Customizing Unique Android UI Designs

Pro Android UI

Wallace Jackson

Apress®

For your convenience Apress has placed some of the front matter material after the index. Please use the Bookmarks and Contents at a Glance links to access them.

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Contents at a Glance

Introduction

Google's Android Operating System continues to gain market share, making it one of the most often utilized OSes internationally. Android currently powers everything from smartwatches to iTV sets to smartphones to smartglasses to touchscreen tablets to e-book readers to game consoles and now homes, appliances, audio products, car dashboards, and more.

One of the most important design considerations for any Android application is the UI Design (User Interface Design), as this defines how the Android application user interfaces with the objective of the application itself. An Android application that features a streamlined, simple, and elegant UI Design will please users and enhance sales volumes within the Android applications marketplace.

The Android OS contains a plethora of UI Design classes that have been specifically created to help Android developers implement creative UI designs, as well as to conform their UI Design to Android OS UI Design standards. This book covers those primary UI Layout Container classes and methods, as well as all the Android UI Design standards and guidelines, which every Android developer should understand and follow in their application design work process.

I wrote *Pro Android UI* to help readers delve into the inner workings of the Android UI Design standards, to explore the most popular UI layout classes and methods, and to be a complimentary title to my recent *Pro Android Graphics* title. *Pro Android UI* targets those readers who are already technically proficient, that is, those who are familiar with computer programming concepts and techniques. This title covers the latest Android 4.x Operating System revisions (4.0, 4.1.2, 4.2.2, 4.3.1, and 4.4.2), as well as covering earlier Android OS versions.

This book also covers the usage of a wide variety of related open source software packages that can be used in the Android application development work process. Such packages include seasoned open source new media applications like GIMP, Lightworks, Pencil, Blender, and Audacity. We take a look at how the usage of these packages fits into the overall Android application development work process. We also take a look at new media elements and supported formats, how they work, and how to leverage them in your UI Design process.

Using a multiple open source software package implementation approach will serve to set *Pro Android UI* distinctly apart from the other Android user interface design titles currently on the market. This book starts out with the reader installing the latest Java SE and Android SDKs using the Eclipse Kepler IDE, with the Android ADT Bundle, and then many of the most popular open source new media production applications for digital imaging, digital audio editing, digital video production, user interface wireframing and prototyping, and more.

The book then progresses through creating Menu UI Designs, ActionBar UI Designs, Android UI Rules and Guidelines, and then finally through the primary types of UI Layout Containers that developers specifically implement for their Android application UI Design.

We look at static user interface design using XML mark-up, dynamic user interface design using Java, using digital imaging within your user interface design, using digital video and animation in your user interface design, Android OS user interface design rules and standards , as well as other advanced new media concepts and multimedia application features that are currently popular in Android UI Design for Android application development.

We look at the core Android UI Design areas, including UI layout containers, UI widgets, ActionBar UI Design, New Media formats, codecs, concepts and implementations, and advanced concepts such as Fragments, all in fine detail. If you want to get an overview of and a handle on Android UI Design, this title is a great place to start that process.

Part 1

Introduction to the Core Classes for Android UI Design: Development Tools, Layout Containers and Widgets

Chapter 1

Android UI Design Tools: Setting Up Your Android Development System

In this first chapter, we will set-up your Android Application Development workstation. I recommend using at least a hexa-core Intel or AMD 64-bit PC with 64-bit Windows 8.1 (or at least Windows 7) operating system installed on this workstation, preferable using an SSD (Solid State Drive) for your primary C:\ disk drive. An SSD will provide your workstation with a vastly accelerated overall system performance, especially at software load-time.

Fortunately, you can get a hexa-core (or octa-core) online at PriceWatch, or walk into Walmart and pick one up for just a few hundred dollars. Then, simply install all this open source software that I am going to expose you to in this chapter, which is worth thousands (actually, it's priceless if you factor in the power that it gives you), and you can then create or develop anything that you can imagine—right out of thin air.

For those readers who have just purchased their new Pro Android UI Design workstation, and who are going to put an entire development software suite together from scratch, I will go through this entire process. Essentially, these are the steps that I would go through to put together a powerful UI development workstation from scratch with zero expenditure on software.

The first objective is to get the entire Oracle Java software development kit (SDK), which Oracle currently calls **JavaSE 6u45 JDK** (Java Development Kit). Android uses Java Version 6u45, as of Android 4.4, but there is also a Java Version 7u45, and later on this year there will be a Java Version 8 released, which will contain the powerful JavaFX 2.2.45 new media engine, and so great things are coming in the future for Pro Android UI developers!

The second thing that we will download and install is Android's Developer Tools (ADT) that we get from Google's `developer.android.com` website.

The Android Developer Tools (ADT Bundle) consists of: the **Eclipse Kepler** 4.4 IDE (Integrated Development Environment), along with the **ADT plug-ins** which accesses the **Android 4.4 KitKat API Level 19 SDK** (Software Development Kit), which is also part of this 480MB ADT Bundle download.

After that, we'll download and install software development tools that we will utilize in conjunction with Android for things such as UI wireframing (Pencil), digital image editing (GIMP2), digital audio editing (Audacity), digital video editing (Lightworks 11.5) and 3D modeling (Blender 2.69).

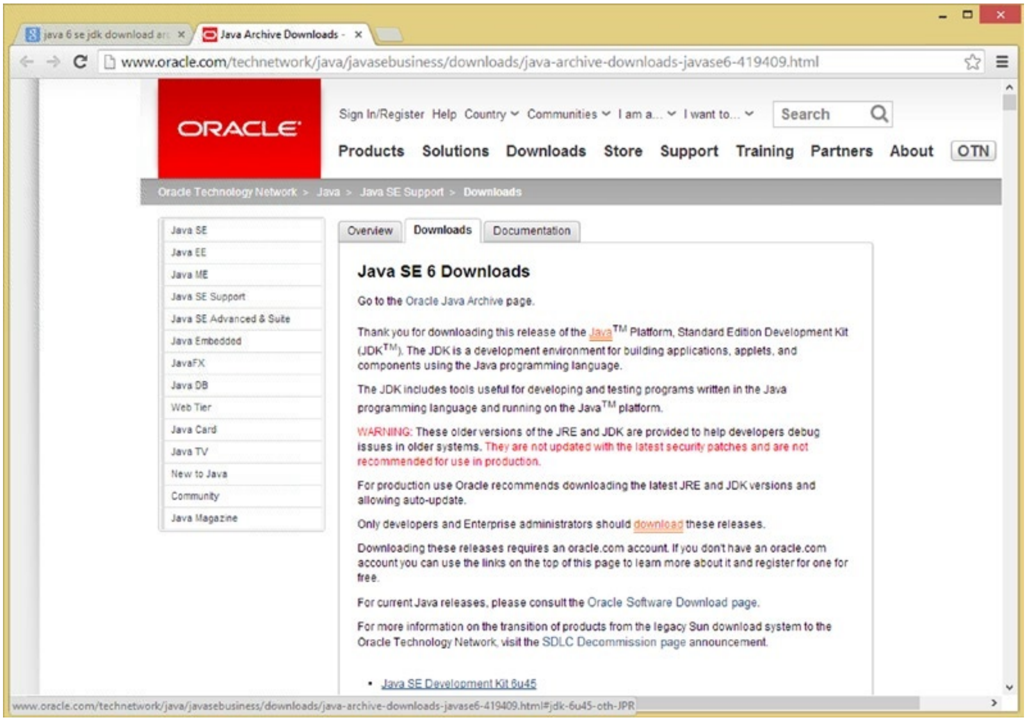
All these software development tools which we download and install match the primary feature sets of expensive paid software packages, such as those from Microsoft (Visual Studio), Apple (Logic, Avid, and Final Cut Pro) and Adobe (Photoshop, Premiere, and After Effects), each of which would cost thousands of dollars to purchase.

Java 6: Download and Install the Foundation for Android

The first thing that you want to do is to visit **Oracle's Tech Network Java** archives website, which is currently located at the following URL:

http://www.oracle.com/work/java/javasebusiness/downloads/java-archive-downloads-javase6-419409.html

You need to download and install the latest **Java 6 JDK** environment, which, at the time of writing this book is **Java SE 6u45**, as shown in Figure 1-1.


java 6 se jdk download ar
Java Archive Downloads -
www.oracle.com/technetwork/java/javasebusiness/downloads/java-archive-downloads-javase6-419409.html
ORACLE
Sign In/Register Help Country Communities I am a... I want to...
Search
Products Solutions Downloads Store Support Training Partners About OTN
Oracle Technology Network > Java > Java SE Support > Downloads
Java SE
Java EE
Java ME
Java SE Support
Java SE Advanced & Suite
Java Embedded
JavaFX
Java DB
Web Tier
Java Card
Java TV
New to Java
Community
Java Magazine
Overview
Downloads
Documentation
www.oracle.com/technetwork/java/javasebusiness/downloads/java-archive-downloads-javase6-419409.html#jdk-6u45-oth-JPR

Java SE 6 Downloads

Go to the Oracle Java Archive page.

Thank you for downloading this release of the Java^{TM} Platform, Standard Edition Development Kit (JDK^{TM}). The JDK is a development environment for building applications, applets, and components using the Java programming language.

The JDK includes tools useful for developing and testing programs written in the Java programming language and running on the Java^{TM} platform.

WARNING: These older versions of the JRE and JDK are provided to help developers debug issues in older systems. They are not updated with the latest security patches and are not recommended for use in production.

For production use Oracle recommends downloading the latest JRE and JDK versions and allowing auto-update.

Only developers and Enterprise administrators should download these releases.

Downloading these releases requires an oracle.com account. If you don't have an oracle.com account you can use the links on the top of this page to learn more about it and register for one for free.

For current Java releases, please consult the Oracle Software Download page.

For more information on the transition of products from the legacy Sun download system to the Oracle Technology Network, visit the SDLC Decommission page announcement.

- Java SE Development Kit 6u45

***Figure 1-1.** Oracle TechNetwork website Java section, scroll to the middle, to find the Java SE 6 JDK download*

The URL is also shown in the address bar of Figure 1-1, or, you can simply Google **Java 6 SE JDK Download Archive 6U45,** as shown in the Google tab in the screenshot.

You can see the **Java SE Development Kit 6u45 download** link for this Java SE 6u45 JDK shown at the bottom of Figure 1-1. Make sure to use this **JDK** download link, and not the **JRE 6u45** (Java Runtime Edition) download link.

The JRE is that part of Java which "runs" or executes your Java code, once it is compiled into an interim "Java ByteStream" format, and this will not allow you to develop Java code, only to run it once it has been developed.

To develop the Java (and thus Android, which uses Java) program logic for your applications, you will need to download the JDK, as well as the JRE.

Fortunately, the JDK download also includes the JRE, which is logical, as it would be needed as part of the development and testing work process.

The reason the JRE is also available separately is that others who want to run your Java apps will need the JRE installed on their system, but do not need the entire JDK, as they are not developers.

