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Getting Started with iOS, Swift and Coding guidelines Assignment

1. Explain what is Xcode?

Xcode is Apple's IDE (integrated development environment), made for producing software on Mac for use on iOS, iPadOS, macOS, tvOS, and watchOS. Free to download and use, the IDE is chiefly used by developers to create iPhone and iPad apps, as well as programs for the Mac.

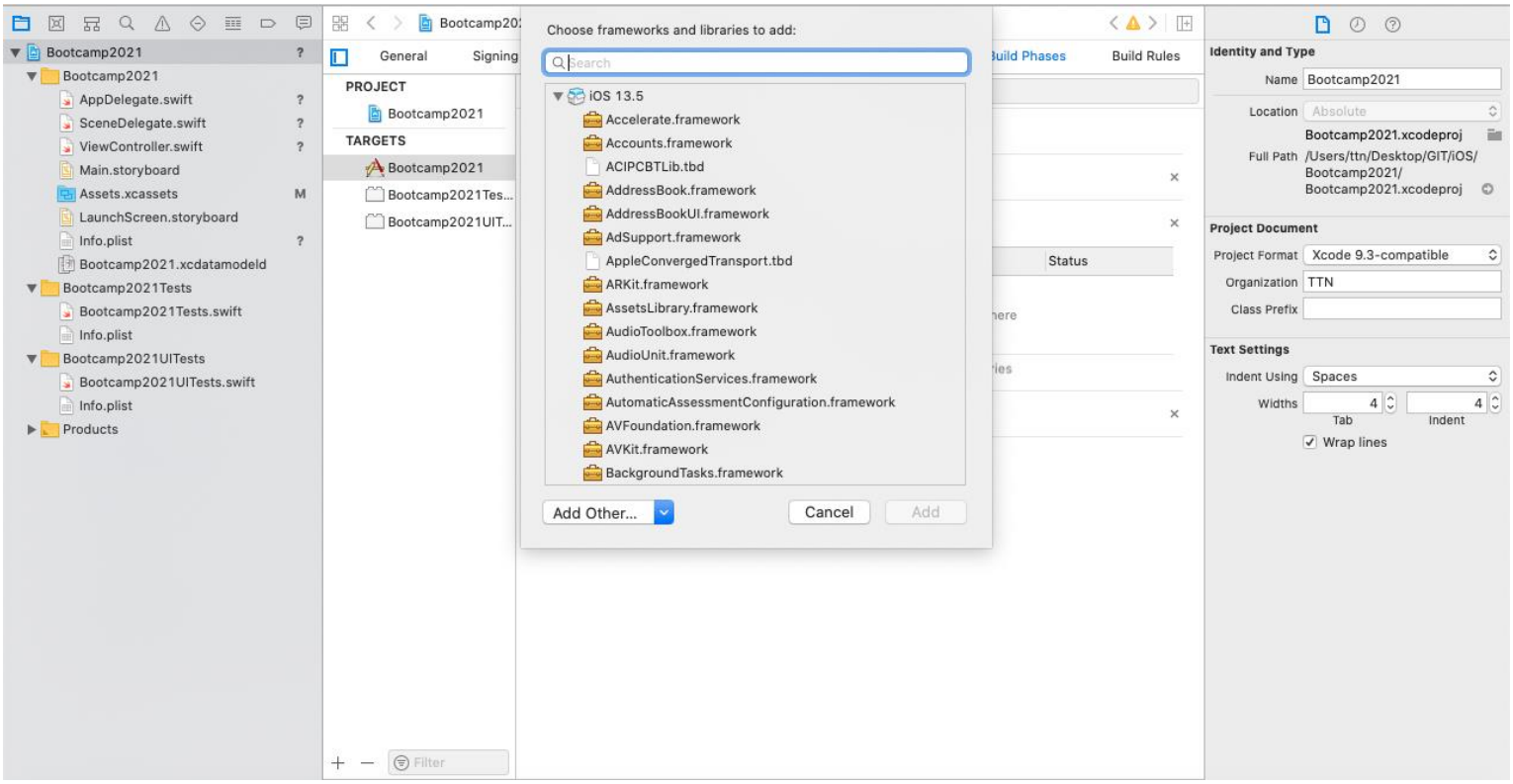
It enables developers to write the code and compile apps that can be used on various devices and operating systems. As Apple's own IDE, it is primarily used for the development of apps within its own ecosystem, though it can be used for writing source code in a variety of languages for use in other projects.

