

MariHacks

iOS Development

A Brief Introduction

Anthony Fiorito
February 4, 2018

Agenda

- Classes/Inheritance
- Swift Optionals
- Model-View-Controller Architecture
- iOS View Hierarchy
- Your First iOS App
- Learning Resources

Classes/Inheritance

- Object-oriented programming (OOP) is a programming style that focuses on using objects to design applications
- A class is a template for describing something with data (variables) and operations (methods)
- An object is an instance of a class. The object executes the functionality while the class describes the functionality
- Classes can have parent classes (superclass) and child classes (subclass)
- The child parent relationship is defined by the inheritance hierarchy

Inheritance Example

UIButton Class Inheritance



Swift Optionals ?!

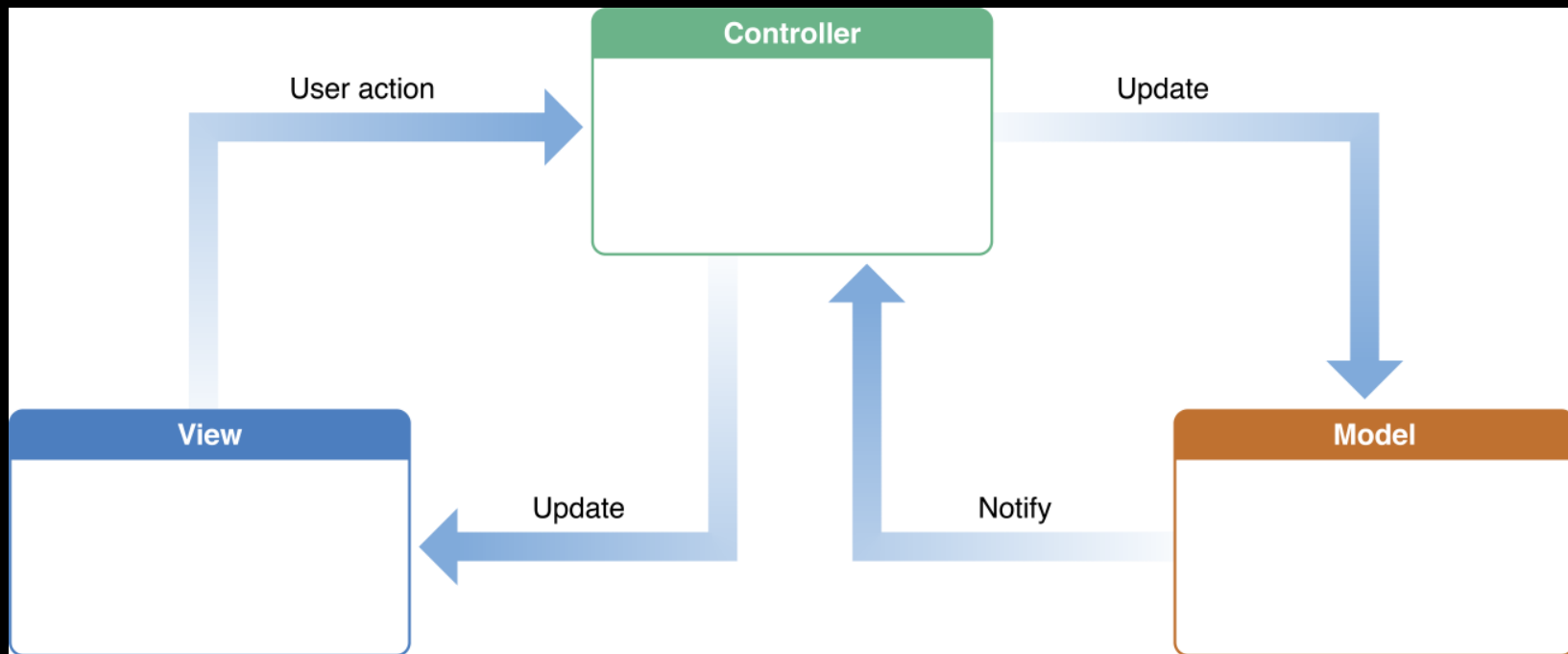
- Optionals solve the problem of non-existing values
- For example:
 - With `Int` type you can always be sure that you will have an integer
 - With `Int?` type you might have an integer or you might have `nil`
- You can force unwrap a variable by using an exclamation mark (!)
 - The exclamation mark says that you are sure the value isn't `nil`
 - If the value ends up being `nil`, your program will crash

Model-View-Controller Architecture

- Model-View-Controller (MVC) describes the way to structure an application.
- MVC separates objects into three roles: model, view and controller
- MVC specifies rules for separating responsibilities and how to communicate between different parts of the application
- Model: encapsulates application data and logic that modifies data
- View: displays information and handles user interaction
- Controller: intermediary between the model and view. The main purpose is to update the view with changes from the model

