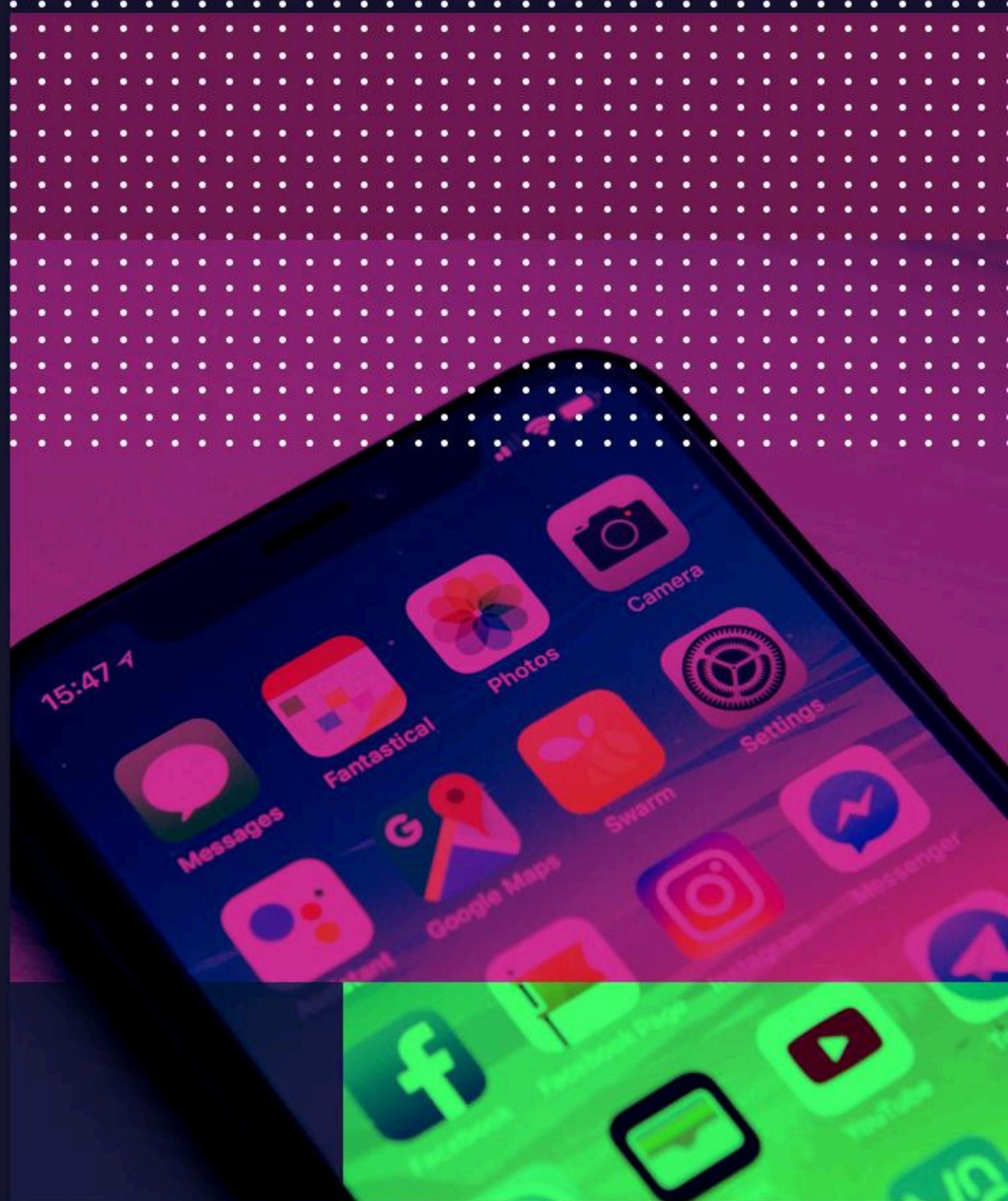


WORKSHOP

How to build an iOS app completely from scratch



Kristaps

- Co-founder, Swift developer at Qminder
- Speaker and mentor
- Open source and inclusivity



Alina

- Swift developer at Mapon
- Open-minded
- Explorer



Kārlis

- Mobile developer at Accenture
- iOS guest lecturer at Vidzeme University
- Good guy

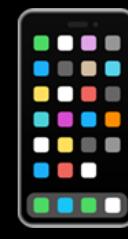


Mr. Byte



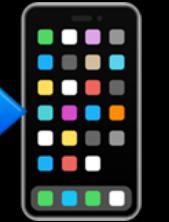
Plan

What is iOS development?