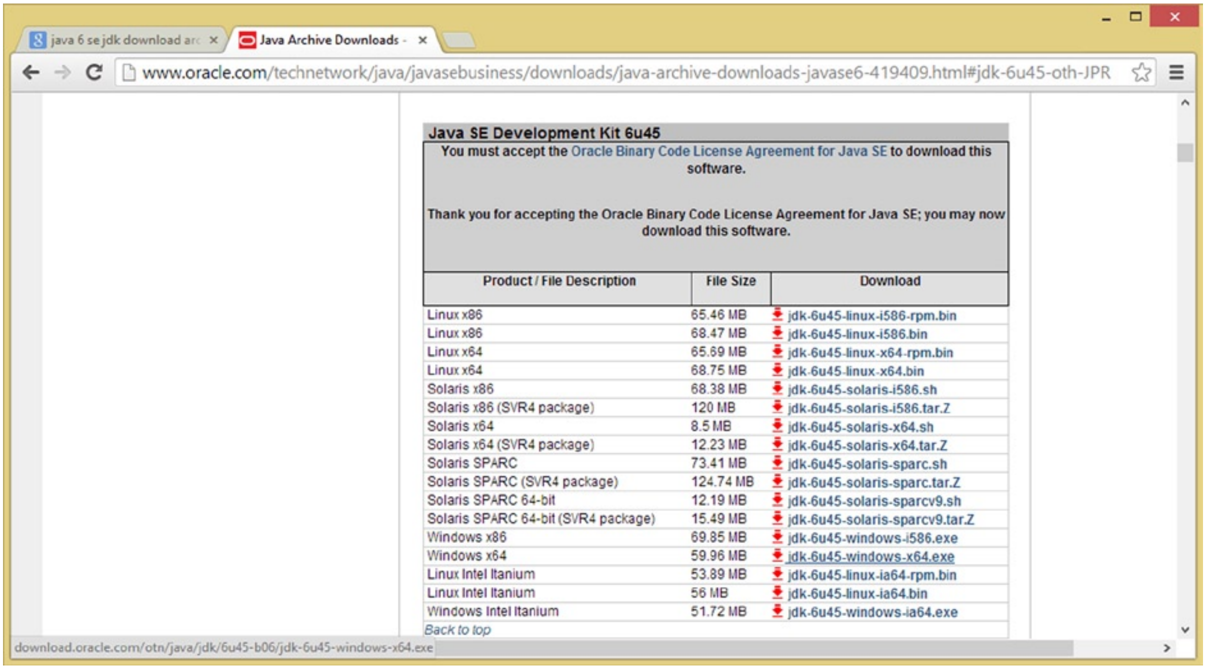
Make sure **not** to download the JDK 7u45 JDK or the Java7u45 Bundle, which includes NetBeans 8.0, because Android uses the Eclipse IDE, and not the NetBeans IDE for the ADT plug-ins. NetBeans 8.0 is what I use for Java 8 and HTML5 development, but is not currently compatible with Android ADT.

Thus, if you see any Java 7 downloads, you are on the wrong webpage, for the current Java 7 (or Java 8) downloads, not the Java 6 "archive" page.

The Java 6 version is "archived," which means that it is still available, but is not the current version. Once Google and Oracle settle their legal positions regarding the use of Java in Android, Android OS may eventually be upgraded to utilize Java 7 or even Java 8, which would make the JavaFX new media engine available to Android developers.

What makes this something to watch out for and also somewhat confusing, is that Oracle made the Java 7 **update** or **version numbering** parallel with Java 6, so one is Java 6u45 and one is Java 7u45, making them more similar than they actually are. Java 7 has not had 45 updates, but for some reason, the version numbers have been jumped on Java 7 to parallel between the two and will most likely remain in sync from now on, so make sure to use JavaSE 6!

Once you click on the Java SE Development Kit 6u45 download link, you will be taken to a JDK6 Download section shown in Figure 1-2, where you can select the OS you're using (I'm using Windows 8.1 64-bit Windows).



java 6 se jdk download arc
Java Archive Downloads -
www.oracle.com/technetwork/java/javasebusiness/downloads/java-archive-downloads-javase6-419409.html#jdk-6u45-oth-JPR
download.oracle.com/otn/java/jdk/6u45-b06/jdk-6u45-windows-x64.exe

Java SE Development Kit 6u45

You must accept the Oracle Binary Code License Agreement for Java SE to download this software.

Thank you for accepting the Oracle Binary Code License Agreement for Java SE; you may now download this software.

Product / File Description	File Size	Download
Linux x86	65.46 MB	jdk-6u45-linux-i586-rpm.bin
Linux x86	68.47 MB	jdk-6u45-linux-i586.bin
Linux x64	65.69 MB	jdk-6u45-linux-x64-rpm.bin
Linux x64	68.75 MB	jdk-6u45-linux-x64.bin
Solaris x86	68.38 MB	jdk-6u45-solaris-i586.sh
Solaris x86 (SVR4 package)	120 MB	jdk-6u45-solaris-i586.tar.Z
Solaris x64	8.5 MB	jdk-6u45-solaris-x64.sh
Solaris x64 (SVR4 package)	12.23 MB	jdk-6u45-solaris-x64.tar.Z
Solaris SPARC	73.41 MB	jdk-6u45-solaris-sparc.sh
Solaris SPARC (SVR4 package)	124.74 MB	jdk-6u45-solaris-sparc.tar.Z
Solaris SPARC 64-bit	12.19 MB	jdk-6u45-solaris-sparcv9.sh
Solaris SPARC 64-bit (SVR4 package)	15.49 MB	jdk-6u45-solaris-sparcv9.tar.Z
Windows x86	69.85 MB	jdk-6u45-windows-i586.exe
Windows x64	59.96 MB	jdk-6u45-windows-x64.exe
Linux Intel Itanium	53.89 MB	jdk-6u45-linux-ia64-rpm.bin
Linux Intel Itanium	56 MB	jdk-6u45-linux-ia64.bin
Windows Intel Itanium	51.72 MB	jdk-6u45-windows-ia64.exe

Back to top

***Figure 1-2.** Java SE Development Kit 6u45 download links after Accept License Agreement Radio Button clicked*

Once you click the **Accept License Agreement** radio button, which will be on the **top-left** of the download links table, as seen in Figure 1-2, the links will become **bolded** and you will be able to click on the link that you wish to use. If you are on Windows, and your OS is 64-bit, as my Windows 8.1 OS is, then use the **Windows x64** link, otherwise you would use the **Windows x86** link if you have Windows XP, a 32-bit OS such as Windows Vista 32-bit, or Windows 7 32-bit or even Windows 8.1 32-bit.

It is important to use 32-bit versions of Java and Eclipse if your OS is a 32-bit OS version, and similarly use a 64-bit version of Java and Eclipse, if your OS is a 64-bit version. An OS that is 64-bit can access more than 3GB of system memory. You can find out what your OS version is by dropping down your **Start** menu and **right-clicking** on the **Computer** selection and then selecting the **Properties** menu option, located at the bottom of that menu.

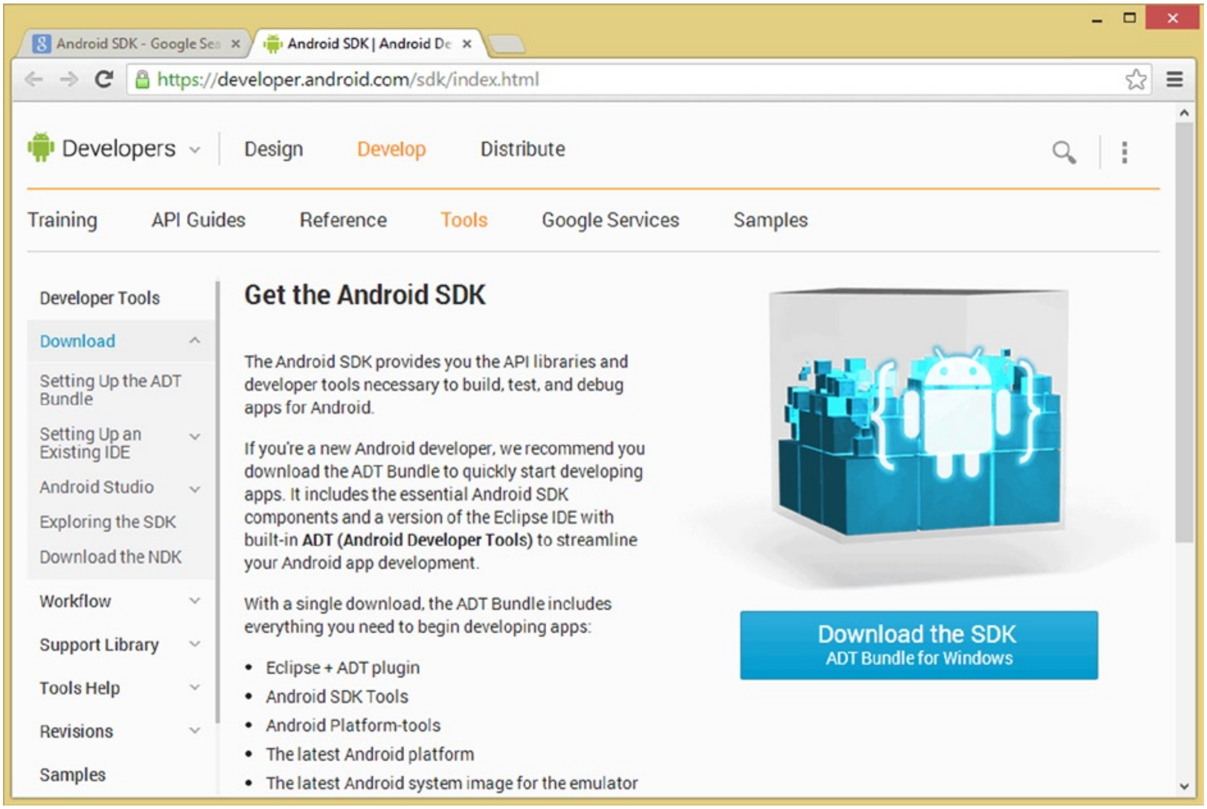
Once the installation executable has downloaded, open it, and install the latest Java JDK on your system. You can remove any older versions of Java using the Windows Control Panel, and Change or Remove Programs utility if your workstation is not new, so only the latest JDK and JRE are installed.

Once Java 6u45 (or later) JDK is installed on the workstation you can then download and install the **Android ADT Bundle** from the `developer.android.com` website. You can use the Change or Remove Programs utility in your Control Panel that you used to remove older Java versions to confirm installation.

Android ADT Bundle: Find and Download Android's IDE

The second thing that we want to do is to visit the `developer.android.com` website, and download and install the Android Development Environment ADT Bundle ZIP file. On the homepage, click the **Get the SDK** button, on the bottom left of the site, to navigate to this website's SDK section, which is shown in Figure 1-3. The URL for this section of the website can also be seen in Figure 1-3 and you can type it in directly as well if you want to:

`https://developer.android.com/sdk/index.html`



Get the Android SDK

The Android SDK provides you the API libraries and developer tools necessary to build, test, and debug apps for Android.

If you're a new Android developer, we recommend you download the ADT Bundle to quickly start developing apps. It includes the essential Android SDK components and a version of the Eclipse IDE with built-in **ADT (Android Developer Tools)** to streamline your Android app development.

