

# Android runtime

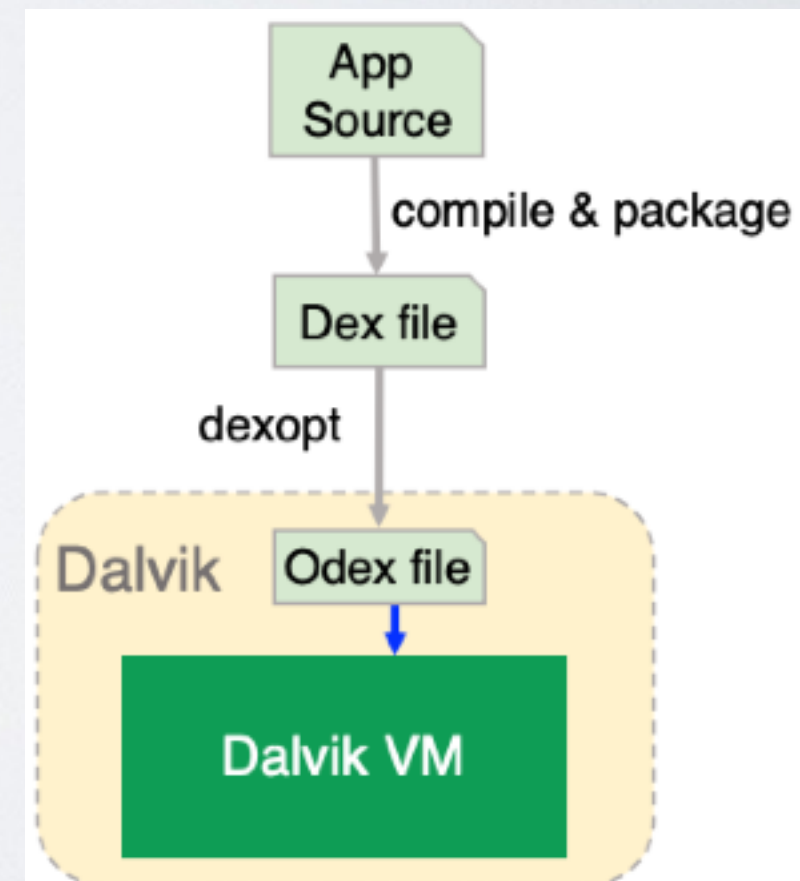
- ➔ Runtime - a component provides functionality necessary for the execution of a program  
E.g., scheduling, resource management, stack behavior

## Prior to Android 5.0 - Dalvik

- Each Android app has its own process, runs its own instance of the Dalvik virtual machine (process virtual machine)
- The VM executes the Dalvik executable (.dex) format
- Register-based compared to stack-based of JVM

## After Android 5.0 - ART

- Backward compatible for running Dex bytecode
- New feature - Ahead-Of-Time (AOT) compilation
- Improved garbage collection



# Java API framework

The main Android OS from app point of view

- Provide high-level services and environment to apps
- Interact with low-level libraries and Linux kernel

Some components

- Activity Manager - manages the lifecycle of apps
- Package Manager - keeps track of apps installed
- Power Manager - wakelock APIs to apps