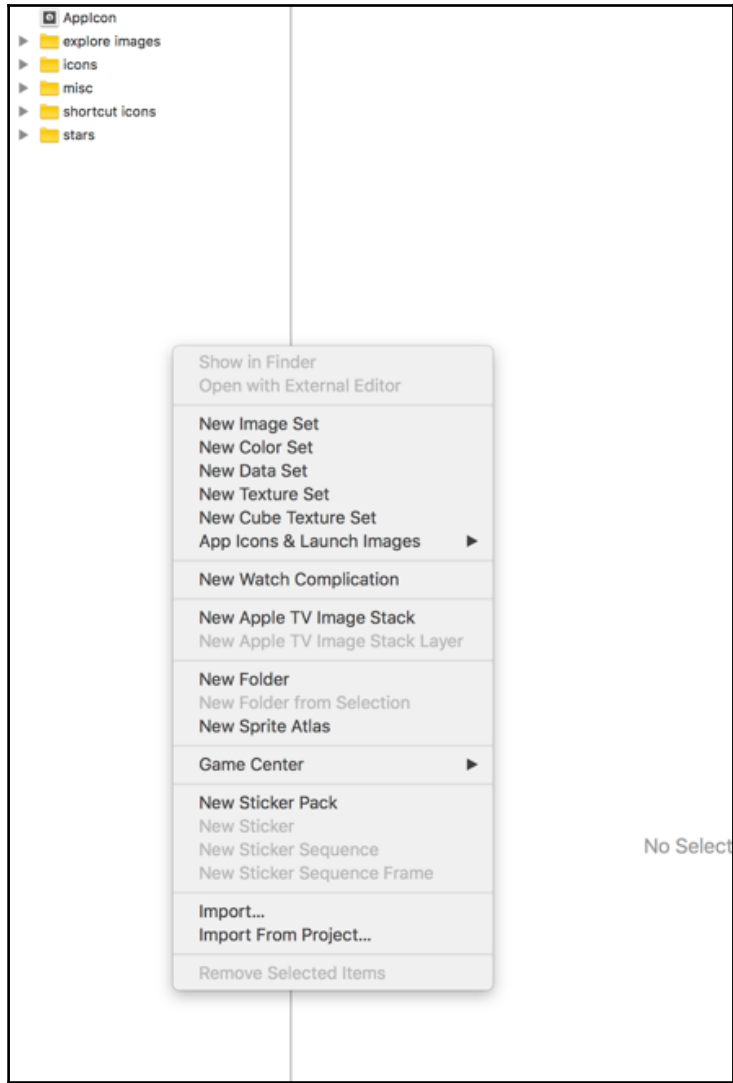
New Referencing Outlet Collection

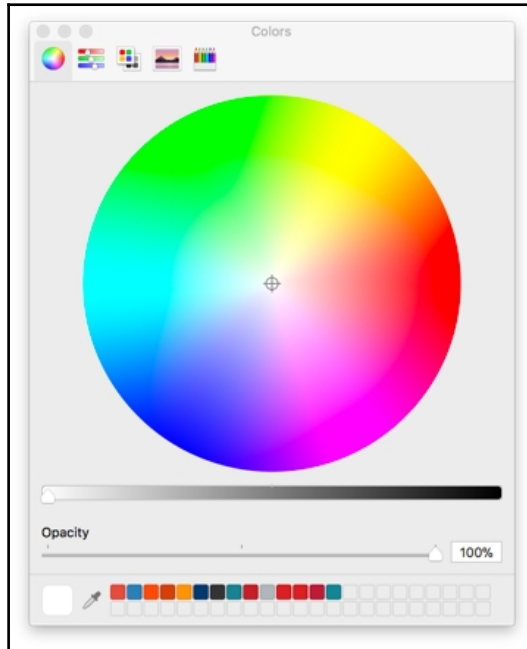
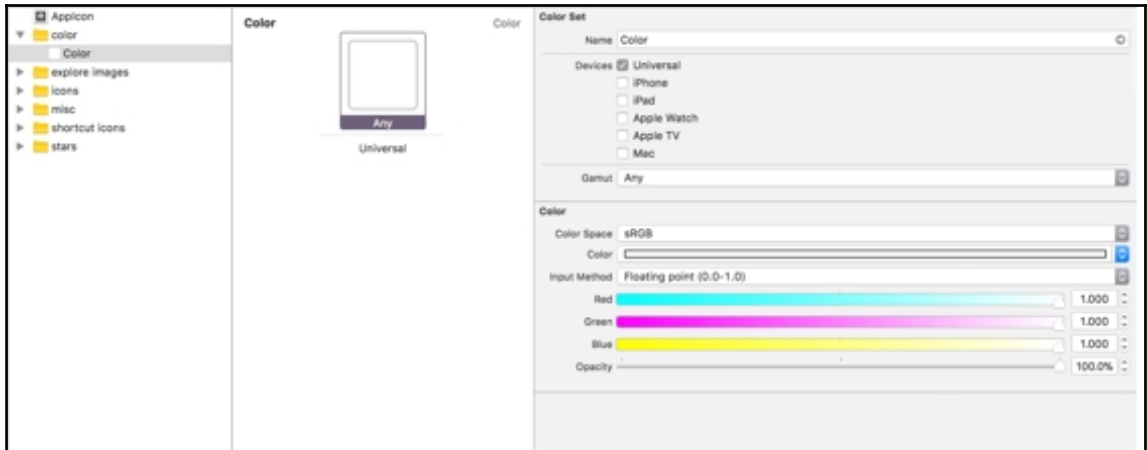
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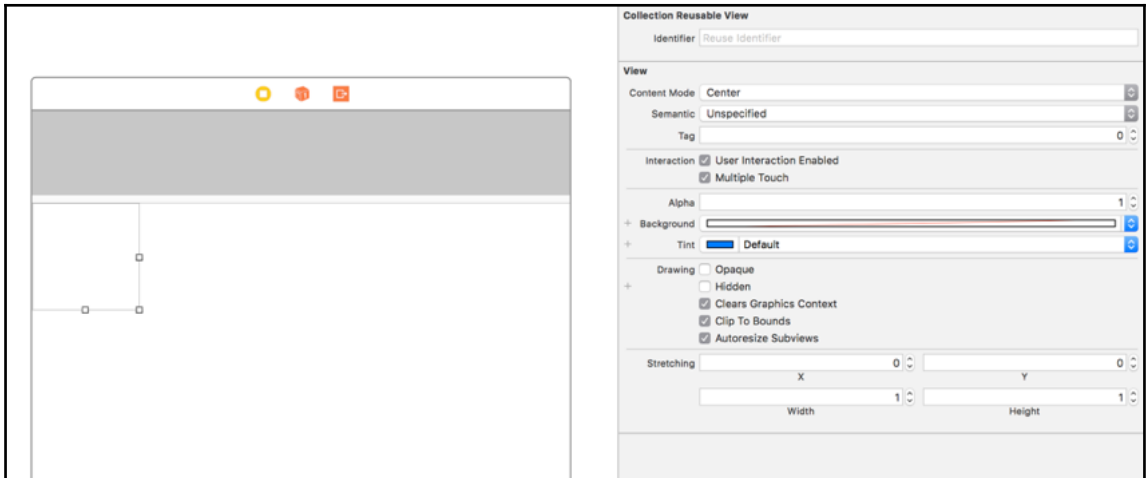
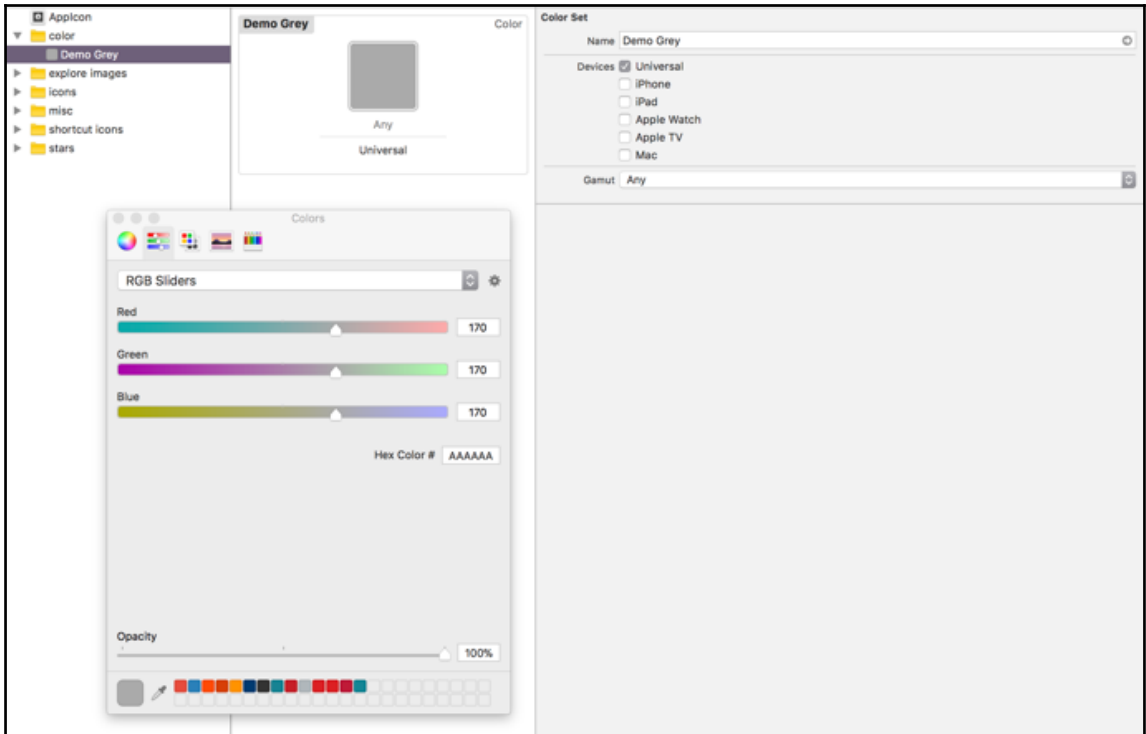
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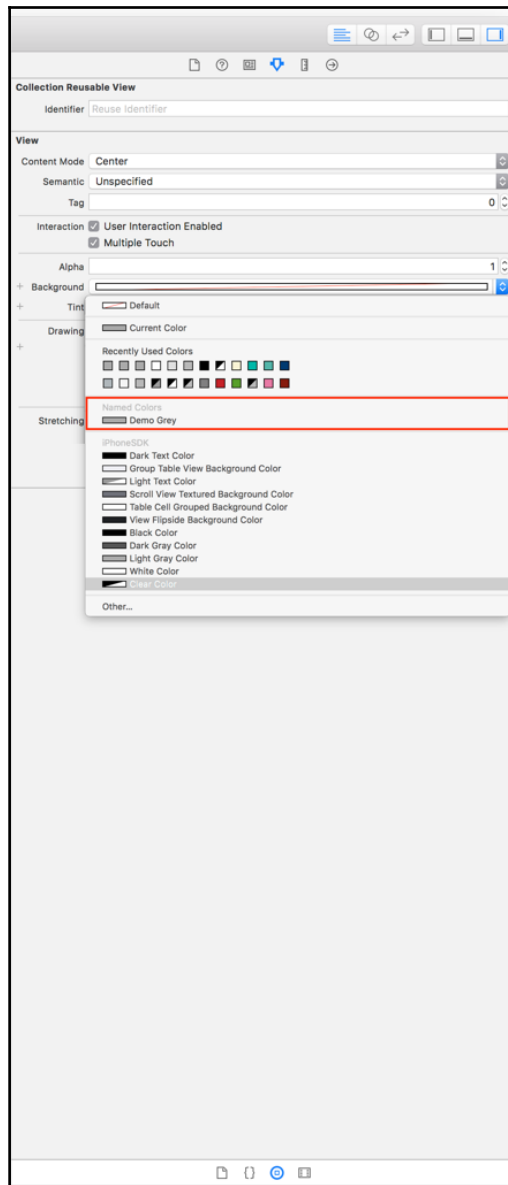


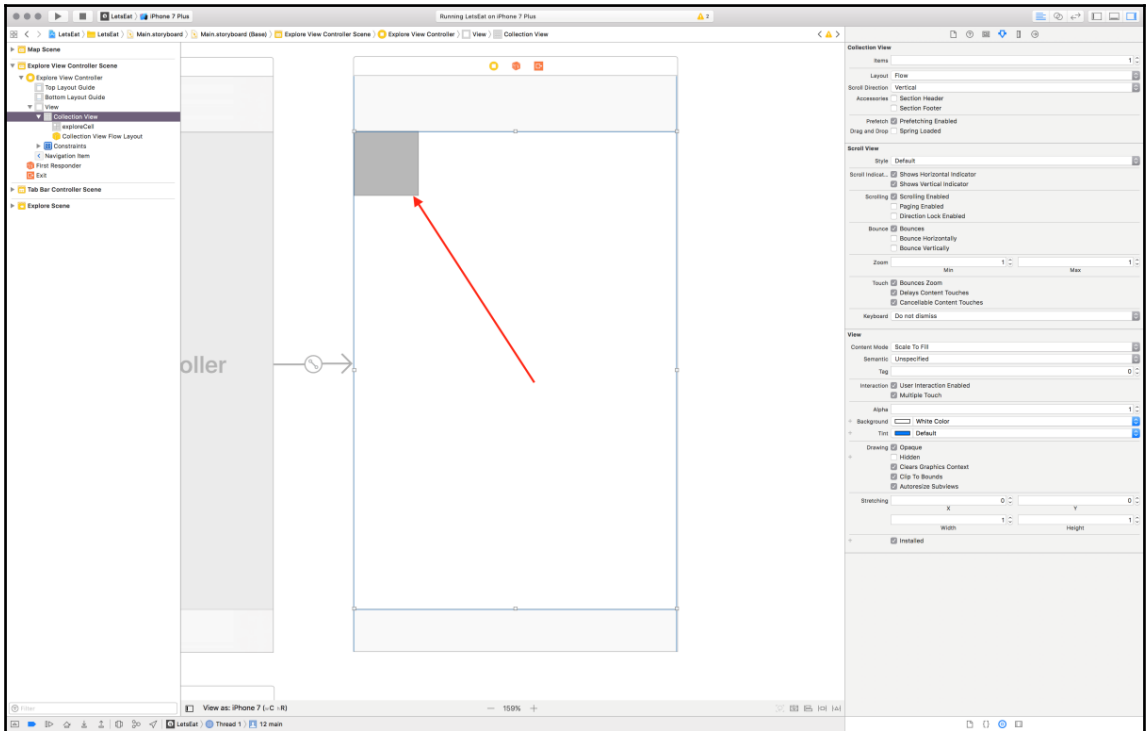


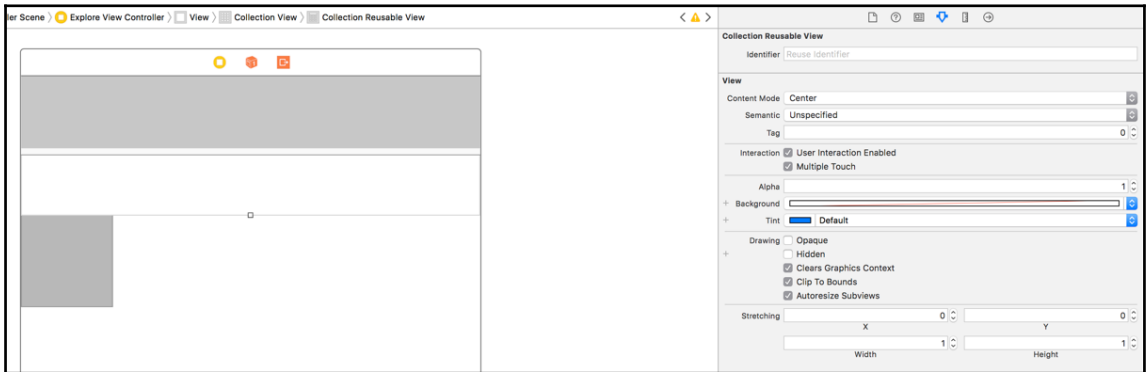
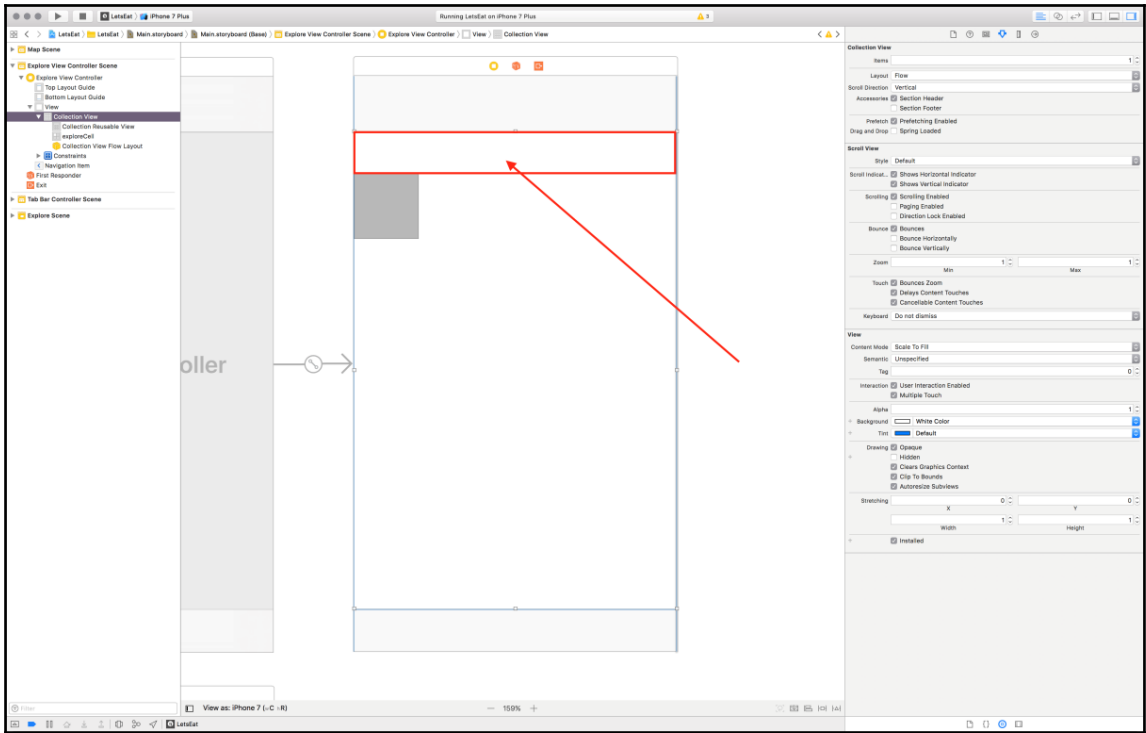


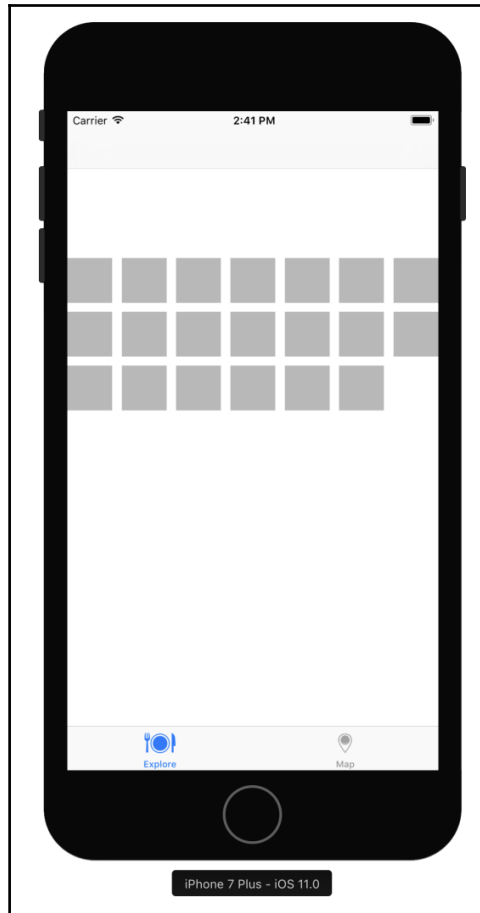












Fields	Values			
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Min Spacing	For Cells: 0	For Lines: 7		
Section Insets	Top: 7	Bottom: 7	Left: 7	Right: 7

Fields	Values			
Cell Size	Width: 196	Height: 154		
Min Spacing	For Cells: 0	For Lines: 7		
Section Insets	Top: 7	Bottom: 7	Left: 7	Right: 7

Fields	Values			
Cell Size	Width: 150	Height: 154		
Min Spacing	For Cells: 0	For Lines: 7		
Section Insets	Top: 7	Bottom: 7	Left: 7	Right: 7

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Collection View

Cell Size Width Height

Header Size Width Height

Footer Size Width Height

Min Spacing For Cells For Lines

Section Insets Top Bottom

Left Right

Scroll View

Indicator Insets Top Bottom

Left Right

View

Show

X Y

Width Height

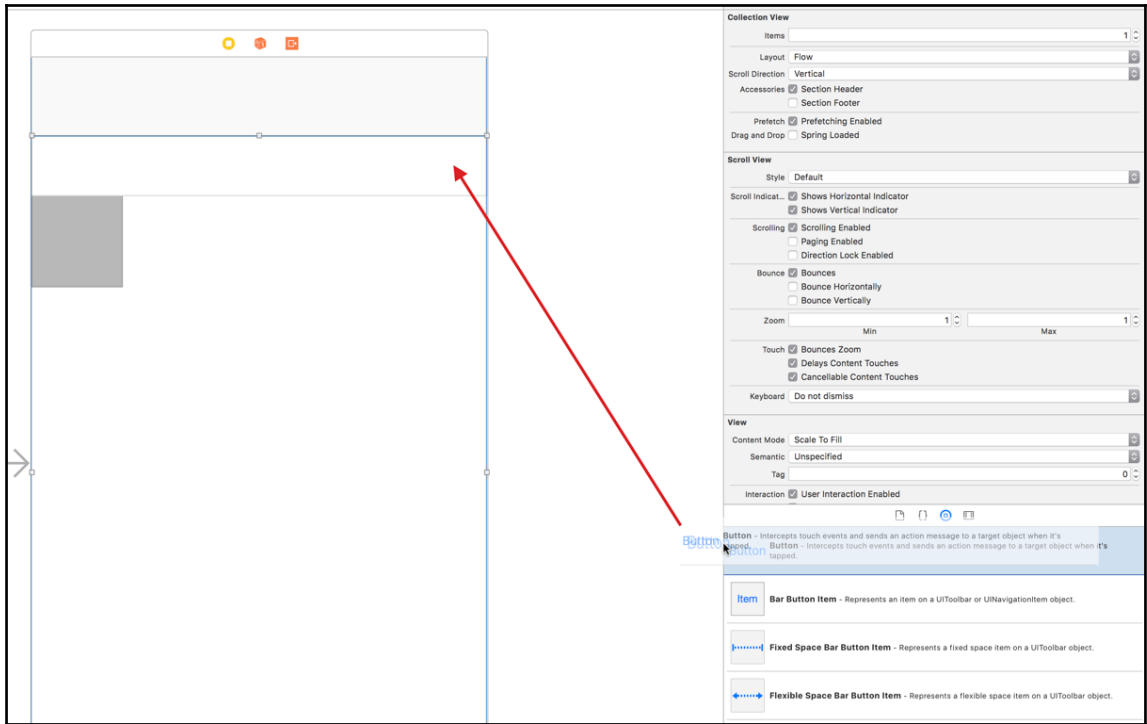
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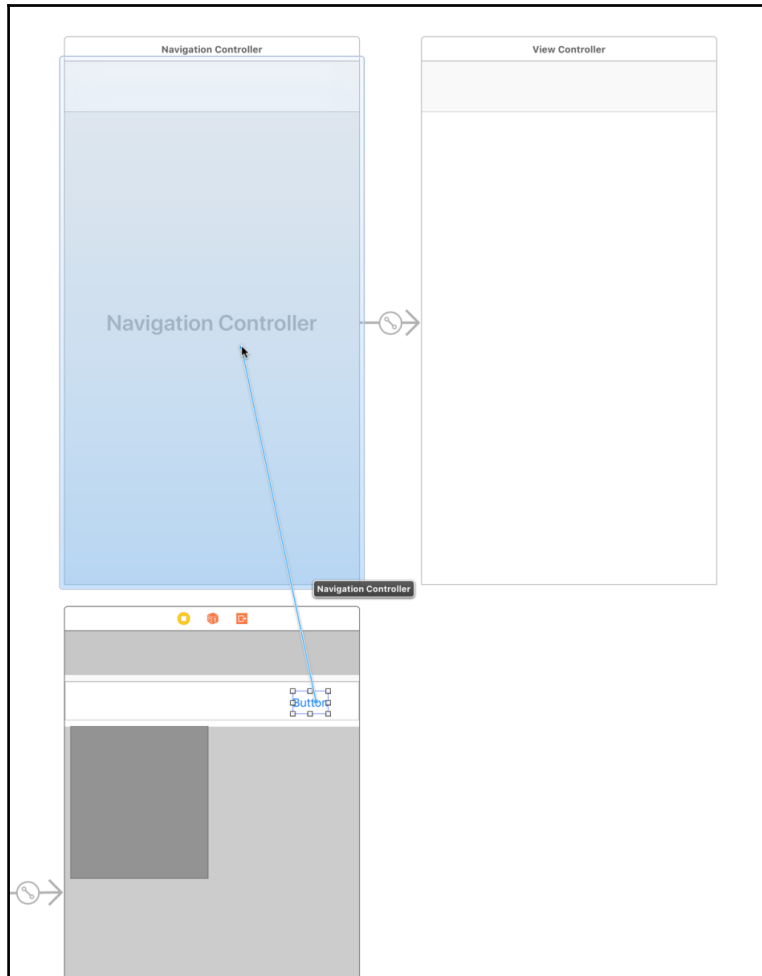
Layout Margins

+ Preserve Superview Margins

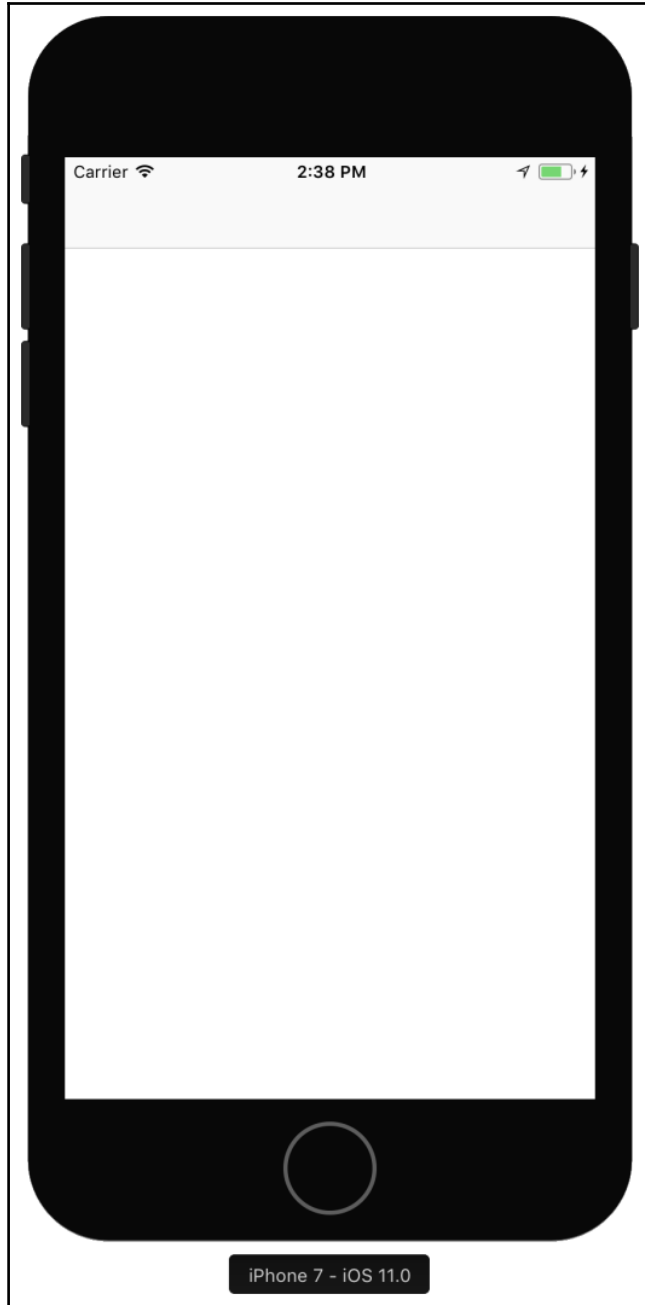
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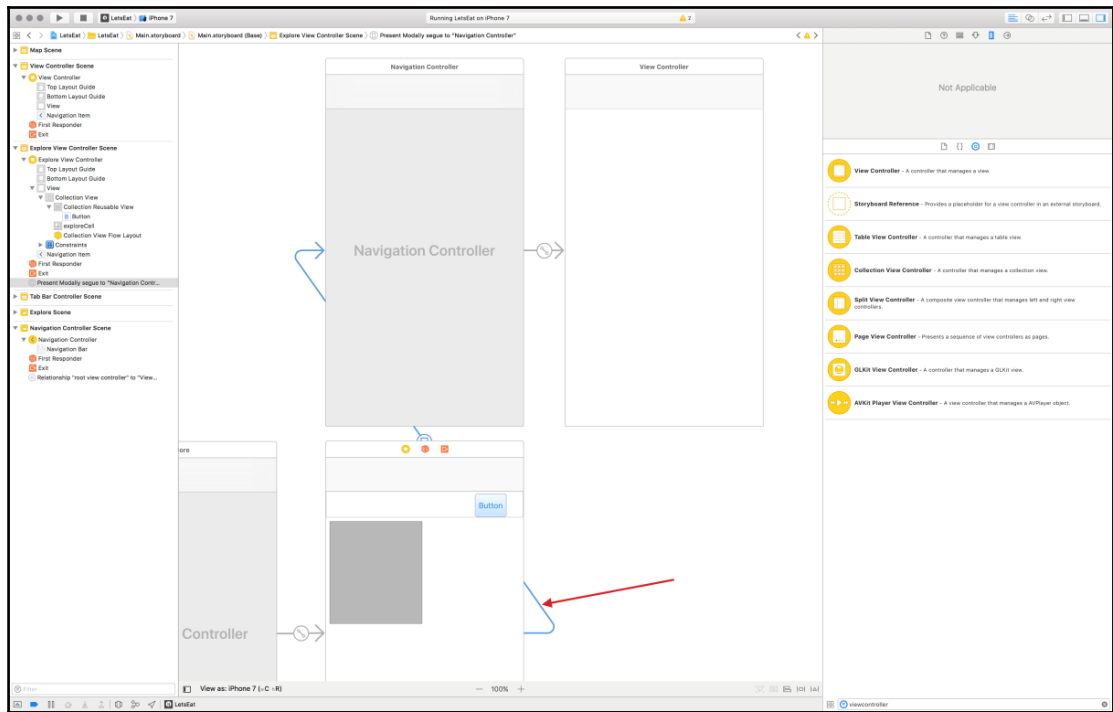


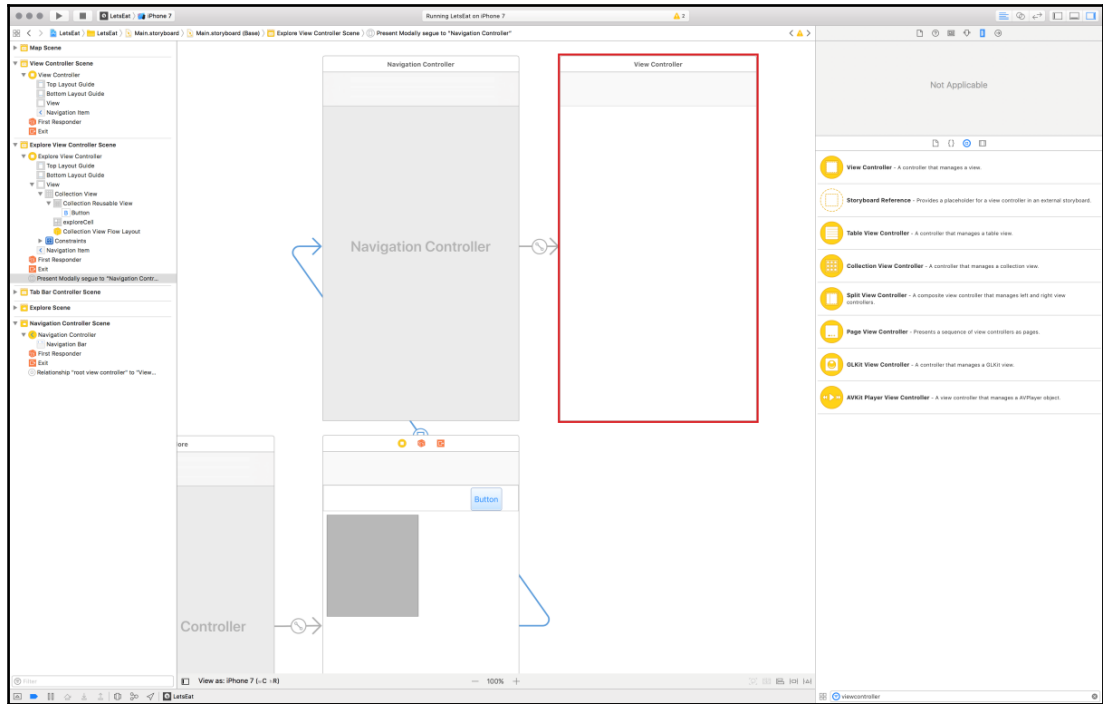


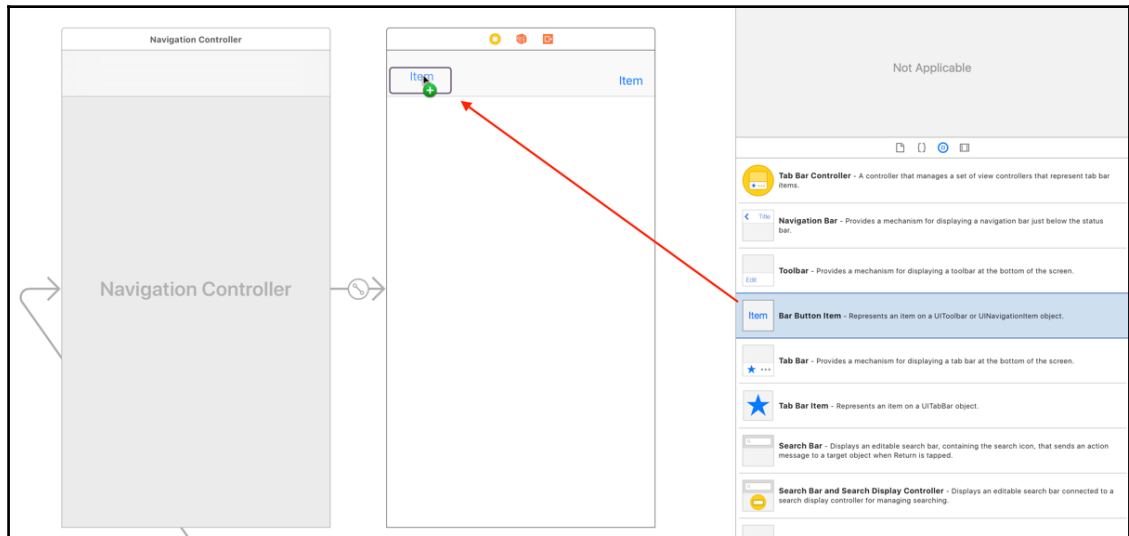
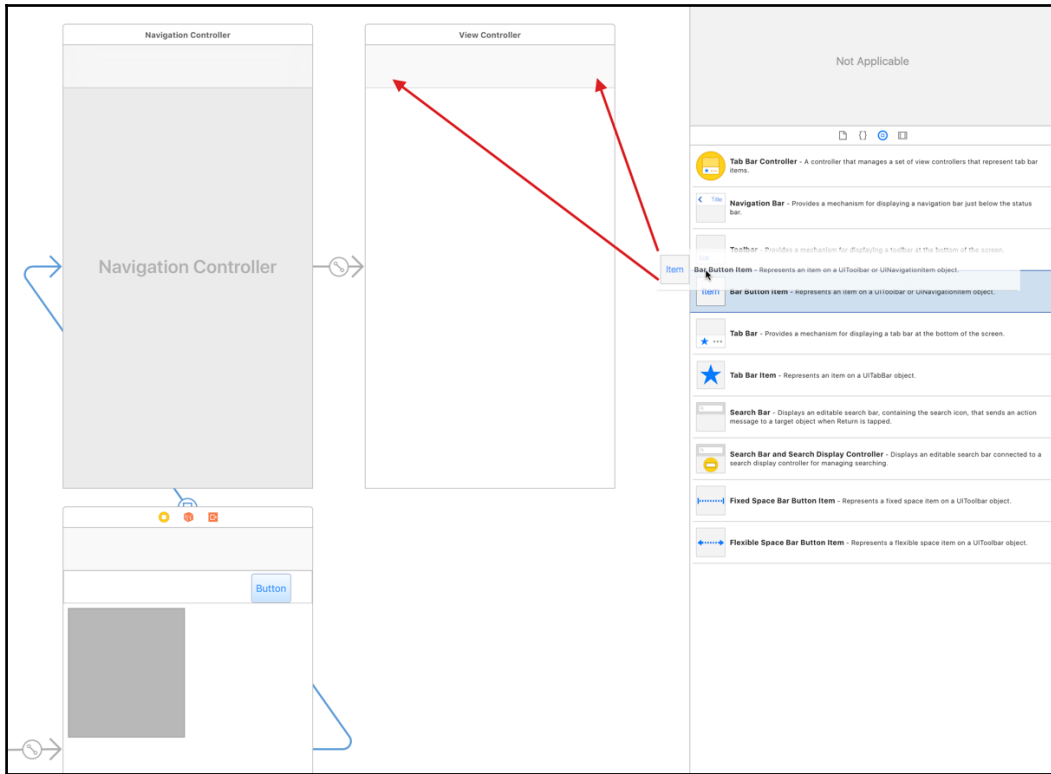


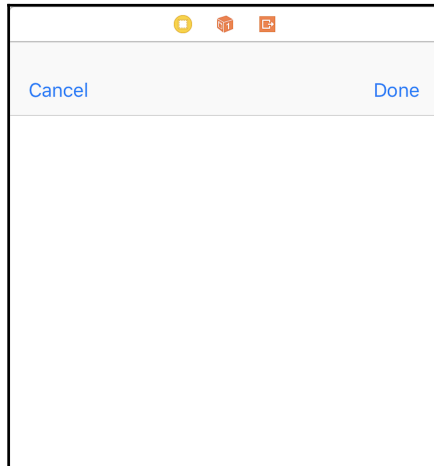
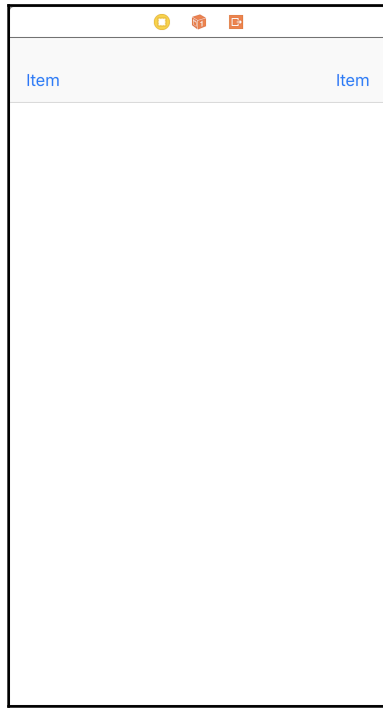
- Action Segue
 - Show
 - Show Detail
 - Present Modally
 - Present As Popover
 - Custom
- Non-Adaptive Action Segue
 - Push (deprecated)
 - Modal (deprecated)

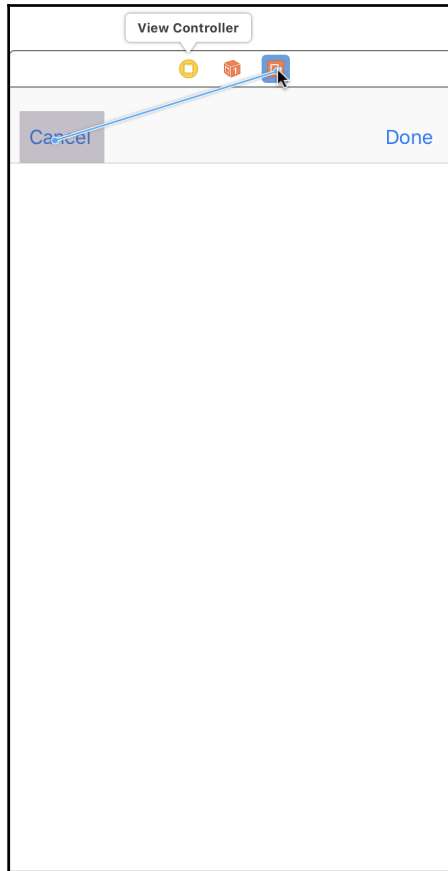




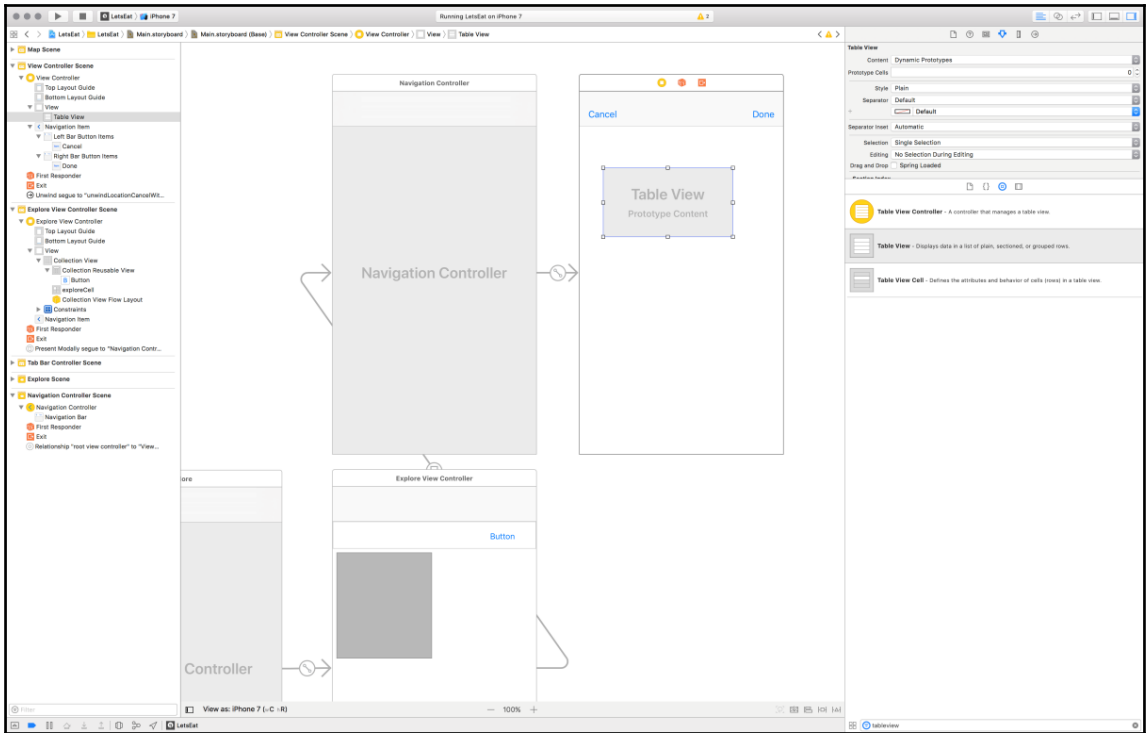




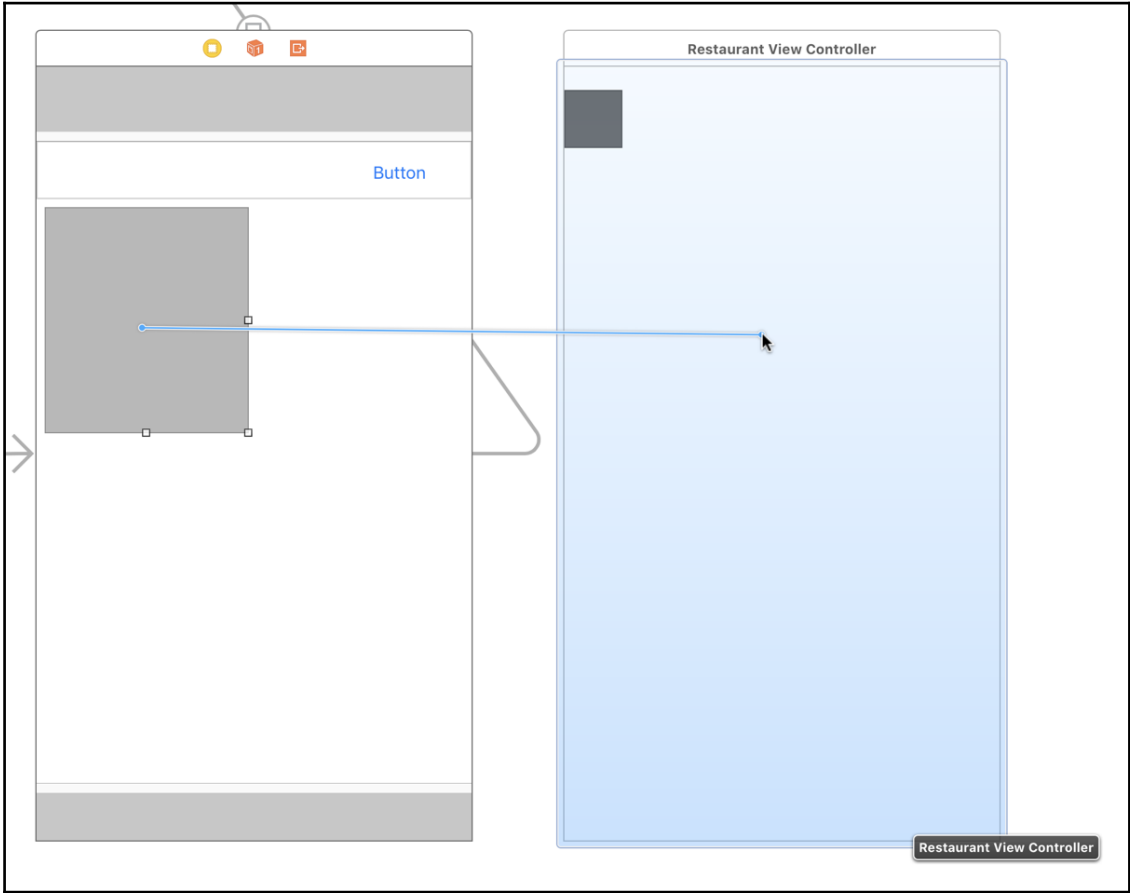


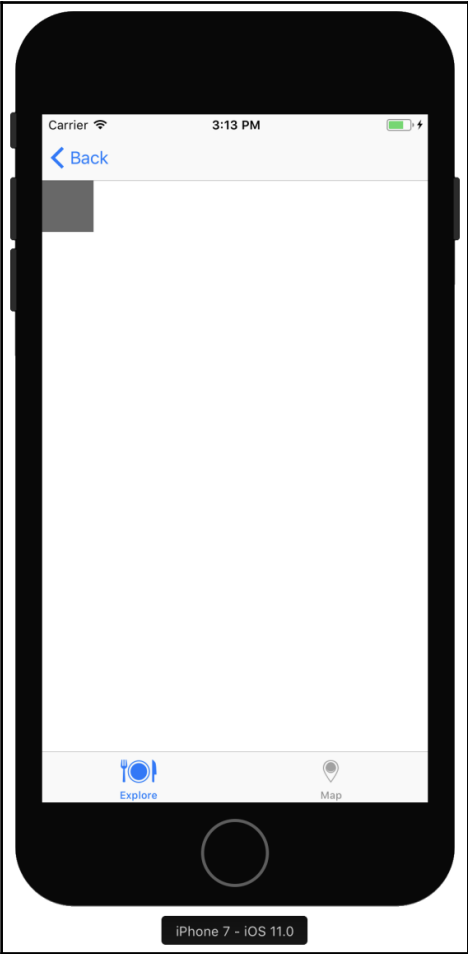


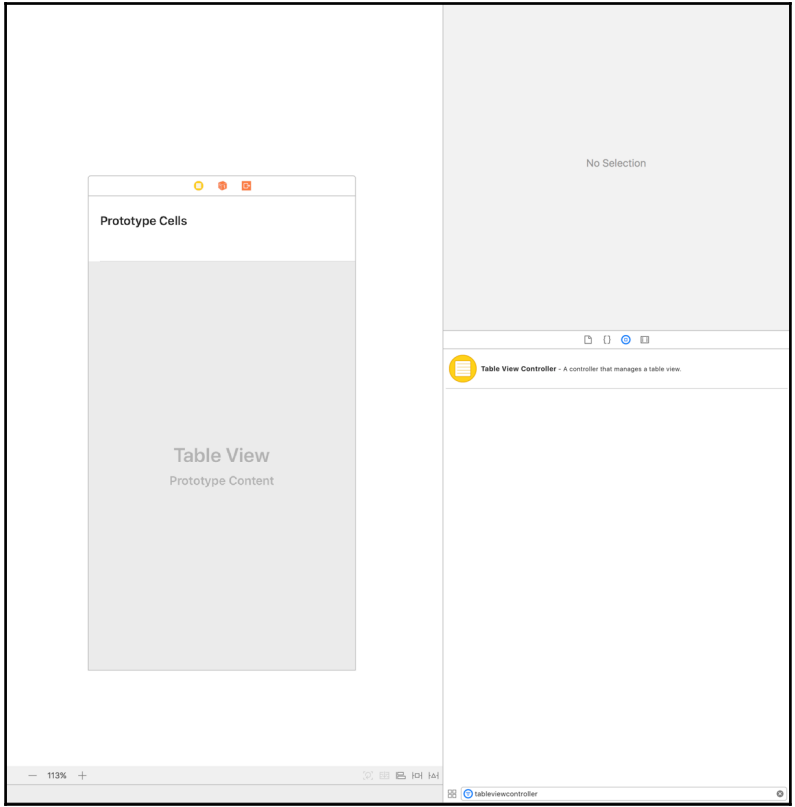
Action Segue
unwindLocationCancelWithSegue:

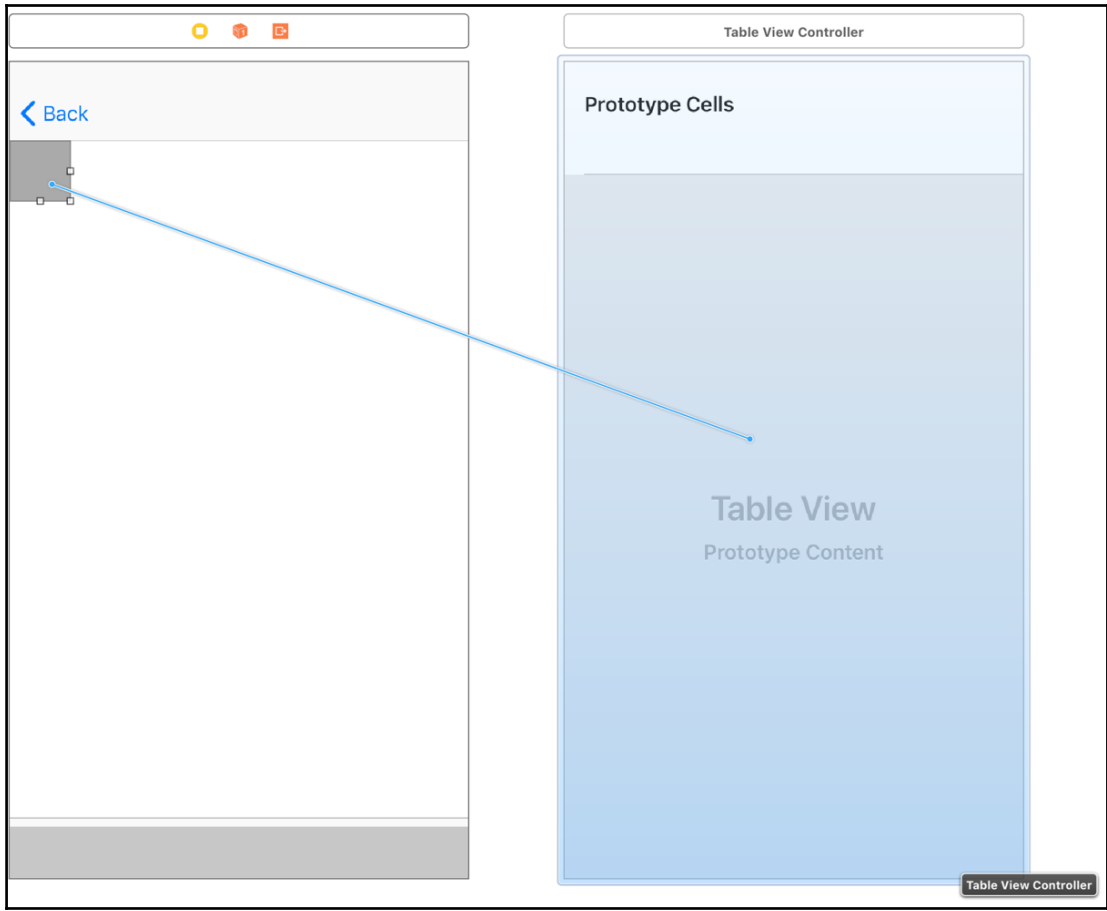


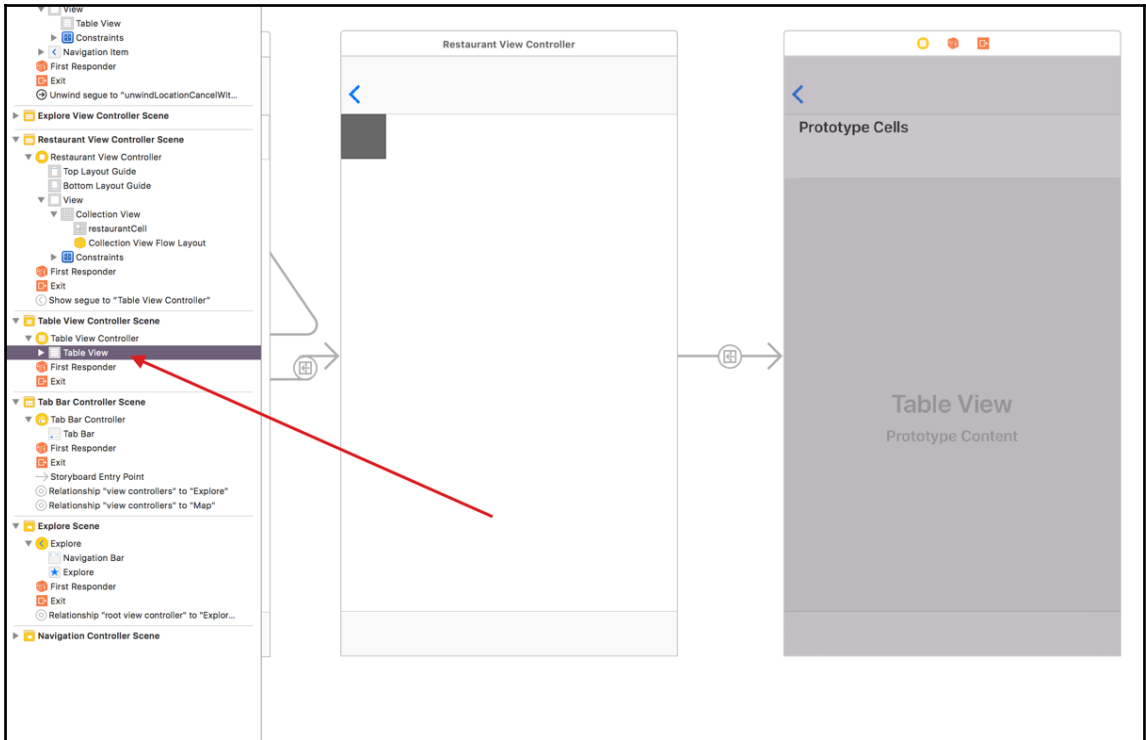
Chapter 9: Finishing Up Our App Structure in Storyboard

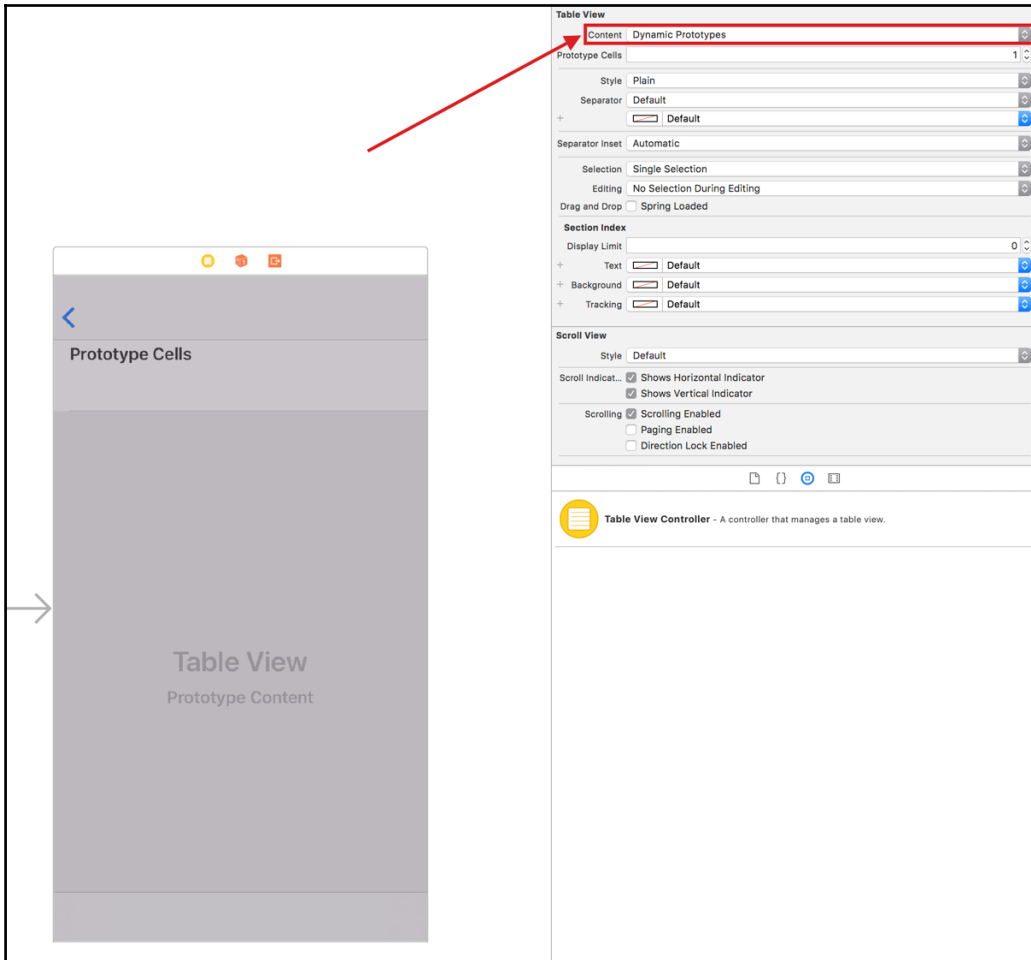


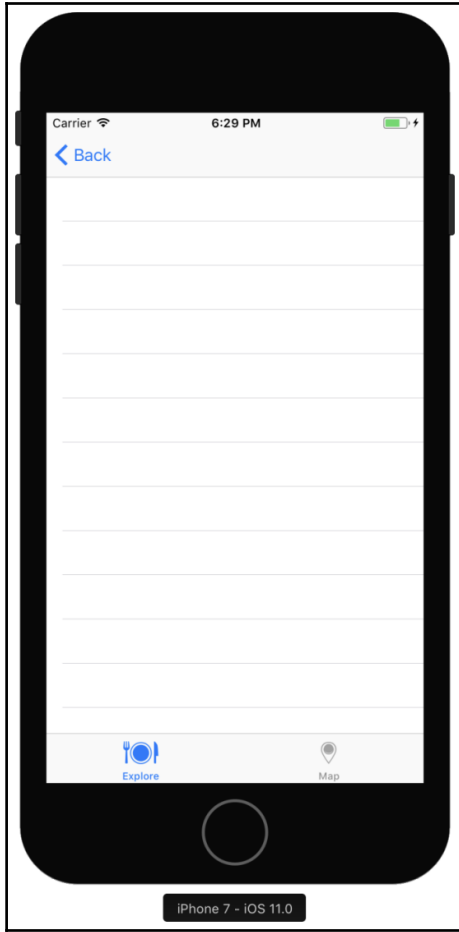


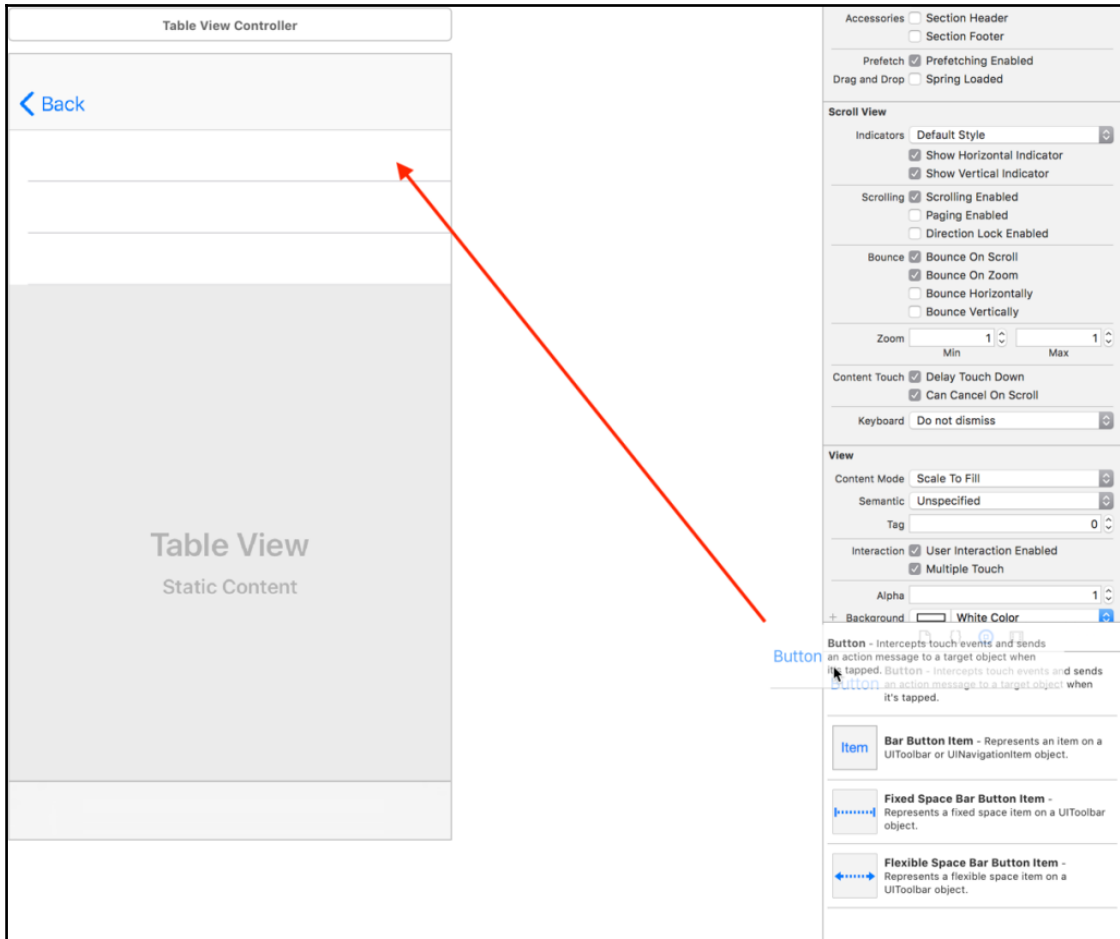


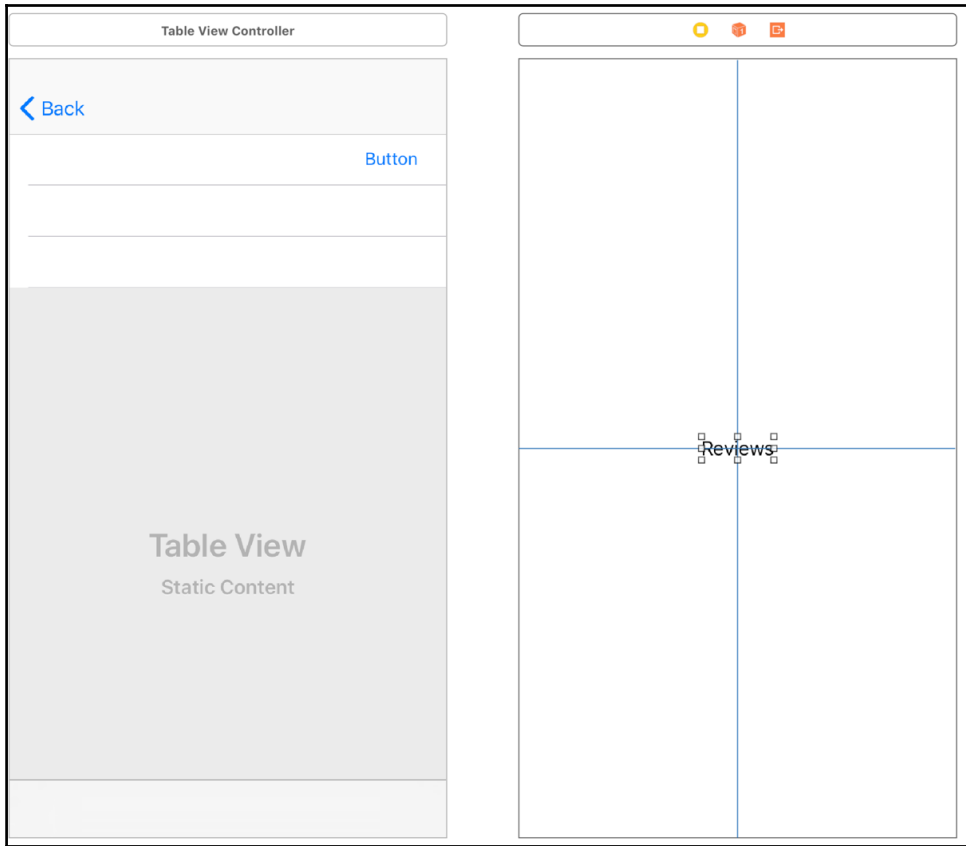


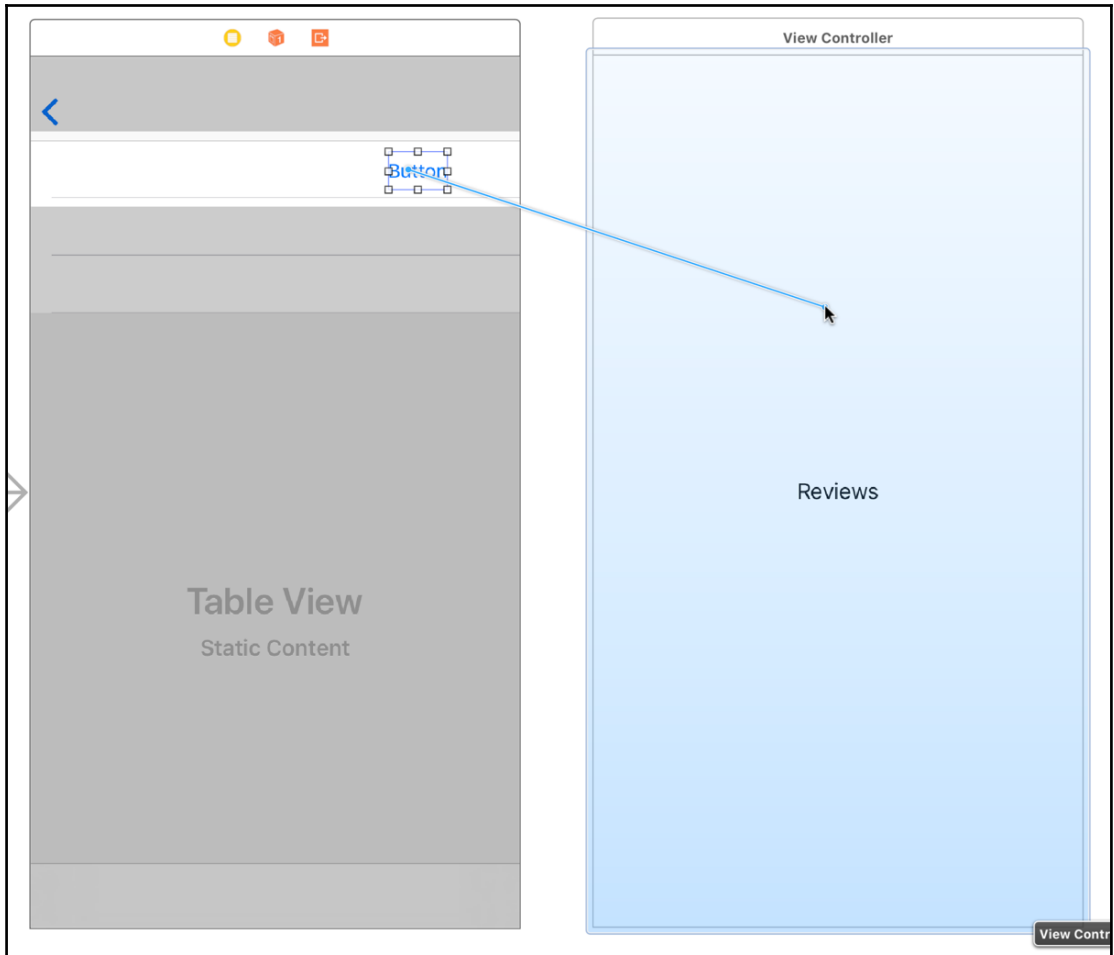


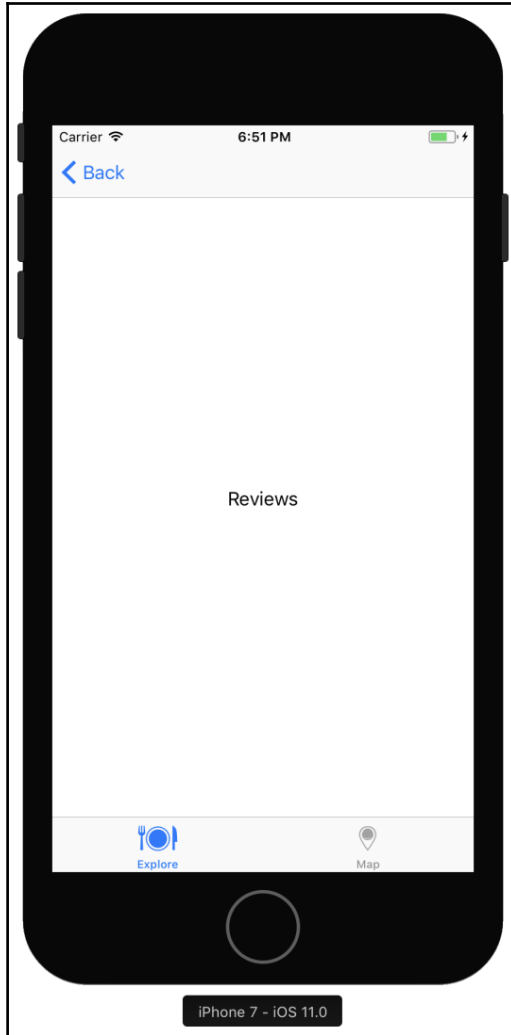


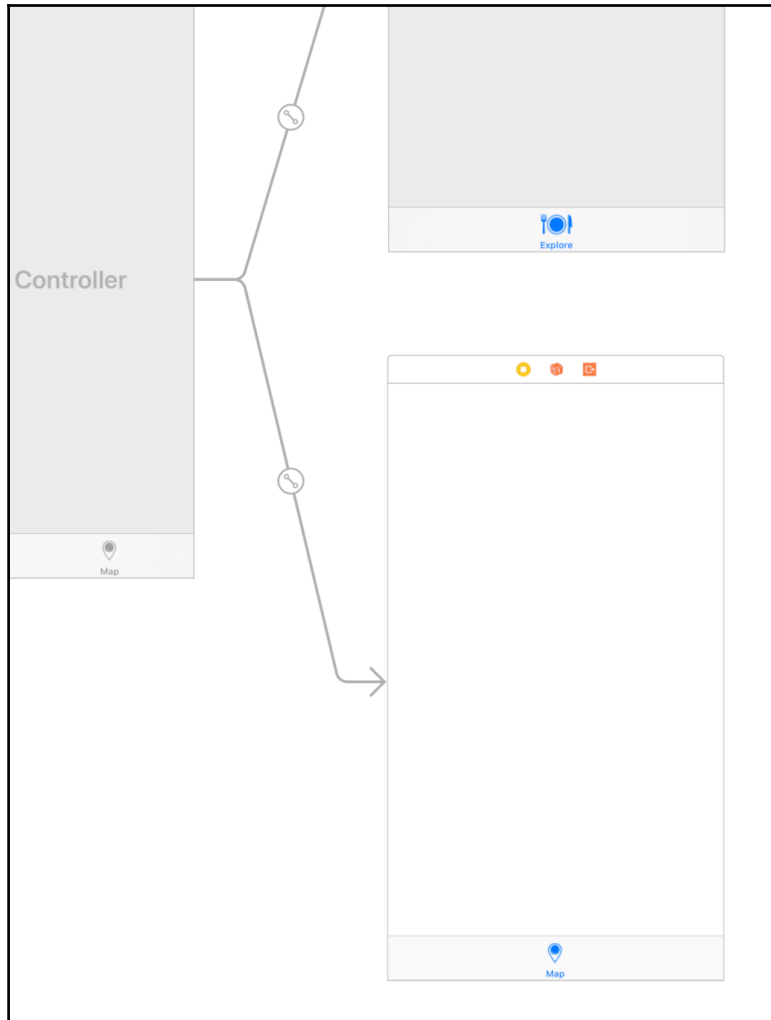


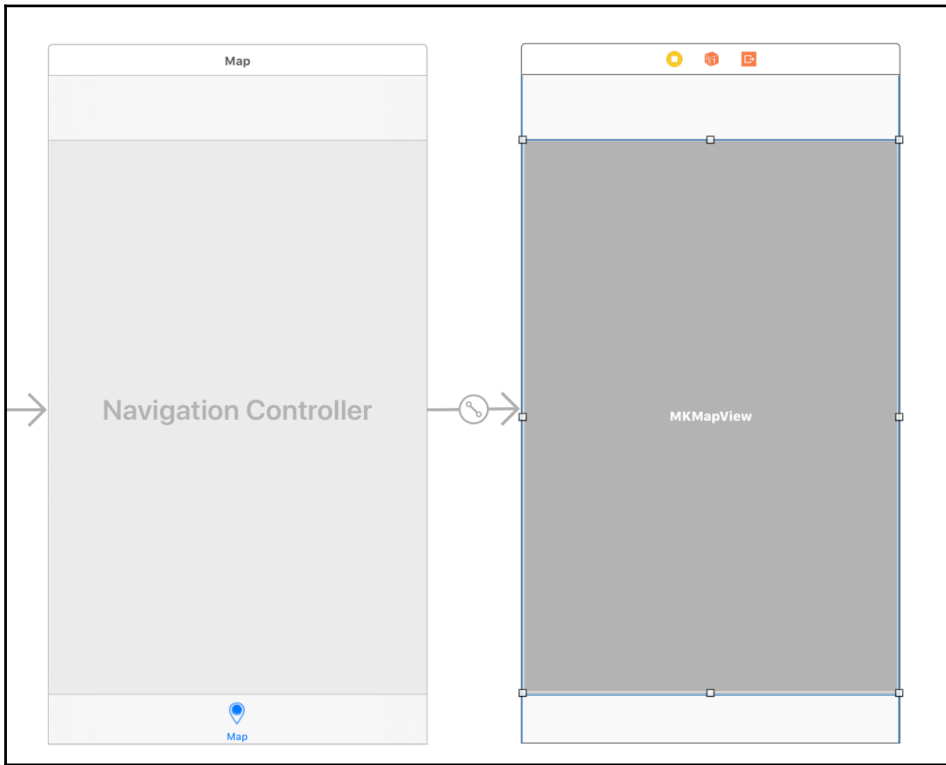
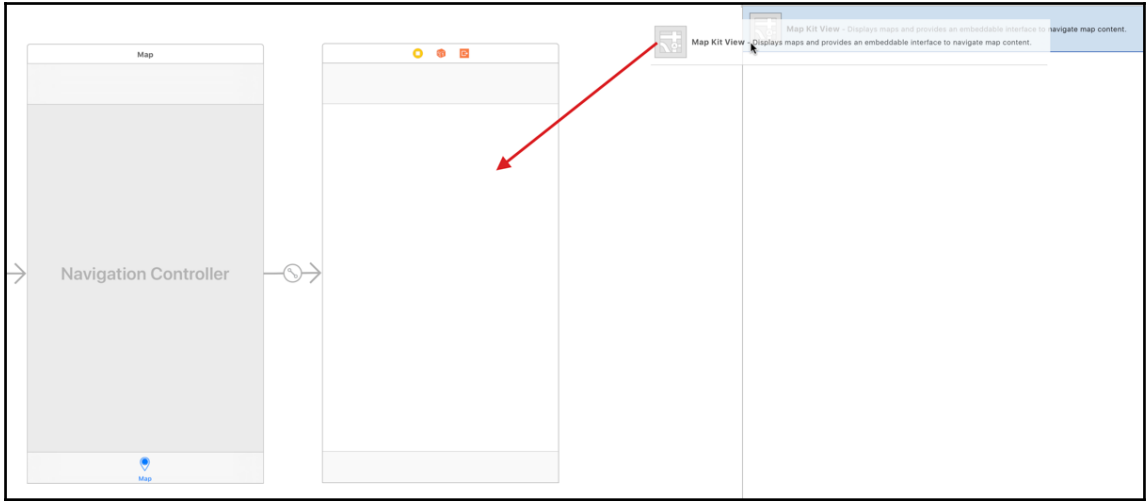


