Managing the Java Thread Lifecycle: Layers Involved in Starting a Thread

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Learning Objectives in this Lesson

• Understand the layers involved in starting a Java thread
Layers Involved in Starting a Java Thread

- Starting a Java thread involves interesting design & implementation issues
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- Calling `start()` on a thread triggers the execution of its `run()` hook method
Layers Involved in Starting a Java Thread

- The Java platform provides a stack of layers that define various mechanisms for running concurrent programs on a wide range of computing devices.

Different versions of Android & Java implement these layers differently, though key levels of abstraction are often similar.

See en.wikibooks.org/wiki/Java_Programming/The_Java_Platform
Layers Involved in Starting a Java Thread

- Likewise, the Android platform provides a stack of layers that define various mechanisms for running concurrent programs on mobile computing devices.

See developer.android.com/guide/platform
Layers Involved in Starting a Java Thread

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- The Android Linux kernel controls hardware & manages system resources.
Likewise, the Android platform provides a stack of layers that define various mechanisms for running concurrent programs on mobile computing devices. The Bionic LibC library supports the Pthreads C programming APIs.
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Dalvik & ART provide a managed execution environment for Java apps.
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Android’s runtime contains the classes in the java.util.concurrent packages.
Layers Involved in Starting a Java Thread

- Creating & starting new threads on any Java platform consumes a non-trivial amount of system resources, so use them judiciously!
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• Creating & starting new threads on any Java platform consumes a non-trivial amount of system resources, so use them judiciously!

• e.g., only create threads for computations that run much longer than the time needed to spawn them!
End of Managing the Java Thread Lifecycle: Layers Involved in Starting a Thread