Lunch 

Build an app →



January 9, 2007



2.2 billion

2.2 million

120\$ billion



Mac



iPhone



Apple Watch



iPad



Apple TV

Swift

June 2, 2014 / December 3, 2015

Developed by Apple

General purpose language

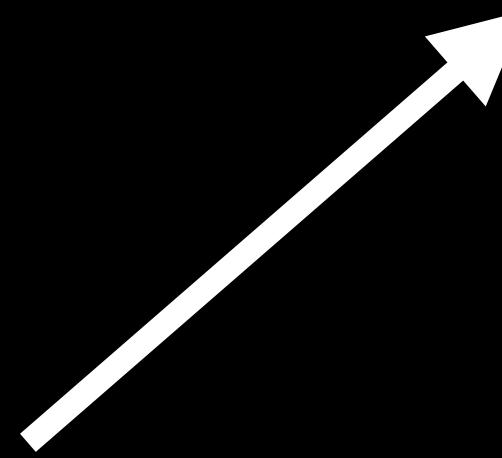


*“A programming language is a vocabulary
and set of grammatical rules for instructing a
computer or computing device to perform
specific tasks.”*

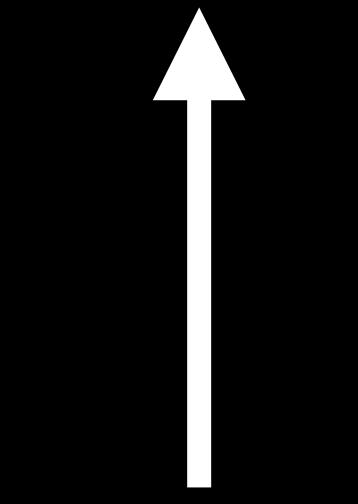
Programming ABC

Variables

```
var x: Int = 1
```



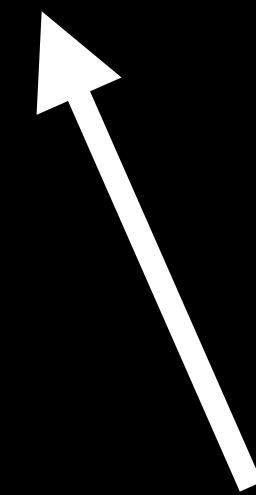
keyword



name



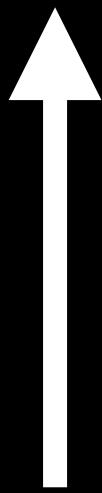
data type



value

Constants

```
let pi: Double = 3.14
```



keyword

Different variables

```
var number: Int = 13
```

```
var decimal: Float = 2.76
```

```
var name: String = "RigaTechGirls 🧑💻"
```

```
var isItSpringNow: Bool = false
```

