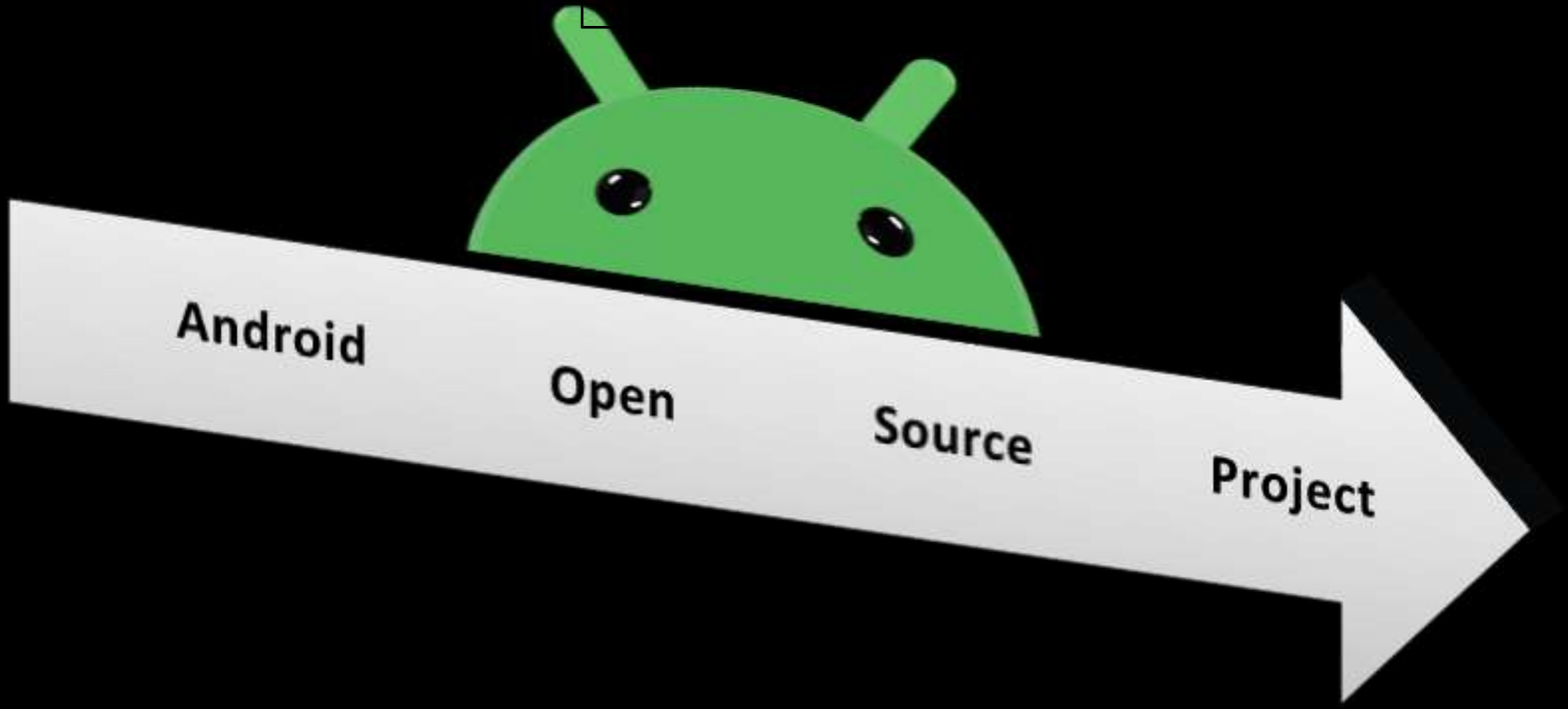
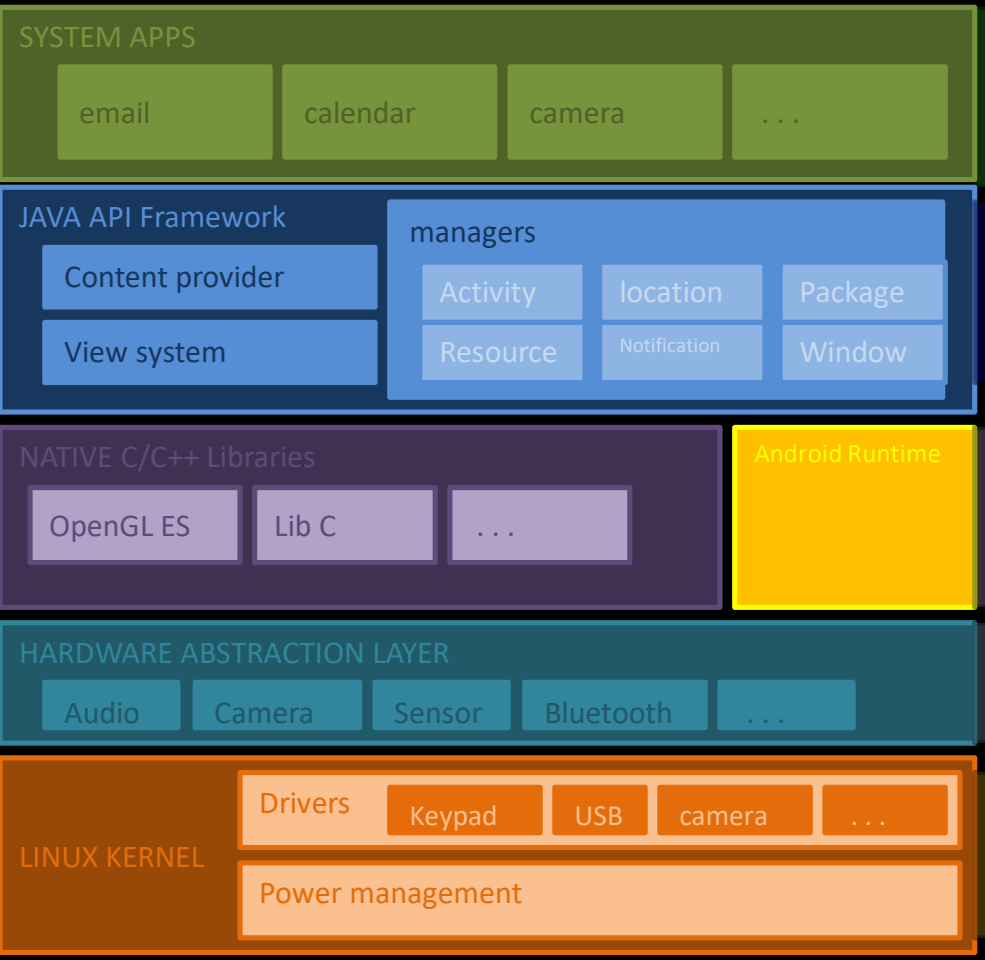


