



iOS App Development Workshop

Swift, SwiftUI, && Xcode

Agenda

What we'll be doing!



- Welcome!
- Swift Overview
 - What is it?
 - Syntax
 - Capabilities
 - SwiftUI
- Intro to Xcode
- The Project
- Time to Work!

Hack for Humanity



ACM

SCU'S ANNUAL SOCIAL GOOD HACKATHON

< HACK FOR >
HUMANITY

Code for a cause

JOIN US VIRTUALLY ON FEB 12-13

Swag Activities Prizes

SIGN UP AT
hackforhumanity.io

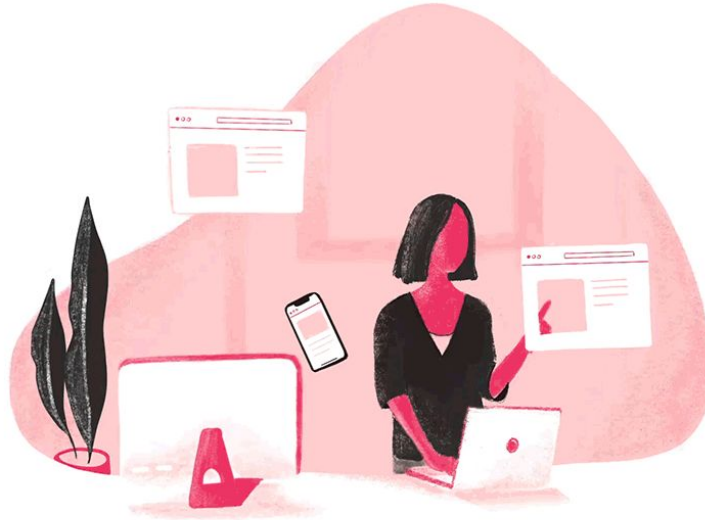
In compliance with ADA/504, please direct all accommodation requests to ACM at acm@scu.edu

The poster is for the SCU's Annual Social Good Hackathon, 'Hack for Humanity'. It features a central graphic of a lightbulb with a globe inside. The text is primarily in white and green on a black background. Logos for ACM and ACM W are present. A QR code is provided for sign-up. A footer note mentions ADA/504 compliance.

Welcome!



Icebreaker



Name + Major + Year + Favorite Ice Cream
Have you ever used Swift before?

What is Swift?



- Object Oriented Programming (OOP) Language
- Modern
 - a. A combination of many programming languages
 - b. Sleek, modern, simple appearance
- Designed for Safety
 - a. Syntax is tuned to make it easy to define your intent
 - b. Swift objects can never be nil
- Fast and Powerful!
- Uses
 - a. Systems programming
 - b. Mobile & desktop Apps
 - c. Cloud services



Comments & Semicolons

// You can do a single comment like this!

/* Swift doesn't require you to write a semicolon after each statement in your code (but you can if you wish!)

Semicolons are required if you want to write multiple separate statements on a single line

*/

```
let cat = "🐱"; print(cat)
```

Data Types

Int

Float

Double

Bool

String

Character

Optional

Tuple

// Others

Color

Date

...

Variables

```
let myEyeColor = "blue" // constant
```

// Constants must be initialized with a value!

```
var myAge = 20 // regular variable
```

```
var myHeight
```

// The examples above are **inferred** variables!

```
let myName: String = "Maddie"
```

```
var myAge: Int = 20
```

```
var myFavoriteColor: Color = Color("aqua")
```

If Statements

```
if (today == "Wednesday") {  
    print("Go to ACMW workshop!")  
}  
else if (today == "Saturday" || today ==  
"Sunday") {  
    print ("Sleep in")  
}  
else {  
    print("Go to school")  
}
```

// **Note:** Swift operators include &&, ||, ==, >=, <=, >, <, ?, ...

While & For Loops

```
while x < 2 {  
  print ("x is less than 2!"); x++  
}
```

```
let names = ["Anna", "Alex", "Brian", "Jack"]  
for name in names {  
  print("Hello, \"(name)!")  
}
```

```
for index in 1...5 {  
  print("\"(index) times 5 is \"(index * 5)")  
}
```

Repeat & Switch Statements

```
repeat {  
  print ("x is less than 2!"); x++  
} while x < 2
```

```
switch someCharacter {  
  case "a":  
    print("The first letter of the alphabet")  
  case "z":  
    print("The last letter of the alphabet")  
  default:  
    print("Some other character")  
}
```


Functions

```
func greet(person: String) -> String {  
    return "Hello, " + person + "!"  
}
```

```
func greet(person: String) {  
    print("Hello, \" + person + "!")  
}
```

```
func sayHelloWorld() -> String {  
    return "hello, world"  
}
```

Using Swift, make your own
function & type it in the chat!