As an entire suite, developers can use Xcode to design the user interface, write app code, compile code, test the code and app, and debug. On completing an app to a quality where it can be accepted for distribution, Xcode can submit the app to Apple's assorted App Store marketplaces.

2. Explain how you can add frameworks in Xcode project?

- Select the project file from the project navigator on the left side of the project window.
- Select the target for where you want to add frameworks in the project settings editor.

- Select the “Build Phases” tab, and click the small triangle next to “Link Binary With Libraries” to view all of the frameworks in your application.
- To Add frameworks, click the “+” below the list of frameworks.
- To select multiple frameworks, press and hold the command key while using the mouse to click the desired frameworks.



3. Explain what is the difference between Xcode, Cocoa and Objective C?

Xcode

Xcode is the integrated development environment (IDE) - the application - that developers use to write software for iOS and/or OS X. It includes the editor, the build system (determining what to build to produce the desired target), and quite a few other things.

Objective C

Objective-C is the main language that developers write such software in. They may write bits of it in pure C, use C++ or combine it with Objective-C (producing Objective-C++), or write some or all

of the program in another language entirely, such as MacRuby, Java (with j2objc), or C# (with MonoTouch).

Cocoa
Cocoa is an Application Programming Interface (API) framework for Apple's operating system macOS. *Cocoa & Cocoa Touch have distinct target devices.* Cocoa Touch is a specific API for anything apart from macOS (i.e, iOS, tvOS, watchOS → these are basically devices which incorporate the usage of gestures, animations and various other graphical control elements). Cocoa & Cocoa Touch have a standard pre-built set of elements which are included in the Xcode IDE.

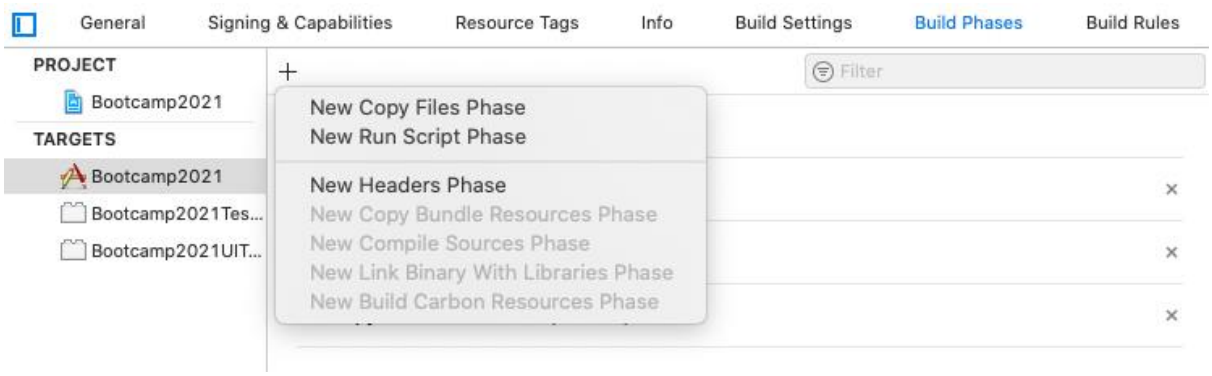
4. What is the short cut to open the "Code Snippet Library" in Xcode?

We can access the Code Snippet Library from the Xcode Source Editor using the shortcut **Control+Option+Command+2**.