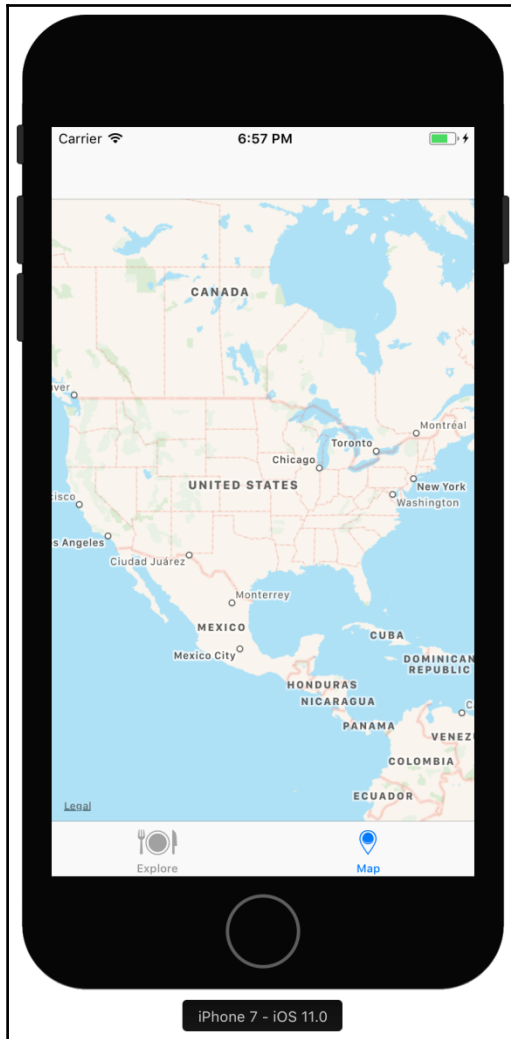


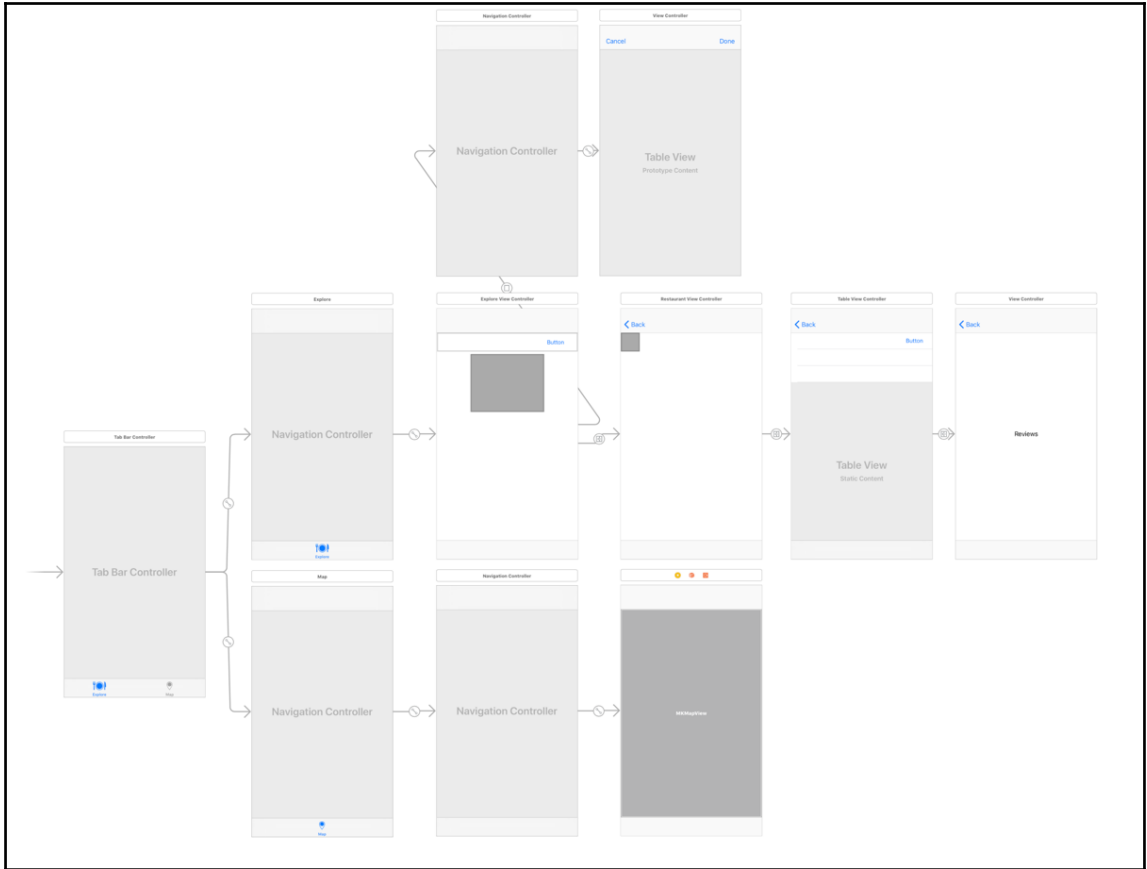




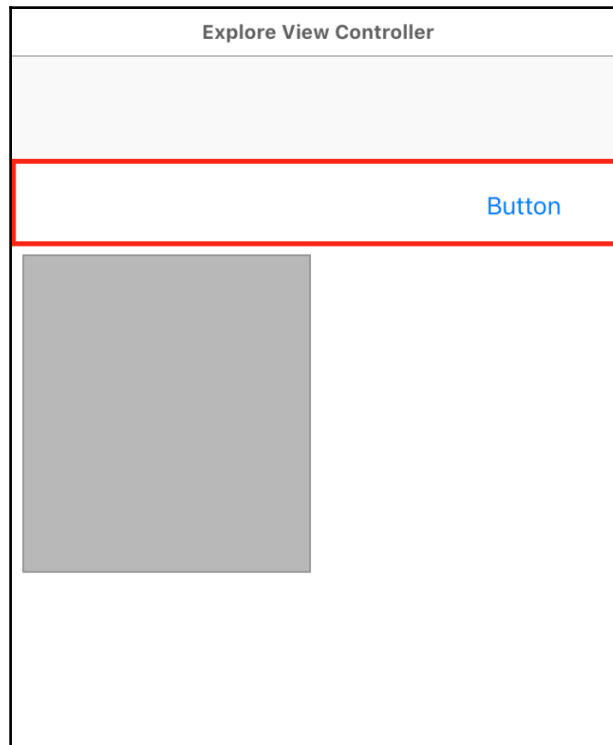
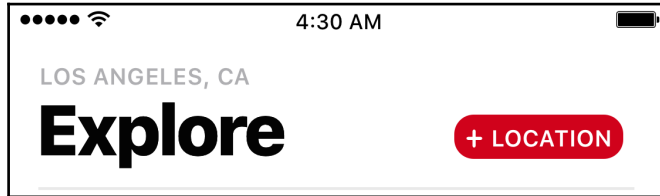


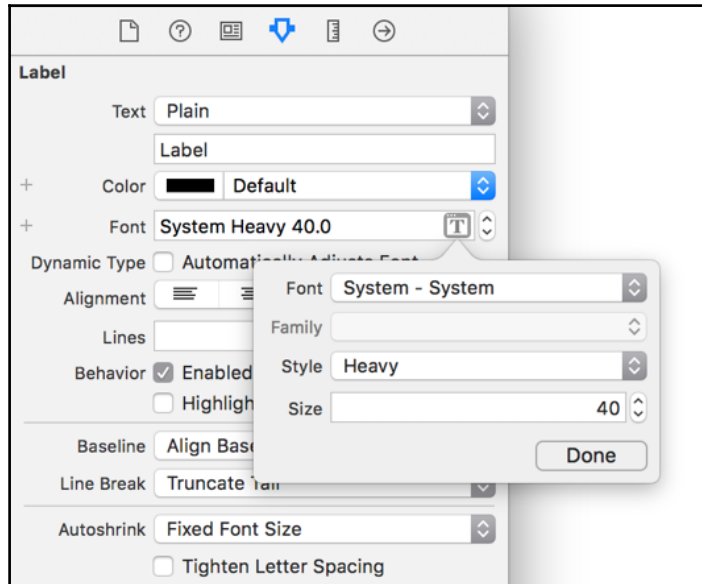
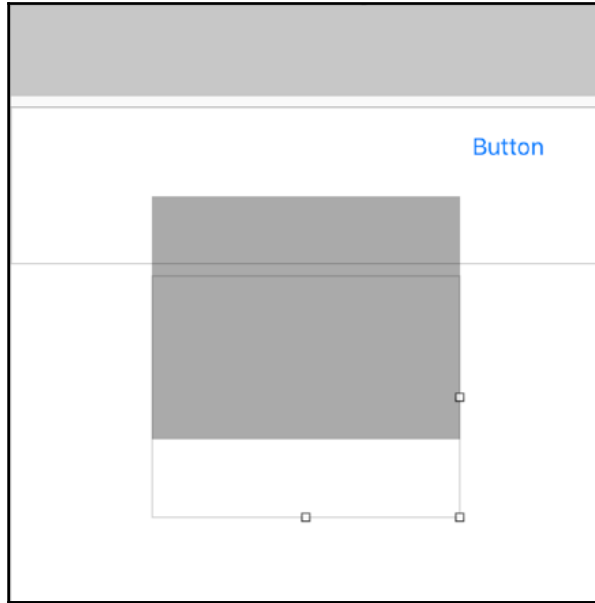


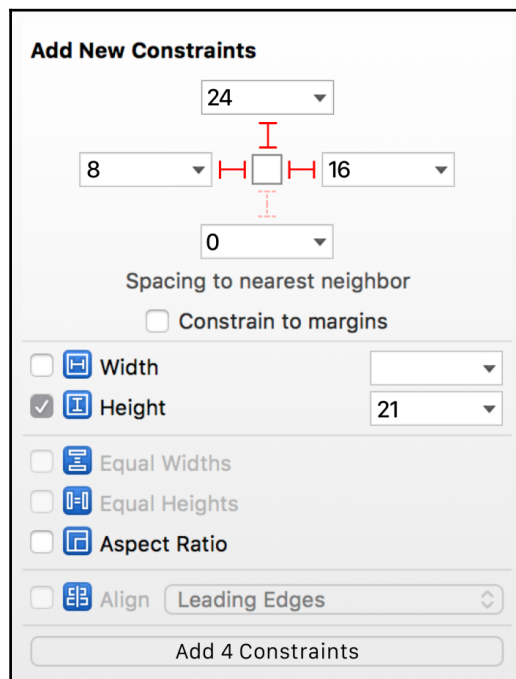
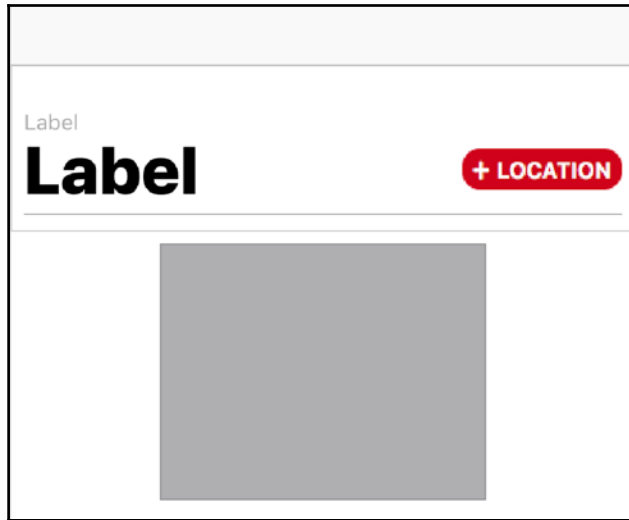




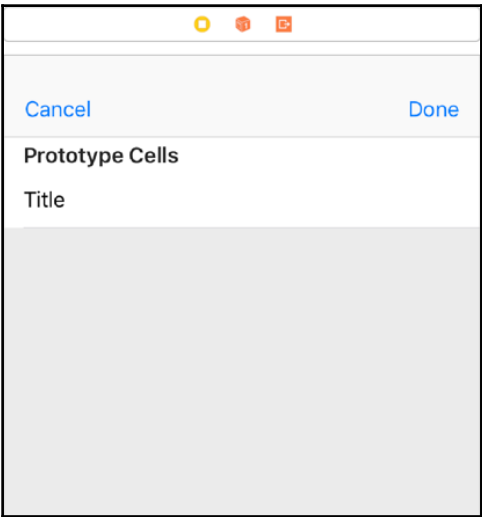
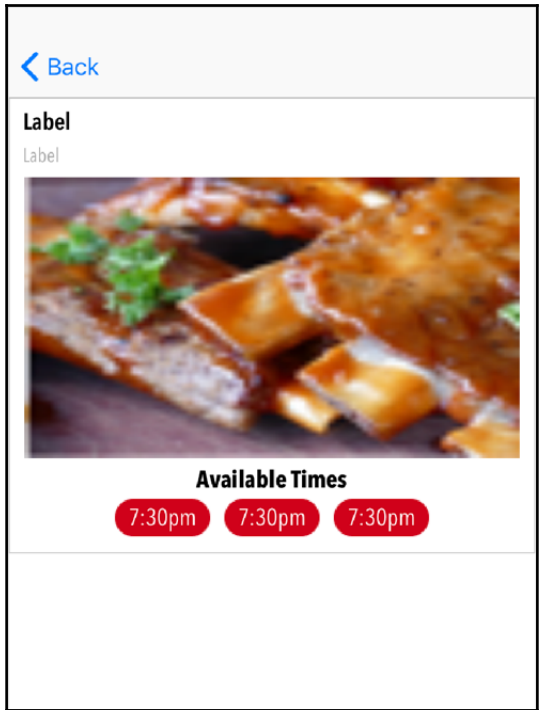
Chapter 10: Designing Cells



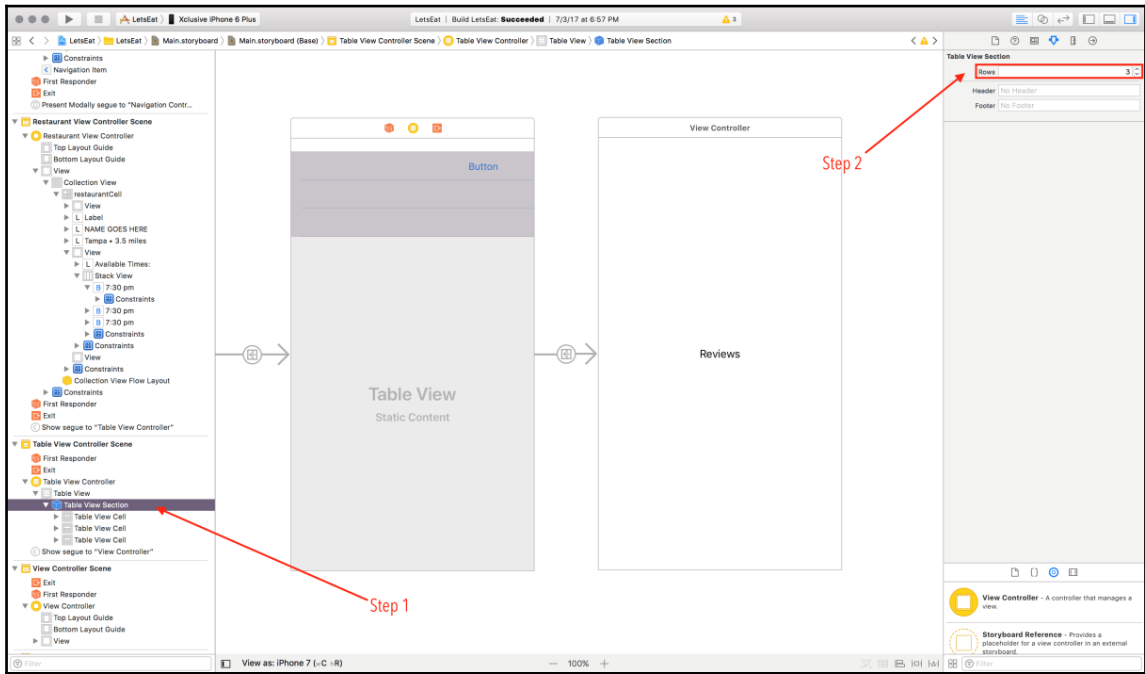


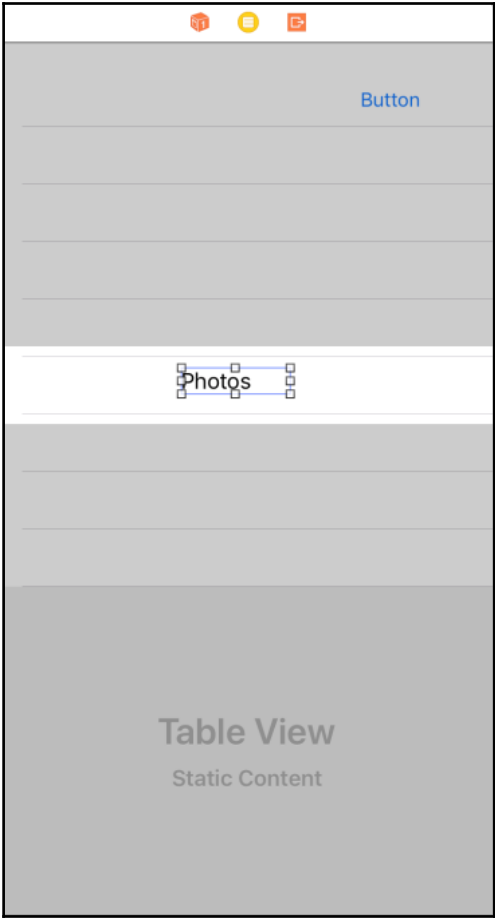


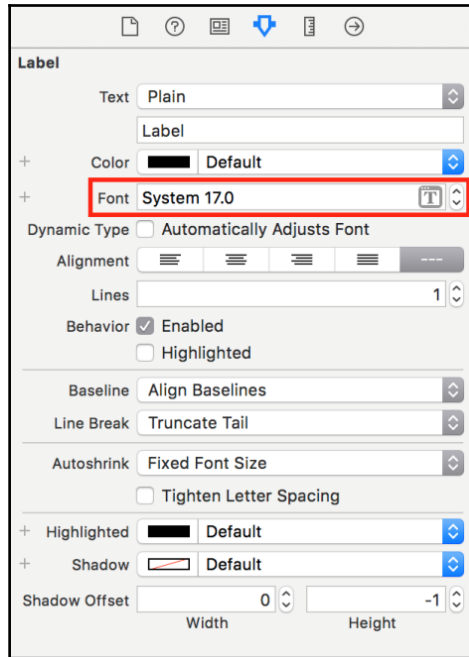


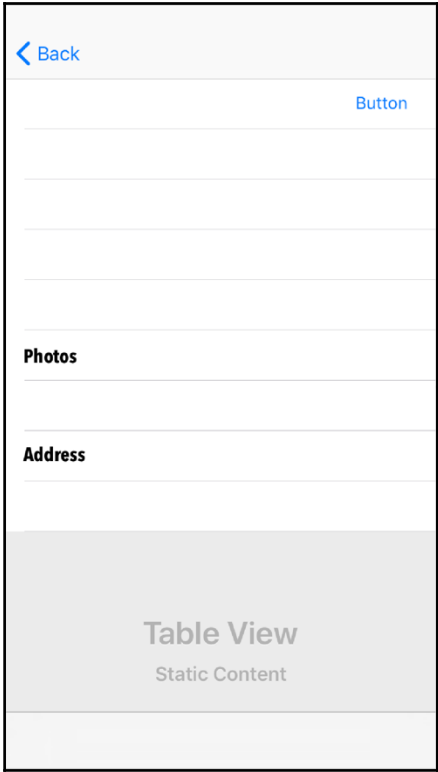


Chapter 11: Designing Static Tables



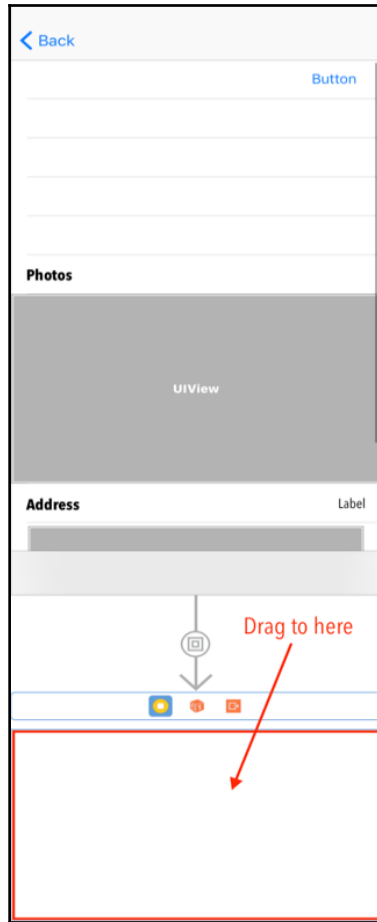


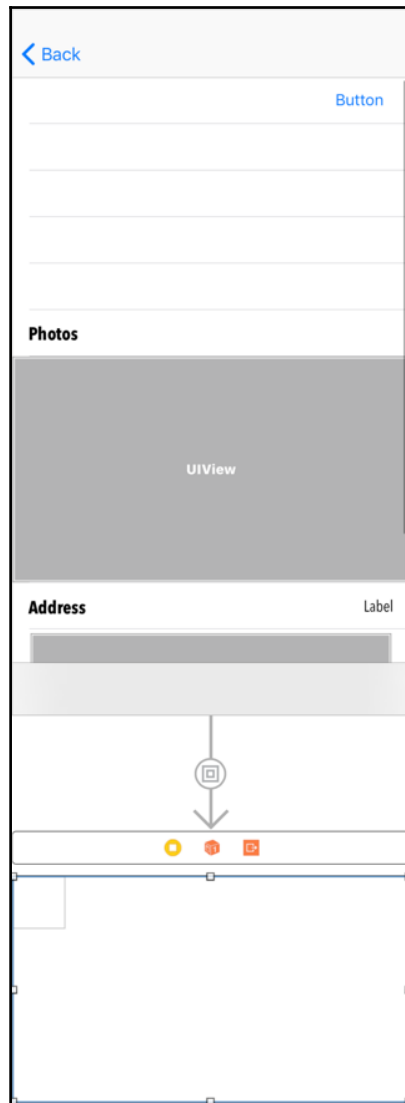


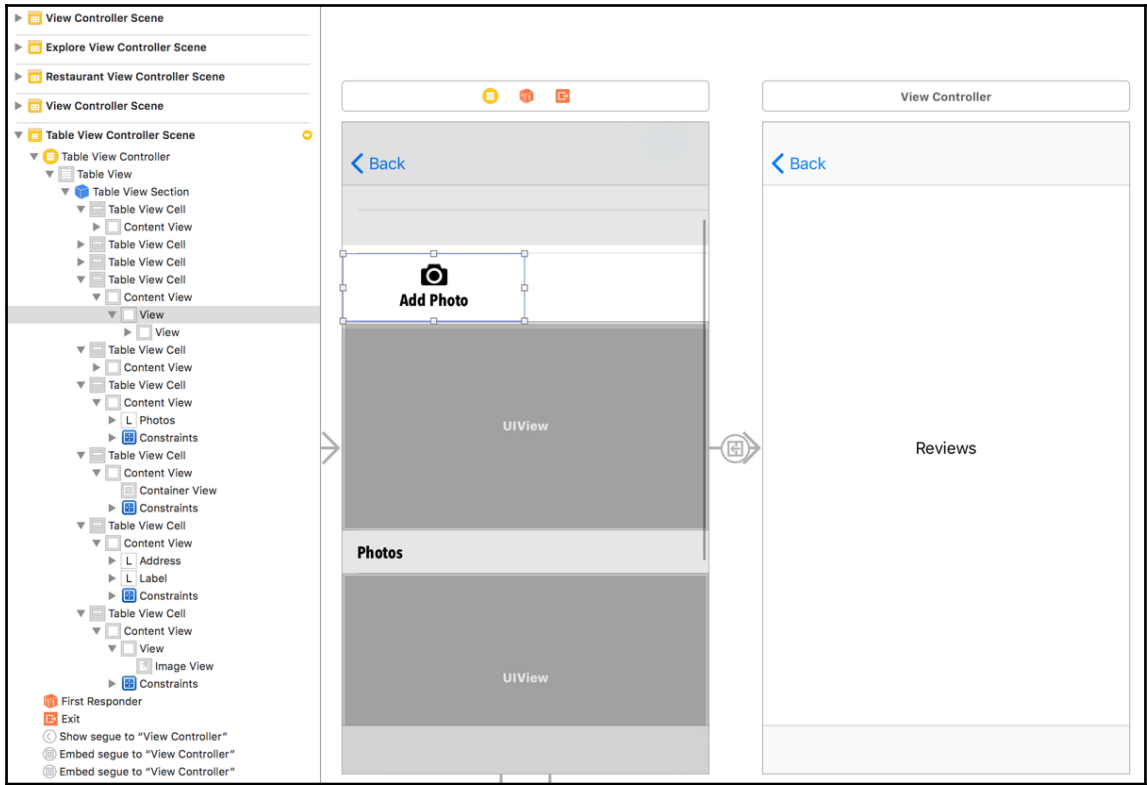


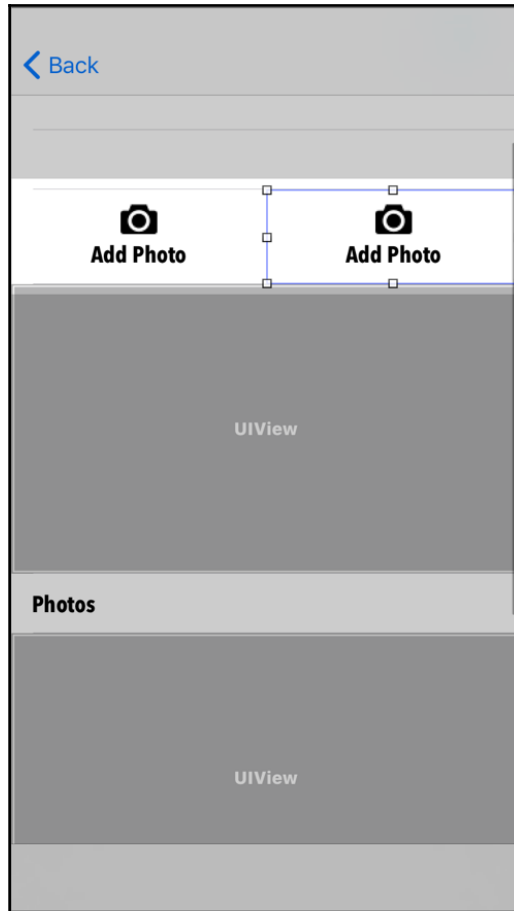


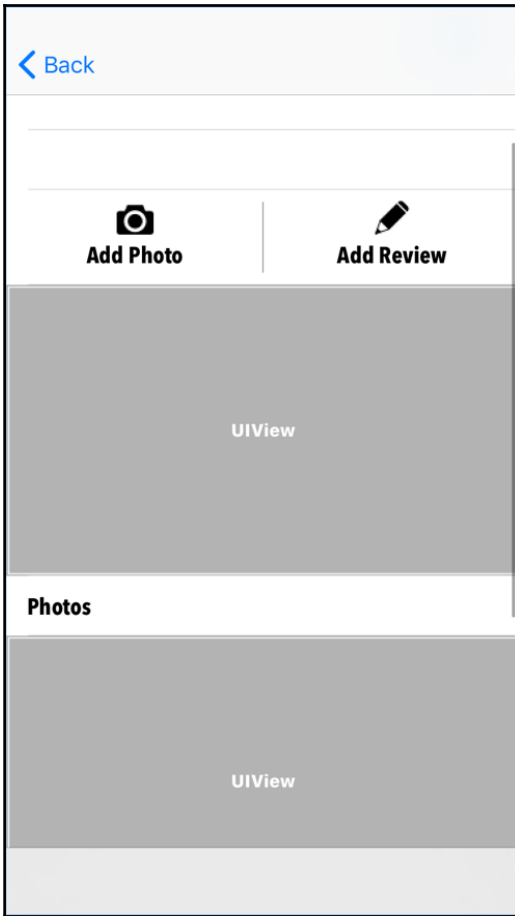


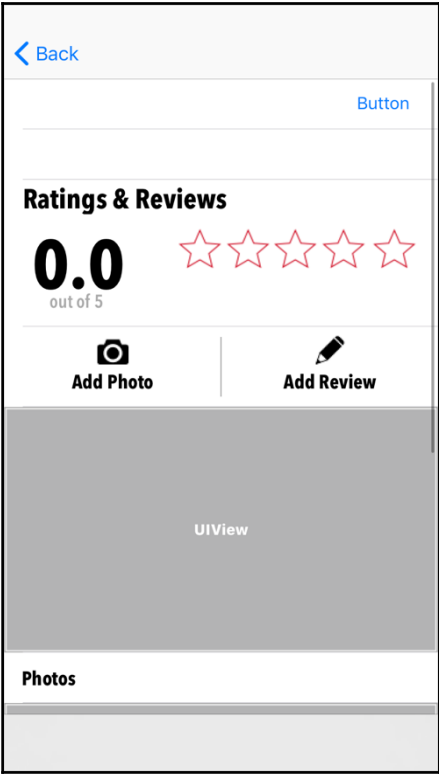


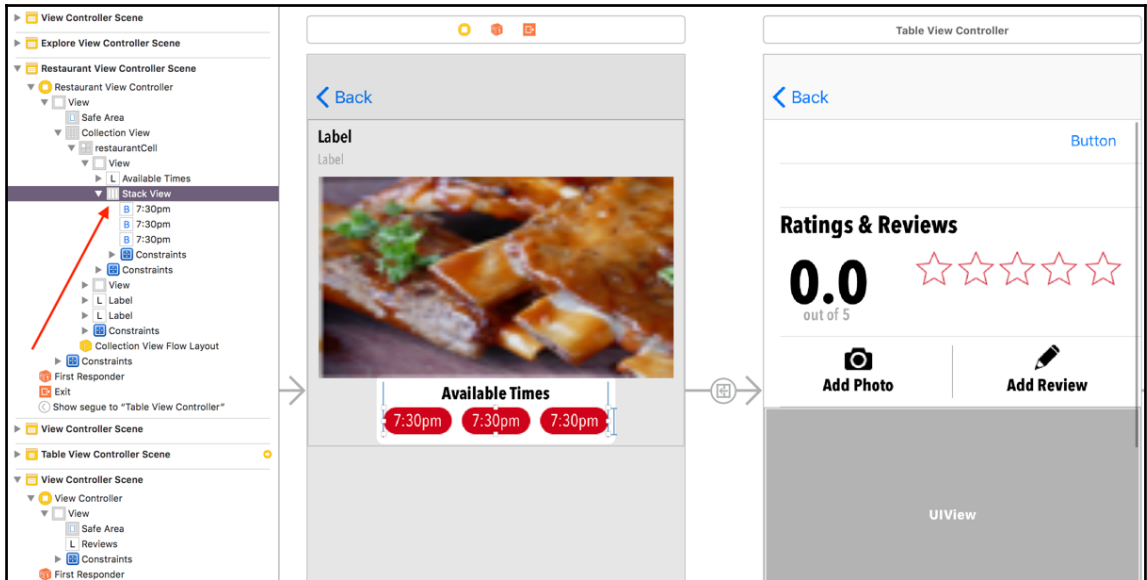


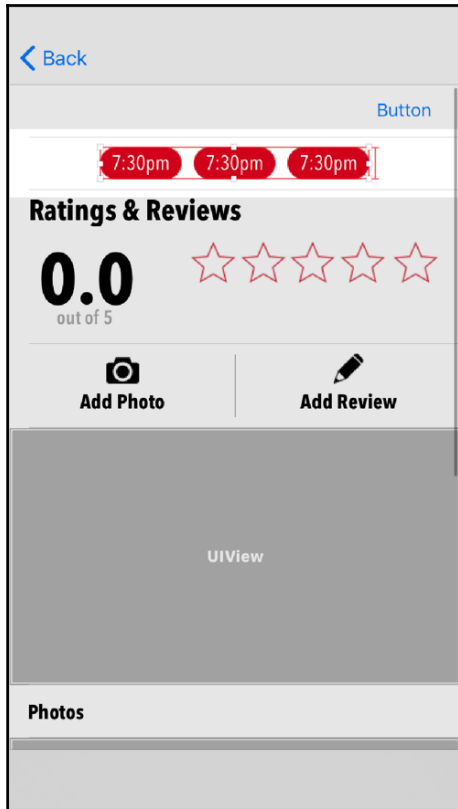


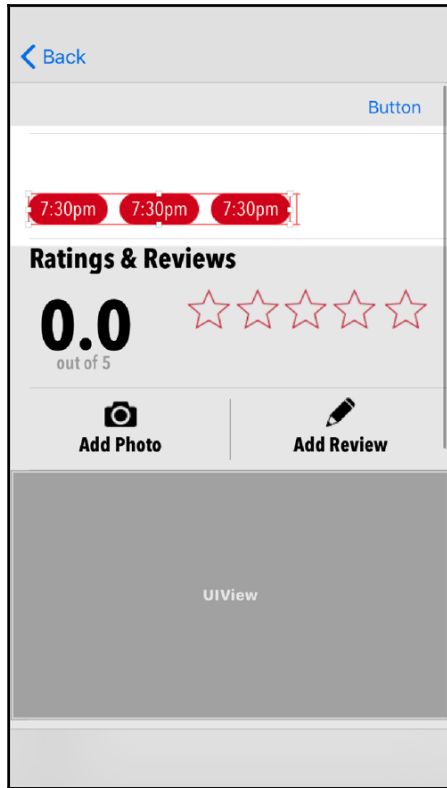


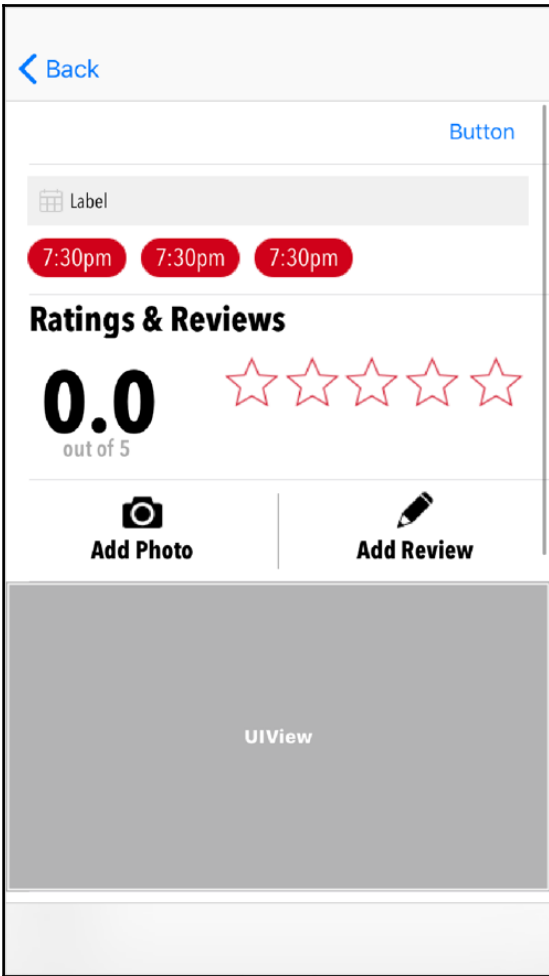


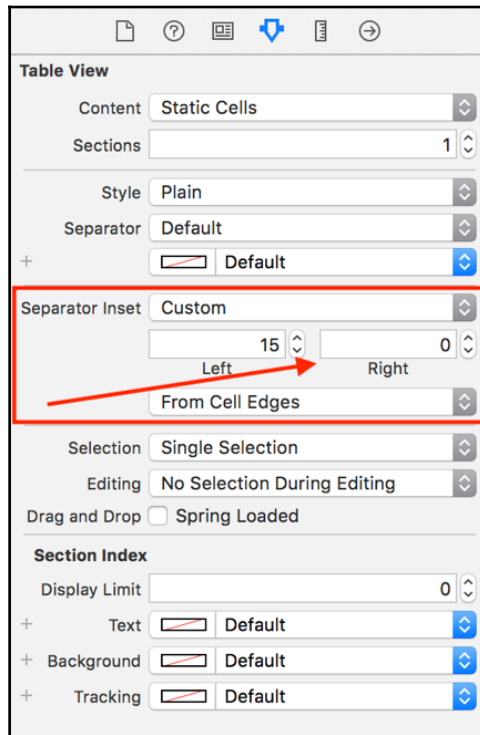
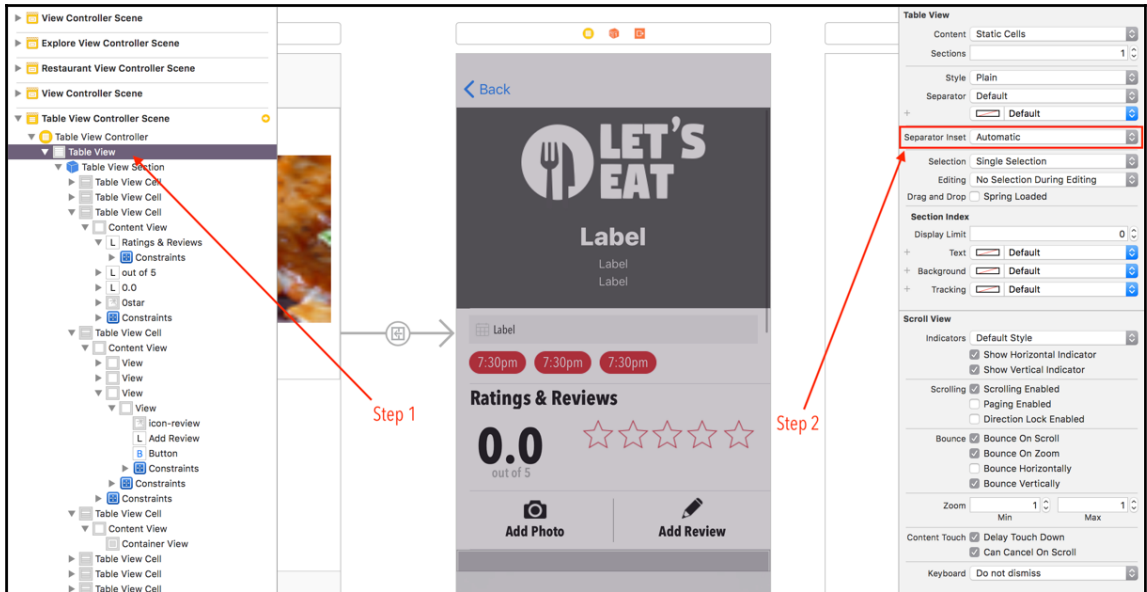




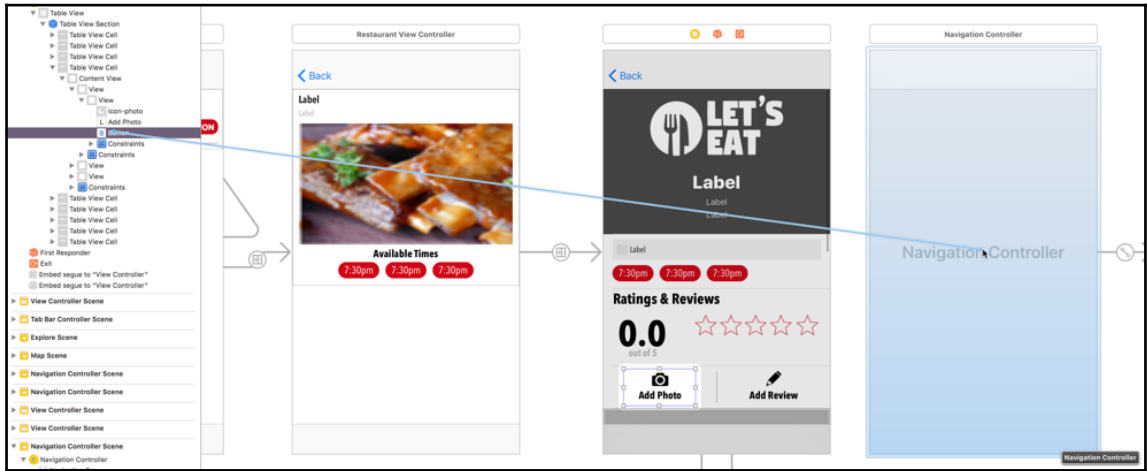


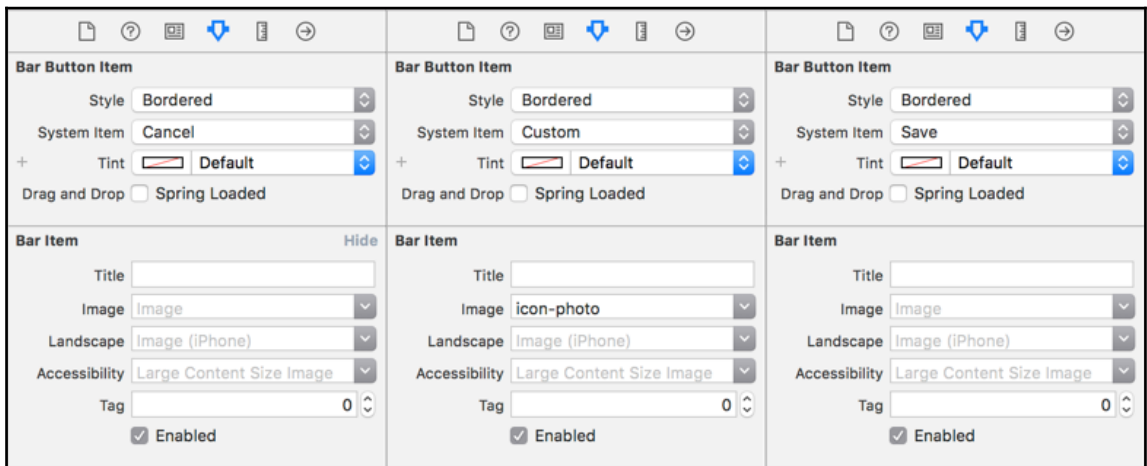
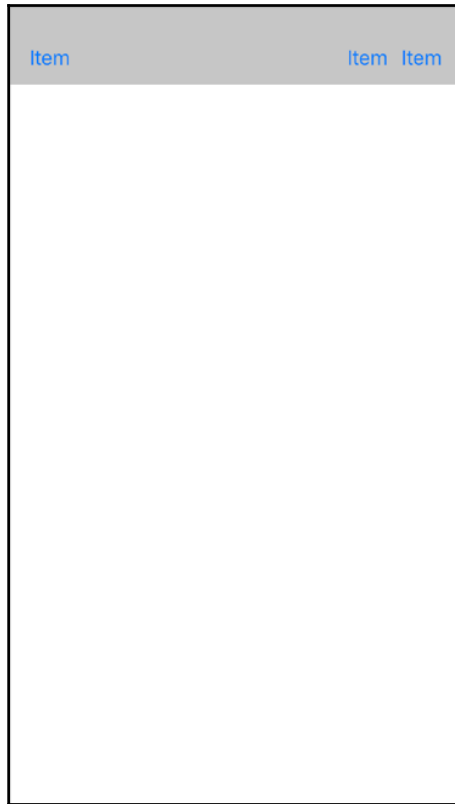


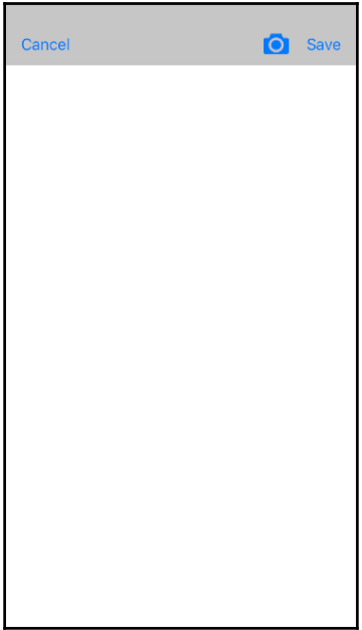


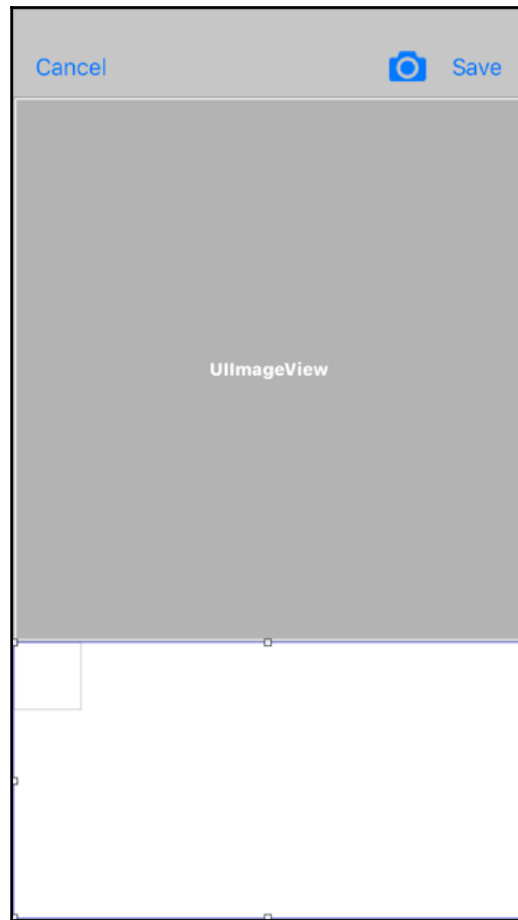


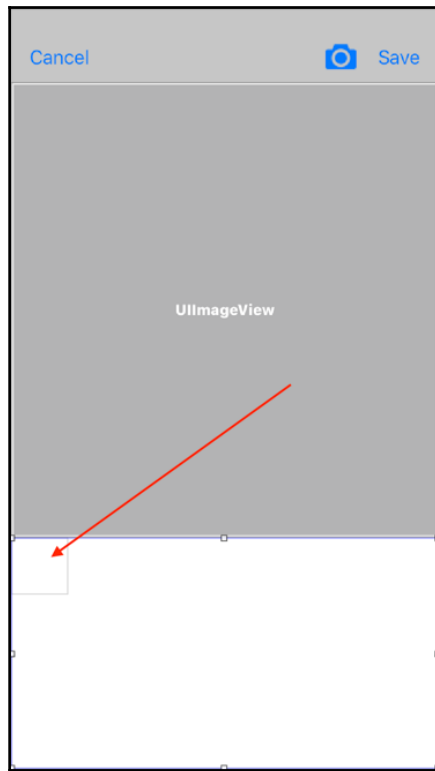
Chapter 12: Designing a Photo Filter and Review Form

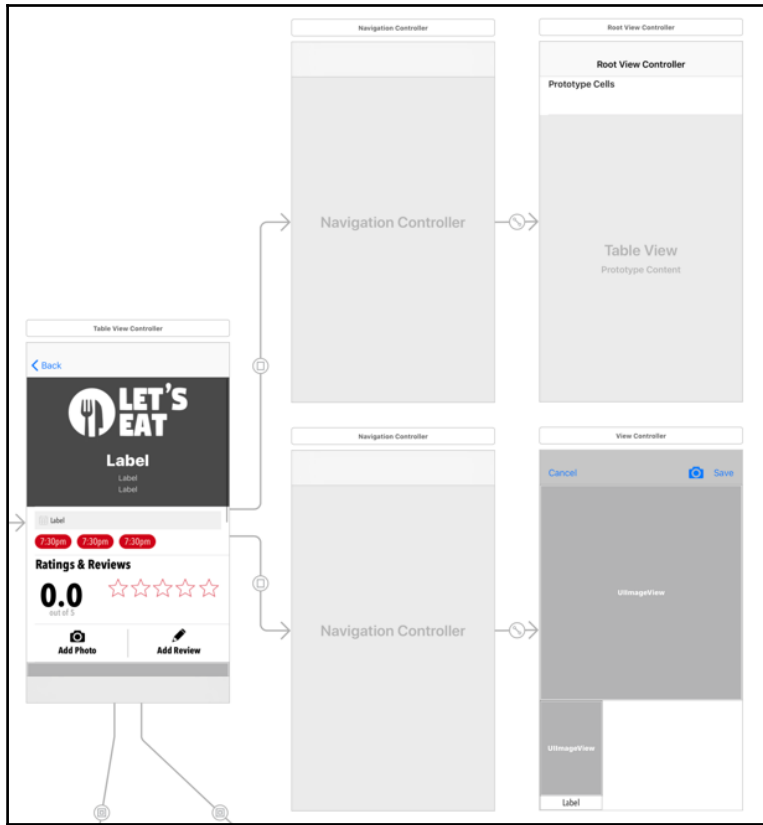


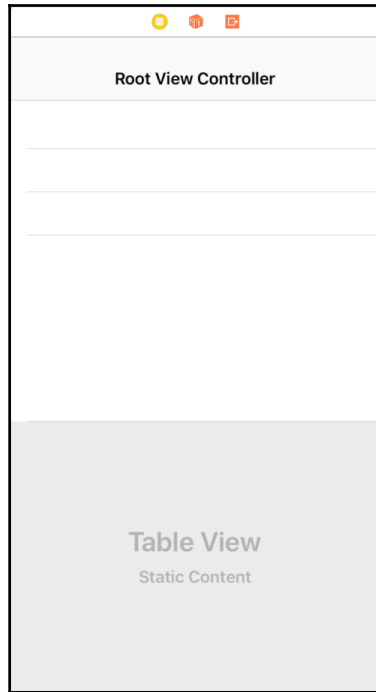


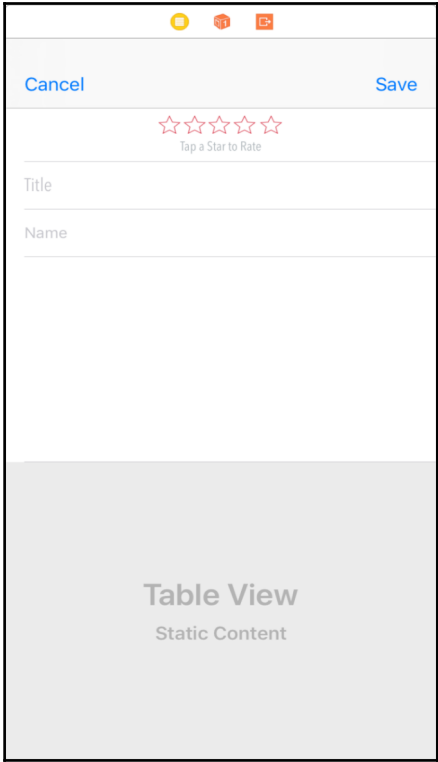


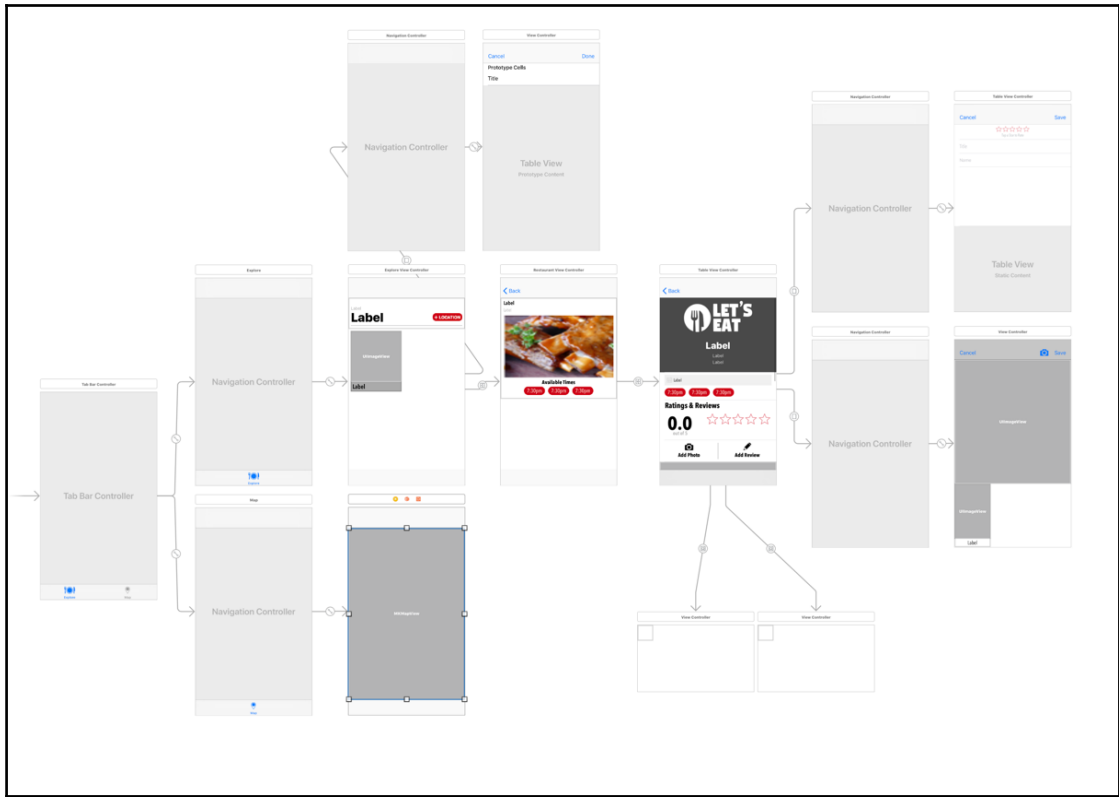


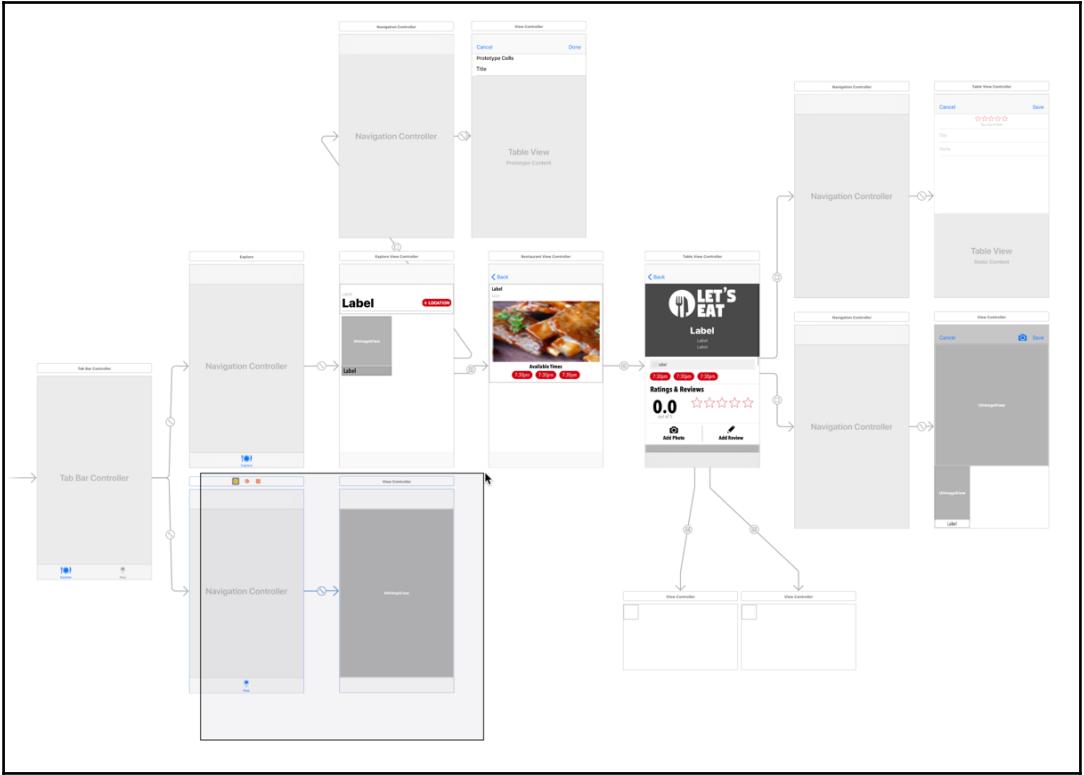


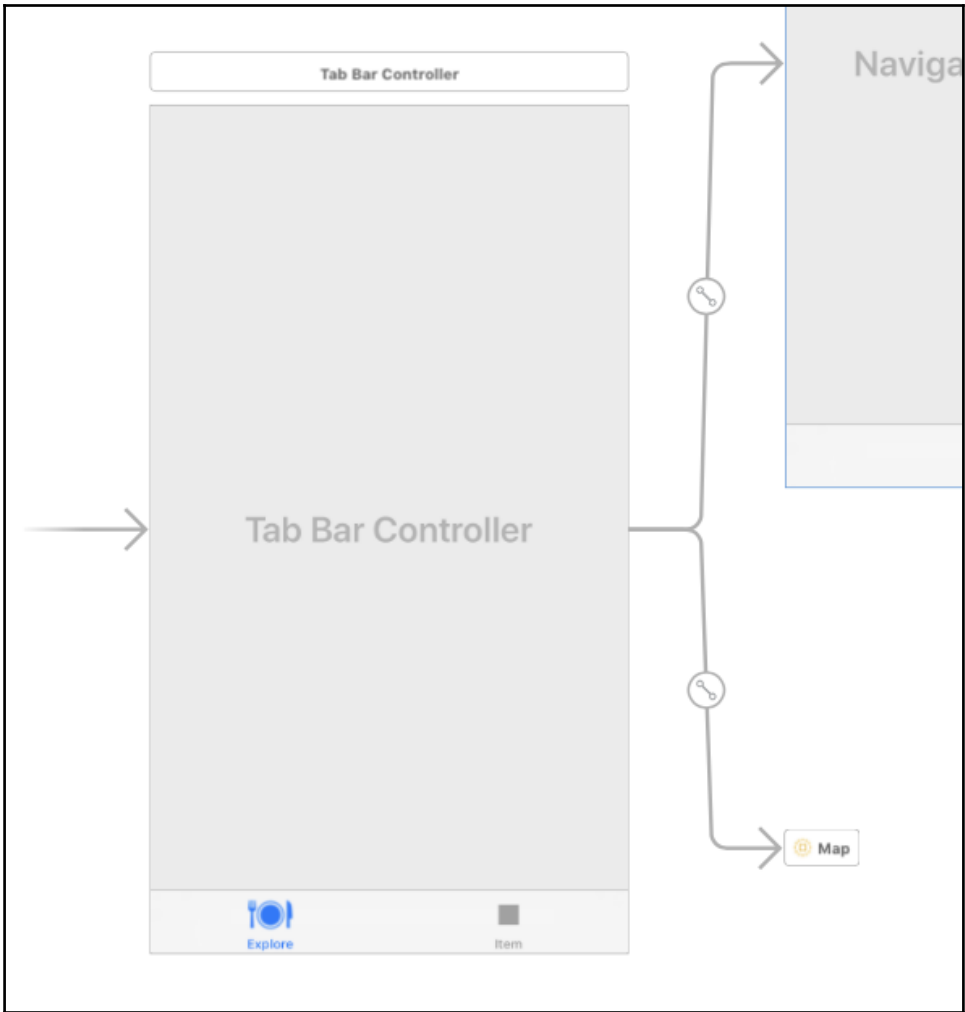


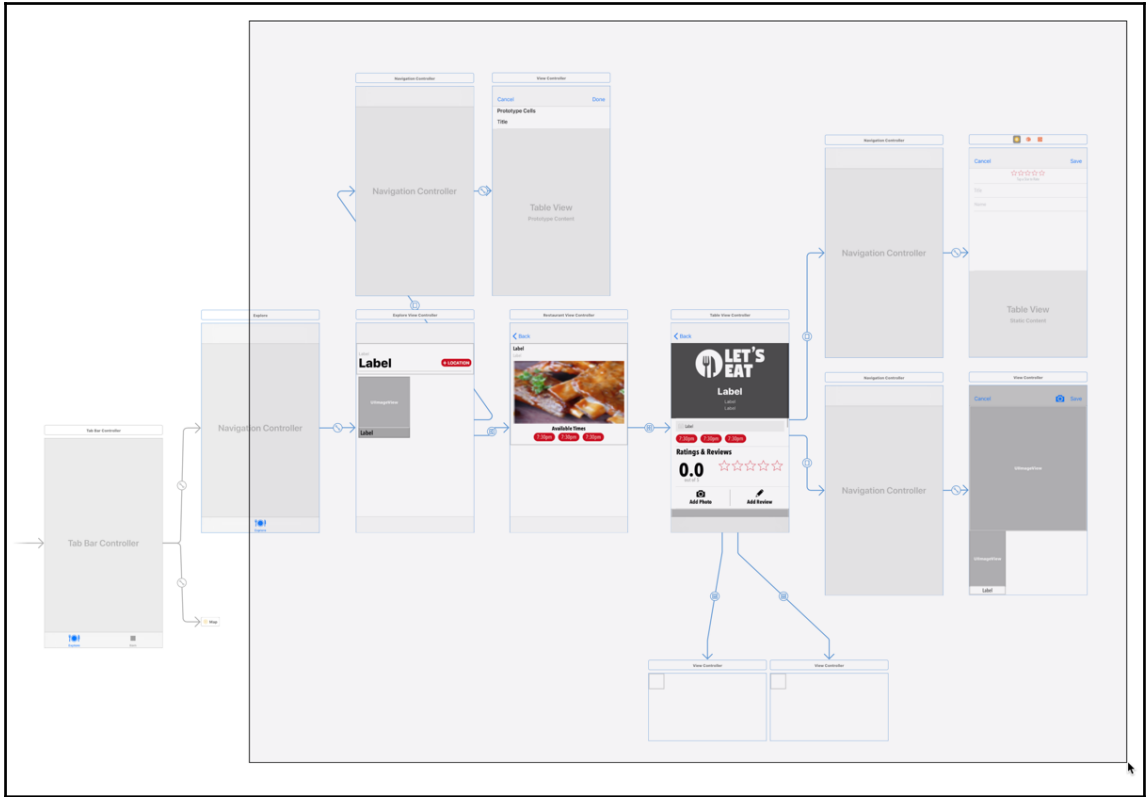


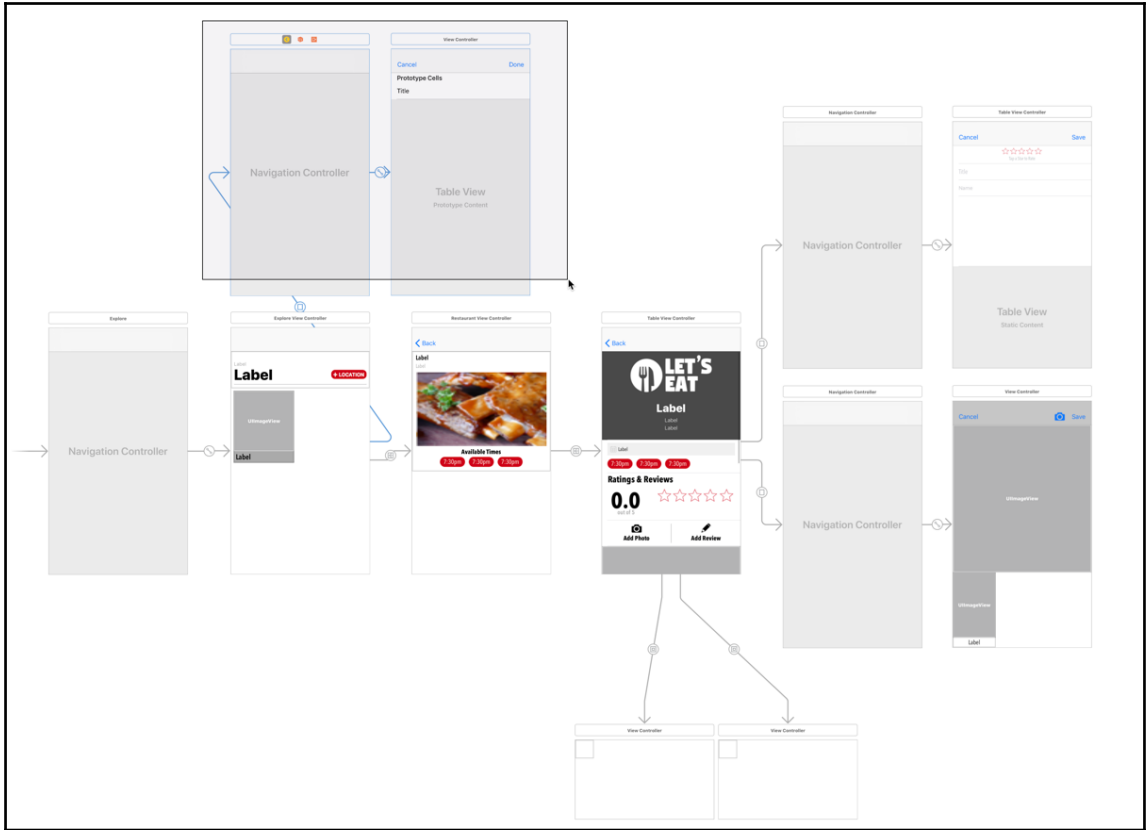


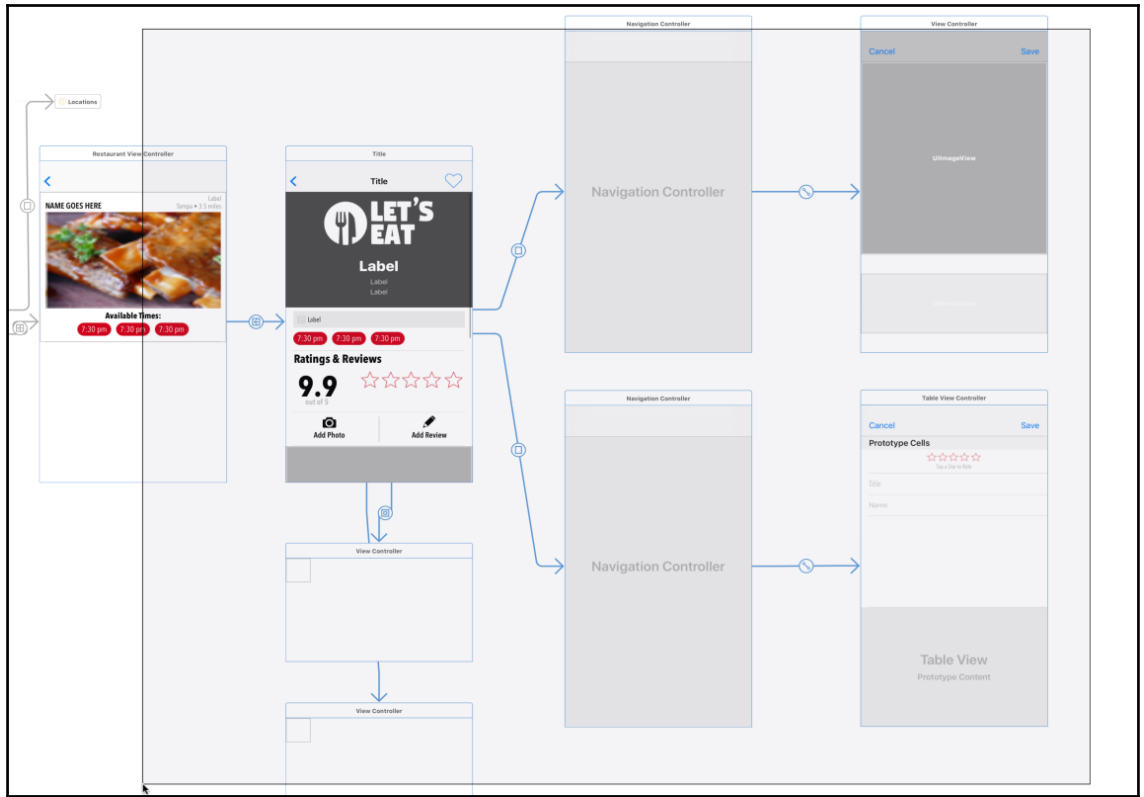


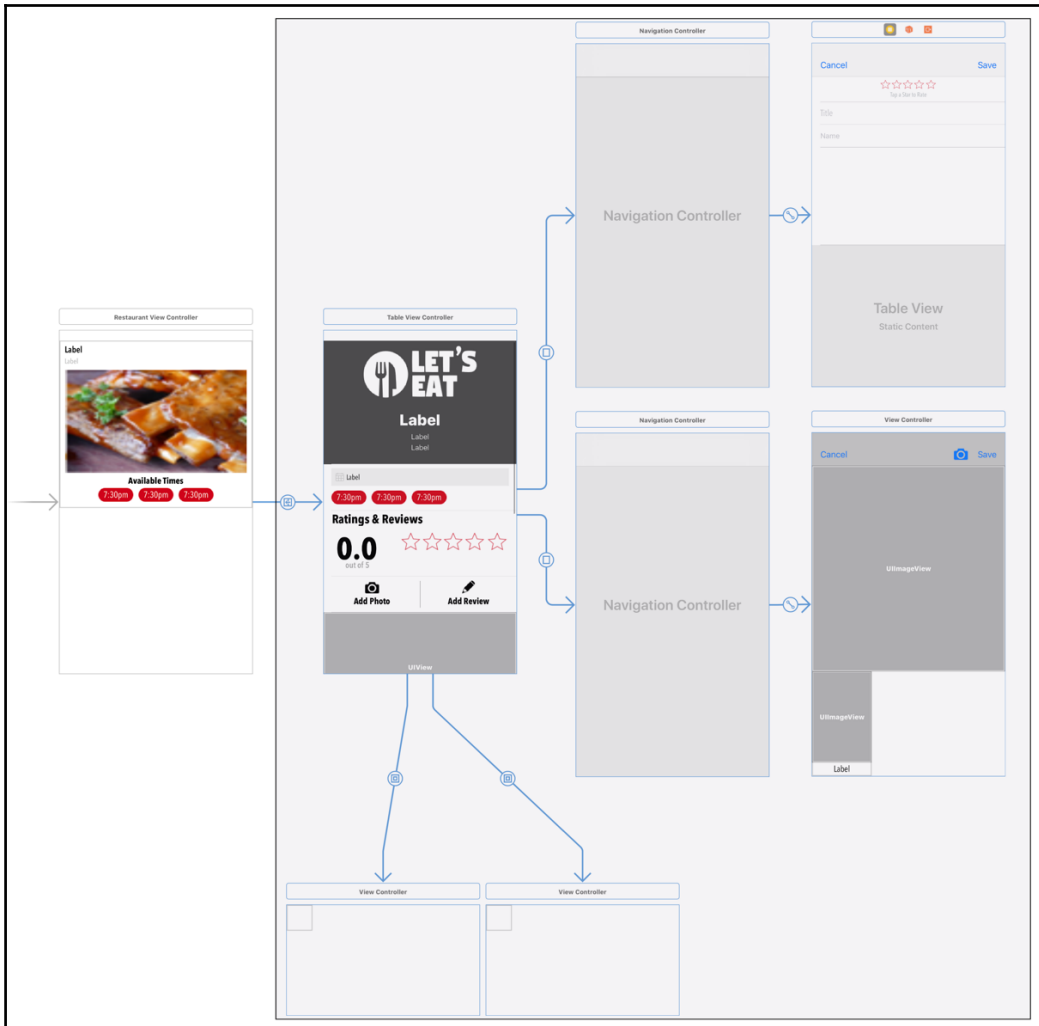


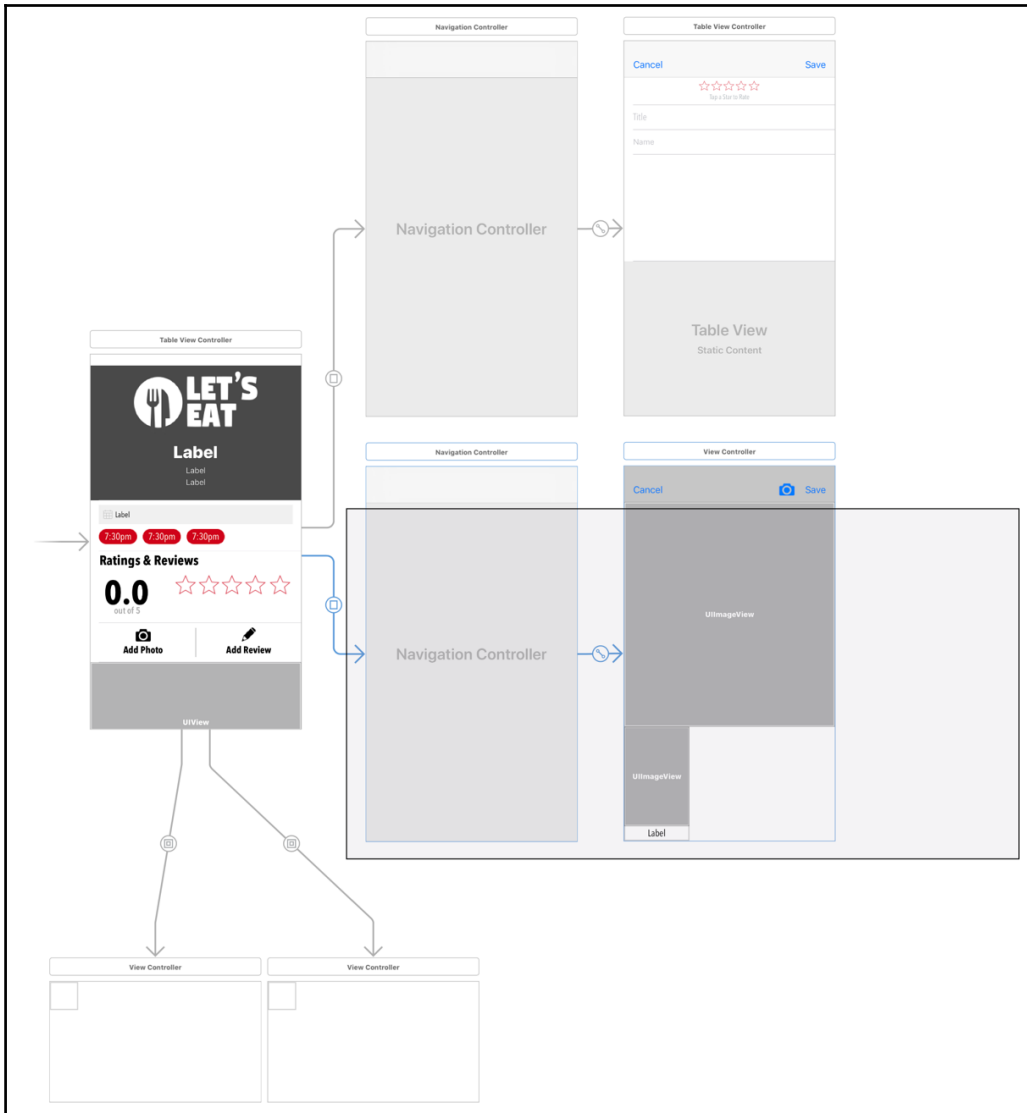


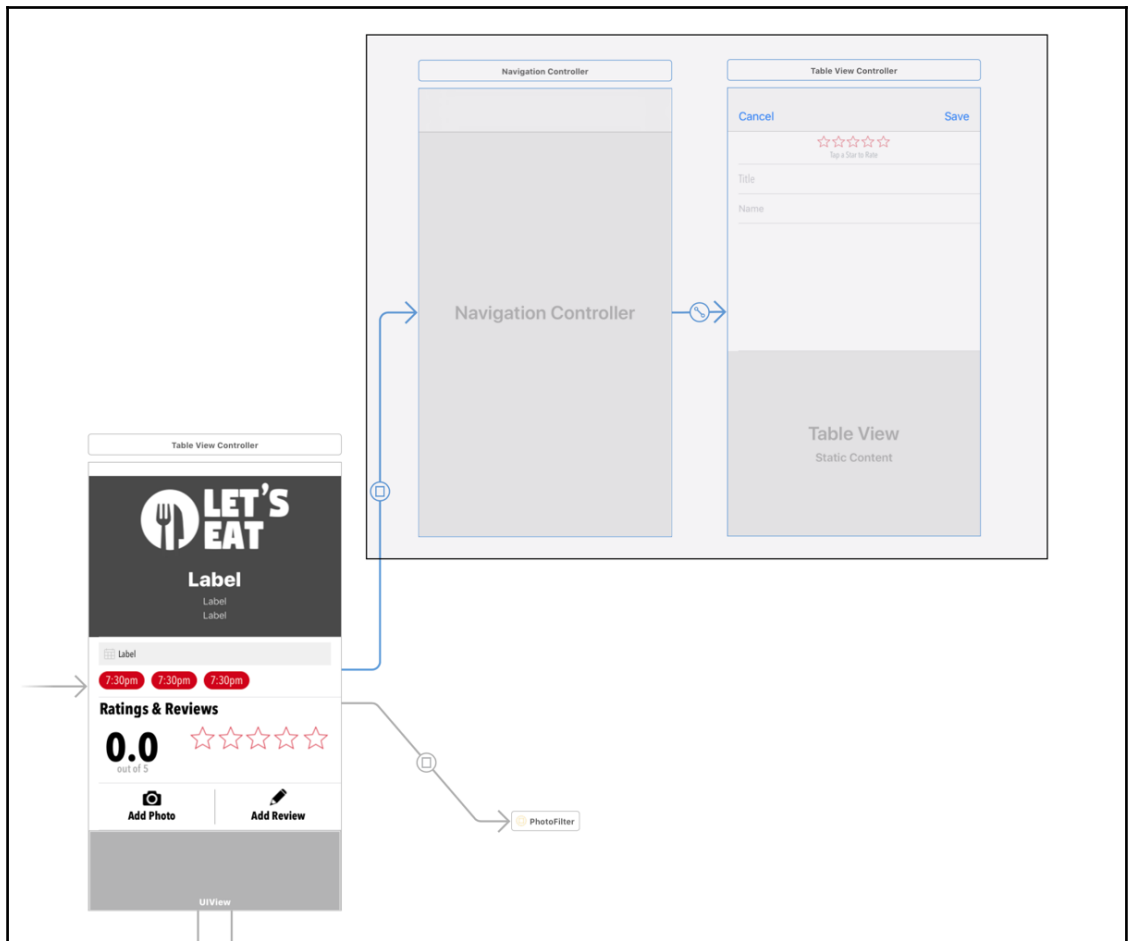


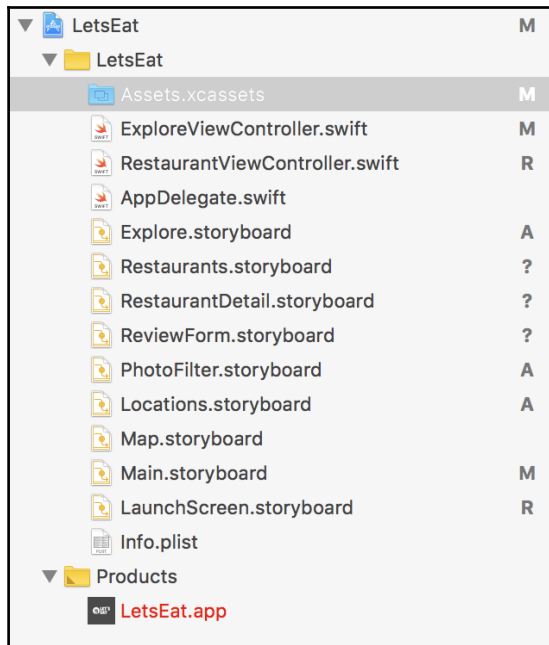




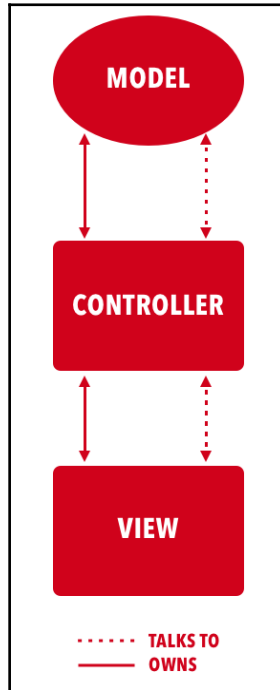








Chapter 13: Getting Started with the Grid



```
1
2 // Cat Class
3 class Cat {
4     var name:String?
5 }
6
7 // Dog Struct
8 struct Dog {
9     var name:String?
10 }
11
12
13 // Create a cat
14 let yellowCat = Cat()
15 yellowCat.name = "Whiskers"
16 print(yellowCat.name)
17
18 // Create a dog
19 var yellowDog = Dog()
20 yellowDog.name = "Bruno"
21 print(yellowDog.name)
22
23 // Create a stray cat
24 let yellowStrayCat = yellowCat
25 yellowStrayCat.name = "Smokey"
26 print(yellowStrayCat.name)
27 print(yellowCat.name)
28
29 // create a stray dog
30 var yellowStrayDog = Dog()
31 yellowStrayDog.name = "Max"
32 print(yellowStrayDog.name)
33 print(yellowDog.name)
34
35
```