SwiftUI



- Simple!
 - a. Easy to integrate code & UI
- Modern way to declare user interfaces for any Apple platform
 - a. Allows for seamless integration for iOS, Mac, and Watch apps

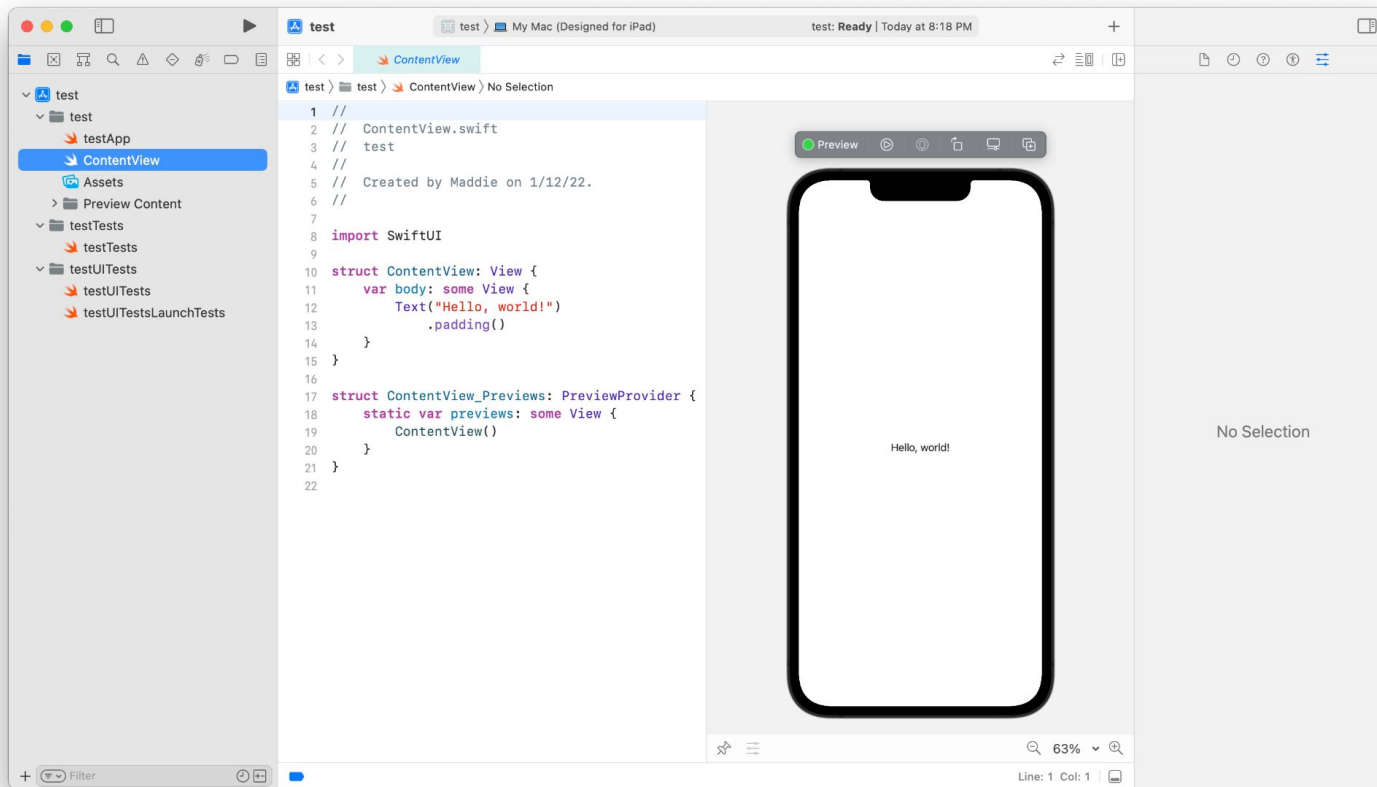


Intro to Xcode

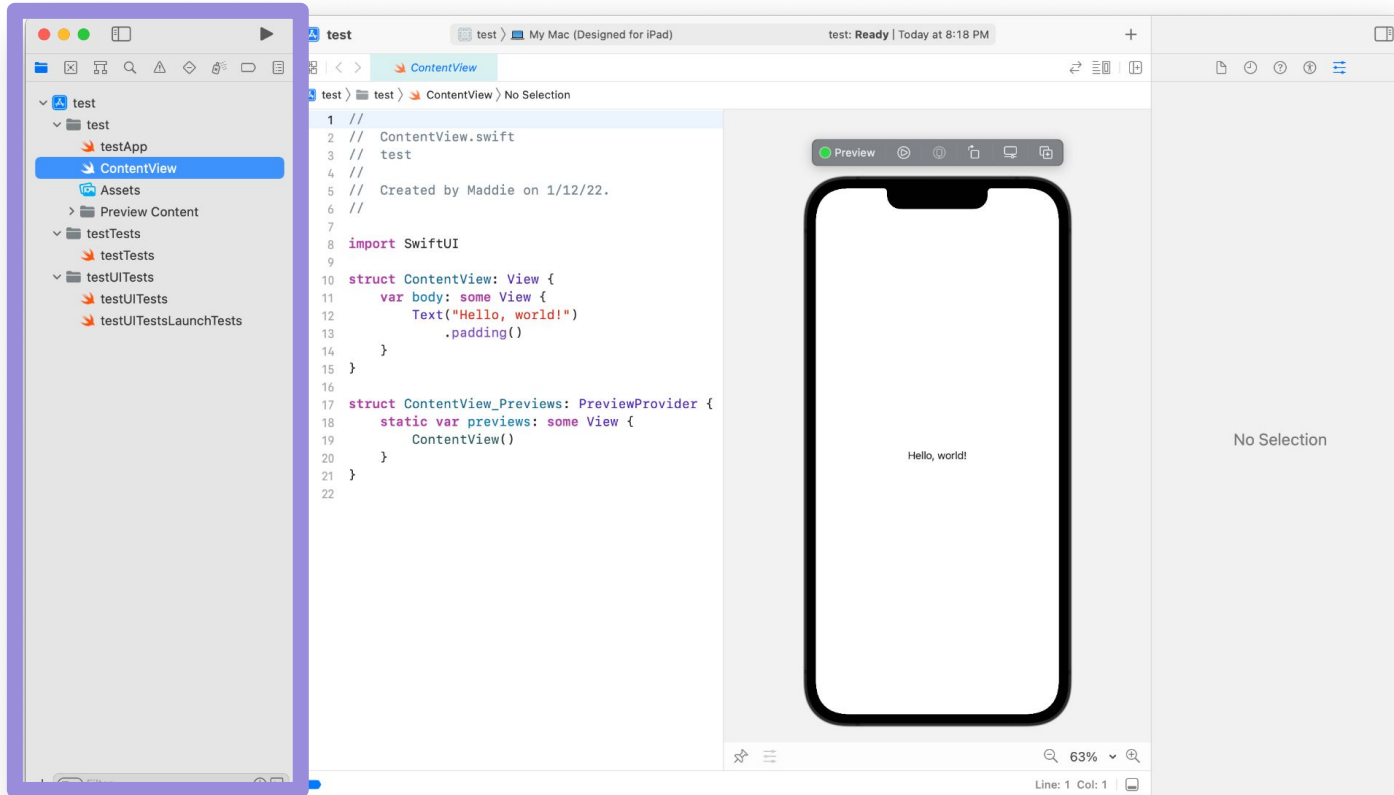
- Integrated Development Environment (IDE)
 - a. Everything developers need to create applications for Mac, iPhone, iPad, Apple TV, & Apple Watch!
 - b. Provides a unified workflow for user interface design, coding, testing, & debugging
- Link to download:
<https://apps.apple.com/us/app/xcode/id497799835?mt=12>