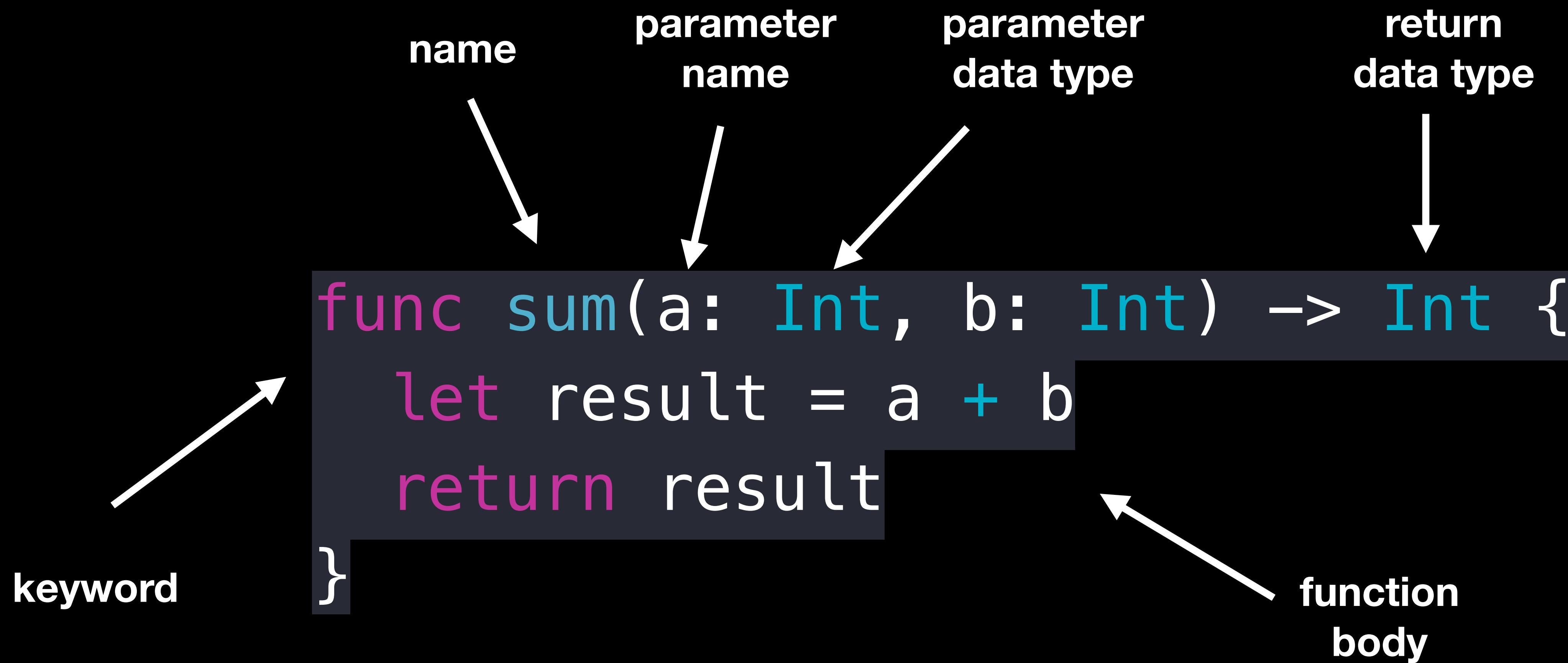
Optional variables



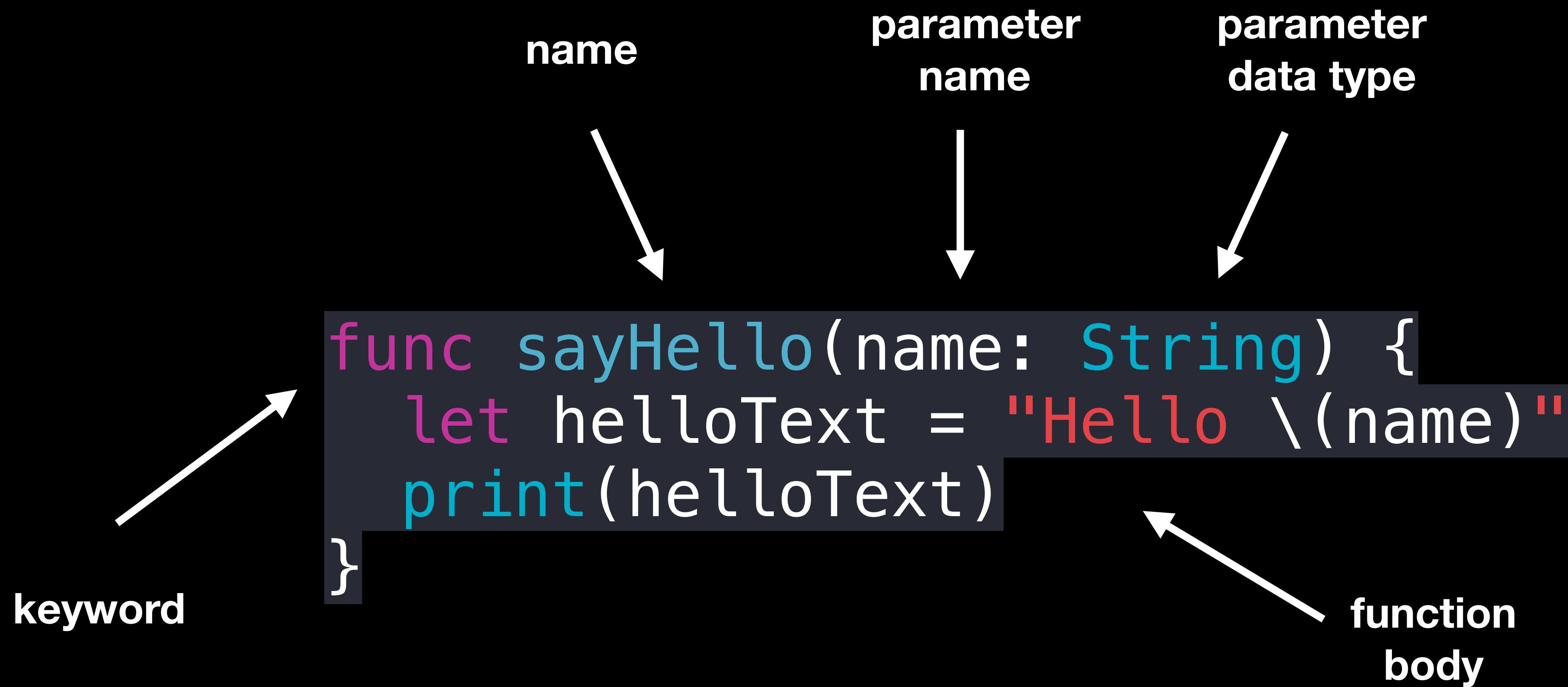
```
var myOptional: Int? = 4
```

```
var myOptional: Int? = nil
```

Functions



Functions



Conditionals

```
if day == "Monday" {  
    // work hard  
}  
else if day == "Friday" {  
    // play hard  
}  
else {  
    // rest  
}
```

