

1. [**Major Types of Mobile Applications**](http://.)

[Before getting into the major categories of mobile application we should understand what they are all about.](http://.)

[**Basically A mobile app is software or application software built and designed to work on mobile devices.**](http://.)

1. [**Native Apps** :](http://.)

[These are apps built specifically for each platform such as iOS or Android. They are written in the platform’s native programming language and can take advantage of all the device features such as camera, GPS, etc. They can be downloaded from the app store and installed on the device.](http://.)

[Basically they are built for a specific platform i.e They are platform dependent](http://.)

[Examples of native apps include most pre-installed applications like **camera, contacts , photo , mail.**](http://.)

1. [**Web Apps**](http://.)

[They are built using web technologies such as HTML, CSS, and JavaScript. They can be accessed inside a web browser such as chrome, safari and do not need to be downloaded or installed. They can be accessed through a URL and can be used across multiple platforms.](http://.)

[Examples of web apps include **google docs ,n**](http://.)

1. [**Hybrid Apps** are a combination of both native and web apps. They are built using web technologies but are wrapped in a native container that allows them to access device features such as camera, GPS, etc. They can be downloaded from the app store and installed on the device.](http://.)

[Example of hybrid apps include **Facebook , amazon store**](http://.)

[There are several criteria to differentiate between the types of mobile applications. Some of them are:](http://.)

1. [**Development Time and Cost**:](http://.)

[Native apps take longer to develop because they are built in the platform native language and are more expensive than web apps. Hybrid apps take less time to develop than native apps but more time than web apps.](http://.)

1. [**User Experience**:](http://.)

[Native apps provide a better user experience than web apps because they can take advantage of all the device features such as camera, GPS, etc. Hybrid apps can also provide a good user experience but not as good as native apps.](http://.)

1. [**Performance**:](http://.)

[Native apps perform better than web apps because they are optimized for the platform. Hybrid apps can perform well but not as well as native apps.](http://.)

1. [**Distribution**:Native and hybrid apps can be downloaded from the app store and installed on the device. Web apps do not need to be downloaded or installed and can be accessed through a URL.](http://.)
2. [**Maintenance**:](http://.)

[Native and hybrid apps require maintenance because they need to be updated for new versions of the platform. Web apps do not require maintenance because they run inside a web browser](http://.)

[6.  **Accessibility:**](http://.)

[Native apps basically can be accessed through a platform store such as Play Store](http://.)

[App Store implying the users must access these platforms to be able to get these apps.](http://.)

[Whereas Web apps can be accessed on web browsers on mobile devices.](http://.)

[Hybrid apps which is a combination of both native and web apps are not platform dependent meaning they can be downloaded from different platforms](http://.)

[7. **Internet Access:**](http://.)

[Native apps don’t necessarily need the presence of the internet to perform tasks, but hybrid apps will slightly need internet access that is not at all instances and finally web apps will always need internet access.](http://.)

[8. **Security:**](http://.)

[That said, from point 7 we see that Native apps are more secure than the other two, and Hybrid apps then more secure than the Web app. This is because the is this saying that nothing in the internet is secure and the web app depends totally on the internet hence making it more vulnerable than the others.](http://.)

9. **Integration with Third-Party Systems:**

An effective mobile application will have the ability to seamlessly integrate with third-party tools and technologies that touch the app throughout its lifecycle. For example, Xamarin integrates with Visual Studio and other third-party frameworks and libraries to allow you to build apps for Android, iOS, and Windows.

[**2) Review of programing languages for mobile development**](http://.)

[There are many programming languages used for mobile development. Some of the most popular ones include:](http://.)

1. [**Java**: Java is one of the most sought-after programming languages in the world of mobile app development. It is considered to be the most prominent and highly employed programming language for Android app development](http://.)

[Examples of mobile apps developed with java include; instagram , whatsapp and twitter](http://.)

1. [**Kotlin**: Kotlin was first released at Google I/O in June 2011 and later became an official language of Android in the following years. Kotlin is a modern programming language that is designed to be more concise than Java and has many features that make it easier to write code.](http://.)

[Examples of mobile apps developed using kotlin are Uber, pinterest](http://.)

1. [**Objective-C**: Objective-C is an object-oriented programming language that was developed by Apple for use in its Mac OS X and iOS operating systems. It is still used today for developing iOS apps.](http://.)

[Examples of mobile apps developed using objective-C are Linkedin, instagram,skype.](http://.)

1. [**Swift**: Swift is a powerful and intuitive programming language developed by Apple for iOS, iPadOS, macOS, watchOS, tvOS, and Linux.](http://.)

[Example: Airbnb, linkedin](http://.)

1. [**Python**: Python is a high-level programming language that is easy to learn and use. It has become increasingly popular in recent years for mobile app development because of its simplicity and versatility.](http://.)

[Example: Instagram, dropbox, youtube](http://.)

1. [**Dart**: Dart is a client-optimized programming language for apps on multiple platforms. It is developed by Google and used to build mobile, desktop, server, and web applications.](http://.)

[Example :google ads, alibaba.com](http://.)

1. [**Ruby on Rails**: Ruby on Rails is a web application framework written in Ruby that follows the Model-View-Controller (MVC) architectural pattern. It has been used to develop many popular mobile apps.](http://.)

[Example: Github and shopify.](http://.)

