**1. How Android code execution works?**

The source codes are compiled by Standard Java Compiler (using JIT) into bytecodes. After that, the bytecodes will be executed by Virtual Machine as DALVIK or ART.

**2. Compare Android code execution process with Java code execution process?**

Similarities: both Android code and Java code are compiled by Standard Java Compiler into bytecodes and the bytecodes will be executed by using Virtual Machine.

Differences:

* + Android code using 2 Virtual Machine: DALVIK and ART
  + Java code using Java Virtual Machine

**3. What is Dalvik Virtual Machine**

Dalvik Virtual Machine is an Android Virtual Machine for mobile devices. It uses JIT compilation and compile bytecode into machine code at runtime so it saves a lot of RAM 🡪 low memory usage.

**4. What is Android Runtime**

Anrdroid Runtime is a runtime environment for Android project. It uses Ahead Of Time (AOT) compilation, so it will take times and space for compiling codes.

**5. Compare Dalvik and Android Runtime (at least 10 comparing points)**

Similarities:

Both Dalvik and Android Runtime take DEX bytecode as input.

Differences:

|  |  |  |
| --- | --- | --- |
|  | Dalvik | Android Runtime |
| Loading time | Longer | Faster |
| Compilation | JIT (Just In Time) | AOT (Ahead Of Time) |
| Memory usage | Lower | Higher |
| Power | Consumes more power | Consumes less power |
| Bytecode convert | Every time lanching app | Just once when the app is installed |
| Booting time | Faster | Slower |
| Battery | Uses more battery | Optimized for battery life |
| Garbage collection | Not good as ART | Better than Dalvik |
| Performance | Slower than ART | Faster |
| Best suitable | Small storage devices | Large storage devices |