Cat
Cat
Optional("Whiskers")\n

Dog
Dog
Optional("Bruno")\n

Cat
Cat
Optional("Smokey")\n
Optional("Smokey")\n

Dog
Dog
Optional("Max")\n
Optional("Bruno")\n

```
Optional("Whiskers")
Optional("Bruno")
Optional("Smokey")
Optional("Smokey")
Optional("Max")
Optional("Bruno")
```

```
Ready | Today at 9:23 PM
FunctionsStructs
1
2 // Cat Class
3 class Cat {
4     var name:String?
5 }
6
7 // Dog Struct
8 struct Dog {
9     var name:String?
10 }
11
12
13 // Create a cat
14 let yellowCat = Cat()
15 yellowCat.name = "Whiskers"
16 print(yellowCat.name)
17
18 // Create a dog
19 var yellowDog = Dog()
20 yellowDog.name = "Bruno"
21 print(yellowDog.name)
22
23 // Create a stray cat
24 let yellowStrayCat = yellowCat
25 yellowStrayCat.name = "Smokey"
26 print(yellowStrayCat.name)
27 print(yellowCat.name)
28
29 // create a stray dog
30 var yellowStrayDog = Dog()
31 yellowStrayDog.name = "Max"
32 print(yellowStrayDog.name)
33 print(yellowDog.name)
34
35
Optional("Whiskers")
Optional("Bruno")
Optional("Smokey")
Optional("Smokey")
Optional("Max")
Optional("Bruno")
```

The screenshot shows a code editor window titled "FunctionsStructs" with a status bar at the top indicating "Ready | Today at 9:23 PM". The code defines two classes: "Cat" and "Dog". The "Cat" class has a property "name" of type "String?". The "Dog" class also has a property "name" of type "String?". The code then creates instances of these classes: a "Cat" named "Whiskers", a "Dog" named "Bruno", a "stray cat" named "Smokey" (which is a reference to the "Whiskers" cat), and a "stray dog" named "Max" (which is a new "Dog" instance). The code prints the names of these instances. A red arrow points from the text "Optional(\"Whiskers\")" in the output to the line "yellowCat.name = \"Whiskers\"" in the code. The output at the bottom of the editor shows the following lines: "Optional(\"Whiskers\")", "Optional(\"Bruno\")", "Optional(\"Smokey\")", "Optional(\"Smokey\")", "Optional(\"Max\")", and "Optional(\"Bruno\")".


```
Ready | Today at 9:38 PM
FunctionsStructs
1
2 // Cat Class
3 class Cat:Animal {
4     var name:String?
5 }
6
7 class Animal {
8     var age:Int?
9 }
10
11 // Dog Struct
12 struct Dog:Animal {
13     var name:String?
14 }
15
16
17 // Create a cat
18 let yellowCat = Cat()
19 yellowCat.name = "Whiskers"
20 yellowCat.age = 3
21 print(yellowCat.name)
22
23
Cat
Cat
Cat
Optional("Whiskers")\n

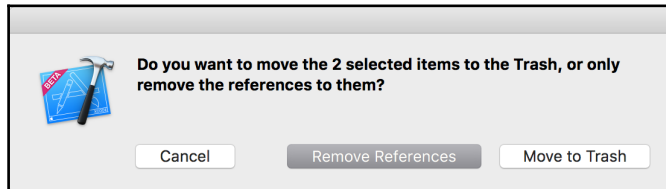
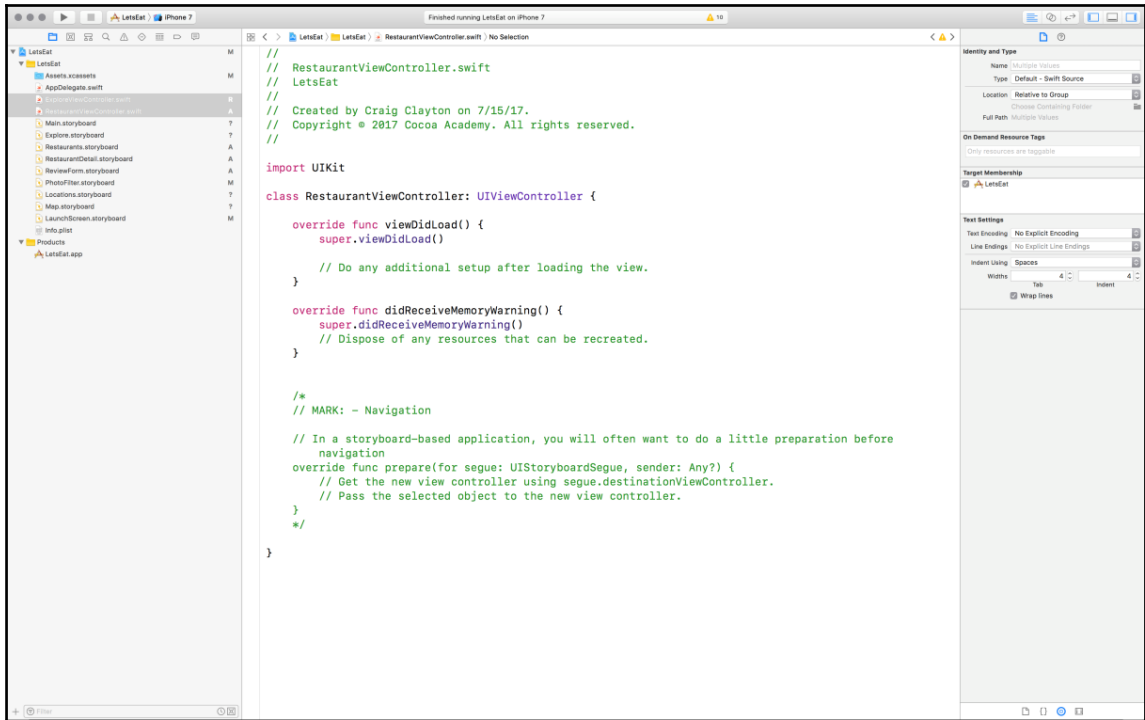
Playground execution failed: error: FunctionsStructs.playground:6:8: error: non-class type 'Dog' cannot inherit from class 'Animal'
struct Dog:Animal {
    ^ ~~~~~~

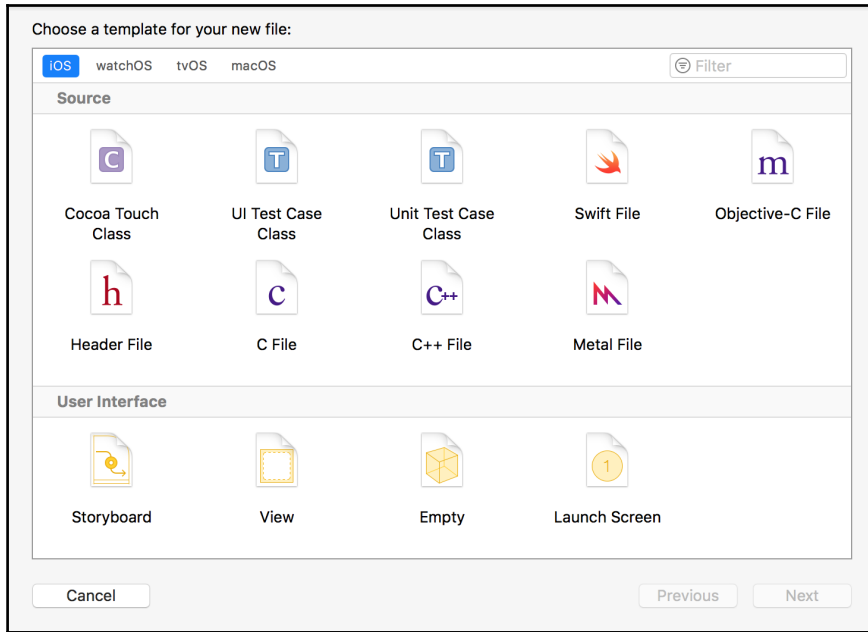
* thread #1: tid = 0x1939c24, 0x000000104cf73c0 FunctionsStructs`executePlayground, queue = 'com.apple.main-thread', stop reason = breakpoint 1.2
* frame #0: 0x000000104cf73c0 FunctionsStructs`executePlayground
* frame #1: 0x000000104cf69c0 FunctionsStructs`__37-[XCPAppDelegate enqueueRunLoopBlock]_block_invoke + 32
* frame #2: 0x00000010581125c CoreFoundation`__CFRunLoop_IS_CALLING_OUT_TO_A_BLOCK__ + 12
* frame #3: 0x0000001057f6304 CoreFoundation`__CFRunLoopDoBlocks + 356
* frame #4: 0x0000001057f5a75 CoreFoundation`__CFRunLoopRun + 901
* frame #5: 0x0000001057f5494 CoreFoundation`CFRunLoopRunSpecific + 420
* frame #6: 0x00000010aba1a6f GraphicsServices`GSEventRunModal + 161
* frame #7: 0x00000010639fa74 UIKit`UIApplicationMain + 159
```

```
Ready | Today at 9:39 PM
FunctionsStructs
1
2 // Cat Class
3 class Cat:Animal {
4     var name:String?
5 }
6
7 class Animal {
8     var age:Int?
9 }
10
11 // Dog Struct
12 struct Dog:AnimalB {
13     var name:String?
14 }
15
16 struct AnimalB {
17     var age:Int?
18 }
19
20 // Create a cat
21 let yellowCat = Cat()
22 yellowCat.name = "YellowCat"
Cat
Cat

Playground execution failed: error: FunctionsStructs.playground:6:8: error: inheritance from non-protocol type
'AnimalB'
struct Dog:AnimalB {
    ^
    A

* thread #1: tid = 0x193d926, 0x00000001057893c0 FunctionsStructs`executePlayground, queue = 'com.apple.main-
thread', stop reason = breakpoint 1.2
* frame #0: 0x00000001057893c0 FunctionsStructs`executePlayground
  frame #1: 0x00000001057889c0 FunctionsStructs`__37-[XCPAppDelegate enqueueRunLoopBlock]_block_invoke + 32
  frame #2: 0x00000001062a325c CoreFoundation`__CFRUNLOOP_IS_CALLING_OUT_TO_A_BLOCK__ + 12
  frame #3: 0x0000000106288304 CoreFoundation`__CFRunLoopDoBlocks + 356
  frame #4: 0x0000000106287a75 CoreFoundation`__CFRunLoopRun + 901
  frame #5: 0x0000000106287494 CoreFoundation`CFRunLoopRunSpecific + 420
  frame #6: 0x000000010b633a6f GraphicsServices`GSEventRunModal + 161
  frame #7: 0x0000000106e31a74 UIKit`UIApplicationMain + 159
```





```
import UIKit

class ExploreViewController: UIViewController {

    override func viewDidLoad() {
        super.viewDidLoad()

        // Do any additional setup after loading the view.  DELETE
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }

    /*
    // MARK: - Navigation

    // In a storyboard-based application, you will often want to do a little preparation before navigation
    override func prepare(for segue: UIStoryboardSegue, sender: Any?) {
        // Get the new view controller using segue.destinationViewController.
        // Pass the selected object to the new view controller.
    }
    */
}

import UIKit

class ExploreViewController: UIViewController {

    override func viewDidLoad() {
        super.viewDidLoad()

    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }
}
```

 DELETE

 UPDATED

```
import UIKit

class ExploreViewController: UIViewController {

    override func viewDidLoad() {
        super.viewDidLoad()

        // Do any additional setup after loading the view.
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }

    /*
    // MARK: - Navigation

    // In a storyboard-based application, you will often want to do a little preparation before navigation
    override func prepare(for segue: UIStoryboardSegue, sender: Any?) {
        // Get the new view controller using segue.destinationViewController.
        // Pass the selected object to the new view controller.
    }
    */
}

import UIKit

class ExploreViewController: UIViewController {

    override func viewDidLoad() {
        super.viewDidLoad()

        print("Hello Explore View Controller")
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }
}


```

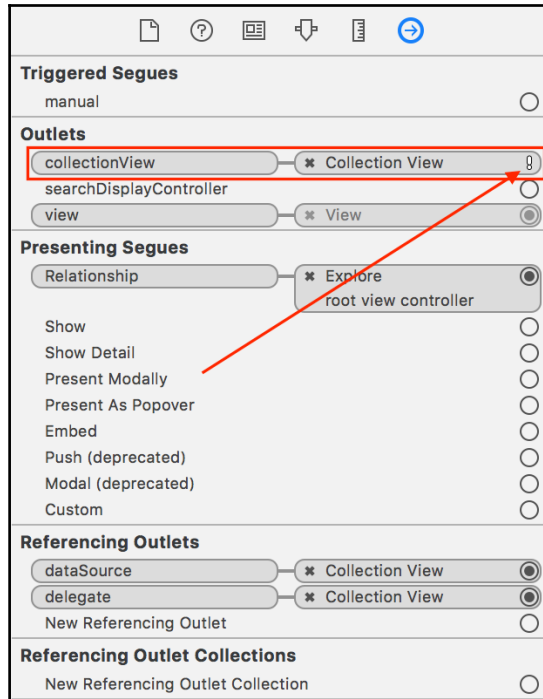
DELETED

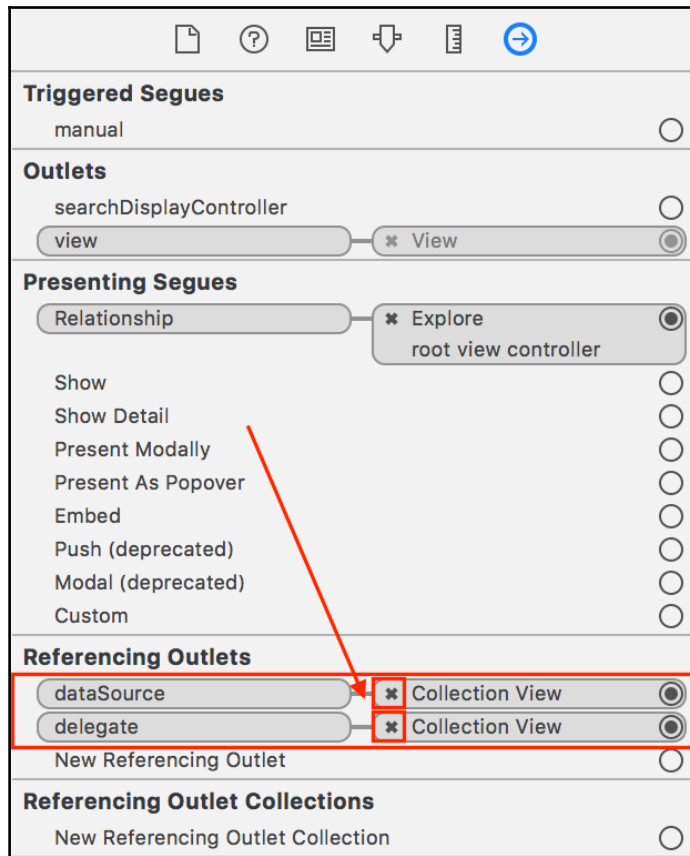


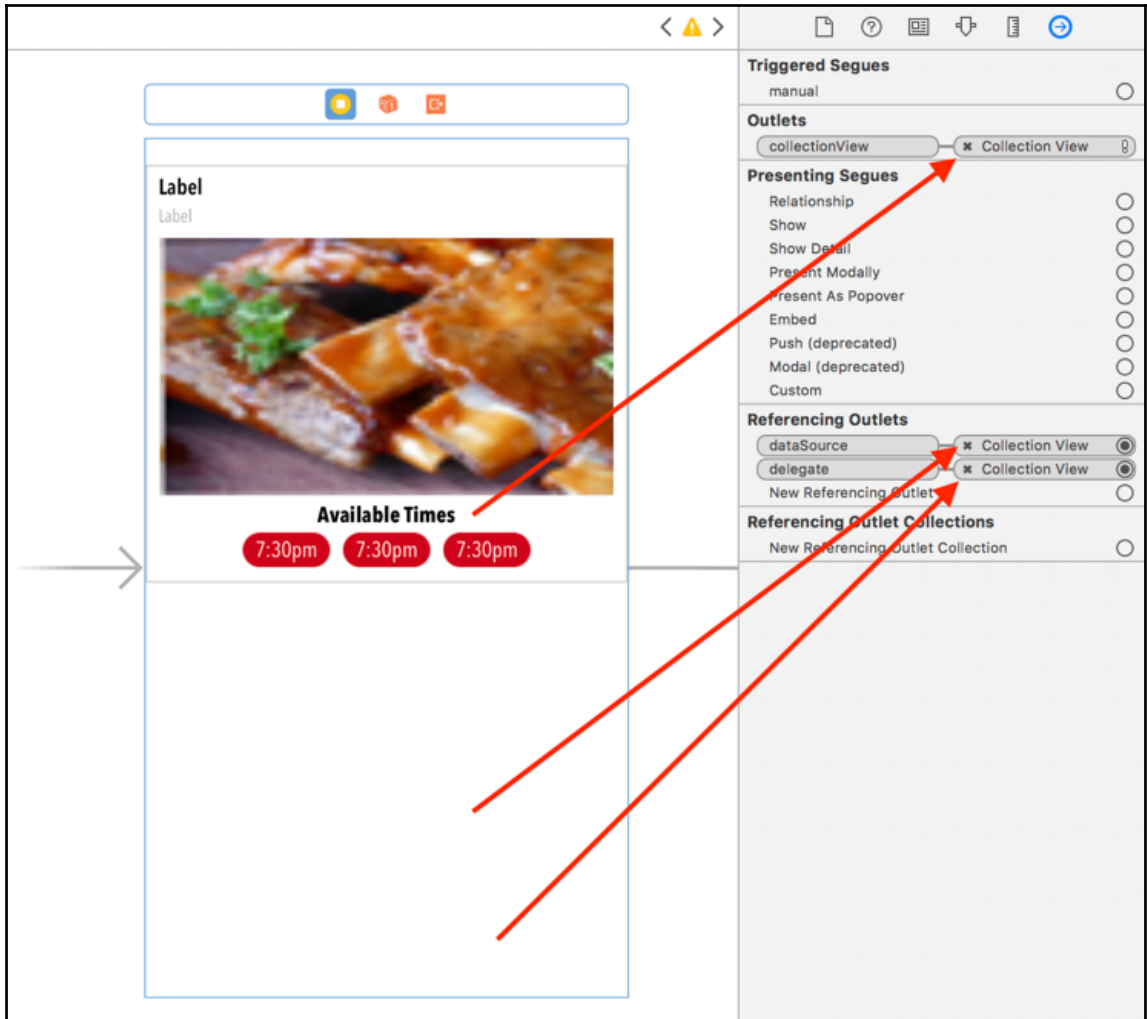
DELETE

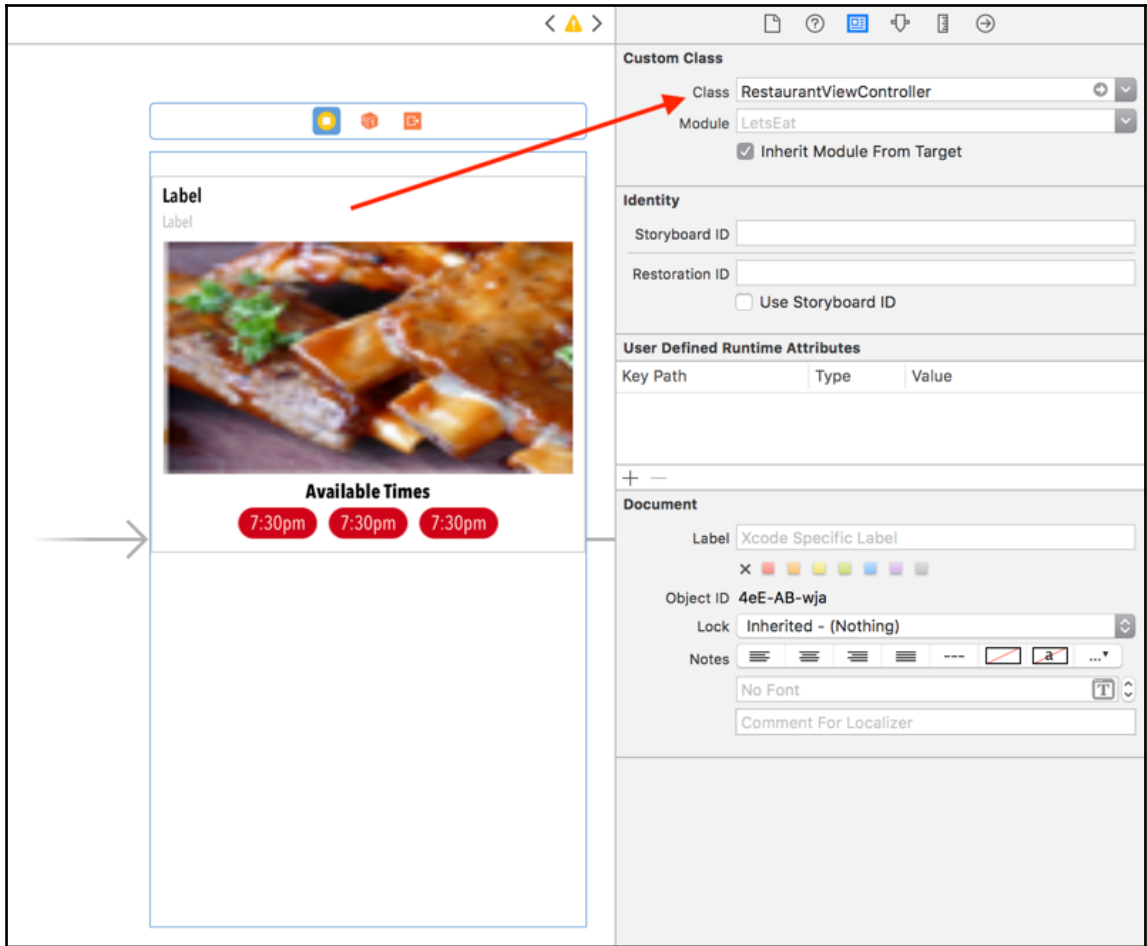


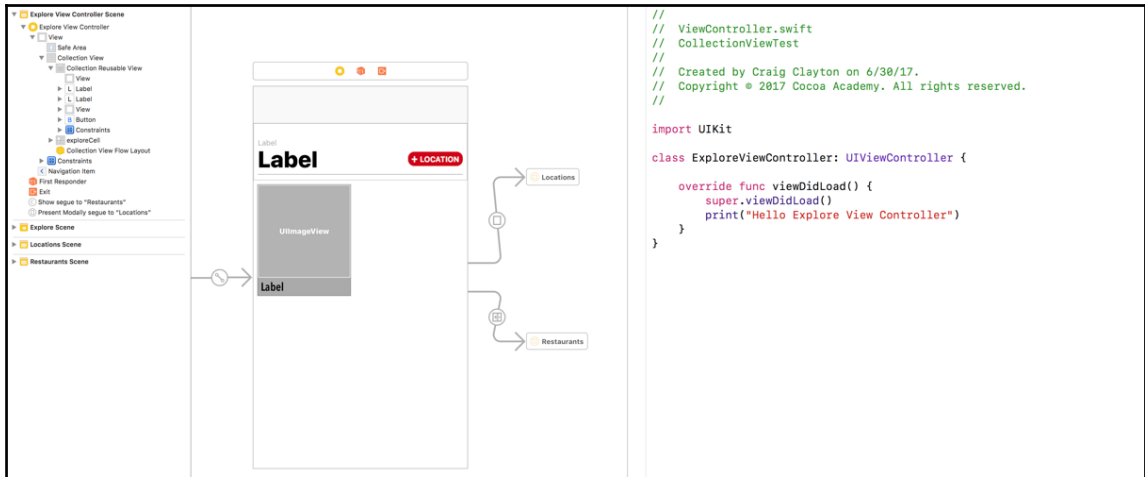
UPDATED





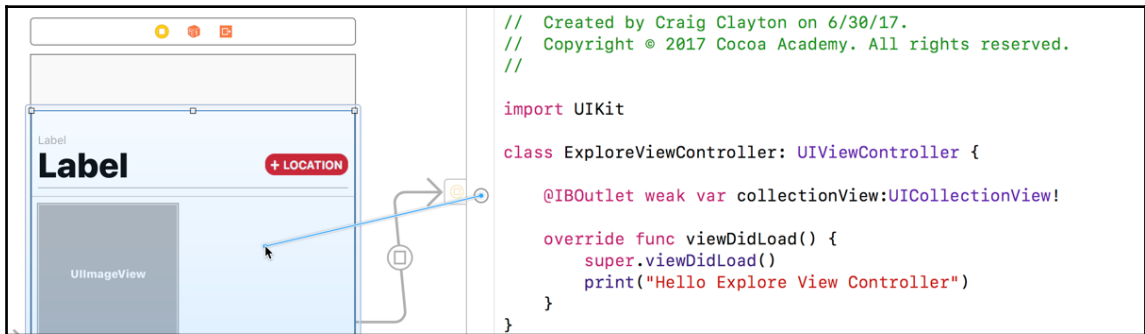




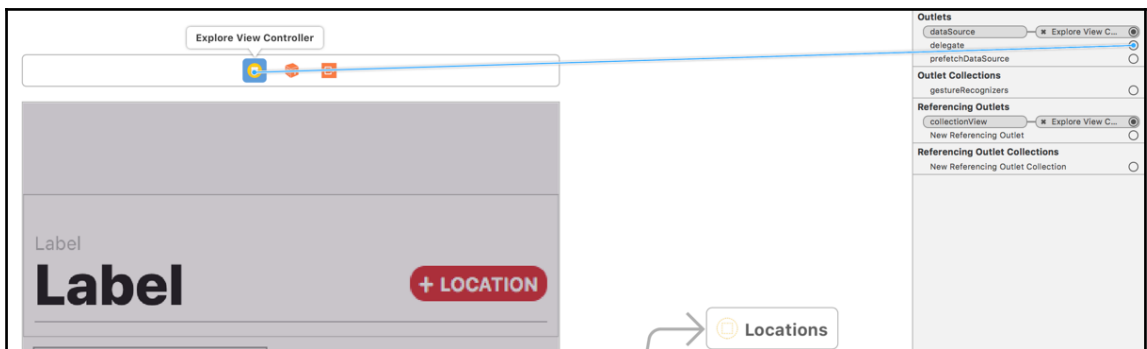
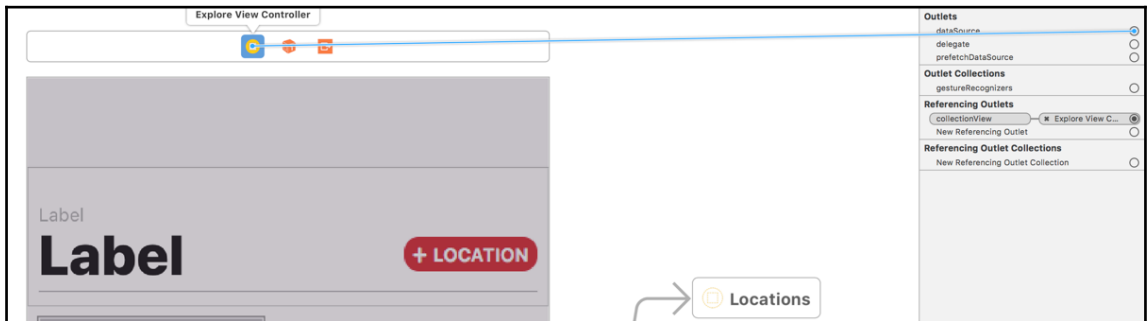
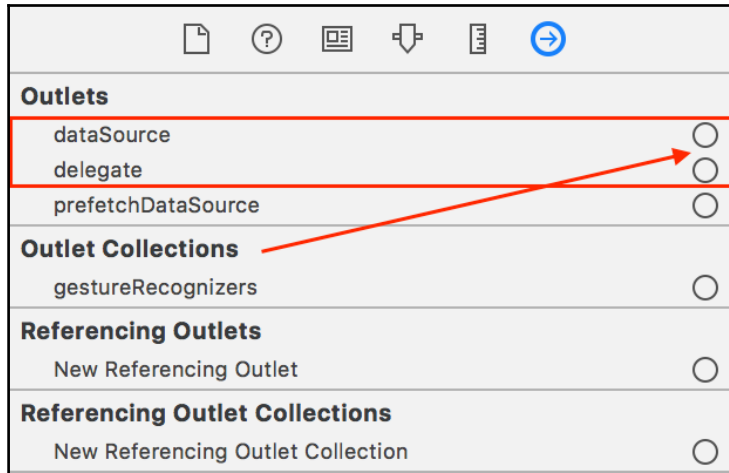


○ @IBOutlet weak var collectionView:UICollectionView!

+ @IBOutlet weak var collectionView:UICollectionView!



● @IBOutlet weak var collectionView:UICollectionView!



```
import UIKit

class ExploreViewController: UIViewController, UICollectionViewDataSource, UICollectionViewDelegate {

    @IBOutlet weak var collectionView: UICollectionView!

    override func viewDidLoad() {
        super.viewDidLoad()
        print("Hello Explore View Controller")
    }

    func collectionView(_ collectionView: UICollectionView, viewForSupplementaryElementOfKind kind: String, at indexPath: IndexPath) -> UICollectionViewReusableView {
        let headerView = collectionView.dequeueReusableView(ofKind: kind, withReuseIdentifier: "header", for: indexPath)
        return headerView
    }

    func collectionView(_ collectionView: UICollectionView, cellForItemAt indexPath: IndexPath) -> UICollectionViewCell {
        return collectionView.dequeueReusableCell(withReuseIdentifier: "exploreCell", for: indexPath)
    }

    func numberOfSections(in collectionView: UICollectionView) -> Int {
        return 1
    }

    func collectionView(_ collectionView: UICollectionView, numberOfItemsInSection section: Int) -> Int {
        return 20
    }

    // Add Unwind here
    @IBAction func unwindLocationCancel(segue: UIStoryboardSegue) {}
}
```

Chapter 14: Getting Data into Our Grid



▼ Root	Array	(31 items)
▼ Item 0	Dictionary	(2 items)
name	String	All
image	String	all.png
▼ Item 1	Dictionary	(2 items)
name	String	Bistro
image	String	bistro.png
▼ Item 2	Dictionary	(2 items)
name	String	Bar / Lounge / Bottle Service
image	String	bar.png
▼ Item 3	Dictionary	(2 items)
name	String	Brewery
image	String	brewery.png

```
import Foundation

class ExploreDataManager {
    A fileprivate func loadData() -> [[String: AnyObject]] {
        guard let path = Bundle.main.path(forResource: "ExploreData", ofType: "plist"),
              let items = NSArray(contentsOfFile: path) else {
            return [:]
        }
        D
        return items as! [[String : AnyObject]]
    }
    F
}
    B
    C
    E
```

▼ Root	Array	(31 items)
▼ Item 0	Dictionary	(2 items)
name	String	All
image	String	all.png
▼ Item 1	Dictionary	(2 items)
name	String	Bistro
image	String	bistro.png
▼ Item 2	Dictionary	(2 items)
name	String	Bar / Lounge / Bottle Service
image	String	bar.png
▼ Item 3	Dictionary	(2 items)
name	String	Brewery
image	String	brewery.png

```

import Foundation

class ExploreDataManager {

    func fetch() {
        for data in loadData() {
            print(data)
        }
    }

    fileprivate func loadData() -> [[String: AnyObject]] {
        guard let path = Bundle.main.path(forResource: "ExploreData", ofType: "plist"),
              let items = NSArray(contentsOfFile: path) else {
            return []
        }

        return items as! [[String : AnyObject]]
    }
}

```

```

["image": all.png, "name": All]
["image": bistro.png, "name": Bistro]
["image": bar.png, "name": Bar / Lounge]
["image": brewery.png, "name": Brewery]
["image": burgers.png, "name": Burgers]
["image": californian.png, "name": Californian]
["image": caribbean.png, "name": Caribbean]
["image": comfort.png, "name": Comfort Food]
["image": cuban.png, "name": Cuban]
["image": continental.png, "name": Continental]
["image": french.png, "name": French]
["image": international.png, "name": International]
["image": italian.png, "name": Italian]
["image": japanese.png, "name": Japanese]
["image": latin.png, "name": Latin American]
["image": mediterranean.png, "name": Mediterranean]
["image": mexican.png, "name": Mexican]
["image": organic.png, "name": Organic]
["image": panasian.png, "name": Pan-Asian]
["image": peruvian.png, "name": Peruvian]
["image": pizza.png, "name": Pizzeria]
["image": primerib.png, "name": Prime Rib]
["image": seafood.png, "name": Seafood]
["image": southamerican.png, "name": South American]
["image": southern.png, "name": Southern]
["image": spanish.png, "name": Spanish]
["image": steak.png, "name": Steakhouse]
["image": sushi.png, "name": Sushi]
["image": tapas.png, "name": Tapas / Small Plates]
["image": vietnamese.png, "name": Vietnamese]
["image": wine.png, "name": Wine Bar]

```



```

import Foundation

class ExploreDataManager {

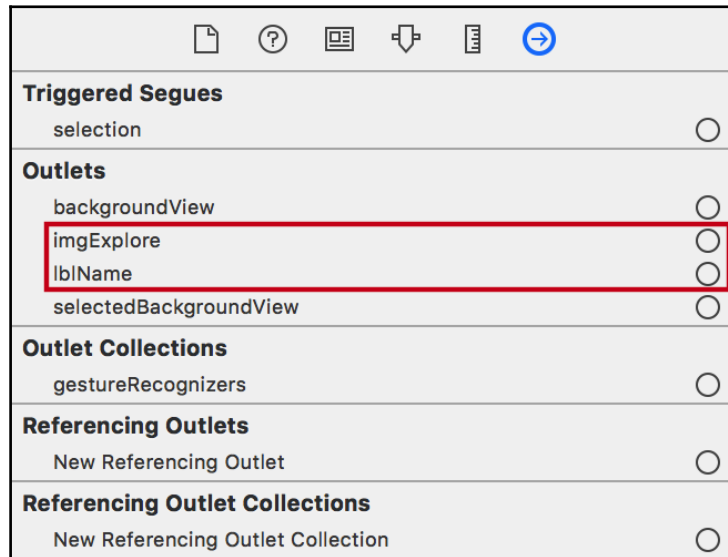
    fileprivate var items:[ExploreItem] = []

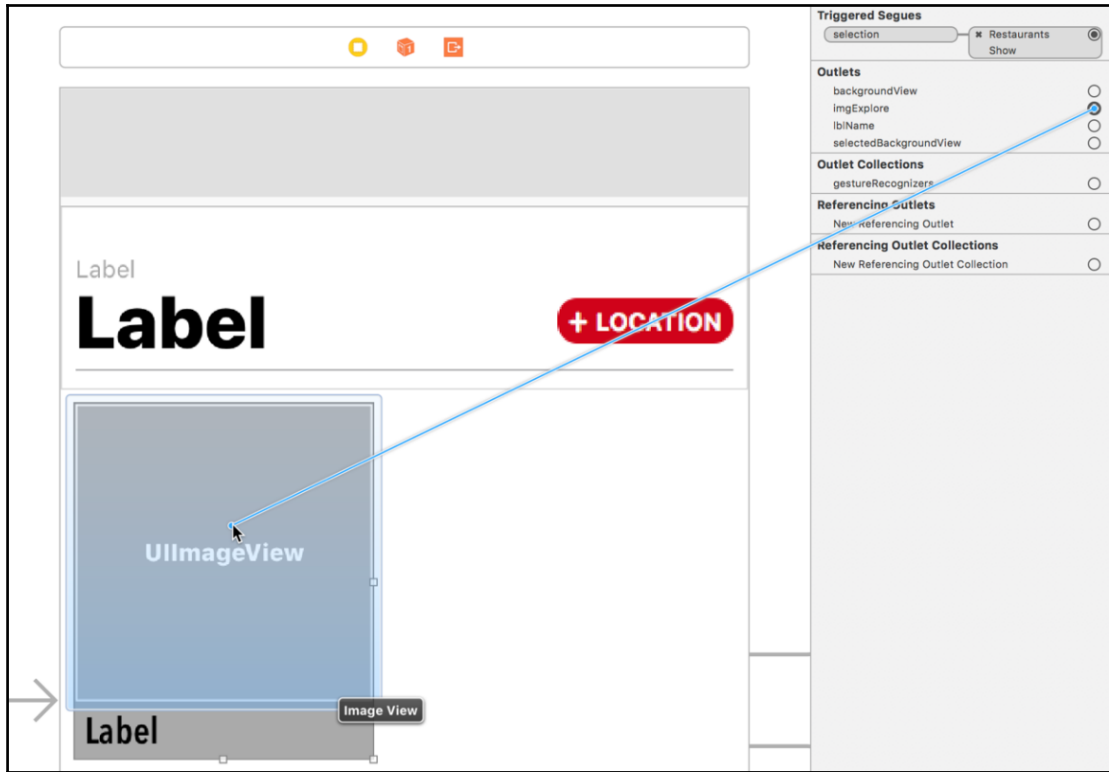
    func fetch() {
        for data in loadData() {
            items.append(ExploreItem(dict: data))
        }
    }

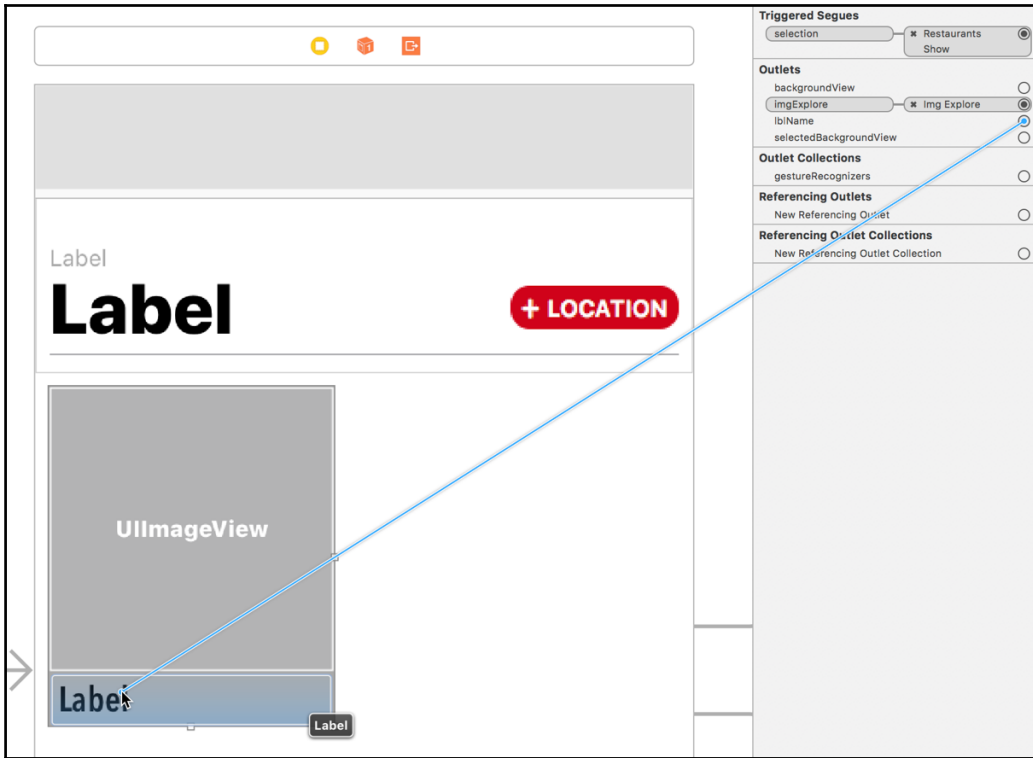
    fileprivate func loadData() -> [[String: AnyObject]] {
        guard let path = Bundle.main.path(forResource: "ExploreData", ofType: "plist"),
            let items = NSArray(contentsOfFile: path) else {
            return [[:]]
        }

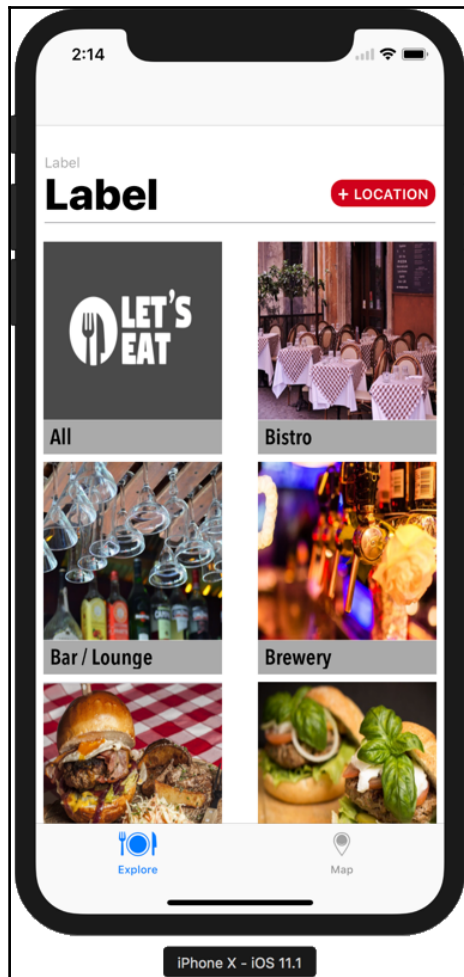
        return items as! [[String : AnyObject]]
    }
}

```






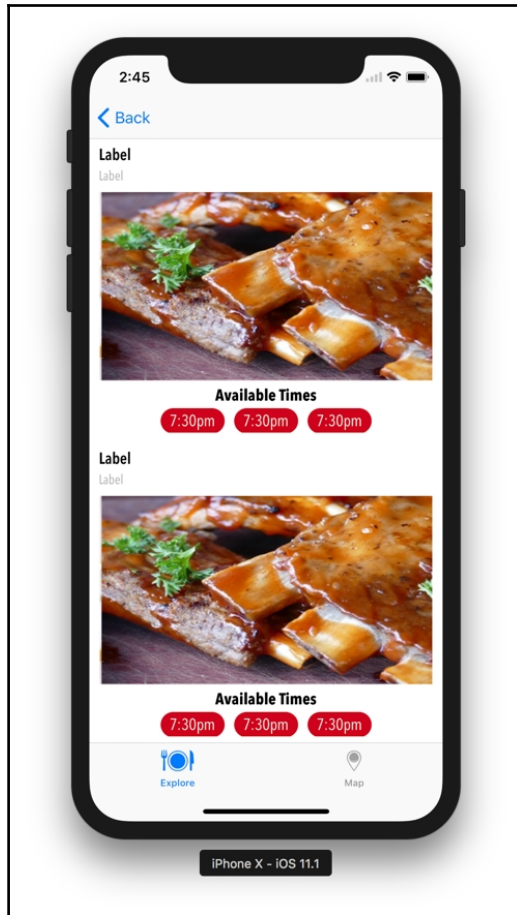




```
@IBOutlet weak var collectionView:UICollectionView!
```

Icons: Document, Question, Grid, Arrow, List, Refresh	
Outlets	
dataSource	<input type="radio"/>
delegate	<input type="radio"/>
prefetchDataSource	<input type="radio"/>
Outlet Collections	
gestureRecognizers	<input type="radio"/>
Referencing Outlets	
New Referencing Outlet	<input type="radio"/>
Referencing Outlet Collections	
New Referencing Outlet Collection	<input type="radio"/>

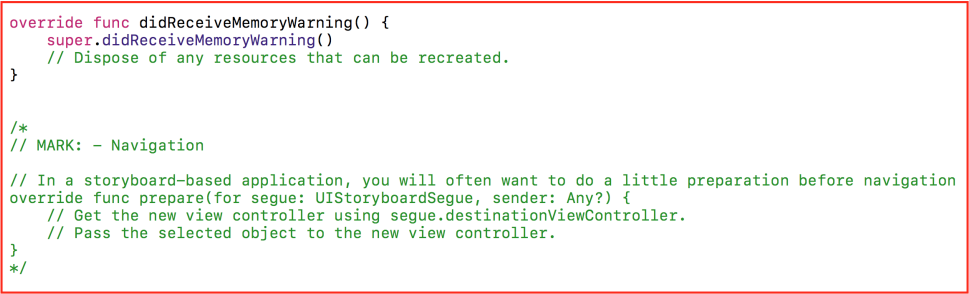


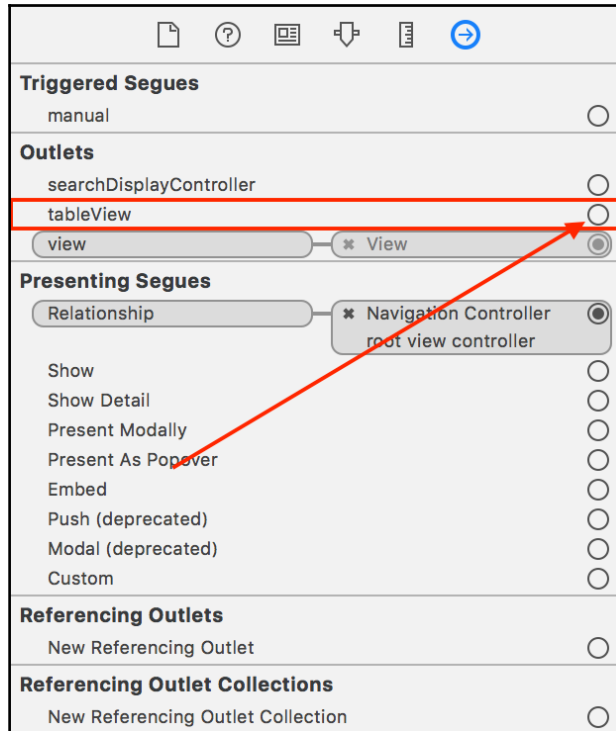


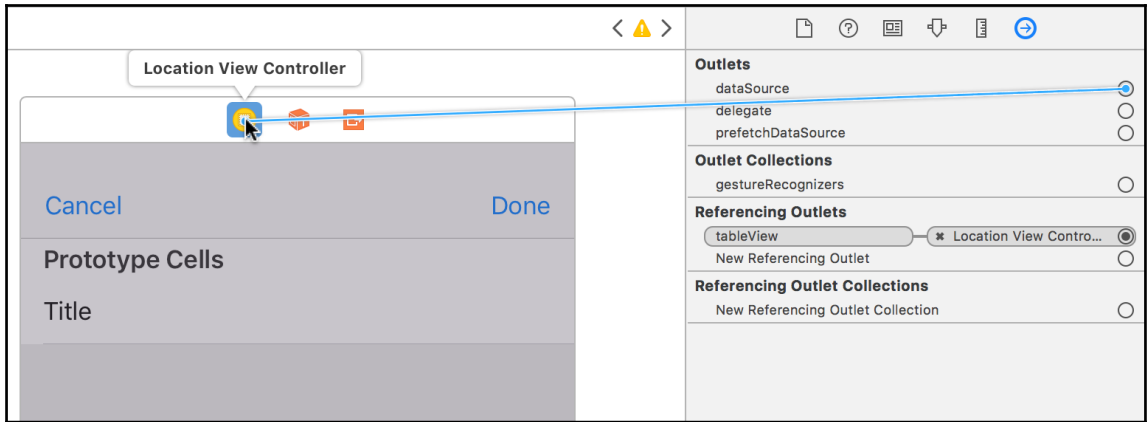
Chapter 15: Getting Started with the List

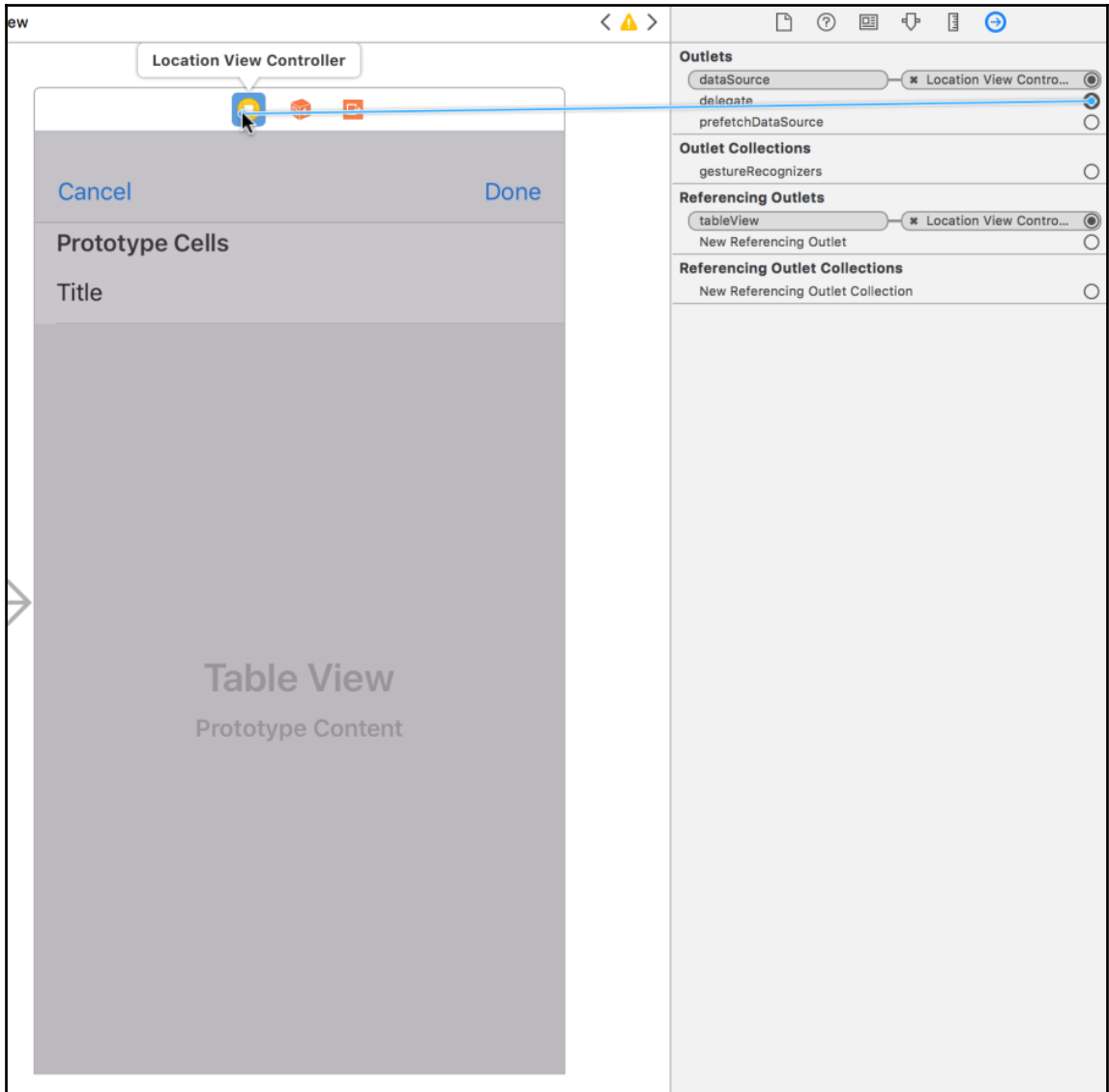
```
class LocationViewController: UIViewController {  
    @IBOutlet weak var tableView:UITableView!
```

```
//  
// LocationViewController.swift  
// LetsEat  
//  
// Created by Craig Clayton on 11/19/16.  
// Copyright © 2016 Craig Clayton. All rights reserved.  
//  
import UIKit  
class LocationViewController: UIViewController {  
    @IBOutlet var tableView:UITableView!  
    override func viewDidLoad() {  
        super.viewDidLoad()  
        // Do any additional setup after loading the view.  
    }  
    override func didReceiveMemoryWarning() {  
        super.didReceiveMemoryWarning()  
        // Dispose of any resources that can be recreated.  
    }  
    /*  
    // MARK: - Navigation  
    // In a storyboard-based application, you will often want to do a little preparation before navigation  
    override func prepare(for segue: UIStoryboardSegue, sender: Any?) {  
        // Get the new view controller using segue.destinationViewController.  
        // Pass the selected object to the new view controller.  
    }  
    */  
}
```









```
import UIKit

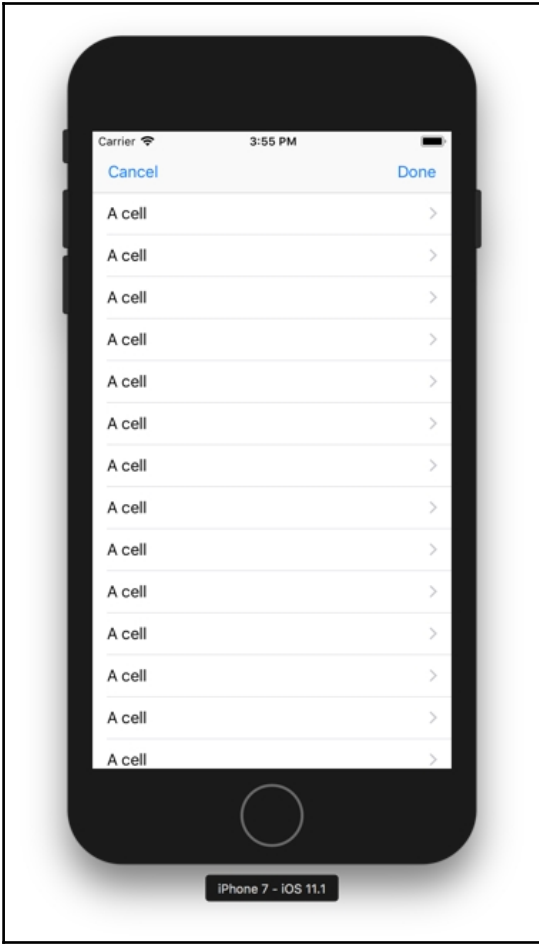
class LocationViewController: UIViewController, UITableViewDataSource {
    @IBOutlet weak var tableView:UITableView!

    A func tableView(_ tableView: UITableView, numberOfRowsInSection section: Int) -> Int {
        return 15 B
    }

    C func numberOfSections(in tableView: UITableView) -> Int {
        return 1 D
    }

    E func tableView(_ tableView: UITableView, cellForRowAt indexPath: IndexPath) -> UITableViewCell {
        let cell = tableView.dequeueReusableCell(withIdentifier: "locationCell", for: indexPath) as UITableViewCell F
        cell.textLabel?.text = "A cell"

        return cell G
    }
}
```



```
import UIKit

class LocationViewController: UIViewController, UITableViewDataSource {

    @IBOutlet weak var tableView: UITableView!

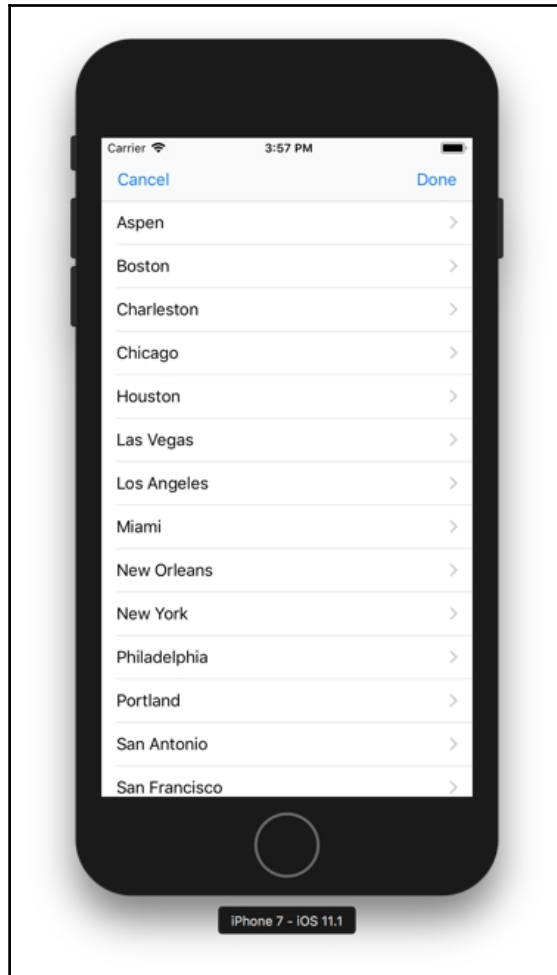
    let locations = ["Aspen", "Boston", "Charleston", "Chicago", "Houston", "Las Vegas", "Los Angeles", "Miami", "New Orleans",
        "New York", "Philadelphia", "Portland", "San Antonio", "San Francisco", "Washington District of Columbia"]

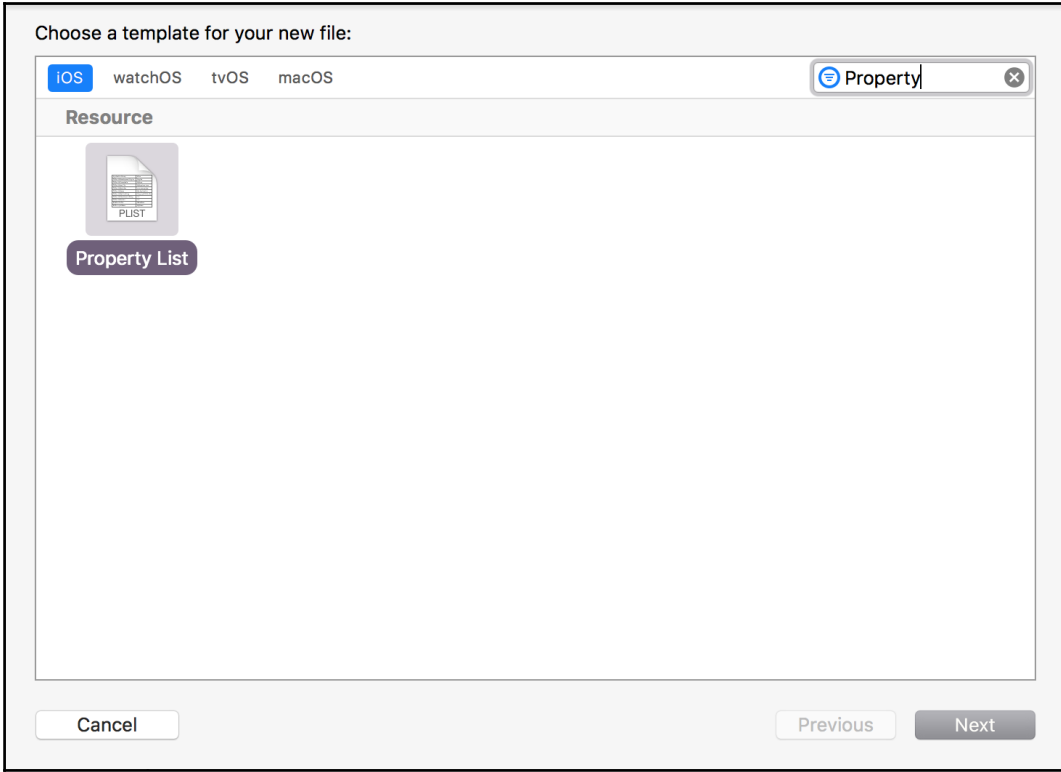
    func tableView(_ tableView: UITableView, numberOfRowsInSection section: Int) -> Int {
        return 15
    }

    func numberOfSections(in tableView: UITableView) -> Int {
        return 1
    }

    func tableView(_ tableView: UITableView, cellForRowAt indexPath: IndexPath) -> UITableViewCell {
        let cell = tableView.dequeueReusableCell(withIdentifier: "locationCell", for: indexPath) as UITableViewCell
        cell.textLabel?.text = "A cell"

        return cell
    }
}
```






< > Locations.plist > No Selection

Key	Type	Value
▼ Root	Dictionary	(0 items)

< > Locations.plist > No Selection

Key	Type	Value
▼ Root	<input type="radio"/> Array <input checked="" type="radio"/> Dictionary	(0 items)

Key	Type	Value
▼ Root	Array	⌵ (0 items)



Key	Type	Value
▼ Root	Array	(1 item)
▼ Item 0	Dictionary	(0 items)

Key	Type	Value
▼ Root	Array	(1 item)
▼ Item 0	Dictionary	(1 item)
state	String	CO

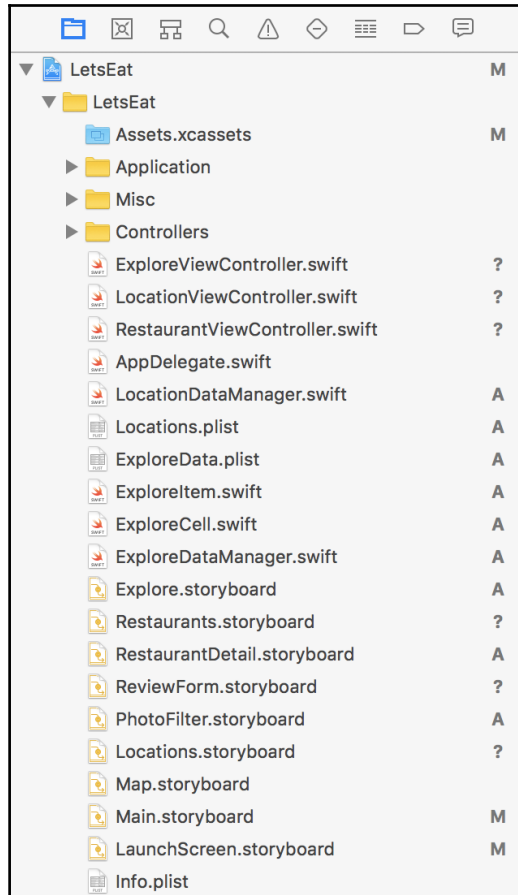
Key	Type	Value
▼ Root	Array	(1 item)
▼ Item 0	Dictionary	(2 items)
state	String	CO
city	String	Aspen

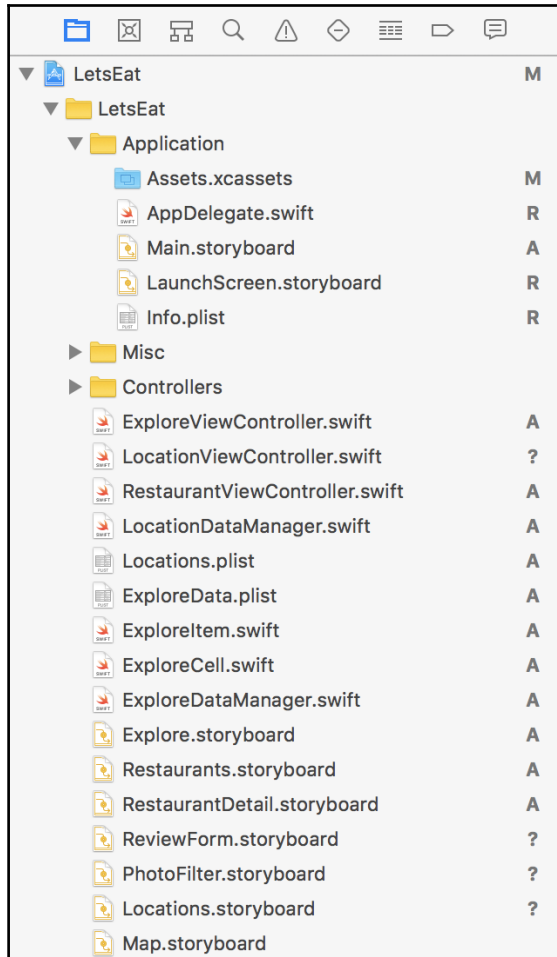
Key	Type	Value
▼ Root	Array	(1 item)
▶ Item 0	Dictionary	(2 items)

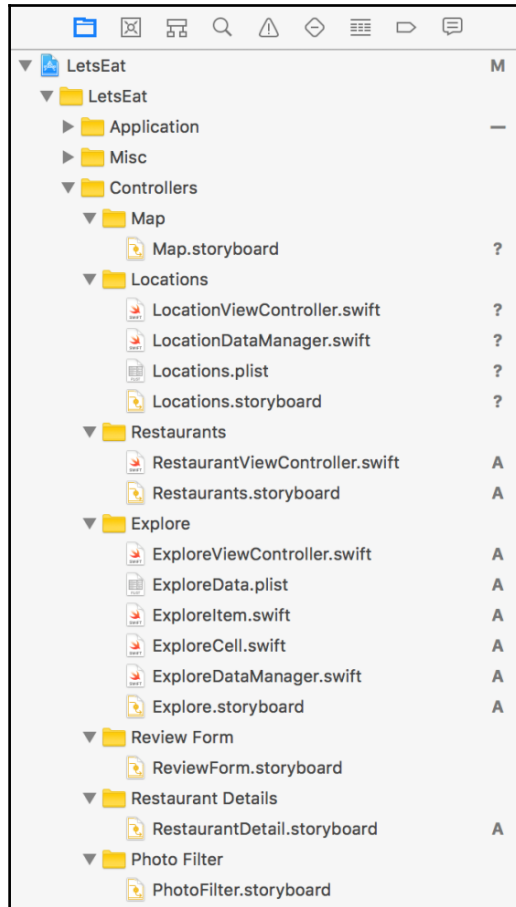
Key	Type	Value
▼ Root	Array	(2 items)
▶ Item 0	Dictionary	(2 items)
▶ Item 1	Dictionary	(2 items)

Key	Type	Value
▼ Root	Array	(14 items)
▼ Item 0	Dictionary	(2 items)
city	String	Aspen
state	String	CO
▼ Item 1	Dictionary	(2 items)
city	String	Boston
state	String	MA

Key	Type	Value
▼ Root	Array	(14 items)
▼ Item 0	Dictionary	(2 items)
city	String	Aspen
state	String	CO
▼ Item 1	Dictionary	(2 items)
city	String	Boston
state	String	MA
▼ Item 2	Dictionary	(2 items)
city	String	Charleston
state	String	NC
▼ Item 3	Dictionary	(2 items)
city	String	Chicago
state	String	IL
▼ Item 4	Dictionary	(2 items)
city	String	Houston
state	String	TX
▼ Item 5	Dictionary	(2 items)
city	String	Las Vegas
state	String	NV
▼ Item 6	Dictionary	(2 items)
city	String	Los Angeles
state	String	CA
▼ Item 7	Dictionary	(2 items)
city	String	Miami
state	String	FL
▼ Item 8	Dictionary	(2 items)
city	String	New Orleans
state	String	LA
▼ Item 9	Dictionary	(2 items)
city	String	New York
state	String	NY
▼ Item 10	Dictionary	(2 items)
city	String	Philadelphia
state	String	PA
▼ Item 11	Dictionary	(2 items)
city	String	Portland
state	String	OR
▼ Item 12	Dictionary	(2 items)
city	String	San Antonio
state	String	TX
▼ Item 13	Dictionary	(2 items)
city	String	San Francisco
state	String	CA







Chapter 16: Where Are We?

Key	Type	Value
▼ Root	Array	(5 items)
▼ Item 0	Dictionary	(16 items)
address	String	108 West 2nd Street #104
area	String	Los Angeles / Orange County
city	String	Los Angeles
▼ cuisines	Array	(2 items)
Item 0	String	Indian
Item 1	String	Gastropubs
country	String	US
id	Number	104,173
image_url	String	https://www.opentable.com/img/restimages/104173.jpg
lat	Number	34.051061
lng	Number	-118.244705
mobile_reserve_url	String	http://mobile.opentable.com/opentable/?restId=104173
name	String	Badmaash
phone	String	2132217466x
postal_code	String	90012
price	Number	2
reserve_url	String	http://www.opentable.com/single.aspx?rid=104173
state	String	CA
▶ Item 1	Dictionary	(15 items)
▶ Item 2	Dictionary	(16 items)
▶ Item 3	Dictionary	(16 items)
▶ Item 4	Dictionary	(16 items)

```
import Foundation
import MapKit

class RestaurantItem: NSObject, MKAnnotation {
    var name: String?
    var cuisines:[String] = []
    var latitude: Double?
    var longitude:Double?
    var address:String?
    var postalCode:String?
    var state:String?
    var imageURL:String?

    init(dict:[String:AnyObject]) {
        if let lat = dict["lat"] as? Double { self.latitude = lat }
        if let long = dict["lng"] as? Double { self.longitude = long }
        if let name = dict["name"] as? String { self.name = name }
        if let cuisines = dict["cuisines"] as? [String] { self.cuisines = cuisines }
        if let address = dict["address"] as? String { self.address = address }
        if let postalCode = dict["postal_code"] as? String { self.postalCode = postalCode }
        if let state = dict["state"] as? String { self.state = state }
        if let image = dict["image_url"] as? String { self.imageURL = image }
    }
}
```

Type 'RestaurantItem' does not conform to protocol 'MKAnnotation'

Ignore this error

```

import Foundation
import MapKit

class RestaurantItem: NSObject, MKAnnotation {
    var name: String?
    var cuisines:[String] = []
    var latitude: Double?
    var longitude:Double?
    var address:String?
    var postalCode:String?
    var state:String?
    var imageURL:String?

    init(dict:[String:AnyObject]) {
        if let lat = dict["lat"] as? Double { self.latitude = lat }
        if let long = dict["lng"] as? Double { self.longitude = long }
        if let name = dict["name"] as? String { self.name = name }
        if let cuisines = dict["cuisines"] as? [String] { self.cuisines = cuisines }
        if let address = dict["address"] as? String { self.address = address }
        if let postalCode = dict["postal_code"] as? String { self.postalCode = postalCode }
        if let state = dict["state"] as? String { self.state = state }
        if let image = dict["image_url"] as? String { self.imageURL = image }
    }

    var title: String? {
        return name
    }

    var subtitle: String? {
        if cuisines.isEmpty { return "" }
        else if cuisines.count == 1 { return cuisines.first }
        else { return cuisines.joined(separator: ", ") }
    }

    var coordinate: CLLocationCoordinate2D {
        guard let lat = latitude, let long = longitude else { return
            CLLocationCoordinate2D() }
        return CLLocationCoordinate2D(latitude: lat, longitude: long )
    }
}

```



```

import Foundation

class MapDataManager {

    fileprivate var items:[RestaurantItem] = []

    var annotations:[RestaurantItem] {
        return items
    }

    func fetch(completion:(_ annotations:[RestaurantItem]) -> ()) {
        if items.count > 0 { items.removeAll() }

        for data in loadData() {
            items.append(RestaurantItem(dict: data))
        }
        completion(items)
    }

    fileprivate func loadData() -> [[String:AnyObject]] {
        guard let path = Bundle.main.path(forResource: "MapLocations", ofType: "plist"),
            let items = NSArray(contentsOfFile: path) else { return [[:]] }

        return items as! [[String: AnyObject]]
    }
}

```

Key	Type	Value
▼ Root	Array	(5 items)
▶ Item 0	Dictionary	(16 items)
▶ Item 1	Dictionary	(16 items)
▶ Item 2	Dictionary	(16 items)
▶ Item 3	Dictionary	(16 items)
▶ Item 4	Dictionary	(16 items)

```

import Foundation

protocol DataManager {
    func load(file name:String) -> [[String:AnyObject]]
}

extension DataManager {
    func load(file name:String) -> [[String:AnyObject]] {
        guard let path = Bundle.main.path(forResource: name, ofType: "plist"),
            let items = NSArray(contentsOfFile: path) else { return [[:]] }

        return items as! [[String : AnyObject]]
    }
}

```

```

import Foundation

class MapDataManager {

    fileprivate var items:[RestaurantItem] = []

    var annotations:[RestaurantItem] {
        return items
    }

    func fetch(completion:(_ annotations:[RestaurantItem]) -> ()) {
        if items.count > 0 { items.removeAll() }
        for data in loadData() {
            items.append(RestaurantItem(dict: data))
        }
        completion(items)
    }

    fileprivate func loadData() -> [[String:AnyObject]] {
        guard let path = Bundle.main.path(forResource: "MapLocations", ofType: "plist"), let items =
            NSArray(contentsOfFile: path) else { return [[]] }

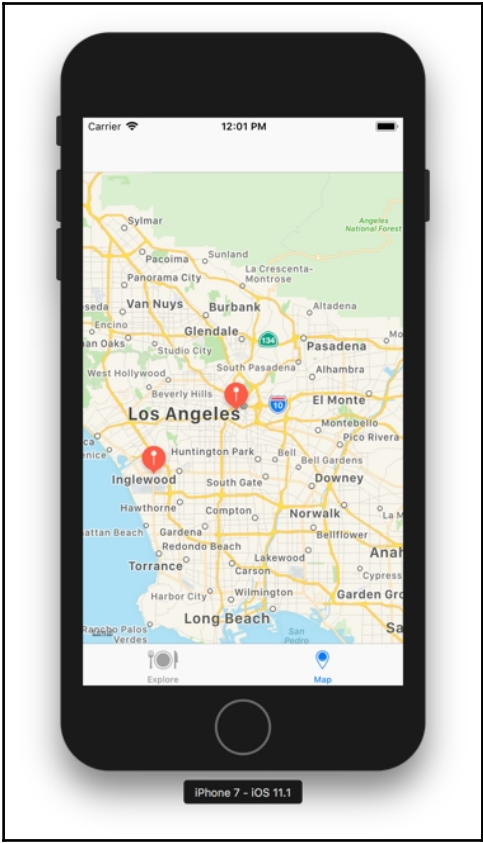
        return items as! [[String : AnyObject]]
    }
}

```

```

    func currentRegion(latDelta:CLLocationDegrees, longDelta:CLLocationDegrees) -> MKCoordinateRegion {
        guard let item = items.first else { return MKCoordinateRegion() } ——— B
        let span = MKCoordinateSpanMake(latDelta, longDelta) ——— C
        return MKCoordinateRegion(center: item.coordinate, span: span) ——— D
    }

```



```

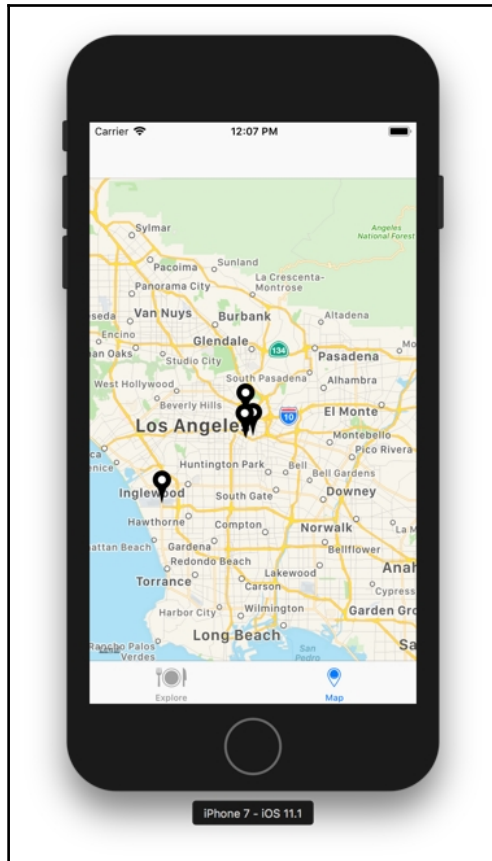
func mapView(_ mapView: MKMapView, viewFor annotation: MKAnnotation) -> MKAnnotationView? {
    let identifier = "custompin"
    guard !annotation.isKind(of: MKUserLocation.self) else {
        return nil
    }
    var annotationView:MKAnnotationView?

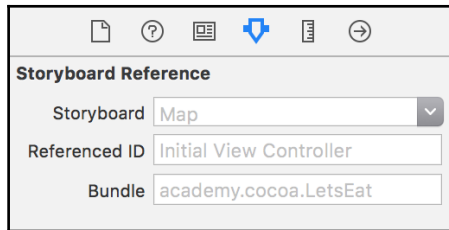
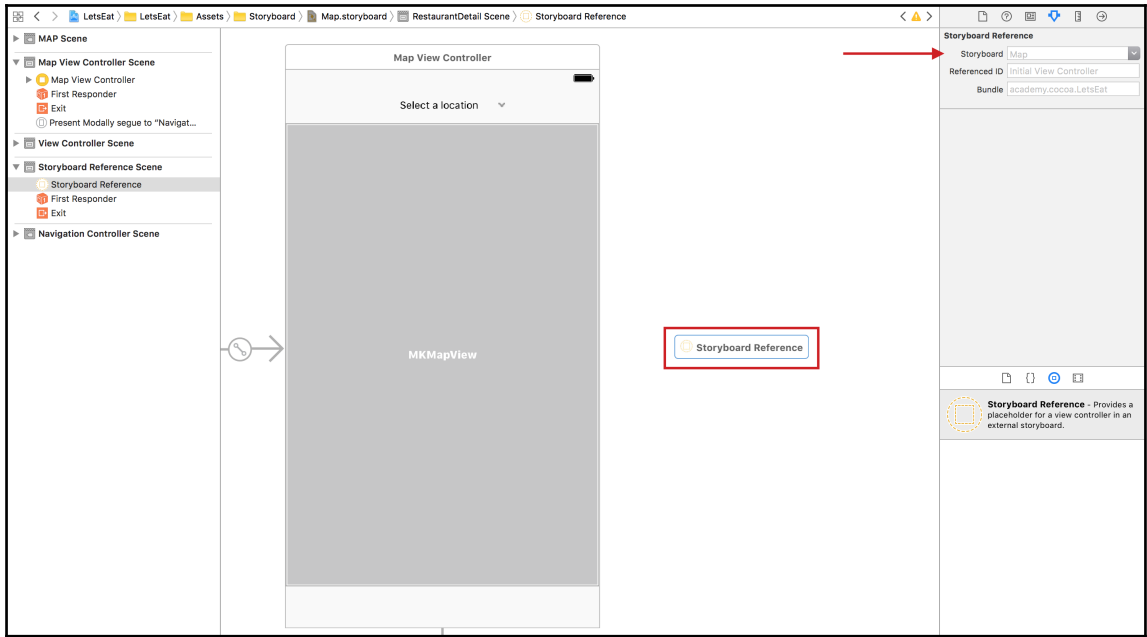
    if let customAnnotationView = mapView.dequeueReusableAnnotationView(withIdentifier:
        identifier) {
        annotationView = customAnnotationView
        annotationView?.annotation = annotation
    }
    else {
        let av = MKAnnotationView(annotation: annotation, reuseIdentifier: identifier)
        av.rightCalloutAccessoryView = UIButton(type: .detailDisclosure)
        annotationView = av
    }

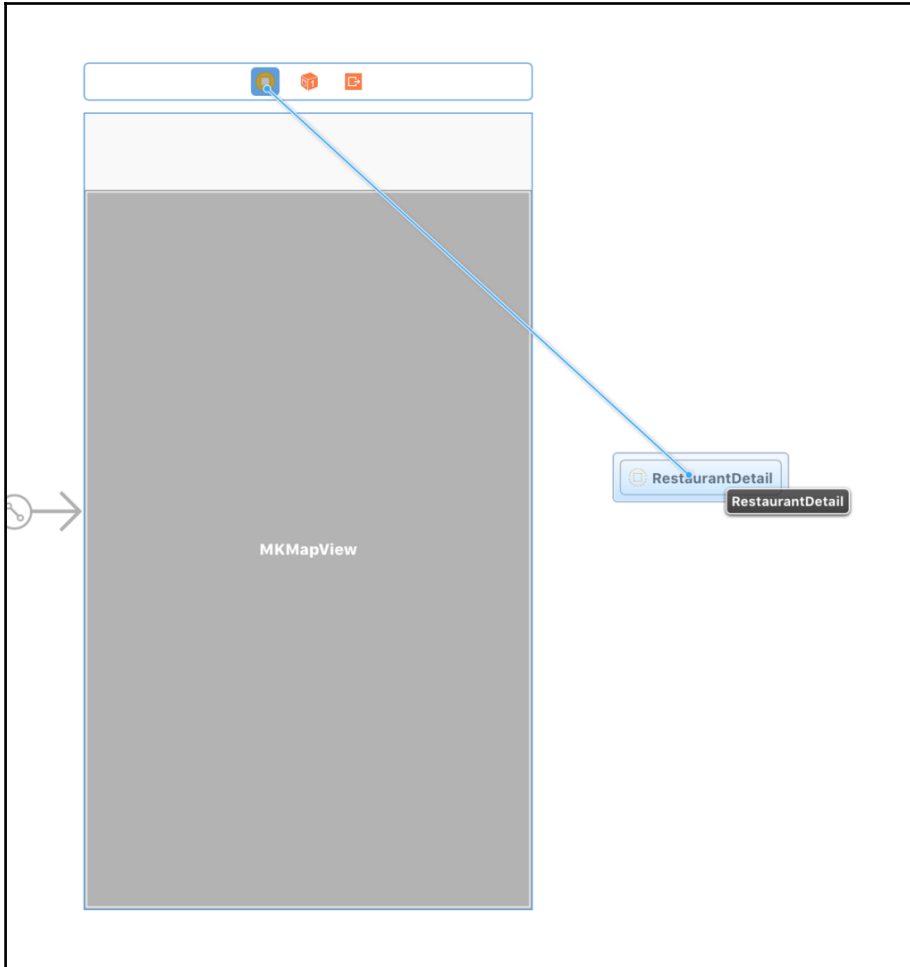
    if let annotationView = annotationView {
        annotationView.canShowCallout = true
        annotationView.image = UIImage(named: "custom-annotation")
    }

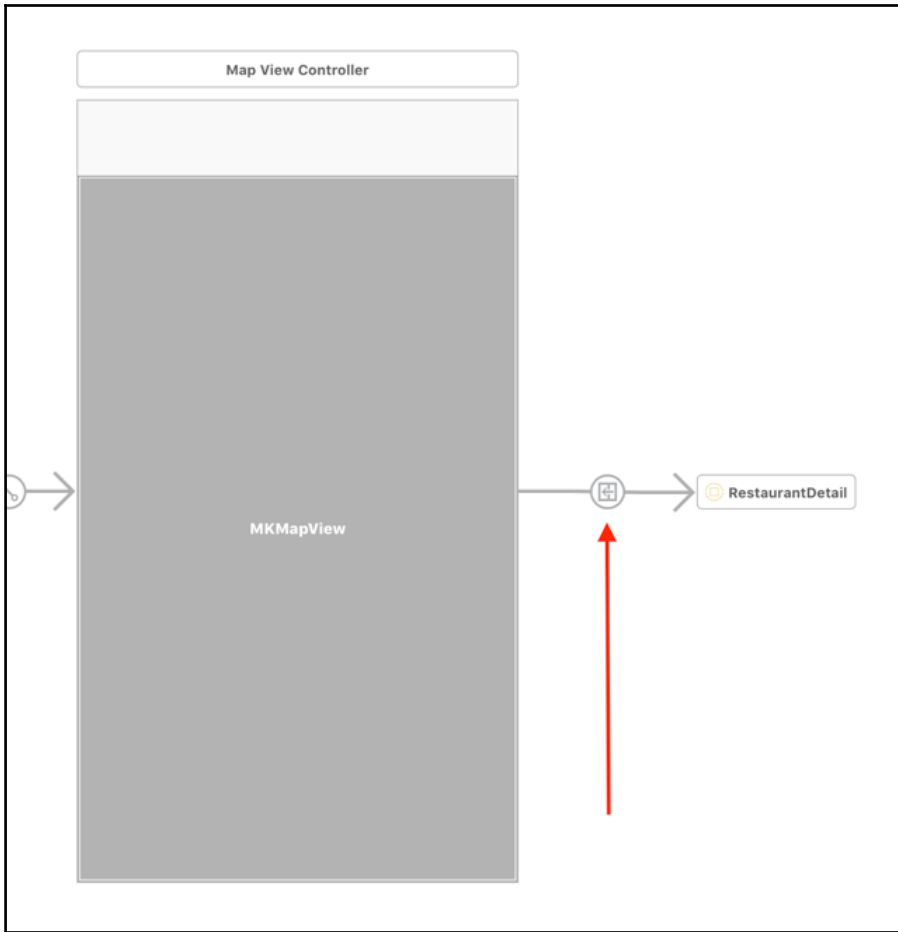
    return annotationView
}

```









Storyboard Segue

Identifier:

Class: ▼

Module: ▼

Kind: ▼

Animates


```

    mapView.delegate = self

    manager.fetch { (annotations) in
        addMap(annotations)
    }
}

func addMap(_ annotations:[RestaurantAnnotation]) {
    mapView.setRegion(manager.currentRegion(latDelta: 0.5, longDelta: 0.5), animated: true)
    mapView.addAnnotations(annotations)
}

func mapView(_ mapView: MKMapView, annotationView view: MKAnnotationView,
    calloutAccessoryControlTapped control: UIControl) {
    self.performSegue(withIdentifier: Segue.showDetail.rawValue, sender: self)
}

func mapView(_ mapView: MKMapView, viewFor annotation: MKAnnotation) -> MKAnnotationView? {
    let identifier = "custompin"

    guard !annotation.isKind(of: MKUserLocation.self) else {
        return nil
    }

    var annotationView:MKAnnotationView?