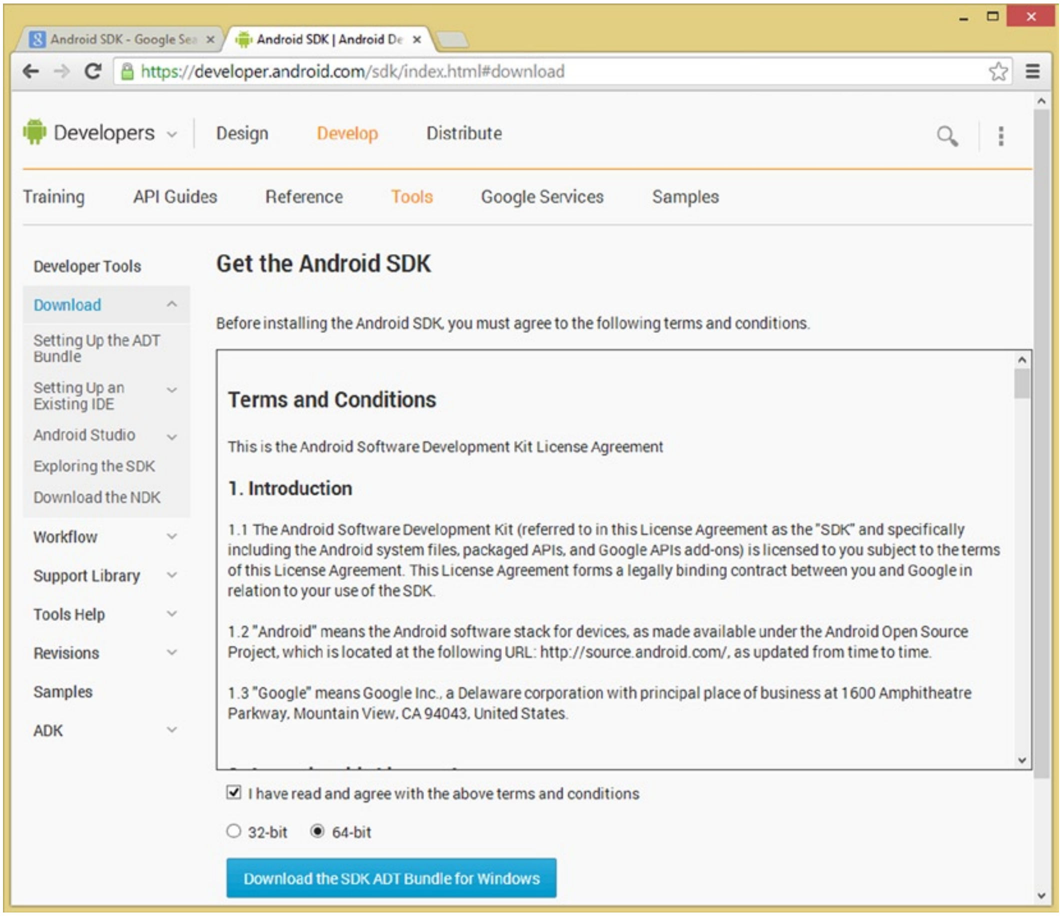
With a single download, the ADT Bundle includes everything you need to begin developing apps:

- Eclipse + ADT plugin
- Android SDK Tools
- Android Platform-tools
- The latest Android platform
- The latest Android system image for the emulator

***Figure 1-3.** The `developer.android.com/sdk/websitedownloadpage`, and the Download the SDK button, on the right*

Once you are on the **Get the Android SDK** page click the **Download the SDK ADT Bundle for Windows** (a big blue button on the middle-right of the page) to download an ADT Bundle for Windows, as is shown in Figure 1-3.

This takes you to the actual downloads page, where you can select your OS bit-level version (32-bit or 64-bit) and agree to the terms of the product licensing, as is shown in Figure 1-4. Since I'm running the Windows 8.1 64-bit OS, I selected the 64-bit software version radio button.



Get the Android SDK

Before installing the Android SDK, you must agree to the following terms and conditions.

Terms and Conditions

This is the Android Software Development Kit License Agreement

1. Introduction

1.1 The Android Software Development Kit (referred to in this License Agreement as the "SDK" and specifically including the Android system files, packaged APIs, and Google APIs add-ons) is licensed to you subject to the terms of this License Agreement. This License Agreement forms a legally binding contract between you and Google in relation to your use of the SDK.

1.2 "Android" means the Android software stack for devices, as made available under the Android Open Source Project, which is located at the following URL: http://source.android.com/, as updated from time to time.

1.3 "Google" means Google Inc., a Delaware corporation with principal place of business at 1600 Amphitheatre Parkway, Mountain View, CA 94043, United States.

☑ I have read and agree with the above terms and conditions

○ 32-bit ● 64-bit

***Figure 1-4.** Android Developer site Get the Android SDK page where you click Download the SDK ADT Bundle for Windows*

The actual SDK ADT Bundle downloading page, shown in Figure 1-4, contains a section at the top for the **end user licensing agreement (EULA)** specific to the **Android Software Development Kit**, as well as selections for either a **32-bit** or a **64-bit** IDE Android software bundle download. Read the Terms and Conditions section of this page carefully! If needed, read this with your legal department, and then click the checkbox next to the statement at the bottom that reads: **I have read and agree with the above terms and conditions**. This enables the rest of this download page functionality.

Once the checkbox has been activated (checked), you should then can select either the **32-bit** or the **64-bit** version of Eclipse 4.4's ADT Bundle that is contained inside of a **.ZIP format** software installation package.

If you downloaded the Java 6u45 JDK for Windows x64 or Linux x64 you would select the 64-bit version; conversely if you selected Java 6u45 for an x86 OS you would select the 32-bit version of this SDK ADT bundle of software.

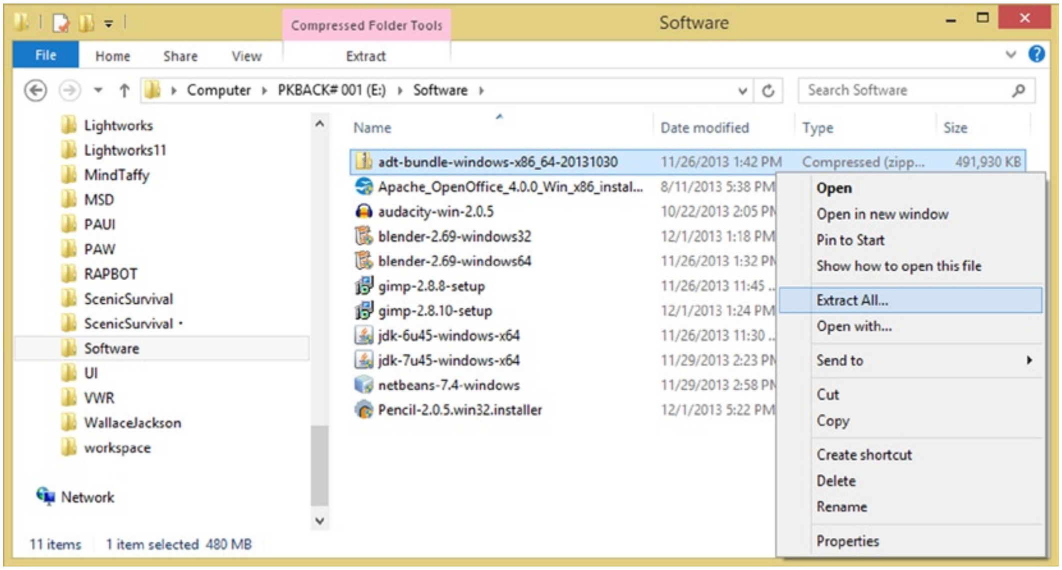
Once this selection has been made, the actual **Download the SDK ADT Bundle** blue button will be activated and you may click it to begin a download.

Once this 480MB download is complete, which may take a while depending on your Internet connection; we'll **unzip** the files in a development directory and set-up Android for use on our Pro Android UI development workstation.

Android ADT Bundle: Installing the Android IDE

The first thing we need to do after the download is complete is to find the file that we just downloaded, which should be in your operating system's Downloads folder. Usually you can right-click on a downloaded file in your browser's download progress window, and select the **View in Folder** option.

I downloaded my software on a different workstation, so I copied this file into a Software folder on my USB thumbdrive, which is shown in Figure 1-5.



Name	Date modified	Type	Size
adt-bundle-windows-x86_64-20131030	11/26/2013 1:42 PM	Compressed (zipp...	491,930 KB
Apache_OpenOffice_4.0.0_Win_x86_instal...	8/11/2013 5:38 PM		
audacity-win-2.0.5	10/22/2013 2:05 P		
blender-2.69-windows32	12/1/2013 1:18 PM		
blender-2.69-windows64	11/26/2013 1:32 P		
gimp-2.8.8-setup	11/26/2013 11:45 ...		
gimp-2.8.10-setup	12/1/2013 1:24 PM		
jdk-6u45-windows-x64	11/26/2013 11:30 ...		
jdk-7u45-windows-x64	11/29/2013 2:23 P		
netbeans-7.4-windows	11/29/2013 2:58 P		
Pencil-2.0.5.win32.installer	12/1/2013 5:22 PM		

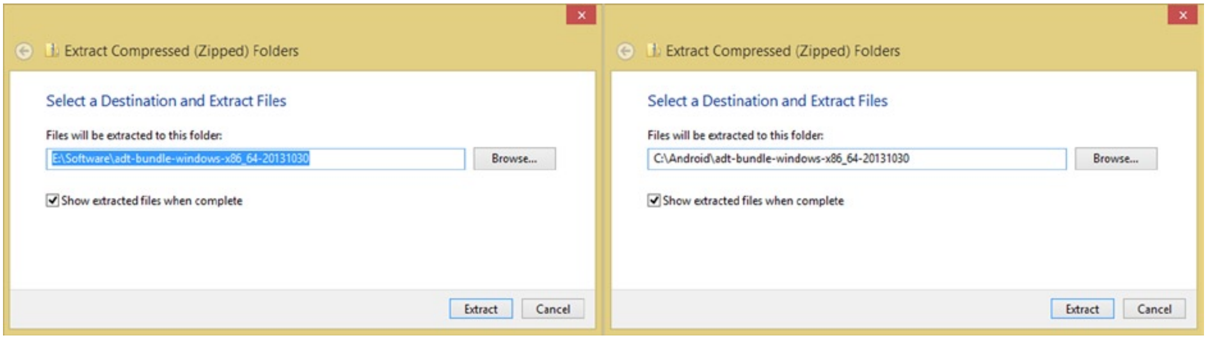
11 items 1 item selected 480 MB

Figure 1-5. Finding the adt-bundle-windows ZIP file in my Software folder, and right-clicking to Extract All

Once you locate either the **adt-bundle-windows-x86** (32-bit Windows XP, Win7, or Vista), or the **adt-bundle-windows-x86_64** (64-bit Windows Vista, Win7 or Win8) **ZIP** file in your Downloads folder, **right-click** it, and select the **Extract All** option from the menu, as is shown in Figure 1-5.