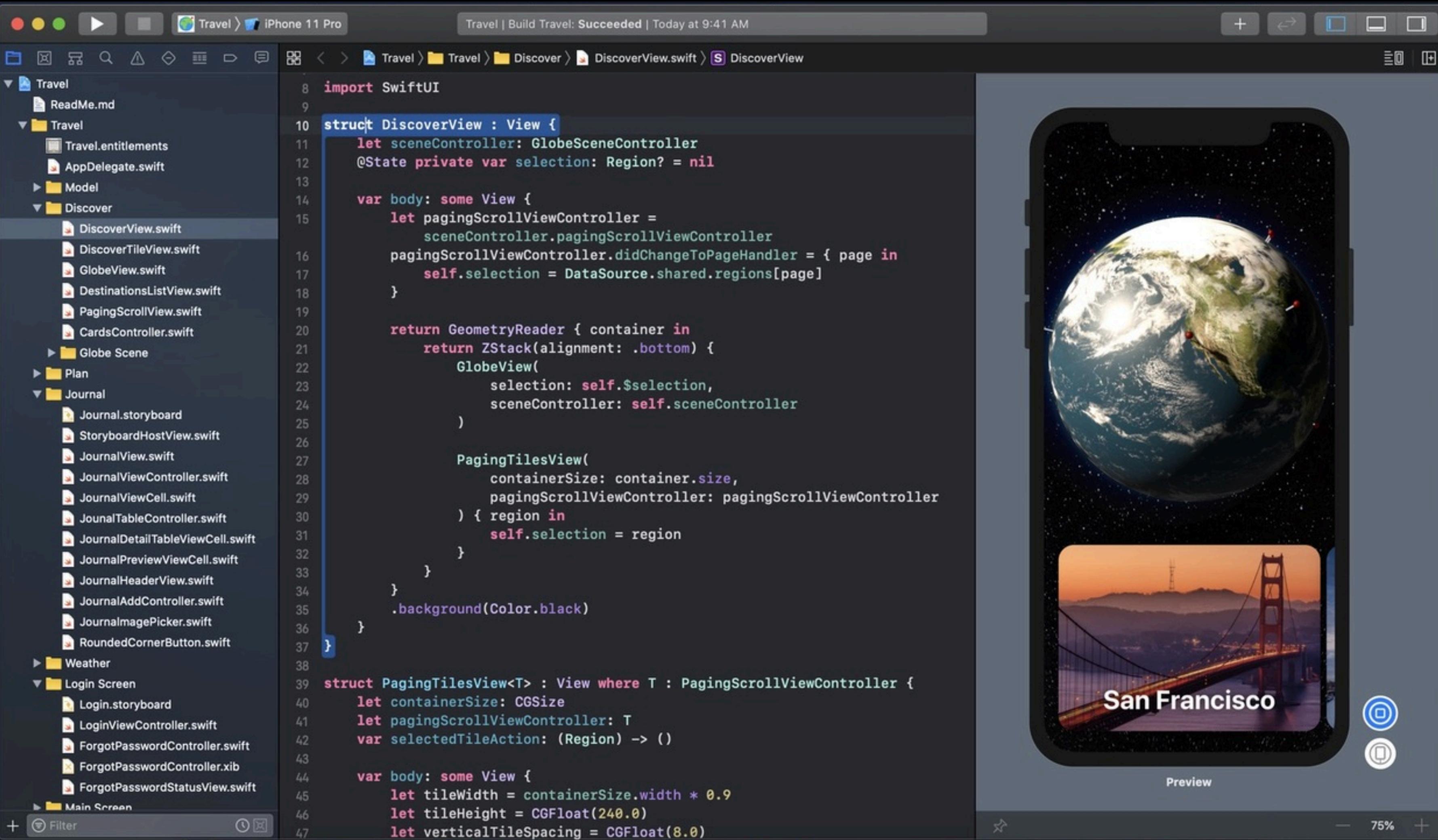
condition

keyword

The diagram illustrates the structure of a conditional statement. It features two white arrows originating from the left side of the slide. One arrow points to the word 'day' in the first line of the code, which is highlighted in red. This line is labeled 'condition'. The other arrow points to the word 'else' in the third line of the code, which is highlighted in magenta. This line is labeled 'keyword'. The code itself is presented in a dark grey box with color-coded syntax highlighting: magenta for keywords like 'if', 'else', and 'else if', green for strings like 'Monday', 'Friday', and the comments 'work hard', 'play hard', and 'rest', and red for operators like '==' and '=='.