```

```

//
// RestaurantDetailViewController.swift
// LetsEat
//
// Created by Craig Clayton on 11/15/16.
// Copyright © 2016 Craig Clayton. All rights reserved.
//

import UIKit

class RestaurantDetailViewController: UITableViewController {

    override func viewDidLoad() {
        super.viewDidLoad()
    }
}

```

```

//
// RestaurantDetailViewController.swift
// LetsEat
//
// Created by Craig Clayton on 11/12/17.
// Copyright © 2017 Cocoa Academy. All rights reserved.
//

import UIKit

class RestaurantDetailViewController: UITableViewController {

    var selectedRestaurant:RestaurantItem?

    override func viewDidLoad() {
        super.viewDidLoad()
        dump(selectedRestaurant as Any)
    }
}

```

```

func mapView(_ mapView: MKMapView, annotationView view: MKAnnotationView, calloutAccessoryControlTapped control: UIControl) {
    guard let annotation = mapView.selectedAnnotations.first else { return }
    selectedRestaurant = annotation as? RestaurantItem
}

self.performSegue(withIdentifier: Segue.showDetail.rawValue, sender: self)

```

```

override func viewDidLoad() {
    super.viewDidLoad()

    initialize()
}

override func prepare(for segue: UIStoryboardSegue, sender: Any?) {
    switch segue.identifier! {
    case Segue.showDetail.rawValue:
        showRestaurantDetail(segue: segue)
    default:
        print("Segue not added")
    }
}

func initialize() {
    mapView.delegate = self

    manager.fetch { (annotations) in
        addMap(annotations)
    }
}

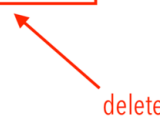
func addMap(_ annotations:[RestaurantAnnotation]) {
    mapView.setRegion(manager.currentRegion(latDelta: 0.5, longDelta: 0.5), animated: true)
    mapView.addAnnotations(annotations)
}

func showRestaurantDetail(segue:UIStoryboardSegue) {
    if let viewController = segue.destination as? RestaurantDetailViewController, let restaurant = selectedRestaurant {
        viewController.selectedRestaurant = restaurant
    }
}

```

```
2017-11-12 12:32:42.020113-0500 LetsEat[11094:1811464] Could not inset legal attribution from corner 4
Optional(<LetsEat.RestaurantItem: 0x608000391c60>)
  some: <LetsEat.RestaurantItem: 0x608000391c60> #0
    - super: NSObject
    - name: Optional("Maria's Italian Kitchen - Downtown")
      - some: "Maria's Italian Kitchen - Downtown"
    - cuisines: 2 elements
      - "Indian"
      - "Gastropubs"
    - latitude: Optional(34.04934200000001)
      - some: 34.04934200000001
    - longitude: Optional(-118.258174)
      - some: -118.258174
    - address: Optional("615 S. Flower Street")
      - some: "615 S. Flower Street"
    - postalCode: Optional("90017")
      - some: "90017"
    - state: Optional("CA")
      - some: "CA"
    - imageURL: Optional("https://www.opentable.com/img/restimages/19183.jpg")
      - some: "https://www.opentable.com/img/restimages/19183.jpg"
2017-11-12 12:32:45.572309-0500 LetsEat[11094:1811464] [Warning] Warning once only: Detected a case where constraints ambiguously suggest a height of zero for a tableview cell's content view. We're considering the collapse unintentional and using standard height instead.
```

```
class ExploreViewController: UIViewController, UICollectionViewDataSource {
    @IBOutlet weak var collectionView:UICollectionView!
    let manager = ExploreDataManager()
    override func viewDidLoad() {
        super.viewDidLoad()
    }
}
```



```

import UIKit

class ExploreViewController: UIViewController {

    @IBOutlet weak var collectionView:UICollectionView!

    let manager = ExploreDataManager()

    override func viewDidLoad() {
        super.viewDidLoad()

        manager.fetch()
    }

    func collectionView(_ collectionView: UICollectionView, viewForSupplementaryElementOfKind kind: String, at indexPath: IndexPath) -> UICollectionViewReusableView {
        let headerView = collectionView.dequeueReusableSupplementaryView(ofKind: kind, withReuseIdentifier: "header", for: indexPath)
        return headerView
    }

    func collectionView(_ collectionView: UICollectionView, cellForItemAt indexPath: IndexPath) -> UICollectionViewCell {
        let cell = collectionView.dequeueReusableCell(withReuseIdentifier: "exploreCell", for: indexPath) as! ExploreCell

        let item = manager.explore(at: indexPath)
        if let name = item.name { cell.lblName.text = name }
        if let image = item.image { cell.imgExplore.image = UIImage(named: image) }

        return cell
    }

    func numberOfSections(in collectionView: UICollectionView) -> Int {
        return 1
    }

    func collectionView(_ collectionView: UICollectionView, numberOfItemsInSection section: Int) -> Int {
        return manager.numberOfItems()
    }

    @IBAction func unwindLocationCancel(segue:UIStoryboardSegue) {}

    // MARK: Private Extension
    private extension ExploreViewController {
        // code goes here
    }

    // MARK: UICollectionViewDataSource
    extension ExploreViewController: UICollectionViewDataSource {
        // code goes here ←————— Move all the code marked above to here
    }
}

```

```

import UIKit

class ExploreViewController: UIViewController {

    @IBOutlet weak var collectionView:UICollectionView!

    let manager = ExploreDataManager()

    override func viewDidLoad() {
        super.viewDidLoad()

        manager.fetch()
    }

    @IBAction func unwindLocationCancel(segue:UIStoryboardSegue) {}
}

// MARK: Private Extension
private extension ExploreViewController {
    // code goes here
}

// MARK: UICollectionViewDataSource
extension ExploreViewController: UICollectionViewDataSource {

    func collectionView(_ collectionView: UICollectionView, viewForSupplementaryElementOfKind kind: String, at indexPath: IndexPath) -> UICollectionViewReusableView {
        let headerView = collectionView.dequeueReusableSupplementaryView(ofKind: kind, withReuseIdentifier: "header", for: indexPath)
        return headerView
    }

    func collectionView(_ collectionView: UICollectionView, cellForItemAt indexPath: IndexPath) -> UICollectionViewCell {
        let cell = collectionView.dequeueReusableCell(withReuseIdentifier: "exploreCell", for: indexPath) as! ExploreCell

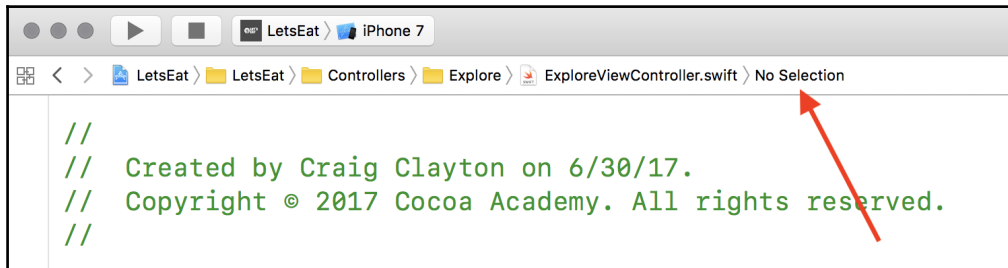
        let item = manager.explore(at: indexPath)
        if let name = item.name { cell.lblName.text = name }
        if let image = item.image { cell.imgExplore.image = UIImage(named: image) }

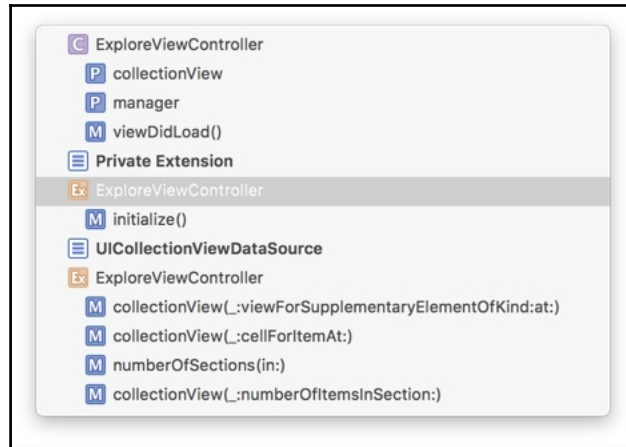
        return cell
    }

    func numberOfSections(in collectionView: UICollectionView) -> Int {
        return 1
    }

    func collectionView(_ collectionView: UICollectionView, numberOfItemsInSection section: Int) -> Int {
        return manager.numberOfItems()
    }
}

```





```
import UIKit

class RestaurantViewController: UIViewController, UICollectionViewDataSource {

    @IBOutlet var collectionView:UICollectionView!

    override func viewDidLoad() {
        super.viewDidLoad()
    }

    func collectionView(_ collectionView: UICollectionView, cellForItemAt indexPath: IndexPath) -> UICollectionViewCell {
        return collectionView.dequeueReusableCell(withReuseIdentifier: "restaurantCell", for: indexPath)
    }

    func numberOfSections(in collectionView: UICollectionView) -> Int {
        return 1
    }

    func collectionView(_ collectionView: UICollectionView, numberOfItemsInSection section: Int) -> Int {
        return 10
    }
}

// MARK: Private Extension
private extension RestaurantListViewController {

}

// MARK: UICollectionViewDataSource
extension RestaurantListViewController: UICollectionViewDataSource {
    ←————— Move all the code marked above to here
}
```

```

import UIKit

class RestaurantViewController: UIViewController {

    @IBOutlet var collectionView:UICollectionView!

    override func viewDidLoad() {
        super.viewDidLoad()
    }
}

// MARK: Private Extension
private extension RestaurantViewController {

}

// MARK: UICollectionViewDataSource
extension RestaurantViewController: UICollectionViewDataSource {

    func collectionView(_ collectionView: UICollectionView, cellForItemAt indexPath: IndexPath) -> UICollectionViewCell {
        return collectionView.dequeueReusableCell(withReuseIdentifier: "restaurantCell", for: indexPath)
    }

    func numberOfSections(in collectionView: UICollectionView) -> Int {
        return 1
    }

    func collectionView(_ collectionView: UICollectionView, numberOfItemsInSection section: Int) -> Int {
        return 10
    }
}

```

```

class LocationViewController: UIViewController {

    @IBOutlet weak var tableView:UITableView!

    let manager = LocationDataManager()

    override func viewDidLoad() {
        super.viewDidLoad()
        manager.fetch()
    }

    func tableView(_ tableView: UITableView, numberOfRowsInSection section: Int) -> Int {
        return manager.numberOfItems()
    }

    func numberOfSections(in tableView: UITableView) -> Int {
        return 1
    }

    func tableView(_ tableView: UITableView, cellForRowAt indexPath: IndexPath) -> UITableViewCell {
        let cell = tableView.dequeueReusableCell(withIdentifier: "locationCell", for: indexPath) as UITableViewCell
        cell.textLabel?.text = manager.locationItem(at:indexPath)

        return cell
    }
}

// MARK: Private Extension
private extension LocationViewController {

}

// MARK: UITableViewDataSource
extension LocationViewController: UITableViewDataSource {

}

```

← Move all the code marked above to here

```

import UIKit

class LocationViewController: UIViewController {

    @IBOutlet weak var tableView:UITableView!

    let manager = LocationDataManager()

    override func viewDidLoad() {
        super.viewDidLoad()
        manager.fetch()
    }
}

// MARK: Private Extension
private extension LocationViewController {

}

// MARK: UITableViewDataSource
extension LocationViewController: UITableViewDataSource {
    func tableView(_ tableView: UITableView, numberOfRowsInSection section: Int) -> Int {
        return manager.numberOfItems()
    }

    func numberOfSections(in tableView: UITableView) -> Int {
        return 1
    }

    func tableView(_ tableView: UITableView, cellForRowAt indexPath: IndexPath) -> UITableViewCell {
        let cell = tableView.dequeueReusableCell(withIdentifier: "locationCell", for: indexPath) as UITableViewCell
        cell.textLabel?.text = manager.locationItem(at:indexPath)

        return cell
    }
}

```

```

class LocationViewController: UIViewController {

    @IBOutlet weak var tableView:UITableView!

    let manager = LocationDataManager()

    override func viewDidLoad() {
        super.viewDidLoad()
        initialize()
    }
}

// MARK: Private Extension
private extension LocationViewController {
    func initialize() {
        manager.fetch()
    }
}

```



```

import UIKit
import MapKit

class MapViewController: UIViewController {

    @IBOutlet var mapView: MKMapView!

    let manager = MapDataManager()
    var selectedRestaurant: RestaurantItem?

    override func viewDidLoad() {
        super.viewDidLoad()
        initialize()
    }

    override func prepare(for segue: UIStoryboardSegue, sender: Any?) {
        switch segue.identifier! {
        case Segue.showDetail.rawValue:
            showRestaurantDetail(segue: segue)
        default:
            print("Segue not added")
        }
    }

    func initialize() {
        mapView.delegate = self
        manager.fetch { (annotations) in
            addMap(annotations)
        }
    }

    func addMap(_ annotations: [RestaurantItem]) {
        mapView.setRegion(manager.currentRegion(latDelta: 0.5, longDelta: 0.5), animated: true)
        mapView.addAnnotations(manager.annotations)
    }

    func showRestaurantDetail(segue: UIStoryboardSegue) {
        if let viewController = segue.destination as? RestaurantDetailViewController, let restaurant = selectedRestaurant {
            viewController.selectedRestaurant = restaurant
        }
    }

    func mapView(_ mapView: MKMapView, viewFor annotation: MKAnnotation) -> MKAnnotationView? {
        let identifier = "custompin"

        guard !annotation.isKind(of: MKUserLocation.self) else { return nil }
        var annotationView: MKAnnotationView?

        if let customAnnotationView = mapView.dequeueReusableAnnotationView(withIdentifier: identifier) {
            annotationView = customAnnotationView
            annotationView?.annotation = annotation
        } else {
            let av = MKAnnotationView(annotation: annotation, reuseIdentifier: identifier)
            av.rightCalloutAccessoryView = UIButton(type: .detailDisclosure)
            annotationView = av
        }

        if let annotationView = annotationView {
            annotationView.canShowCallout = true
            annotationView.image = UIImage(named: "custom-annotation")
        }

        return annotationView
    }

    func mapView(_ mapView: MKMapView, annotationView view: MKAnnotationView, calloutAccessoryControlTapped control: UIControl) {
        guard let annotation = mapView.selectedAnnotations.first else { return }
        selectedRestaurant = annotation as? RestaurantItem

        self.performSegue(withIdentifier: Segue.showDetail.rawValue, sender: self)
    }
}

// MARK: Private Extension
private extension MapViewController {
}

// MARK: MKMapViewDelegate
extension MapViewController: MKMapViewDelegate {
}

```

← Move all the code marked above to here

```

// MARK: MKMapViewDelegate
extension MapViewController: MKMapViewDelegate {
    func mapView(_ mapView: MKMapView, viewFor annotation: MKAnnotation) -> MKAnnotationView? {
        let identifier = "custompin"

        guard !annotation.isKind(of: MKUserLocation.self) else { return nil }
        var annotationView: MKAnnotationView?

        if let customAnnotationView = mapView.dequeueReusableAnnotationView(withIdentifier: identifier) {
            annotationView = customAnnotationView
            annotationView?.annotation = annotation
        }
        else {
            let av = MKAnnotationView(annotation: annotation, reuseIdentifier: identifier)
            av.rightCalloutAccessoryView = UIButton(type: .detailDisclosure)
            annotationView = av
        }

        if let annotationView = annotationView {
            annotationView.canShowCallout = true
            annotationView.image = UIImage(named: "custom-annotation")
        }

        return annotationView
    }

    func mapView(_ mapView: MKMapView, annotationView view: MKAnnotationView, calloutAccessoryControlTapped control: UIControl) {
        guard let annotation = mapView.selectedAnnotations.first else { return }
        selectedRestaurant = annotation as? RestaurantItem

        self.performSegue(withIdentifier: Segue.showDetail.rawValue, sender: self)
    }
}

```

```

import UIKit
import MapKit

class MapViewController: UIViewController {

    @IBOutlet var mapView: MKMapView!

    let manager = MapDataManager()
    var selectedRestaurant:RestaurantItem?

    override func viewDidLoad() {
        super.viewDidLoad()
        initialize()
    }

    override func prepare(for segue: UIStoryboardSegue, sender: Any?) {
        switch segue.identifier! {
            case Segue.showDetail.rawValue:
                showRestaurantDetail(segue: segue)
            default:
                print("Segue not added")
        }
    }
}

func initialize() {
    mapView.delegate = self
    manager.fetch { (annotations) in
        addMap(annotations)
    }
}

func addMap(_ annotations:[RestaurantItem]) {
    mapView.setRegion(manager.currentRegion(latDelta: 0.5, longDelta: 0.5), animated: true)
    mapView.addAnnotations(manager.annotations)
}

func showRestaurantDetail(segue:UIStoryboardSegue) {
    if let viewController = segue.destination as? RestaurantDetailViewController, let restaurant = selectedRestaurant {
        viewController.selectedRestaurant = restaurant
    }
}

// MARK: Private Extension
private extension MapViewController {
}

```

← Move all the code marked above to here

```

import UIKit
import MapKit

class MapViewController: UIViewController {

    @IBOutlet var mapView: MKMapView!

    let manager = MapDataManager()
    var selectedRestaurant:RestaurantItem?

    override func viewDidLoad() {
        super.viewDidLoad()
        initialize()
    }

    override func prepare(for segue: UIStoryboardSegue, sender: Any?) {
        switch segue.identifier! {
        case Segue.showDetail.rawValue:
            showRestaurantDetail(segue: segue)
        default:
            print("Segue not added")
        }
    }
}

// MARK: Private Extension
private extension MapViewController {
    func initialize() {
        mapView.delegate = self
        manager.fetch { (annotations) in
            addMap(annotations)
        }
    }

    func addMap(_ annotations:[RestaurantItem]) {
        mapView.setRegion(manager.currentRegion(latDelta: 0.5, longDelta: 0.5), animated: true)
        mapView.addAnnotations(manager.annotations)
    }

    func showRestaurantDetail(segue:UIStoryboardSegue) {
        if let viewController = segue.destination as? RestaurantDetailViewController, let restaurant = selectedRestaurant {
            viewController.selectedRestaurant = restaurant
        }
    }
}
}

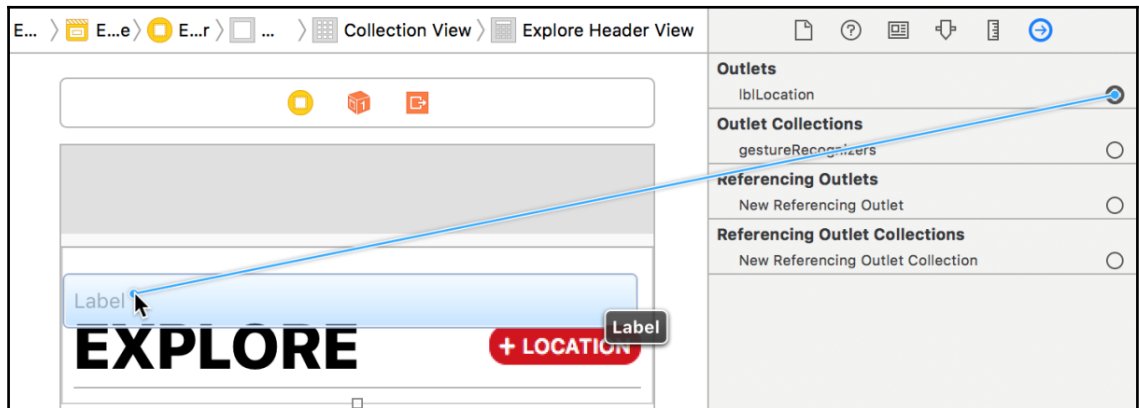
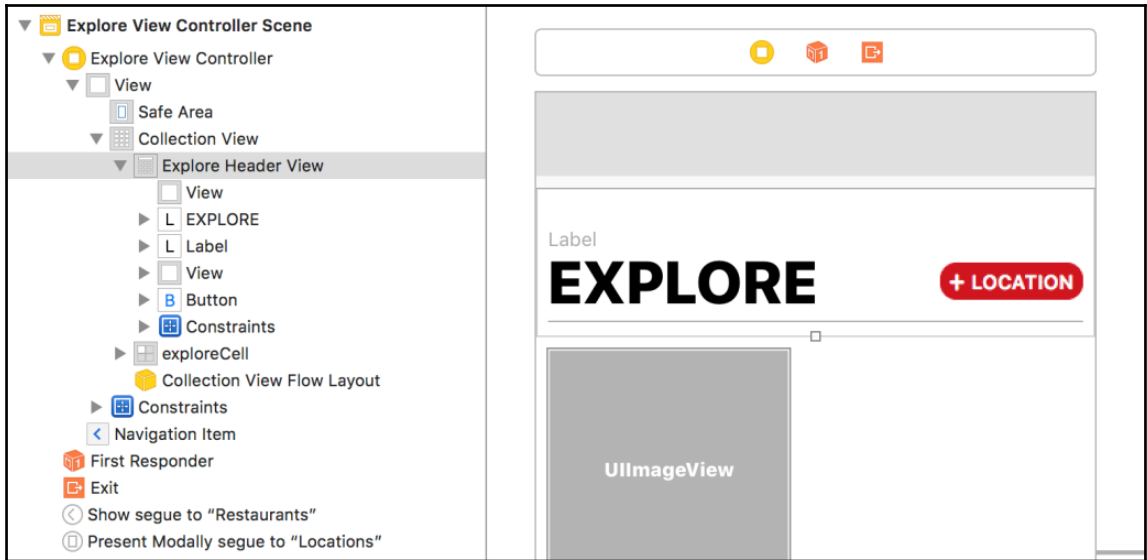
```

Chapter 17: Working with an API

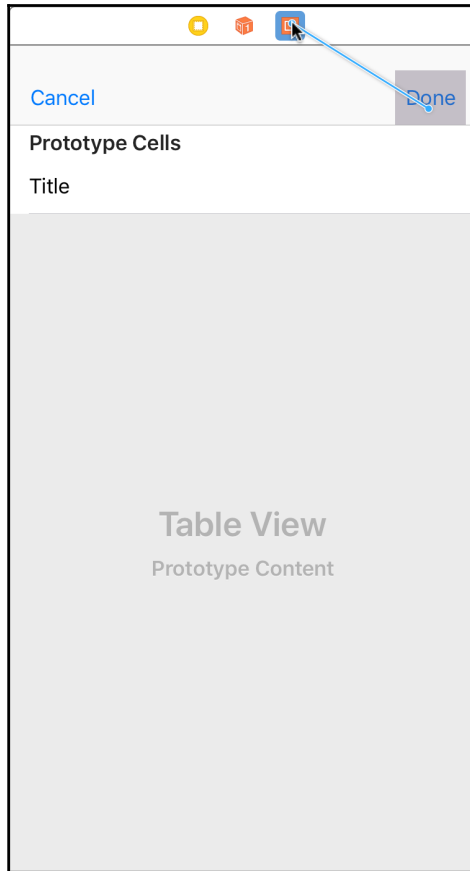
```
{
  "total_entries": 67,
  "per_page": 25,
  "current_page": 1,
  "restaurants": [
    {
      "id": 147475,
      "name": "Union Provisions",
      "address": "513 King Street",
      "city": "Charleston",
      "state": "SC",
      "area": "South Carolina",
      "postal_code": "29403",
      "country": "US",
      "phone": "8436410821x",
      "lat": 32.790291,
      "lng": -79.93936,
      "price": 2,
      "reserve_url": "http://www.opentable.com/single.aspx?rid=147475",
      "mobile_reserve_url": "http://mobile.opentable.com/opentable/?restId=147475",
      "image_url": "https://www.opentable.com/img/restimages/147475.jpg",
      "cuisines": [
        {
          "cuisine": "American"
        },
        {
          "cuisine": "Bar"
        }
      ]
    }
  ],
}
```

```
import Foundation

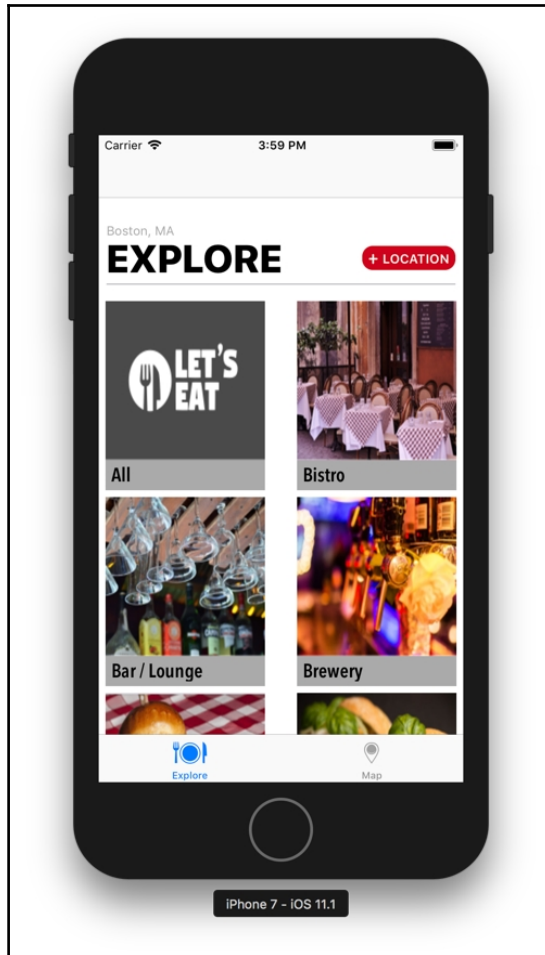
struct RestaurantAPIManager {
  A
  B static func loadJSON(file name:String) -> [[String:AnyObject]] {
    var items = [[String : AnyObject]]()
    C
    guard let path = Bundle.main.path(forResource: name, ofType: "json"),
          let data = NSData(contentsOfFile: path) else {
      D
      return []
    }
    do {
      let json = try JSONSerialization.jsonObject(with: data as Data, options: .allowFragments) as AnyObject
      E
      if let restaurants = json["restaurants"] as? [[String: AnyObject]] {
        items = restaurants as [[String : AnyObject]]
      }
    }
    catch {
      print("error serializing JSON: \(error)")
      F
      items = []
    }
    return items
  }
  G
}
```

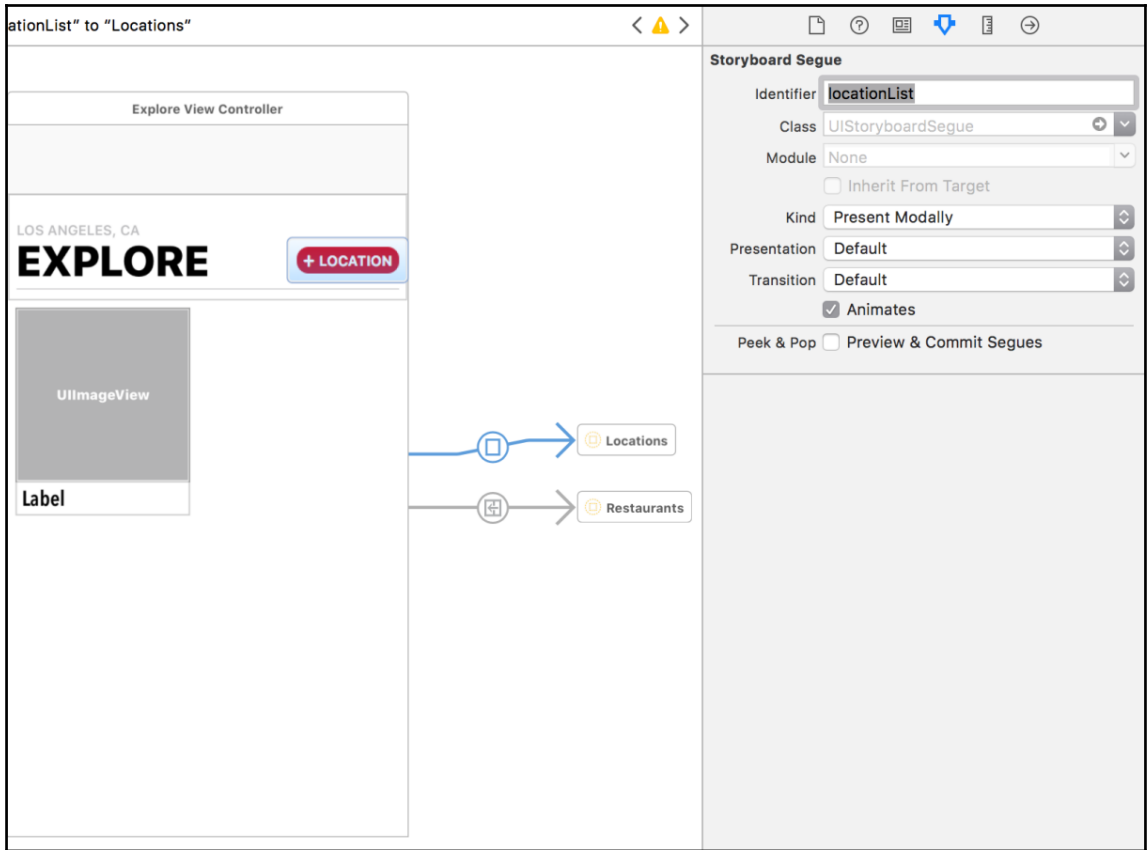


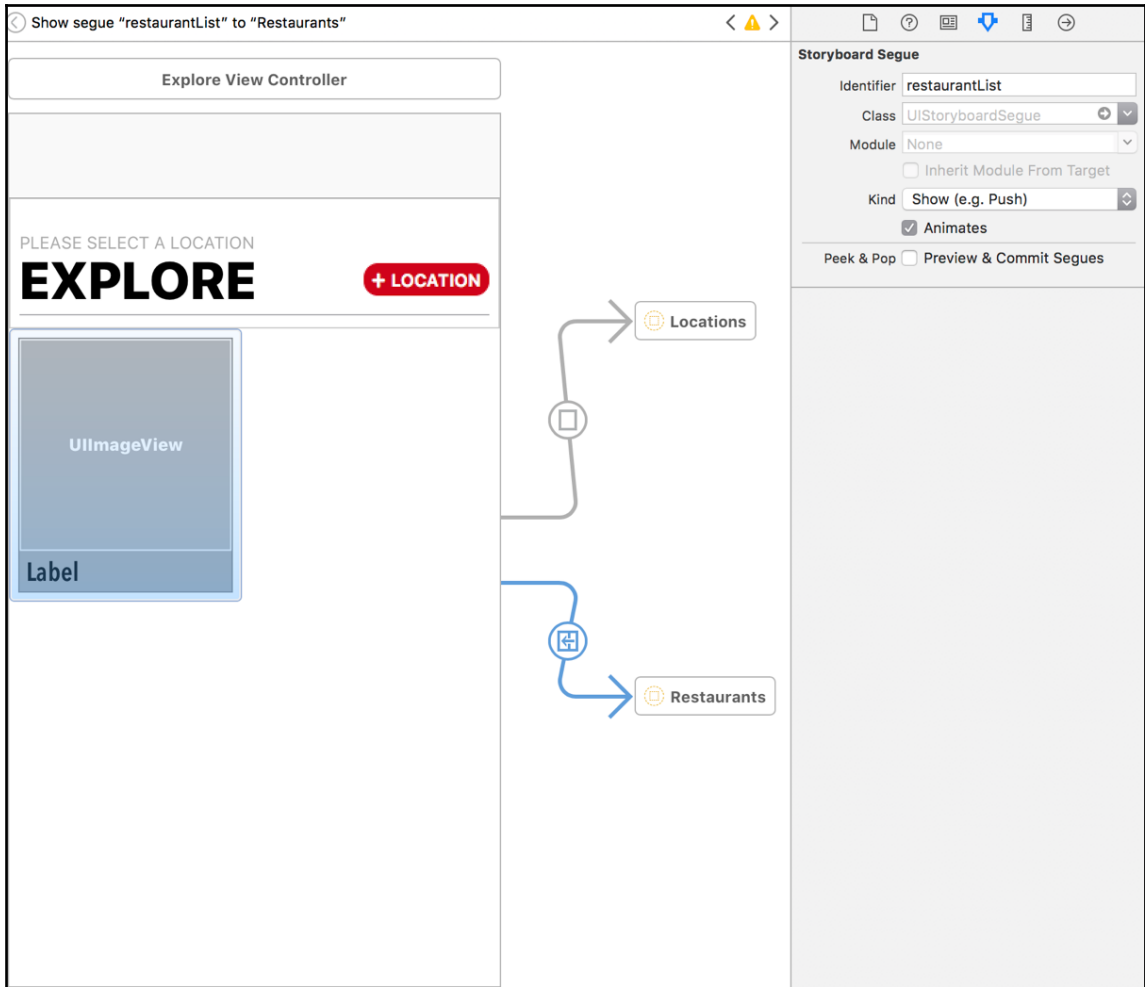




Action Segue
unwindLocationCancelWithSegue:
unwindLocationDoneWithSegue:



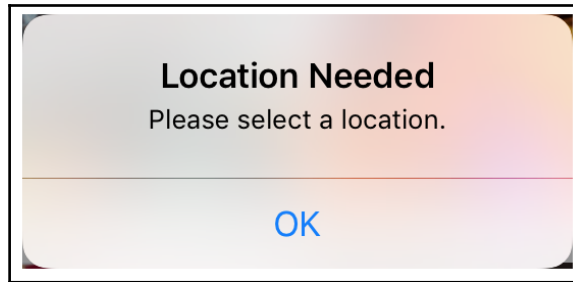




```

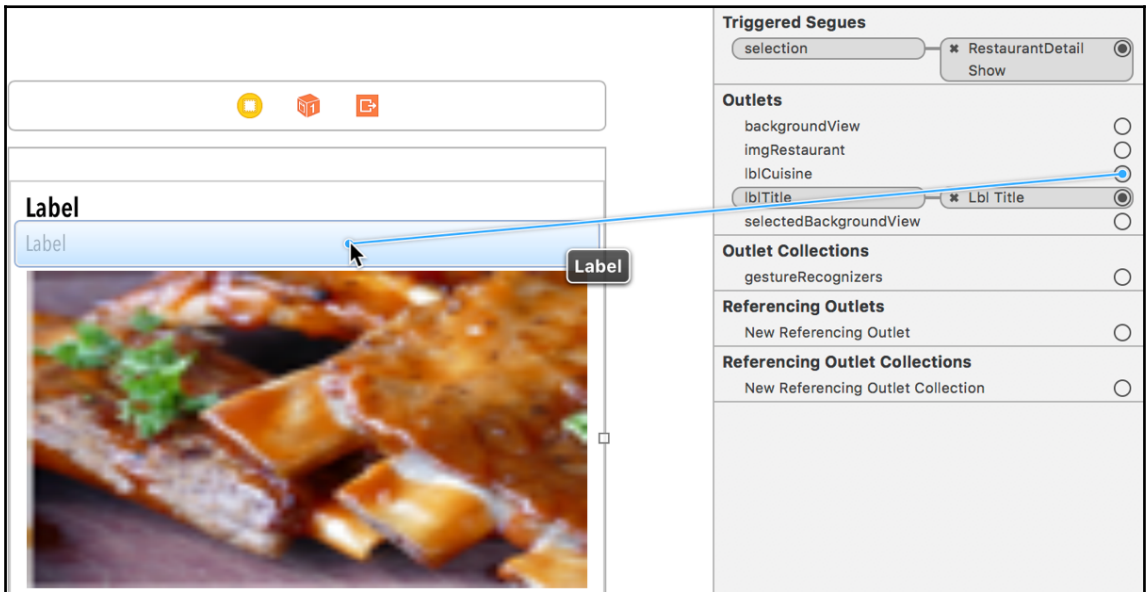
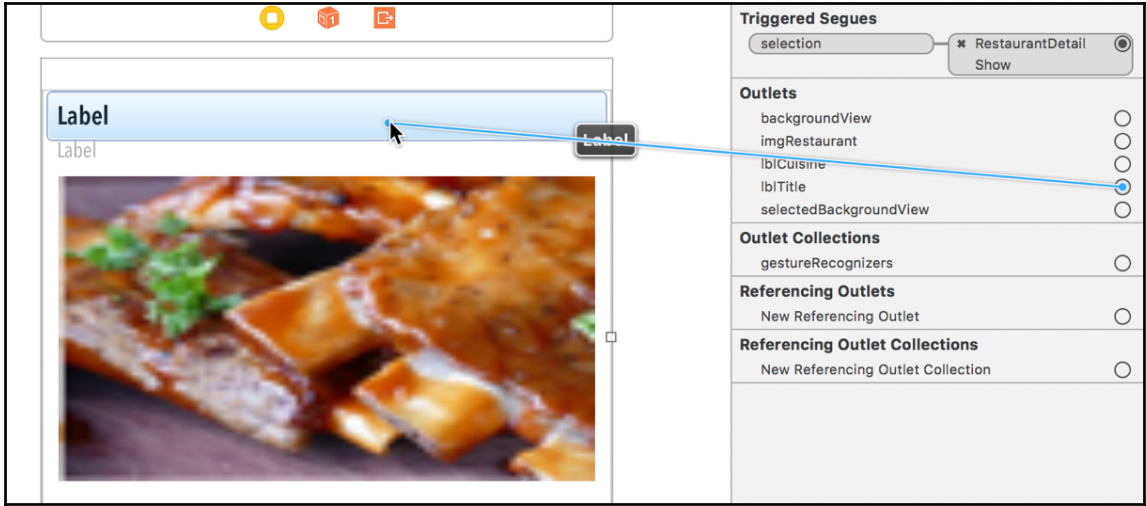
func set(selected cell:UITableViewCell, at indexPath:IndexPath) { A
    B if let city = selectedCity {
        let data = manager.findLocation(by: city) C
        D if data.isFound {
            if indexPath.row == data.position {
                cell.accessoryType = .checkmark
            }
            else { cell.accessoryType = .none }
        }
    }
    else { cell.accessoryType = .none } E
}

```



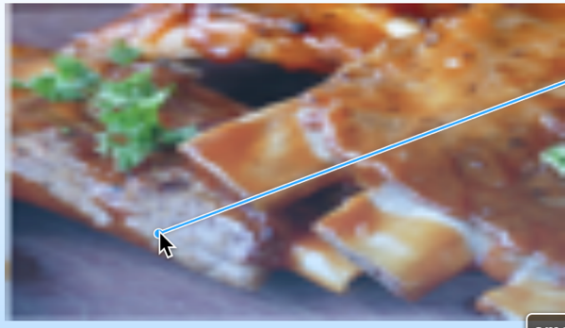
```
selected city Optional(LetsEat.LocationItem(state: Optional("NC"), city: Optional("Charleston")))
selected type Optional("Bistro")
```

```
type Bistro
[[{"state": SC, "city": Charleston, "country": US, "name": Union Provisions, "address": 513 King Street, "lat":
32.790291, "price": 2, "reserve_url": http://www.opentable.com/single.aspx?rid=147475, "long":
-79.93935999999999, "id": 147475, "phone": 8436410821x, "image_url": https://www.opentable.com/img/restimages/
147475.jpg, "mobile_reserve_url": http://mobile.opentable.com/opentable/?restId=147475, "area": South
Carolina, "postal_code": 29403, "cuisines": <__NSArrayI 0x608000232e80>{
{
  cuisine = Pizza;
},
{
  cuisine = Italian;
}
}], [{"state": SC, "city": Charleston, "country": US, "name": McCrady's, "address": 2 Unity Alley, "lat":
32.778, "price": 4, "reserve_url": http://www.opentable.com/single.aspx?rid=3751, "long": -79.92700000000001,
"id": 3751, "phone": 8435770025x1, "image_url": https://www.opentable.com/img/restimages/3751.jpg,
"mobile_reserve_url": http://mobile.opentable.com/opentable/?restId=3751, "area": South Carolina,
"postal_code": 29401, "cuisines": <__NSArrayI 0x6080002311c0>{
{
```



Label

Label



american

Available Times

7:30pm 7:30pm 7:30pm

Triggered Segues

selection * RestaurantDetail Show

Outlets

backgroundView

imgRestaurant

lblCuisine * Lbl Cuisine

lblTitle * Lbl Title

selectedBackgroundView

Outlet Collections

gestureRecognizers

Referencing Outlets

New Referencing Outlet

Referencing Outlet Collections

New Referencing Outlet Collection

```

import Foundation

class RestaurantDataManager {

    private var items:[RestaurantItem] = [] — A
    private var restaurants:[RestaurantItem] = [] — B

    func fetch(by location:String, withFilter:String="All", completionHandler:() -> Swift.Void) {
        var restaurants:[RestaurantItem] = []

        for restaurant in RestaurantAPIManager.loadJSON(file: location) { — D
            restaurants.append(RestaurantItem(dict: restaurant))
        }

        if withFilter != "All" {
            items = restaurants.filter({ $0.cuisines.contains(withFilter) }) — E
        }
        else { items = restaurants }

        completionHandler() — F
    }

    G func numberOfItems() -> Int {
        return items.count
    }

    H func restaurantItem(at index:IndexPath) -> RestaurantItem {
        return items[index.item]
    }
}

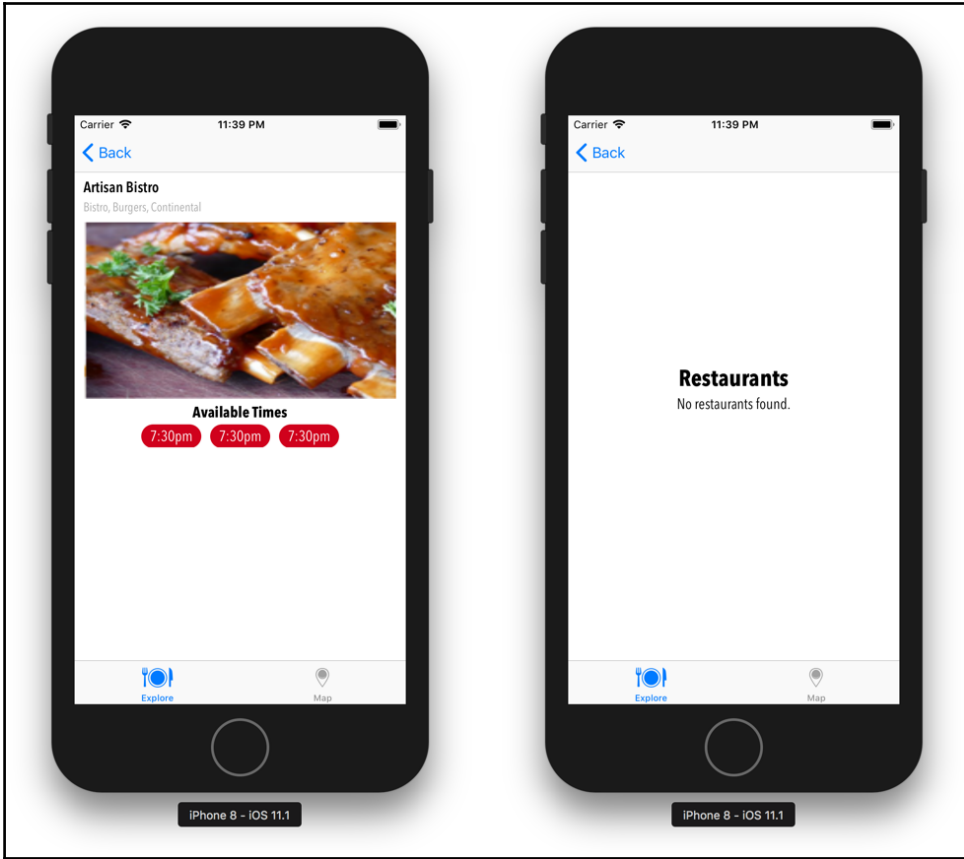
```

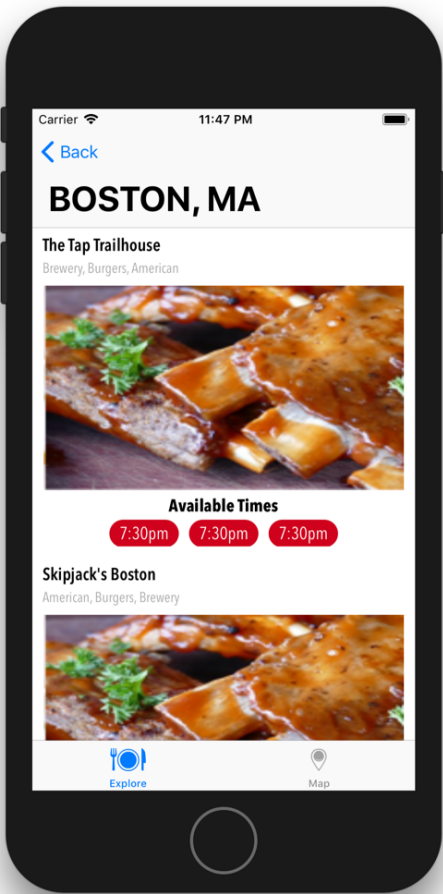
```

M Void fetch(by: String, completionHandler: () -> Void)
M Void fetch(by: String, withFilter: String, completionHandler: () -> Void)
M Int numberOfItems()
M RestaurantItem restaurantItem(at: IndexPath)

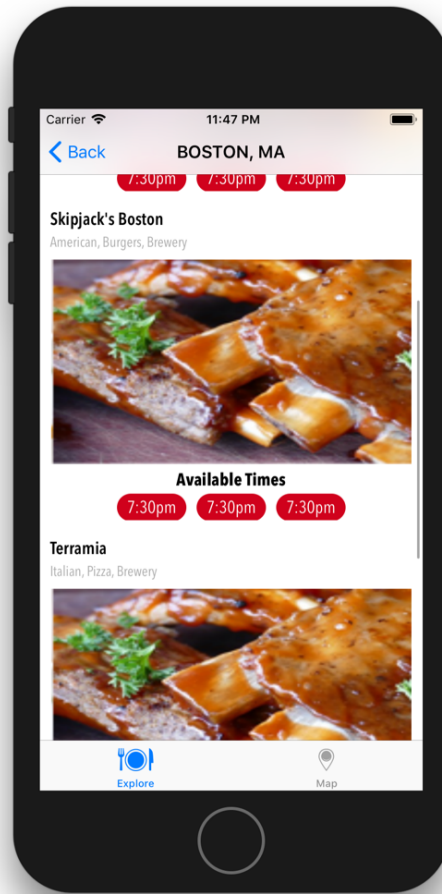
```





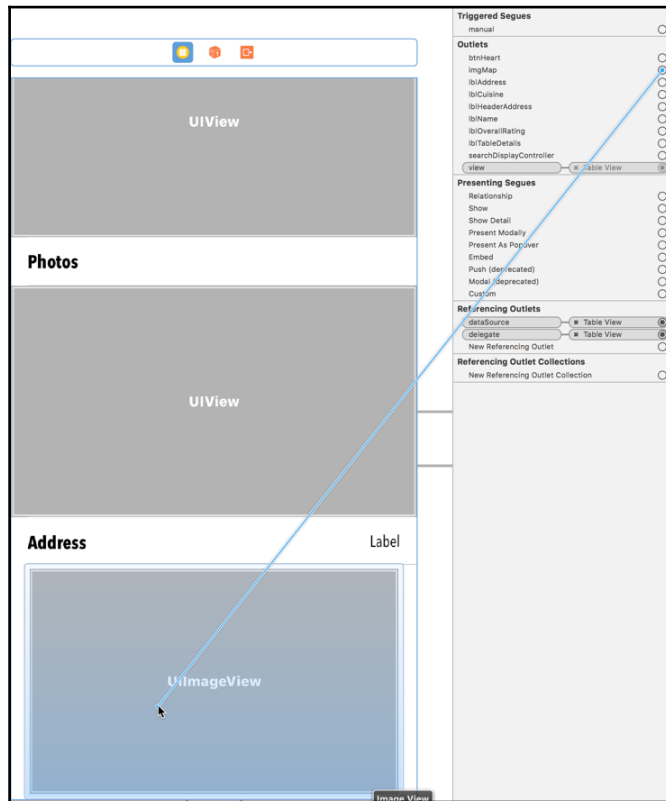


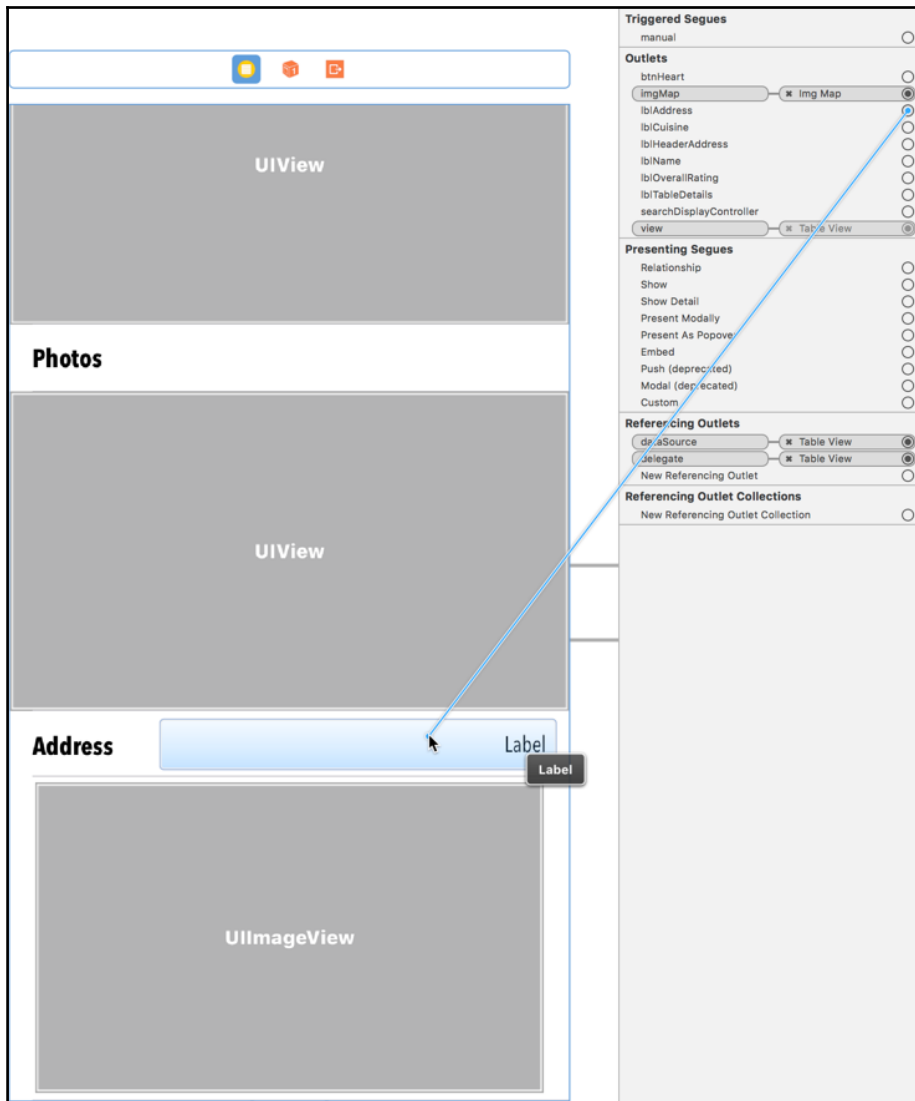
iPhone 8 - iOS 11.1

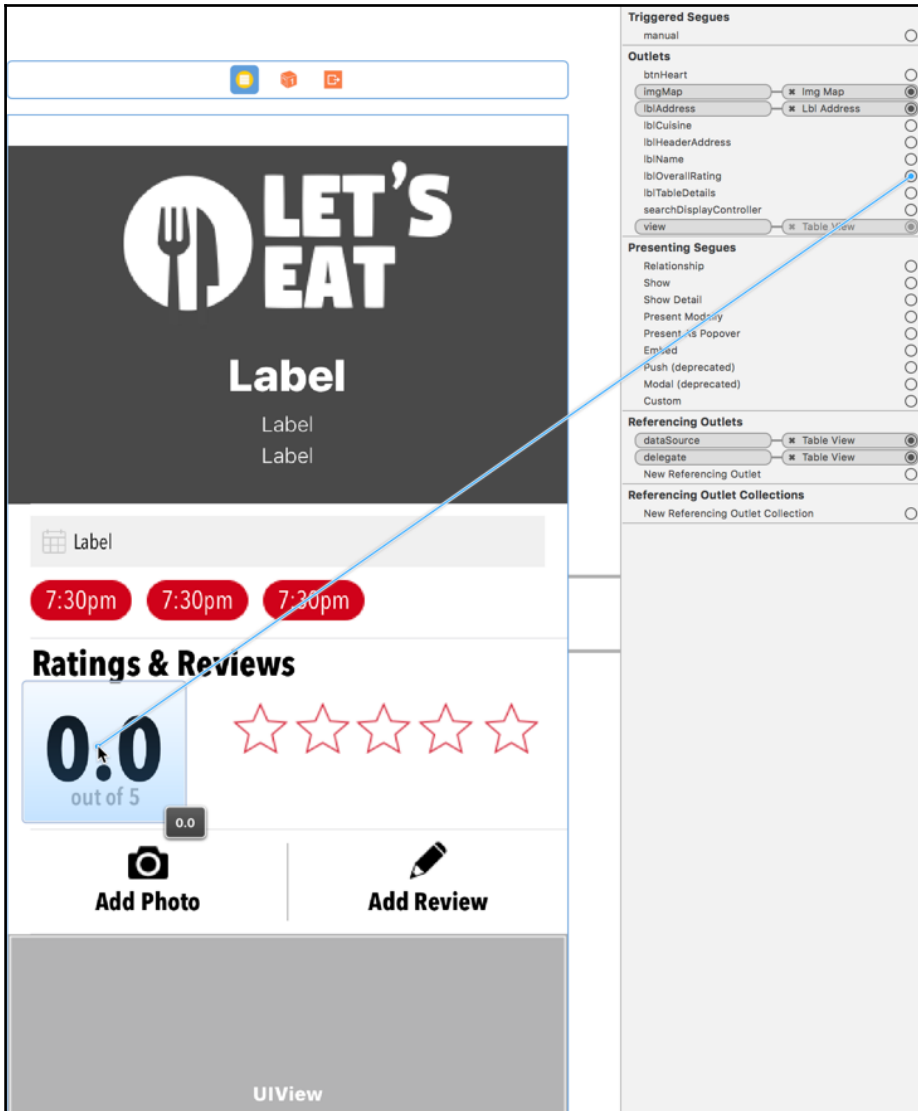


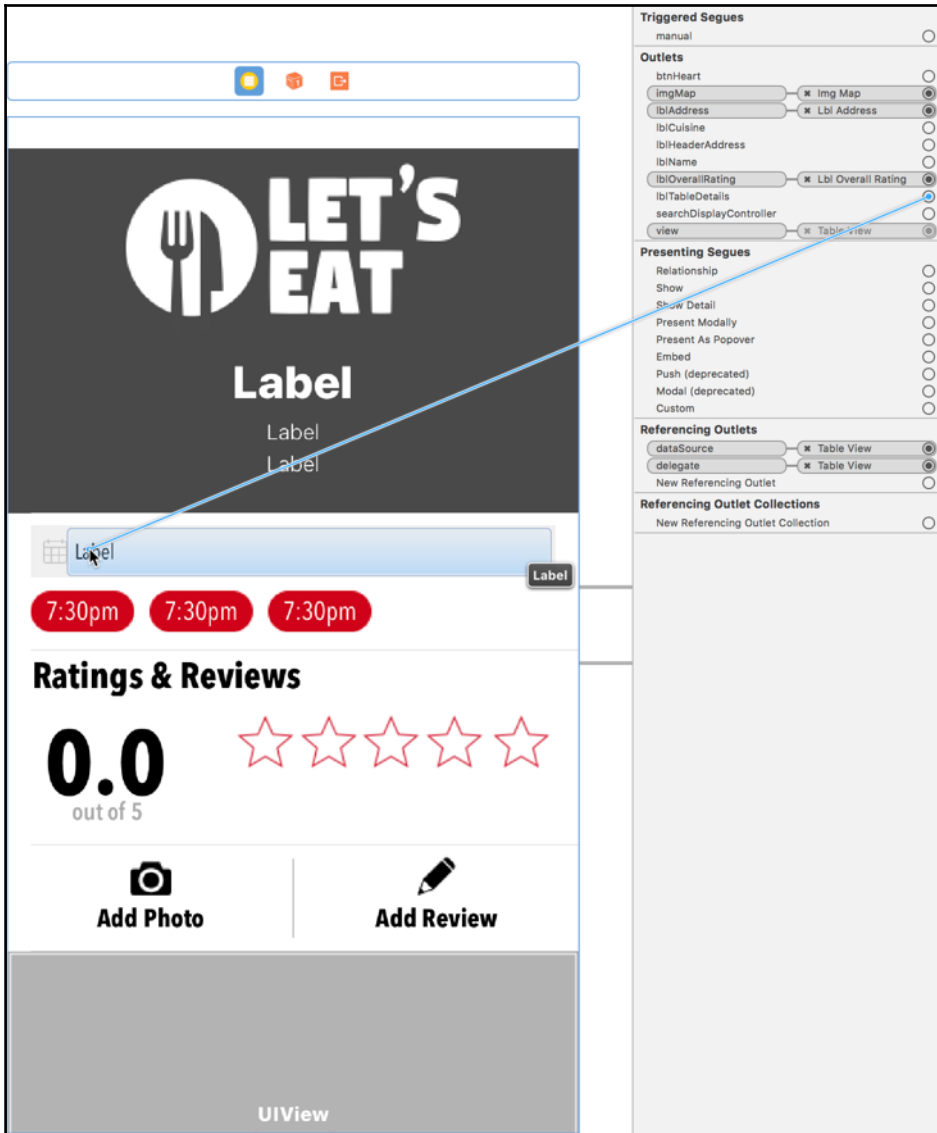
iPhone 8 - iOS 11.1

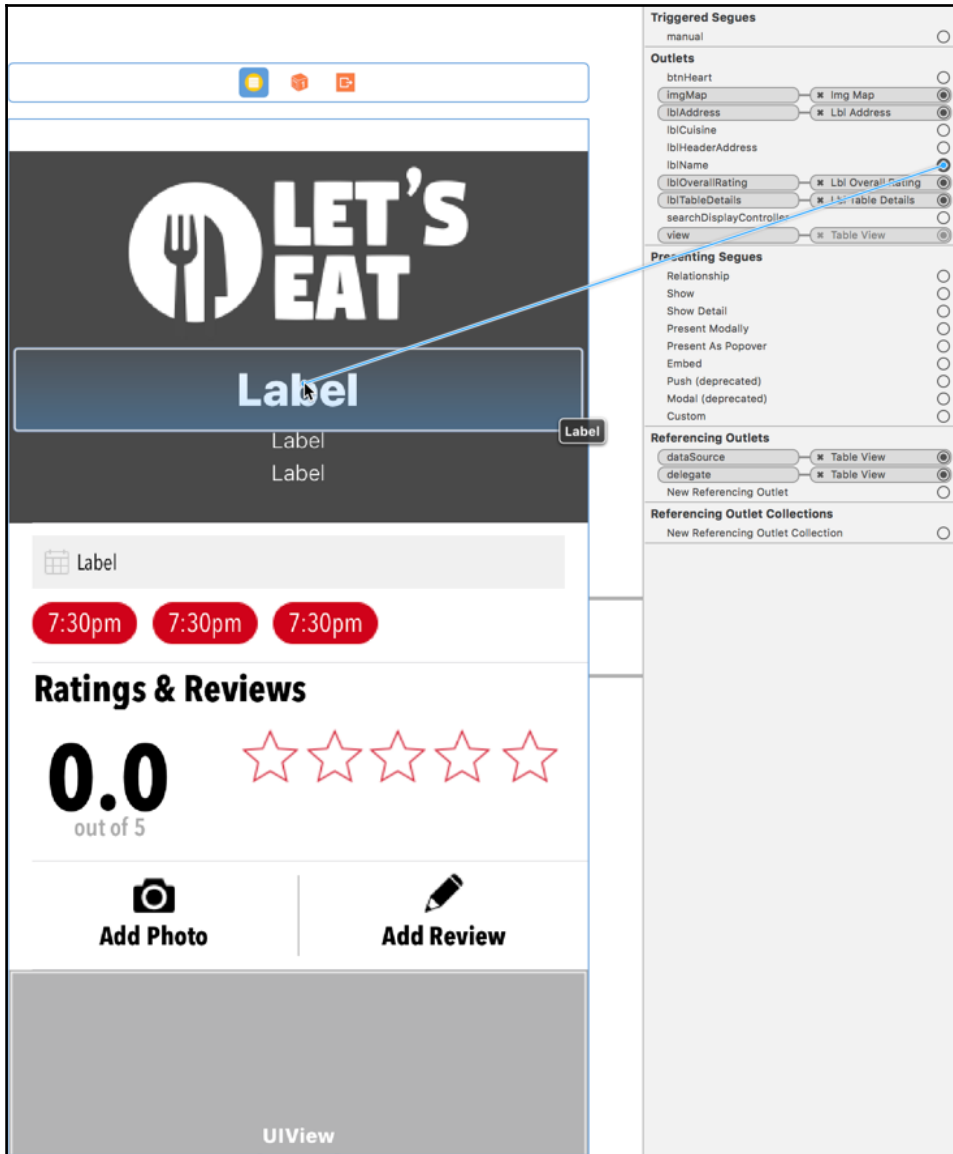
Chapter 18: Displaying Data in Restaurant Detail

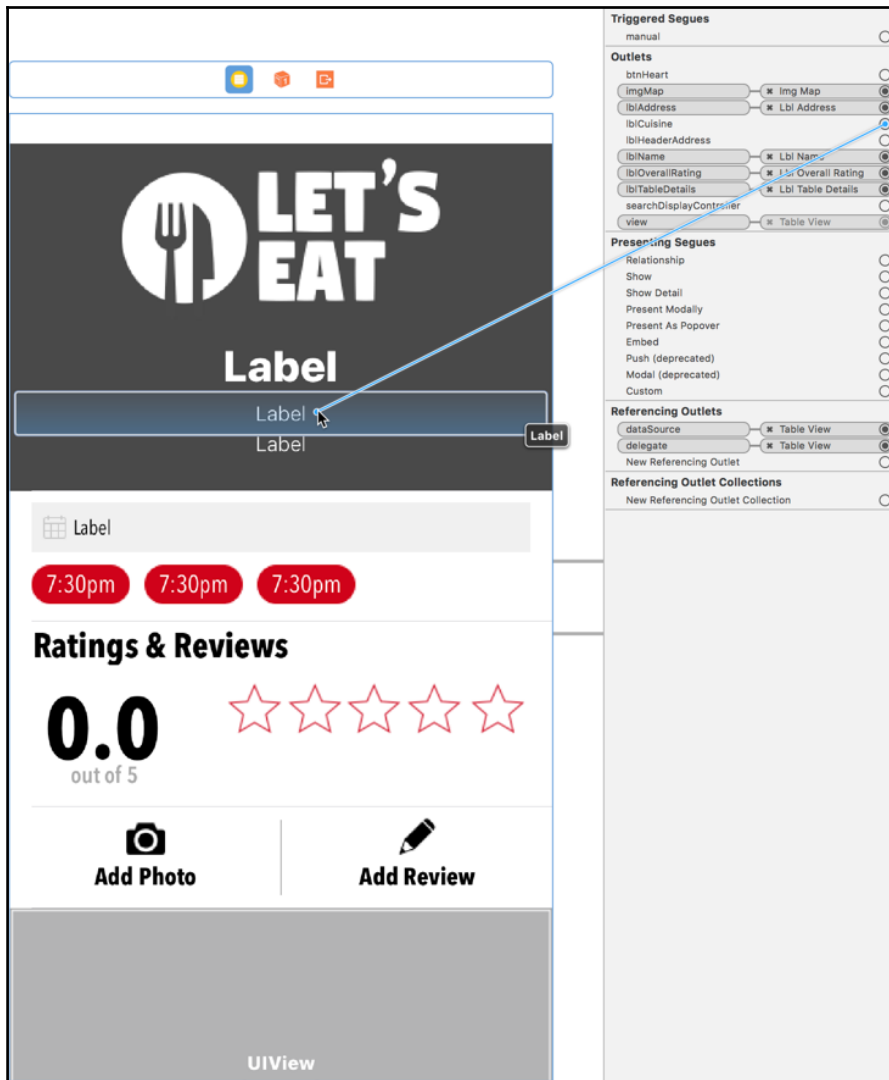


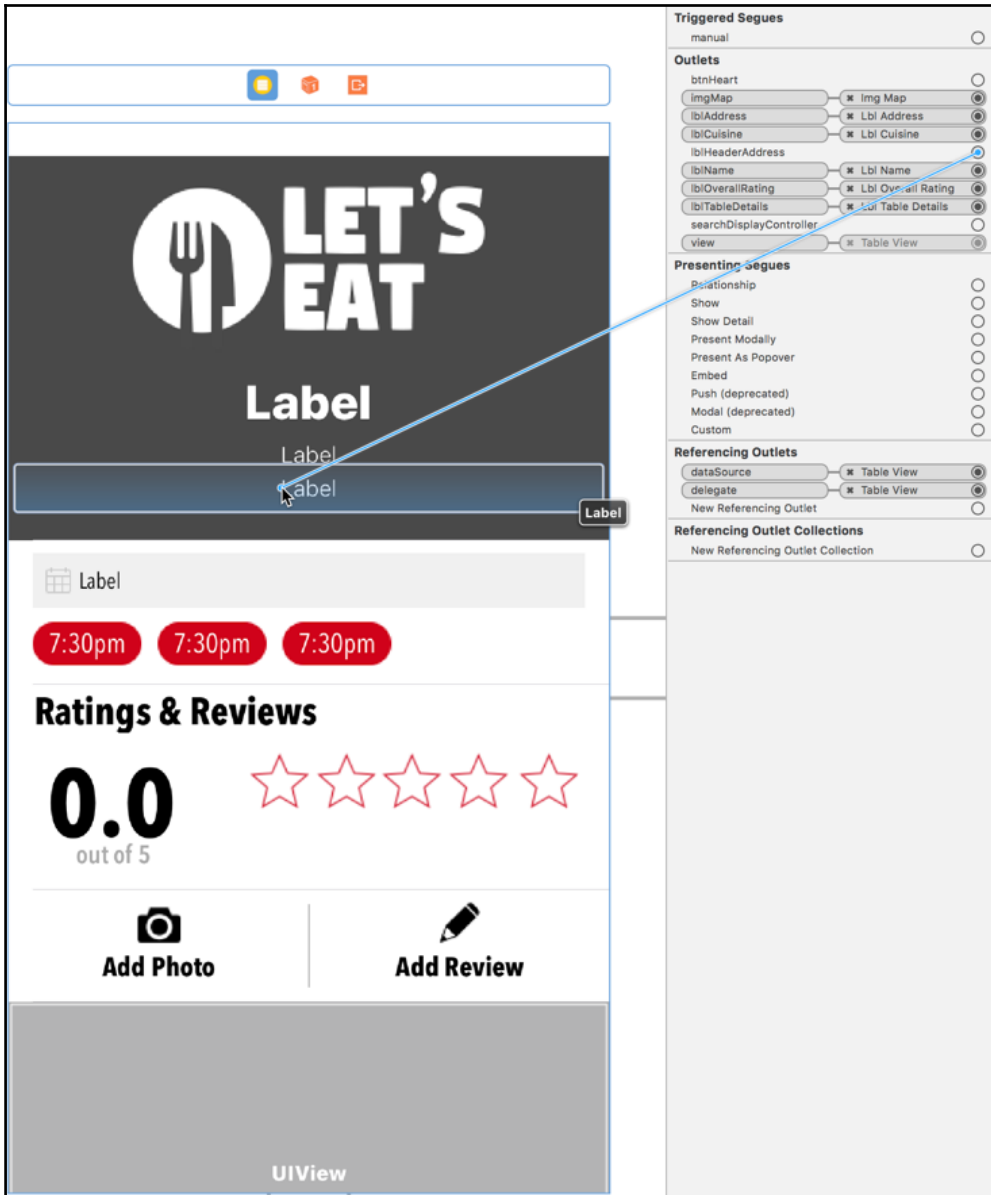


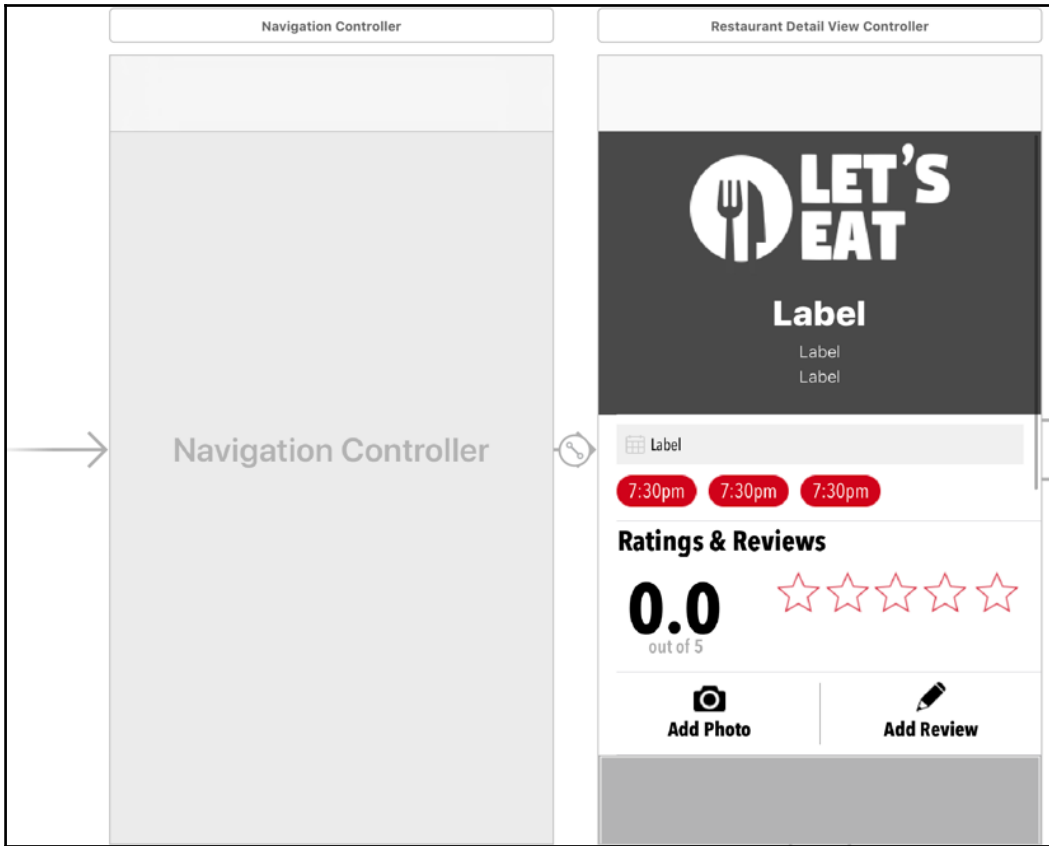


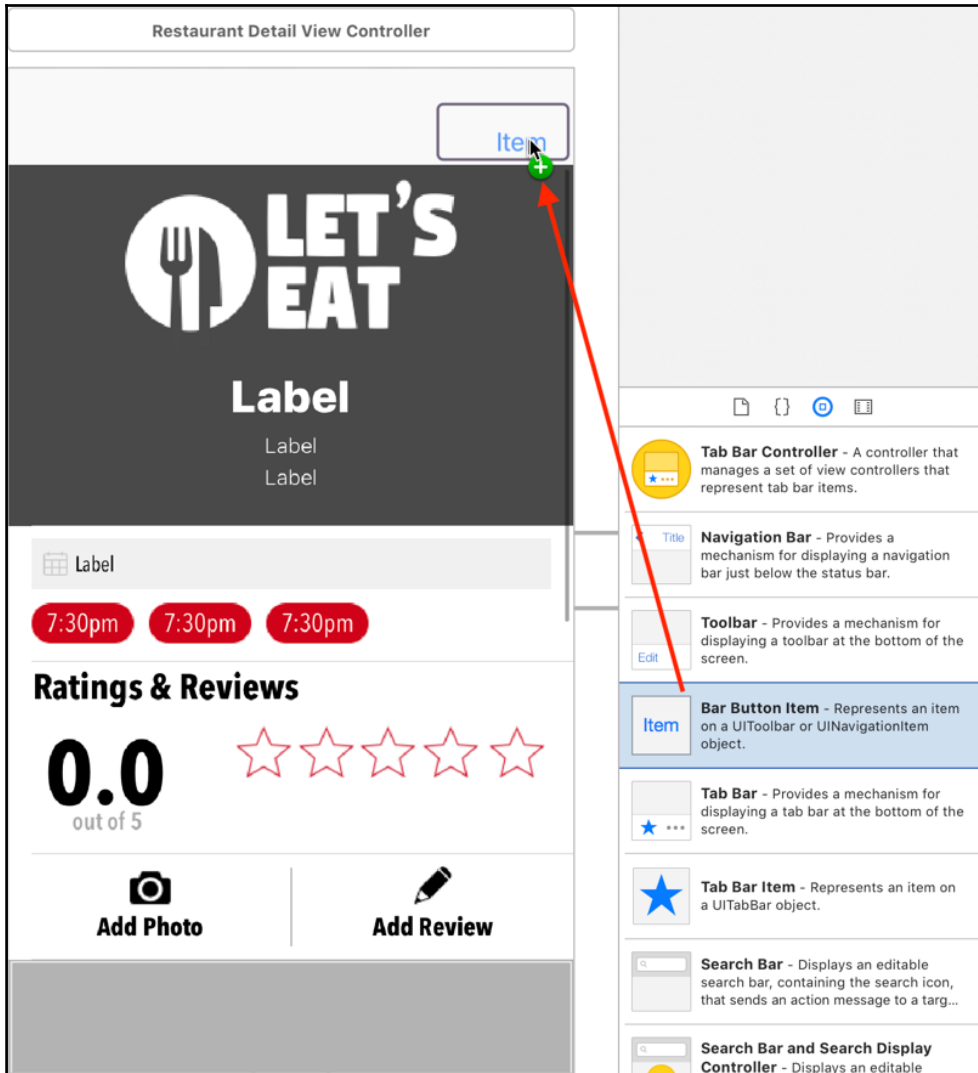


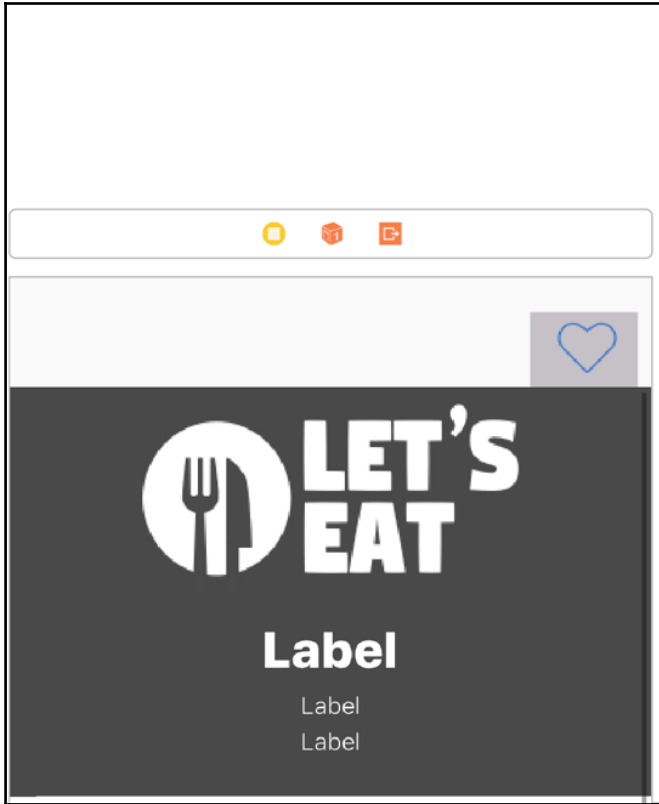












The image displays a mobile application interface. At the top, there is a navigation bar with three icons: a yellow circle, a red heart, and a red square with a white plus sign. Below the navigation bar is a main content area with a dark background. On the left side of this area is a circular logo containing a white fork and knife. To the right of the logo, the text "LET'S EAT" is written in large, bold, white capital letters. Below this text, the word "Label" is written in a smaller, white font. Underneath "Label", there are two more lines of text, each labeled "Label".