Also shown in Figure 1-5 are a number of the software packages that I use, downloaded and installed on my Android development workstation to bring it to a fully functioning content production workstation capability, for both Android (Java 6 and Eclipse) as well as HTML5 (Java 7 and NetBeans) work.

In the **Select a Destination and Extract Files** dialog shown in Figure 1-6, place your cursor before the adt-bundle-windows part of the file name and then backspace over the Downloads folder. We are doing this because we do not want to install our development environment in our Software Downloads folder but rather under an Android folder in our primary hard drive, which is designated as **C:\Android,** and thus a resulting installation folder path would be **C:\Android\adt-bundle-windows-x86_64** as shown in Figure 1-6. Once your installation folder has been specified, click the **Extract** button.



Extract Compressed (Zipped) Folders

Select a Destination and Extract Files

Files will be extracted to this folder:

E:\Software\adt-bundle-windows-x86_64-20131030

☑ Show extracted files when complete

Extract Compressed (Zipped) Folders

Select a Destination and Extract Files

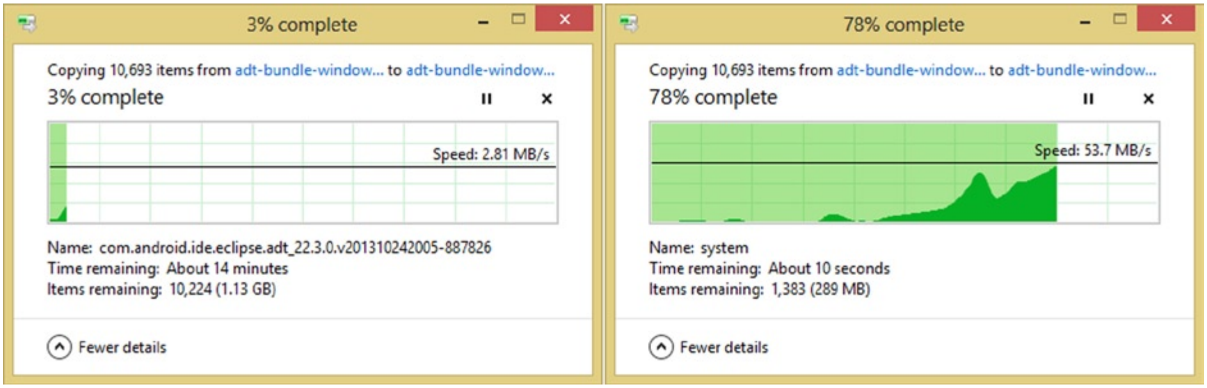
Files will be extracted to this folder:

C:\Android\adt-bundle-windows-x86_64-20131030

☑ Show extracted files when complete

***Figure 1-6.** Edit Install Folder to place it in the C:\Android\ folder that you created under your C:\ HDD root dir*

Once you click **Extract**, you will get a progress dialog, shown in Figure 1-7, showing 480+ megabytes of archived files being extracted into over 1000MB of data, spanning more than ten thousand items, in dozens of folders and subfolders.



3% complete

Copying 10,693 items from adt-bundle-window... to adt-bundle-window...

3% complete

Speed: 2.81 MB/s

Name: com.android.ide.eclipse.adt_22.3.0.v201310242005-887826
Time remaining: About 14 minutes
Items remaining: 10,224 (1.13 GB)

78% complete

Copying 10,693 items from adt-bundle-window... to adt-bundle-window...

78% complete

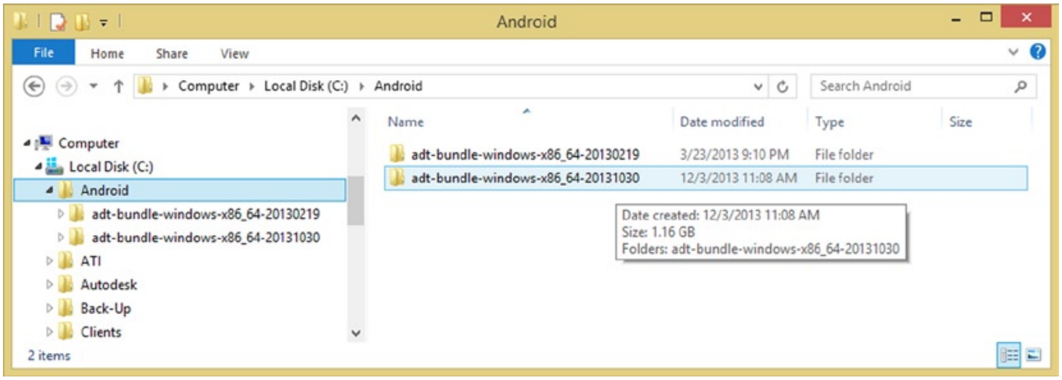
Speed: 53.7 MB/s

Name: system
Time remaining: About 10 seconds
Items remaining: 1,383 (289 MB)

***Figure 1-7.** Installing the Android ADT Bundle to your C:\Android\ folder showing progress dialog at 3% and 78%*

Once everything is extracted, which may take a little while depending on the data access (and write) speed of your hard disk drive and the computer processor speed as well, we'll be ready to create a **shortcut** for Eclipse.

Once this extraction process is completed, open your operating system file management utility; for Windows this would be called **Windows Explorer**, and is shown in use, in Figure 1-8. As you can see I have installed the latest Android OS 4.4 right next to the Android 4.2.2 OS that I used to write the *Pro Android Graphics* title earlier in 2013, as well as much of this title.


Android
File
Home
Share
View
Computer › Local Disk (C:) › Android
Search Android
Computer
Local Disk (C:)
Android
adt-bundle-windows-x86_64-20130219
adt-bundle-windows-x86_64-20131030
ATI
Autodesk
Back-Up
Clients
2 items

Name	Date modified	Type	Size
adt-bundle-windows-x86_64-20130219	3/23/2013 9:10 PM	File folder	
adt-bundle-windows-x86_64-20131030	12/3/2013 11:08 AM	File folder	

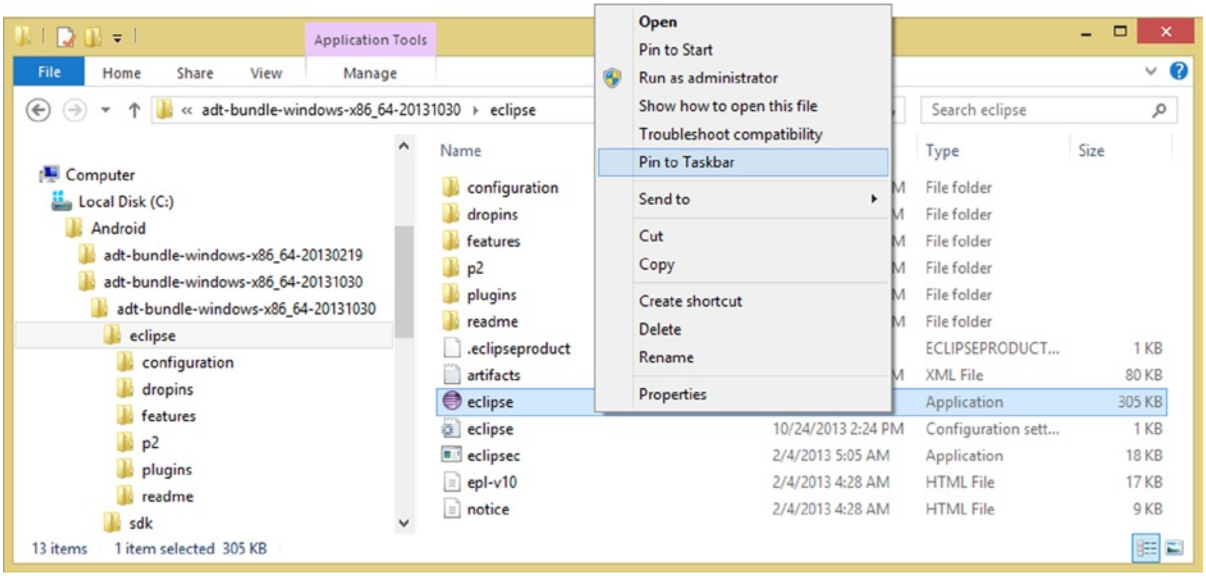
Date created: 12/3/2013 11:08 AM
Size: 1.16 GB
Folders: adt-bundle-windows-x86_64-20131030

Figure 1-8. Showing the ADT Bundle for Android 4.4 (20131030) next to an ADT Bundle for OS 4.2.2 (20130219)

We need to locate our **adt-bundle-windows-x86_64-20131030** folder as well as its subfolders, in your root C:\Android\ hard disk drive in the left side of the Explorer utility, in the hard disk drive navigation pane.

Find your **eclipse** sub-folder where your application icon is located. This is located under your **adt-bundle-windows-x86_64-20131030** folder, and then click it. This shows the **contents** (files and sub-folders) for this particular folder, in your **file management pane**, located on the right side of your Windows Explorer (or other OS file management utility).

Find the **eclipse.exe** program **executable** file; it will have a **purple sphere** (program icon) on the left side of it, as shown in Figure 1-9. Right-click this eclipse executable file, and select the **Pin to Taskbar** option from the context sensitive menu, which is brought up via your right-click.



Name		Type	Size
configuration	M	File folder	
dropins	M	File folder	
features	M	File folder	
p2	M	File folder	
plugins	M	File folder	
readme	M	File folder	
.eclipseproduct		ECLIPSEPRODUCT...	1 KB
artifacts	M	XML File	80 KB
eclipse		Application	305 KB
eclipse	10/24/2013 2:24 PM	Configuration sett...	1 KB
eclipsec	2/4/2013 5:05 AM	Application	18 KB
epl-v10	2/4/2013 4:28 AM	HTML File	17 KB
notice	2/4/2013 4:28 AM	HTML File	9 KB

Figure 1-9. Find the C:\adt-bundle-windows install folder and right-click the eclipse.exe file to Pin to Taskbar

Once you select the Pin to Taskbar option, a single-click Eclipse software launch icon is installed on the operating system **Taskbar**, so that you can quickly and easily launch the Eclipse ADT software anytime you want to develop Android 4.4 applications.

It is important to note that we did not need to install quick launch icons (shortcuts) for Java 6u45, as the JDK that we installed exists underneath the other application development tools, and is not accessed directly, as the other open source software packages we are going to be installing are.

Java SE is a development environment infrastructure component, and is thus not directly accessed, or run, like Eclipse ADT or like other new media software development tools, which we'll be installing a bit later on.

We'll be creating launch icon short-cuts for these tools as well on our OS Taskbar so that we can quickly and easily launch them at a moment's notice!

