IOS Introduction

IOS stands for iPhone operating system. It is a proprietary mobile operating system of Apple for its handheld. It supports Objective-C, C, C++, and Swift programming languages. It is based on the Macintosh OS X. After Android, it is the world's second most popular mobile operating system. Many of Apple's mobile devices, including the iPhone, iPad, and iPod, run on this operating system. To control the device, iOS employs a multi-touch interface, such as sliding your finger across the screen to advance to the next page or pinching your fingers to zoom in or out of the screen.

Features of IOS Platform

iOS has become popular because of its prominent features. The following are the popular features of iOS. Let's get into the details.

1. Multitasking: iPhone offers multitasking features. It started with iPhone 4, and iPhone 3GS. By using the multitasking feature on an iOS device or using a multi-finger gesture on an iPad, you can swiftly go from one app to another at any moment.
2. Social Media: Sharing content and displaying an activity stream are just a few of the ways iOS makes it simple to integrate social network interactions into the app.
3. iCloud: Apple's iCloud is a service that offers Internet-based data storage. It works on all Apple devices and has some Windows compatibility, and handles most operations in the background. It is highly encrypted. It offers a backup option to help the user not lose any of their data.
4. In-App purchase: In-app purchases, which are available on all Apple platforms, provide users with additional material and services, such as digital items(iOS, iPadOS, macOS, watchOS), subscriptions, and premium content, right within the app. You may even use the App Store to promote and sell in-app purchases.
5. Game Center: Game Center, Apple's social gaming network, adds even more pleasure and connection to your games. Game Center provides access to features such as leaderboards, achievements, multiplayer capability, a dashboard, and more.

6. Notification Center: Notification Center is a feature in iOS that shows you all of your app alerts in one place. Rather than needing immediate resolution, it displays notifications until the user completes an associated action. However, we can control the notification settings.
7. Accelerometer: An accelerometer is a device that detects changes in velocity along a single axis. A three-axis accelerometer is built into every iOS device, providing acceleration readings in each of the three axes. LIS302DL 3-axis MEMS-based accelerometer is used in the original iPhone and first-generation iPod touch.
8. Gyroscope: The rate at which a gadget rotates around a spatial axis is measured using a gyroscope. A three-axis gyroscope is found in many iOS devices, and it provides rotation data in each of the three axes.
9. GPS: To detect your location, the iPhone uses an inbuilt Assisted GPS (AGPS) chip. You don't even need to install this function because it's already integrated into your iPhone. As it provides an approximation of your location based on satellite information, this system is faster than standard GPS.
10. Accessibility: Every Apple product and service is built with one-tap accessibility capabilities that work the way you do.
11. Bluetooth: Apple supplies the Core Bluetooth framework, which includes classes for connecting to Bluetooth-enabled low-energy wireless technology.
12. Orientations: The iOS apps can be used in both portrait and landscape modes. Apple, on the other hand, provides size classes in XCode for creating interfaces in landscape and portrait orientations.
13. Camera integration: In iOS, Apple provides the AVFoundation Capture Subsystem, which is a standard high-level architecture for audio, image, and video capture.
14. Location services: The Location Services enable applications and websites to access the user's device location with the user's permission. When location services are operational, the status bar displays a black or white arrow icon.
15. Maps: Apple offers an online mapping service that can be utilized as the iOS default map system. It has a variety of functions, such as a flyover mode. Apple's MapKit may be used to create applications that utilize maps.

History

The iPhone was first released in June 2007 and on September 5, 2007, Apple released the iPod Touch which had most of the non-phone abilities of the iPhone. In June 2010 Apple rebranded iPhone Os as iOS. iPad first generation iPad was released in April 2010 and the iPad Mini was released in November 2012.

UI Elements in ios

UI elements are the visual elements that we can see in our applications. Some of these elements respond to user interactions such as buttons, text fields and others are informative such as images, labels.We can add UI elements both in code and with the help of interface builder. Depending on the need we can use either one of them.

We will create a simple iOS application and use it for explaining some of the UI elements.

Step 1 − Create a Viewbased application as we did in our First iOS application.

Step 2 − We will be only updating the ViewController.h and ViewController.m files.

Step 3 − Then we add a method to our ViewController.m file specific for creating the UI element.

Step 4 − We will call this method in our viewDidLoad method.

Step 5 − The important lines of code have been explained in the code with single line comment above those lines.

LIST OF UI ELEMENTS

UI specific elements and their related functionalities are explained below −

Sr.No.	UI Specific Elements
1	Text Fields It is an UI element that enables the app to get user input.

2	Input types - TextFields We can set the type of input that user can give by using the keyboard property of UITextField.
3	Buttons It is used for handling user actions.
4	Label It is used for displaying static content.
5	Toolbar It is used if we want to manipulate something based on our current view.
6	Status Bar It displays the key information of device.
7	Navigation Bar It contains the navigation buttons of a navigation controller, which is a stack of view controllers which can be pushed and popped.
8	Tab bar It is generally used to switch between various subtasks, views or models within the same view.
9	Image View It is used to display a simple image or sequence of images.
10	Scroll View It is used to display content that is more than the area of screen.
11	Table View It is used for displaying scrollable list of data in multiple rows and sections.
12	Split View It is used for displaying two panes with master pane controlling the information on detail pane.

13	Text View It is used for diplaying scrollable list of text information that is optionally editable.
14	View Transition It explains the various view transitions between views.
15	Pickers It is used for displaying for selecting a specific data from a list.
16	Switches It is used as disable and enable for actions.
17	Sliders It is used to allow users to make adjustments to a value or process throughout a range of allowed values.
18	Alerts It is used to give important information to users.
19	Icons It is an image representation used for an action or depict something related to the application.