

iOS 12 and Swift 4.2 The Complete App Development Bootcamp

Syllabus

1. Getting Started

2. iOS/Xcode Interface Builder

- a. How to set up a new Xcode project.
- b. How to use the **Interface Builder** to design and create the appearance of your app.
- c. How to find your way around Xcode.
- d. How to change the **attributes** of various UI elements.
- e. How to **arrange** UI elements on screen by their setting their coordinates.
- f. How to **size** UI elements by changing their dimensions.

3. Sideloaded in iOS

- a. How to run your app on your iPhone/iPad

4. [Challenge 1] The I Am Poor App

5. Introduction to iOS Development

- a. Understand and use constants and variables.
- b. Understand and use Swift **arrays**.
- c. Learn about **randomisation**.
- d. Understand basic gesture controls and **motion** detection.

6. [Challenge 2] Magic 8 Ball App

7. Introduction to Swift Programming

- a. How to use **Swift Playgrounds** and become familiar with Swift syntax.
- b. Understand the **data type** system and how to use Strings, Integers, and Doubles.
- c. Understand how to declare **constants** and **variables** using `let` or `var`.
- d. How to use Swift **functions** and understand their input parameters and return types.
- e. How to use **IF-ELSE** statements to control the flow of execution.
- f. Swift **loops**.

8. Reading and Using Apple Documentation

- a. Finding out how to play sound using **AVFoundation** and **AVAudioPlayer**.
- b. The **ViewController lifecycle**.
- c. How to use tags in Interface Builder.
- d. **Error handling** using try and catch.
- e. Code refactoring.
- f. Basic **debugging** for array index out of range errors.

9. App Design Patterns and the Model-View-Controller (MVC)

- a. What is a **design pattern** and how is it used in programming.
- b. How to use the Model-View-Controller or **MVC** pattern for app development.
- c. Learn about **Object Oriented Programming**.
- d. How to store data locally.
- e. How to incorporate **third party libraries** and how to display Heads Up Displays (HUDs).
- f. How to refactor code and stay organised.
- g. Learn about **class initialisation**.
- h. How to programmatically change UI elements such as Labels and Views.
- i. Start thinking about data encapsulation and how to keep your data safe from corruption.

10. [Challenge 3] Destini App - The Choose Your Own Adventure Game

11. iOS Auto Layout and Setting Constraints

- a. How to add **constraints** and understand how auto layout works.
- b. How to Pin and Align UI elements.
- c. How to create **containers** to configure advanced layouts.
- d. How to debug auto layout errors.
- e. Understanding what Xcode needs in order to correctly layout a design.
- f. How to use **stack views** to easily layout your UI.

12. Intermediate Swift Programming

- a. Understand **Classes** and **Objects**.
- b. Learn about **Properties**.
- c. How to create and use **Enumerations (Enums)**.
- d. Learn the difference between **Functions** and **Methods**.
- e. Learn about **Inheritance** and the **override** keyword.
- f. Learn about **Initialization**, including **Designated** and **Convenience Initializers**.
- g. Understand **Optional** Types, **Forced Unwrapping**, **Optional Binding** and **Optional Chaining**.

13. Networking, APIs and Third Party Library Dependency Managers

- a. How to use **CocoaPods** to manage and use **open source** code libraries.
- b. How to use the **Command Line** on Mac with Terminal.
- c. Learn about **Networking** calls.
- d. Use public web-based **APIs** to fetch data.
- e. How to parse data organised in **JSON** format.
- f. Learn about **Core Location** and utilising the iPhone's inbuilt **GPS**.
- g. Learn about navigation between View Controllers using **Segues**.
- h. Introduction to **Delegates** and **Protocols**.
- i. How to pass data between View Controllers.
- j. Learn and use Swift **Switch** statements.

14. The Command Line and Terminal

15. [Challenge 4] Bitcoin Price App

16. Cloud Based Backend (Firebase), User Authentication and TableViews

- a. How to integrate third party libraries in your app.
- b. How to **store data** in the cloud using **Firebase**.
- c. How to query the Firebase database.
- d. How to use Firebase for **user authentication**.
- e. How to work with a **UITableView**.
- f. How to use custom cells in a Table View.
- g. How to embed View Controllers in a **Navigation Controller** and understanding the navigation stack.
- h. How to create Segues for navigation.
- i. How to make **custom .xib** files to modify native design components.
- j. Using **Grand Central Dispatch** to queue asynchronous tasks.

17. Git GitHub and Version Control

18. Core Data, Realm, Coadable and UserDefaults

19. In-App Purchases and Apple StoreKit API

20 - 25. Machine Learning, CoreML and CreateML

- a. Introduction to **machine learning**
- b. CoreML - Using **pre-trained** machine learning models for image recognition
- c. Using **IBM Watson Bluemix** and **Carthage** for intelligent iOS apps
- d. Advanced CoreML - Converting a model from **Caffe** to MLModel
- e. CreateML - Creating your own image recognition model
- f. Advanced CreateML - Create a Twitter **sentiment analysis** machine learning model using **natural language processing** (NLP) tools from CreateML.

26 - 29. Augmented Reality and ARKit

- a. Introduction to **augmented reality**, **ARKit** and **SceneKit**

- b. Creating **3D objects and text** in AR
- c. **Animations** in AR
- d. **Plane** detection
- e. **Measuring** real world distances in AR
- f. Image recognition and **tracking** in AR
- g. **Rendering** 3D models on tracked images
- h. Playing **videos** in real world tracked images

30. Publishing to the App Store

31 - 34. Mobile App Design

- a. Color Theory
- b. Typography
- c. Mobile User Interface (UI) design fundamentals
- d. Mobile User Experience (UX) design fundamentals
- e. iOS vs. Android design differences
- f. How to use Sketch, Marvel to design your app mockup
- g. Design resources

35 - 48. Mobile App Marketing

- a. Idea validation and MVP
- b. App monetisation models
- c. Optimising the app store listing
- d. Growth hacking techniques for app downloads
- e. How to get press coverage for your app
- f. How to get your app featured on the app store
- g. App Store Optimisation (ASO) how to rank on the app store search engine
- h. How to use paid advertising to get more customers
- i. Improving your app store ratings and reviews
- j. App analytics
- k. Black hat vs. white hat techniques for app marketing
- l. How to build a app showcase website

49. Ask Me Anything