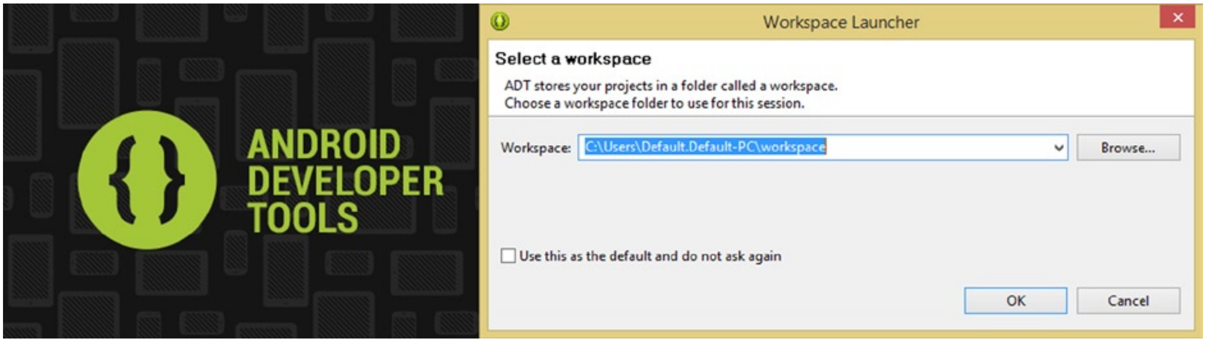
Figure 1-10 shows a Windows Taskbar with your quick launch icons installed with key system utilities (Character Map, Calculator, Notepad, Explorer), as well as some of the apps that we are going to install in this chapter, including Eclipse ADT, Pencil, GIMP, Lightworks, Blender 3D, and Audacity (Digital Audio Editing). Why do you need audio for UI Design? You may want to create audio feedback effects for button click or app background music.

***Figure 1-10.** Windows Taskbar shows the applications and utilities we are installing in this chapter*

Now we are ready to launch the Eclipse ADT IDE, and to make sure that we have all the very latest plug-ins, APIs, tools, and utilities installed.

Android ADT Bundle: Launch the IDE and Update the ADT

When you click the quick launch icon, you will see the ADT start-up screen and Loading Workbench progress bar, as well as a **Workspace Launcher** dialog allowing you to set-up your **\workspace** folder, as shown in Figure 1-11.



Workspace Launcher

Select a workspace

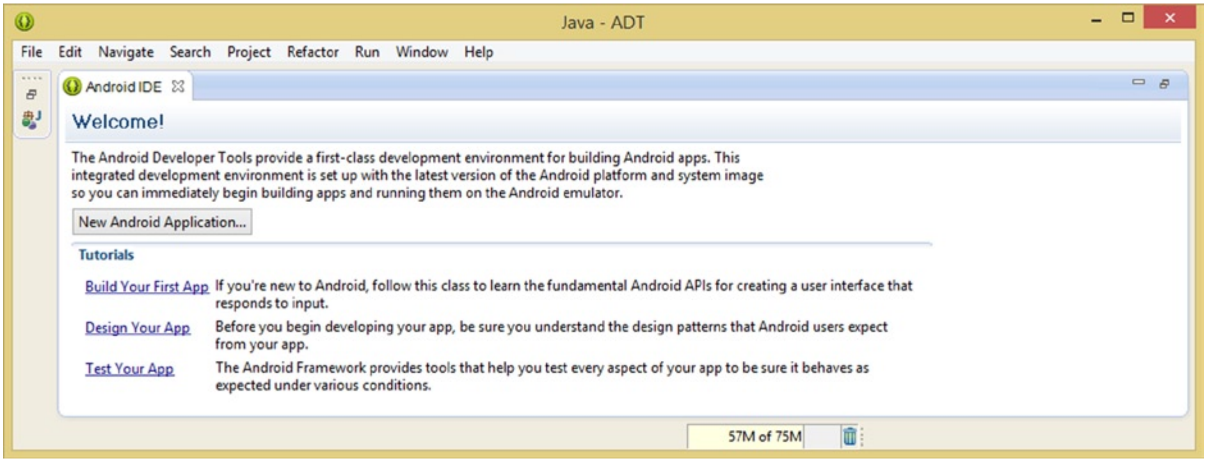
ADT stores your projects in a folder called a workspace.
Choose a workspace folder to use for this session.

Workspace: C:\Users\Default.Default-PC\workspace

□ Use this as the default and do not ask again

***Figure 1-11.** Loading Android Developer Tools and the Workspace Launcher dialog showing Workspace folder*

On first launch Eclipse ADT may ask you for permission to use the software usage data to help them improve their product. I said Yes but you can also say No if you wish. When Eclipse starts for the first time, you will see a **Welcome!** screen, allowing you to create a **New Android Application** or to go through tutorials, such as Build Your First App, Design Your App, and Test Your App, as is shown in Figure 1-12.


Java - ADT
File Edit Navigate Search Project Refactor Run Window Help
Android IDE
Welcome!
New Android Application...
Tutorials
57M of 75M

The Android Developer Tools provide a first-class development environment for building Android apps. This integrated development environment is set up with the latest version of the Android platform and system image so you can immediately begin building apps and running them on the Android emulator.

Build Your First App If you're new to Android, follow this class to learn the fundamental Android APIs for creating a user interface that responds to input.

Design Your App Before you begin developing your app, be sure you understand the design patterns that Android users expect from your app.

Test Your App The Android Framework provides tools that help you test every aspect of your app to be sure it behaves as expected under various conditions.

***Figure 1-12.** On first launch of Eclipse ADT you will see a Welcome! screen which can be exited using the X icon*

Click the X (or cross) in the Android IDE tab, at the top of this Welcome! screen to close this and show the Eclipse ADT IDE, which is initially empty. Your IDE contains the functional panes, but no project files or data, as shown in Figure 1-13. The left pane is the **Package Explorer**, and is used for project hierarchy navigation, the middle pane is your **editing pane**, and the right pane is the **Outline** pane for getting a bird's-eye view of the project. The bottom pane contains Problems, Errors, and LogCat tabs.

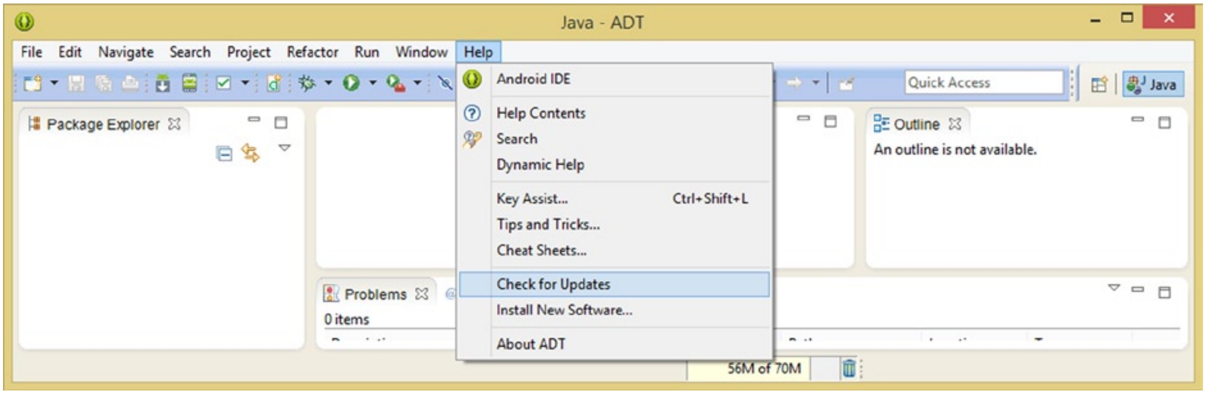
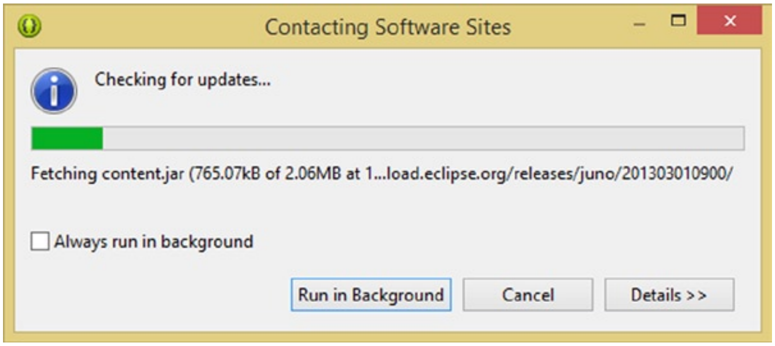


***Figure 1-13.** Use the Eclipse ADT Help menu on first launch to Check for Updates to the IDE, plug-ins, API tools*

Once your Eclipse IDE has started up, select the **Help ➤ Check for Updates** menu sequence, as is also shown in Figure 1-13. This goes out over the Internet to the **Eclipse software repository** and checks for version updates.

It is important to note that for this to work properly, you must have an active connection to the Internet. If you do, Eclipse will open the **Contacting Software Sites** dialog, shown in Figure 1-14, and check the Eclipse software repositories for more recent versions of the software. A software repository is a directory on a remote server that contains the very latest software revisions, in this case, of the **Eclipse Kepler IDE**.



Contacting Software Sites

Checking for updates...

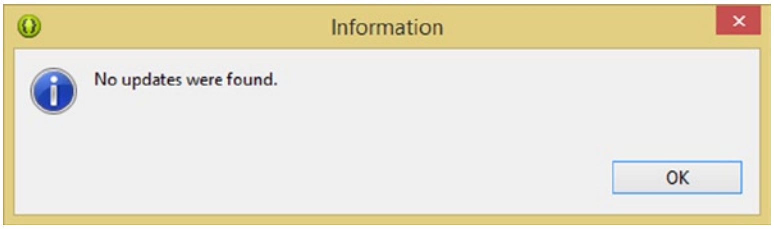
Fetching content.jar (765.07kB of 2.06MB at 1...load.eclipse.org/releases/juno/201303010900/

☐ Always run in background

***Figure 1-14.** Checking for updates to the Eclipse Kepler IDE*

In this case, we already have the latest version of Eclipse, which is to be expected, since we just downloaded and installed the ADT Bundle, and thus you should receive the "**No updates were found**" Information dialog.

This dialog can be seen in Figure 1-15, and informs you that no new updates for the Eclipse ADT IDE (Integrated Development Environment) have been found, which is to be expected, but we'll just make sure anyway!



Information

No updates were found.

***Figure 1-15.** No updates to the Eclipse IDE were found*

Now that you have checked for updates to the Eclipse IDE, you will use the **Window** menu and its **Android SDK Manager** option, to take a look at what you have just installed on an API component basis, as is shown in Figure 1-16.