5. Mention what are the build phases available in Xcode?

The build phases available in Xcode are as follows:

i. New Copy Files Phase
ii. New Run Script Phase
iii. New Headers Phase
iv. New Copy Bundle Resources Phase
v. New Compile Sources Phase
vi. New Link Binary With Libraries Phase
vii. New Build Carbon Resources Phase



6. Explain how app delegate is declared by Xcode project templates?

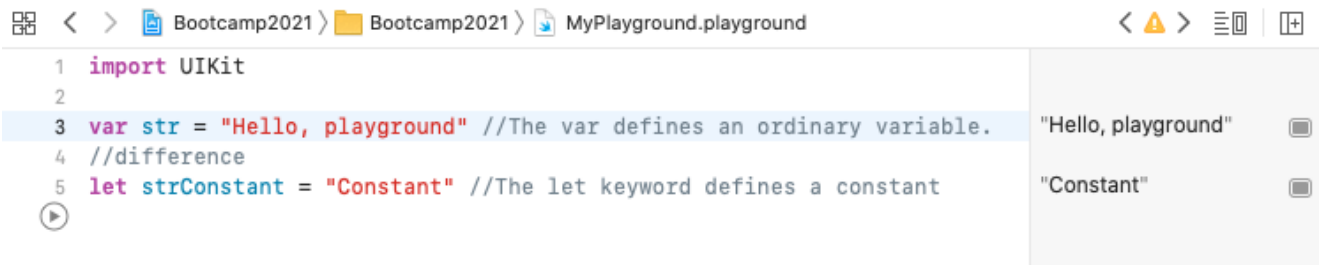
The app delegate is a custom object created at app launch time, usually by the UIApplicationMain function. The primary job of this object is to handle state transitions within the app. For example, this object is responsible for launch-time initialization and handling transitions to and from the background.

App delegate is declared as a subclass of UIResponder by Xcode project templates. The Xcode project templates declare the app delegate as a subclass of UIResponder. If the UIApplication object does not handle an event, it dispatches the event to your app delegate for processing.

7. Explain how you define variables in Swift language?

In Swift, we use the var keyword to declare a variable.

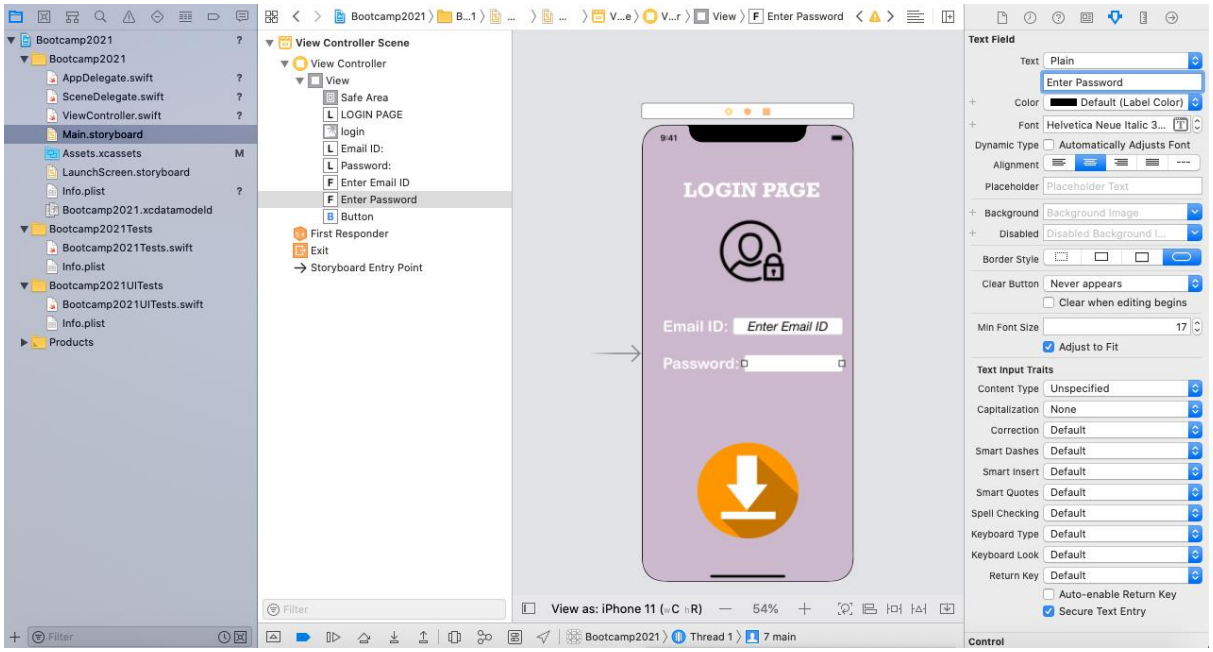
‘l**et’** is used to declare a constant value - you won't change it after giving it an initial value.
‘**var**’ is used to declare a variable value - you could change its value as you wish.

