**INTRODUCING THE ANDROID COMPUTING PLATFORM**

**The Android platform embraces the idea of general-purpose computing**

**for handheld devices. It is a comprehensive platform that features a Linux-based**

**operating system stack for managing devices, memory, and processes. Android’s**

**Java libraries cover telephony, video, speech, graphics, connectivity, UI**

**programming, and a number of other aspects of the device.**

**Although built for mobile- and tablet-based devices, the Android**

**platform exhibits the characteristics of a full-featured desktop framework. Google**

**makes this framework available to Java programmers through a Software**

**Development Kit (SDK) called the Android SDK. When we are working with the**

**Android SDK, we rarely feel that we are writing to a mobile device because we have**

**access to most of the class libraries that we use on a desktop or a server—**

**including a relational database.**

**The Android SDK supports most of the Java Platform, Standard Edition**

**(Java SE), except for the Abstract Window Toolkit (AWT) and Swing. In place of**

**AWT and Swing, Android SDK has its own extensive modern UI framework.**

**Because we’re programming our applications in Java, we should expect that we**

**need a Java Virtual Machine (JVM) that is responsible for interpreting the runtime**

**Java byte code. A JVM typically provides the necessary optimization to help Java**

**reach performance levels comparable to compiled languages such as C and C++.**

**Android offers its own optimized JVM to run the compiled Java class files in order**

**to counter the handheld device limitations such as memory, processor speed, and**

**power. This virtual machine is called the Dalvik VM, which we’ll explore in a later**

**section, “Delving into the Dalvik VM.”**

**HISTORY OF ANDROID**

**Mobile phones use a variety of operating systems, such as Symbian OS,**

**Microsoft’s Windows Phone OS, Mobile Linux, iPhone OS (based on Mac OS X),**

**Moblin (from Intel), and many other proprietary OSs. So far, no single OS has**

**become the de facto standard. The available APIs and environments for developing**

**mobile applications are too restrictive and seem to fall behind when compared to**

**desktop frameworks. In contrast, the Android platform promised openness,**

**affordability, open source code, and, more important, a high-end, all-in-one-place,**

**consistent development framework.**

**Google acquired the startup company Android Inc. in 2005 to start the**

**development of the Android platform. The key players at Android Inc. included**

**Andy Rubin, Rich Miner, Nick Sears, and Chris White.**