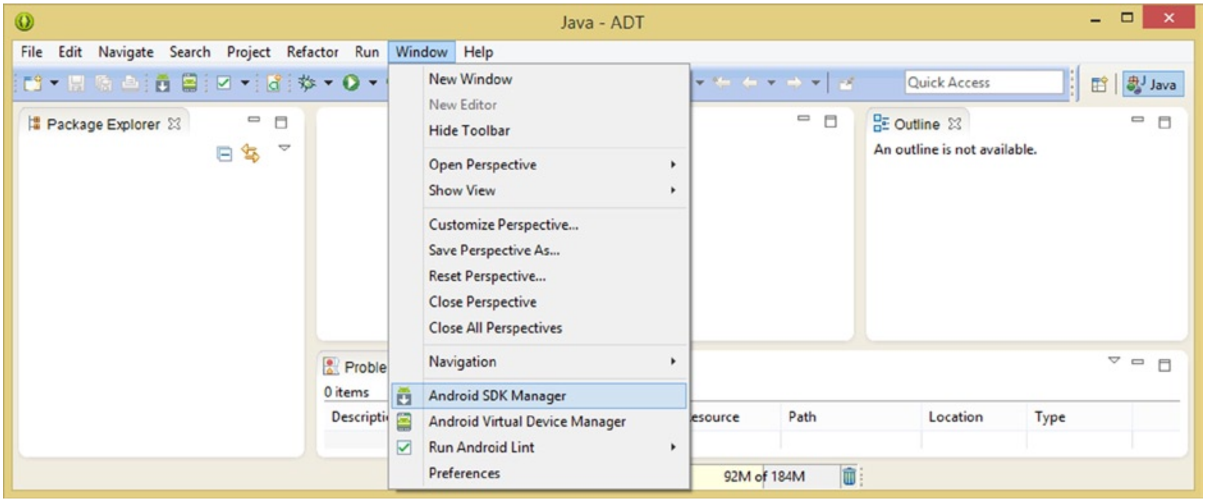
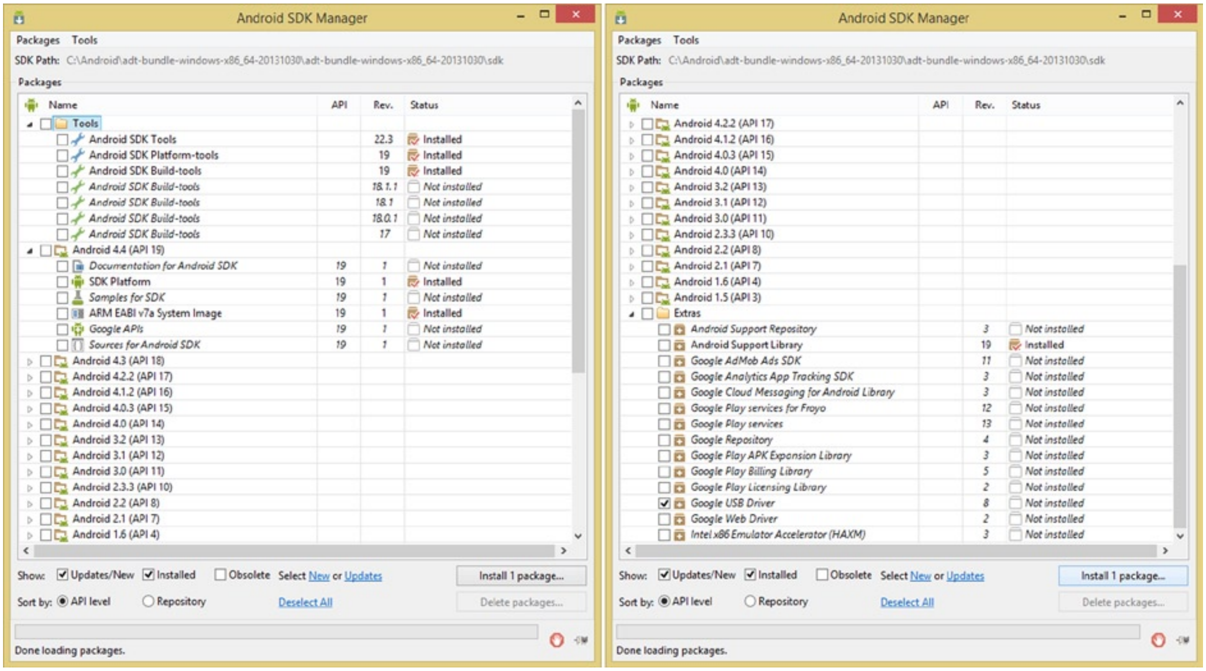


***Figure 1-16.** The Android SDK Manager, invoked using Window ➤ Android SDK Manager*

Figure 1-17 shows this entire Android SDK Manager dialog, as well as the Eclipse-installed (default) check selection next to the **Google USB Driver**.



SDK Path: C:\Android\adt-bundle-windows-x86_64-20131030\adt-bundle-windows-x86_64-20131030\sdk

Packages

Name	API	Rev.	Status
□ Tools			
□ Android SDK Tools		22.3	Installed
□ Android SDK Platform-tools		19	Installed
□ Android SDK Build-tools		19	Installed
□ *Android SDK Build-tools*		*18.1.1*	*Not installed*
□ *Android SDK Build-tools*		*18.1*	*Not installed*
□ *Android SDK Build-tools*		*18.0.1*	*Not installed*
□ *Android SDK Build-tools*		*17*	*Not installed*
□ Android 4.4 (API 19)			
□ *Documentation for Android SDK*	*19*	*1*	*Not installed*
□ SDK Platform	19	1	Installed
□ *Samples for SDK*	*19*	*1*	*Not installed*
□ ARM EABI v7a System Image	19	1	Installed
□ *Google APIs*	*19*	*1*	*Not installed*
□ *Sources for Android SDK*	*19*	*1*	*Not installed*
□ Android 4.3 (API 18)			
□ Android 4.2.2 (API 17)			
□ Android 4.1.2 (API 16)			
□ Android 4.0.3 (API 15)			
□ Android 4.0 (API 14)			
□ Android 3.2 (API 13)			
□ Android 3.1 (API 12)			
□ Android 3.0 (API 11)			
□ Android 2.3.3 (API 10)			
□ Android 2.2 (API 8)			
□ Android 2.1 (API 7)			
□ Android 1.6 (API 4)			

Show: ☑ Updates/New ☑ Installed □ Obsolete Select New or Updates

Sort by: ● API level ○ Repository

Done loading packages.

SDK Path: C:\Android\adt-bundle-windows-x86_64-20131030\adt-bundle-windows-x86_64-20131030\sdk

Packages

Name	API	Rev.	Status
□ Android 4.2.2 (API 17)			
□ Android 4.1.2 (API 16)			
□ Android 4.0.3 (API 15)			
□ Android 4.0 (API 14)			
□ Android 3.2 (API 13)			
□ Android 3.1 (API 12)			
□ Android 3.0 (API 11)			
□ Android 2.3.3 (API 10)			
□ Android 2.2 (API 8)			
□ Android 2.1 (API 7)			
□ Android 1.6 (API 4)			
□ Android 1.5 (API 3)			
□ Extras			
□ *Android Support Repository*		*3*	*Not installed*
□ Android Support Library		19	Installed
□ *Google AdMob Ads SDK*		*11*	*Not installed*
□ *Google Analytics App Tracking SDK*		*3*	*Not installed*
□ *Google Cloud Messaging for Android Library*		*3*	*Not installed*
□ *Google Play services for Froyo*		*12*	*Not installed*
□ *Google Play services*		*13*	*Not installed*
□ *Google Repository*		*4*	*Not installed*
□ *Google Play APK Expansion Library*		*3*	*Not installed*
□ *Google Play Billing Library*		*5*	*Not installed*
□ *Google Play Licensing Library*		*2*	*Not installed*
☑ *Google USB Driver*		*8*	*Not installed*
□ *Google Web Driver*		*2*	*Not installed*
□ *Intel x86 Emulator Accelerator (HAXM)*		*3*	*Not installed*

Show: ☑ Updates/New ☑ Installed □ Obsolete Select New or Updates

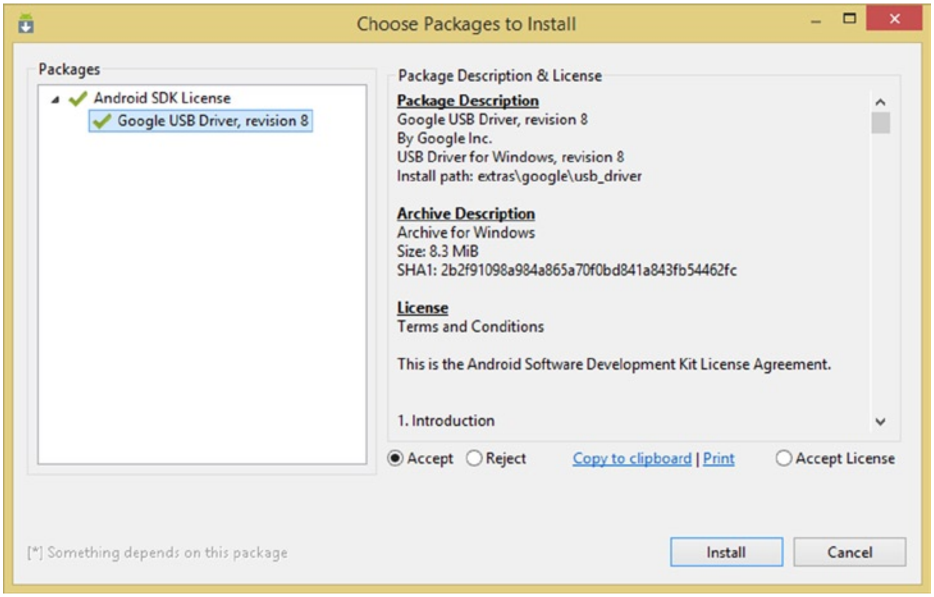
Sort by: ● API level ○ Repository

Done loading packages.

***Figure 1-17.** Android SDK Manager dialog and the components you just installed; select the Google USB Driver*

Click the **Install 1 package** button, to install this Google USB Driver, so that you can test your Android apps on real Android hardware devices. You can also select other Google APIs in this area of the dialog if you needed to use any of these in your application development as well.

Once you click this button the **Choose Packages to Install** dialog will appear, as can be seen in Figure 1-18, where you can see all of the various packages that you have selected for installation.


Choose Packages to Install
Packages
Android SDK License
Google USB Driver, revision 8
Package Description & License

Package Description
Google USB Driver, revision 8
By Google Inc.
USB Driver for Windows, revision 8
Install path: extras\google\usb_driver

Archive Description
Archive for Windows
Size: 8.3 MiB
SHA1: 2b2f91098a984a865a70f0bd841a843fb54462fc

License
Terms and Conditions

This is the Android Software Development Kit License Agreement.

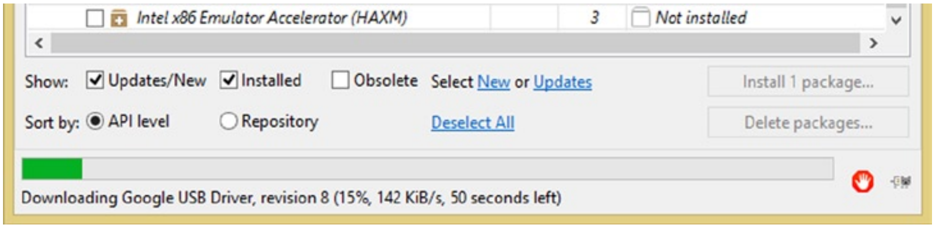
1. Introduction

● Accept ○ Reject Copy to clipboard | Print ○ Accept License

[*] Something depends on this package

Figure 1-18. Accepting the license terms and conditions for the Google USB Driver

Once you click the **Accept** radio button to accept the **license agreement**, and then click the **Install** button, you will get the progress bar at the bottom of the Android SDK Manager dialog, shown in Figure 1-19, that shows which package is being downloaded, the revision, the percentage completed, the data transfer speed, and the time left until the download's completion.