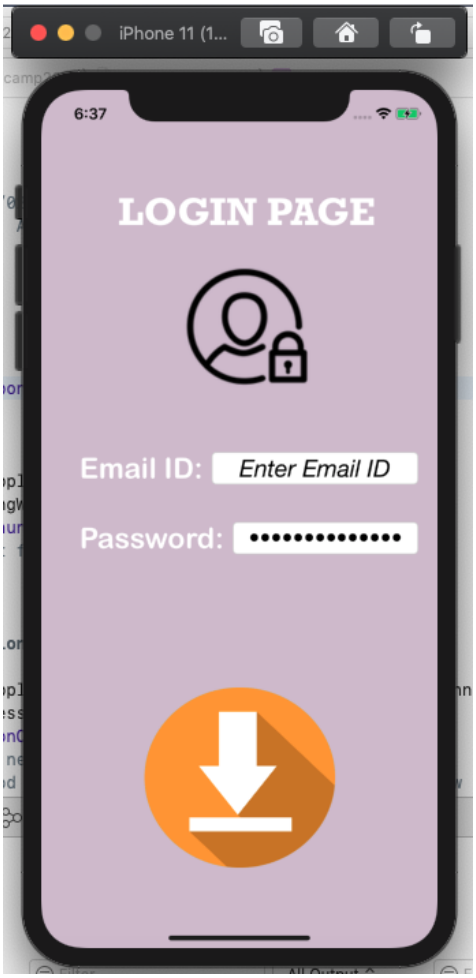


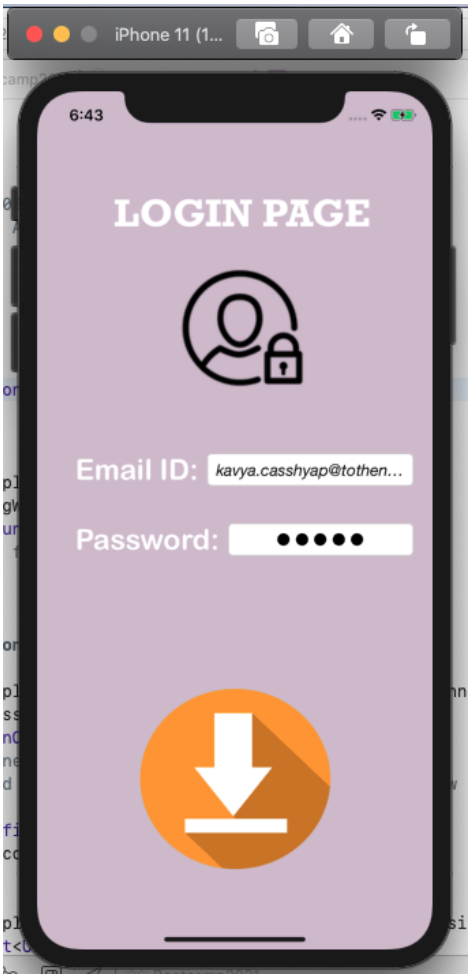
8. What is interface builder?

