

Top Programming Languages For Android App Development

Android app development is a trendy field growing bigger by the day. This makes choosing a programming language a difficult experience. Here are the top programming languages for android app development.



Over three billion active users are using Android OS worldwide, which is three times higher than IOS. Android captures [71.54%](#) of the mobile operating system marketplace. With the increase in the number of Android users, the requirement for utility-based novel mobile applications is increasing.

Software developers are focused on android application development that involves programming languages. If you want to create your Android apps, sound knowledge about them is a must-have. This article will inform you about the top programming languages for Android app development.

What are Programming Languages?

Programming languages are messengers to interact with operating systems. The systems only understand instructions in binary numbers 0s and 1s. A programming language is required to make these instructions understandable for the OS.

To communicate with android devices, android apps are created using a programming language. The Android applications were primarily written in Java because they have extensive libraries. However, many other programming languages are available to get started.

7 Top Programming Languages for Android App Development

Although several programming languages like HTML, Java, C++, and millions of others are available in mobile and web development. Some of them are practically useful. Top Programming Languages For Android App Development include:

Java



For 25 years, Java has been the most prominent programming language widely used by developers. Many new languages were introduced after it, but they could not knock down the legacy held by Java.

The biggest reason, new languages cannot replace Java is that it is easy to learn for beginners. Moreover, it offers extensive community support to help new developers with queries.

Not only this, Java is the most ancient and trusted language for creating Android apps. Some of the top grossing apps, including Android OS, Spotify, and Twitter, came into being using this language.

Features

- Java is stable, secure, and more readable than other programming languages.
- Complexity handling activity is better because Java is object-oriented.
- Rich API allows more integration in Android applications.
- Java is strongly typed and points out the mistakes.

Pros

- Provides compatibility for apps
- Easy to learn and code

- Extensive libraries prove resourceful
- Provides project-specific information to save time

Cons

- Difficult to master
- It needs extensive study to understand completely

Kotlin



In 2017, Apple adapted Swift, while Google adapted Kotlin as its official language because it was simple with extensive libraries as a source to learn to code. It is an open-source, multipurpose, typed language that can run on Java virtual machines.

One reason for Kotlin's success is that it is a pragmatic computer programming language that combines functional and acquisitive programming features. This allows for faster compilation of codes and programs.

The speed, flexibility, security, accuracy, and stability of Kotlin are attracting many brands to develop their mobile apps. Some of the best Android applications like Pinterest, Netflix, Uber, and Basecamp are built using Kotlin.

Features

- Kotlin is statically typed and clean for making apps.
- The documentation for this language is easy.
- Due to its large community having experts, it is worthy for beginners.
- Kotlin has a safe null ability system and method references.

Pros

- Fast compilation timing
- Less verbose
- Concise resourceful libraries
- Has null safety and lambdas

Cons

- Difficult to debug and only supportive in the .net framework
- No compatibility for older Androids

Python



Python is another popular and programmer-friendly language for creating android applications. There is a library called Kivy in Python that helps you to build android apps faster. It is object-oriented like Java, easy to use, and speeds up the coding.

You will find Python, a high-level programming language that can be used for app development through using third-party tools. These tools convert the apps into Android packages. Android apps created on Python are known for high memory consumption.

Though Python is a good programming language and allows the creation of excellent apps, it is not recommended highly. This is because it cannot provide native features to applications. Dropbox, Quora, and Reddit are built using Python as a programming language.

Features

- Python supports all versions of Android.
- It encourages rapid application development.
- Object-oriented language Python is suitable for all small and large project development.
- Allows the creation of data visualization, task automation, and analytics-related applications.

Pros

- Flexible coding language
- Serves for general-purpose programming
- Faster Android app development
- Supports server-side programming

Cons

- Kivy is not supported natively
- More challenging as compared to Java

C++



C++ is one of the most extensive programming languages for Android app development. Its easy-to-use syntax supports extremely fast Android app creation. Due to its wide range of utility, C++ is considered a priority for game developers, desktop app developers, and machine learning.

The fame of C++ skyrocketed when Apple designed Swift as a successor to C, influenced by C++ greatly. C++ is more useful than C because it executes faster and leverages cross-platform development within apps created in Java or Kotlin.

Most Android apps and their IOS versions are created in C++ because it is perfect for intuitive interface creation. Also, for C++ experts, it becomes easy to enter Android development. This language is useful but hard to learn.

Features

- C++ has many compilers and libraries that serve as resources for learning.
- The syntax of C++ is similar to Java, C, and C# so learning these languages is easy for C++ experts.
- It is generic and object-oriented to support memory allocation and faster application execution.
- Supports cross-platform development of Android applications.

Pros

- Collects no garbage in the background
- Portable across different operating systems
- Favors the development of highly memory-consuming apps
- Compatible with Android Native Development Kit (NDK)

Cons

- The complex syntax makes it hard to learn
- Simple object orientation

C#



C# was developed by Microsoft on the Xamarin network as an improved version of C and C++ to introduce a powerful programming language for desktop, mobile applications, and website development. Due to its powerful syntax, it is becoming the priority in Android and ios app development.

C# allows programs to be written simply, and the developers can understand them precisely. The syntax of this programming language is simplified, and it is easy for beginners to start coding without having proper knowledge about codes.

The main benefit of choosing C# as a programming language for developing an android app is Microsoft provides tools for all stages. The tools include Visual Studio Community Edition and IDEs to help you develop from start to end without any additional downloads requirement.

