Android Tutorial – What is Android?

Android is a mobile operating system. It is an open-source framework and is based on Linux. The Android framework helps us to develop advanced and user-friendly applications. The applications can be built using Java and Kotlin. The Android operating system has then gone through numerous releases by fixing bugs as well as adding additional features which make our life more comfortable and easier.

History of Android Technology

It is an operating system developed by Android Inc. and then overtaken by Google. Android Inc. was developed in Palo Alto California, in October 2003 by Andy Rubin, Rich Miner, Nick Sears, and Chris White.

In 2005, Google acquired Android Inc, in 2007. The first version was released by Google and the commercial version was released in 2008 known as Android 1.0.

Besides, numeric names, Google has assigned code names to all Android versions. The following picture depicts all the versions and their code names.

Why Learn Android Technology?

Android technology is not constrained to only cell phones, nowadays there are many devices in the market that use it as their operating system. Devices like television sets, tablets, Android auto cars, ebook-reader, and wristwatches use Android as the operating system. It is leading the global market. Most of the population uses Android devices. The applications we use every day has brought plenty of jobs available for Android developers in the market. As Android is open-source anyone can learn and build Android applications. Also, Android applications are compatible with a variety of devices. No doubt Android development is one of the enthusiastic and interesting jobs in this period of technology.

The most important and basic requirement for Android development is Java. Java is considered as a native language to learn Android. To build Android applications it is necessary to keep all OOP clear. Also, we will need some basics of database concepts.

Android Features

As we know the Android has changed our lives, let's discuss some of the Android features.

1. Voice-search

This feature lets the user search by recording the voice message instead of typing it. Example- If we want to call XYZ person, we just have to speak and the call will be directed to the XYZ person, performing multi-tasking. With this feature, we can watch a video and also play games simultaneously.

2. Screen-capture

We can capture the screen using this feature.

3. Multiple Language Support

English is the default language but now we can use any local language. Also, Android supports multiple languages.

4. Gestures

With the help of gestures, we can use the phone without even touching it.

5. Tethering

With this feature, we can share internet connections through the wired./wireless hotspot.

6. Media Support

Android supports the following media H.263, H.264, MPEG-4, AMR, AMR-WB, AAC, HE-AAC, MP3, JPG, PNG, etc.

7. Storage

SQLite is an open-source relational database that is inbuilt in Android.

8. Auto-correct

This feature suggests words and corrects grammatical mistakes.

9. Sensors

Almost, every mobile phone has inbuilt sensors that sense the motion of the phone. Some of the inbuilt sensors are an accelerometer, heart rate, magnetic field sensor, gyroscope.

There are many such features provided by Android and with updates, we get new features every year.

Android Architecture

When we talk about Android we know that it is an operating system and we use applications that are built on it. Now we need to understand exactly what is Android and what enables it to work the way it does. For that, we need to have an exact vision of its components and functionalities.

Here comes the need and use of Android Architecture. Android Architecture is a software stack of components that are required to build an Android Application. Android Architecture contains 5 major layers that an Architecture works in. Android Architecture explains the complete working of Android through these five layers only.

These five layers are:

1. System Applications
2. Java API Framework
3. Native Libraries
4. Android Runtime
5. Linux Kernel

Frameworks for Android Development

Let's discuss the tools required for application development. There are many tools available for Android development. Some of the best Android development tools are listed below:

1. Corona SDK

This tool helps us to build 2-D applications. Moreover, it uses the Lua language, which is simple than C/C++. Game developers mostly use this framework.

2. Android Studio

Android Studio is the official IDE for Android application development. Also, it helps to build high-quality applications. Android beginners are recommended this application.

3. Phone – Gap

Adobe and Apache sponsor this framework. Moreover, it allows the users to keep watch on changes made while working and running programs.

4. Geny – Motion

Geny Motion helps us to develop and test applications in a faster and safer environment and it uses OpenGL which helps applications to run efficiently.

5. App Builder

Using this framework, users with no coding skills can build applications and web apps and also, it uses a drag and drop interface to create applications.

Android Applications

In this Android tutorial, we have discussed various types of applications that can be created using Android development which helps to save time and energy. Various types of applications are Music, Lifestyle, Social Media, Navigation, Finance, Weather, Travel etc.

Some of the Android mobile applications are explained below:

1. Image-Recognition Application

Now we can identify any image using image recognition app. And, users have to click a picture of a physical object and the application uses visual search technology to recognize the image.

2. Reachability Cursor Application

The screen size of smartphones is increasing day by day as a result, it is becoming difficult to access it with one hand, reachability cursor application makes it easy to operate the phone with one hand. Due to this, we don't need to stretch our fingers to reach the notification panel.

3. Messengers

These applications help us to save our time. We can easily connect with anyone in the world in just 5 secs. And, messaging applications help us to stay connected even when we are far away from each other.