Bar Button Item

Style

System Item

+ Tint

Drag and Drop Spring Loaded

Bar Item

Title

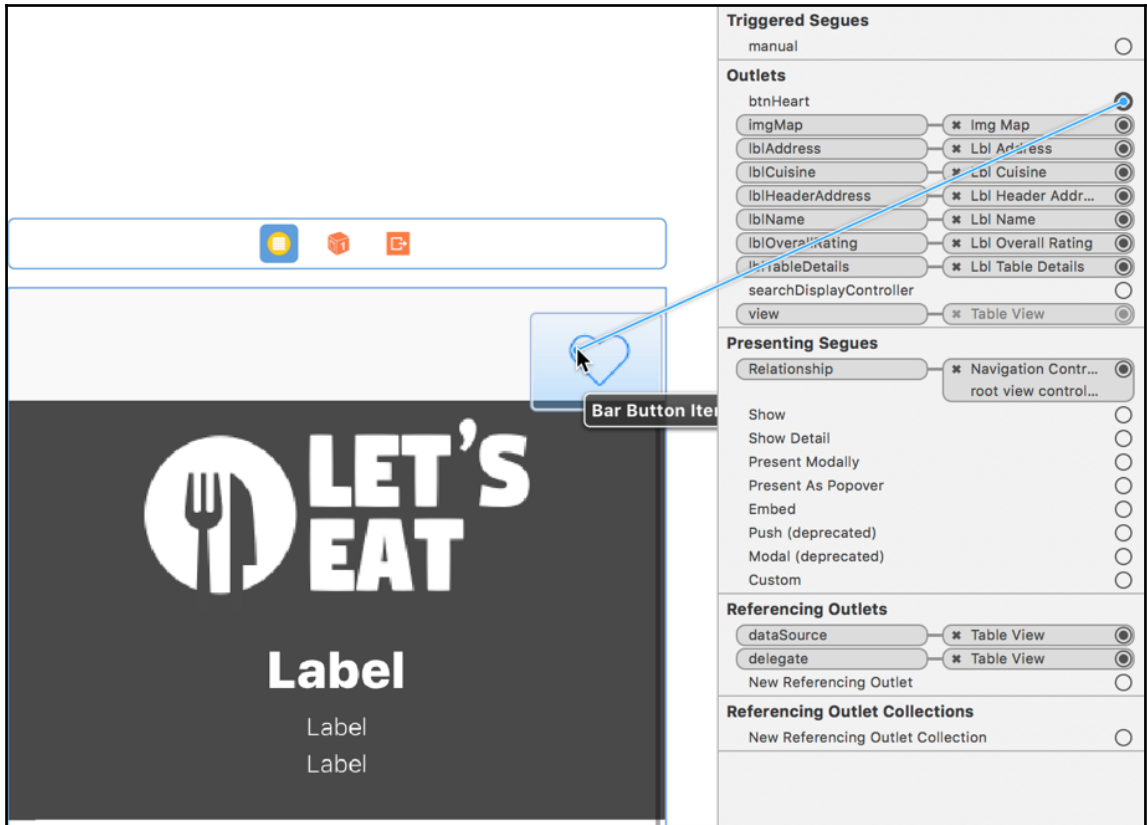
Image

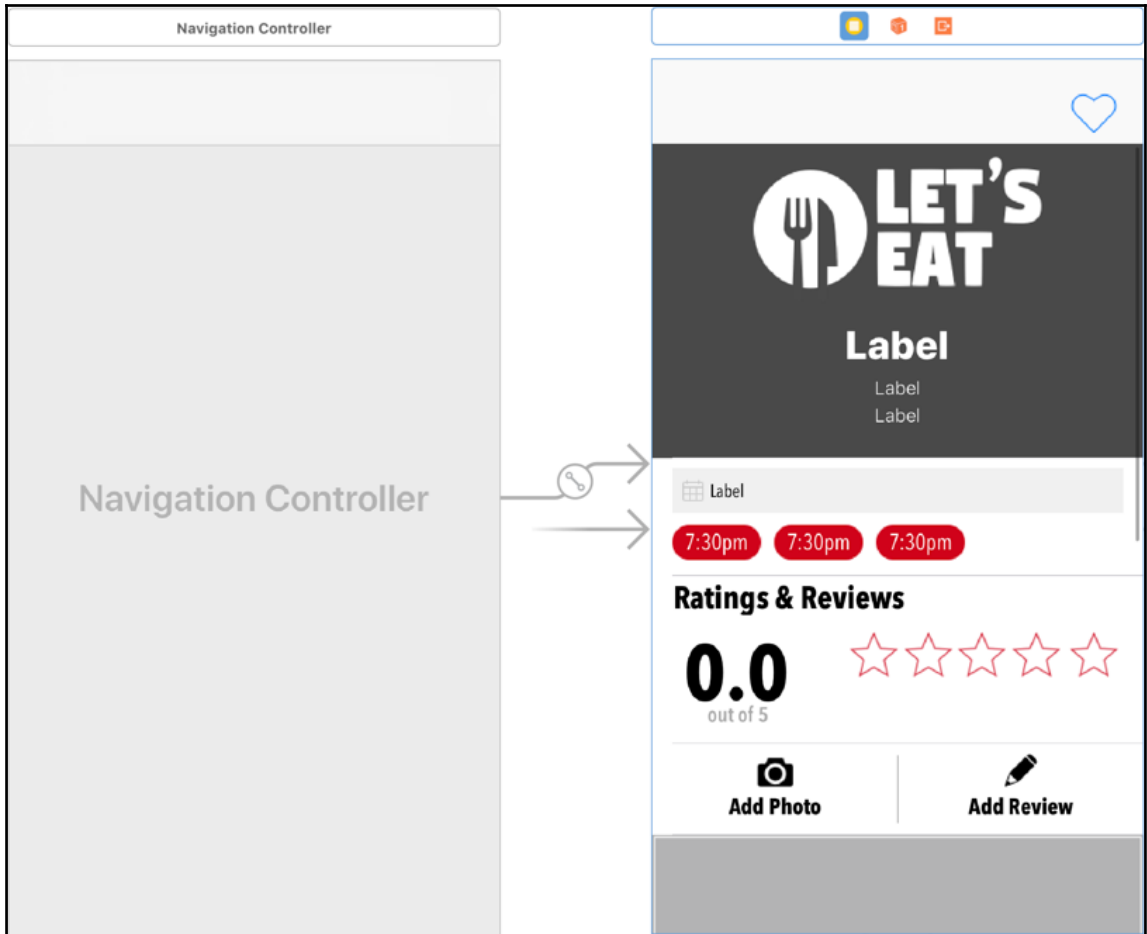
Landscape

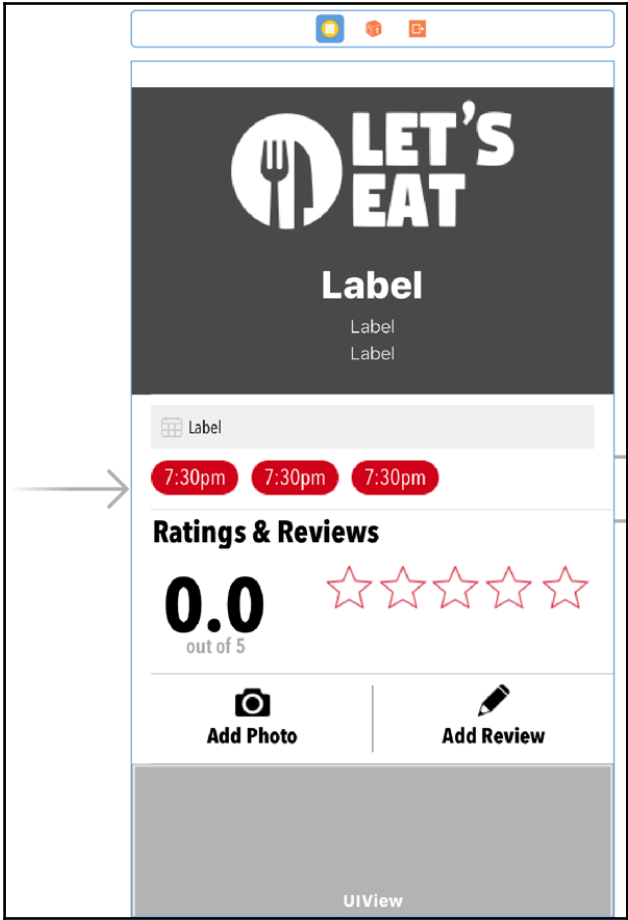
Accessibility

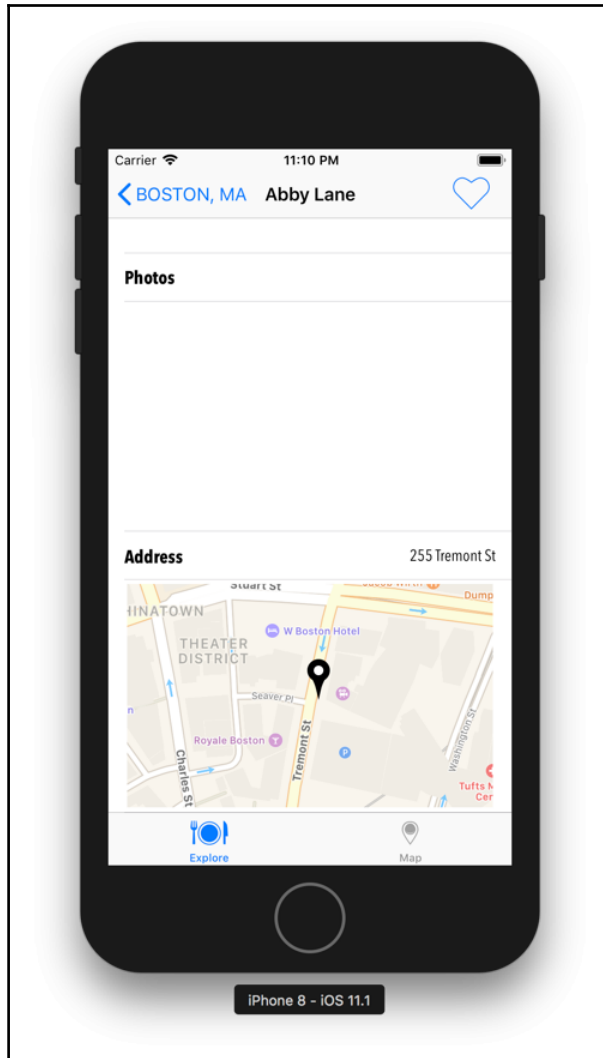
Tag

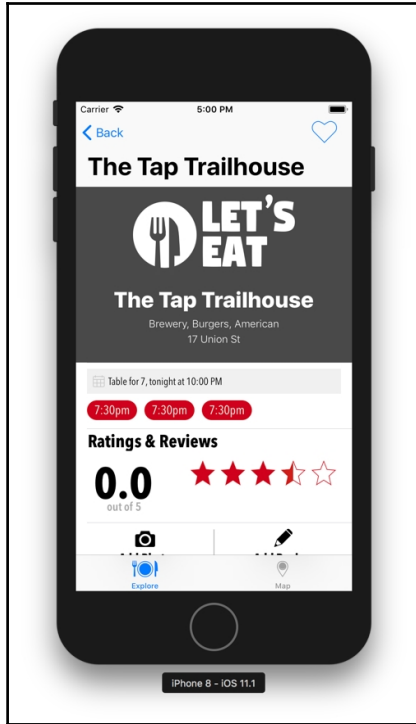
Enabled

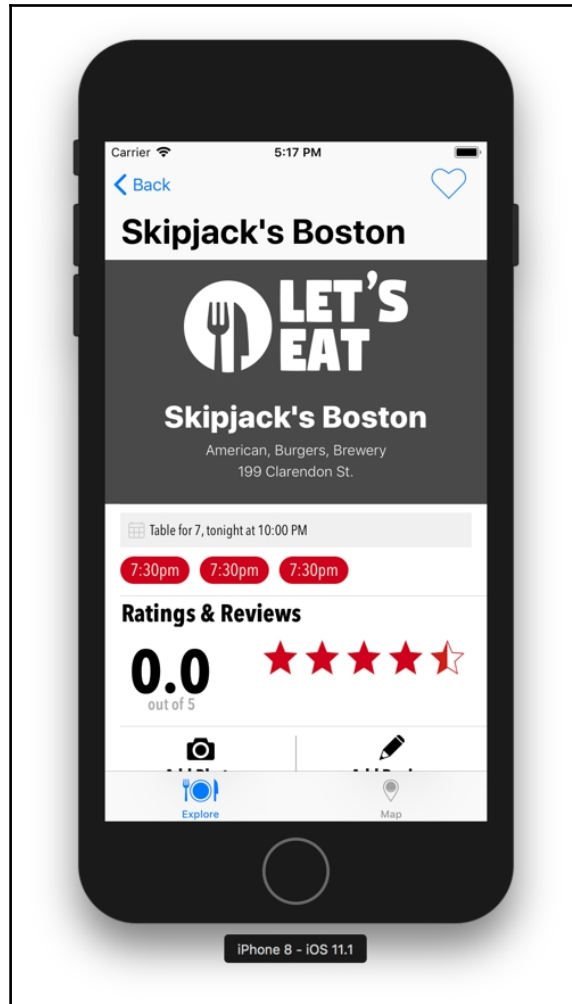


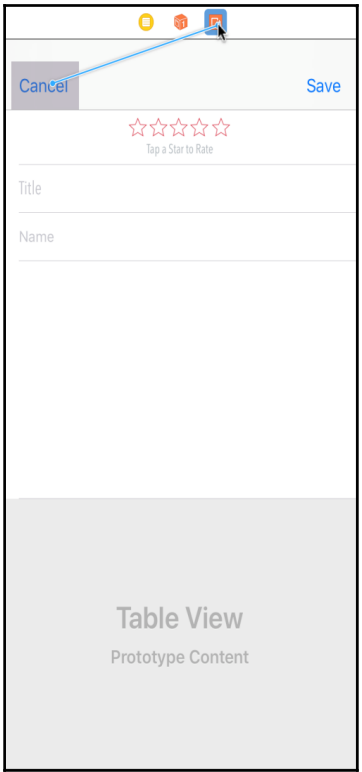


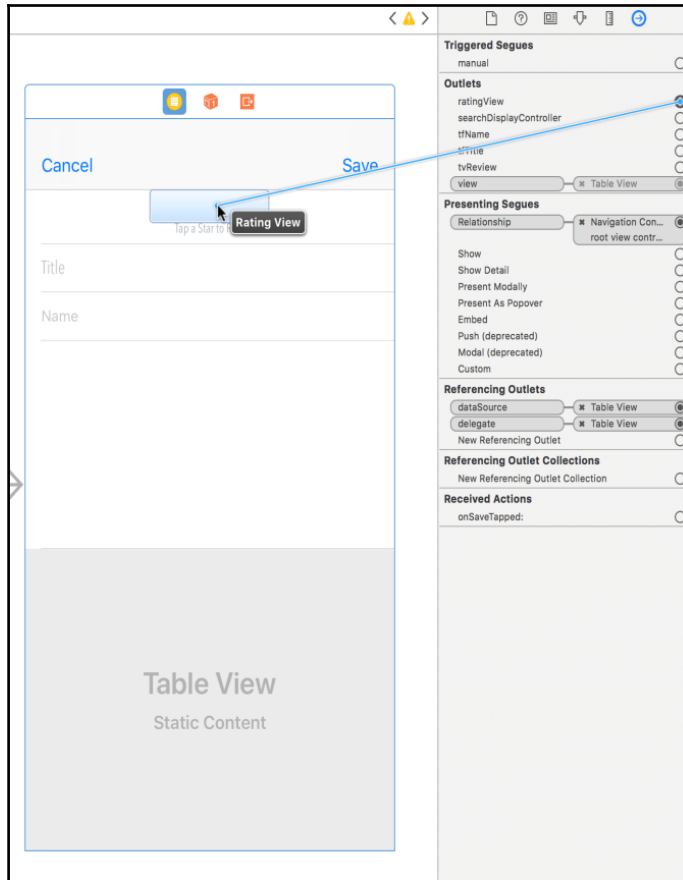


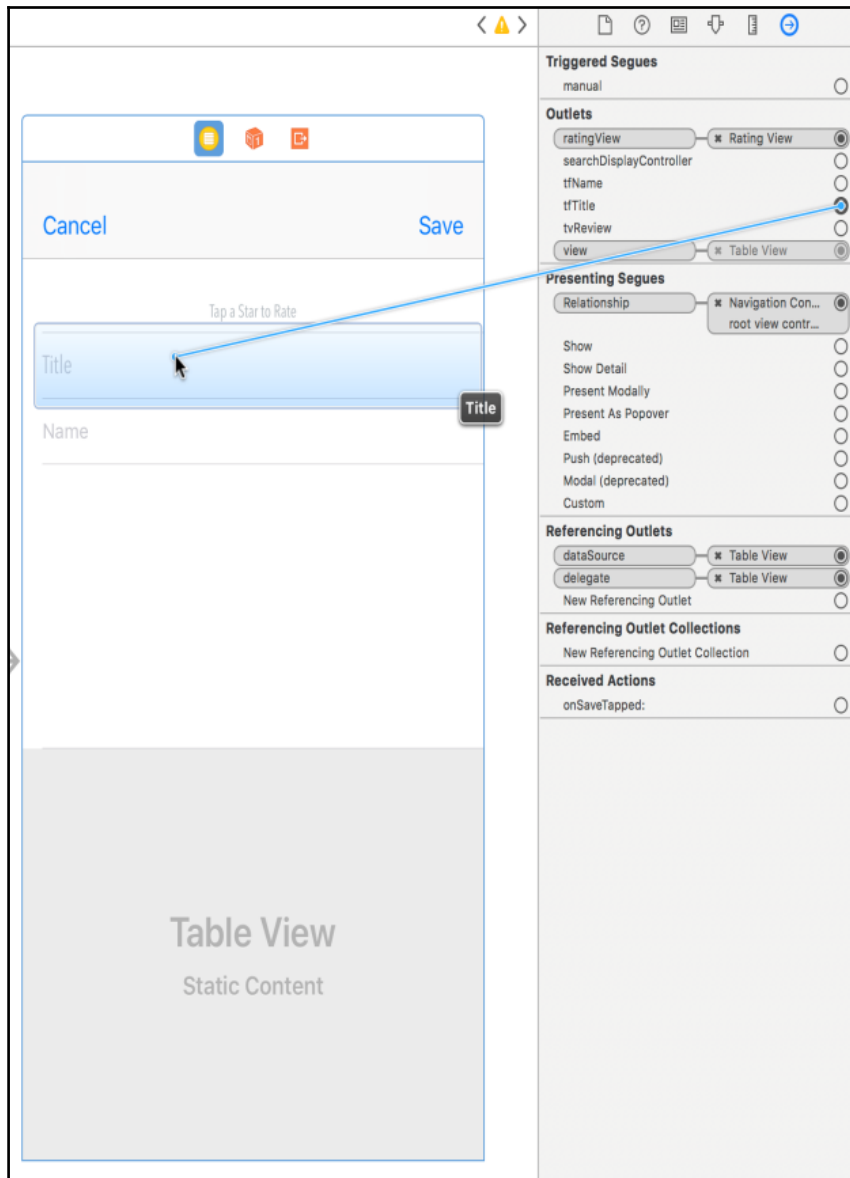


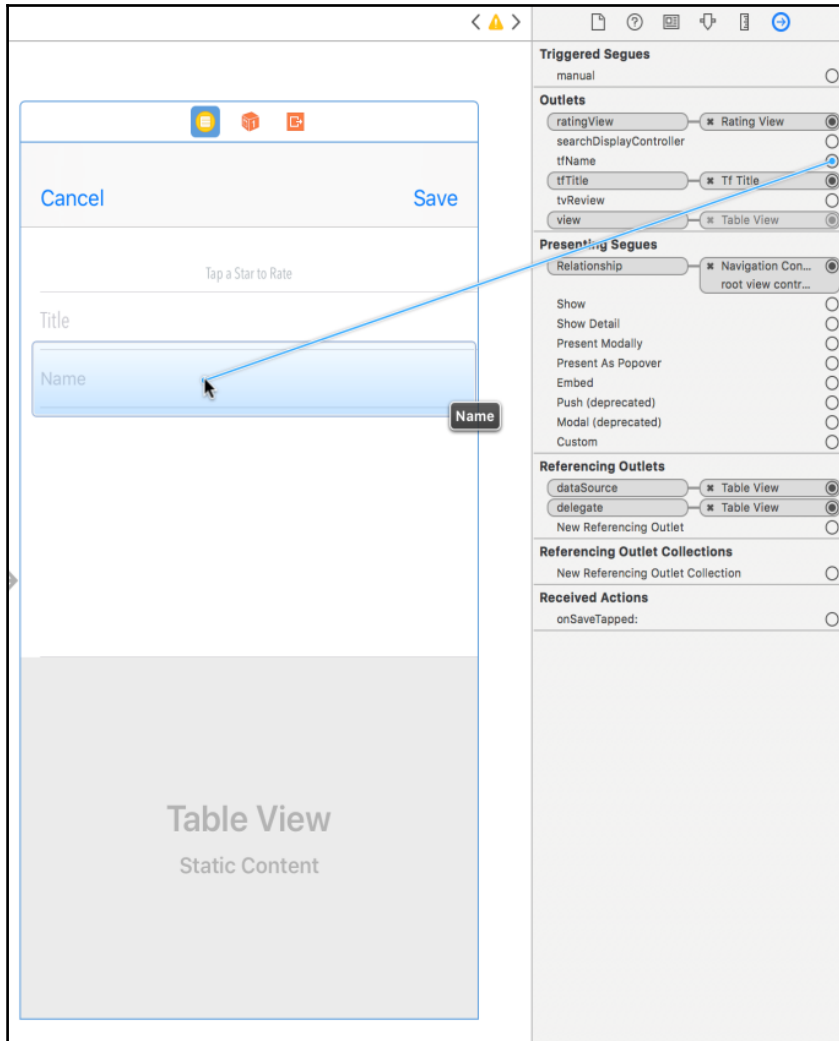


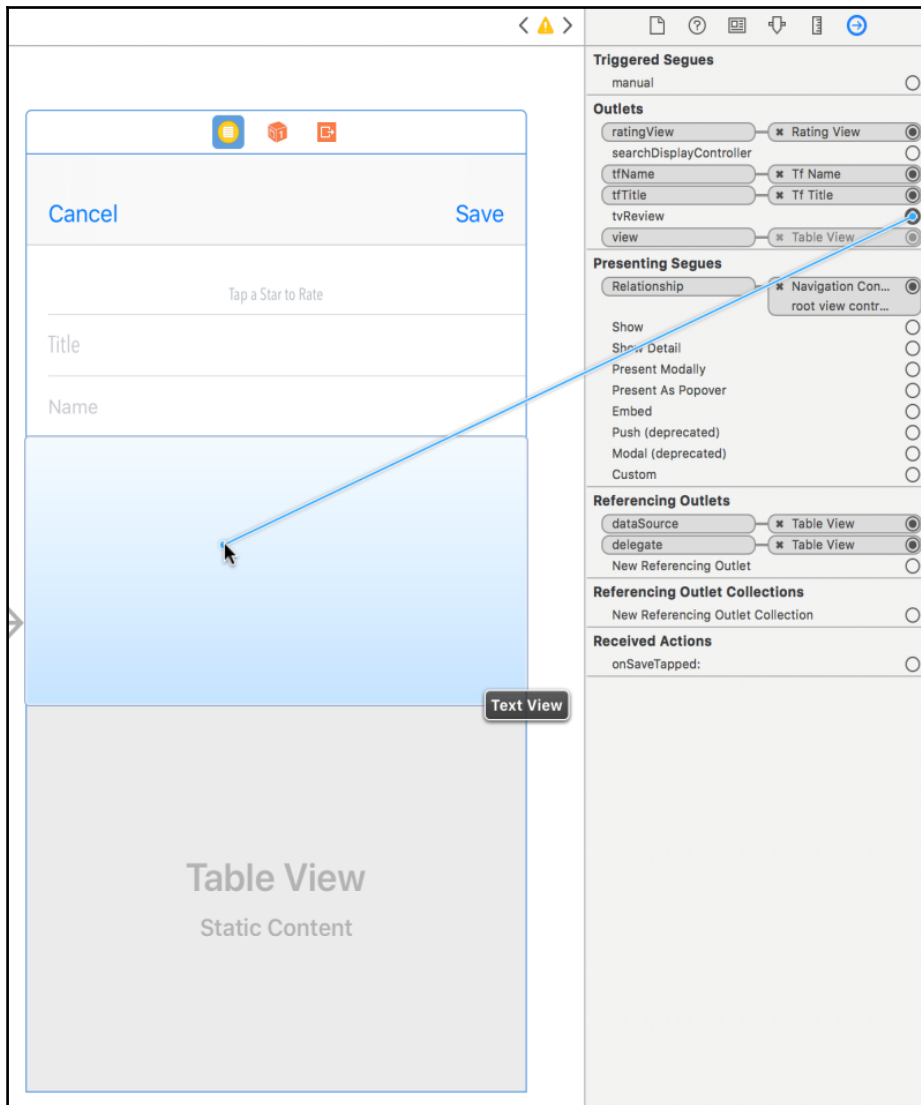


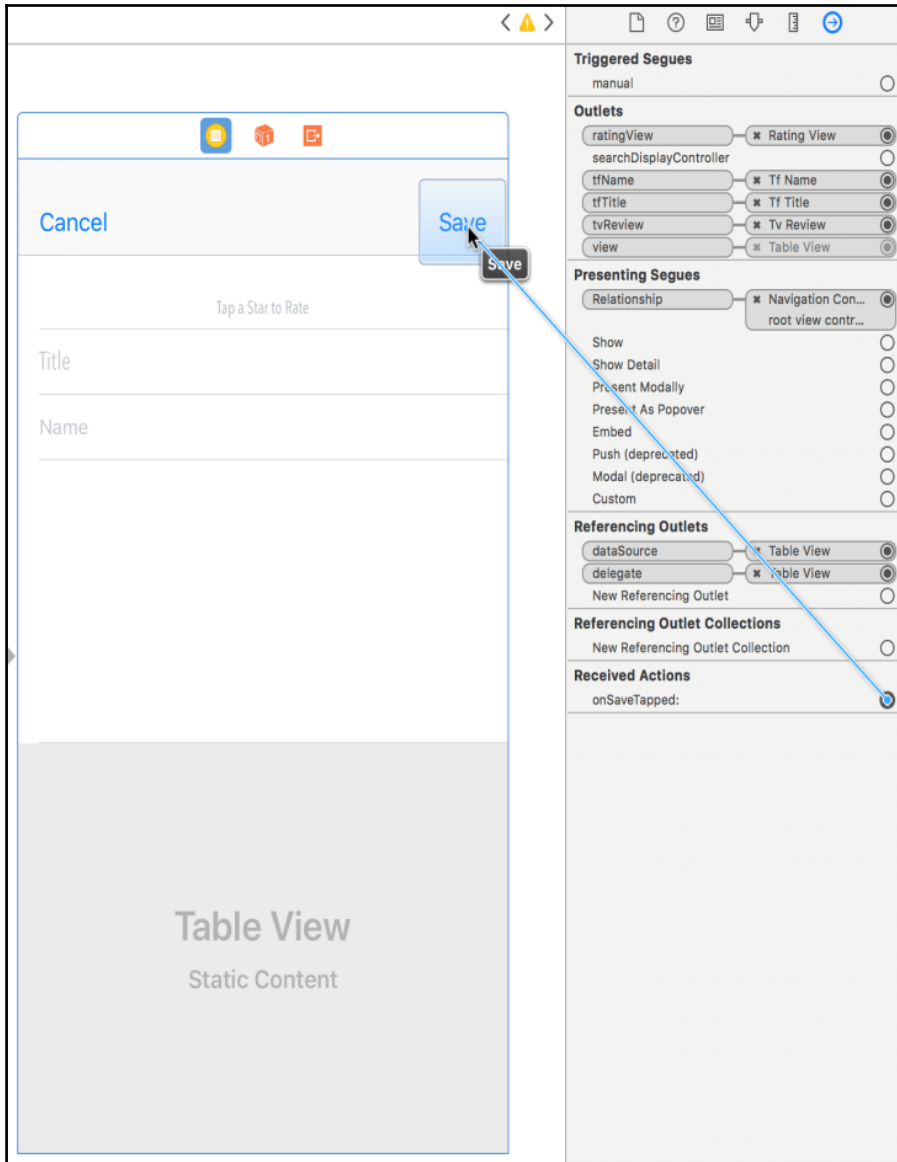






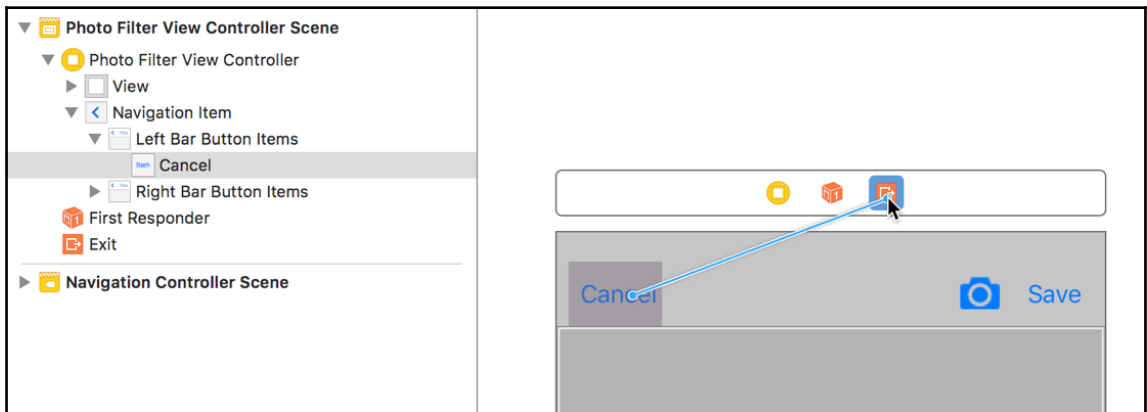




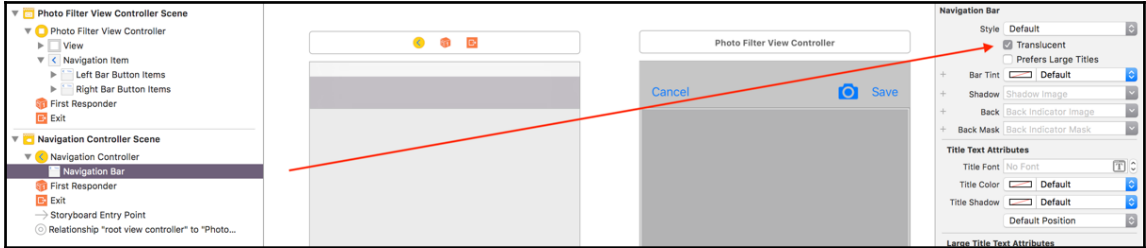


Chapter 20: Working with Photo Filters

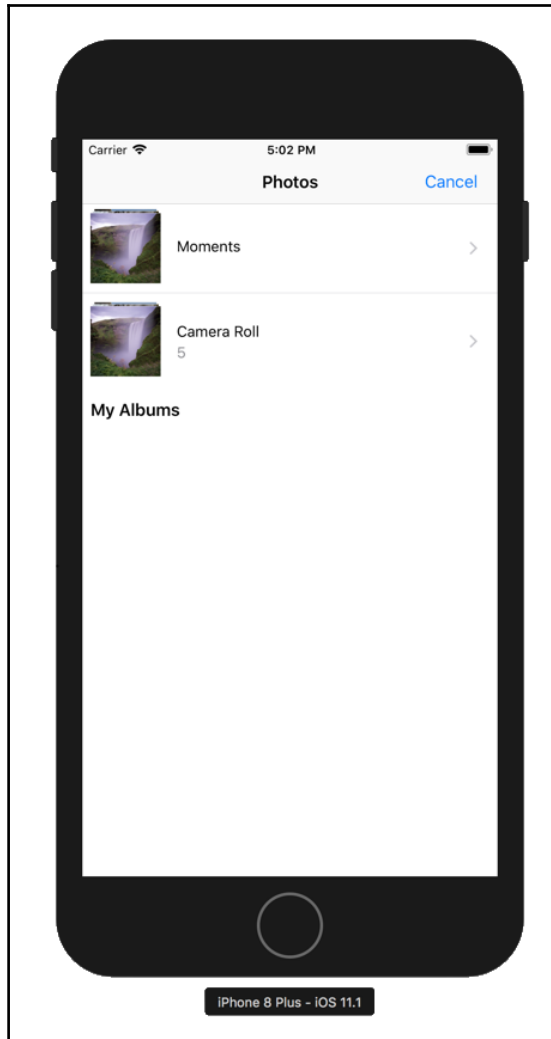
Key	Type	Value
▼ Root	Array	(10 items)
▼ Item 0	Dictionary	(2 items)
filter	String	None
name	String	None
▼ Item 1	Dictionary	(2 items)
filter	String	CIPhotoEffectMono
name	String	Mono
▼ Item 2	Dictionary	(2 items)
filter	String	CISepiaTone
name	String	Sepia
▼ Item 3	Dictionary	(2 items)
filter	String	CIPhotoEffectTonal
name	String	Tonal
▼ Item 4	Dictionary	(2 items)
filter	String	CIPhotoEffectNoir
name	String	Noir
▼ Item 5	Dictionary	(2 items)
filter	String	CIPhotoEffectFade
name	String	Fade
▼ Item 6	Dictionary	(2 items)
filter	String	CIPhotoEffectChrome
name	String	Chrome
▼ Item 7	Dictionary	(2 items)
filter	String	CIPhotoEffectProcess
name	String	Process
▼ Item 8	Dictionary	(2 items)
filter	String	CIPhotoEffectTransfer
name	String	Transfer
▼ Item 9	Dictionary	(2 items)
filter	String	CIPhotoEffectInstant
name	String	Instant

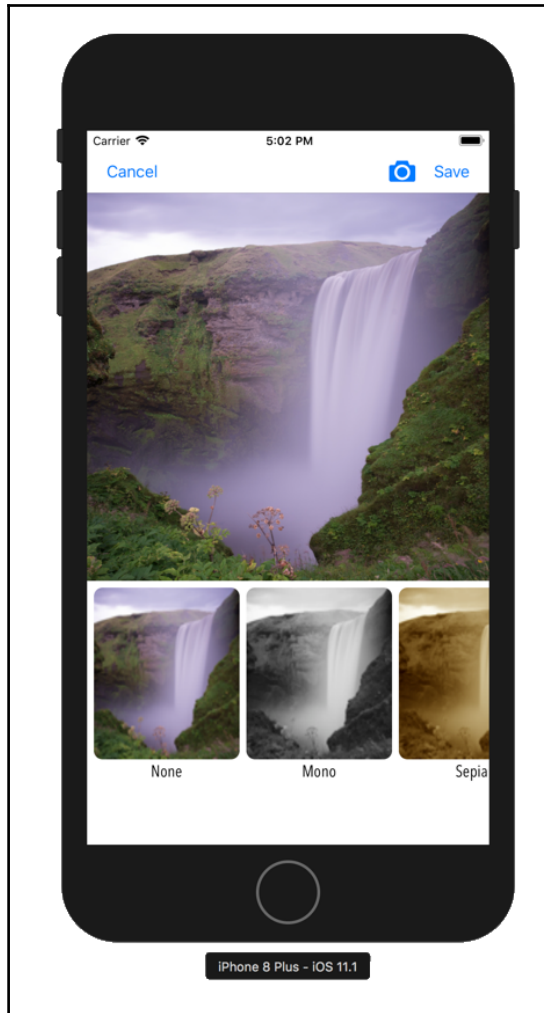


Action Segue
 unwindLocationCancelWithSegue:
 unwindLocationDoneWithSegue:
 unwindReviewCancelWithSegue:

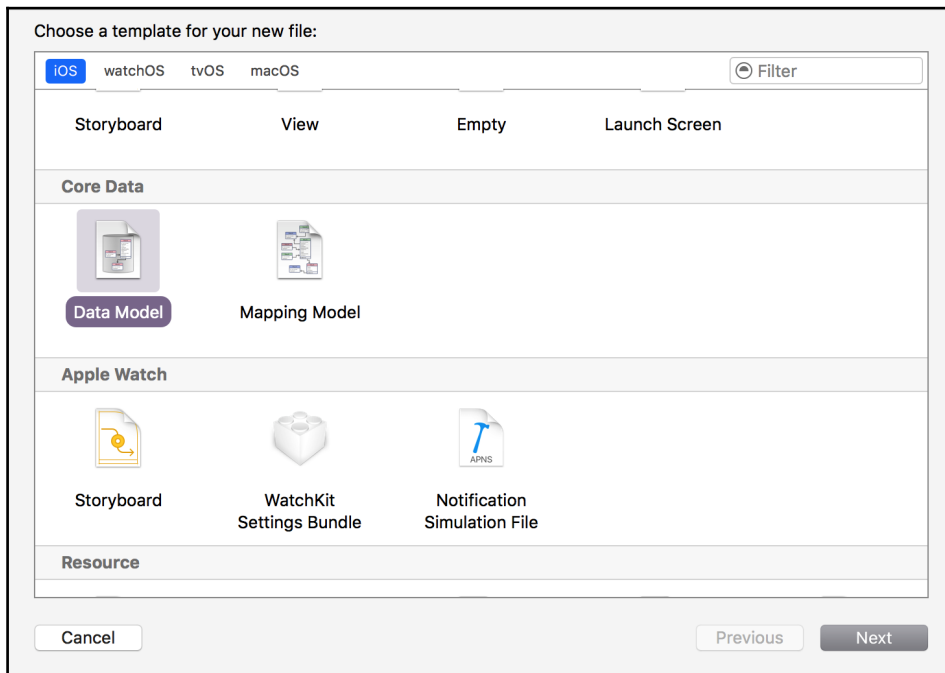
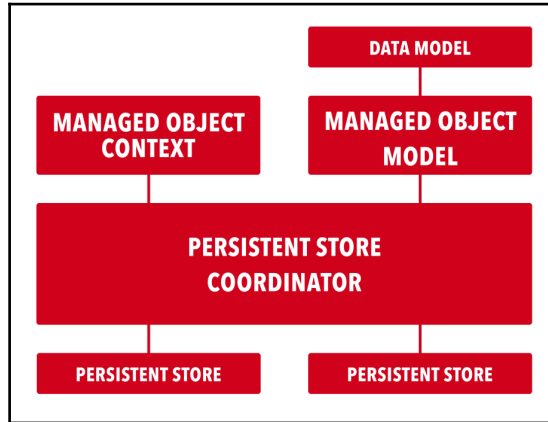


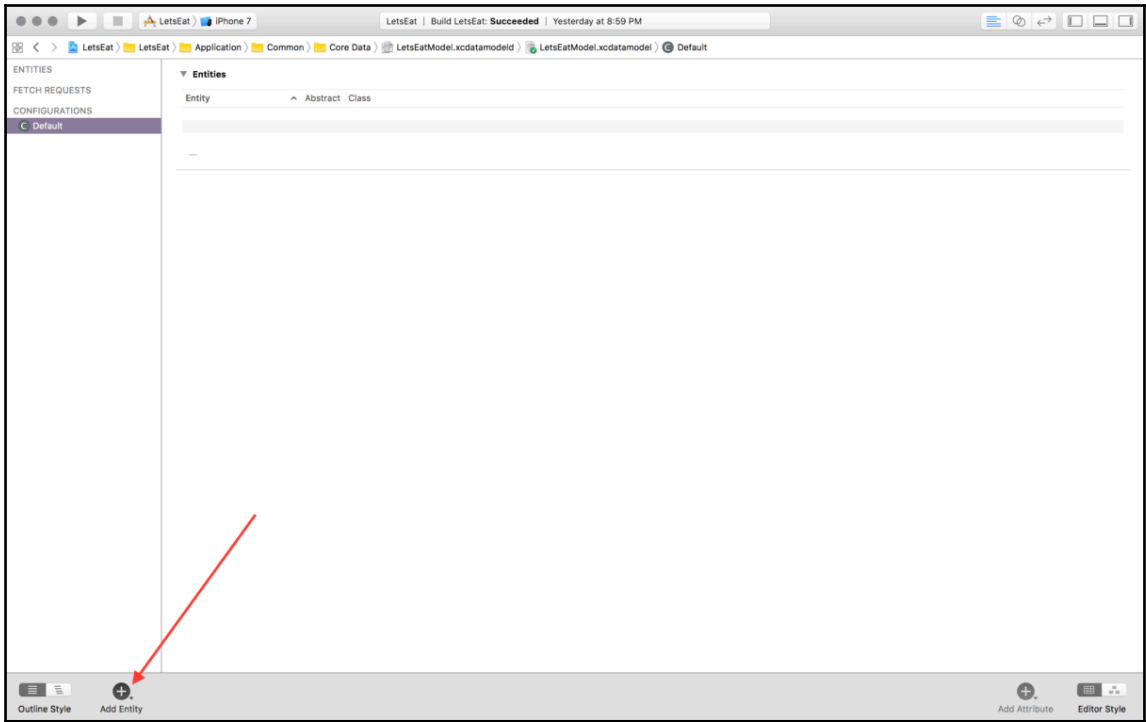
Key	Type	Value
▼ Information Property List	Dictionary	(16 items)
Localization native development re...	String	en
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0
Bundle name	String	\$(PRODUCT_NAME)
Bundle OS Type code	String	APPL
Bundle versions string, short	String	1.0
Bundle version	String	1
Application requires iPhone enviro...	Boolean	YES
Launch screen interface file base...	String	LaunchScreen
Main storyboard file base name	String	Main
Privacy - Camera Usage Description	String	The app uses your camera to take pictures
Privacy - Photo Library Usage Des...	String	The app uses your camera to take pictures
▶ Required device capabilities	Array	(1 item)
▶ Supported interface orientations	Array	(3 items)
▶ Supported interface orientations (i...	Array	(4 items)

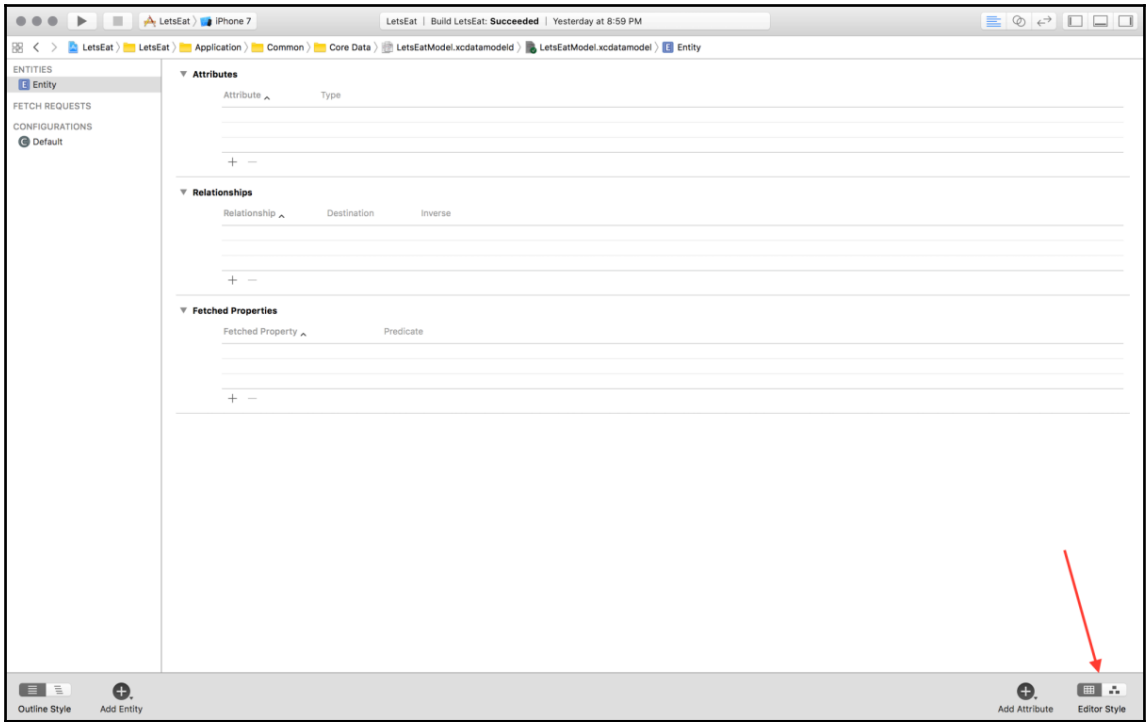


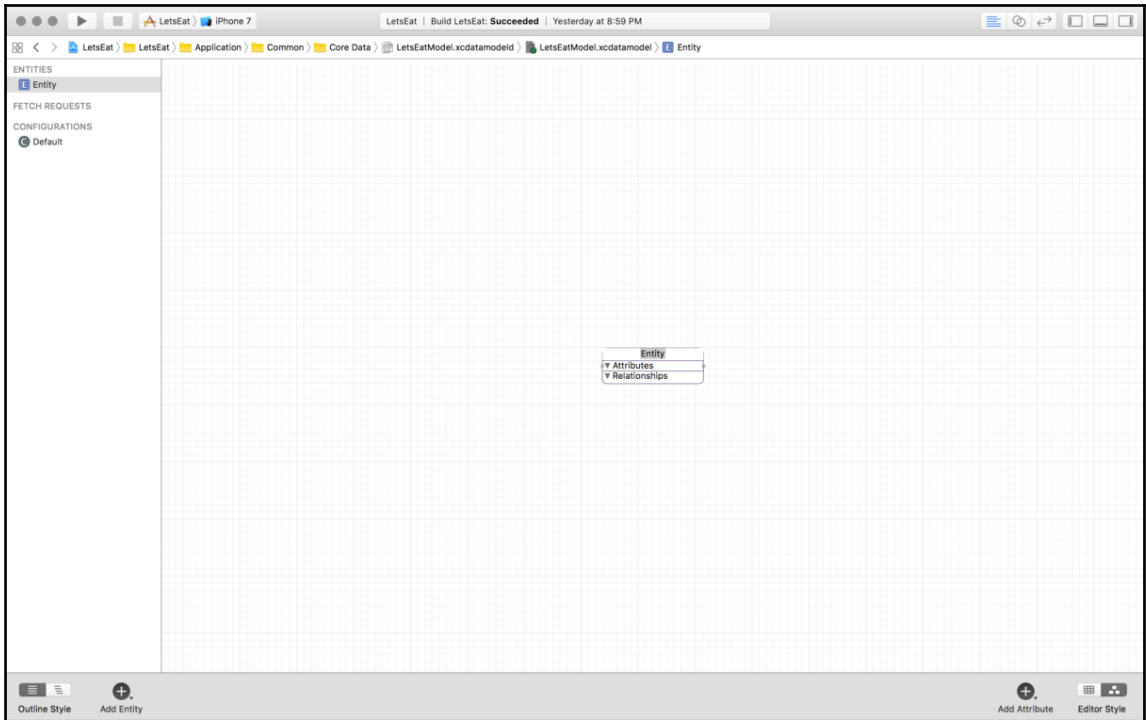


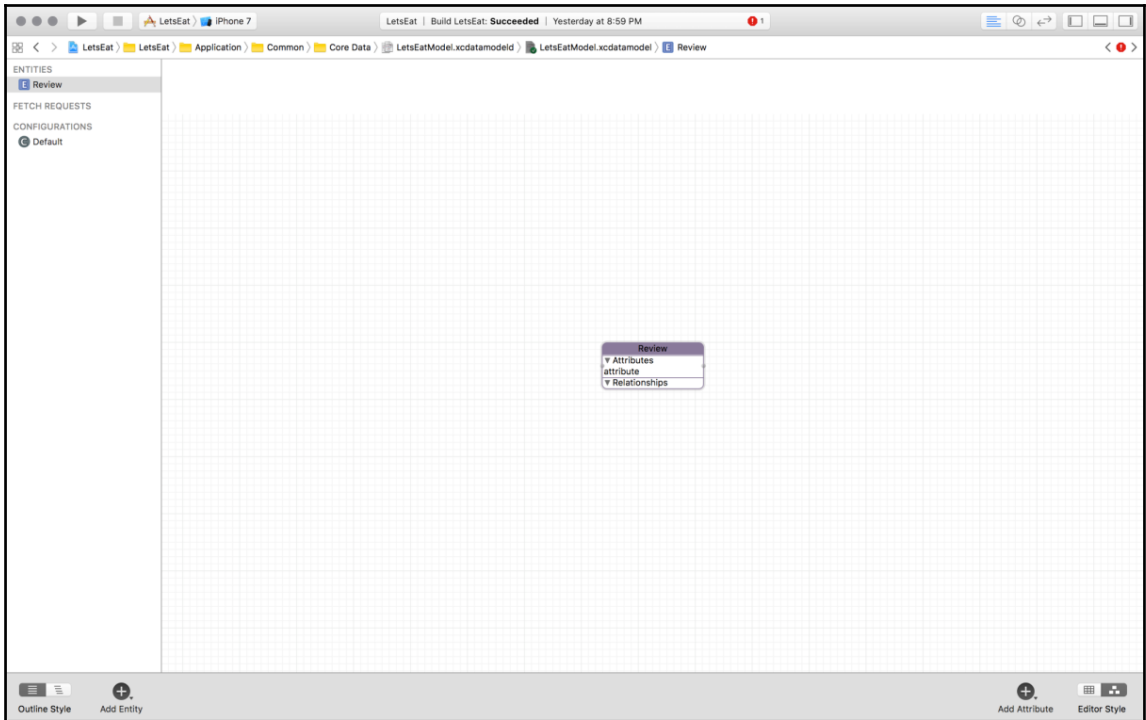
Chapter 21: Understanding Core Data

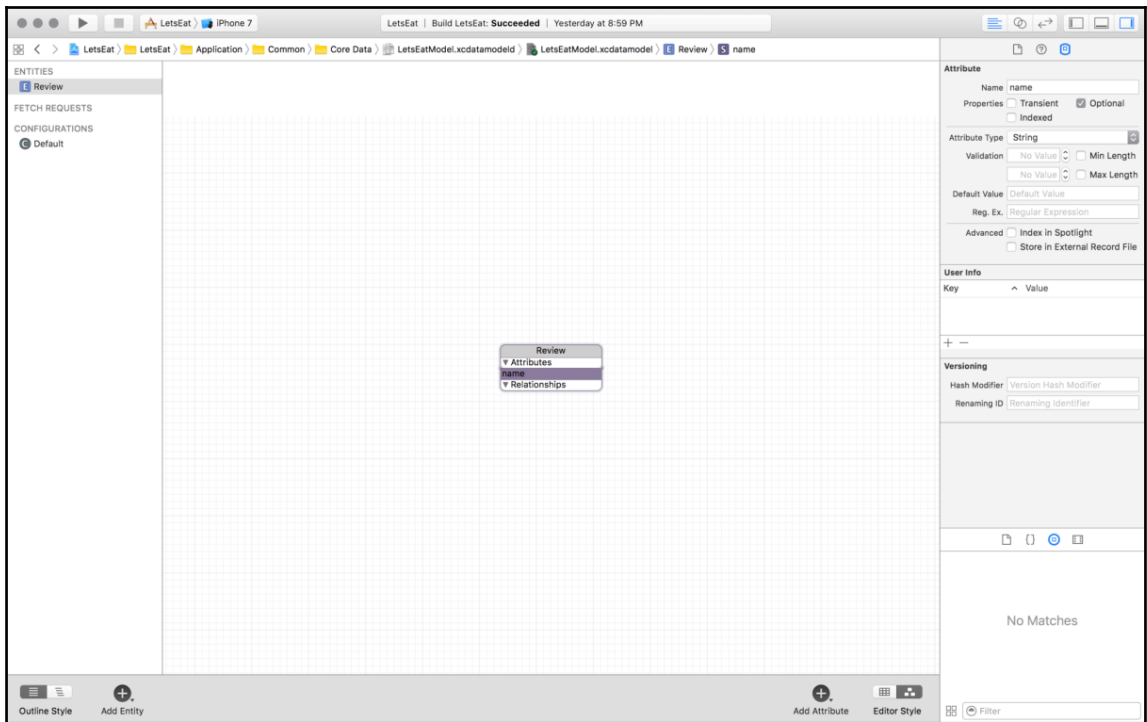


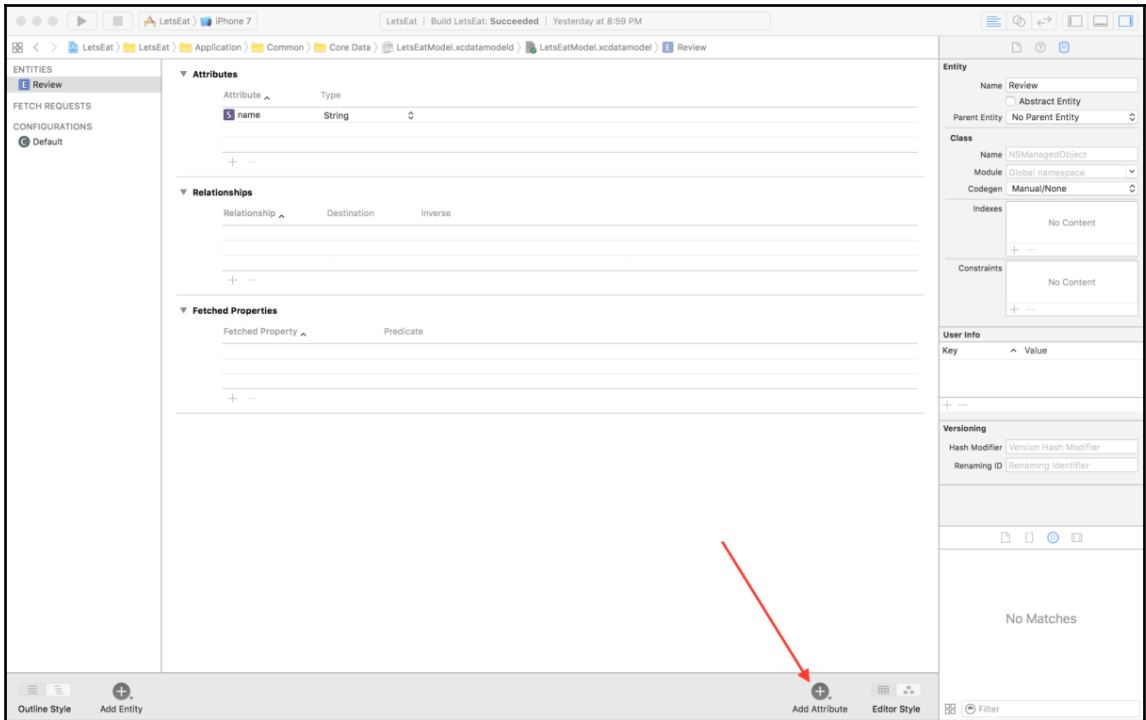












ENTITIES

E Review

FETCH REQUESTS

CONFIGURATIONS

C Default

▼ **Attributes**

Attribute ^	Type	
S customerReview	String	◇
D date	Date	◇
S name	String	◇
N rating	Float	◇
N restaurantID	Integer 32	◇
S uuid	String	◇

+ -

▼ **Relationships**

Relationship ^	Destination	Inverse

+ -

▼ **Fetches Properties**

Fetched Property ^	Predicate

+ -

ENTITIES

- E RestaurantPhoto
- E Review

FETCH REQUESTS

CONFIGURATIONS

- C Default

▼ **Attributes**

Attribute ^	Type	
D date	Date	↕
🔌 photo	Binary Data	↕
N restaurantID	Integer 32	↕
S uuid	String	↕

+ -

▼ **Relationships**

Relationship ^	Destination	Inverse

+ -

▼ **Fetches Properties**

Fetched Property ^	Predicate

+ -

Chapter 22: Saving Reviews

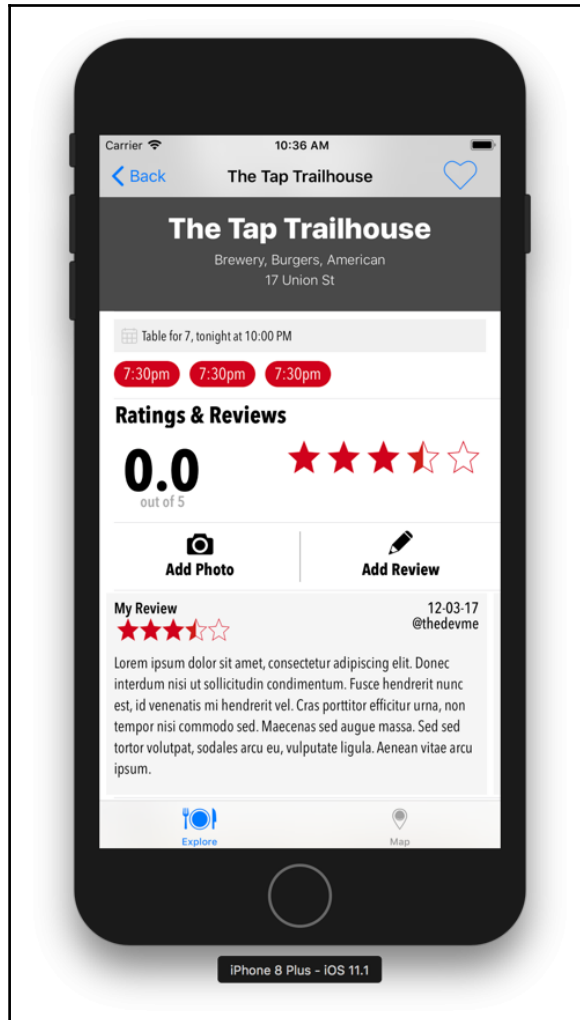
Title goes here

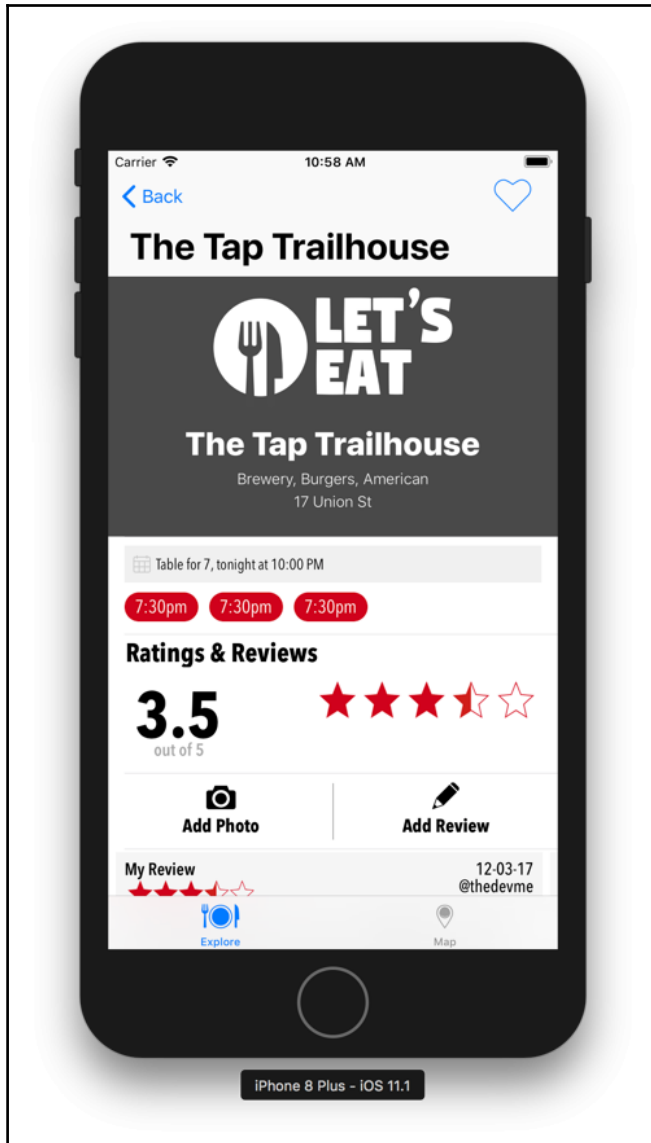
★★★★☆

Date goes here

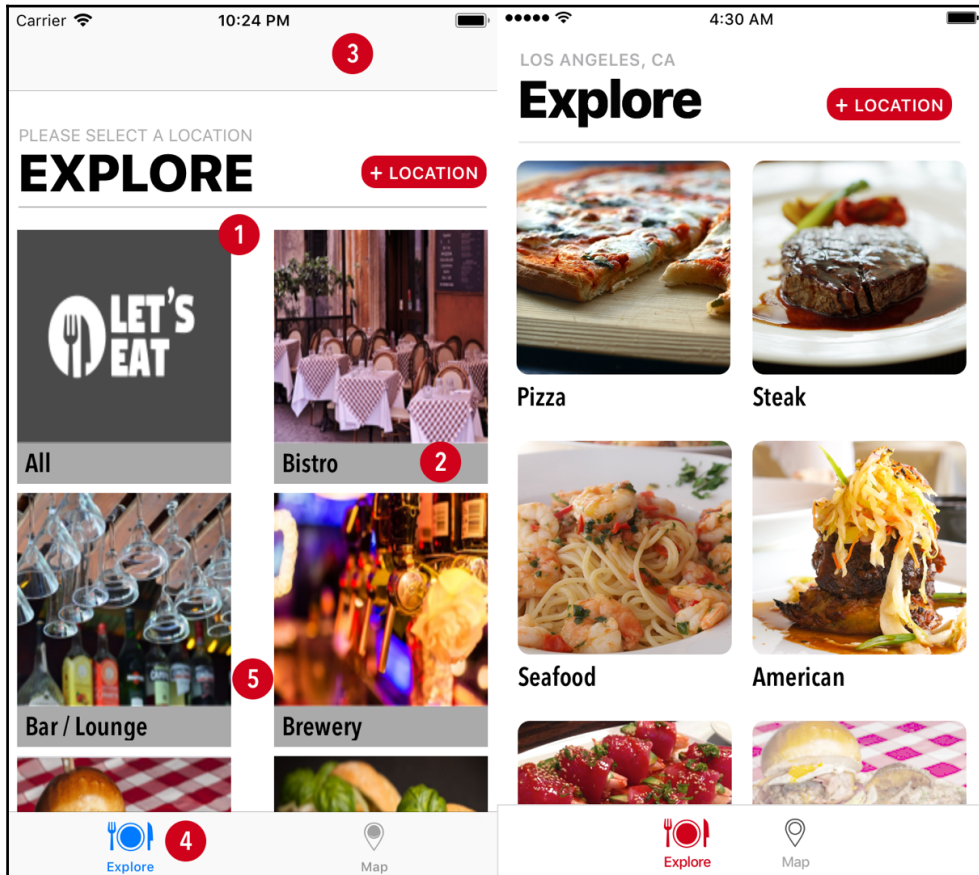
Username

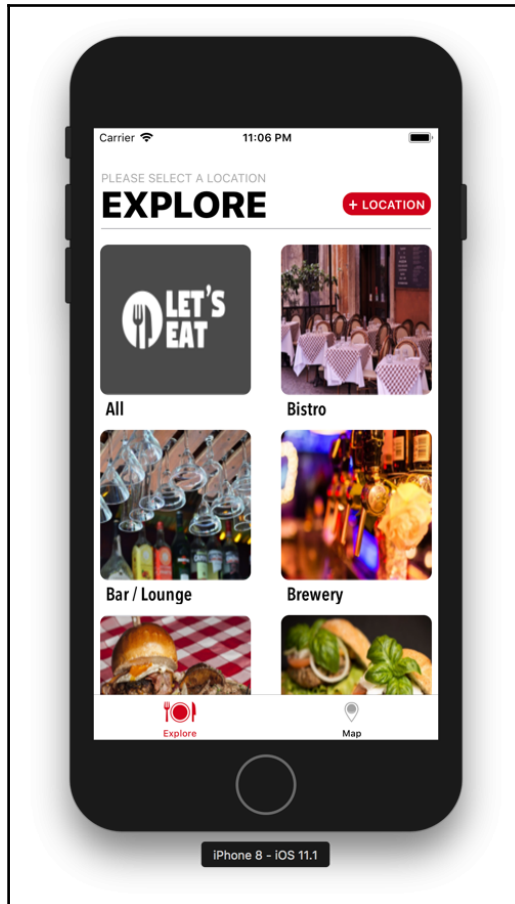
Lorem ipsum dolor sit amet, consectetur adipiscing elit. In vel elit nisl. Nulla facilisi. Quisque congue justo diam, commodo dignissim turpis laoreet a. Fusce at nisl ut mauris cursus dictum. Nam hendrerit lorem eget tortor posuere pharetra. Aliquam arcu mauris, pulvinar sed hendrerit condimentum, tempus vel purus. Fusce nec lacus eget orci euismod ultrices at non lorem.

