Android Development

Introduction

- **Android is an open source and Linux-based Operating System for mobile devices such as smartphones and tablet computers. Android was developed by the Open Handset Alliance, led by Google and other companies.**
- Android is the world's most popular mobile platform as it powers hundreds of millions of mobile devices
- It used in more than 190 countries around the world.
- It's the largest installed base of any mobile platform and growing fast.
- Android gives you a world-class platform for creating apps and games for Android users.

Introduction

- Android is a modified Linux based mobile operating system that was originally started by Android Inc. with the same name.
- In 2005, Google acquired Android and took over its development work to enter into the mobile space.
- Android is open source and free; hence most of the source code of Android is released under the open-source Apache license. That allows anyone to download the source code and change it as per their requirements, hence they can have their own flavor of the Android operating system
- E.g. **Cyanogen, MIUI(by Xiaomi)** etc. are just different flavors of the Android OS.

Blessings with Android Development

- High Reach of SDK for all categories of application.
- Android being Open Source gives wide range of development.
- Applications are not sandboxed
- Application reach to audience is cheap.
- Development Setup is cheap
- Less Hassles from Publishing Platforms.
- Can Handle Background Processes.

Application Fundamentals

- Android applications are written in the Java programming language.
- The compiled Java code — along with any data and resource files required by the application — is bundled by the aapt tool into an Android package, an archive file marked by an **.apk** suffix.
- This file is the vehicle for distributing the application and installing it on mobile devices; it's the file users download to their devices.
- All the code in a single .apk file is considered to be one application.

Application Fundamentals

- Every application runs in its own Linux process.
- Android starts the process when any of the application's code needs to be executed, and shuts down the process when it's no longer needed and system resources are required by other applications.
- Each process has its own Java virtual machine (VM) called as **Dalvik Virtual Machine.**
- By default, each application is assigned a unique Linux user ID.

Android

- A central feature of Android is that one application can make use of elements of other applications .
- For example,
  - Photo Gallery,
  - NotePad
  - Contact List.