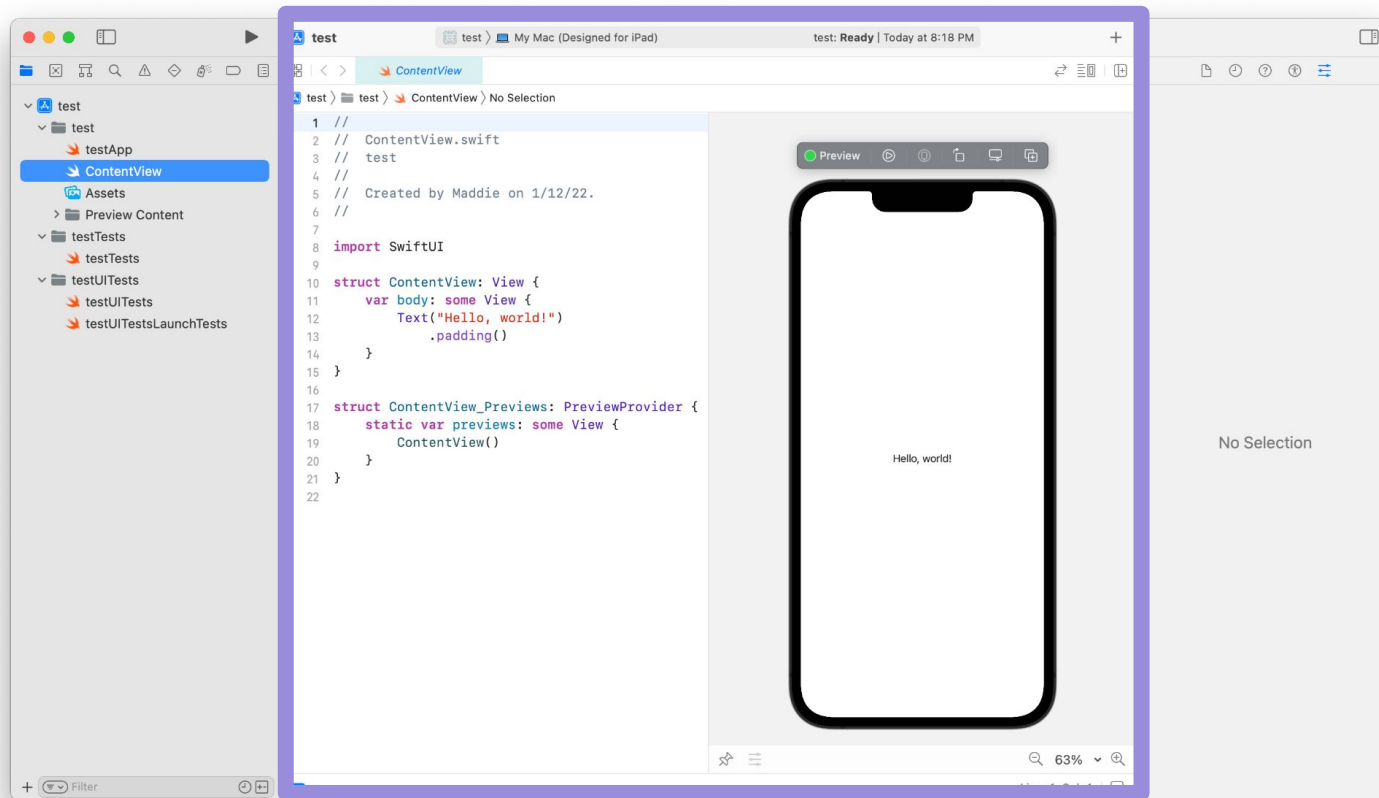
Parts of Xcode



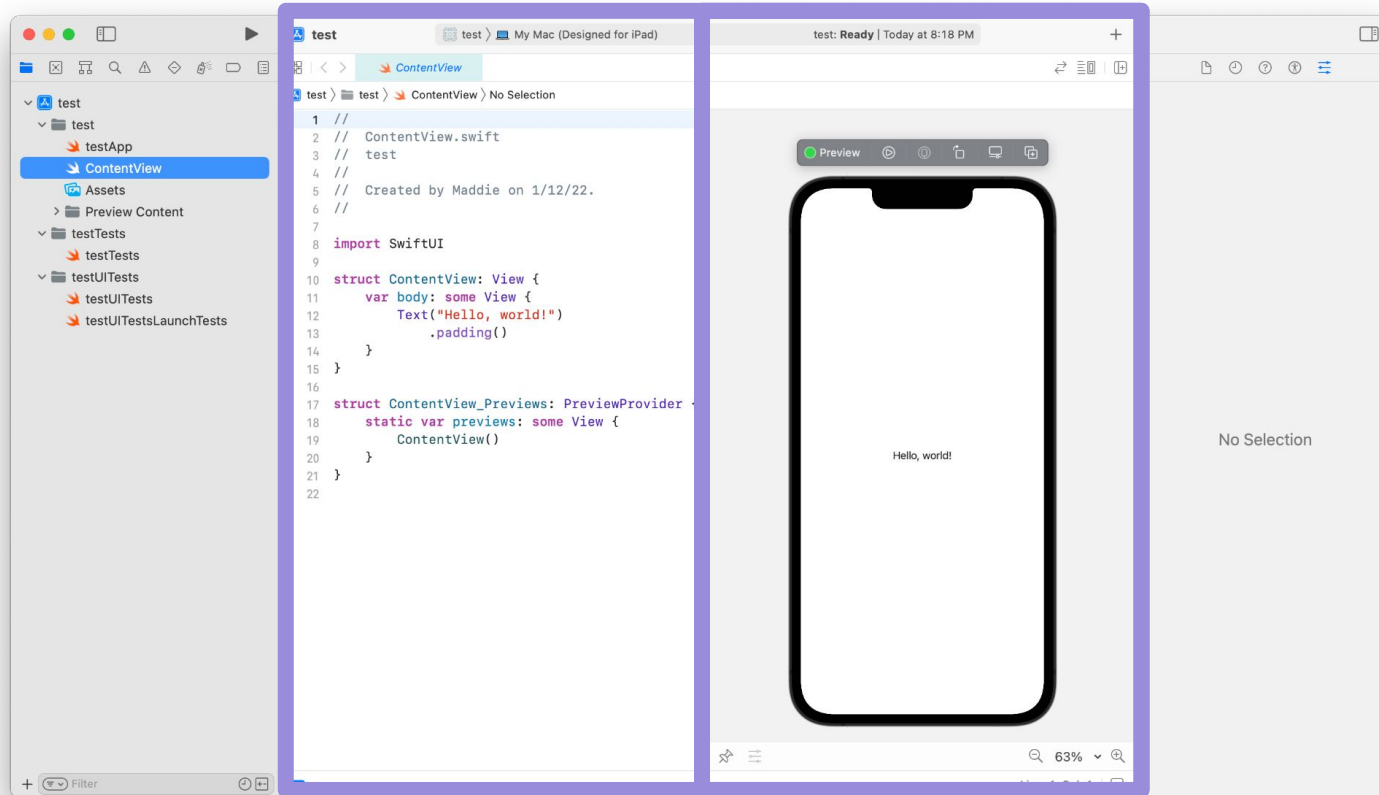