1. [**SQL**: SQL (Structured Query Language) is a standard language for managing relational databases. It is used to store data in mobile apps.](http://.)

[Example apps that use sql databases are uber , whatsapp](http://.)

[Each of these programming languages has its own strengths and weaknesses. The choice of which one to use depends on many factors such as the type of app you want to develop, your experience level, and your personal preferences](http://.)

[**3) mobile App development framework**](http://.)

[Mobile app development framework is a](http://.) software framework [that is designed to support mobile app development.. It is a software library that provides a fundamental structure to support the development of applications for a specific environment.. These frameworks provide facility tools such as speed, fewer bugs to debug and effectiveness.](http://.)

[Framework mostly fall on 2 categories of apps which are the hybrid app and the web app](http://.)

[Native apps on the other hand are costly and time consuming so companies usually either go for the other types of apps.](http://.)

[They are many mobile app frameworks e.g React Native, Ionic, Flutter, xamarin, NativeScript](http://.)

[Before selecting the most adequate framework, we must consider the following features:](http://.)

[**Platform Feature Support:**](http://.)

[**React Native** is an open source user interface created by Meta platforms i.e Facebook](http://.)

It is [used to develop apps for Operating systems such as Android, Android Tv, IOS, MacOS, web, windows.](http://.)

[**Flutter** is an open source user interface created by Google. It is used to develop apps for platforms such as Android, iOS, Linux, macOS, Windows, Google Fuchsia, and the web from a single codebase.](http://.)

[**Ionic** is an open source user interface toolkit Owned by Drifty Co and is used for creating mobile applications.](http://.)

[**Xamarin** is an open source user interface platform owned by Microsoft and](http://.) it [use](http://.)s [C# shared codebase which developers can use to create native Android, IOS, and Windows apps.](http://.)

[**NativeScript** is an Open source framework that bulbs cross-platform applications for android and IOS using Javascript.](http://.)

**Apache Cordova**  is a cross platform application built using javascript, css3 and html.Cordova PLugins allow programmers to utilize hardware software features such as GPS, accelerometer, etc.. which makes it quite reliable for the building of native apps.

JQuery Mobile is a cross platform that supports the development of explicit platform agnostic applications utilizing html and javascript.

[**Ease of Use:**  
Most of these Various frameworks are easy to get quite adept with and are easy to learn.](http://.)

[**Community Support Assistance:**](http://.)

[Most of the various frameworks don’t have experienced community support i.e Flutter, Xamarin because it is widely used which makes it quite disadvantageous for developing.](http://.)

[**Accessibility:**](http://.)

[Most of the frameworks are open sourced which means they can be easily accessible so no nee for purchasing them.](http://.)

[4) **Collecting and analyzing Requirements for a mobile application that has to be developed**](http://.)**:**

Let us start with the collection of the mobile app requirements;

1. **Research on your app idea and technologies available:**

You need to Know if what you are about to develop already exists and if they exist how can you make yours better than the others.

1. **Discuss and decide on the flow of your app:**

Here the person or organization is fully involve the functionalities of the mobile app. This phase is very crucial since any misconception of flow may lead to lost.

1. **Prioritize the features of your app in phases:**

You have to note down functionalities or features that don't have to be joke with and prioritize them for instance any feature that deals with payment has to be handled with extreme security.

1. **Identify features of existing mobile apps:**

This will make you think how you can make you own app better than the app for instance improving one feature or even adding more features.

1. **Create wireframes, user screen sketches for your mobile app:**

It is good to you provide a UI of how the app will look like before the implementation. This will enable you to avoid the situation where you develop the app but it is rejected.

1. **Choose a requirements template or create one with the following sections:**

Business Goals and App Objectives, User Personas, User Stories, Wireframes, Technical Requirements, Non-Functional Requirements, Acceptance Criteria.

Let us end with the analysis of the mobile app requirements. And to do this we have to ask the whats question which are;

1. **What platforms will the app will you use (iOS, Android, or Windows)?**
2. **What type of mobile app are we talking about (Native, Web, or Hybrid)?**

**What are your current services, servers, databases?**

1. **What are your maintenance needs?**
2. **How long should the app function before an overhaul is needed?**
3. **Do you have current API/services documentation?**
4. **Do you have current Apple, Google, or other developer accounts/credentials?**

[**5) How to estimate the Mobile App Development Cost**](http://.)

[How much does it take to build a mobile App we may ask? Well there are some features which have to be considered when estimating the cost of a mobile app](http://.).

1. [**App functionality and purpose** : which goes by saying what will the app be capable of doing for users. Also based on the type of app u might have to purchase some requirements for the app which turns to affect mobile app development cost.](http://.)
2. [**Mobile Platforms and Device Supported**: whether an App will be developed by IOS only or will have an Android version or the hardware device specifications also influences the cost of mobile app production.](http://.)
3. [**Maintenance plan**: When an app has been fully developed, it will require technical support from its developers to provide updates, fix bugs etc which also affects the cost of Mobile app production.](http://.)
4. [**Use of Smartphone hardware features**: That is if the app would be using smartphone features such as NFC technology, GPS navigation etc should also be taken into consideration.](http://.)
5. [**Developer Experience**: That is the cost of hiring a skilled developer for the project are attributes taken into consideration when developing a mobile app.](http://.)
6. **Team size:** Having teams of developers is crucial for mobile app development and the size matters. So a the team size also influences mobile app development cost.