□ Intel x86 Emulator Accelerator (HAXM) 3 Not installed

Show: ☑ Updates/New ☑ Installed □ Obsolete Select New or Updates

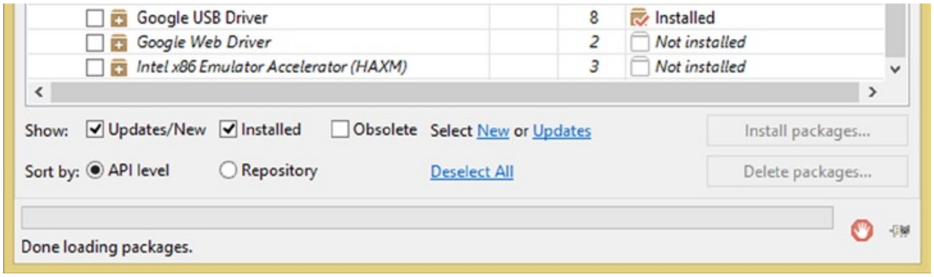
Sort by: ● API level ○ Repository Deselect All

Downloading Google USB Driver, revision 8 (15%, 142 KiB/s, 50 seconds left)

Figure 1-19. The Google USB Driver download progress bar located at the bottom of the dialog

Once the download of the Google USB Driver is complete, this progress bar will turn grey once more, and a **Done loading packages** message will appear.

Notice in Figure 1-20 that the Google USB Driver is now showing inside your Android SDK Manager dialog as being installed, and is also showing a version number (8) so that you know what version you have installed.



□ Google USB Driver	8	Installed
□ Google Web Driver	2	□ Not installed
□ Intel x86 Emulator Accelerator (HAXM)	3	□ Not installed

Show: ☑ Updates/New ☑ Installed □ Obsolete Select New or Updates

Sort by: ● API level ○ Repository Deselect All

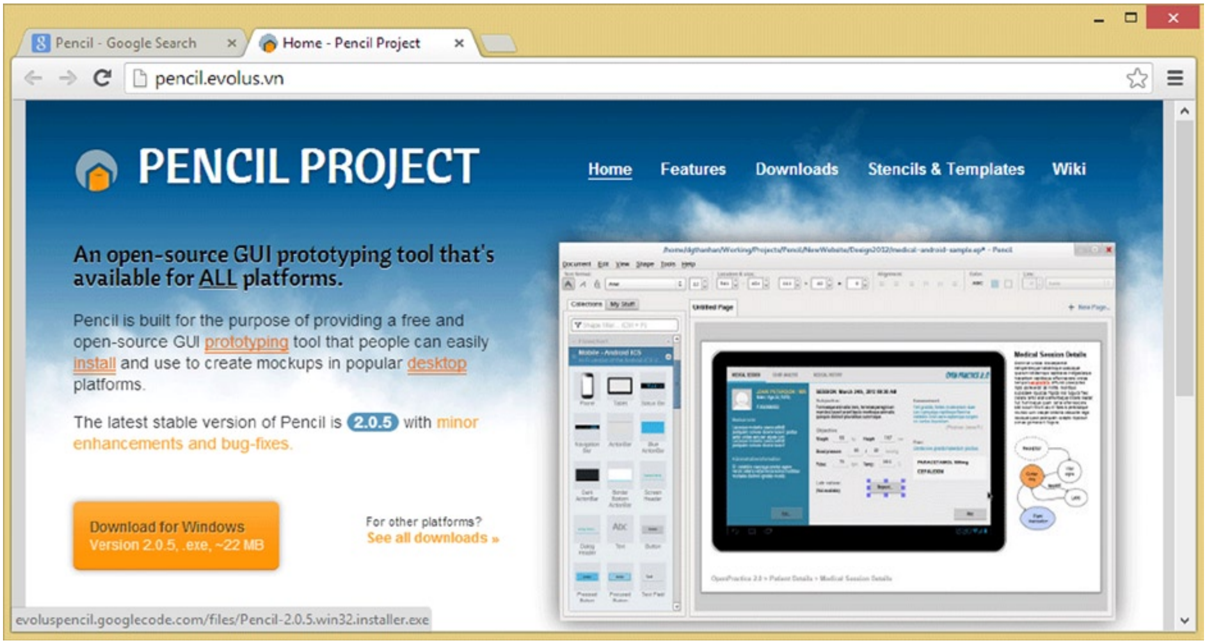
Done loading packages.

***Figure 1-20.** Done loading packages message, and showing the Google USB Driver as Installed*

Now that you have Android ADT for KitKat 4.4 installed, let's install some other useful open source software packages that we may want to use during the book, and for your Android development endeavors in the future.

UI Wireframing Tool: Downloading and Installing Pencil

Since this is a Pro UI book, we'll download the leading open source user interface **wireframing tool**, called **Pencil 2.0.5,** as shown in Figure 1-21.



An open-source GUI prototyping tool that's available for ALL platforms.

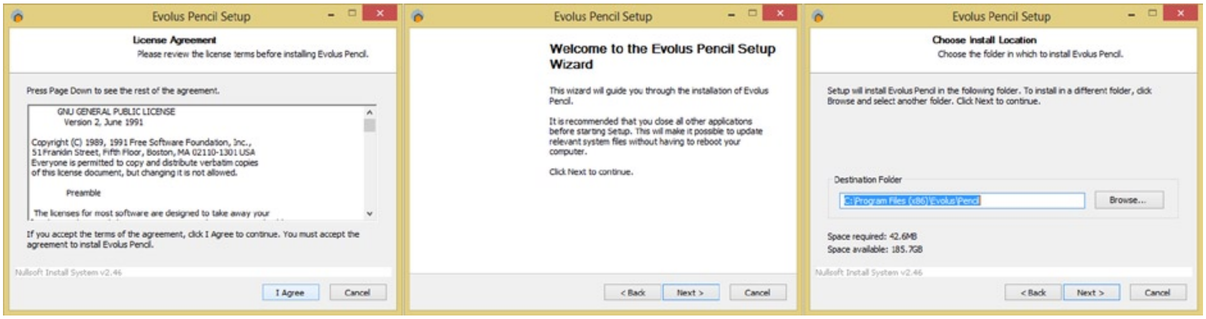
Pencil is built for the purpose of providing a free and open-source GUI prototyping tool that people can easily install and use to create mockups in popular desktop platforms.

The latest stable version of Pencil is 2.0.5 with minor enhancements and bug-fixes.

evoluspencil.googlecode.com/files/Pencil-2.0.5.win32.installer.exe

***Figure 1-21.** Going to the pencil.evolus.vn website homepage to download Pencil 2.0.5 for Windows*

Go to **pencil.evolus.vn** or simply Google "Pencil Wireframe Tool," and click the orange download button on the homepage. Once the file is downloaded, launch the installer and review the license agreement as shown in Figure 1-22, and then click the **I Agree** button, to accept the licensing agreement. Then click the **Next ➤** button, and accept a default installation folder, by clicking on the **Next ➤** button again, in the third dialog.



License Agreement
Please review the license terms before installing Evolus Pencil.

Press Page Down to see the rest of the agreement.

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your

If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install Evolus Pencil.

Nullsoft Install System v2.46

Welcome to the Evolus Pencil Setup Wizard

This wizard will guide you through the installation of Evolus Pencil.

It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.

Click Next to continue.

Choose Install Location
Choose the folder in which to install Evolus Pencil.

Setup will install Evolus Pencil in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue.

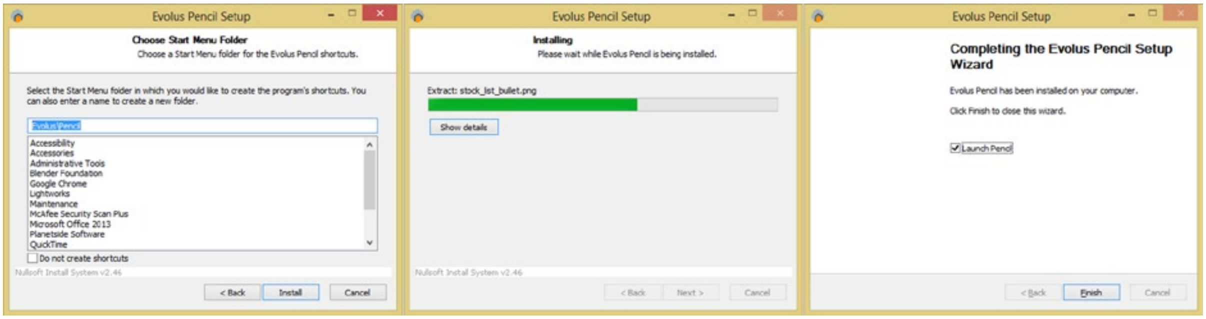
Destination Folder
C:\Program Files (x86)\Evolus\Pencil

Space required: 42.6MB
Space available: 185.7GB

Nullsoft Install System v2.46

***Figure 1-22.** Setting up Pencil 2.0.5; agree to the license agreement, choose installation location for the software*

Next accept the default Start Menu Folder and click the Install button, which brings up the installation progress dialog shown in Figure 1-23. If you want to see details regarding the install, click the Show Details button. When the installation is finished be sure that the **Launch Pencil** checkbox is checked and the software will launch so that you can make sure that it works on your system.



Choose Start Menu Folder
Choose a Start Menu folder for the Evolus Pencil shortcuts.

Select the Start Menu folder in which you would like to create the program's shortcuts. You can also enter a name to create a new folder.

Evolus\Pencil

Accessibility
Accessories
Administrative Tools
Blender Foundation
Google Chrome
Lightworks
Maintenance
McAfee Security Scan Plus
Microsoft Office 2013
Planetside Software
QuickTime

☐ Do not create shortcuts

Nullsoft Install System v2.46

Installing
Please wait while Evolus Pencil is being installed.

Extract: stock_list_bullet.png

Nullsoft Install System v2.46

Completing the Evolus Pencil Setup Wizard

Evolus Pencil has been installed on your computer.

Click Finish to close this wizard.

☑ Launch Pencil

***Figure 1-23.** Choosing your Start Menu Folder, Installing the software, Launch Pencil 2.0.5 to make sure it runs*

When the software launches, you should see a blank wireframe design area on the right side and several stacked palettes of wireframing tool icons on the left side of the screen, as shown in Figure 1-24.

