

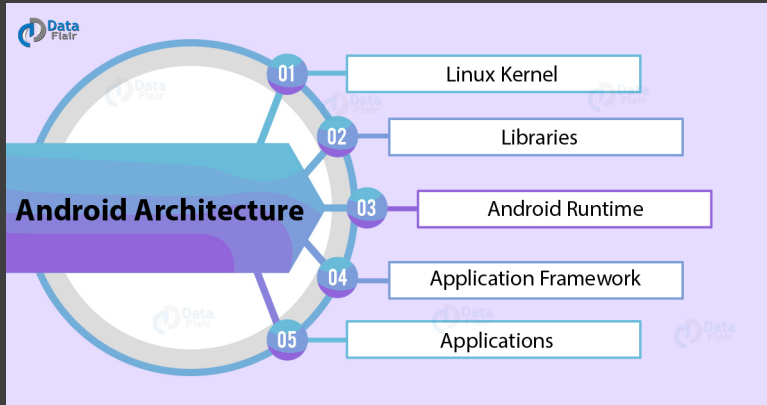


# ANDROID SNIPPETS





# Android Architecture





## 1. Linux Kernel:-

- Linux kernel is the bottom-most and important layer of the Android architecture and it is the core part of Android architecture.
- It provides features such as Security, Process management, Memory management, Device management, Multitasking.
- It is also responsible for a level of abstraction between device hardware and upper layers of Android architecture.

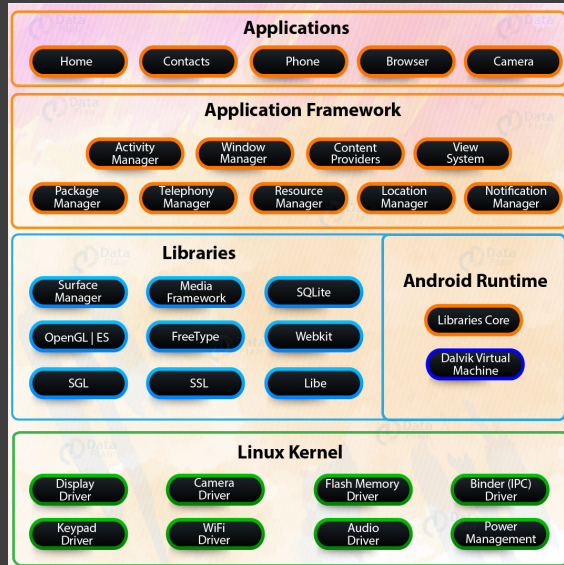




## 2. Libraries:-

- This layer consists of a set of Libraries and Android Runtime.
- The Android component is built using native codes and requires native libraries, which are written in C/C++ and most of the libraries are open-source libraries.
- Also, this layer handles data that is specific to the hardware.
- Some of the native libraries are SSL, SQLite, Libc, OpenGL, media framework, FreeType, and Surface Manager.







### 3. Android Runtime:-

- It comprises of DVM (Dalvik Virtual Machine).
- Just like JAVA uses JVM, Android uses DVM to optimize battery life, memory and performance.
- The byte code generated by the Java compiler has to be converted to .dex file by DVM, as it has its own byte code.
- Also, multiple class files are created as one .dex file and the compressed .jar file is greater than the uncompressed .dex file.





## 4. Application Framework:-

- The application framework built on top of the native library layer provides us with Application programming interface and higher-level services.
- It also consists of an Android Hardware Abstraction Layer (HAL) that allows the Android Application framework to communicate with hardware-specific device drivers.
- The application framework consists of the following key services:





- **Activity Manager:** The method in this class uses testing and debugging methods.
- **Content provider:** It provides data from application to other layers.
- **Resource Manager:** It provides access to non-code resources.
- **Notification Manager:** The users get notification about all the actions happening in the background.
- **View System:** It acts as a base class for widgets and is responsible for event handling.







## Application Framework Services

Activity  
Manager

Content  
Provider

Resource  
Manager

Notification  
Manager

View  
System





## 5. Applications:-

- It is the top-most layer of Android architecture. This layer consists of native Android applications and third-party installed apps.
- They are bundled in an Android package and all the applications that are to be installed are written in this layer only such as contacts, games, settings, and messages.