Model-View-Controller Architecture

MVC Diagram

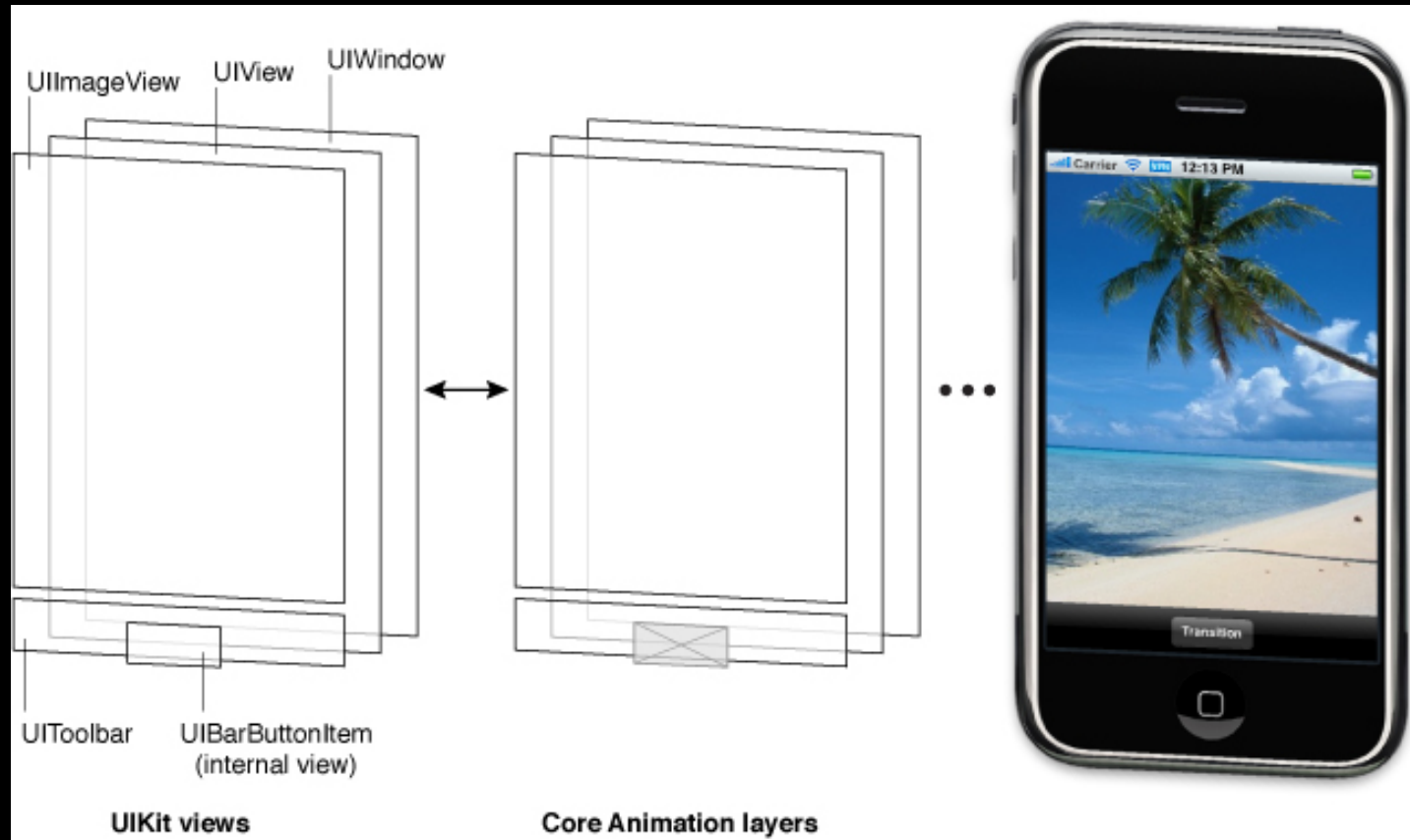


iOS View Hierarchy

- iOS views are composed of different layers similar to an object inheritance hierarchy
- There are two important layers we will see:
 - UIView layer
 - Core Animation (CA) Layer

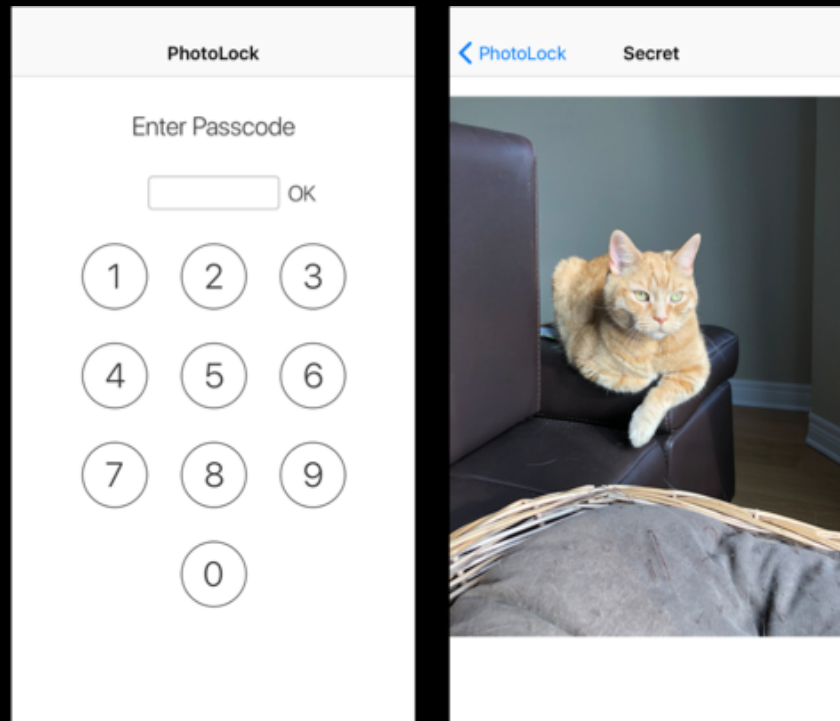
iOS View Hierarchy

View Architecture



Your First iOS App

PhotoLock



Github Link For Completed Project: <https://github.com/a-fiorito/marihacks-demo>

Learning Resources

- Hacking With Swift: <https://www.hackingwithswift.com/>
- Apple's App Development with Swift:
<https://itunes.apple.com/us/book/app-development-with-swift/id1219117996?mt=11>
- Stanford's Developing iOS 11 Apps with Swift:
<https://itunes.apple.com/us/course/developing-ios-11-apps-with-swift/id1309275316>