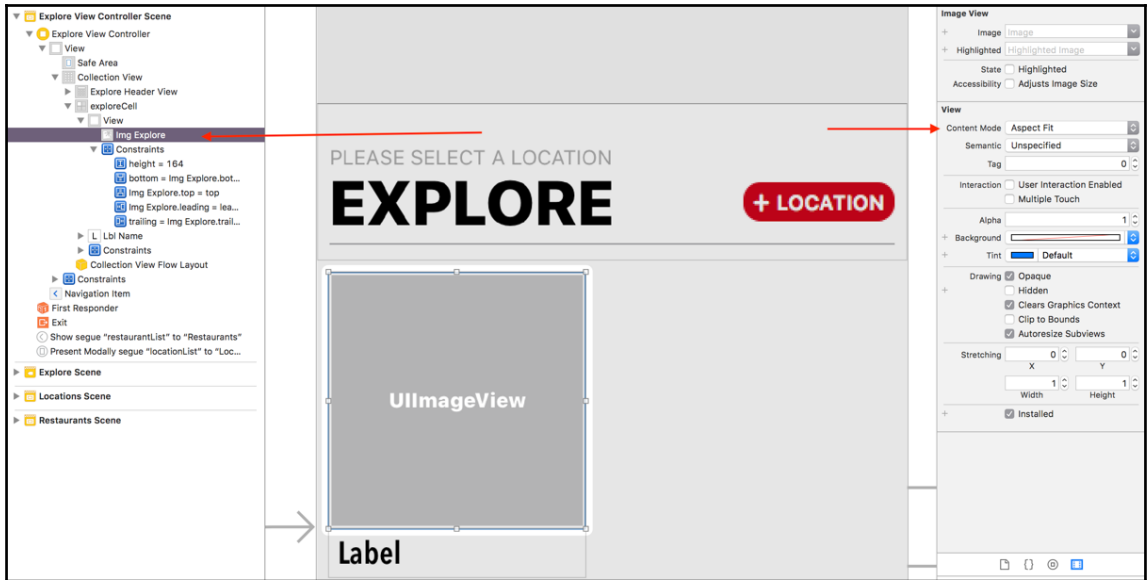


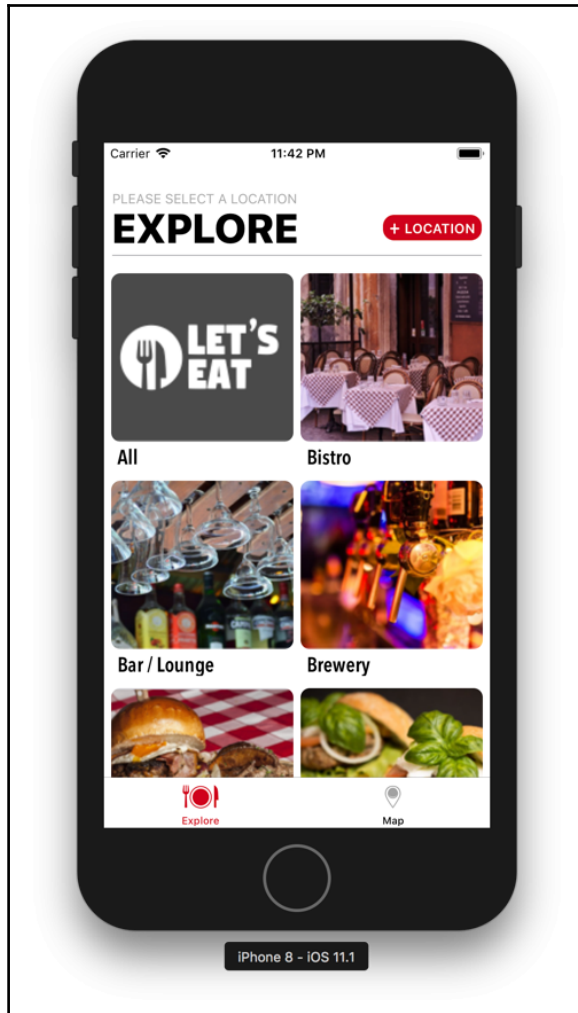


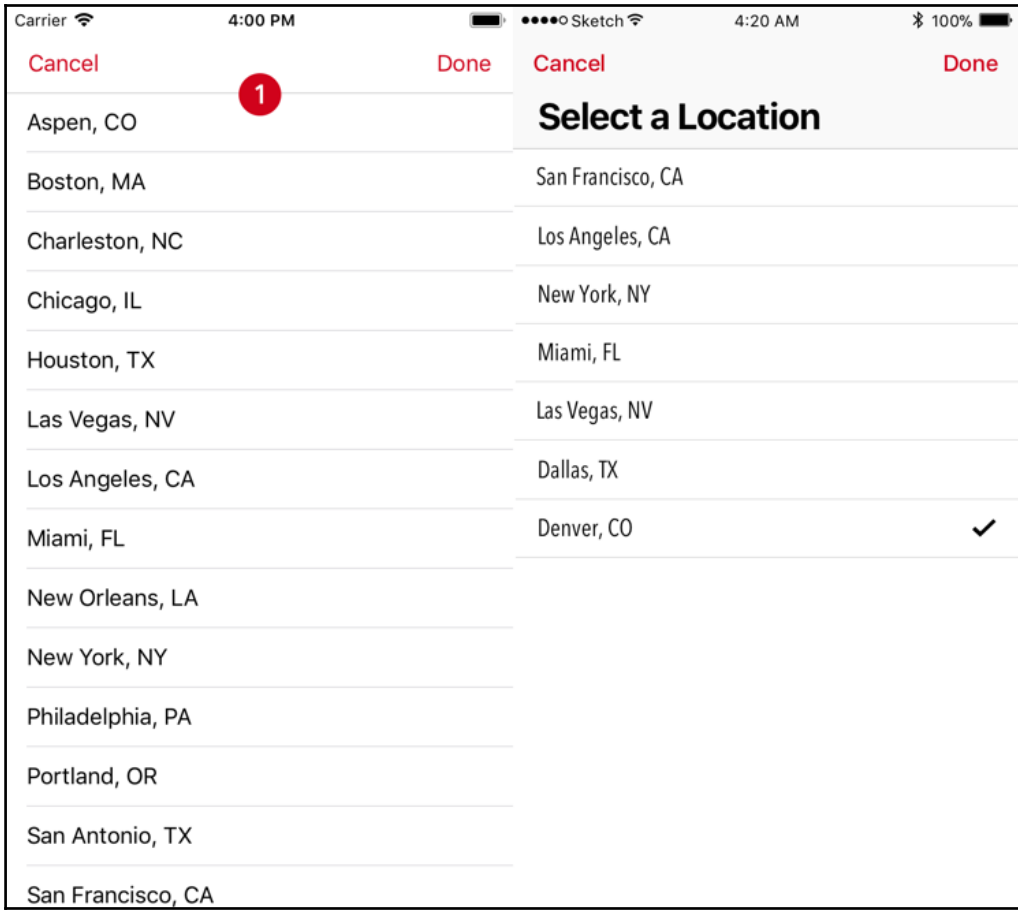
Chapter 23: Universal

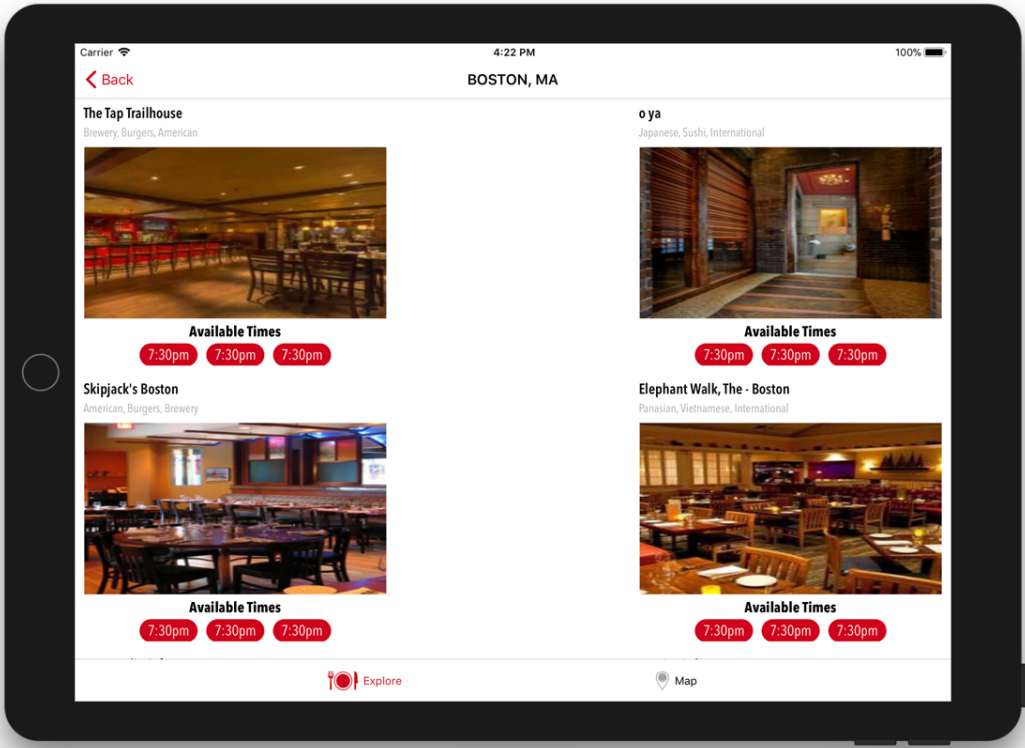




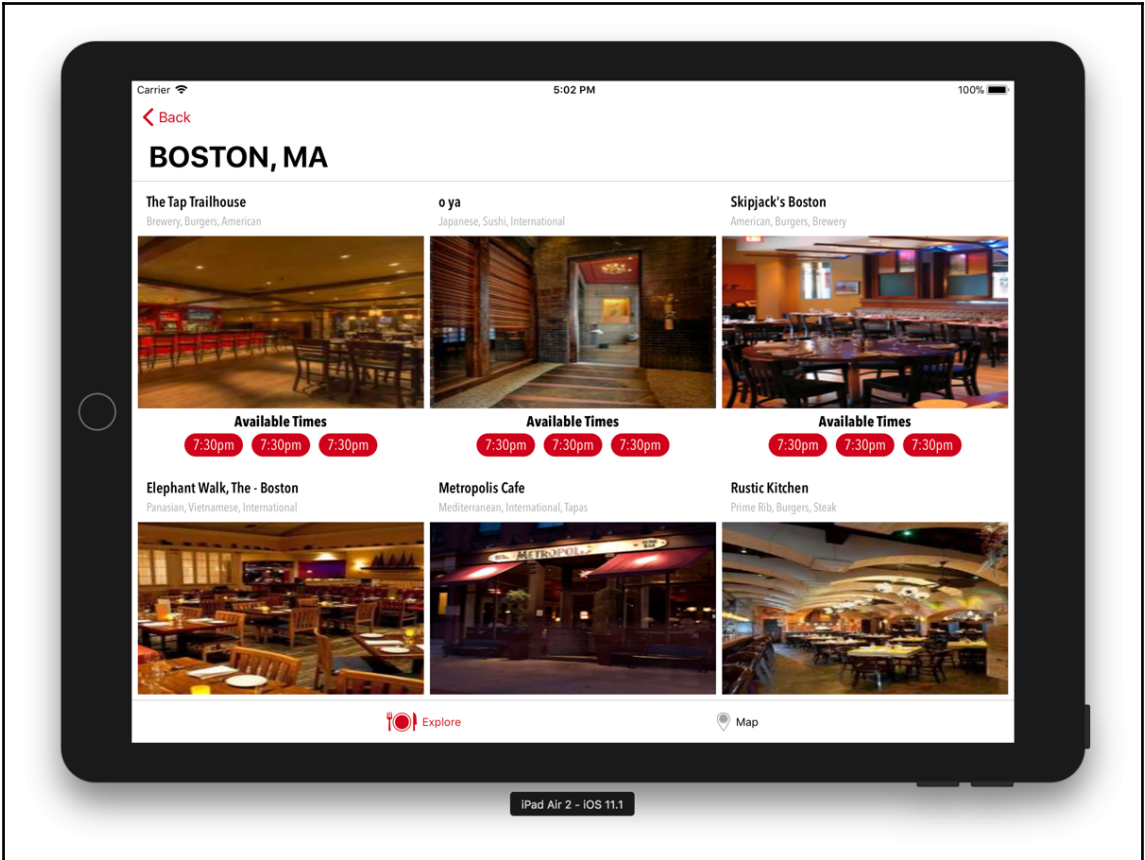


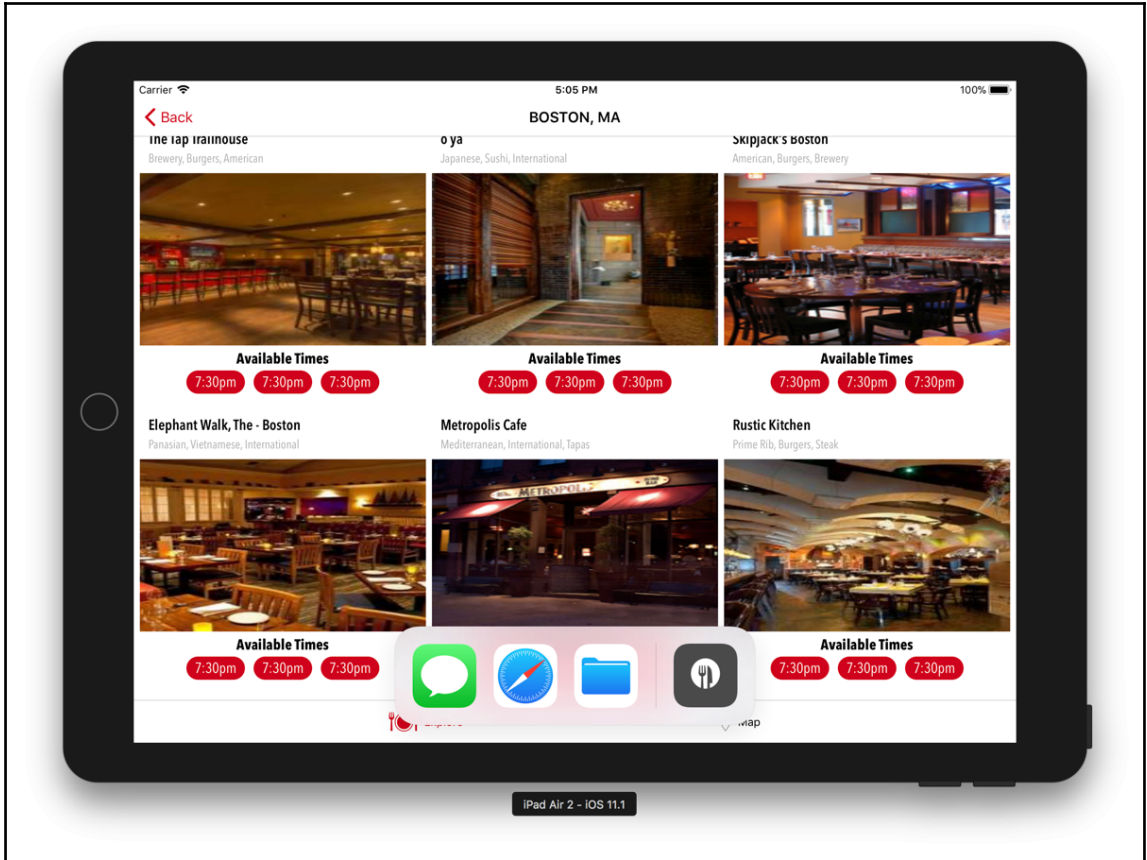


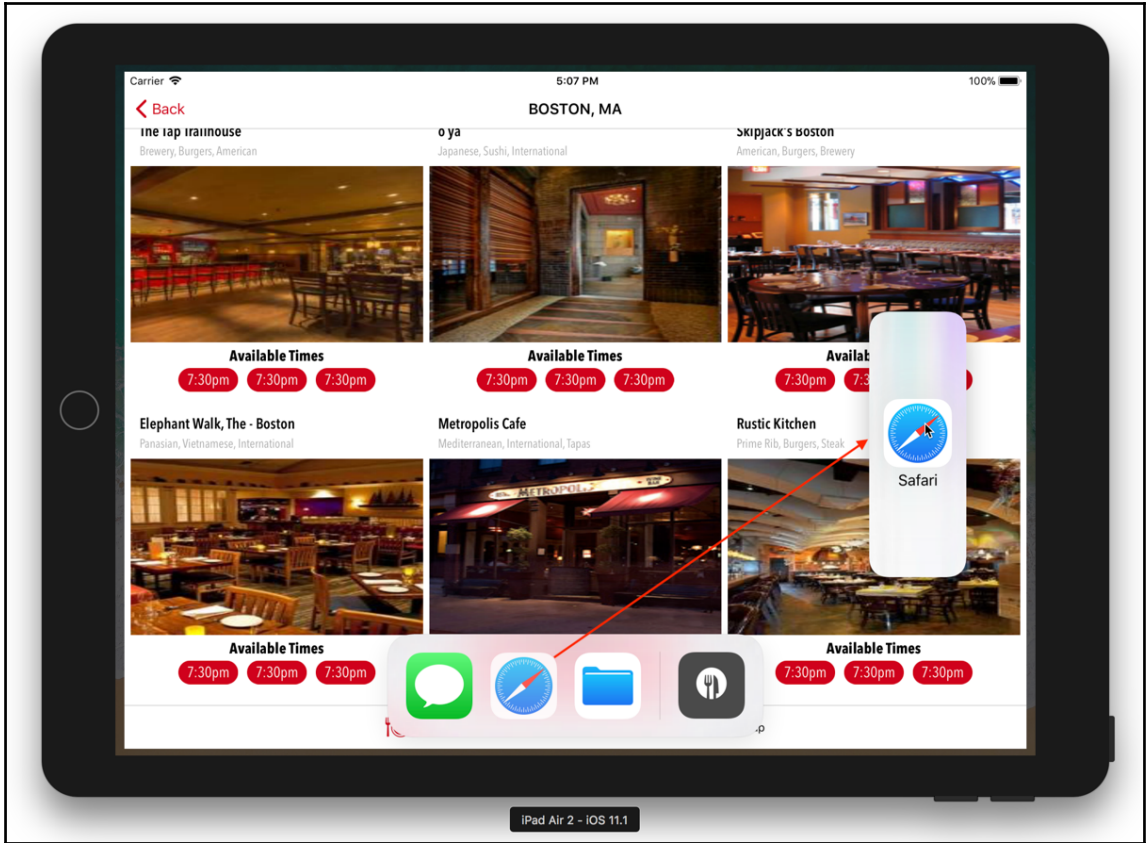


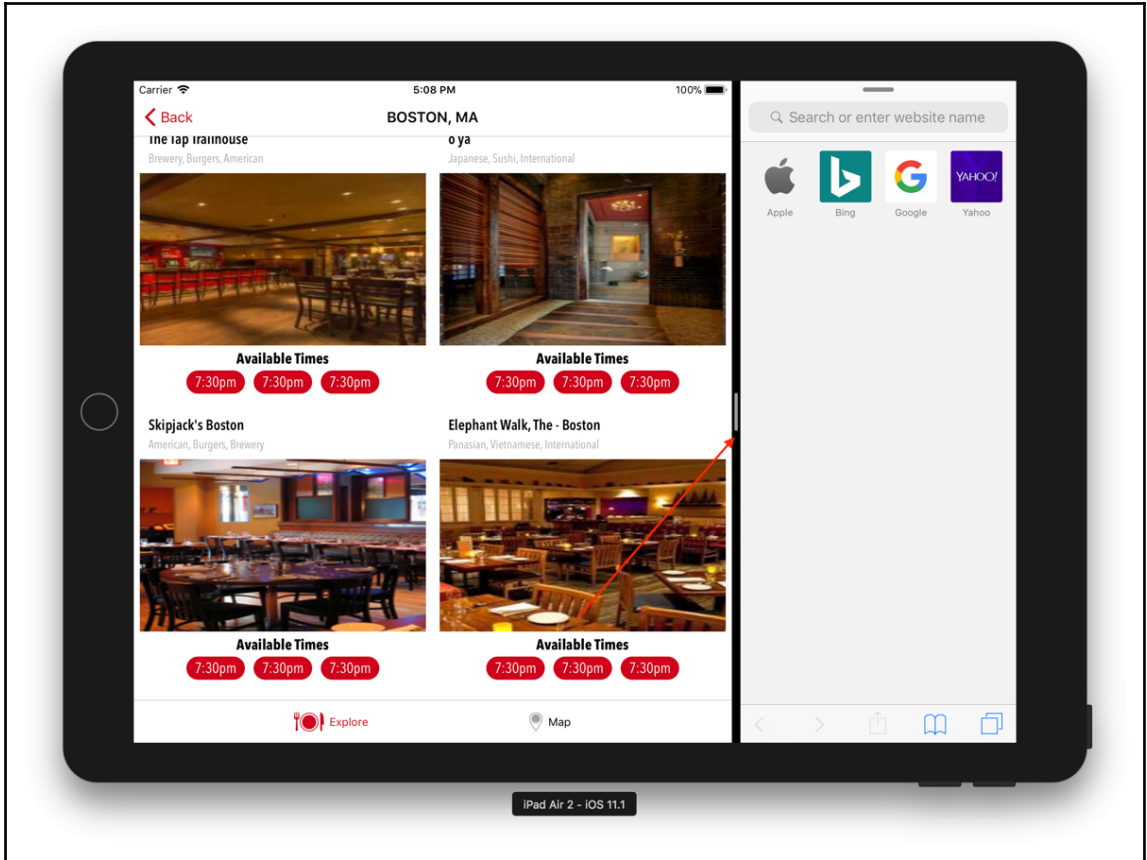


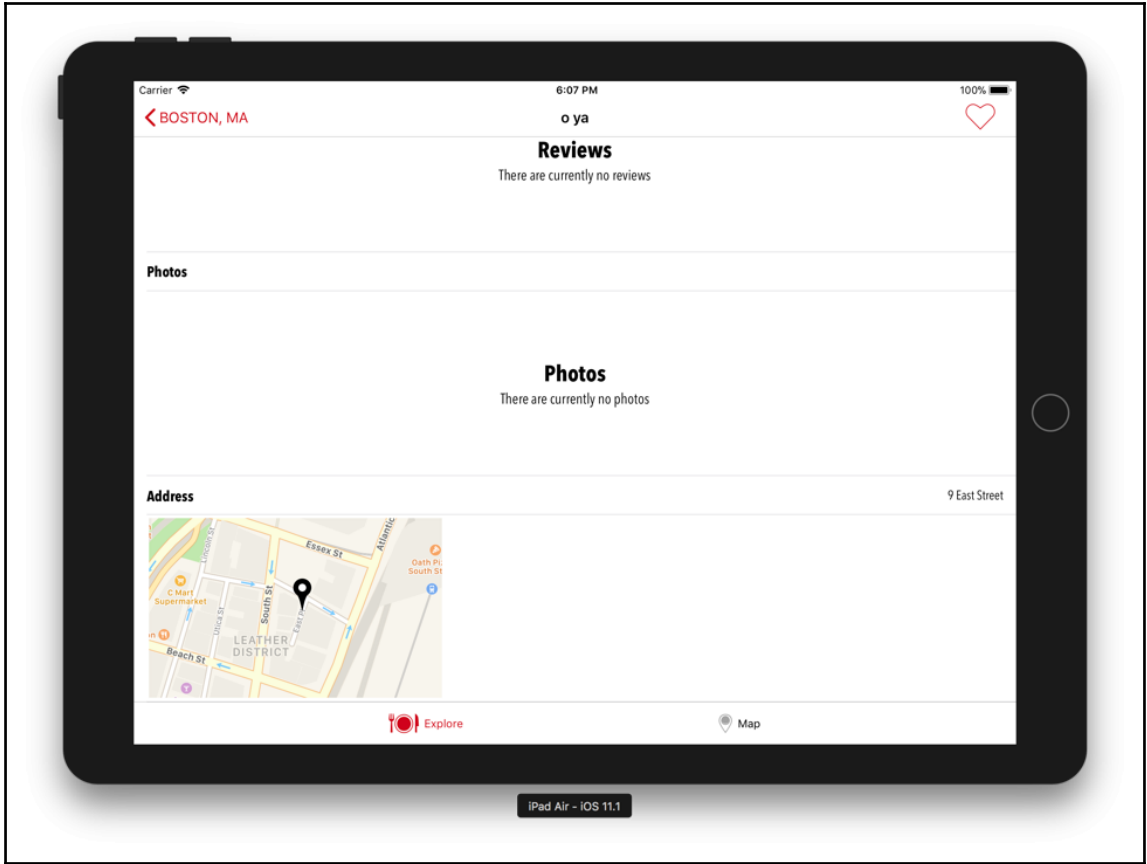
iPad Air 2 - iOS 11.1



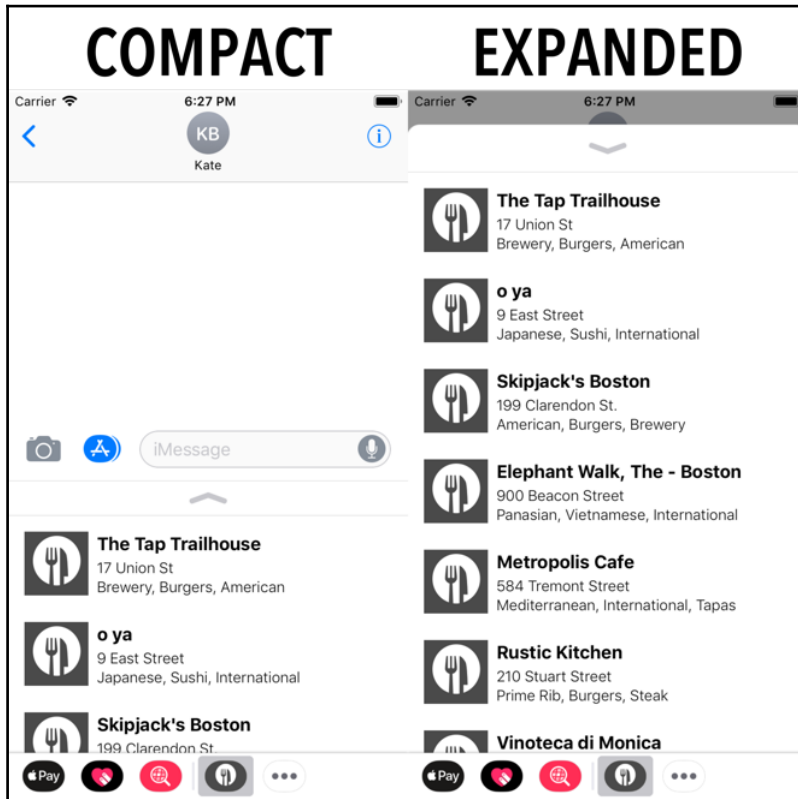


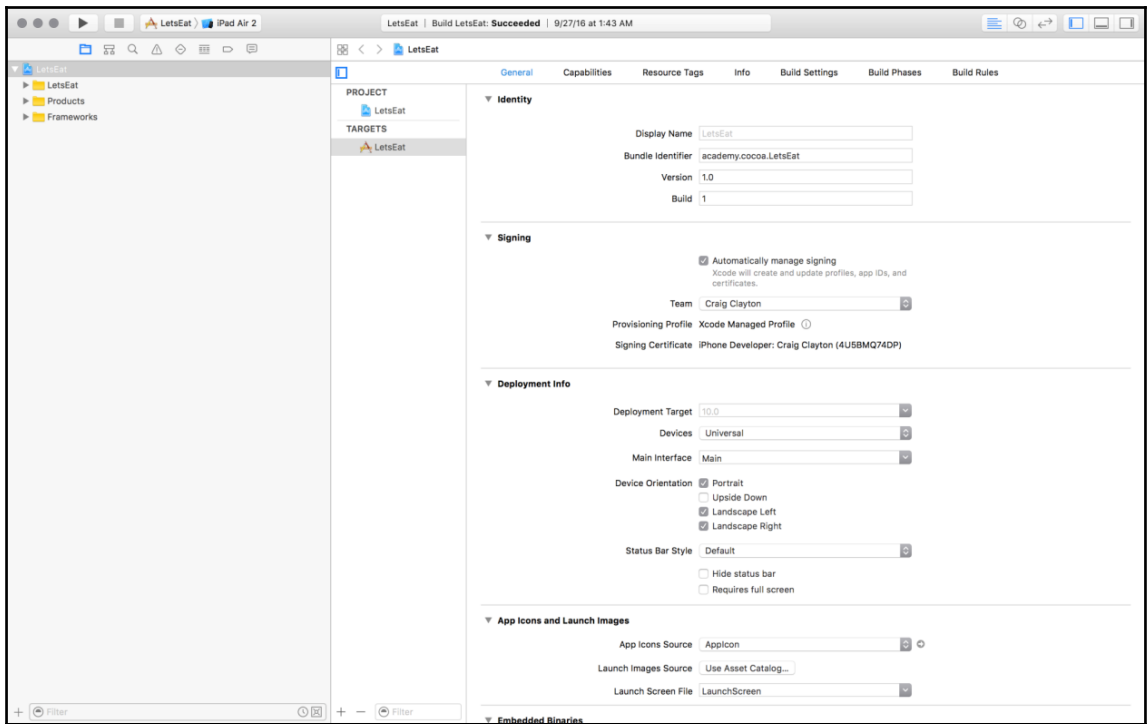


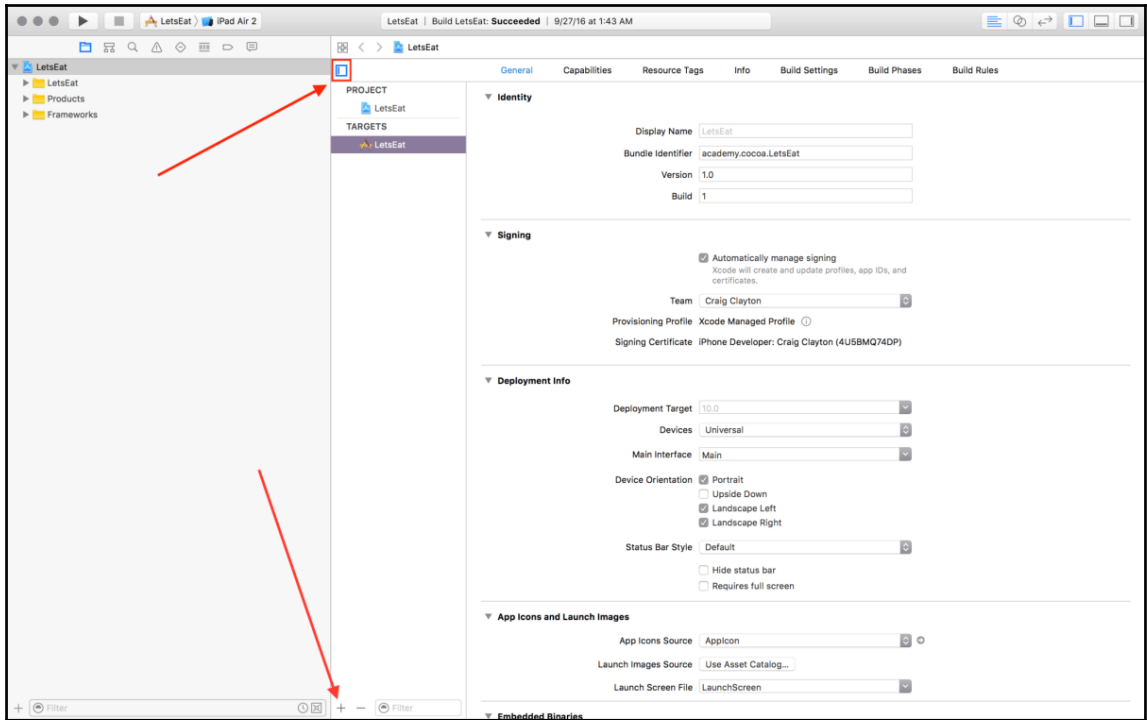


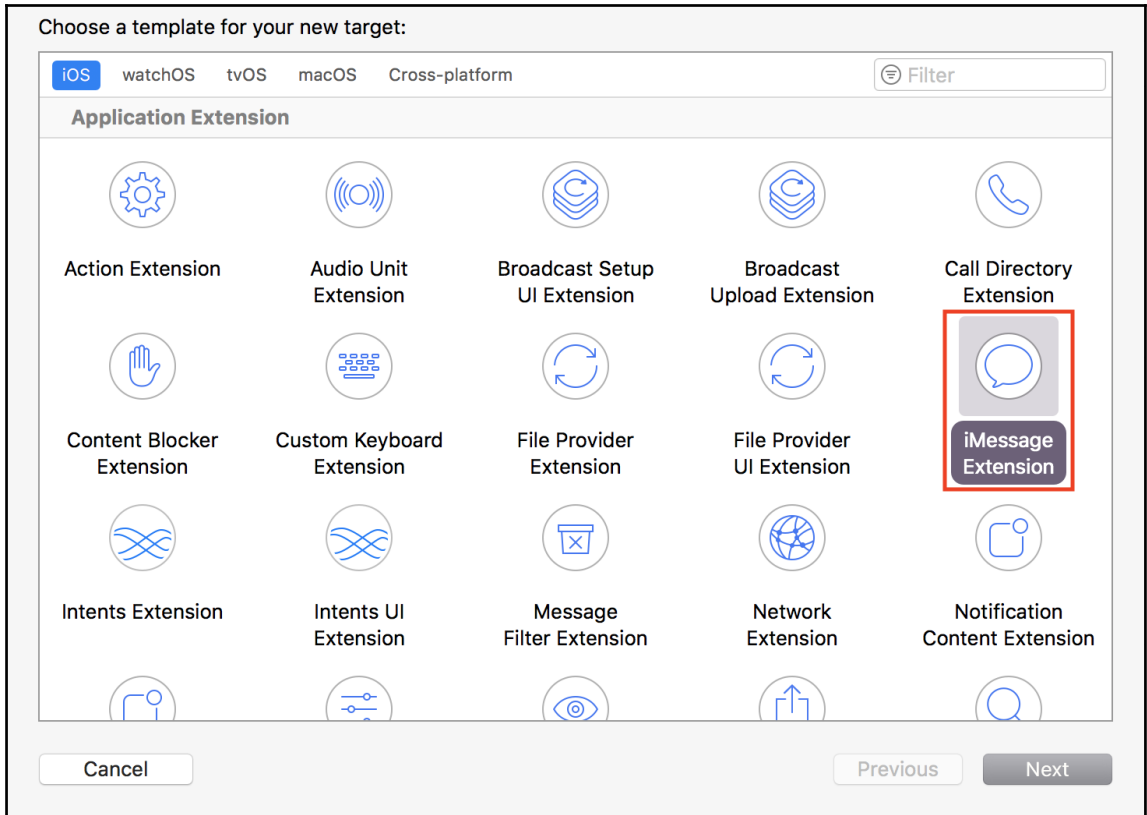


Chapter 24: iMessages









Choose options for your new target:

Product Name:

Team:

Organization Name:


Organization Identifier:

Bundle Identifier:

Language:

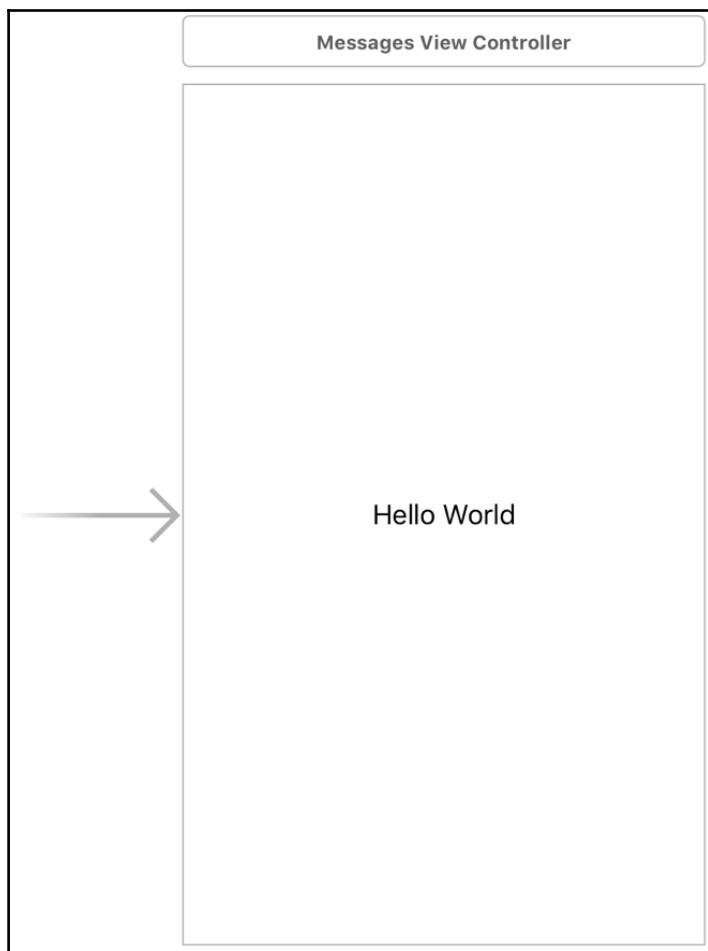
Project:

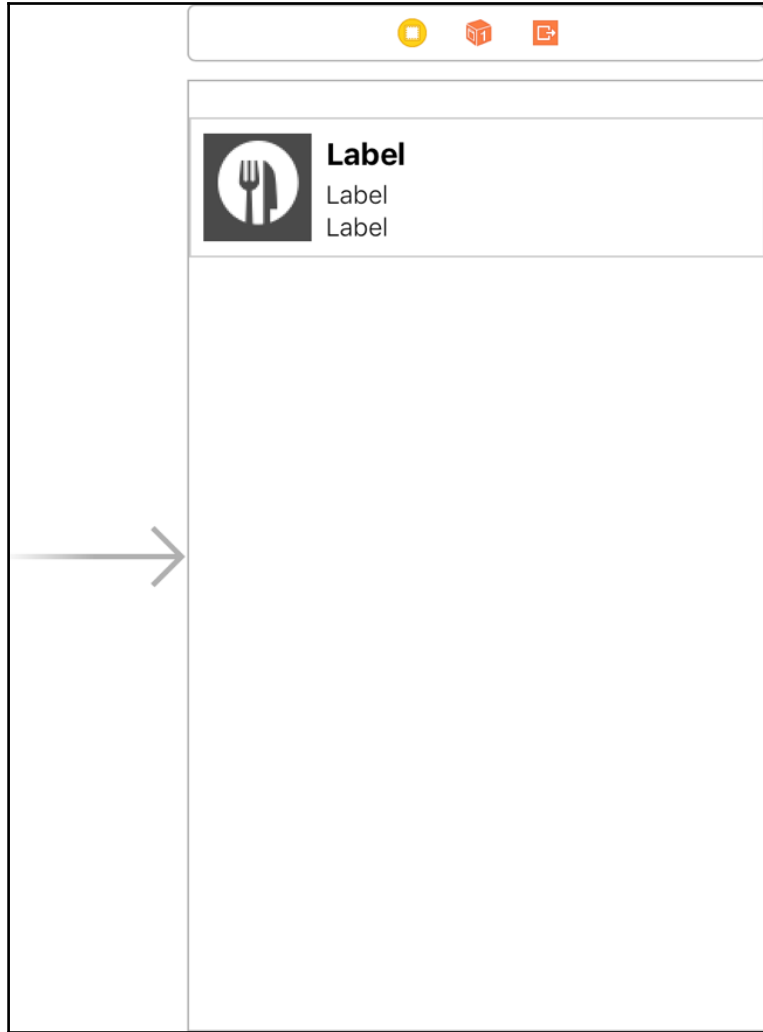
Embed in Application:

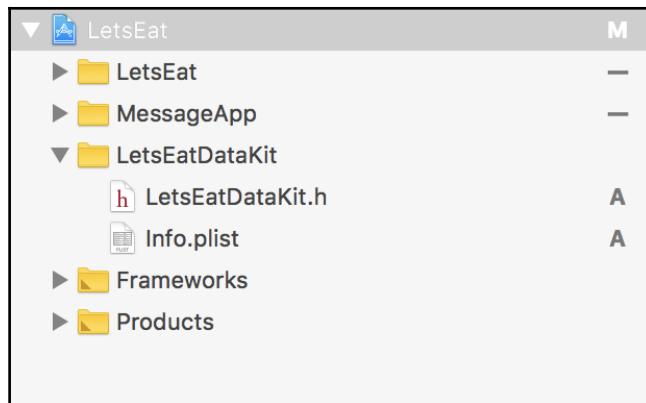
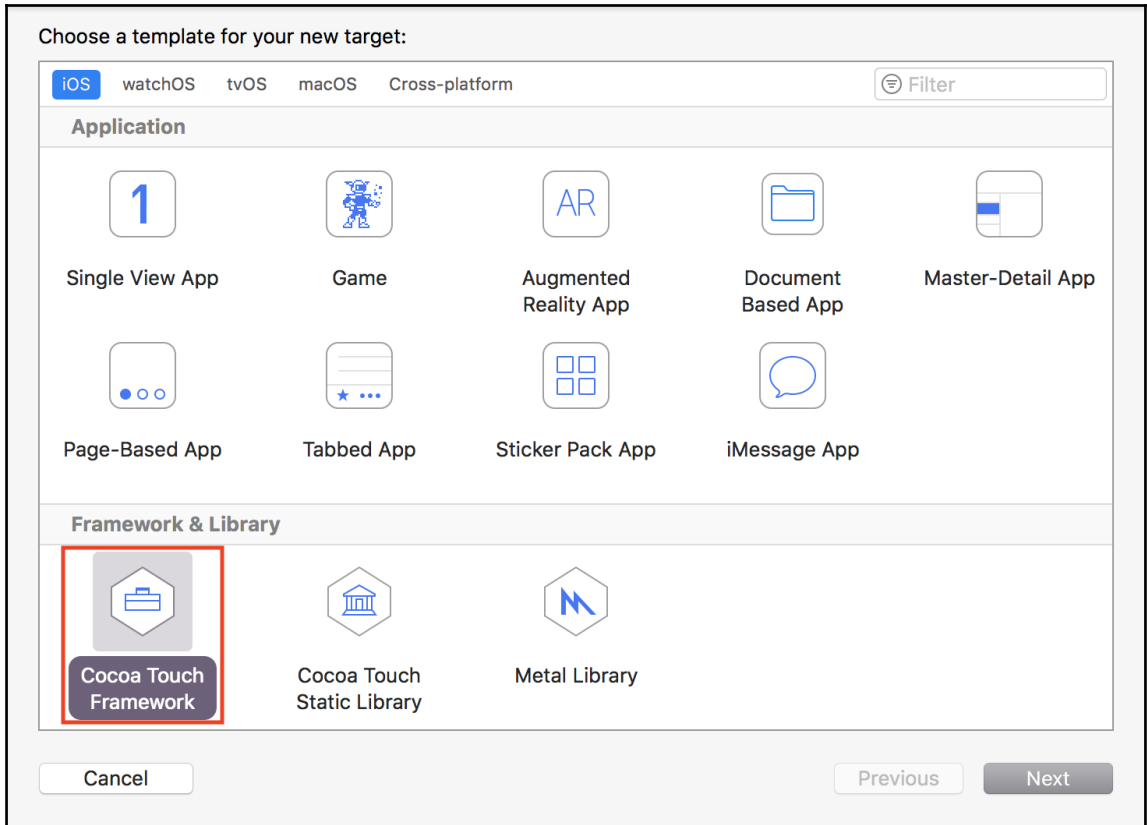
 **Activate "MessageApp" scheme?**

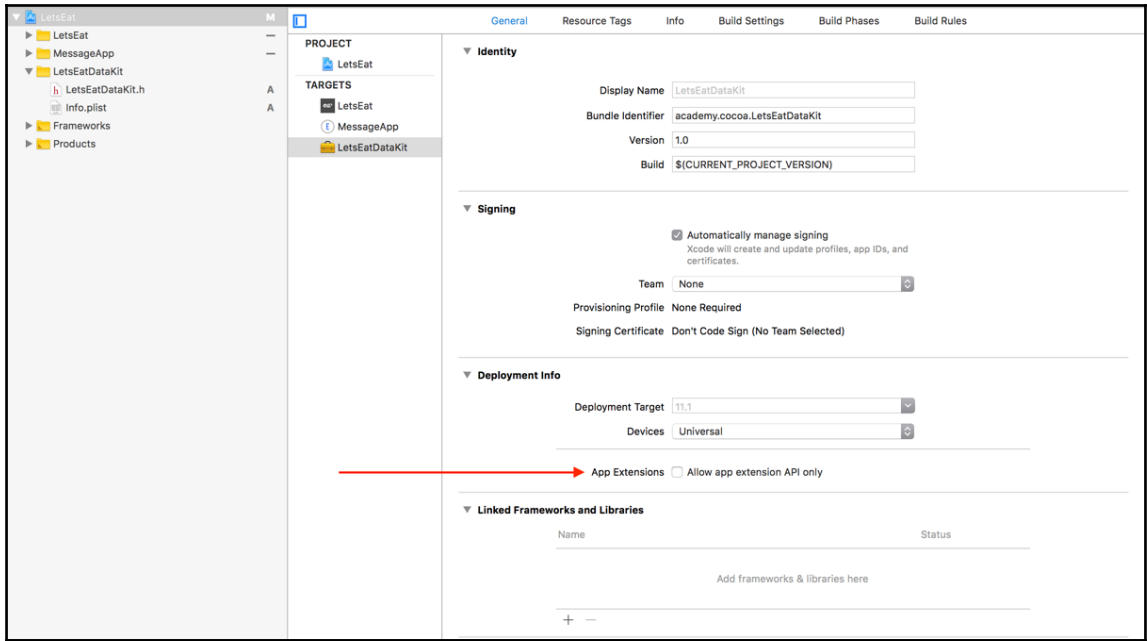
This scheme has been created for the "MessageApp" target. Choose Activate to use this scheme for building and debugging. Schemes can be chosen in the toolbar or Product menu.

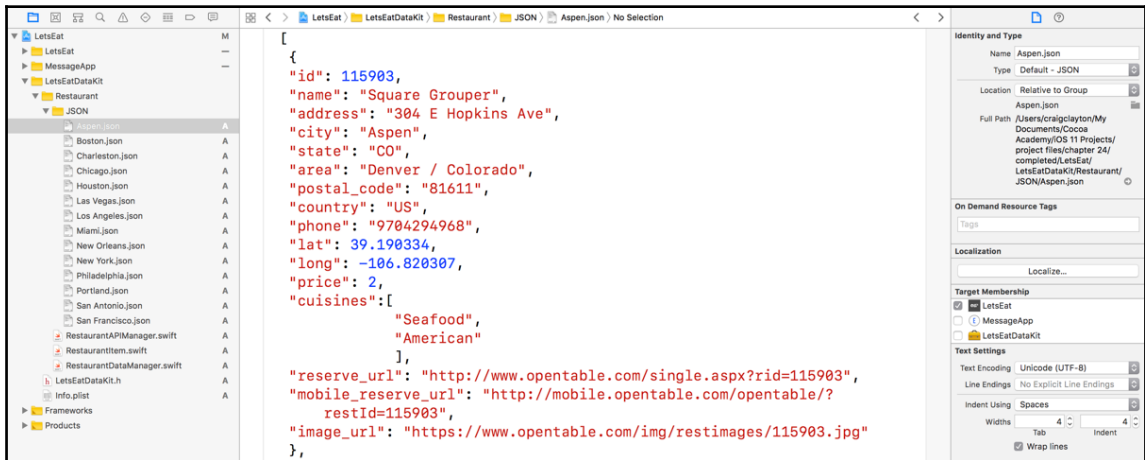
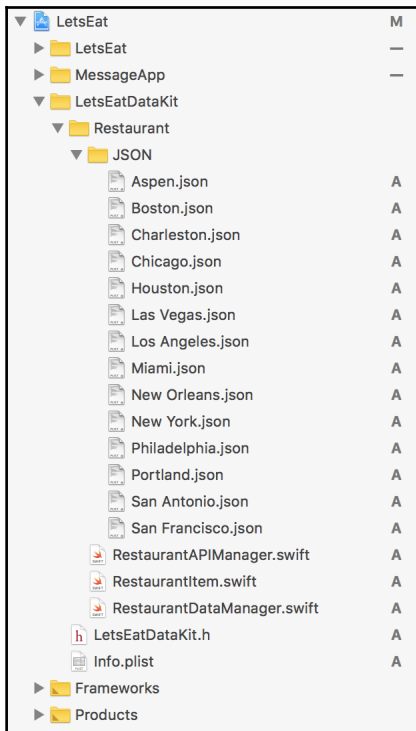
Do not show this message again











Identity and Type

Name

Type

Location

Aspen.json

Full Path

On Demand Resource Tags

Tags

Localization

Target Membership

- LetsEat
- MessageApp ←
- LetsEatDataKit ←

Text Settings

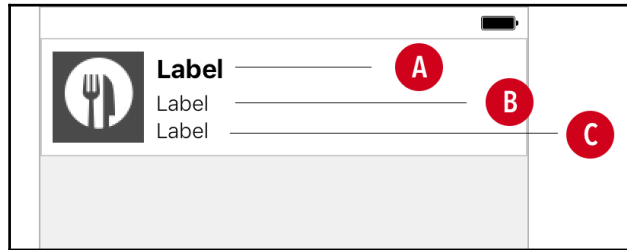
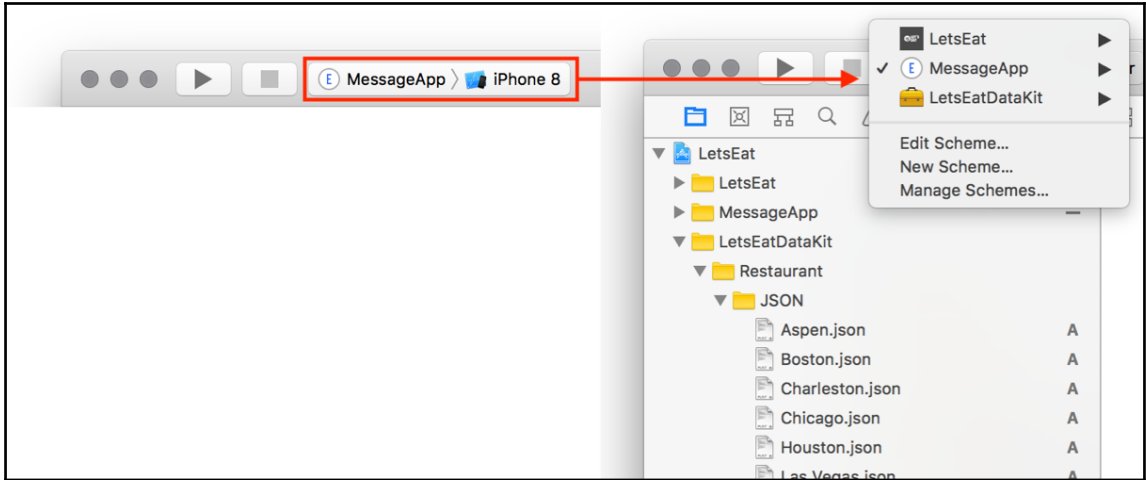
Text Encoding

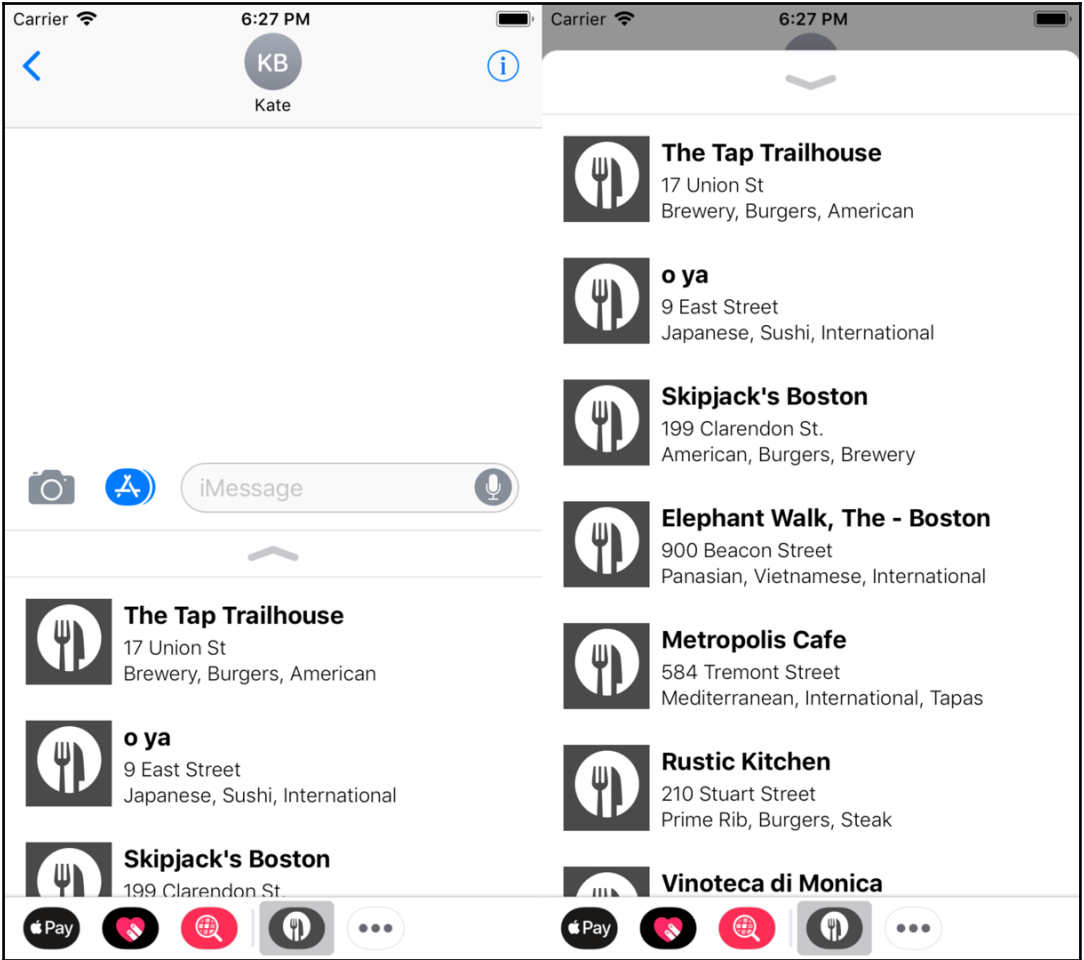
Line Endings

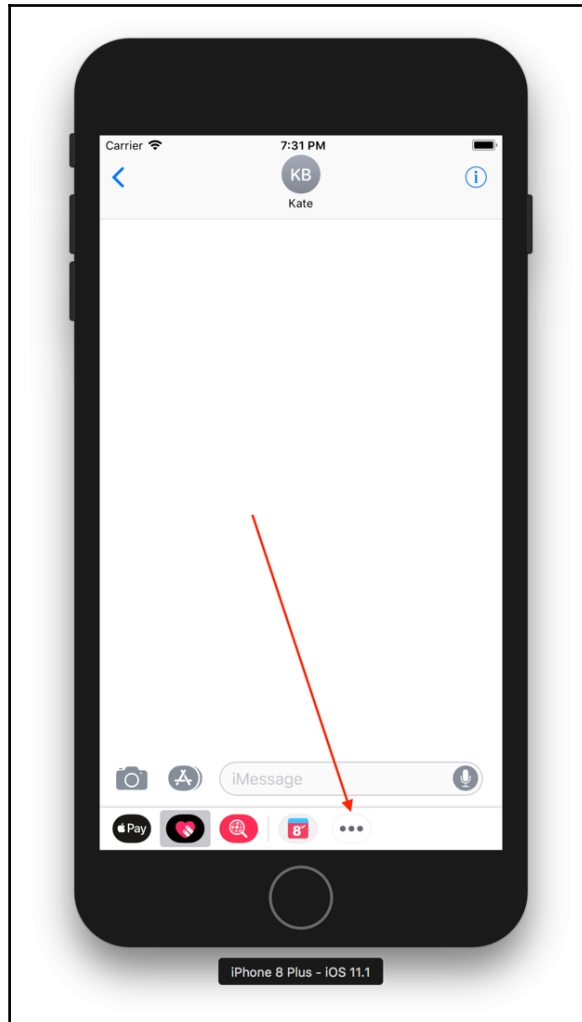
Indent Using

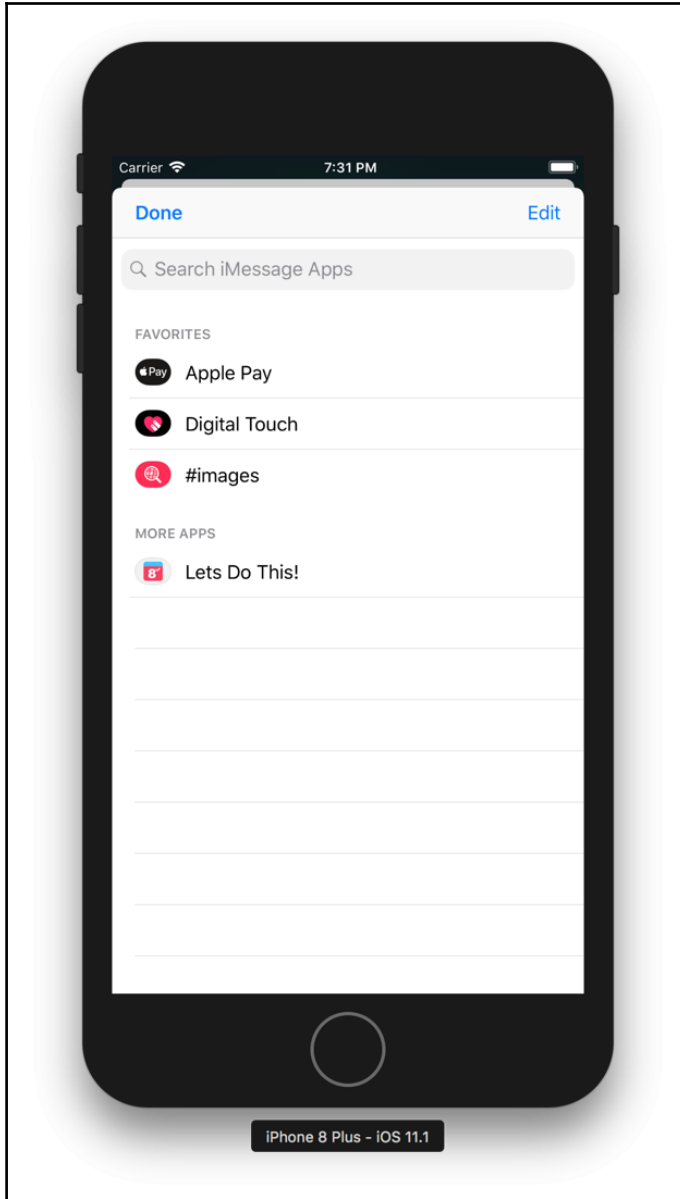
Widths Tab Indent

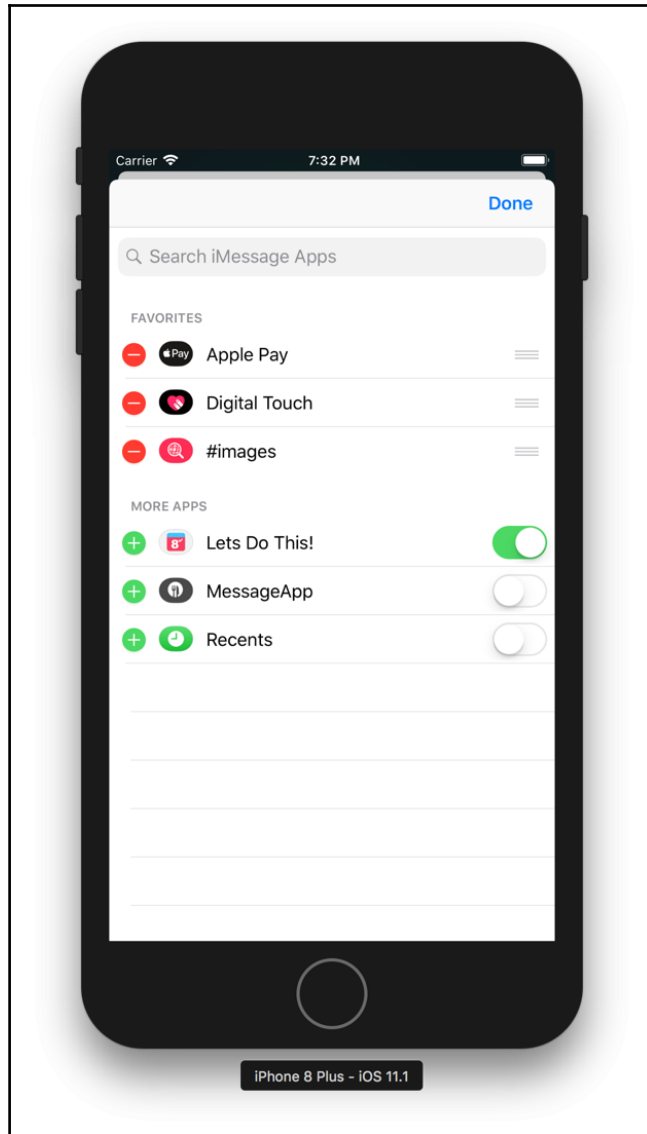
Wrap lines

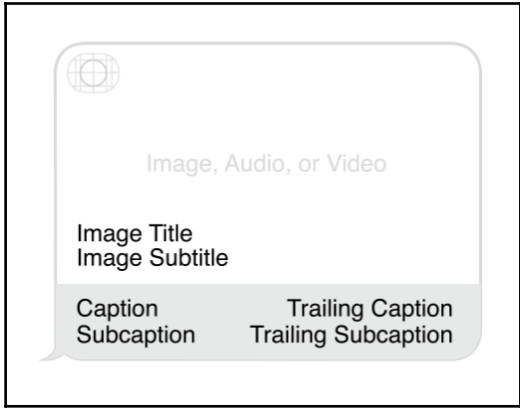


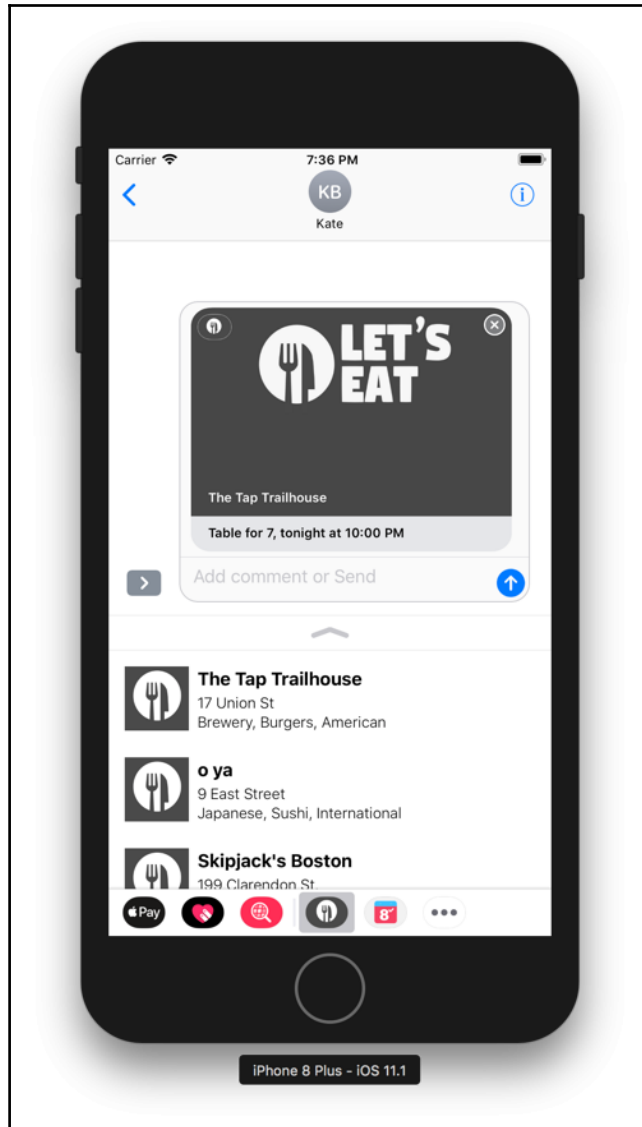




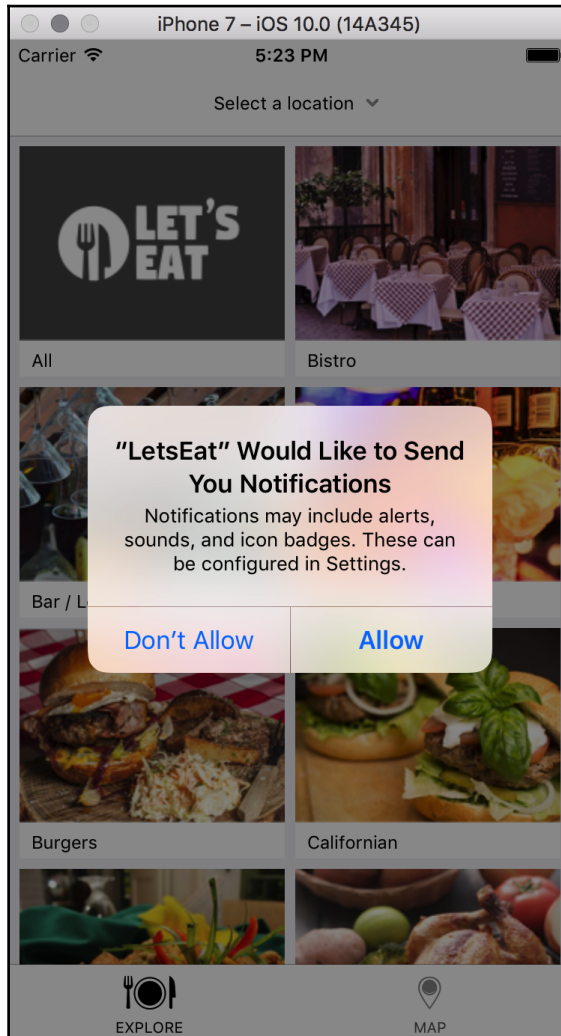








Chapter 25: Notifications



Restaurant Detail View Controller

Triggered Segues

- manual

Outlets

- btnHeart
- imgRating * Img Rating
- lblAddress * Lbl Address
- lblCuisine * Lbl Cuisine
- lblHeaderAddress * Lbl Header Add...
- lblName * Lbl Name
- lblTableDetails * Lbl Table Details
- lblUser * Lbl User
- mapView * Map View
- noReviewsContainer * No Reviews Co...
- reviewsContainer * Reviews Contai...
- searchDisplayController
- txtReview * Txt Review
- view * Table View

Presenting Segues

- Relationship
- Show
- Show Detail
- Present Modally
- Present As Popover
- Embed
- Push (deprecated)
- Modal (deprecated)
- Custom

Referencing Outlets

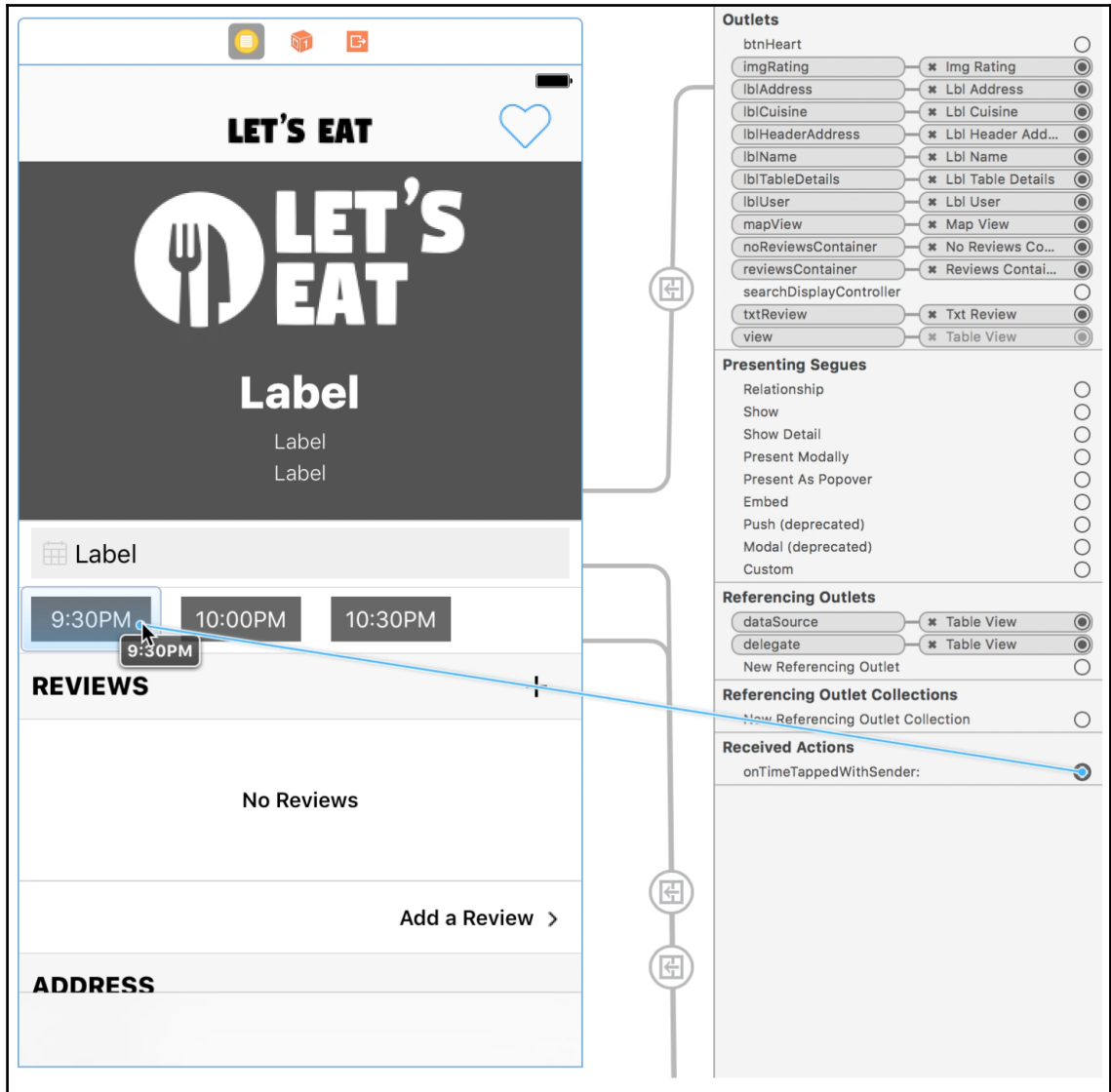
- dataSource * Table View
- delegate * Table View
- New Referencing Outlet

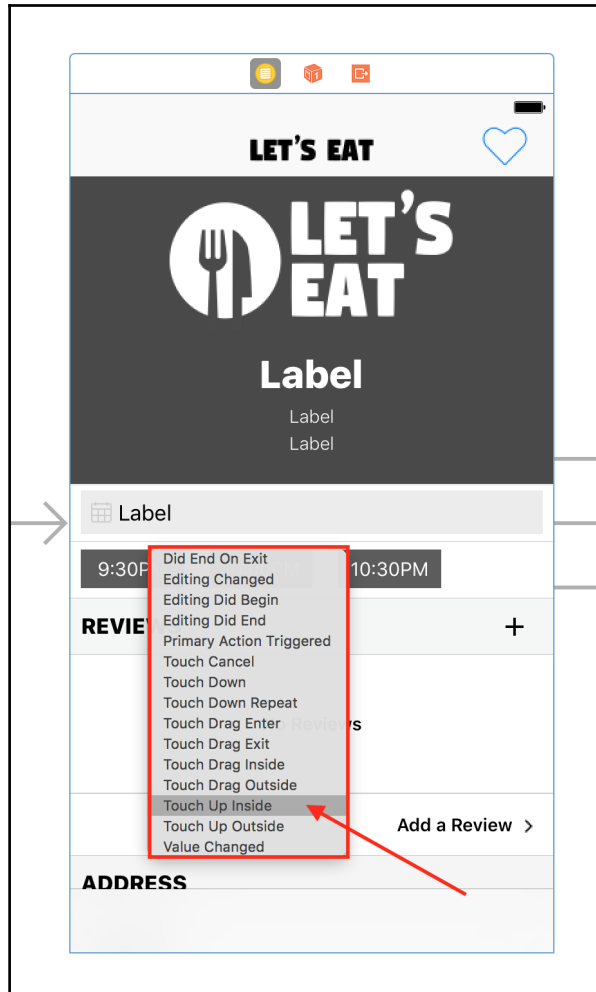
Referencing Outlet Collections

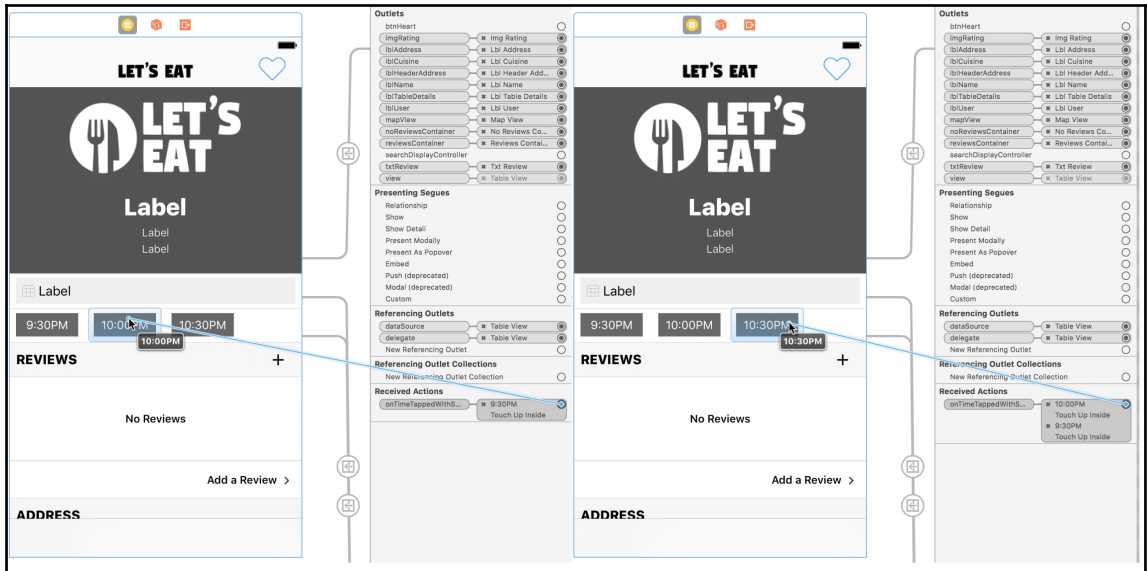
- New Referencing Outlet Collection

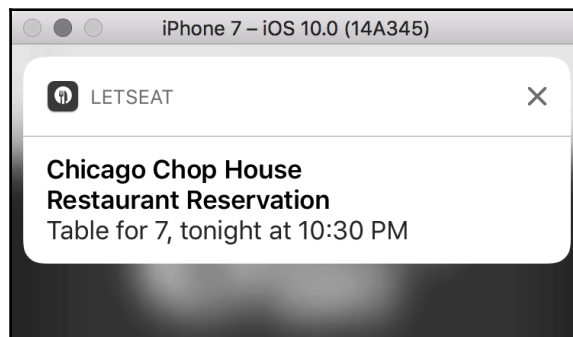
Received Actions

- onTimeTappedWithSender:

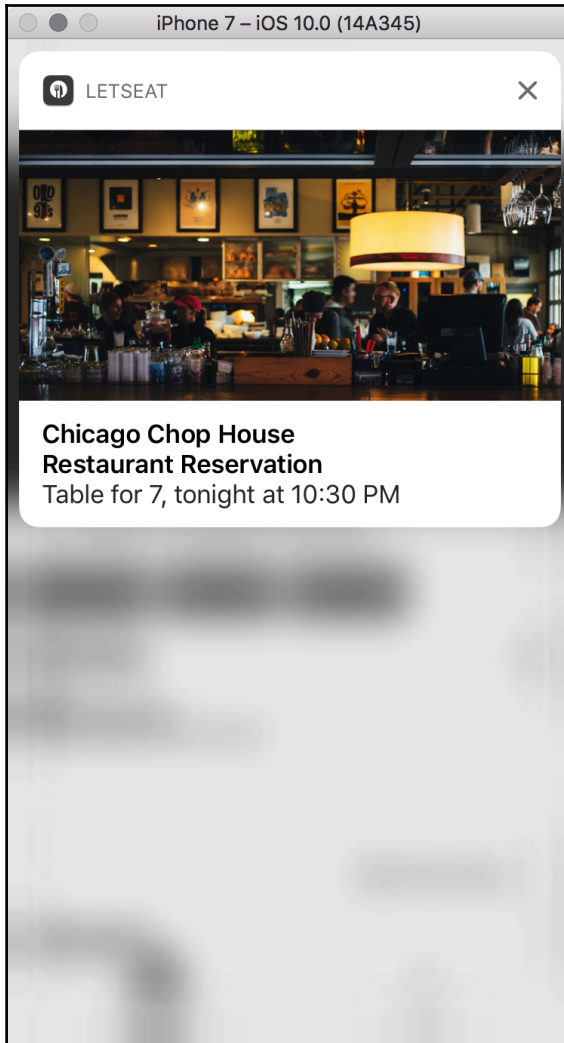




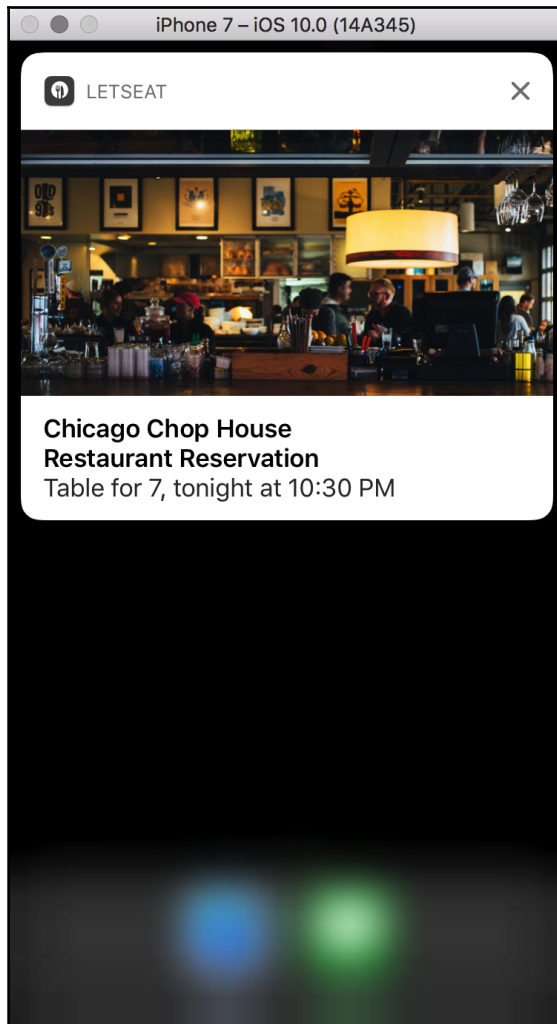




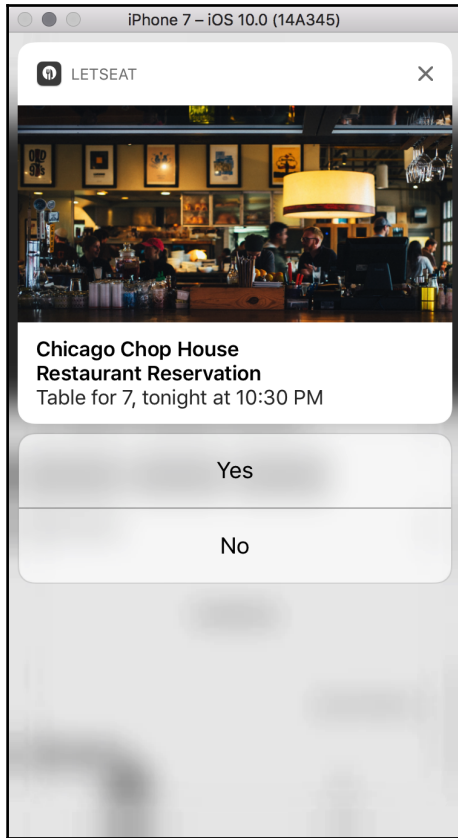


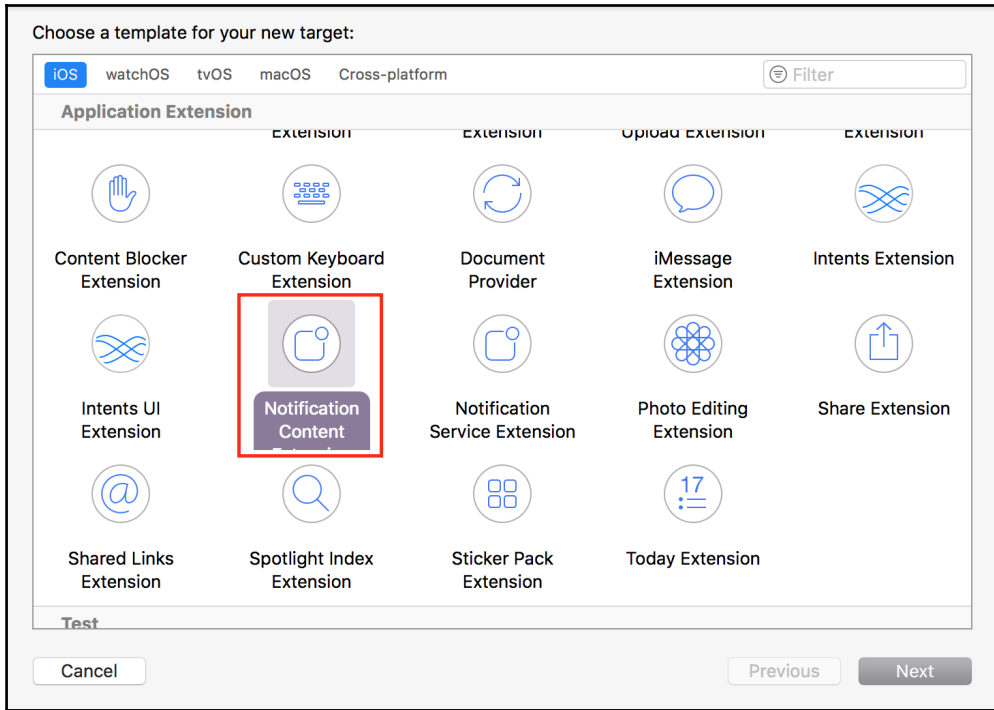






```
func checkNotifications() {  
    UNUserNotificationCenter.current().requestAuthorization(options: [.alert, .sound, .badge]) { (isGranted, error) in  
        // Add code here  
    }  
}
```





Choose options for your new target:

Product Name:

Team:

Organization Name:


Organization Identifier:

Bundle Identifier:

Language:

Project:

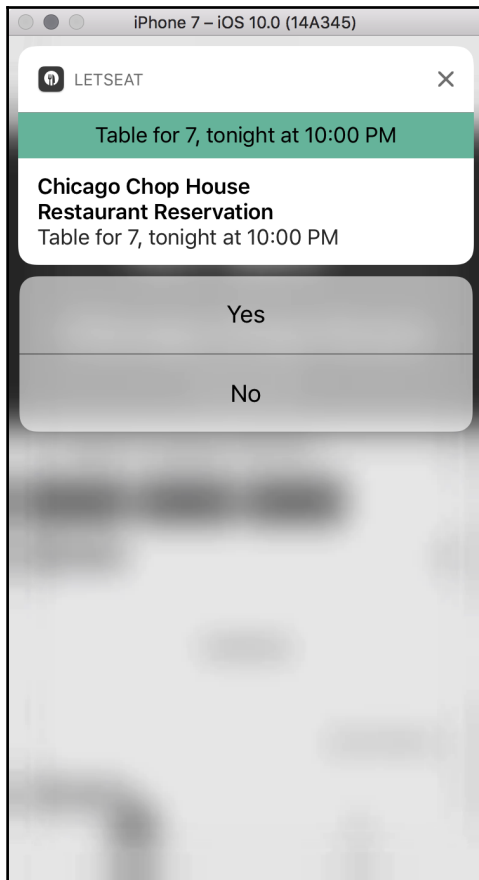
Embed in Application:

 **Activate "LetsEatContentExtension" scheme?**

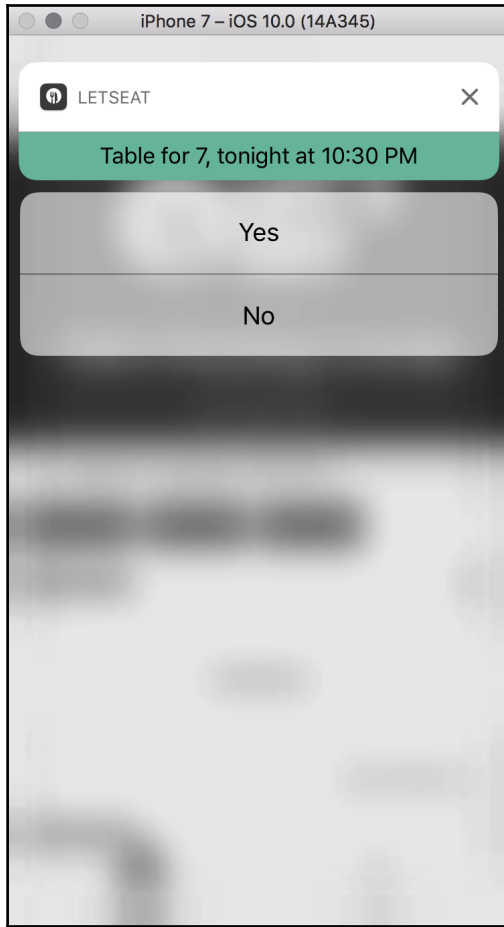
This scheme has been created for the "LetsEatContentExtension" target. Choose Activate to use this scheme for building and debugging. Schemes can be chosen in the toolbar or Product menu.