The Interface Builder editor within Xcode makes it simple to design a full user interface without writing any code. Simply drag and drop windows, buttons, text fields, and other objects onto the design canvas to create a functioning user interface. It allows Cocoa and Carbon developers to create interfaces for applications using a graphical user interface.

9. Create an app with a login interface which should have two text field for email, password where the password is a secure field and a button.







10. List devices and their resolutions, screen size has iOS as their OS.

DEVICES	LOGICAL RESOLUTION	PHYSICAL RESOLUTION	SCREEN SIZE
iPad Pro 11″ (2018-2020)	1024 × 768	2388 × 1668	11″
iPad Pro 12.9″ (2018-2020)	1024 × 768	2732 × 2048	12.9″
iPhone 11 Pro Max (2019)	896 × 414	2688 × 1242	6.5″
iPhone 11 Pro (2019)	812 × 375	2436 × 1125	5.8″
iPhone 11 (2019)	812 × 375	1792 × 828	6.1″
iPad Air 3 (2019)	1112 × 834	2224 × 1668	10.5″
iPad 7 (2019)	1024 × 768	2160 × 1620	10.2″
iPad Mini 5 (2019)	1024 × 768	2048 × 1536	7.9″
iPhone XR (2018)	896 × 414	1792 × 828	6.1″
iPhone XS Max (2018)	896 × 414	2688 × 1242	6.5″
iPhone XS (2018)	812 × 375	2436 × 1125	5.8″
iPad 6 (2018)	1024 × 768	2048 × 1536	9.7″
iPhone X (2017)	812 × 375	2436 × 1125	5.8″
iPhone 8+ (2017)	736 × 414	1920 × 1080	5.5″
iPhone 8 (2017)	667 × 375	1334 × 750	4.7″

iPad 5 (2017)	1024 × 768	2048 × 1536	9.7″
iPad Pro 10.5″ (2017)	1112 × 834	2224 × 1668	10.5″
iPad Pro 12.9″ (2017)	1366 × 1024	2732 × 2048	12.9″
iPhone 7+ (2016)	736 × 414	1920 × 1080	5.5″
iPhone 7 (2016)	667 × 375	1334 × 750	4.7″
iPhone SE (2016)	568 × 320	1136 × 640	4″
iPad Pro 9.7″ (2016)	1024 × 768	2048 × 1536	9.7″
iPhone 6S+ (2015)	736 × 414	1920 × 1080	5.5″
iPhone 6S (2015)	667 × 375	1334 × 750	4.7″
iPad Mini 4 (2015)	1024 × 768	2048 × 1536	7.9″
iPad Pro 12.9″ (2015)	1366 × 1024	2732 × 2048	12.9″
iPhone 6+ (2014)	667 × 375	1334 × 750	4.7″
iPhone 6 (2014)	667 × 375	1334 × 750	4.7″
iPad Air 2 (2014)	1024 × 768	2048 × 1536	9.7″
iPad Mini 3 (2014)	1024 × 768	2048 × 1536	7.9″
iPhone 5S (2013)	568 × 320	1136 × 640	4″
iPhone 5C (2013)	568 × 320	1136 × 640	4″
iPad Air (2013)	1024 × 768	2048 × 1536	9.7″

iPad Mini 2 (2013)	1024 × 768	2048 × 1536	7.9″
iPhone 5 (2012)	568 × 320	1136 × 640	4″
iPad 4 (2012)	1024 × 768	2048 × 1536	9.7″
iPad 3 (2012)	1024 × 768	2048 × 1536	9.7″
iPad Mini (2012)	1024 × 768	2048 × 1536	7.9″
iPhone 4S (2011)	480 × 320	960 × 640	3.5″
iPad 2 (2011)	1024 × 768	1024 × 768	9.7″
iPhone 4 (2010)	480 × 320	960 × 640	3.5″
iPad (2010)	1024 × 768	1024 × 768	9.7″
iPhone 3GS (2009)	480 × 320	480 × 320	3.5″
iPhone 3G (2008)	480 × 320	480 × 320	3.5″
iPhone 2G (2007)	480 × 320	480 × 320	3.5″