Parts of Xcode



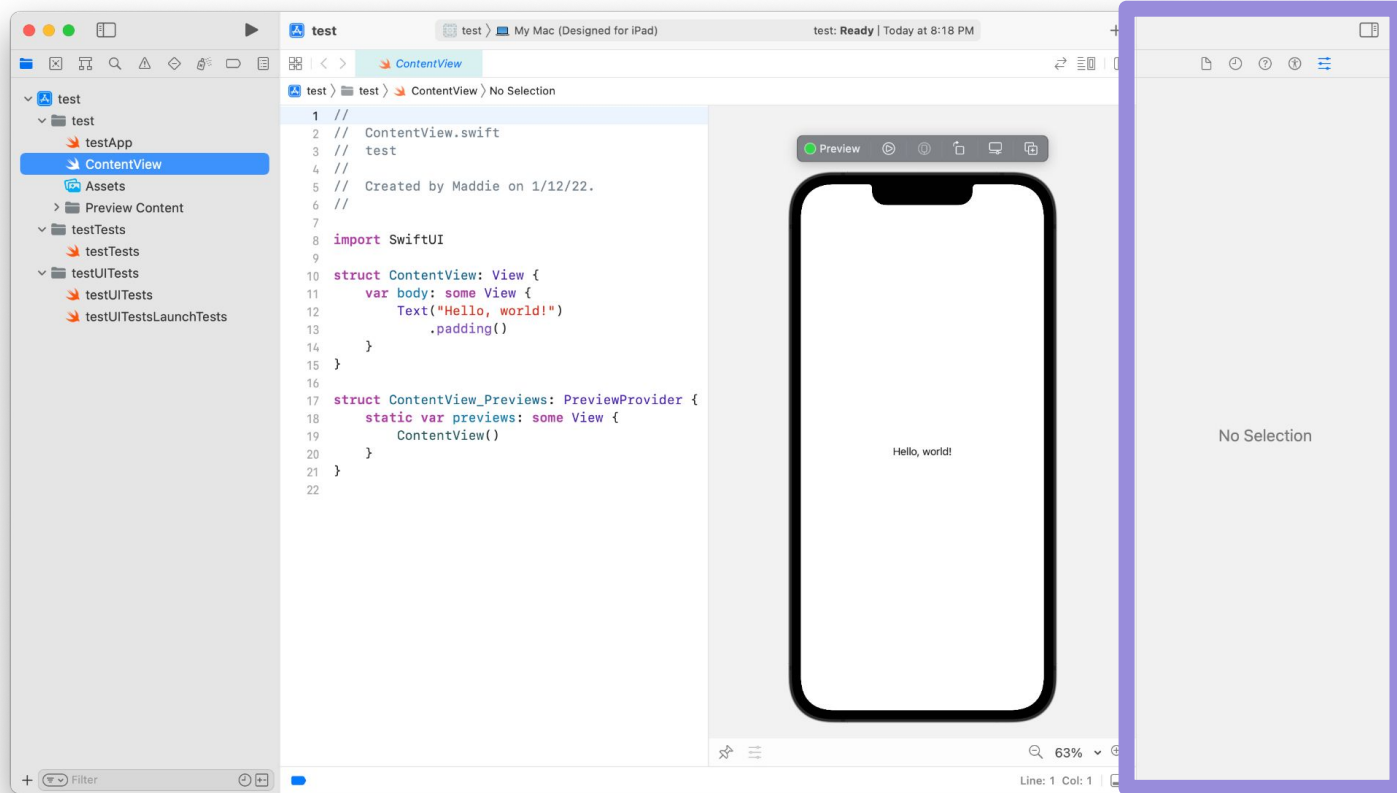