Do not show this message again

Key	Type	Value
▼ Information Property List	Dictionary	(10 items)
Localization native development re... ▼	String	en
Bundle display name ▼	String	LetsEatContentExtension
Executable file ▼	String	\$(EXECUTABLE_NAME)
Bundle identifier ▼	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version ▼	String	6.0
Bundle name ▼	String	\$(PRODUCT_NAME)
Bundle OS Type code ▼	String	XPC!
Bundle versions string, short ▼	String	1.0
Bundle version ▼	String	1
▼ NSExtension ▼	Dictionary	(3 items)
▼ NSExtensionAttributes	Dictionary	(2 items)
UNNotificationExtensionCategory	String	myNotificationCategory ←
UNNotificationExtensionInitialC...	Number	1
NSExtensionMainStoryboard	String	MainInterface
NSExtensionPointIdentifier	String	com.apple.usernotifications.content-extension



Key	Type	Value
▼ Information Property List	Dictionary	(10 items)
Localization native development region	String	en
Bundle display name	String	LetsEatContentExtension
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0
Bundle name	String	\$(PRODUCT_NAME)
Bundle OS Type code	String	XPC!
Bundle versions string, short	String	1.0
Bundle version	String	1
▼ NSExtension	Dictionary	(3 items)
▼ NSExtensionAttributes	Dictionary	(3 items)
UNNotificationExtensionCategory	String	reservationCategory
UNNotificationExtensionInitialContentSizeRatio	Number	0.25
UNNotificationExtensionDefaultContentHidden	Boolean	YES ←
NSExtensionMainStoryboard	String	MainInterface
NSExtensionPointIdentifier	String	com.apple.usernotifications.content-extension



Chapter 26: Just a Peek

```
func checkShortCut(_ application: UIApplication, launchOptions: [UIApplicationLaunchOptionsKey: Any]?) -> Bool {
    var isPerformingAdditionalDelegateHandling = true A
    if let shortcutItem = launchOptions?[UIApplicationLaunchOptionsKey.shortcutItem] as? UIApplicationShortcutItem {
        launchedShortcutItem = shortcutItem
        isPerformingAdditionalDelegateHandling = false
    }
    if let shortcutItems = application.shortcutItems, shortcutItems.isEmpty {
B let laShortcut = UIMutableApplicationShortcutItem(type: Shortcut.openLosAngeles.type, localizedTitle: "Los Angeles", localizedSubtitle: "", icon: UIApplicationShortcutIcon(templateImageName: "shortcut-city"), userInfo:nil)
    }
C let lvShortcut = UIMutableApplicationShortcutItem(type: Shortcut.openLasVegas.type, localizedTitle: "Las Vegas", localizedSubtitle: "", icon: UIApplicationShortcutIcon(templateImageName: "shortcut-city"), userInfo: nil)
    }
    application.shortcutItems = [laShortcut, lvShortcut]
}
D return isPerformingAdditionalDelegateHandling
}
```

```

func handleShortCut(_ item: UIApplicationShortcutItem) -> Bool {
    var isHandled = false
    A guard Shortcut(with: item.type) != nil, let shortCutType = item.type as String?, let tabBarController = self.window?.
      rootViewController as? UITabBarController else { return false }

    switch (shortCutType) {
    case Shortcut.openLocations.type:
        tabBarController.selectedIndex = 0
        let navController = self.window?.rootViewController?.childViewControllers.first as! UINavigationController
        B let viewController = navController.childViewControllers.first as! ExploreViewController
          viewController.performSegue(withIdentifier: "locationList", sender: self)

        isHandled = true

        break

    case Shortcut.openMap.type:
        C tabBarController.selectedIndex = 1
          isHandled = true

        break

    case Shortcut.openLosAngeles.type:
        let navController = self.window?.rootViewController?.childViewControllers.first as! UINavigationController
        let viewController = navController.childViewControllers.first as! ExploreViewController
        viewController.selectedCity = LocationItem(state: "CA", city: "Los Angeles")
        D tabBarController.selectedIndex = 1
          tabBarController.selectedIndex = 0
          isHandled = true

        break

    case Shortcut.openLasVegas.type:
        let navController = self.window?.rootViewController?.childViewControllers.first as! UINavigationController
        let viewController = navController.childViewControllers.first as! ExploreViewController
        E viewController.selectedCity = LocationItem(state: "NV", city: "Las Vegas")

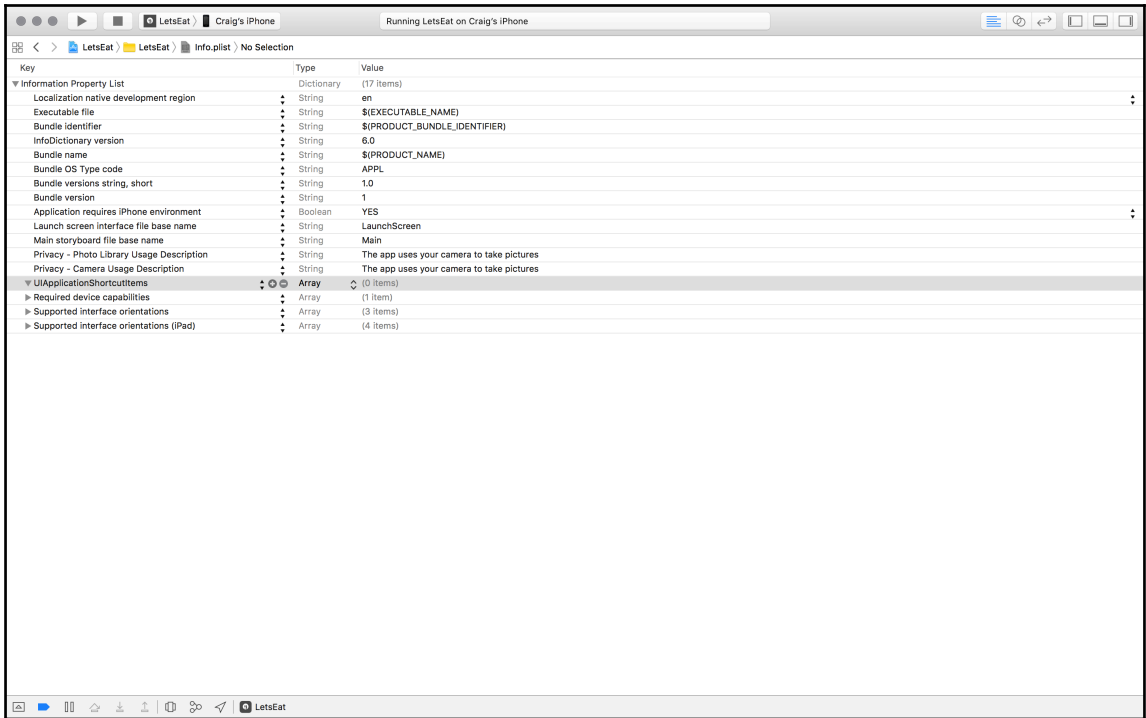
        tabBarController.selectedIndex = 1
        tabBarController.selectedIndex = 0
        isHandled = true

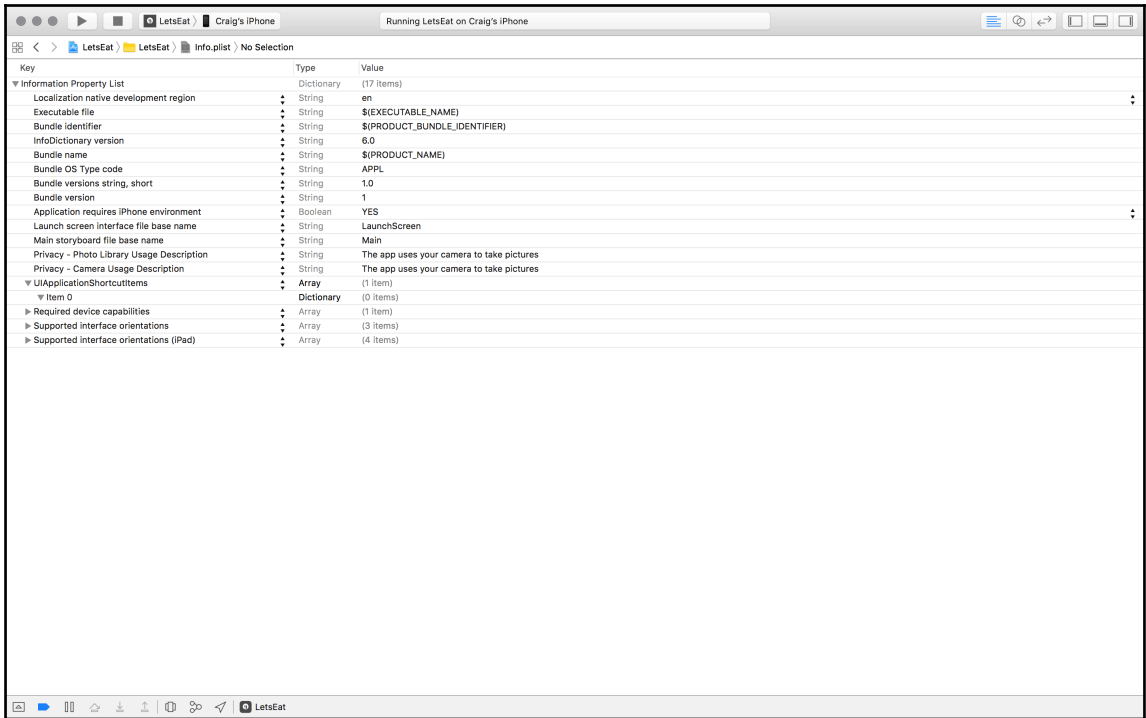
        break

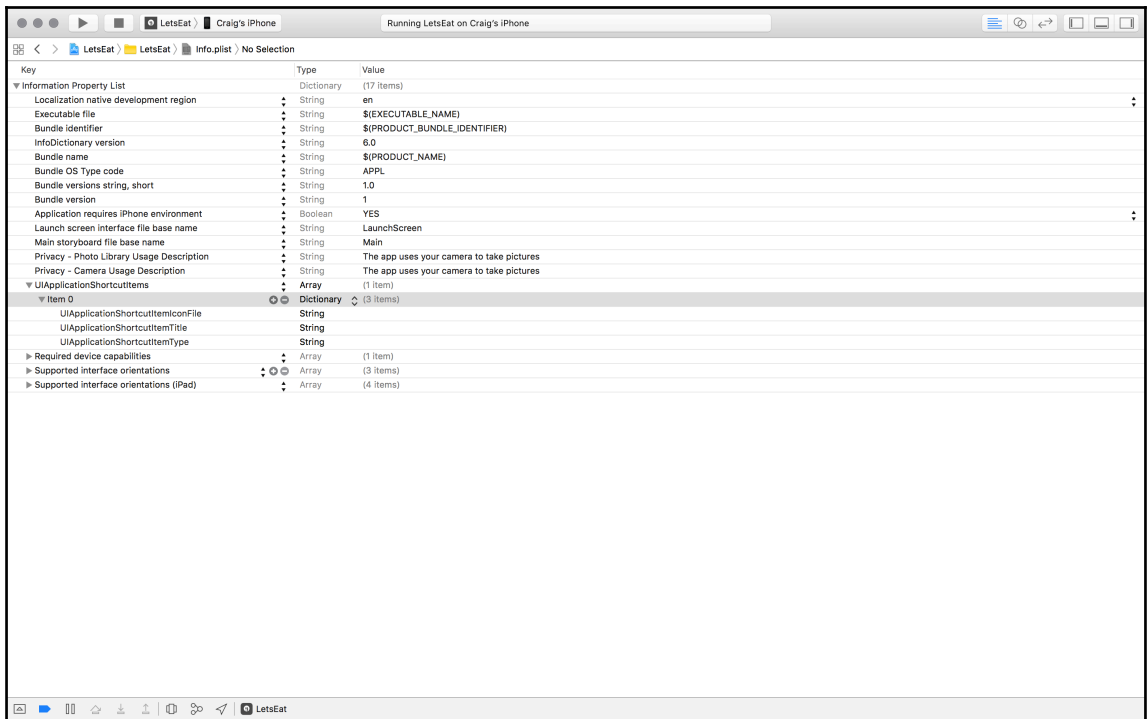
    default:
        break
    }

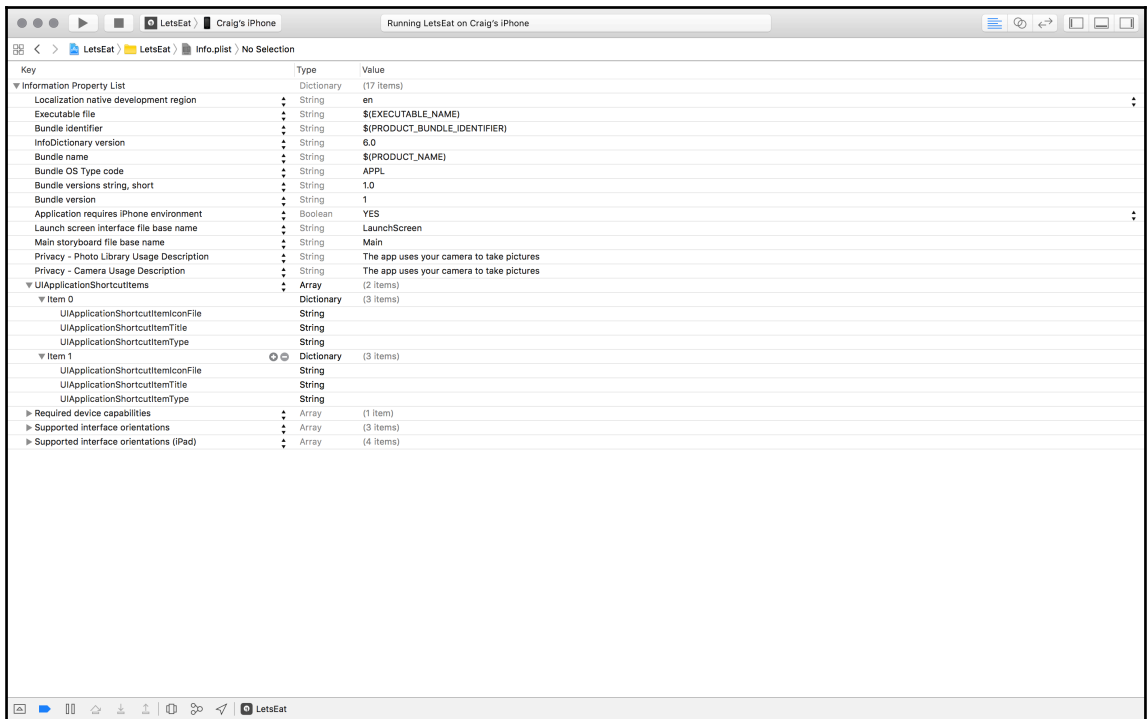
    return isHandled
}

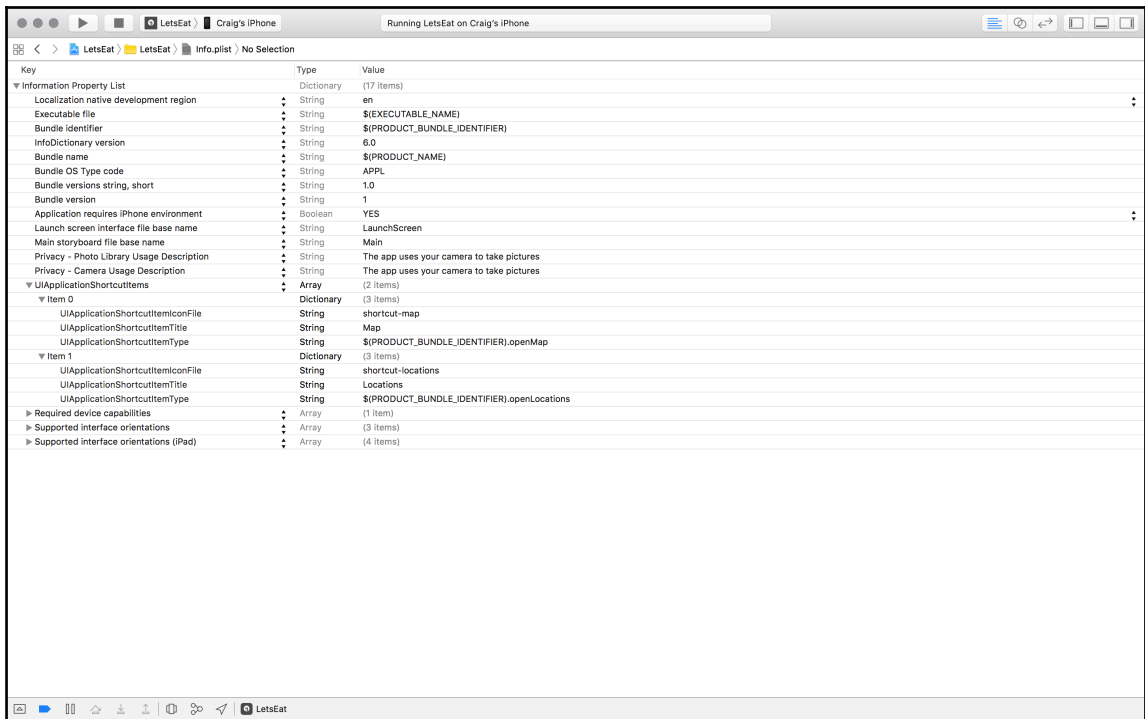
```

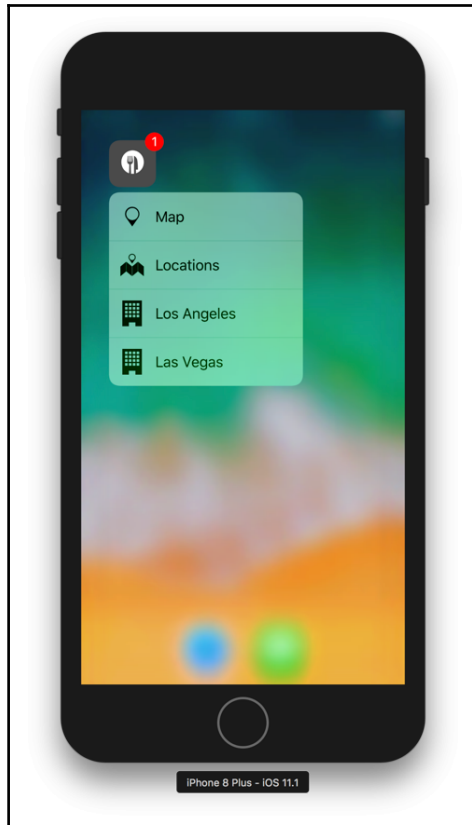


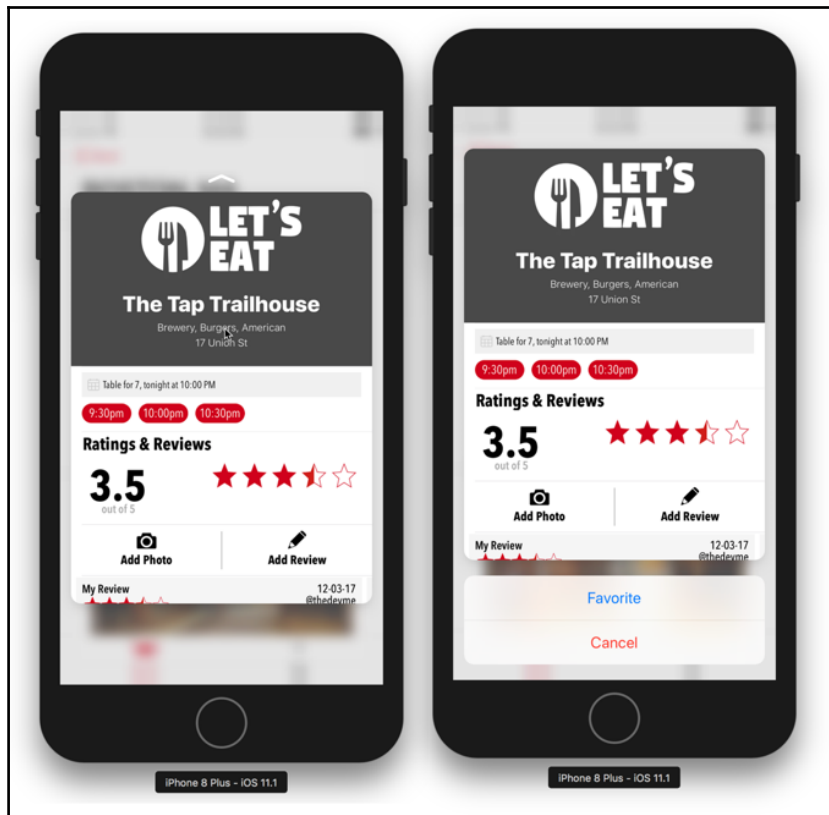


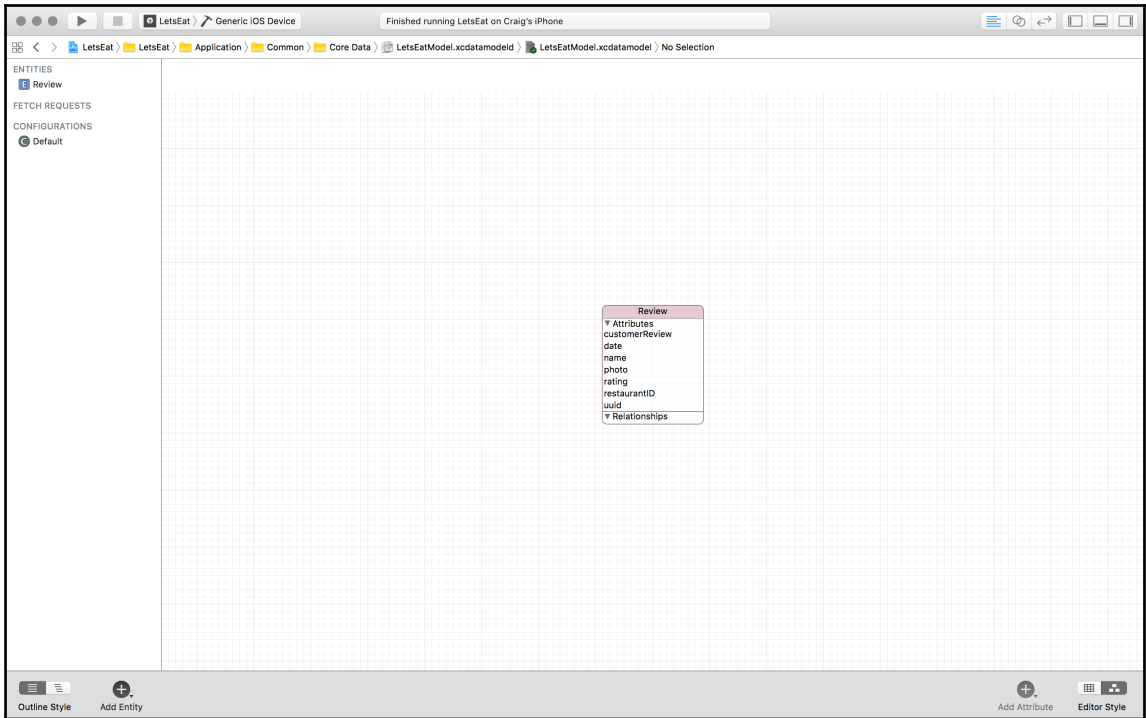


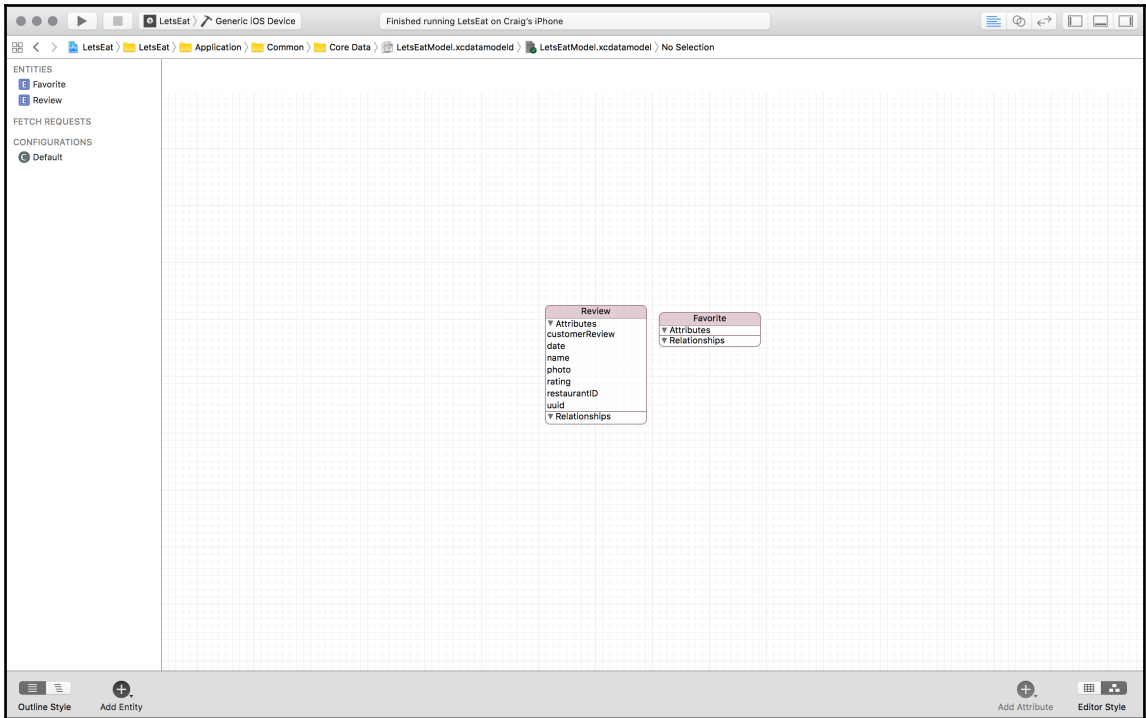


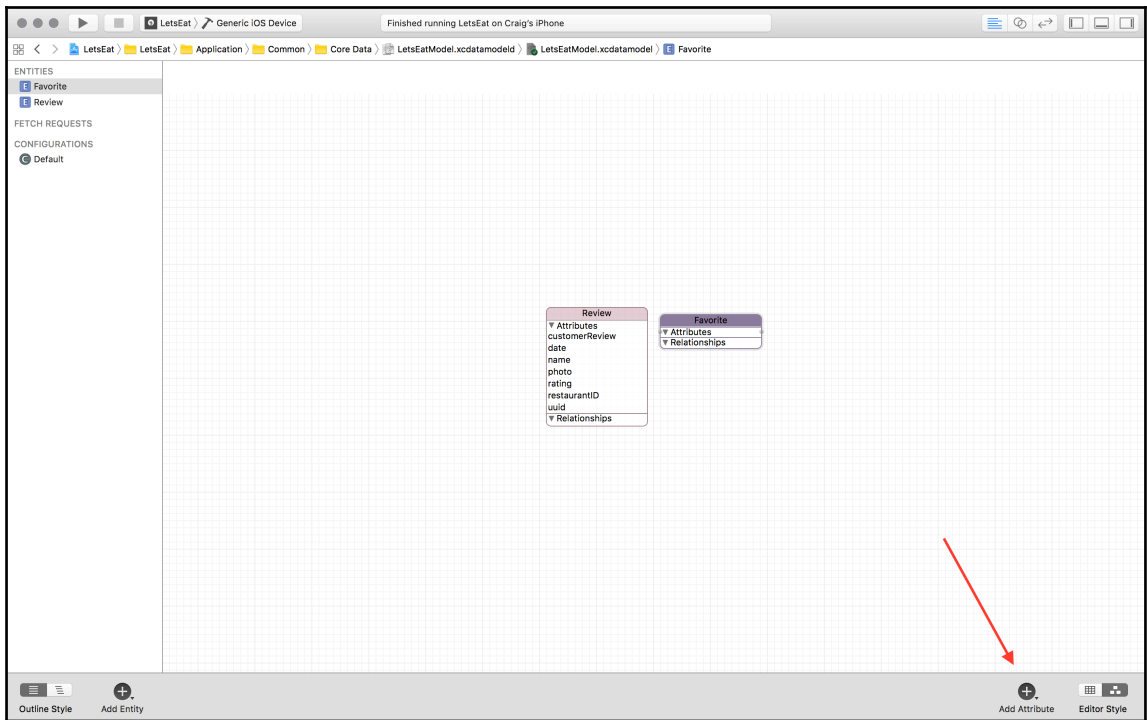


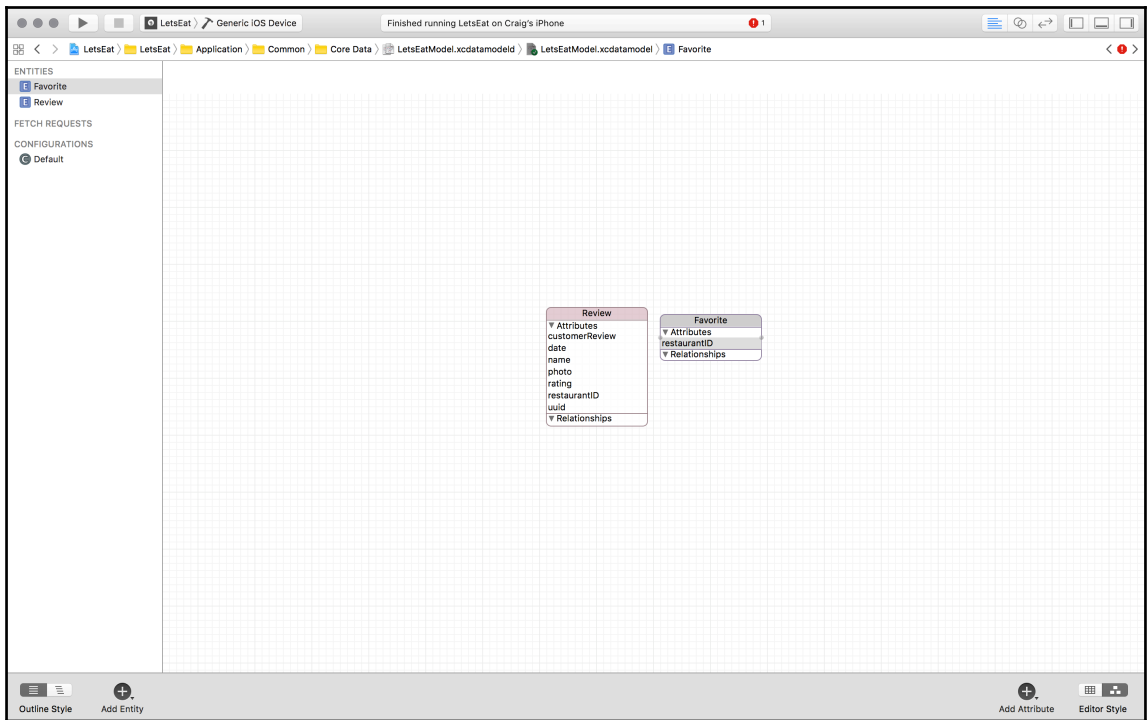


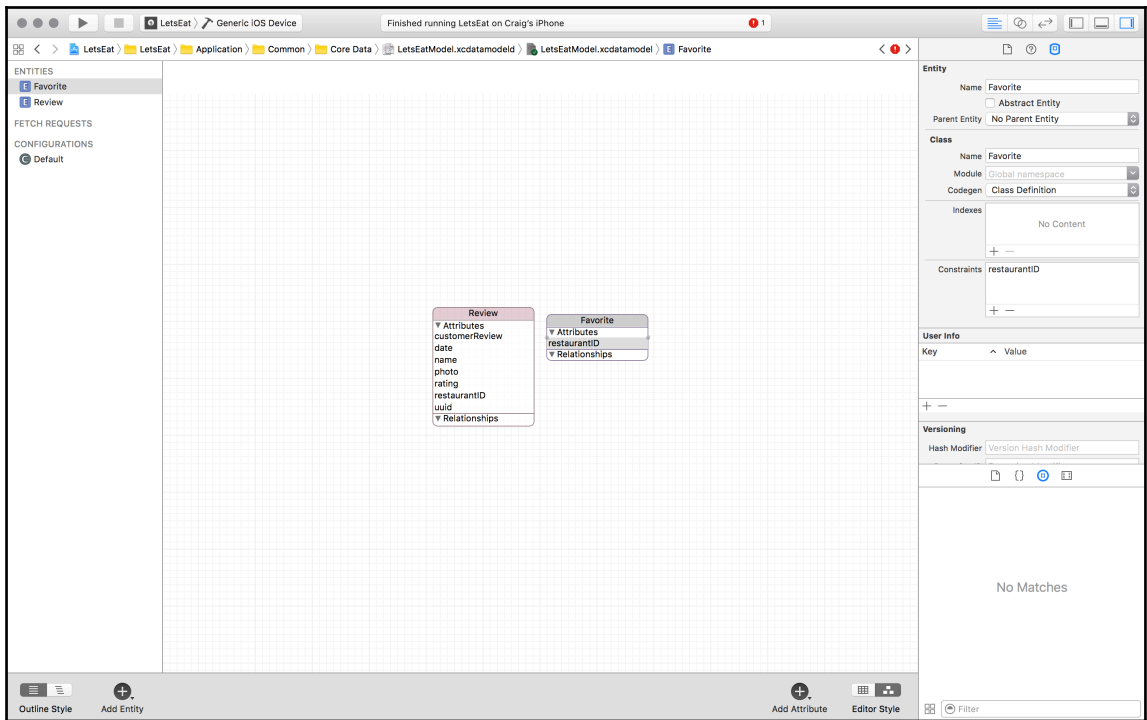


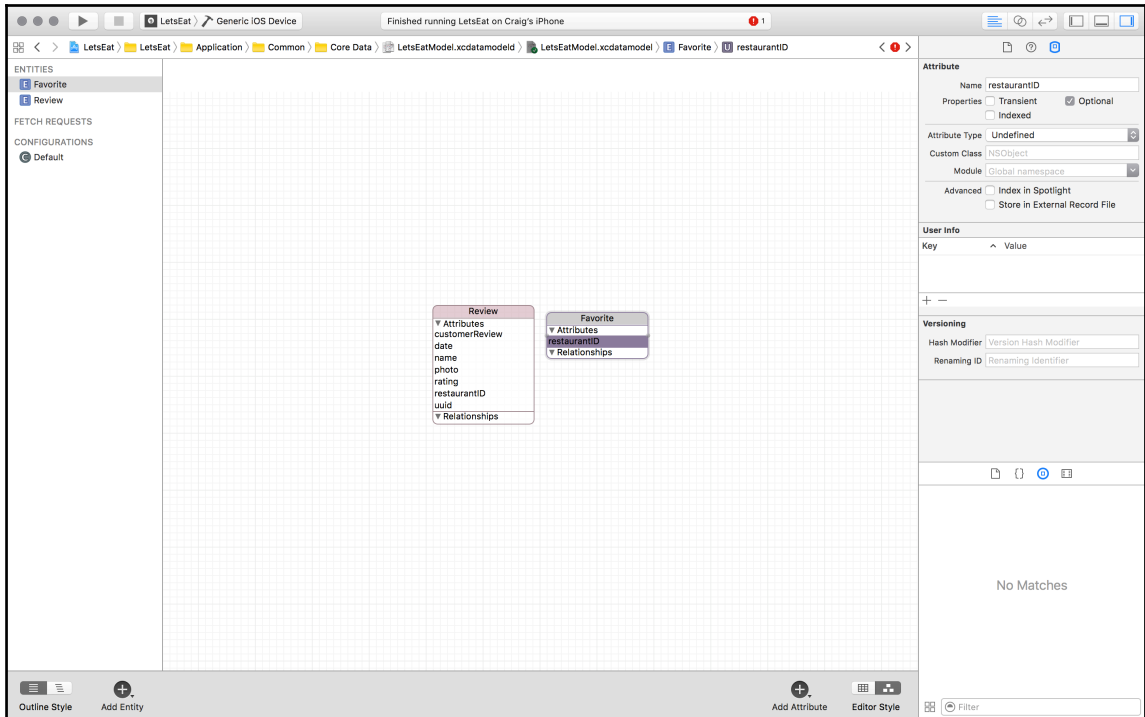












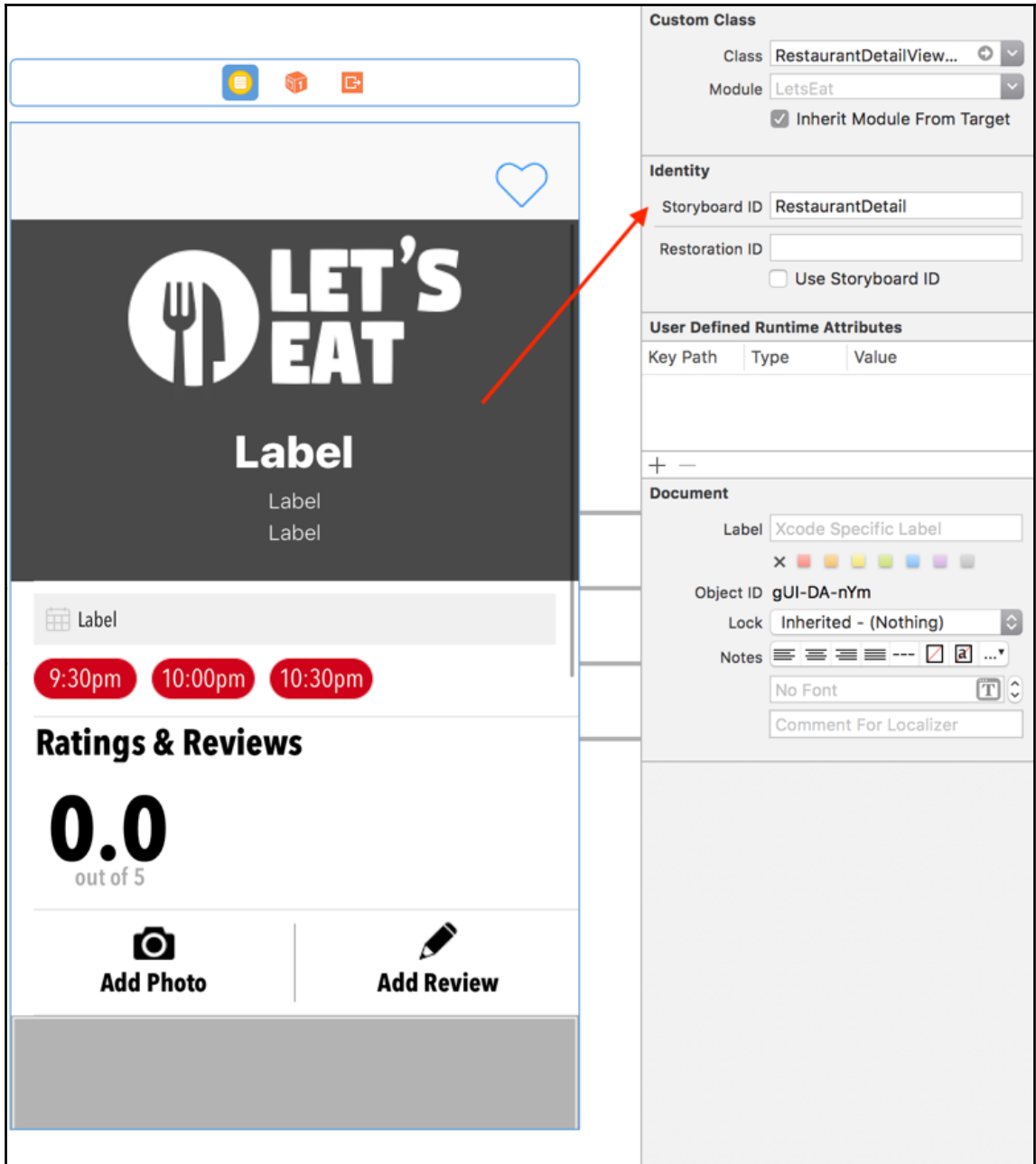
```

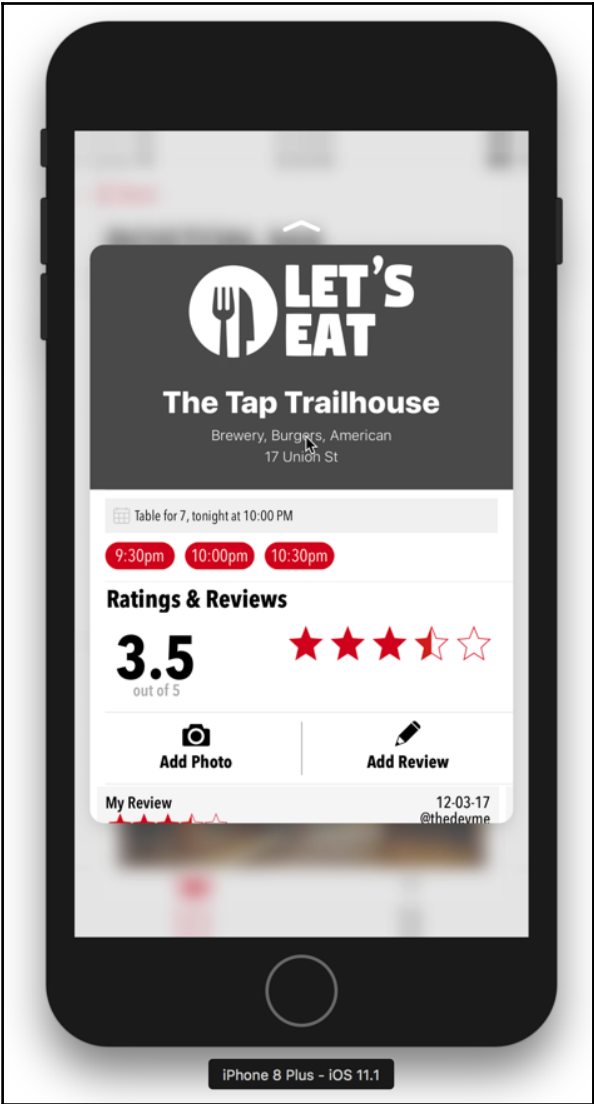
extension RestaurantViewController: UIViewControllerPreviewingDelegate {
    func previewingContext(_ previewingContext: UIViewControllerPreviewing, viewControllerForLocation location: CGPoint) ->
        UIViewController? {
        let restaurantDetail : UIStoryboard = UIStoryboard(name: "RestaurantDetail", bundle: nil)
        A guard let indexPath = collectionView?.indexPathForItem(at: location), let cell = collectionView?.cellForItem(at:
            indexPath), let detailVC = restaurantDetail.instantiateViewController(withIdentifier: "RestaurantDetail") as?
            RestaurantDetailViewController else { return nil }

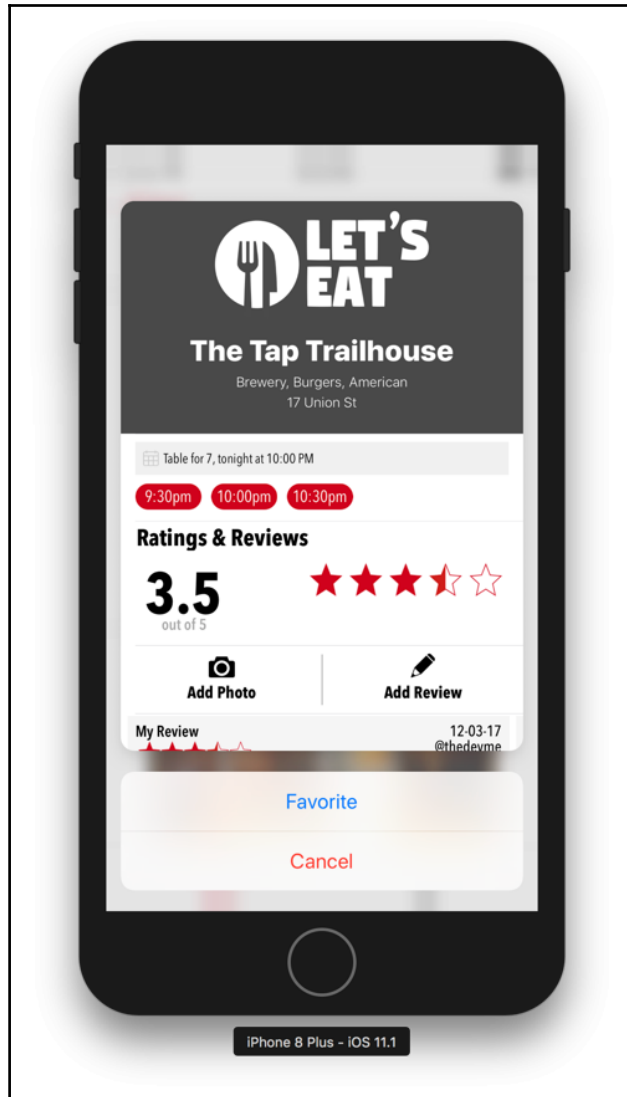
        selectedRestaurant = manager.restaurantItem(at: indexPath)
        detailVC.selectedRestaurant = selectedRestaurant
        B detailVC.preferredContentSize = CGSize(width: 0.0, height: 528)
        previewingContext.sourceRect = cell.frame

        return detailVC
    }
    C func previewingContext(_ previewingContext: UIViewControllerPreviewing, commit viewControllerToCommit: UIViewController)
        {
        show(viewControllerToCommit, sender: self)
        }
}

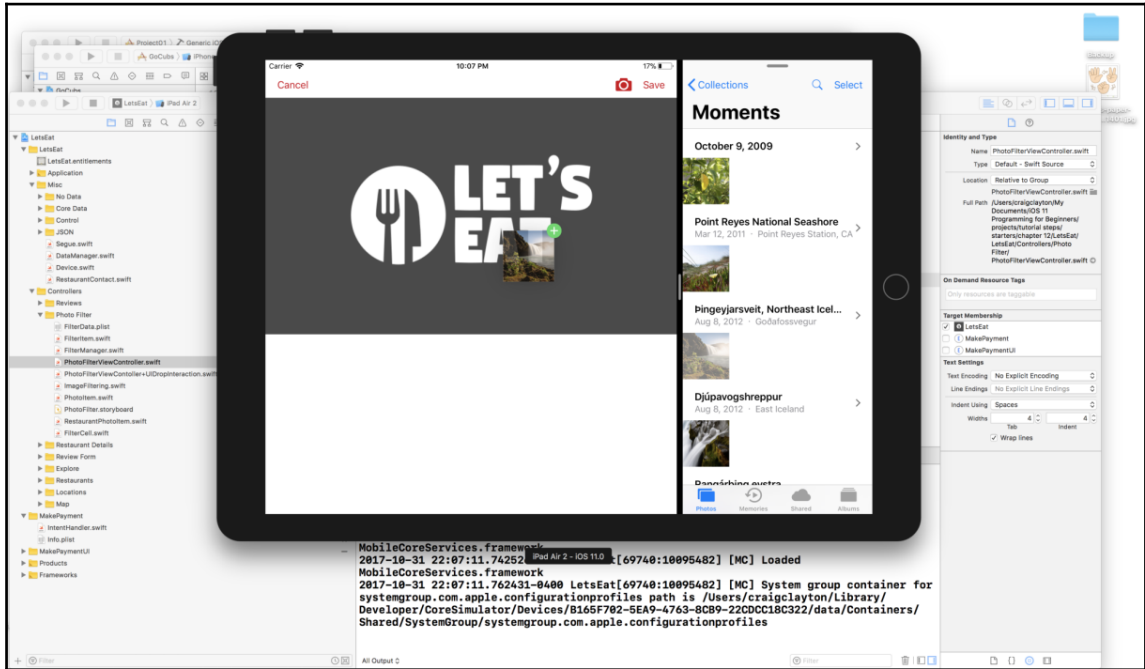
```

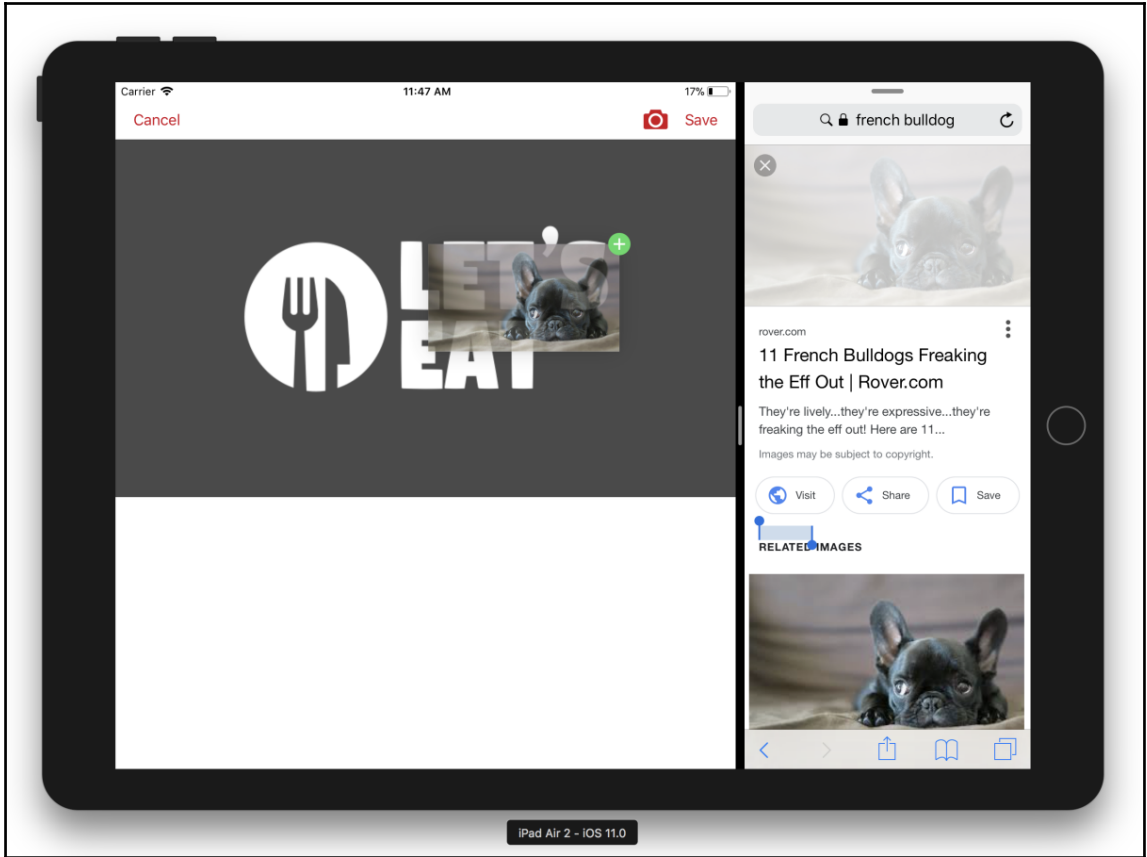


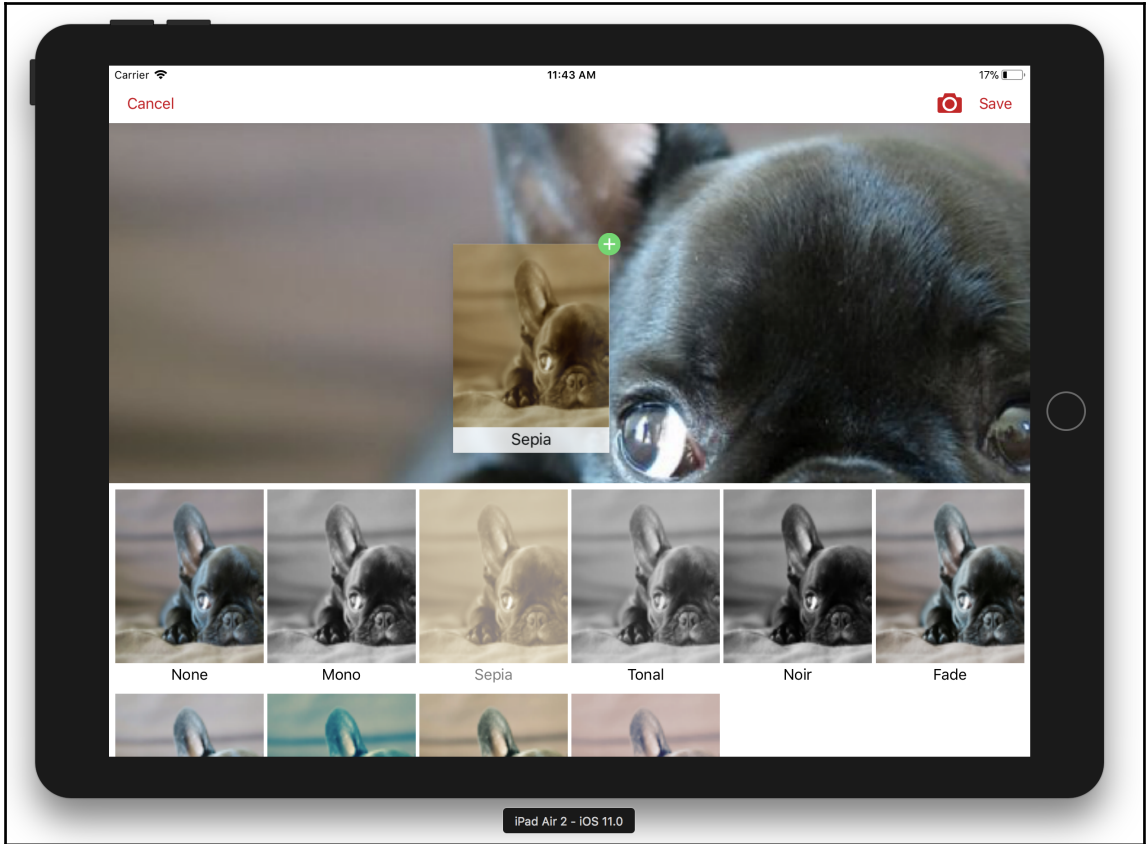


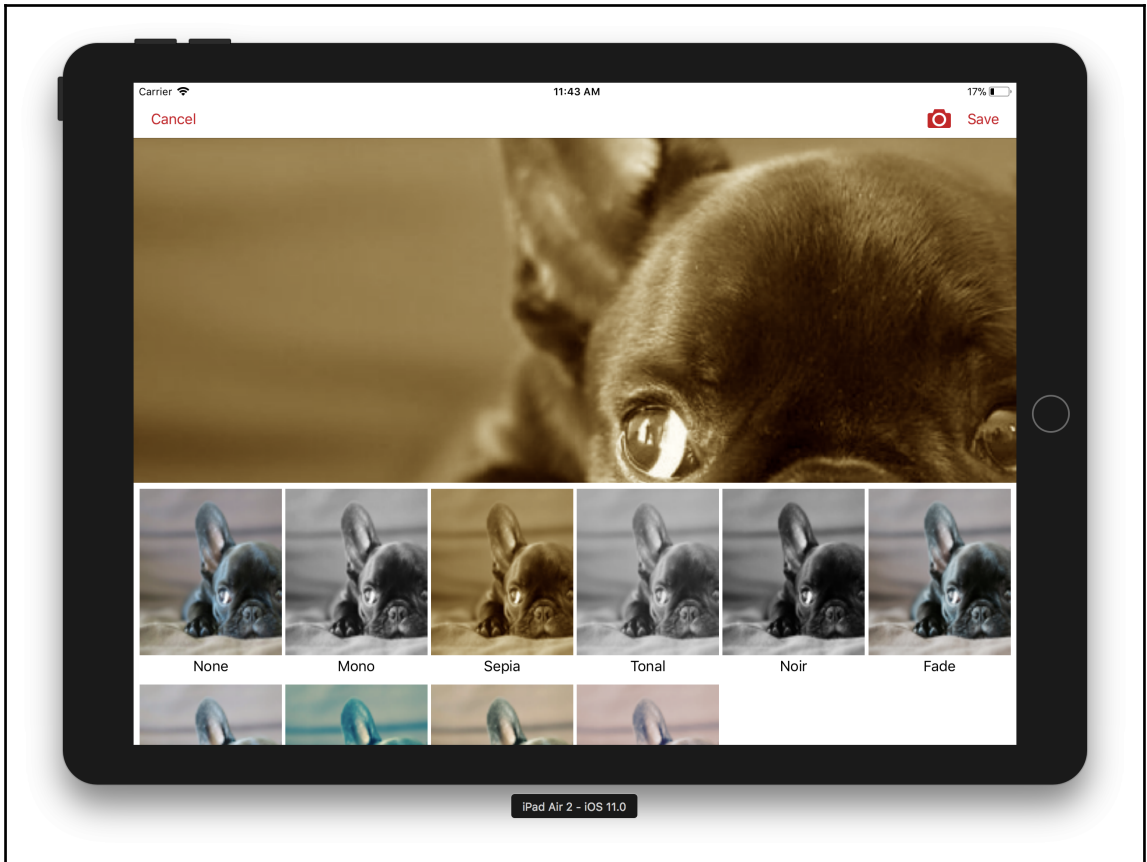


Chapter 27: Drag and Drop

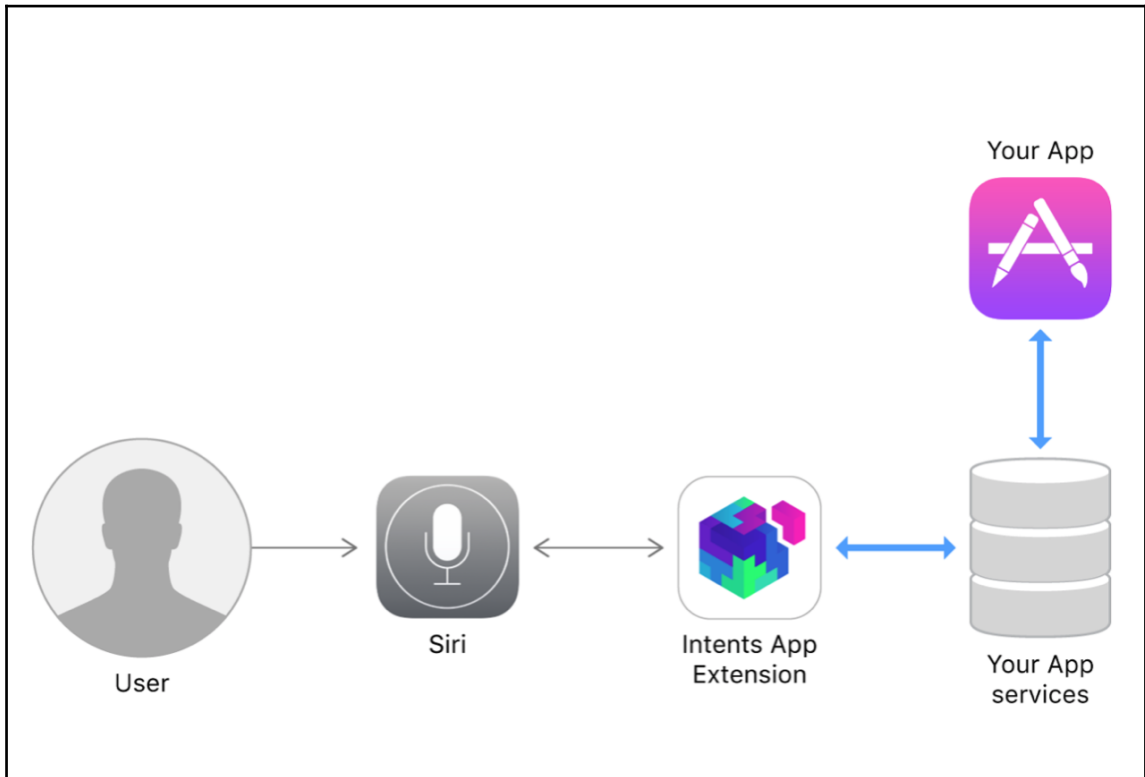


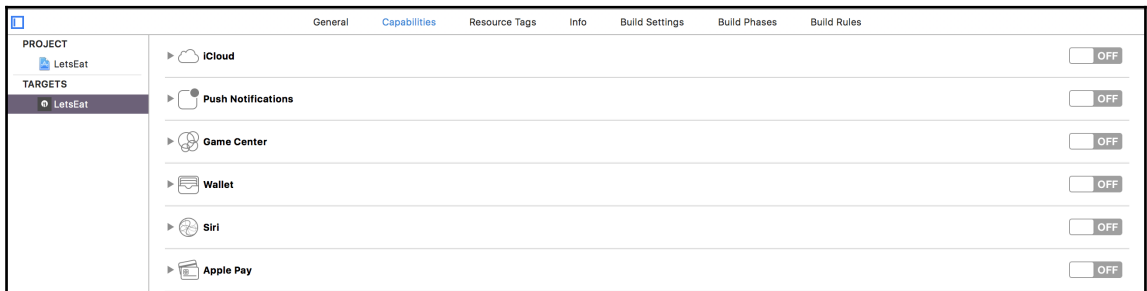
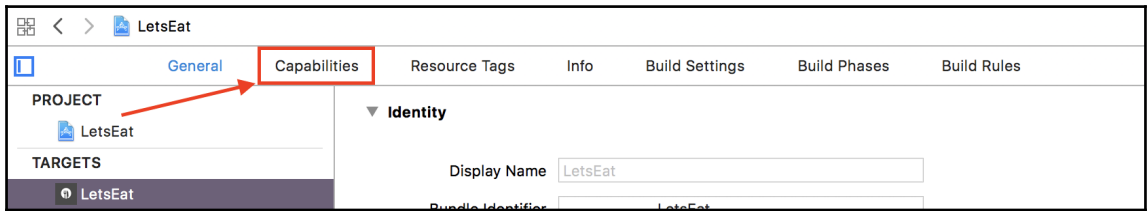
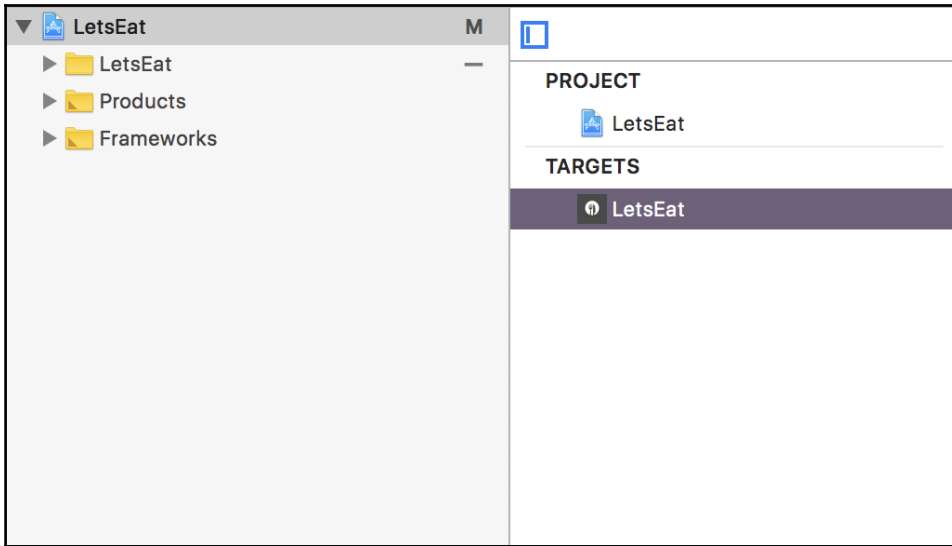


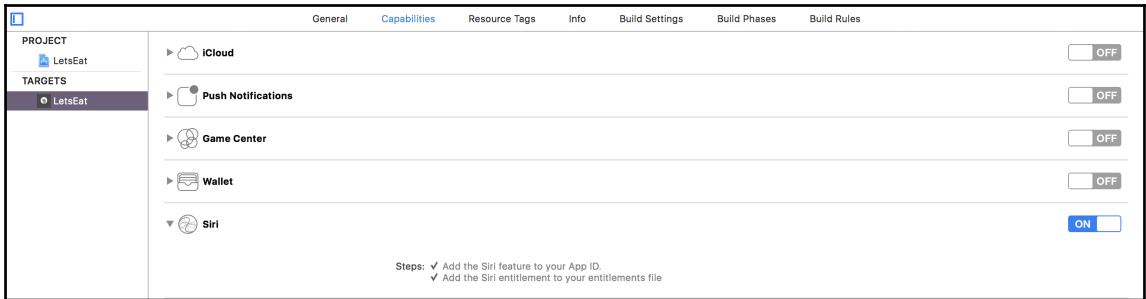


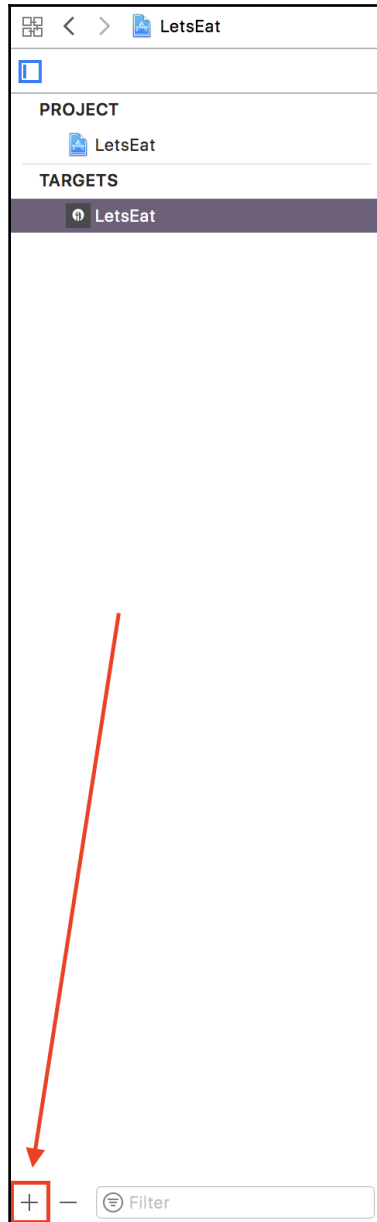


Chapter 28: SiriKit









>

Choose a template for your new target:

iOS watchOS tvOS macOS Cross-platform Filter

Application Extension



Action Extension



Audio Unit Extension



Broadcast Setup UI Extension



Broadcast Upload 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



Cancel

Previous

Next

Choose options for your new target:

Product Name:

Team:

Organization Name:

Organization Identifier:

Bundle Identifier:

Language:

Include UI Extension

Project:

Embed in Application:

Cancel

Previous

Finish

Key	Type	Value
▼ Information Property List	Dictionary	(10 items)
Localization native development r...	String	\$(DEVELOPMENT_LANGUAGE)
Bundle display name	String	MakePayment
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0
Bundle name	String	\$(PRODUCT_NAME)
Bundle OS Type code	String	XPC!
Bundle versions string, short	String	1.0
Bundle version	String	1
▼ 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
NSExtensionPointIdentifier	String	com.apple.intents-service
NSExtensionPrincipalClass	String	\$(PRODUCT_MODULE_NAME).IntentHandler

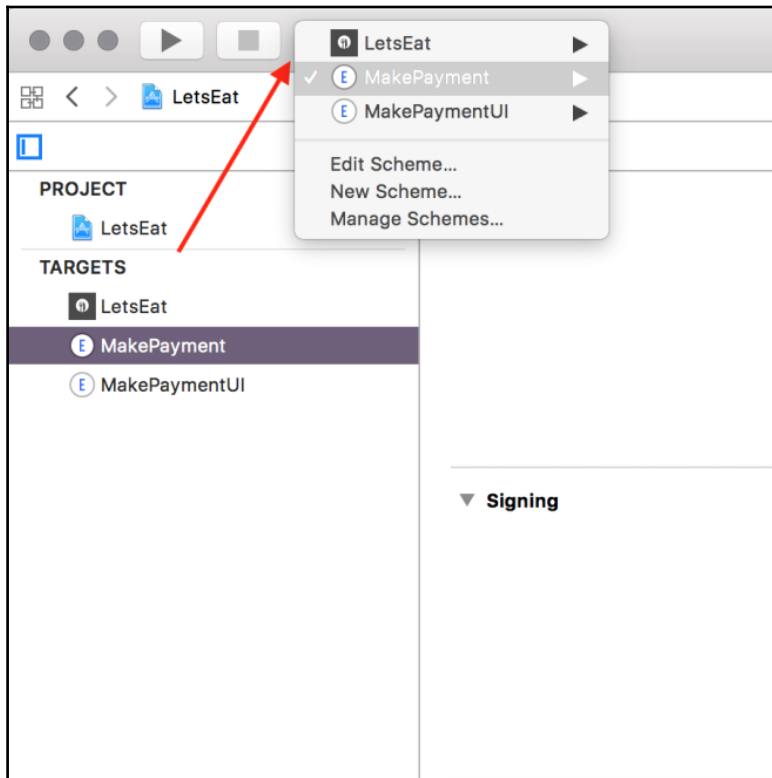
Key	Type	Value
▼ Information Property List	Dictionary	(10 items)
Localization native development r...	String	\$(DEVELOPMENT_LANGUAGE)
Bundle display name	String	MakePayment
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0
Bundle name	String	\$(PRODUCT_NAME)
Bundle OS Type code	String	XPC!
Bundle versions string, short	String	1.0
Bundle version	String	1
▼ 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
NSExtensionPointIdentifier	String	com.apple.intents-service
NSExtensionPrincipalClass	String	\$(PRODUCT_MODULE_NAME).IntentHandler

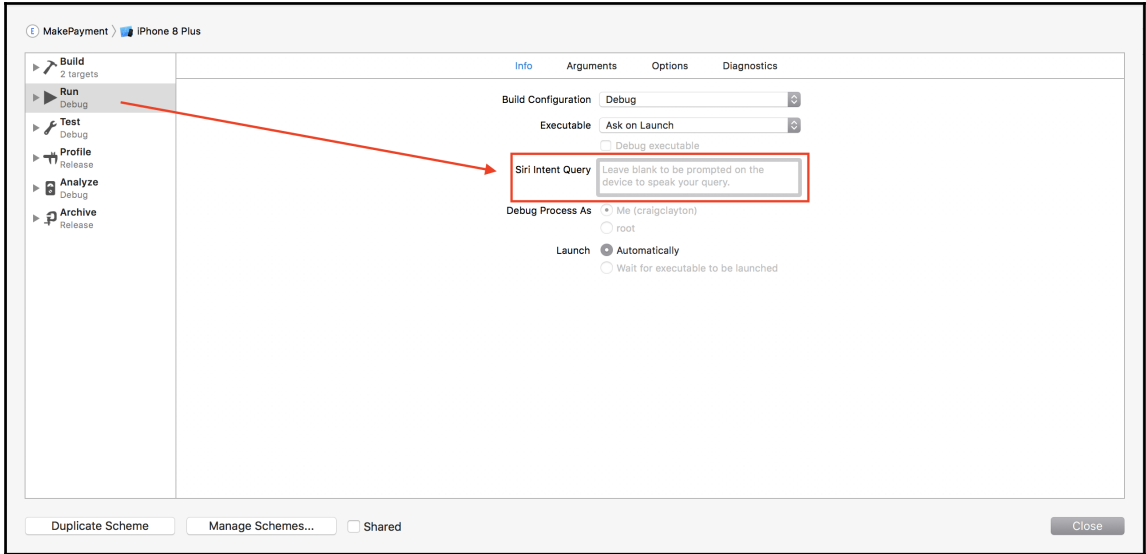
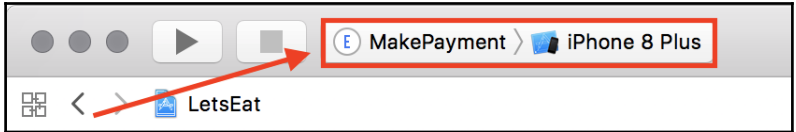
Key	Type	Value
▼ Information Property List	Dictionary	(10 items)
Localization native development r...	String	\$(DEVELOPMENT_LANGUAGE)
Bundle display name	String	MakePayment
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0
Bundle name	String	\$(PRODUCT_NAME)
Bundle OS Type code	String	XPC!
Bundle versions string, short	String	1.0
Bundle version	String	1
▼ NSExtension	Dictionary	(3 items)
▼ NSExtensionAttributes	Dictionary	(2 items)
▼ IntentsRestrictedWhileLo...	Array	(0 items)
▼ IntentsSupported	Array	(1 item)
Item 0	String	INSendPaymentIntent
NSExtensionPointIdentifier	String	com.apple.intents-service
NSExtensionPrincipalClass	String	\$(PRODUCT_MODULE_NAME).IntentHandler

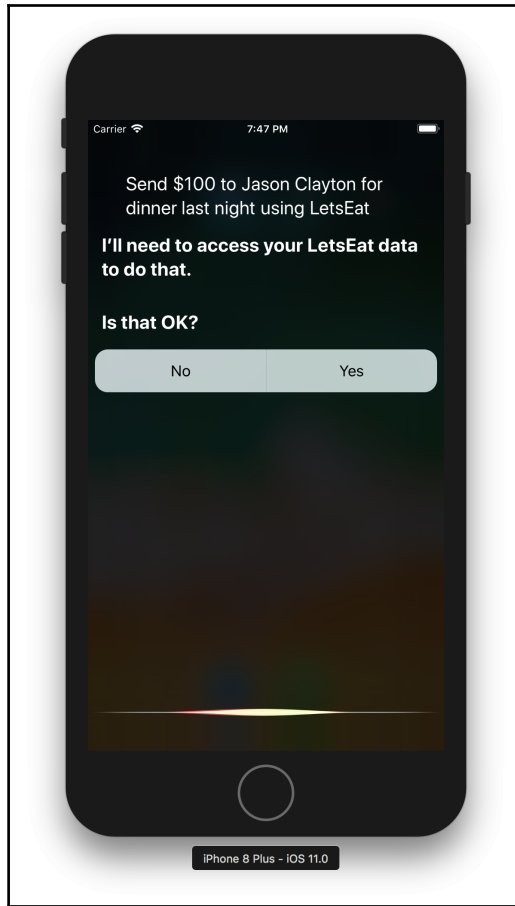
Key	Type	Value
▼ Information Property List	Dictionary	(10 items)
Localization native development r...	String	\$(DEVELOPMENT_LANGUAGE)
Bundle display name	String	MakePayment
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0
Bundle name	String	\$(PRODUCT_NAME)
Bundle OS Type code	String	XPC!
Bundle versions string, short	String	1.0
Bundle version	String	1
▼ NSExtension	Dictionary	(3 items)
▼ NSExtensionAttributes	Dictionary	(2 items)
▼ IntentsRestrictedWhileLocked	Array	(1 item)
Item 0	String	INSendPaymentIntent
▼ IntentsSupported	Array	(1 item)
Item 0	String	INSendPaymentIntent
NSExtensionPointIdentifier	String	com.apple.intents-service
NSExtensionPrincipalClass	String	\$(PRODUCT_MODULE_NAME).IntentHandler

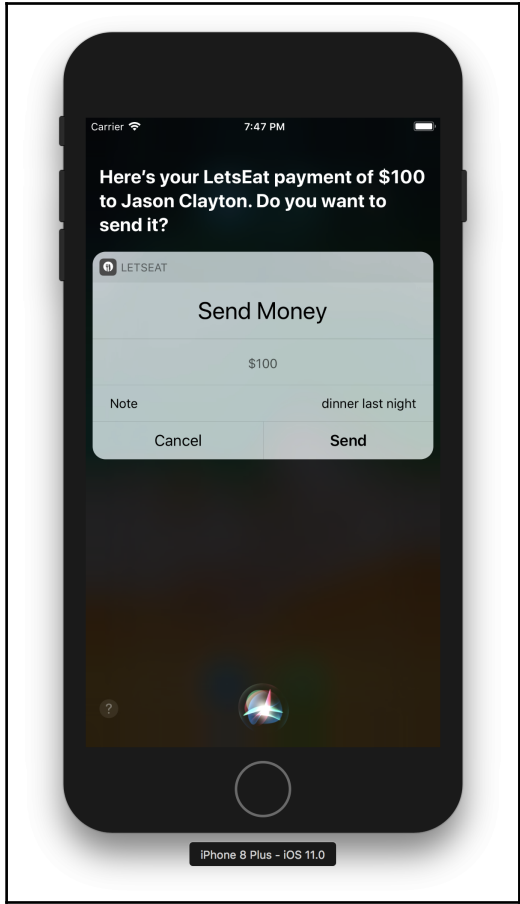
Key	Type	Value
▼ Information Property List	Dictionary	(10 items)
Localization native development region	String	\$(DEVELOPMENT_LANGUAGE)
Bundle display name	String	MakePaymentUI
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0
Bundle name	String	\$(PRODUCT_NAME)
Bundle OS Type code	String	XPC!
Bundle versions string, short	String	1.0
Bundle version	String	1
▼ NSExtension	Dictionary	(3 items)
▼ NSExtensionAttributes	Dictionary	(1 item)
▼ IntentsSupported	Array	(1 item)
Item 0	String	INSendPaymentIntent
NSExtensionMainStoryboard	String	MainInterface
NSExtensionPointIdentifier	String	com.apple.intents-ui-service

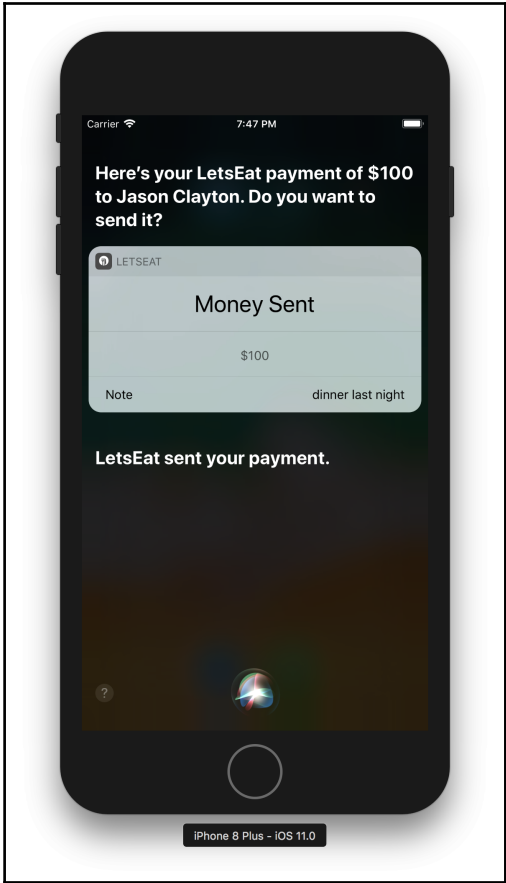
Key	Type	Value
▼ Information Property List	Dictionary	(18 items)
Localization native development r...	String	\$(DEVELOPMENT_LANGUAGE)
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0
Bundle name	String	\$(PRODUCT_NAME)
Bundle OS Type code	String	APPL
Bundle versions string, short	String	1.0
Bundle version	String	1
Application requires iPhone enviro...	Boolean	YES
Privacy - Camera Usage Description	String	The app uses your camera to take pictures
Privacy - Location When In Use U...	String	The app uses location
Privacy - Photo Library Usage Des...	String	The app uses your camera to take pictures
Privacy - Siri Usage Description	String	This app uses Siri to send payments.
Launch screen interface file base...	String	LaunchScreen
Main storyboard file base name	String	Main
▶ Required device capabilities	Array	(1 item)
▶ Supported interface orientations	Array	(3 items)
▶ Supported interface orientations (i...	Array	(4 items)