Android system architecture



Application layer ,responsible for direct interaction with users, usually developed in java or Kotlin, and also some built in stock apps come with Aosp

Application frameworks providers APIs for developers to develop applications

System runtime layer

1.C/C++ libraries can be used by different android component, all the services which we use in application are dependent on this c/c++ library

2. ART(android runtime library /Dalvik) core library provides java libs so that developers can use java language to write android apps

HAL is interface b/n operating system kernel and hardware circuit, it is used to abstract the hardware to protect intellectual property right of hardware, it is hardware independent from the prospective of hardware testing and software testing, provides a virtual hardware platform

Androids core system services are based on Linux kernel , drivers added on this basis, the system security ,memory management, process and network protocol stack

Building AOSP

1. Takes time to build .....
2. Requires high performance computer hardware or run on cloud https://ubuntu.com/aws
3. Builds on ubuntu
4. Installing required packages: AOSP>Docs>Getting Started Refer: https://source.android.com/
5. Install Repo : git Source control tool -> sudo apt install repo
6. Make directory and configure git and initialize repo

   repo init -u https://android.googlesource.com/platform/manifest -b android-12.0.0_r13
7. repo sync

1. in the same directory: execute this commands below

   >> . Build/envsetup.sh #environ variable

   >> lunch # u'll find build for different architectures

   >> lunch sdk_phone_x86_64
2. m -j8 #takes time to build 3-4hrs

Example Automotive Infotainment