

SYLLABUS

THE COMPLETE IOS APP DEVELOPMENT BOOTCAMP



APP BREWERY

www.appbrewery.co

IOS/XCODE INTERFACE BUILDER

- ~~How to set up a new Xcode project.~~
- ~~How to use the Interface Builder to design and create the appearance of your app.~~
- ~~How to find your way around Xcode.~~
- ~~How to size and arrange various UI elements.~~
- ~~How to add custom image assets to Xcode projects.~~
- ~~How to create app icons and size them for all resolutions.~~
- ~~How to run apps on the iOS Simulator as well as sideload to a physical device.~~

INTRODUCTION TO IOS DEVELOPMENT

~~Learn to clone projects from GitHub.~~

~~Link design with code via IBActions and IBOutlets.~~

~~Learn to detect user interaction through UIButton.~~

~~Understand and use Swift variables, constants and collection types.~~

~~Learn about printing and commenting in Swift.~~

~~Learn about randomisation in swift and range operators.~~

~~Learn to use Image Literals in code.~~

~~Learn to use Swift Playgrounds.~~

~~Understand the data type system and the primitive data types such as Strings, Ints and Doubles.~~

IOS AUTO LAYOUT AND SETTING CONSTRAINTS

- ~~How to add constraints and understand how auto layout works.~~
- ~~How to Pin and Align UI elements.~~
- ~~How to create containers to configure advanced layouts.~~
- ~~How to debug auto layout errors.~~
- ~~Understand the pre-requisites to automatic layout.~~
- ~~How to use stack views to easily layout your UI.~~

READING AND USING APPLE DOCUMENTATION

- ~~Figure out how to play sound using AVFoundation and AVAudioPlayer through understanding Apple documentation.~~
- ~~How to use Swift functions and understand input parameters and return types.~~
- ~~Error handling using try and catch.~~
- ~~Code refactoring.~~
- ~~Basic debugging for code errors.~~

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CONTROL FLOW AND OPTIONALS

- ~~Understand the need and use cases of Swift Optionals.~~
- ~~How to use IF-ELSE and Switch statements to control the flow of code execution.~~
- ~~Learn about Swift Dictionaries.~~
- ~~Learn to use the UIProgressView to create an animated progress bar.~~
- ~~Figure out how to use the Timer object in Swift using documentation.~~

IOS DESIGN PATTERNS AND THE MODEL-VIEW-CONTROLLER (MVC)

- What is a design pattern and how is it used in programming.
- How to use the Model-View-Controller or MVC pattern for app development.
- Learn about 2D arrays.
- Learn about Swift Structures and creating custom types.
- Learn about struct initialisation.
- Learn about properties and methods and the difference between functions and methods.
- Learn about immutability and the mutating keyword.

MULTI-SCREEN APPLICATIONS

- Learn about Swift classes.
- Learn about Object-Oriented Programming and inheritance.
- Learn the difference between Structures and Classes and when to use each.
- Learn to use the UISlider.
- Creating a custom UIViewController class.
- Creating UI completely programmatically without Interface Builder.
- How to build a multi-screen app using segues.
- Advanced methods of handling Swift Optionals, including Optional Binding, Optional Chaining and the Nil Coalescing Operator.
- Learn about Color Literals.

NETWORKING, APIS AND JSON PARSING

- How to use public APIs to get live data from the internet.
- Learn about Networking and use the native URLSession object to make HTTP requests to a server.
- Learn about the Decodable Protocol and how to parse JSON formatted data using the native JSONDecoder.

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- Learn to create Dark Mode differentiated assets and use vector assets.
- Learn to use the UITextField to get keyboard inputs.
- Learn about Swift Protocols
- Learn about the Delegation design pattern using Protocols.
- Learn about Swift Extensions.
- Learn to use Swift computed properties.
- Understand the completion handler and the Swift Closure.
- Learn about Core Location to tap into the device GPS data.

SWIFTUI, COMBINE & CATALYST

- Understand what is SwiftUI and how it's different from UIKit.
- Learn to write declarative SwiftUI code to create user interfaces programmatically.
- Learn to build user interfaces using SwiftUI Text, Button, Image, HStack, VStack, ZStack, List, Color and NavigationView components.
- Learn to use the Preview pane and live Preview.
- Use the Object Library to turn UI elements into code.
- Understand and use SwiftUI modifiers to chain modification methods to SwiftUI components.
- Understand the SwiftUI Closure syntax to add custom functionality to SwiftUI components.
- See the difference between Imperative and Declarative code.
- Manage state using the @State property modifier.
- Learn about the @Published property modifier from the Combine framework that allows for more complex state management.
- Manage complex app state using the ObservableObject protocol.
- Learn to incorporate UIKit components in a SwiftUI app using the UIViewRepresentable protocol.
- See your iOS apps turn into a Mac app by leveraging project Catalyst.

THE COMMAND LINE AND TERMINAL

- How to use basic bash commands in the Unix Terminal.
- How to manipulate files and folders without needing a graphical user interface.
- How to download and install to your computer using command line.

GIT GITHUB AND VERSION CONTROL

- Using git for version control and collaboration
- Git forking, branching and cloning
- Using GitHub as a remote repository
- Checkout and rolling back changes with git
- Using git and GitHub with Xcode

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CLOUD BASED BACKEND (FIREBASE), USER AUTHENTICATION AND TABLEVIEWS

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

PERSISTENT STORAGE SOLUTIONS

- How to use UserDefaults and plists
- How to use the Codable Protocol to save to file
- How to use Core Data for relational data management
- How to use Realm as a modern database solution

IN-APP PURCHASES AND APPLE STOREKIT API

- How to integrate the Apple StoreKit API into your app
- How to charge once only and subscription payments for apps
- How to test using Sandbox accounts

MACHINE LEARNING ON IOS, COREML AND CREATEML

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

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AUGMENTED REALITY ON IOS AND ARKIT

- Introduction to augmented reality, ARKit and SceneKit
- Creating 3D objects and text in AR
- Animations in AR
- Plane detection
- Measuring real world distances in AR
- Image recognition and tracking in AR
- Rendering 3D models on tracked images
- Playing videos in real world tracked images

PUBLISHING TO THE APP STORE

- Familiarising with App Store Connect
- How to write the app listing
- Apple TestFlight
- Submitting your app for review

MOBILE APP DESIGN

- Colour Theory
- Typography
- Mobile User Interface (UI) design fundamentals
- Mobile User Experience (UX) design fundamentals
- iOS vs. Android design differences
- How to use Sketch, Marvel to design your app mockup
- Design resources

MOBILE APP MARKETING

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