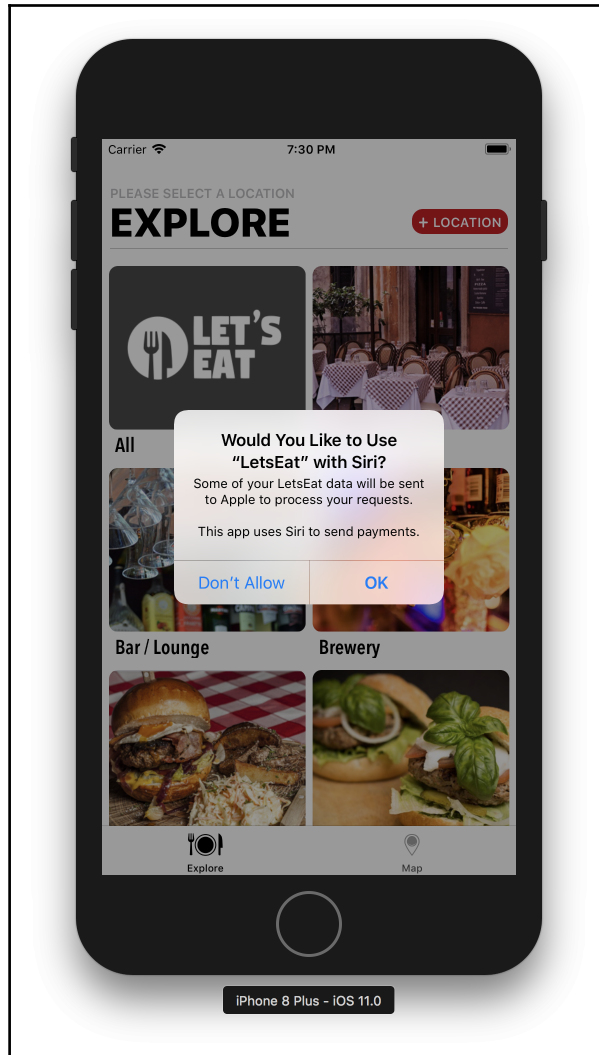




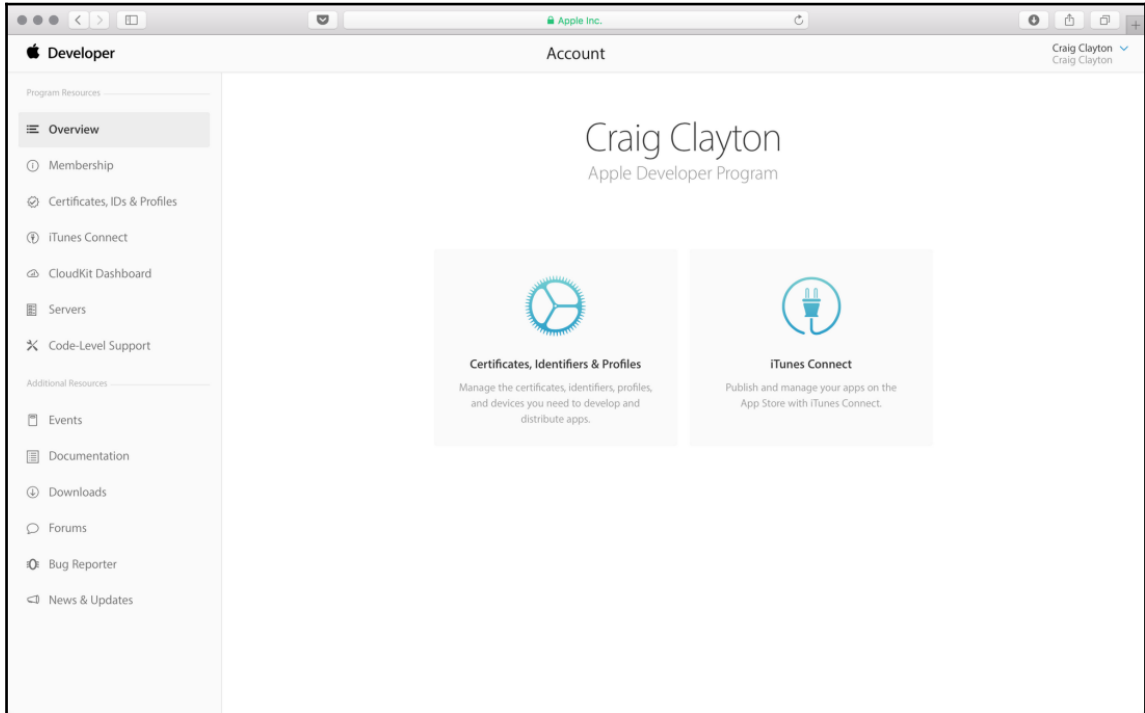


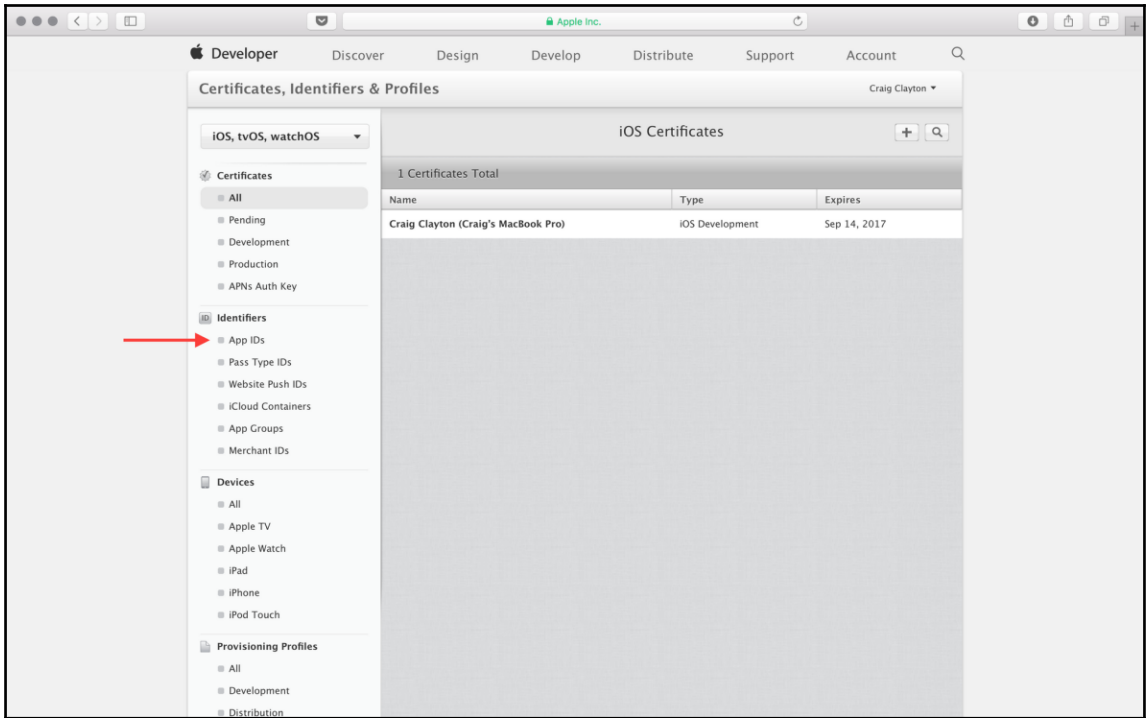


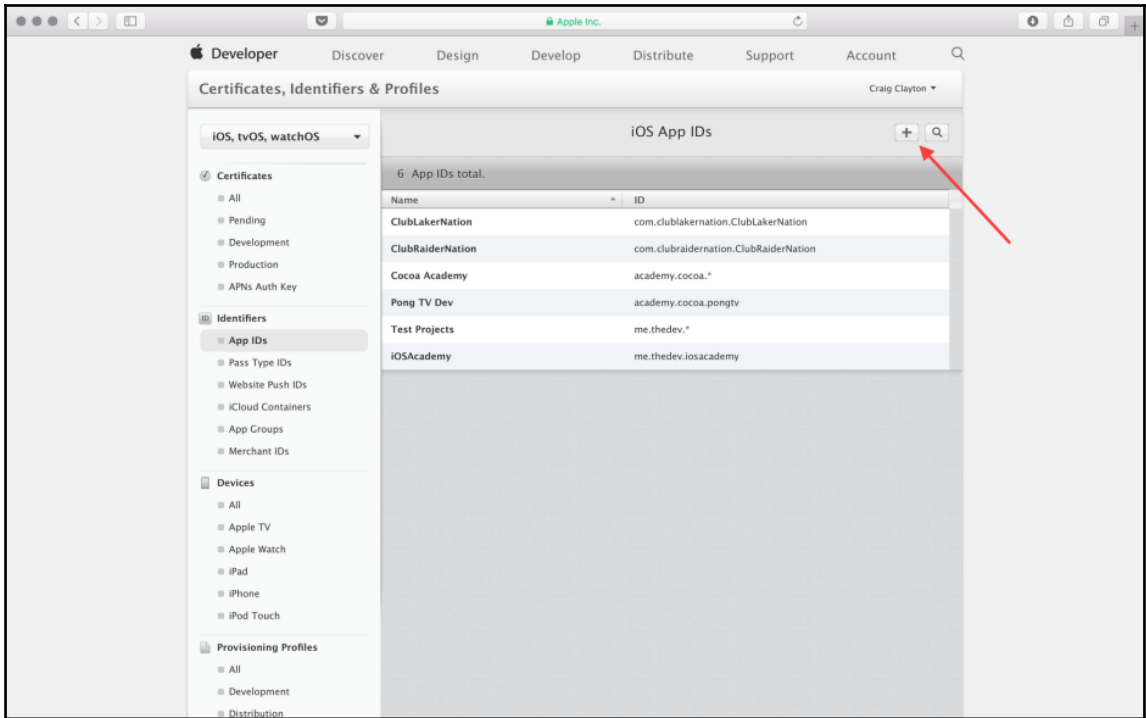


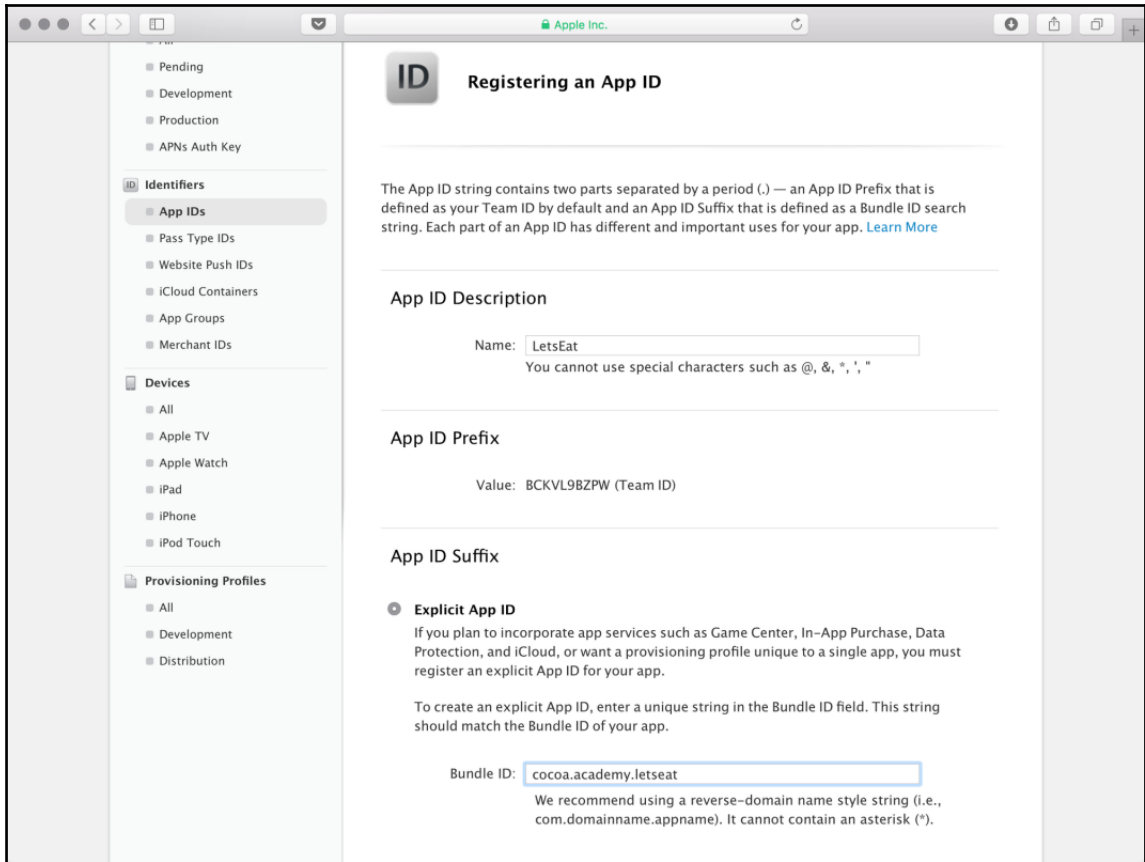


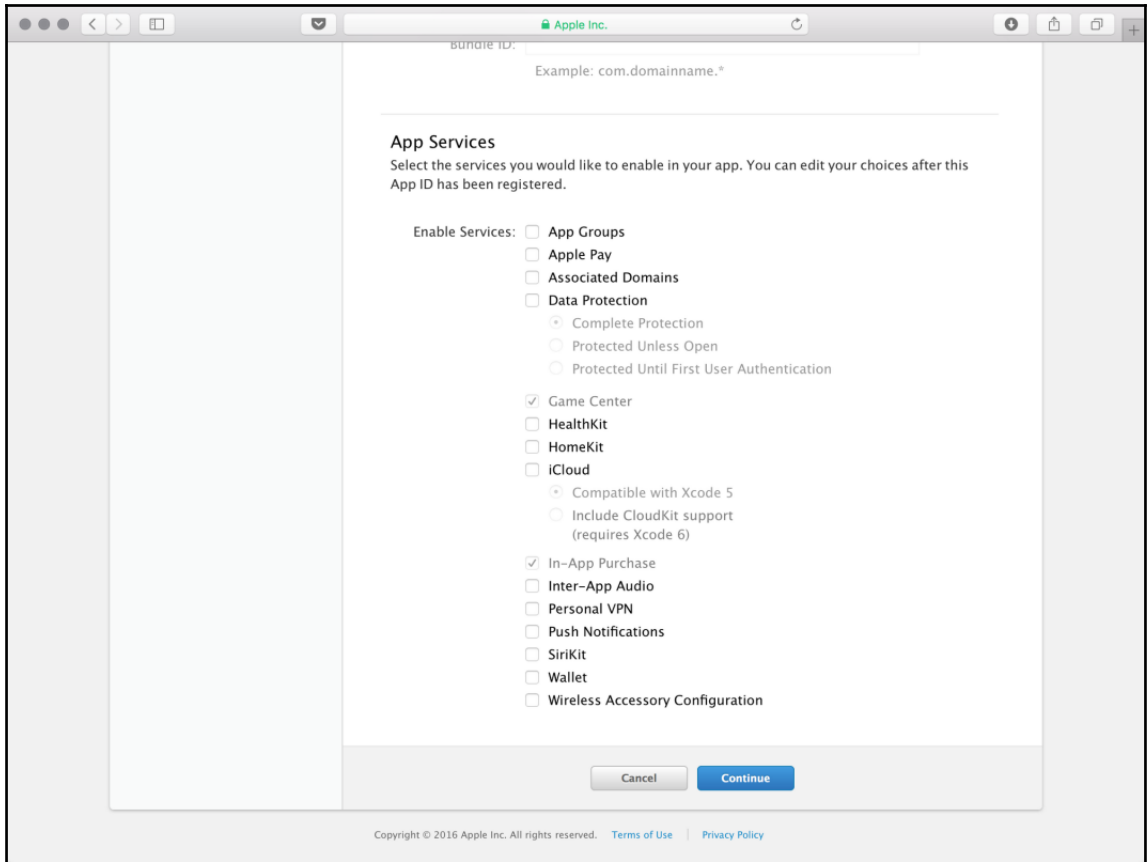
Chapter 29: Beta and Store Submission

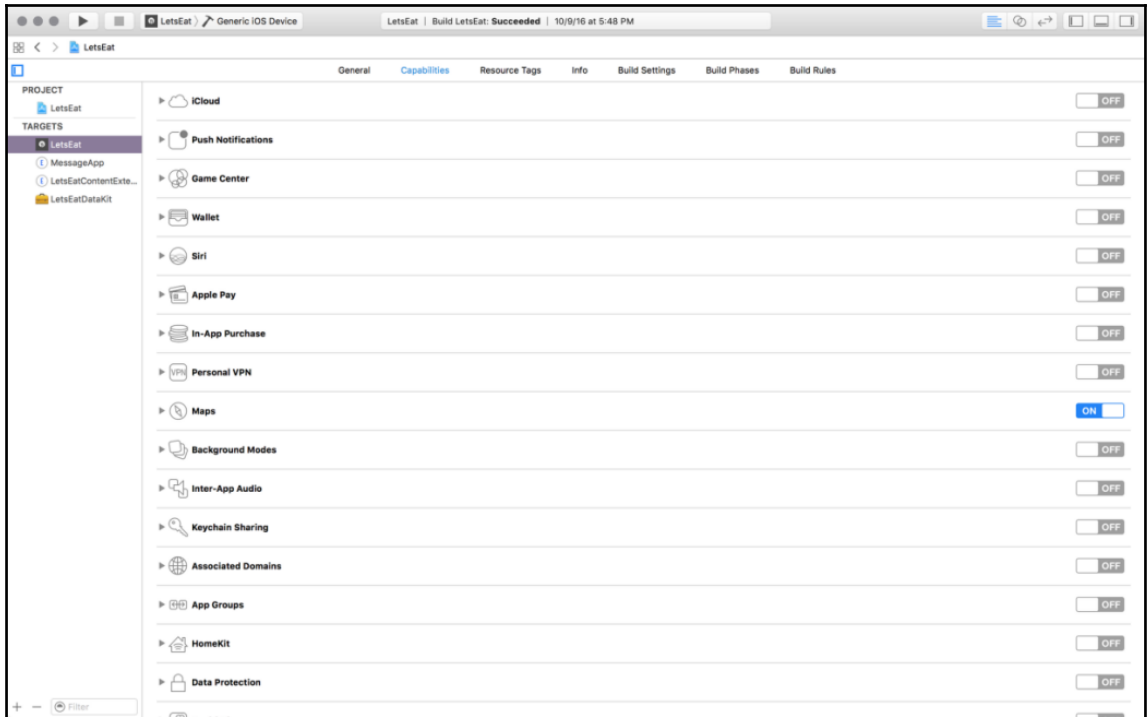


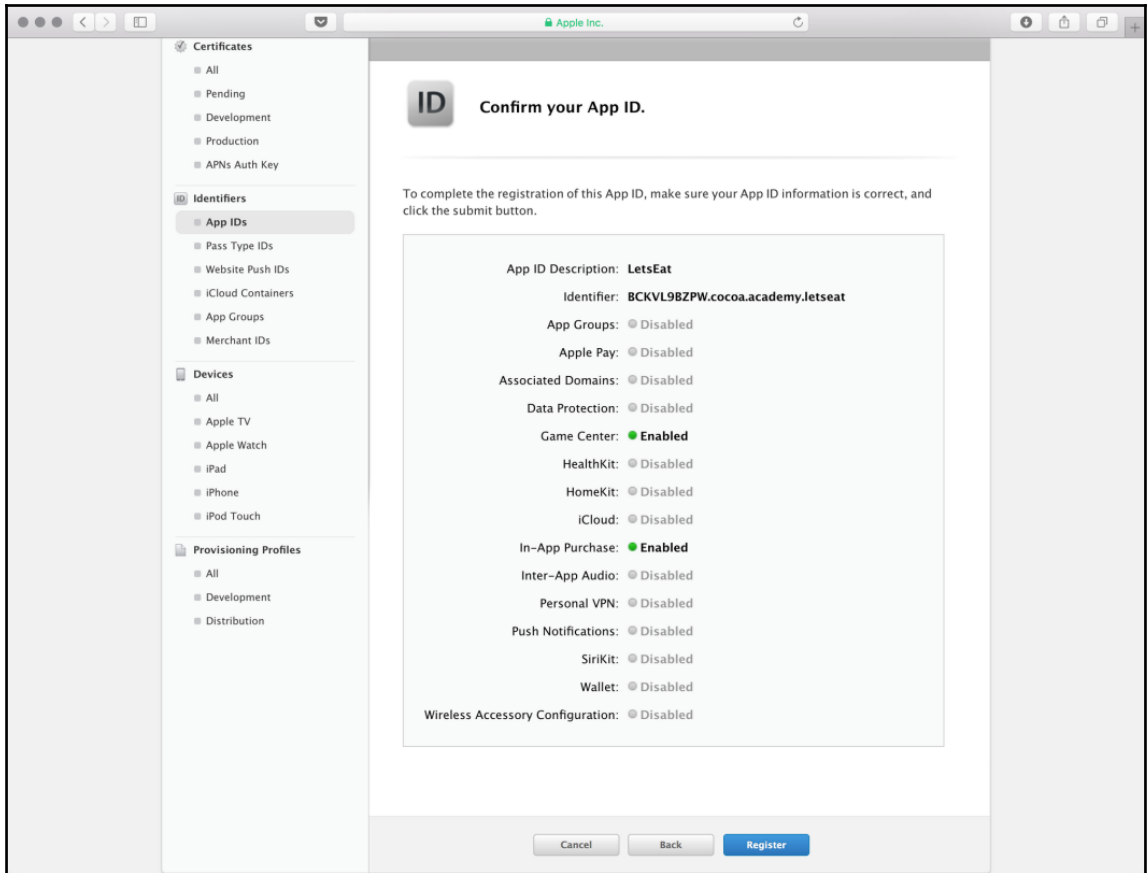


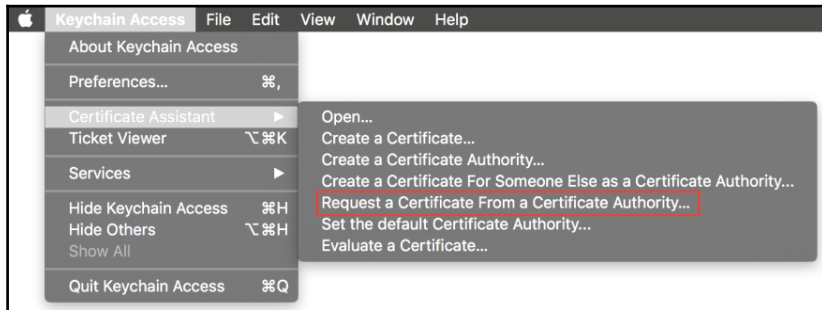
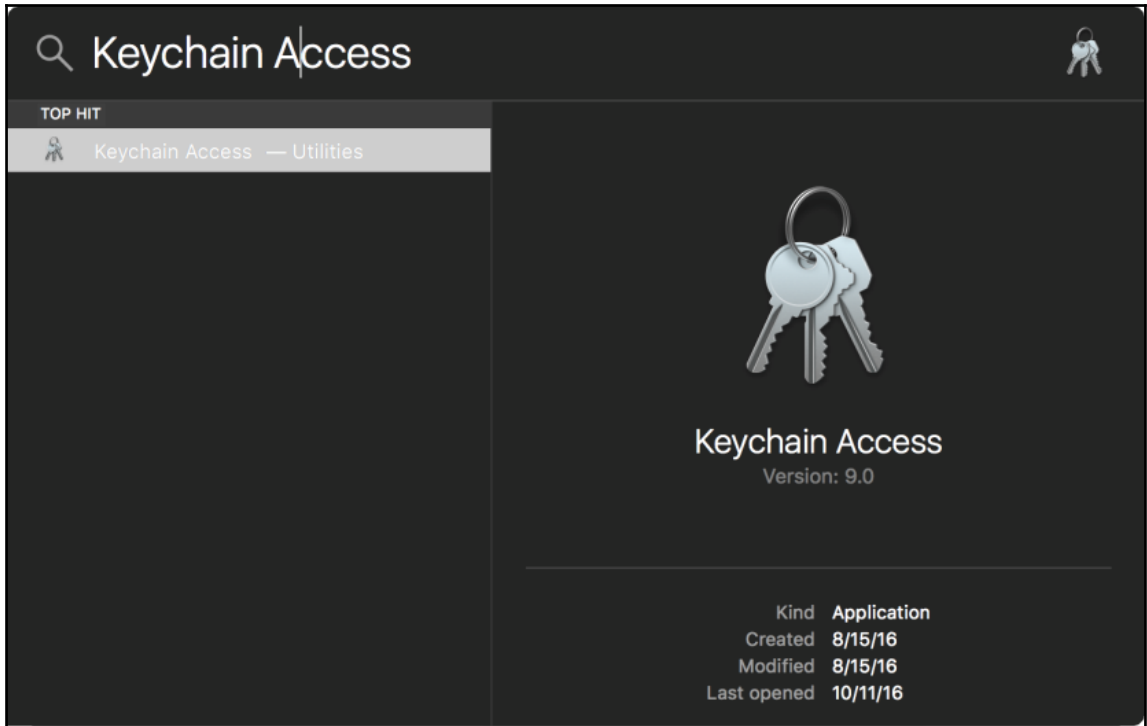


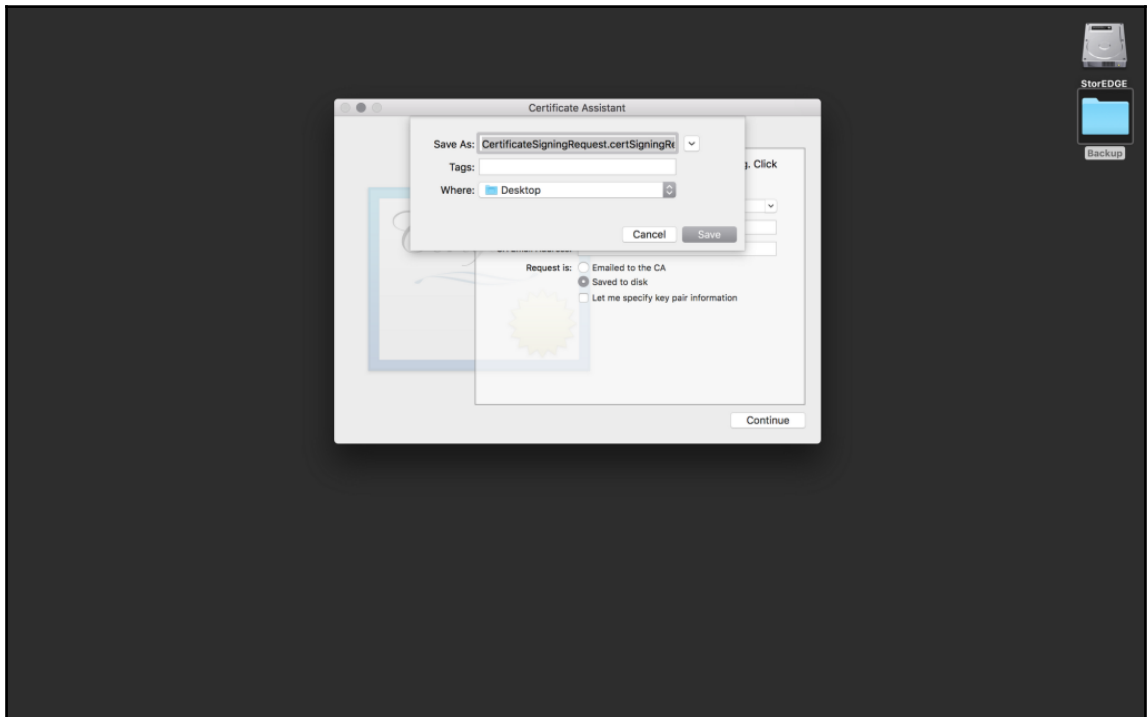
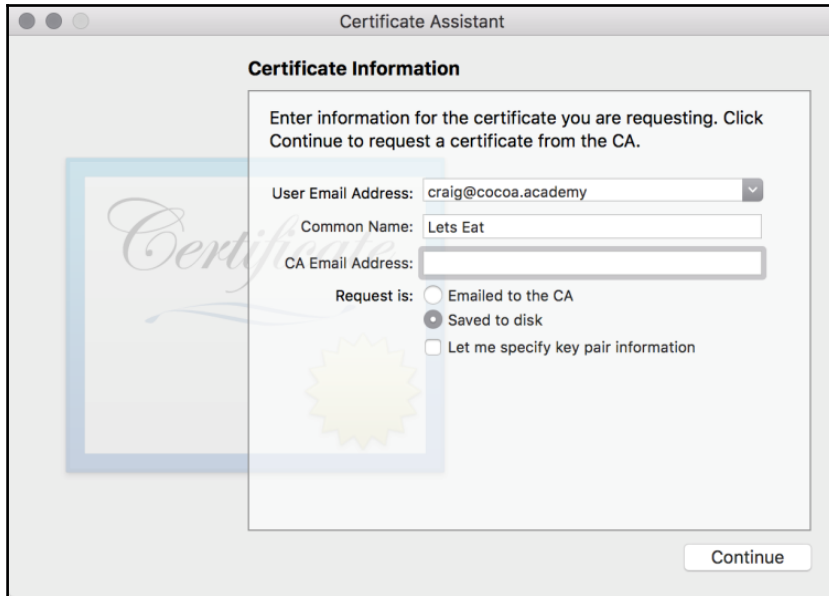


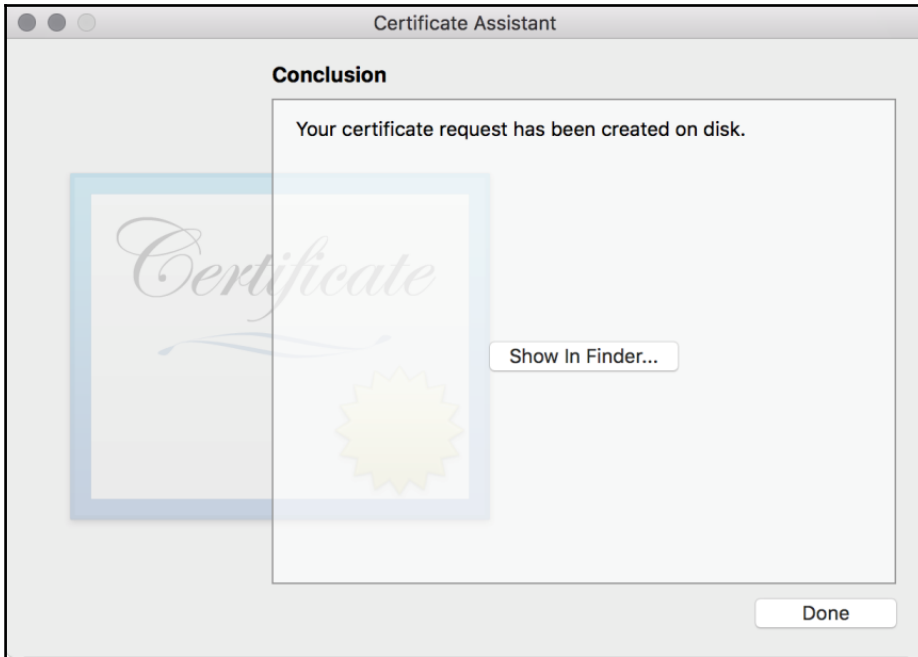


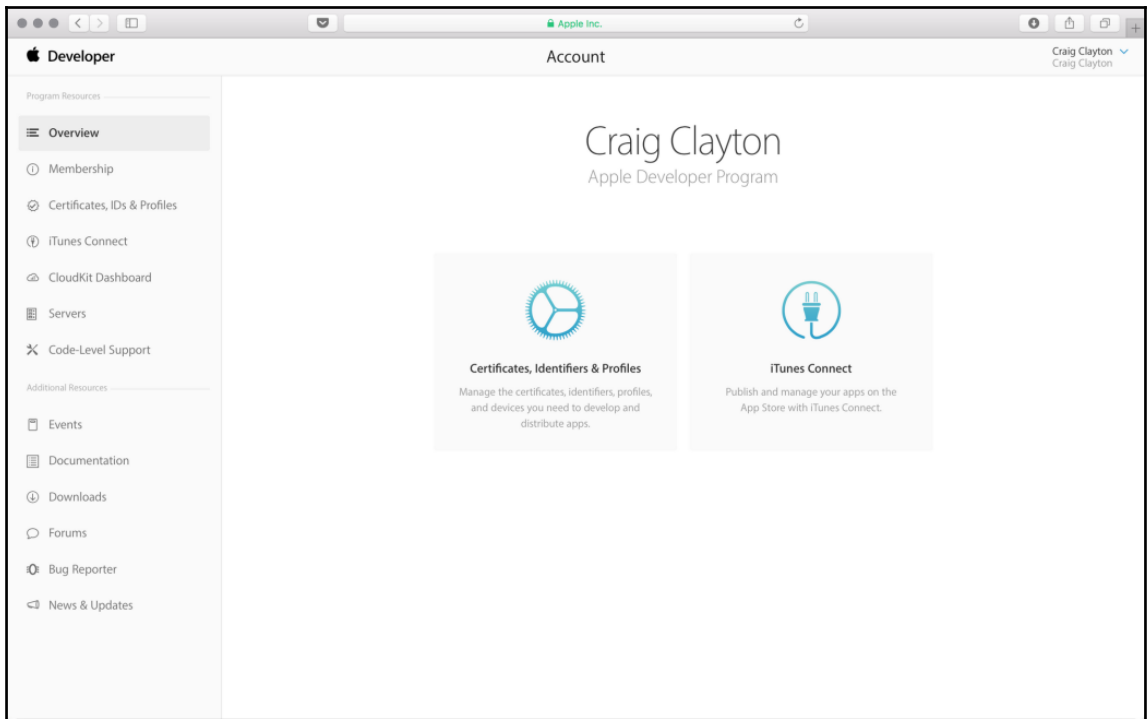


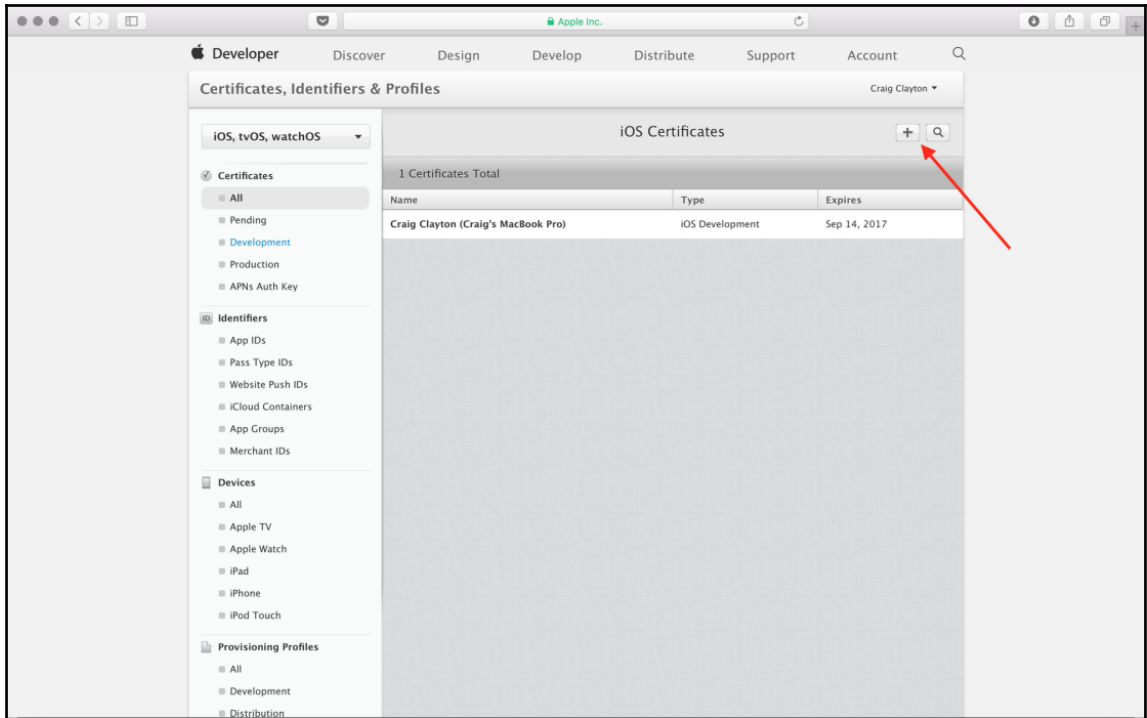


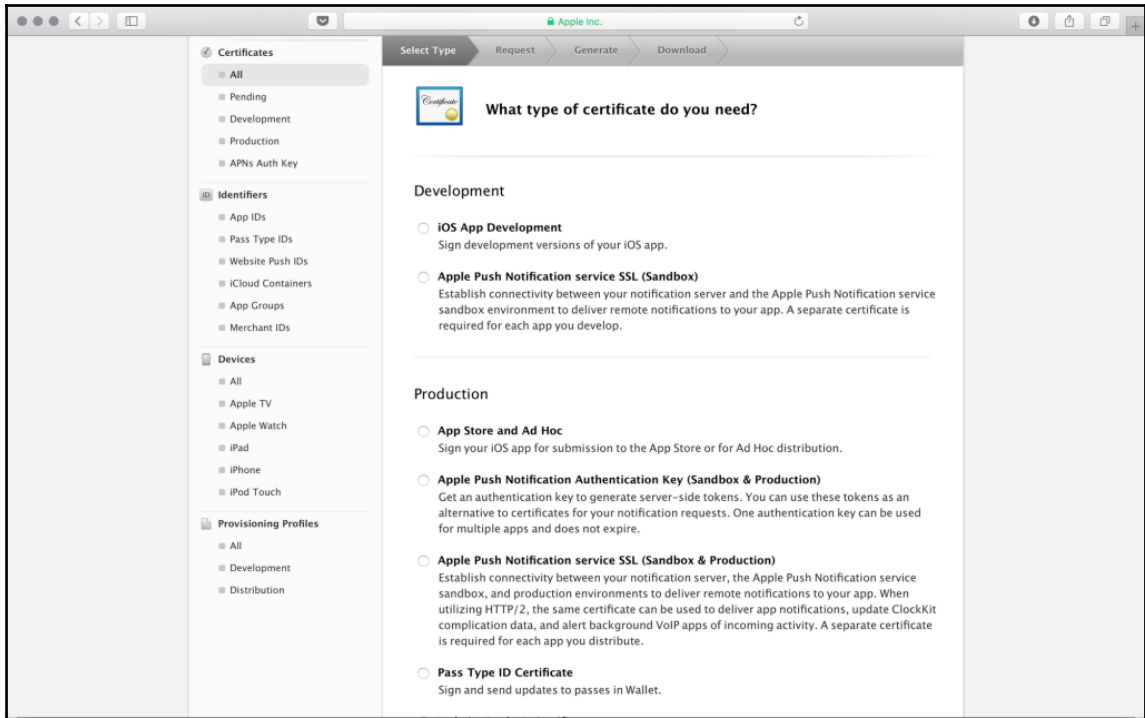


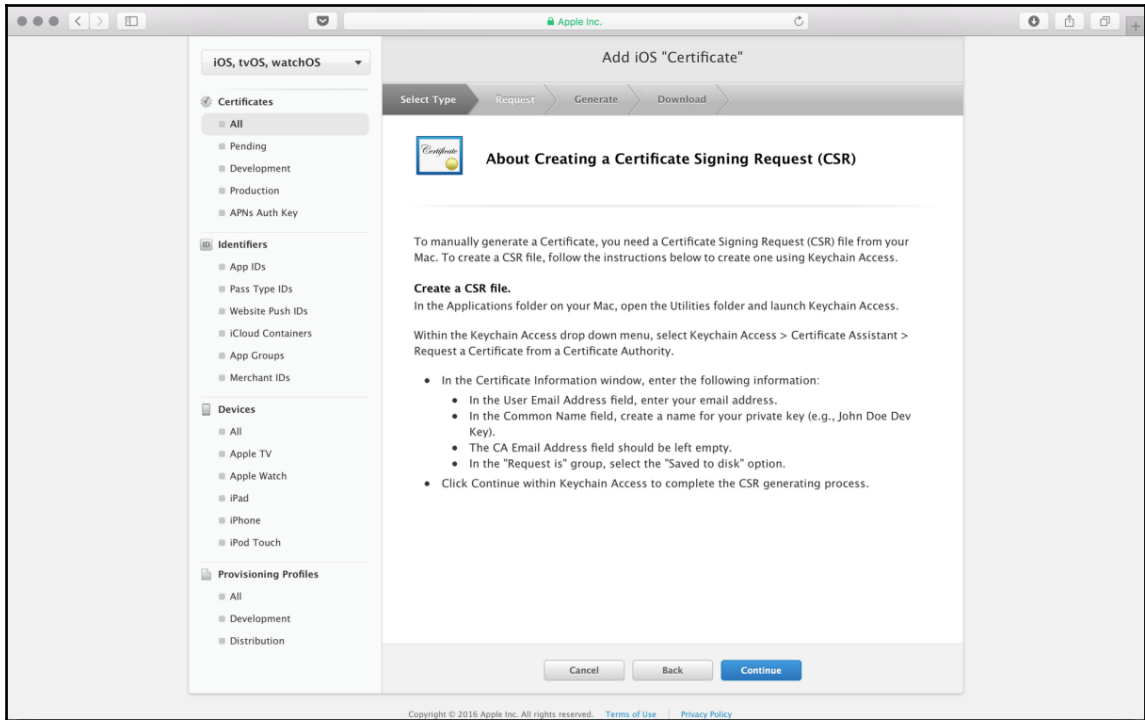


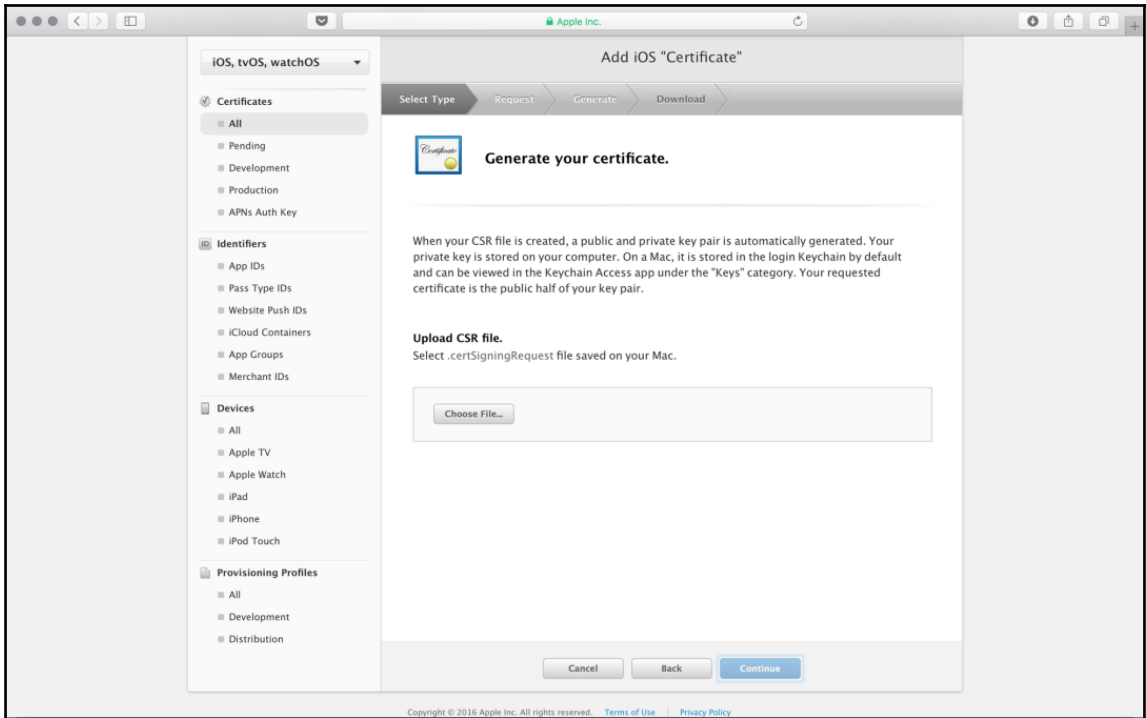


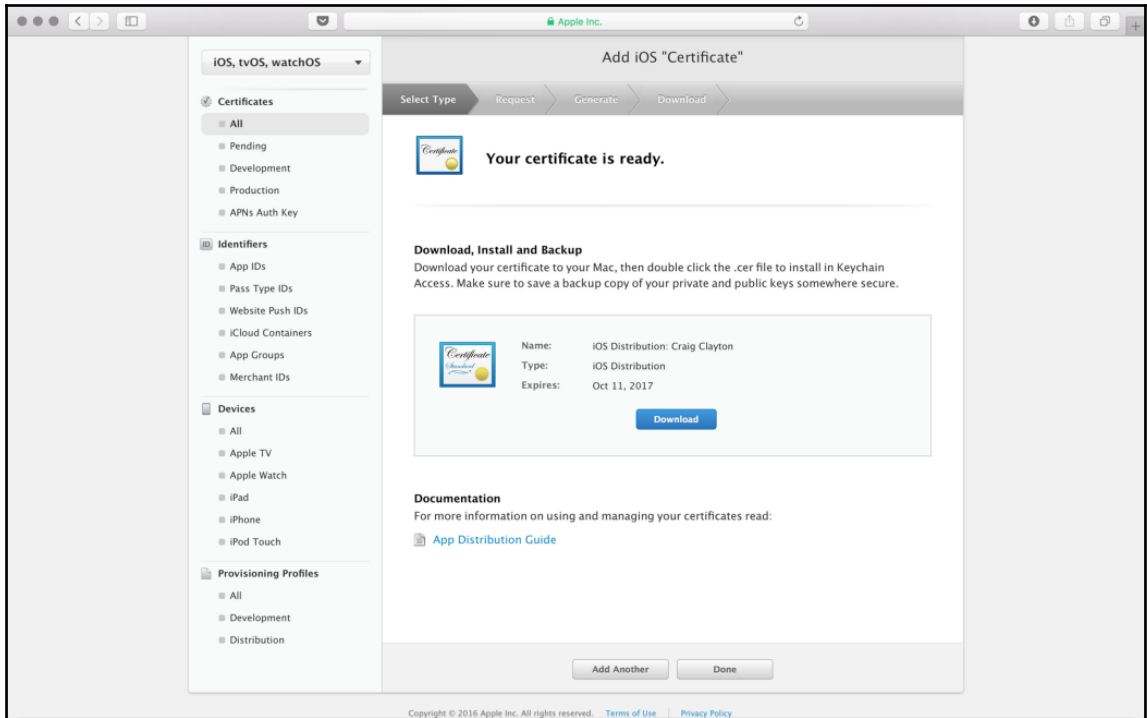


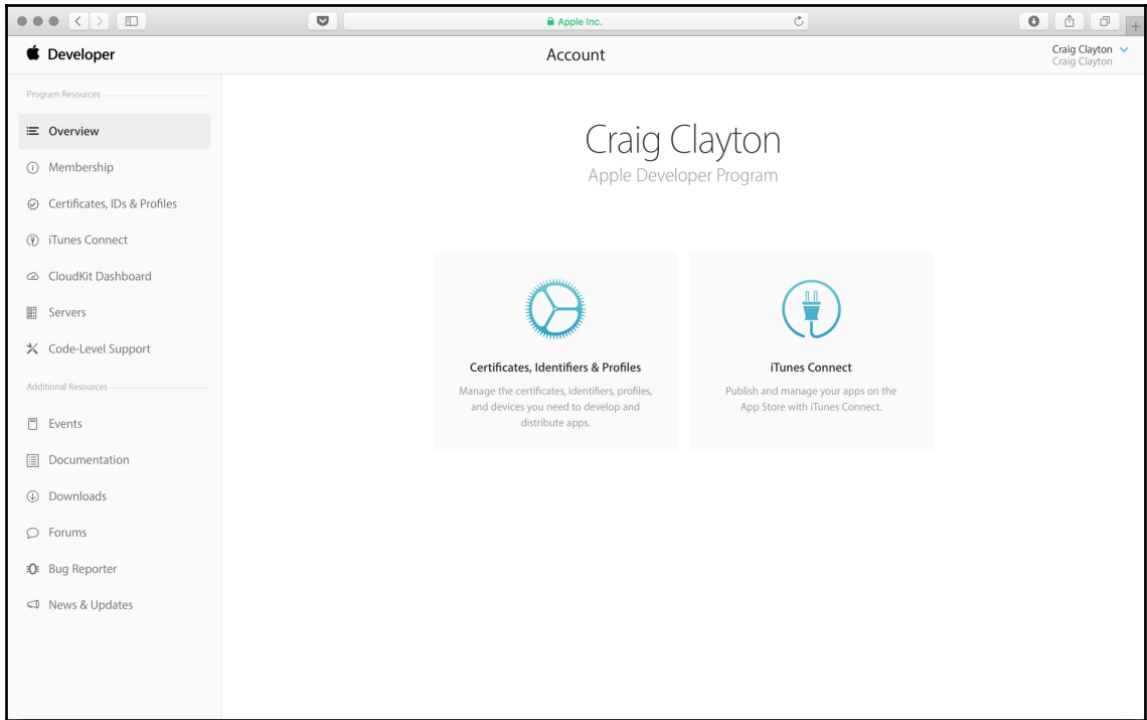


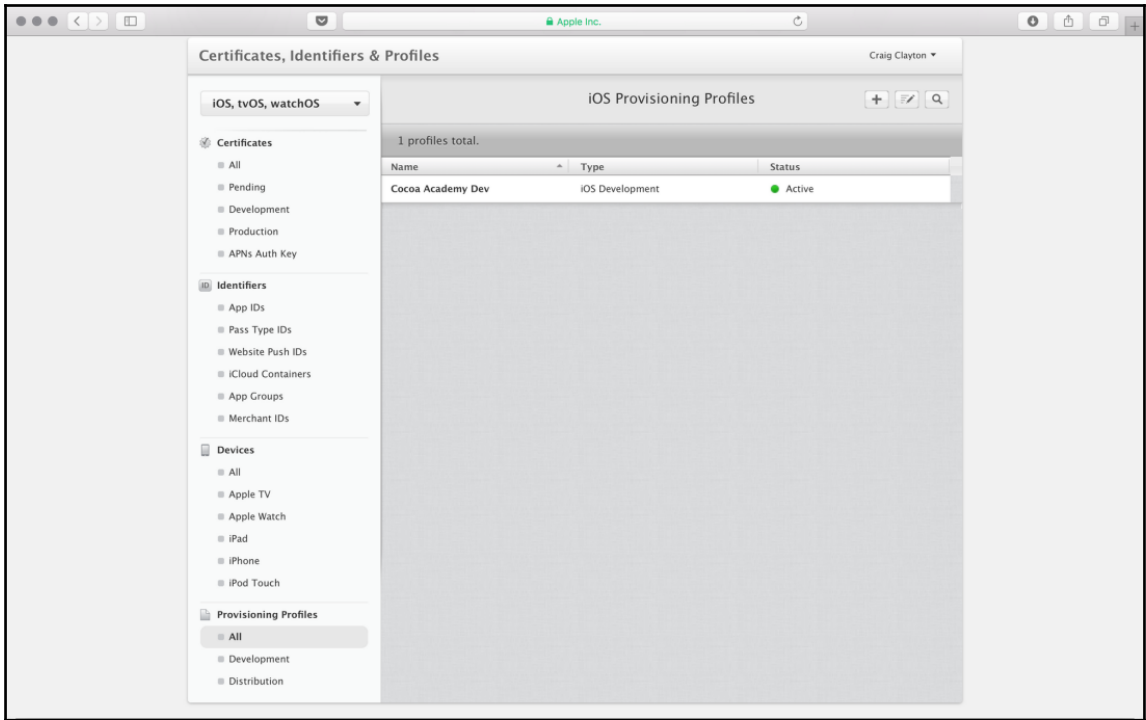


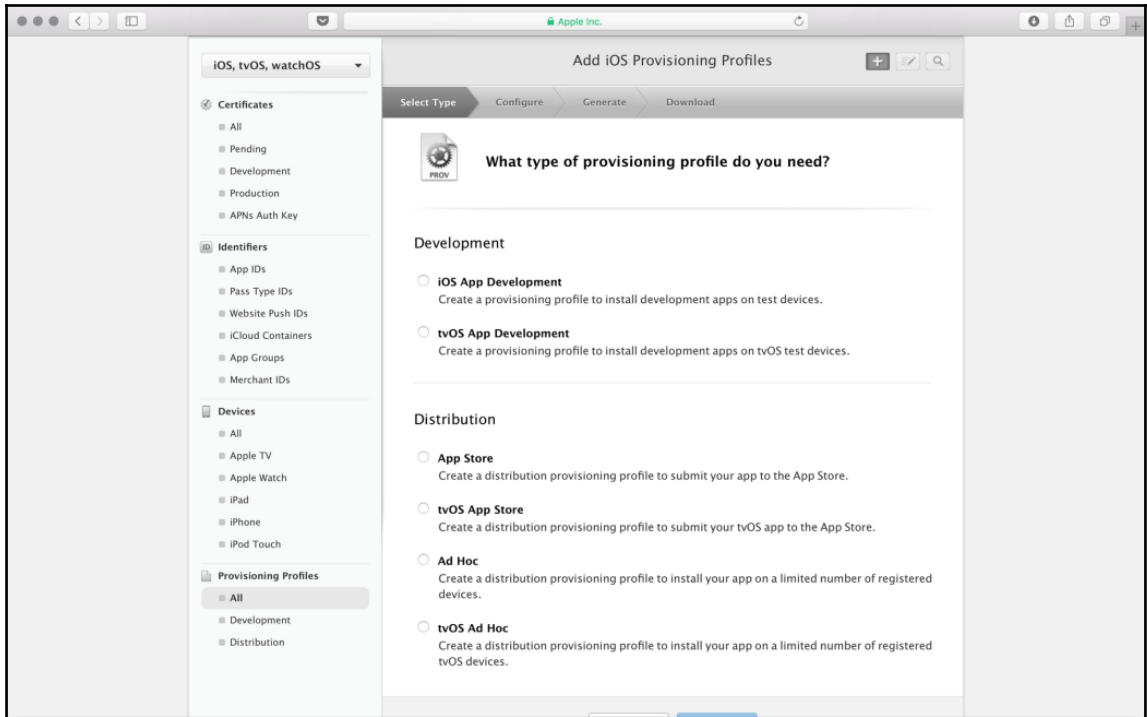


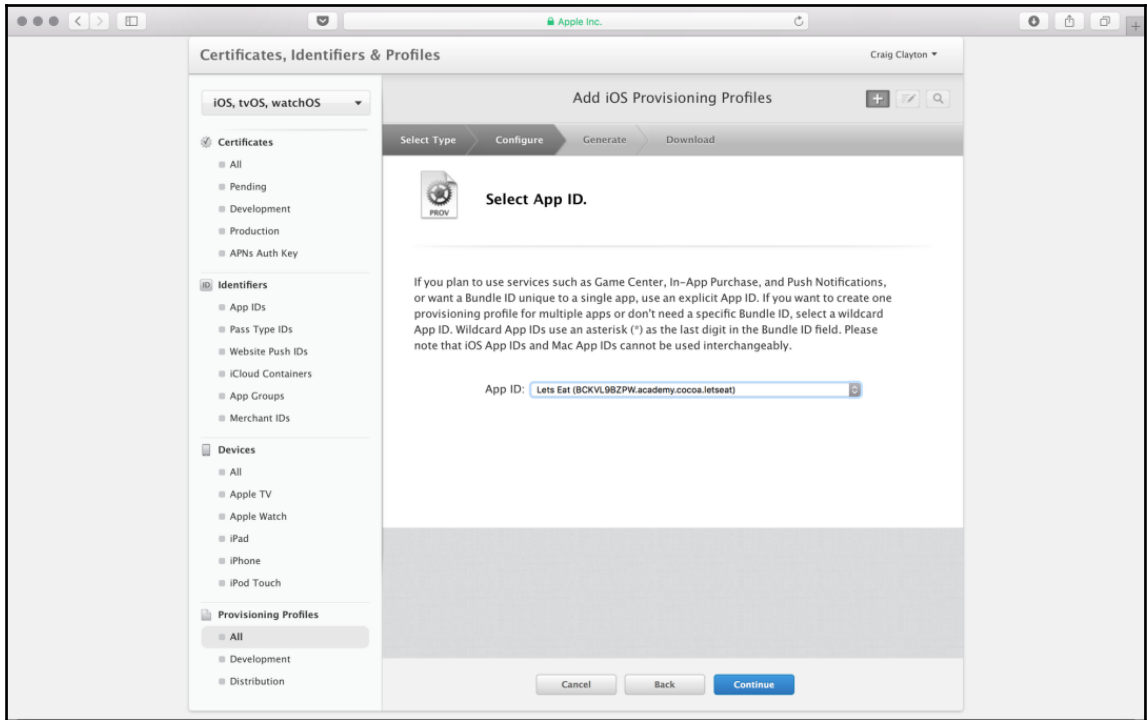


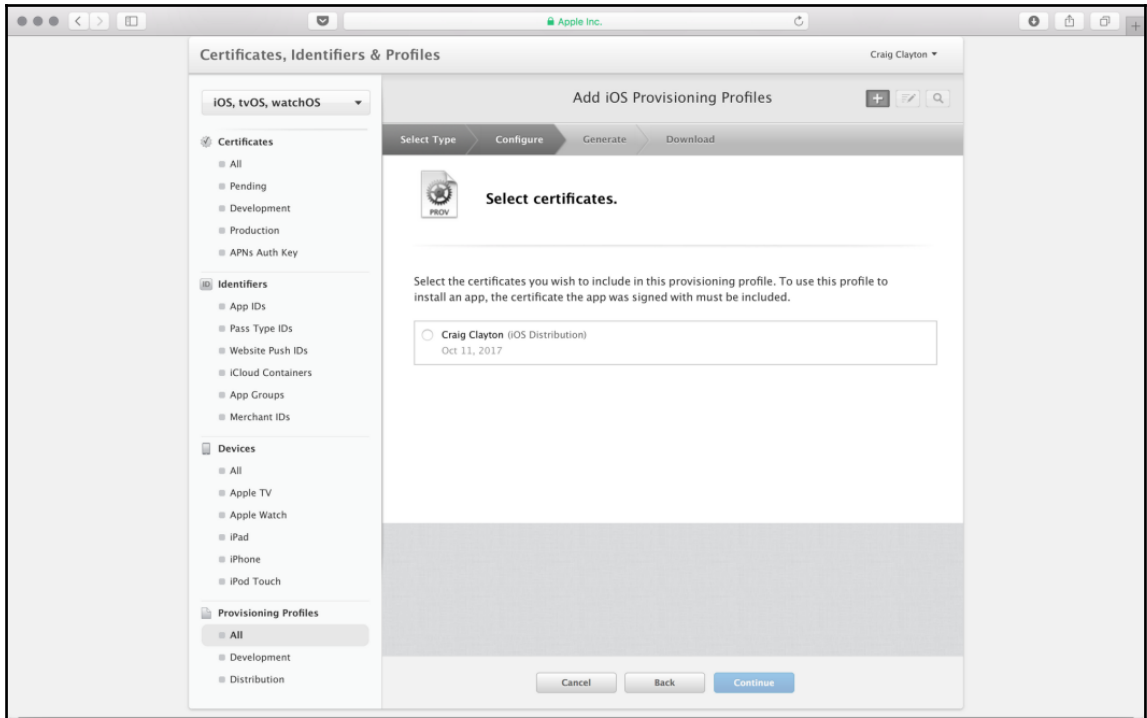


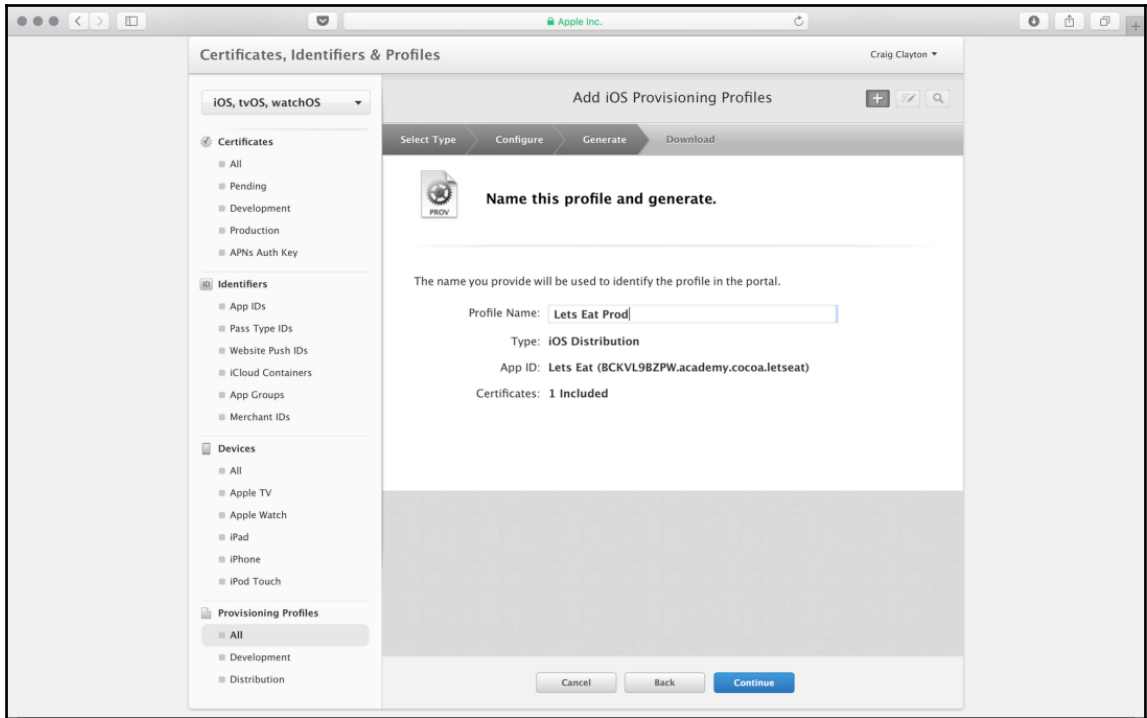


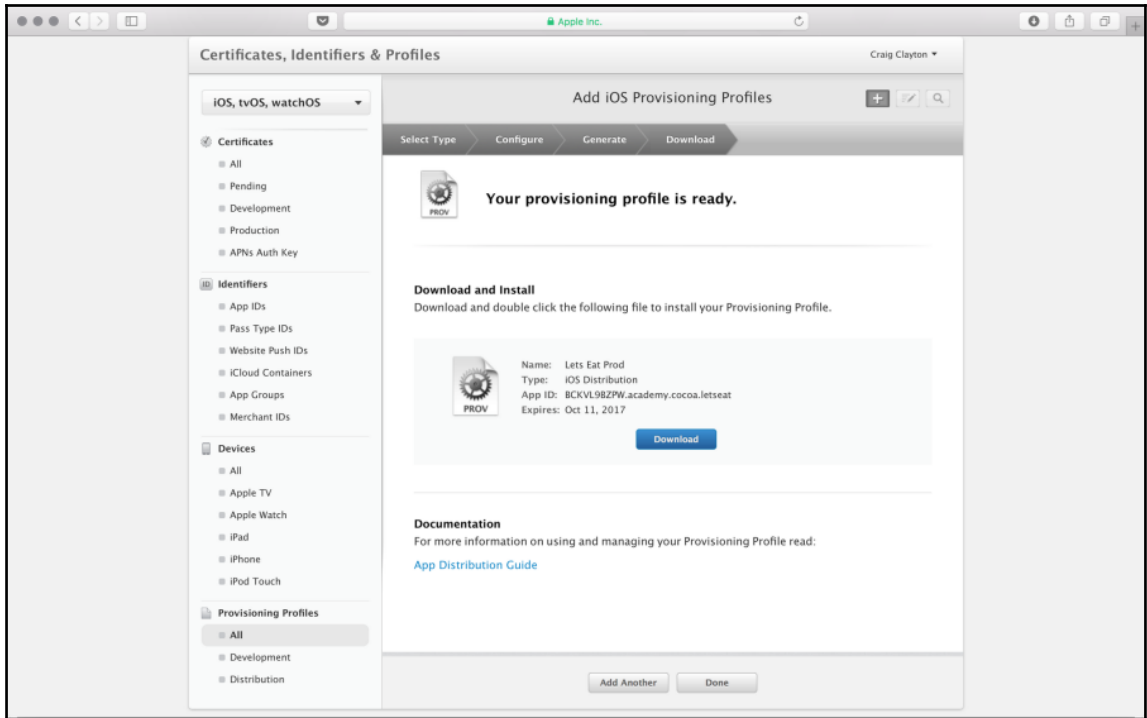


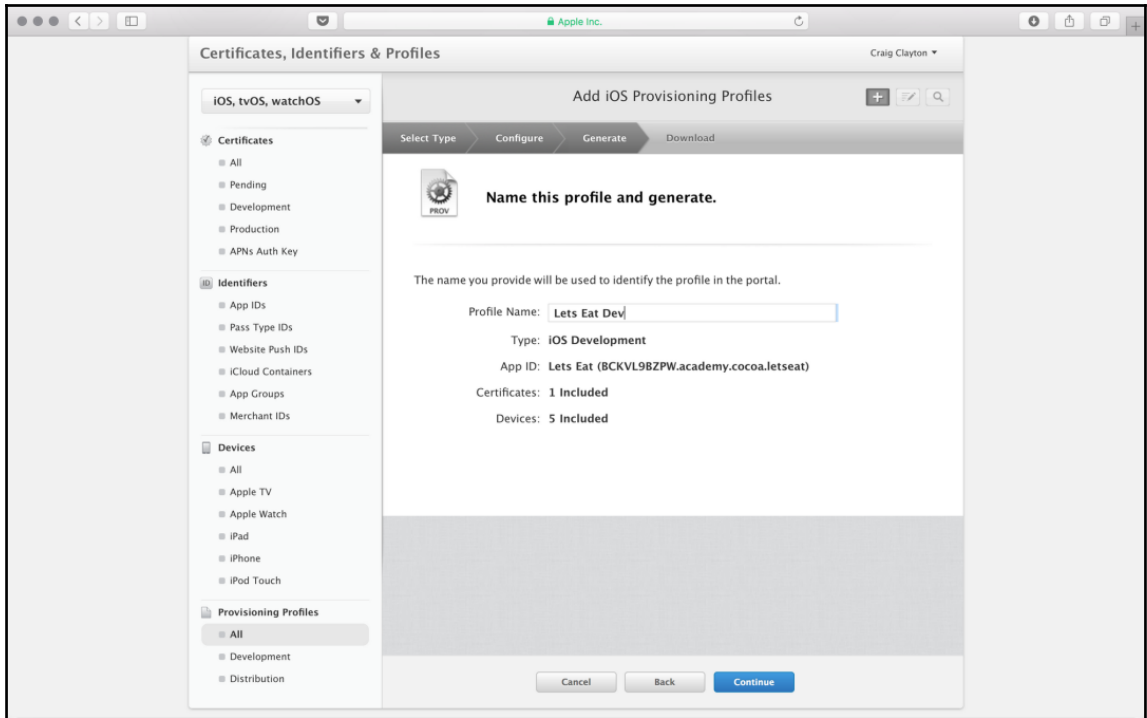


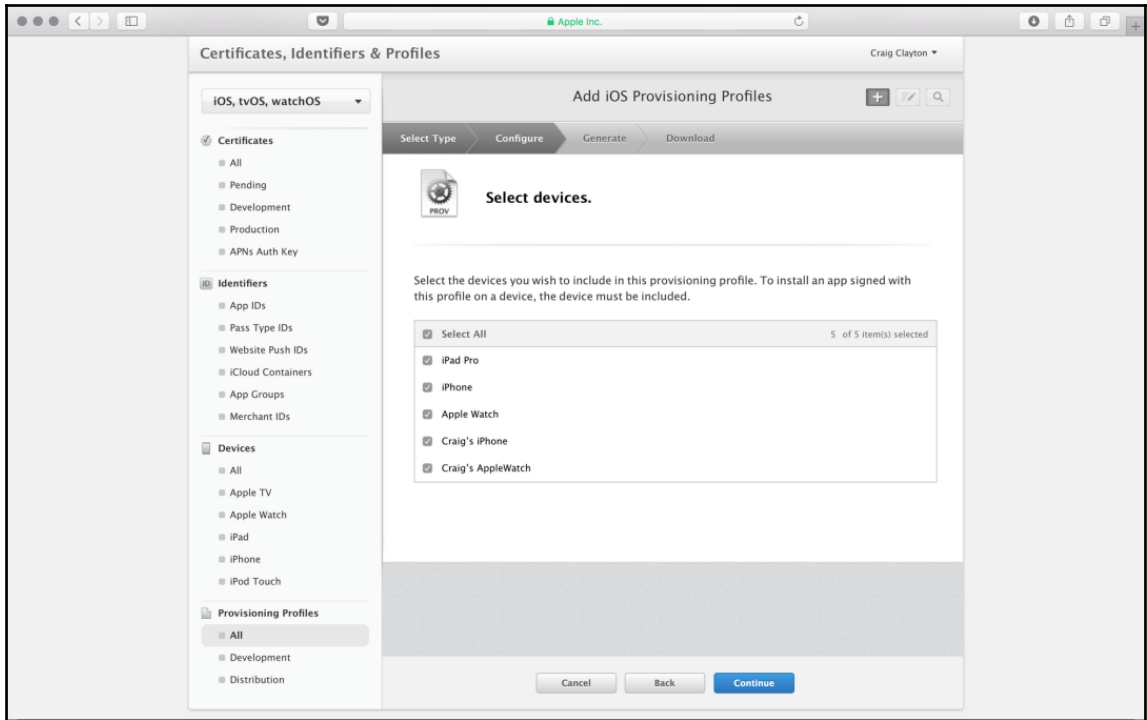


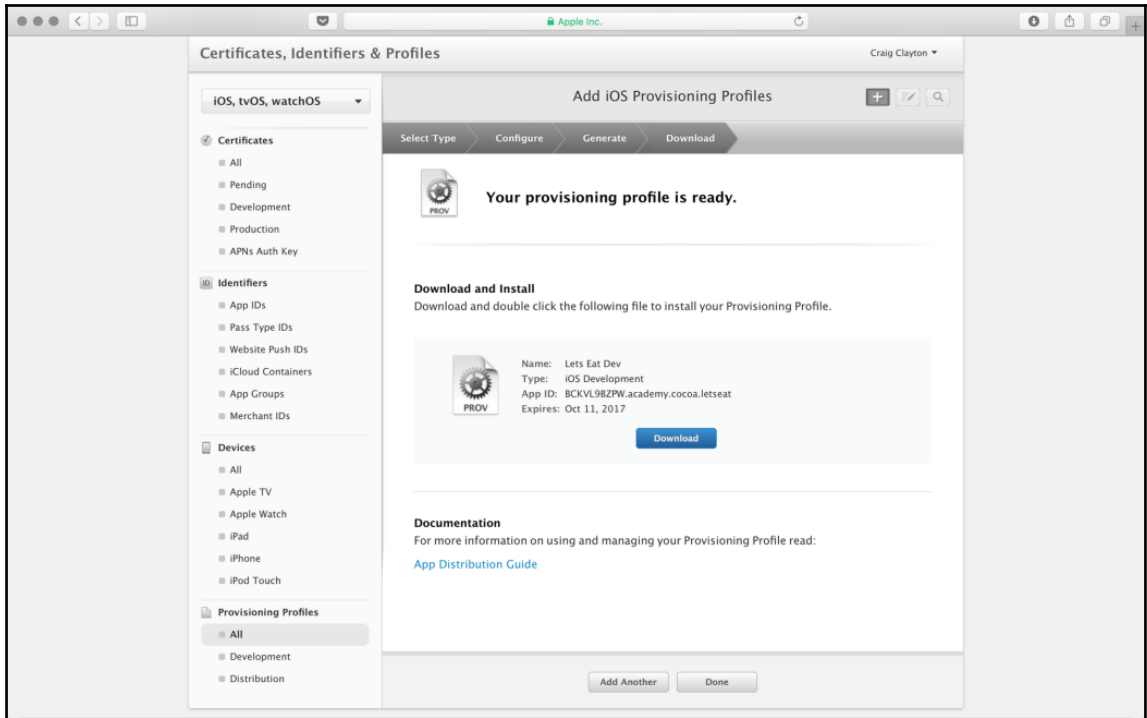


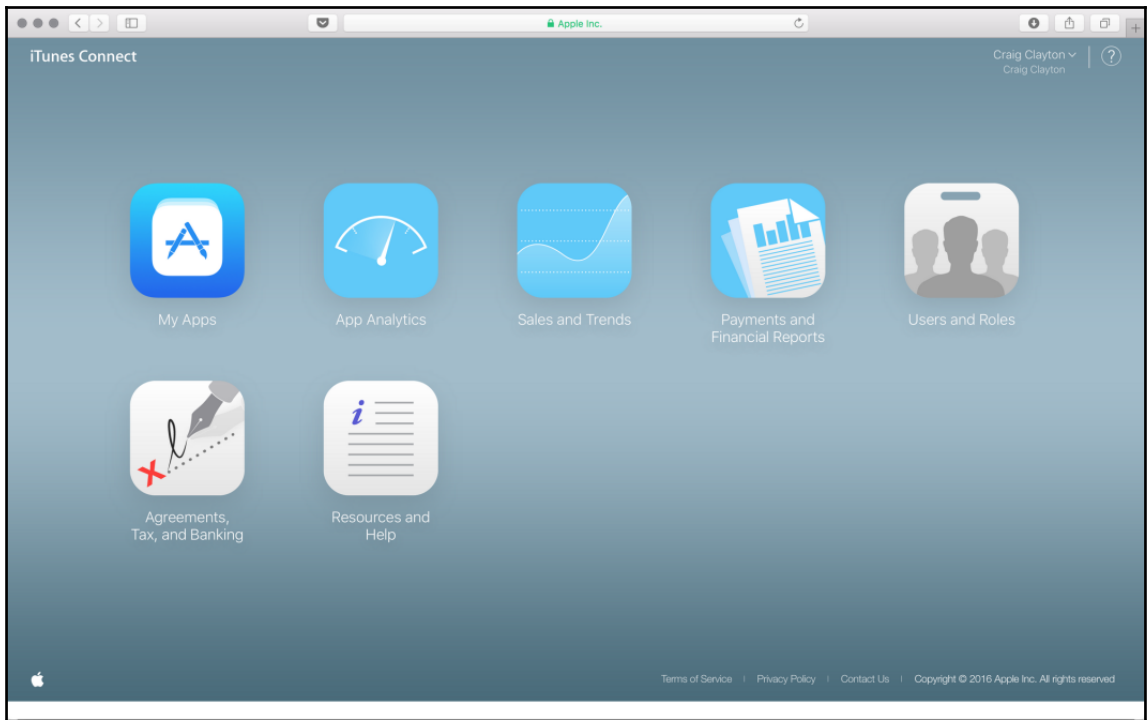


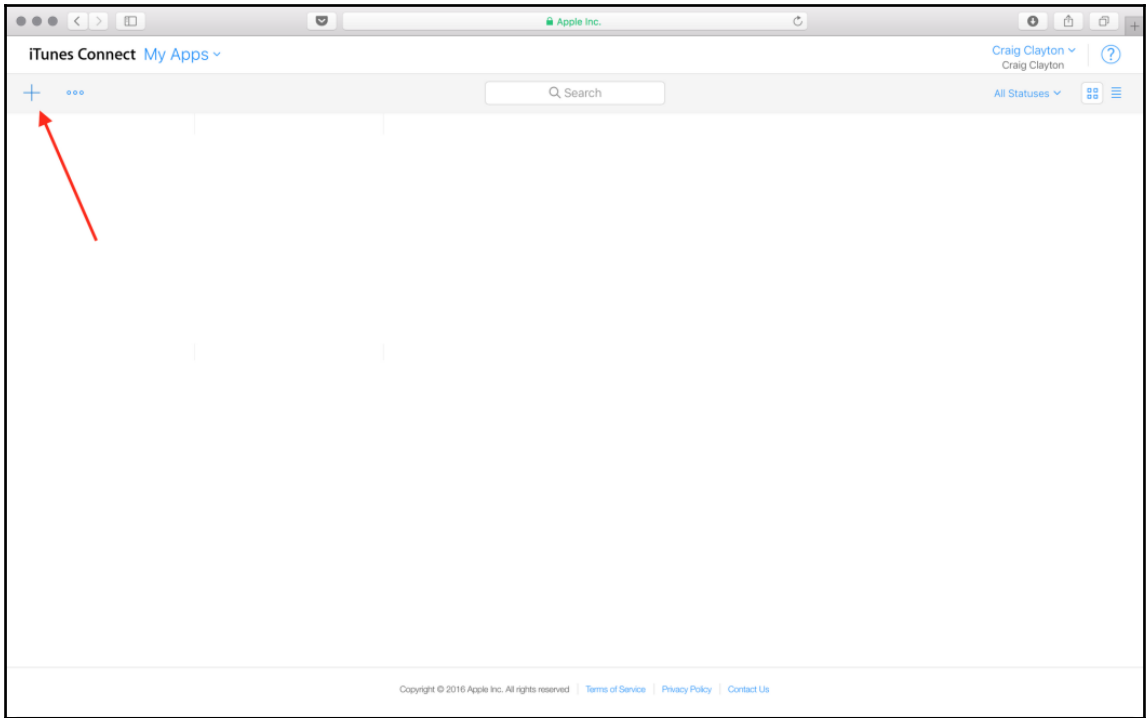


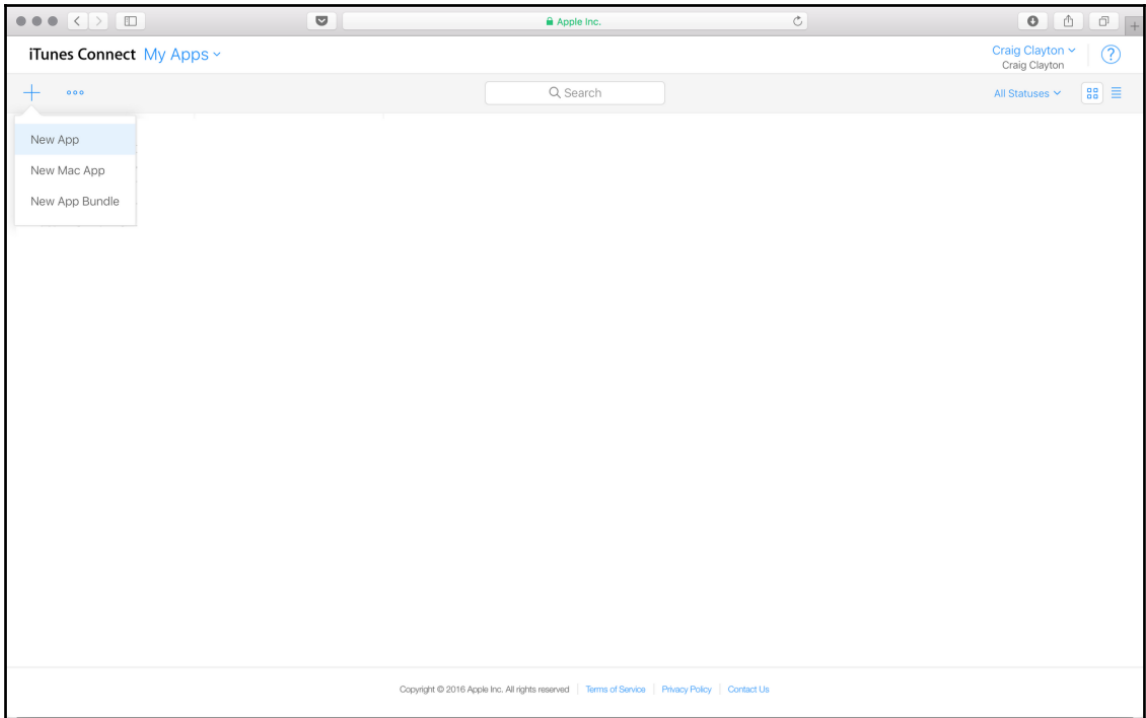












New App

Platforms ?

iOS tvOS

Name ?

Primary Language ?

Bundle ID ?

Register a new bundle ID on the [Developer Portal](#).

SKU ?

Cancel

Create