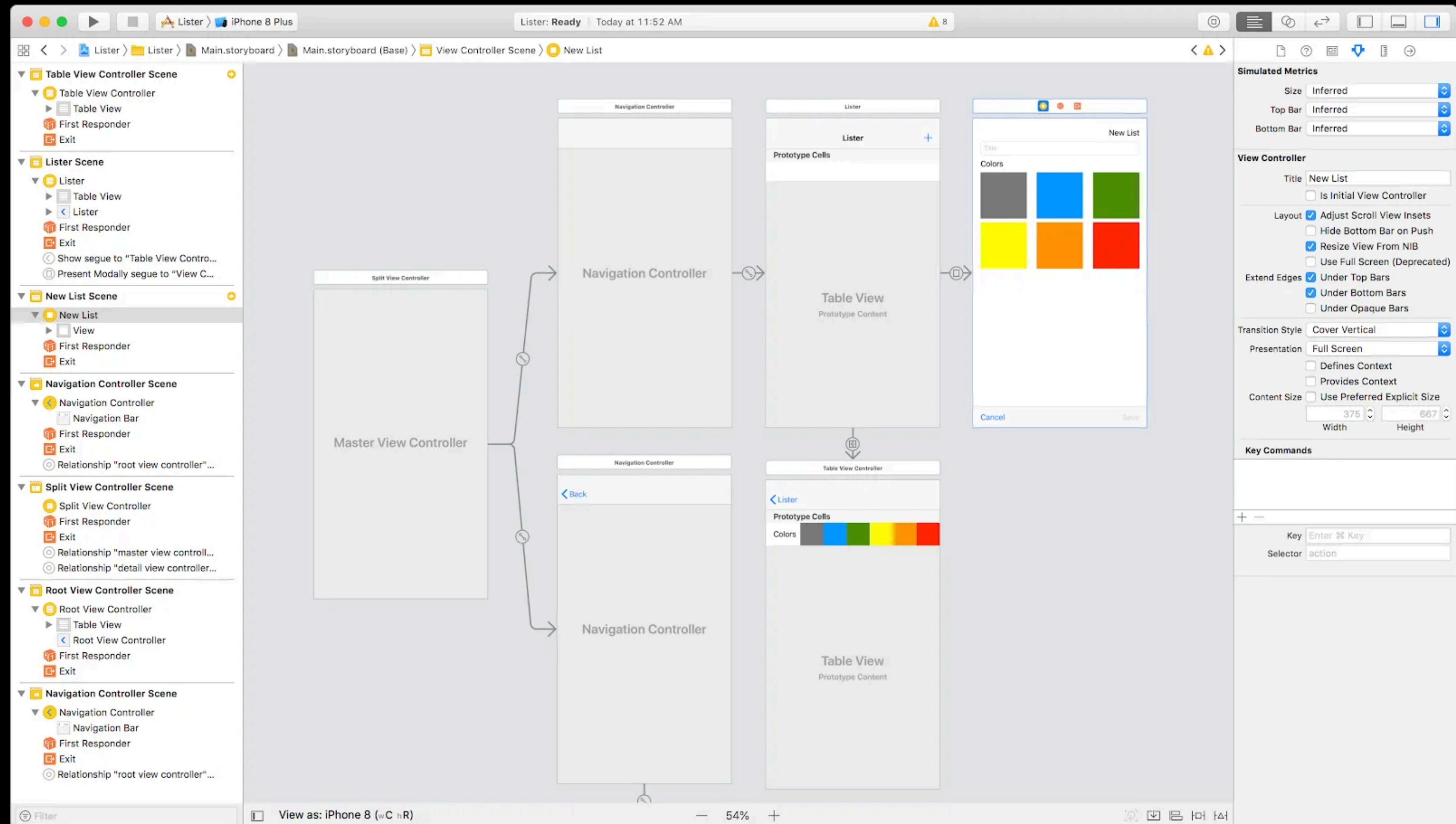
Tools

Xcode



```
8 import SwiftUI
9
10 struct DiscoverView : View {
11     let sceneController: GlobeSceneController
12     @State private var selection: Region? = nil
13
14     var body: some View {
15         let pagingScrollViewController =
16             sceneController.pagingScrollViewController
17         pagingScrollViewController.didChangeToPageHandler = { page in
18             self.selection = DataSource.shared.regions[page]
19         }
20
21         return GeometryReader { container in
22             return ZStack(alignment: .bottom) {
23                 GlobeView(
24                     selection: self.$selection,
25                     sceneController: self.sceneController
26                 )
27
28                 PagingTilesView(
29                     containerSize: container.size,
30                     pagingScrollViewController: pagingScrollViewController
31                 ) { region in
32                     self.selection = region
33                 }
34             }
35         }
36     }
37 }
38
39 struct PagingTilesView<T> : View where T : PagingScrollViewController {
40     let containerSize: CGSize
41     let pagingScrollViewController: T
42     var selectedTileAction: (Region) -> ()
43
44     var body: some View {
45         let tileSize = containerSize.width * 0.9
46         let tileHeight = CGFloat(240.0)
47         let verticalTileSpacing = CGFloat(8.0)
```