Features

- C# is similar to Java and considered ideal for Android app development.
- It implements garbage collection and reduces the chances of memory leaks.
- The syntax is cleaner than C++ and Java, so coding is easier.
- Cross-platform implementation increases practicability.

Pros

- General-purpose programming language
- Supports easier management of Android applications
- Easily integrates with Windows
- The syntax is understandable by C experts

Cons

- Allows pointer in an unsafe block

- Variables and methods are fixed

Dark



Dark is the latest programming language for Java Virtual Machine (JVM), originally developed at Facebook and used with open-source Datalog language. It serves as an experimental tool for researching software performance.

Dark is important because it is the latest and best game development software tool. Game developers love it for quick prototyping and the creation of games on both iOS and Android platforms.

Features

- Dark works with multiple technologies like HTML5 and JavaScript.
- It can build anything from apps to technical games.
- Dark is easy to learn and designed for fast development.

Pros

- Dark is based on Kotlin, popularly used for Android app creation
- Best for creating heavy games

Cons

- Only available on Android Studio 3
- Don't have libraries for graphics and networking

Flutter



Flutter is a mobile app development framework based on Dart coding language. It is an easy way to create high-performance mobile apps that can be used on Android and iOS. With its rich widgets and tools optimized for immersive and visual experiences, it creates apps for cross-platform usage.

You can use the code sections on both platforms by adding a few UI elements to have a fully functioning mobile app in less time and cost. Flutter can see changes made to the code as they change the platform. So, if you want to make changes to the app, you can do it in no time.

Applications created on Flutter have a code base similar to the Mobile and IOS platforms, so less testing is required for native counterparts. Not only does it create stunning apps, but it also allows you to customize and have a rich experience of creating mobile applications.

Features

- Flutter builds cross-platform apps like native apps.
- It can create highly customizable applications in less time and cost.
- The code base is smaller for apps on both platforms.
- It has an extensive library of tools

Pros

- Has the ability to go beyond mobile
- Reduced development costs
- Uses business and UI logic
- Implements simple platform-specific logic

Cons

- Apps are not weighty, and browser support
- The developer has to learn Dart language to use Flutter

Which is the best programming language for Android app development?

Kotlin is the official language used by Google for Android app development. This is why it is one of the top programming languages for android app development and is also simple and easy to learn.

Why Choose Kotlin Over Others?



This programming language is recommended to software developers who only want to specialize in one language. Codes in Kotlin are concise, simple, and safe. The best thing for programming nerds is that there is no need to add semi-colons while writing codes in Kotlin.

The null pointer exception in this language is handled by an exclamation mark (!). The reason to choose Kotlin over other languages is that many app developers are using it to develop applications worldwide. Soon, a community of experts will be available for beginners to learn.

Popular application Zomato is a good example of an Android application created in Kotlin. The programming language holds an appreciation for making it safe and concise. Also, Jetpack Joyride is the wonder of this extensive programming language.

Is It Good to Specialize in One Android App Language or to Diversify?

Android application development is showing growth with an increase in their demand. Therefore, more skilled Android developers are required in this field. To become a successful Android app developer, a sound knowledge of top programming languages for android app development is a good thing.

It is important to learn one language completely and become its expert. However, the truth is that a perfect Android application cannot be created using only a single app. For example, while creating an app in C++, you can perform well if you also have Java knowledge.

Why is Overspecialization not good?

App development market is diverse but keeps on shifting. That's why over specializing in just one language is not good because it can make you stay behind the competition. Recently, a shift from Java to Kotlin created difficulty for Java experts.

The more languages you will learn, the more contribution you will have as a developer. It is good to have a strong programming foundation and pick up more languages than one though your language choice depends on the work you want to do.

Android application development not only requires learning top programming languages for android app development and implementing them to create mobile applications. Android software development kit (SDK) and other tools are also required for efficient application creation.

Conclusion

Android application development requires android programming languages to make instructions understandable by the operating systems. With the increase in the number of Android users, the need for Android applications is increasing.

New programming languages are being added to this universe, and choosing the best one is difficult for beginners in this field. The top programming languages for android app development include Kotlin, Java, C++, C#, etc. Kotlin is considered the best because it has simpler syntax and is easy to learn.

FAQ'S

Is Kotlin better than Corona?

Kotlin is one of the top programming languages for android app development and is a great fit for Android and better than Corona in many aspects.

- Google uses it as its official language, making it promising for the future.
- It incorporates Java seamlessly. It is an excellent fit for Android.
- It serves as general-purpose language and can be incorporated into other platforms.

Can I use HTML for Android application development?

HTML can be used for Android application development and can work with Java and C++. However, it is not a suitable choice for creating mobile applications. HTML is exclusively for web pages and performs well in that domain. In the presence of modern apps, using HTML for Android app development is not a good idea.

How long does it take to learn Android application development?

Learning Android app development is not a big deal if you are consistent. It takes 1 to 1.5 years to earn development skills. Besides, you also need to learn project structure and Android software development kit to be able to create Android apps.

What are some best tools for Android app creation?

To build an excellent Android app, you must master programming languages and use the best tools. Some best tools for Android app creation are:

- Android Studio.
- Android Debug Bridge (ADB)
- Android Virtual Device (AVD) Manager
- Fabric
- Flow Up
- Eclipse