Parts of Xcode



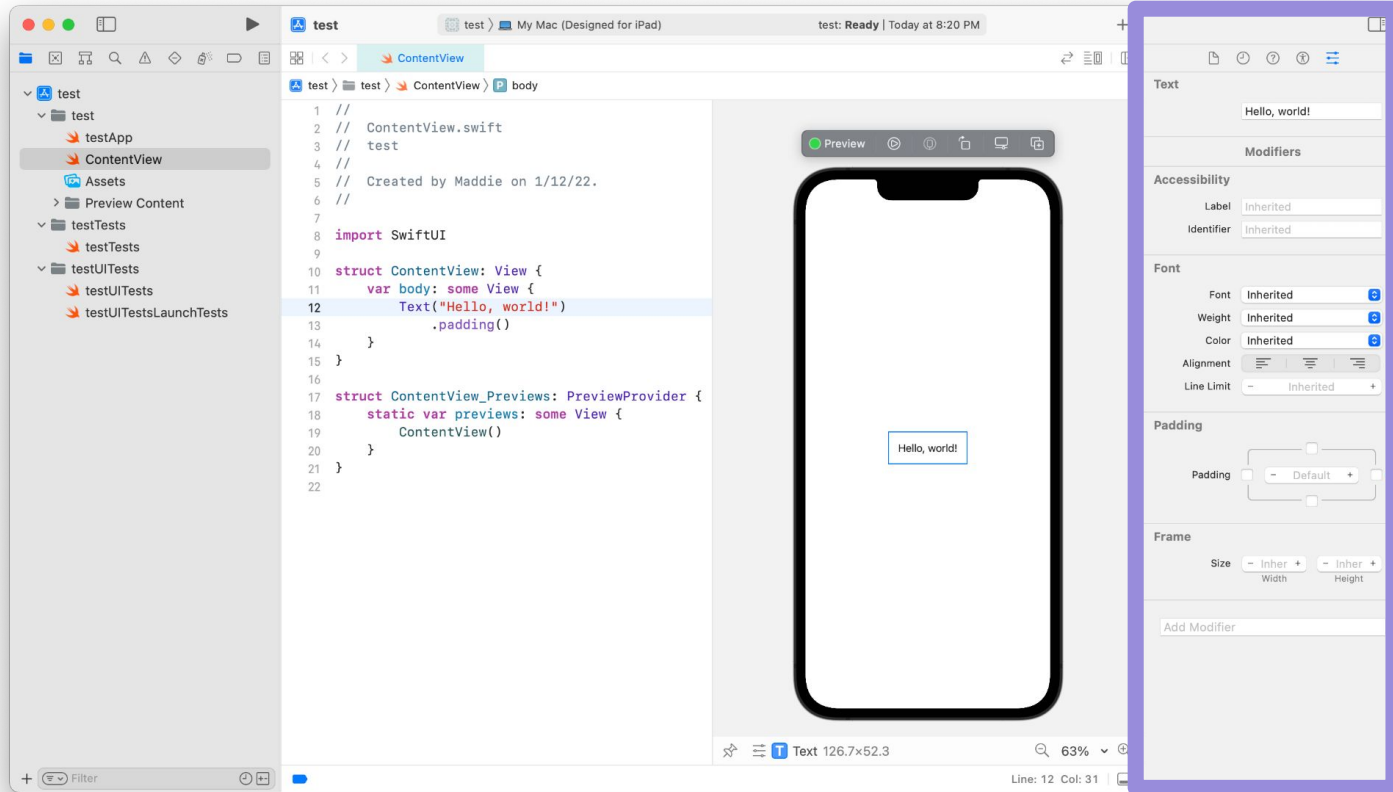
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