User Interface



iOS Simulator

The screenshot shows the Xcode interface with the "Solar System iOS" project open. The left sidebar displays the project structure, including the "Shared" folder containing Networking, CameraModel Classes, Fly-By Classes, Model Classes, Model Protocols, View Classes, and View Model Classes. The "Solar System iOS" folder contains Web view controller, Settings, Main.storyboard, ThePlanets.storyboard, AppDelegate.swift, MainViewController.swift, SceneHUDViewController.swift, 3D Solar System, Planet List, Gravity Simulator, Moon Jumper, Assets.xcassets, LaunchScreen.storyboard, SolarSystem-Bridging-Header.h, PlanetDetails.plist, and Info.plist. The "Resources" and "PlanetPhysics" folders also contain their respective files.

The main editor area shows the code for `MainViewController.swift`:

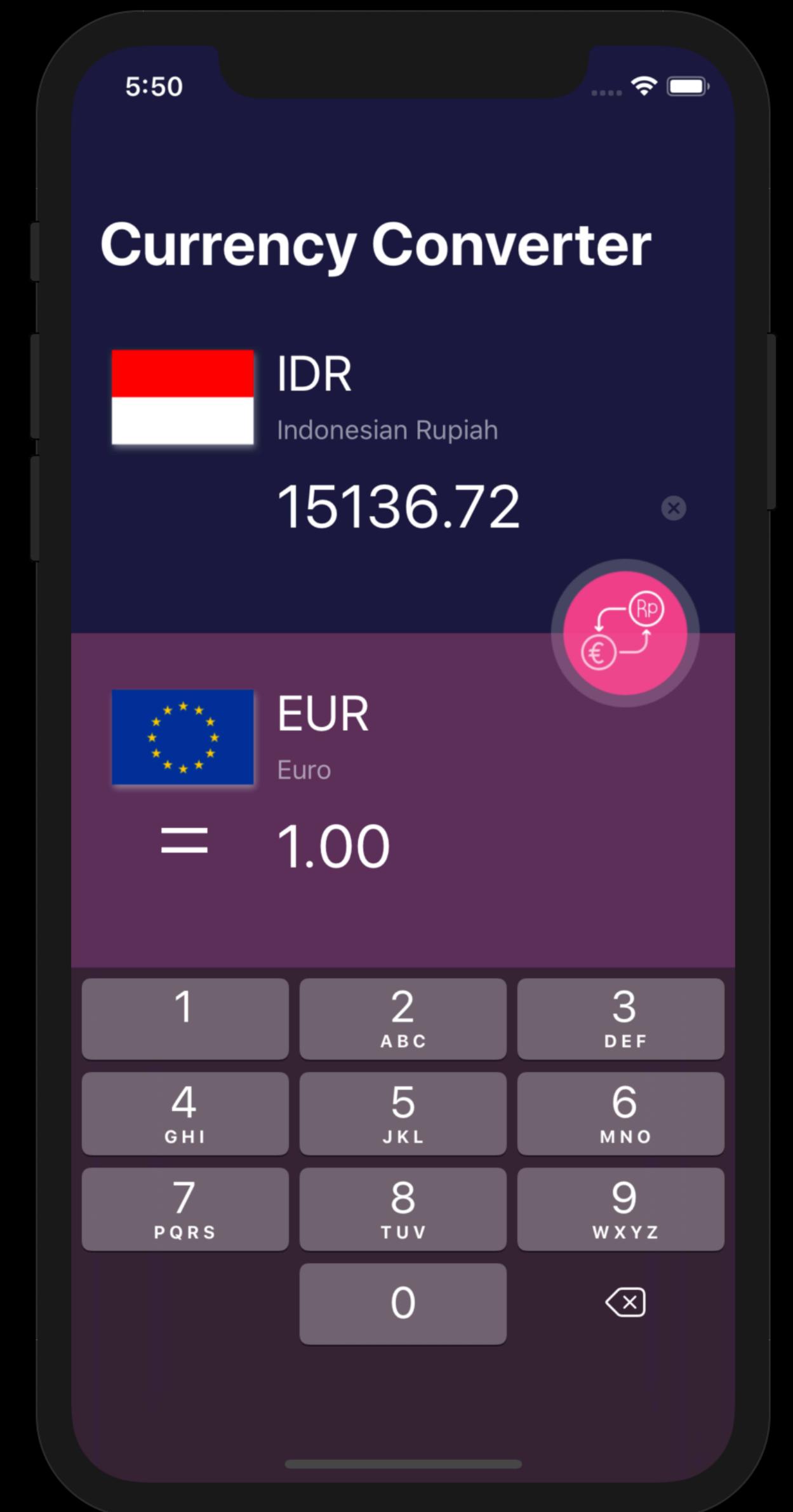
```
7
8 import UIKit
9
10 class MainViewController: UIViewController, SceneHUDDelegate,
11     PlanetDetailsVCDelegate {
12
13     @IBOutlet weak var contentContainerView: UIView!
14     weak var sceneHUDController: SceneHUDViewController?
15
16     weak var solarSystemVC: SceneViewController?
17     weak var planetDetailsVC: SceneDetailsController?
18
19     override func viewDidLoad() {
20         super.viewDidLoad()
21
22         title = "The Solar System"
23
24         // Initiate solar system controller
25         let solarSystemVC =
26             storyboard!.instantiateViewController(withIdentifier:
27             "solarSystemVC") as! SceneViewController
28
29         solarSystemVC.view.translatesAutoresizingMaskIntoConstraints =
30             false
31         addChild(solarSystemVC)
32         contentContainerView.addSubview(solarSystemVC.view)
33
34         // Constraints
35         solarSystemVC.view.leadingAnchor.constraint(equalTo:
36             contentContainerView.leadingAnchor).isActive = true
37         solarSystemVC.view.trailingAnchor.constraint(equalTo:
38             contentContainerView.trailingAnchor).isActive = true
39         solarSystemVC.view.topAnchor.constraint(equalTo:
40             contentContainerView.topAnchor).isActive = true
41         solarSystemVC.view.bottomAnchor.constraint(equalTo:
42             contentContainerView.bottomAnchor).isActive = true
43
44         self.solarSystemVC = solarSystemVC
45 }
```

