

# Linux kernel vs. Android kernel

➔ Linux kernel is the foundation of Android platform

New core code

- binder - interprocess communication mechanism
- shmem - shared memory mechanism
- logger

Performance/power

- wakelock
- low-memory killer
- CPU frequency governor

➔ and much more ... 361 Android patches for the kernel

# 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