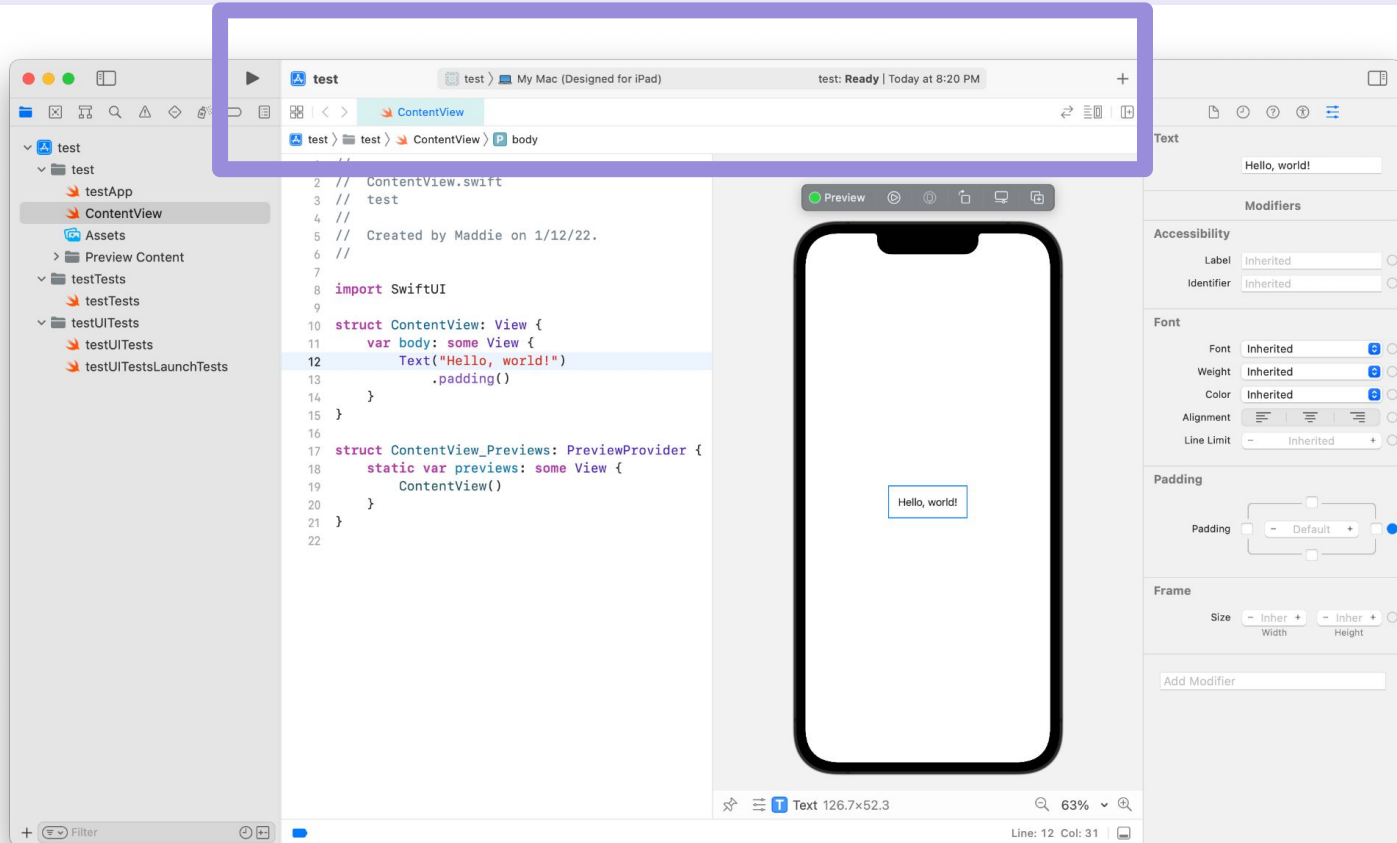
Parts of Xcode