The bottom status bar indicates "iPhone X - 12.0".

The right side of the screen shows the "iPhone X" simulator displaying the "Planets" application. The screen has a dark background with a globe icon at the top. The title bar says "Details" and "Planets". The content area lists the planets with their names and brief descriptions:

- Mercury**: Mercury is the smallest and innermost planet in the Solar System. Its orbital period around the Sun is approximately 88 Earth days.
- Venus**: Venus is the second planet from the Sun, orbiting it every 224.7 Earth days. It rotates in the opposite direction to most other planets.
- Earth**: Earth, otherwise known as the World or the Globe, is the third planet from the Sun and the only object in the Solar System known to harbor life.
- Mars**: Mars is the fourth planet from the Sun and the second-smallest planet in the Solar System.
- Jupiter**: Jupiter is the fifth planet from the Sun and the largest in the Solar System. It is a giant planet with many moons.

Let's build an app



Step 1 - Create project

New Xcode project

Select iOS Simulator

Run empty app

Step 2 - Assets

Download assets

Add to Asset Catalog

Dark mode

Step 3 - User Interface

Text labels

Inputs

Flags

Buttons

Step 4 - Layout elements

Put elements on the screen

Constraints

Screen resolutions

Step 5 - Programming

Convert function from IDR to EUR

Format number

Step 6 - Connect UI

IBOutlets

IBActions

Connect interface to code

Step 7 - Advanced I

Convert automatically

Step 8 - Advanced II

Convert vice versa

Step 9 - Extra

Build currency selection

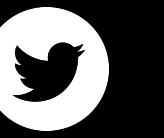
VDN has more crazy rate

What's next?

Treehouse

Hacking with Swift

Just start building



fassko

www.kristaps.me