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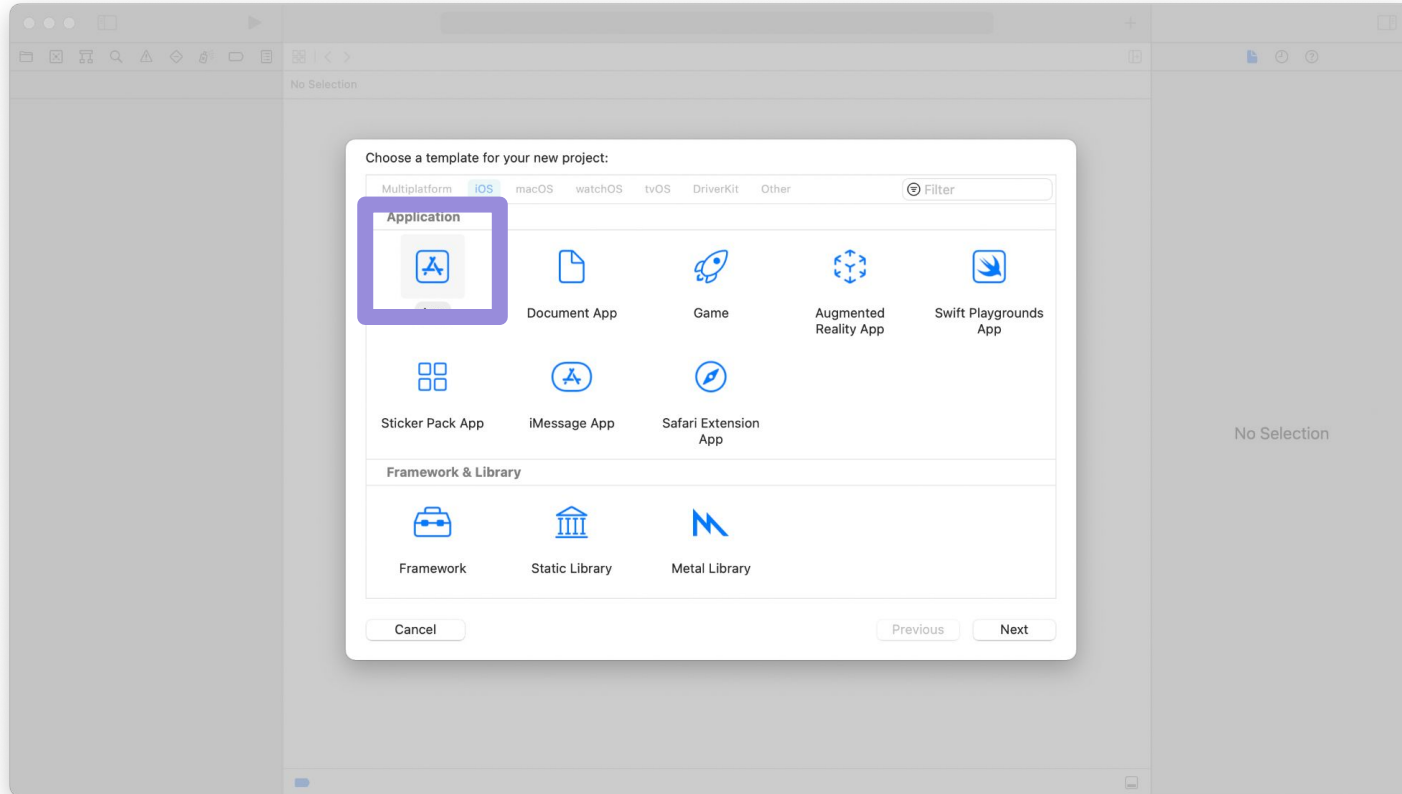
Parts of Xcode



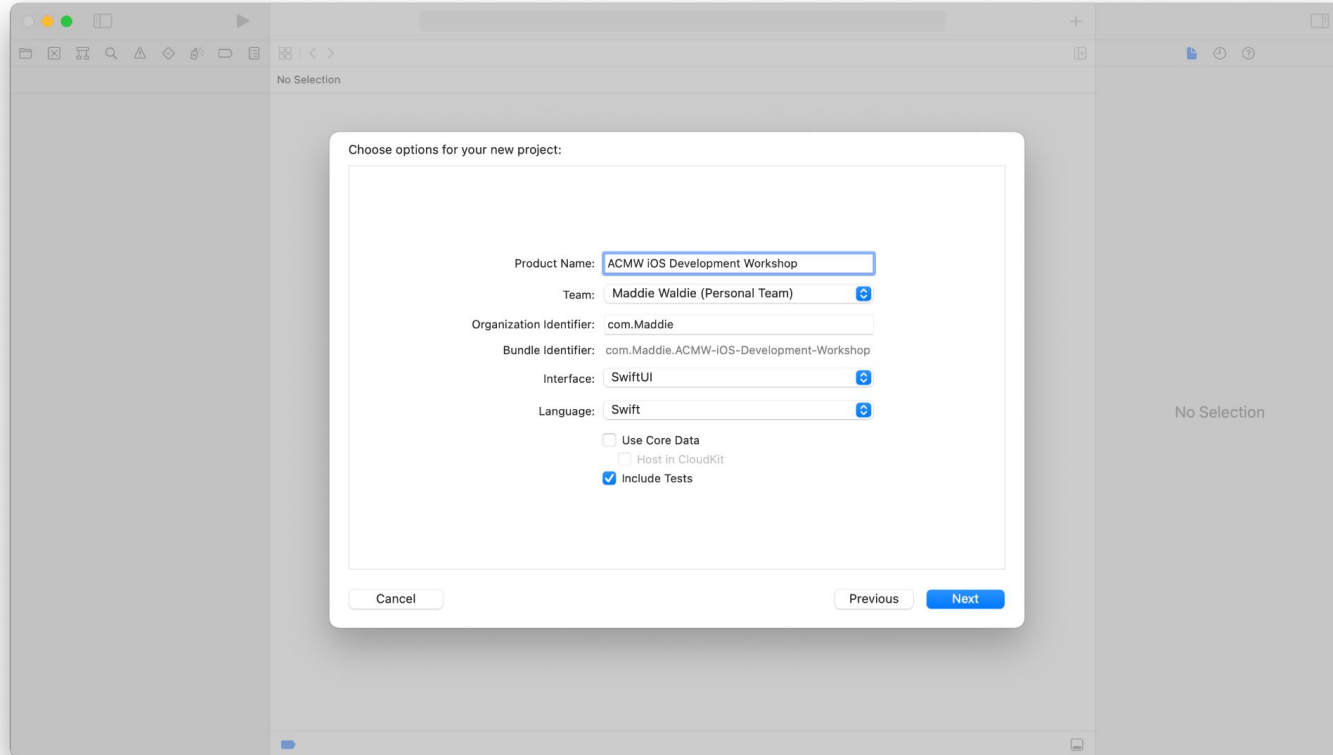
Setting Up Your Project



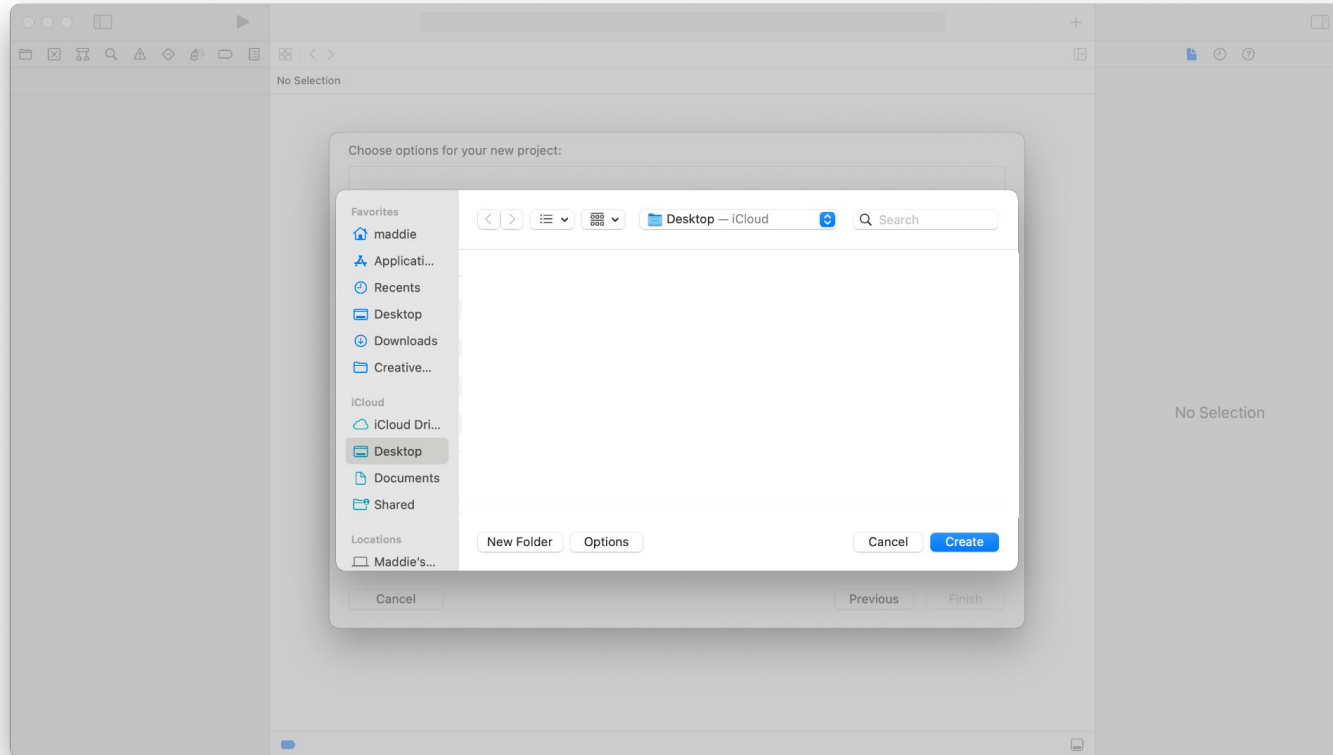
Setting Up Your Project



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Setting Up Your Project



Coding!

Follow along && then work on your own!



Resources

- Swift Language Guide:
<https://docs.swift.org/swift-book/LanguageGuide/TheBasics.html>
- Apple Developer Documentation:
<https://developer.apple.com/documentation/>
- SwiftUI Tutorials:
<https://developer.apple.com/tutorials/swiftui>
- iOS App Dev Tutorials:
<https://developer.apple.com/tutorials/app-dev-training/>