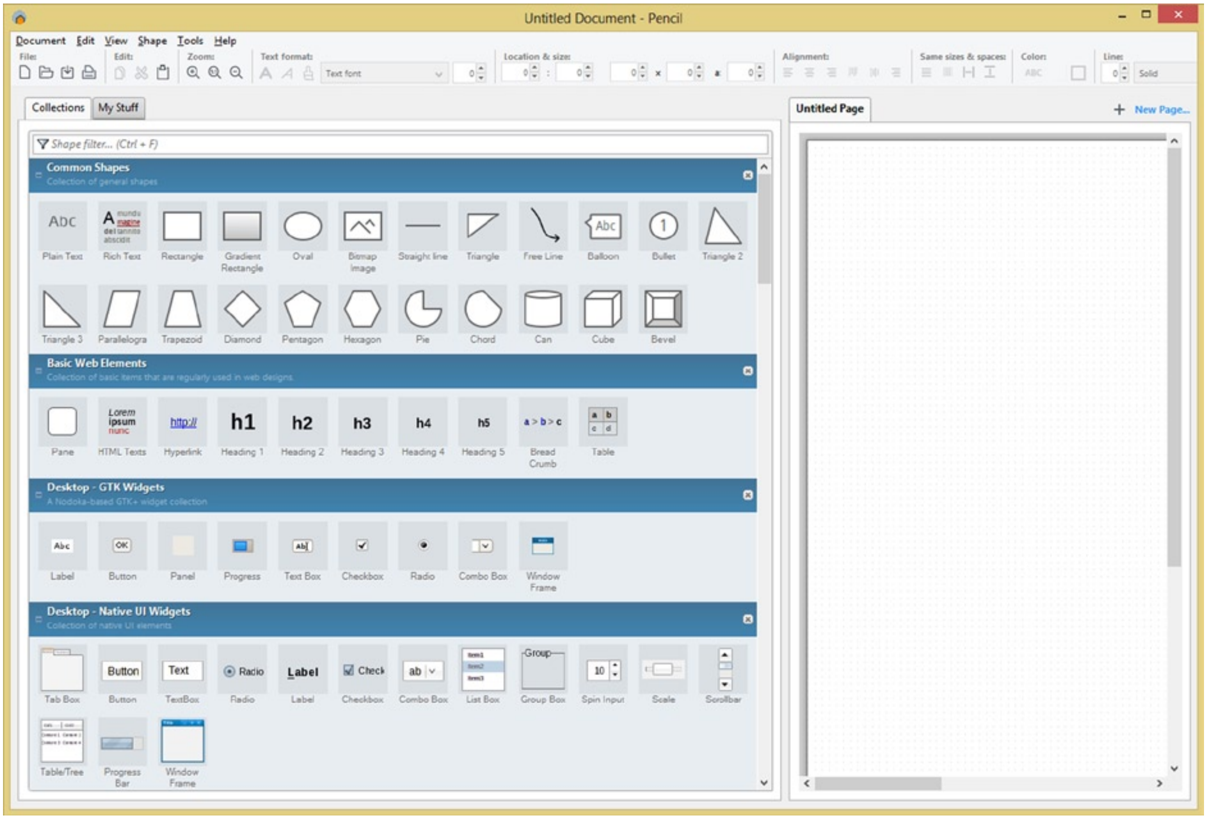

Untitled Document - Pencil
Document Edit View Shape Tools Help
File: Edit: Zoom: Text format: Location & size: Alignment: Same sizes & spaces: Color: Line:
Text font
Solid
Collections My Stuff
Shape filter... (Ctrl + F)
Common Shapes
Collection of general shapes
Plain Text Rich Text Rectangle Gradient Rectangle Oval Bitmap Image Straight line Triangle Free Line Balloon Bullet Triangle 2
Triangle 3 Paralelogra Trapezoid Diamond Pentagon Hexagon Pie Chord Can Cube Bevel
Basic Web Elements
Collection of basic items that are regularly used in web designs
Pane HTML Texts Hyperlink Heading 1 Heading 2 Heading 3 Heading 4 Heading 5 Bread Crumb Table
Desktop - GTK Widgets
A Nodoka-based GTK+ widget collection
Label Button Panel Progress Text Box Checkbox Radio Combo Box Window Frame
Desktop - Native UI Widgets
Collection of native UI elements
Tab Box Button TextBox Radio Label Checkbox Combo Box List Box Group Box Spin Input Scale Scrollbar
Table/Tree Progress Bar Window Frame
Untitled Page
New Page...

Figure 1-24. Launching Pencil 2.0.5 to make sure it runs; taking a look at the flowcharting shapes and UI widgets

The first section common shapes might be better suited for creating flow-charts than user interface designs, but there are some icons in that group that might be usable for basic UI Design. The second group is targeted at basic HTML website design UI elements, and the third section is targeted at UI design for Linux GTK desktop UI programmers. The fourth section is native UI design desktop widgets for OSes such as Windows and Macintosh.

Let's take a look at the user interface design widgets for the Android 4.0 ICS section of Pencil, before we exit the software and continue installing our other open source software packages that we will use for UI Design.

Grab the scrollbar handle, shown on the right side of the Pencil User Interface widget collections pane in Figure 1-24, and drag it halfway down to the center (or middle) of the slider bar range.

You will see the section come into view labeled **Mobile Android ICS** and that contains **Android 4.0 UI widgets**, which we will be using later on in the book in the chapter on UI design and wireframing techniques.

Currently, there are almost 80 different UI widgets we can drag and drop on the right side of the screen to prototype UI designs, as shown in Figure 1-25. We'll be learning about many of these UI widgets in Chapter 3 of this book on the View class, which is used to create subclasses in the android.widget package. These classes are instantiated as objects, are then implemented as functioning user interface elements. It is also important to note that you can import Android 3.0 style UI widgets into Pencil if you want to design via an Android 3.0 UI Design appearance.

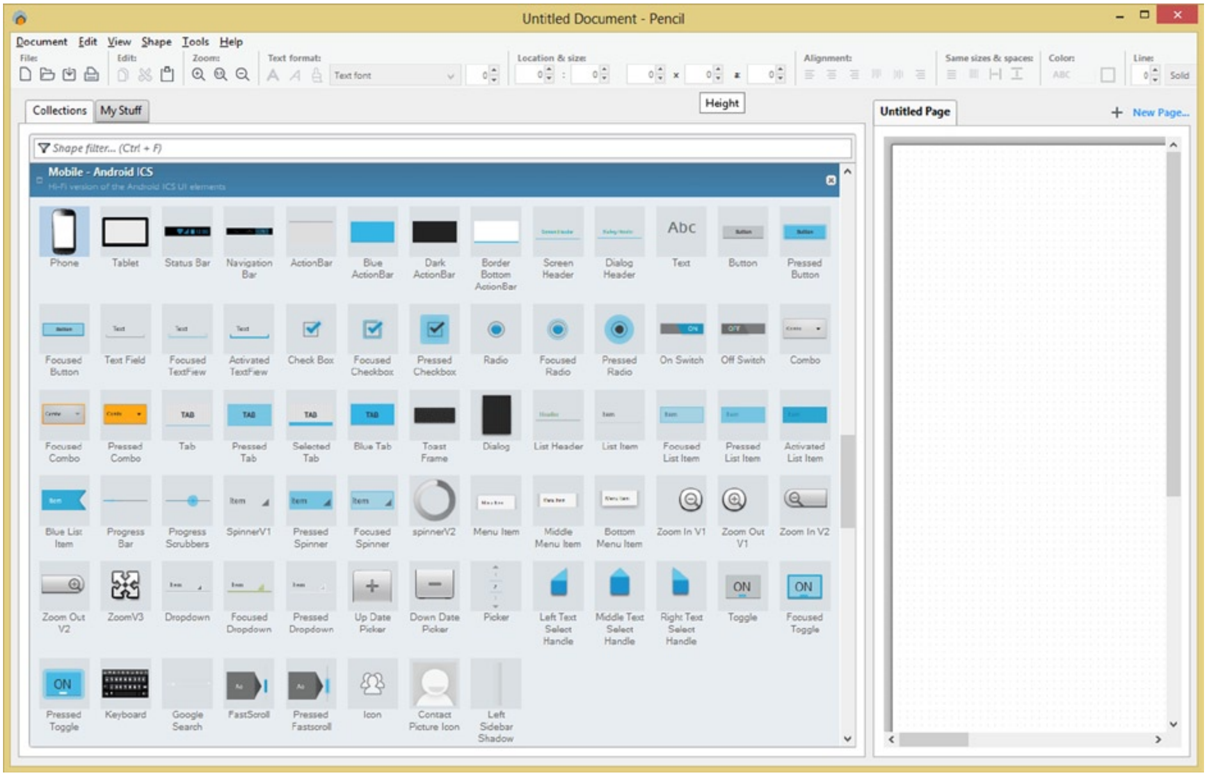


Figure 1-25. Scrolling down to the Android 4.0 ICS Mobile UI Design widget section that we are going to utilize

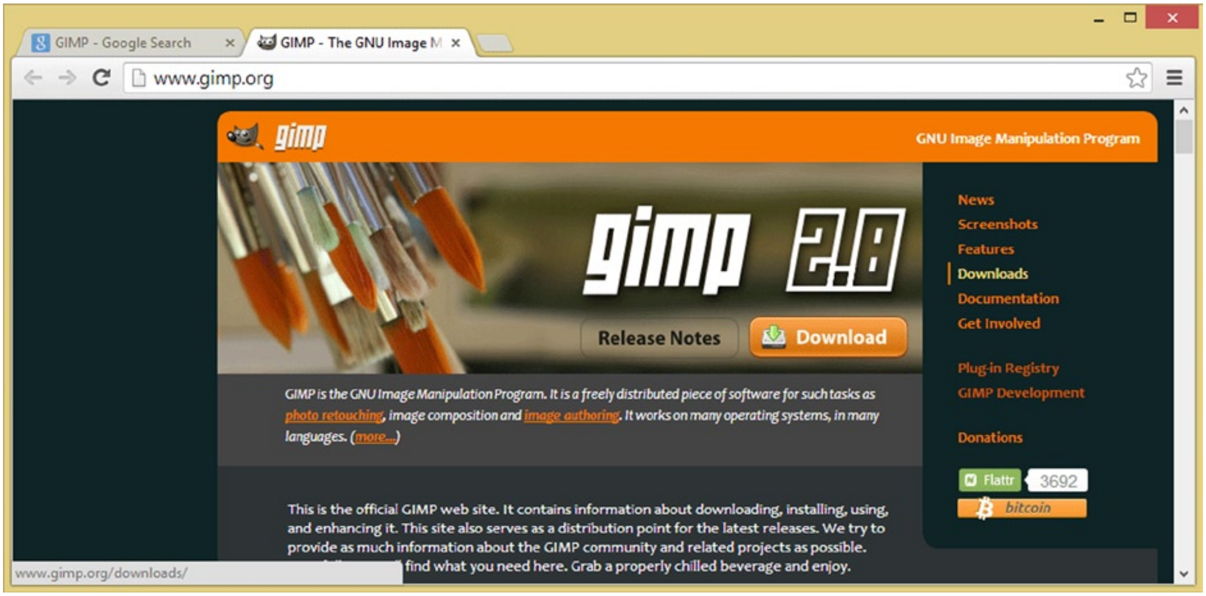
Next we need to download and install the professional digital imaging software called GIMP 2.8.10, which is similar to the popular Photoshop digital imaging software package except that it's free for commercial use.

Digital Image Editing: Download and Install GIMP 2.8.10

Digital Image Editing software is important for Android development, as well as for User Inferface Design. The reason for this is that Android allows developers to integrate their own graphic elements into the Android widgets by referencing an image source, using a background image, or using an alpha value (transparency).

Alpha channels, which we'll be learning more about later, are an attribute of the UI element, which will allow digital image assets to "show through" the User Interface element. This allows a UI element to be integrated into the overall application's "User Experience" with 100% seamless results.

Open your browser and go to `www.gimp.org`. You are taken to the GIMP homepage, shown in Figure 1-26.



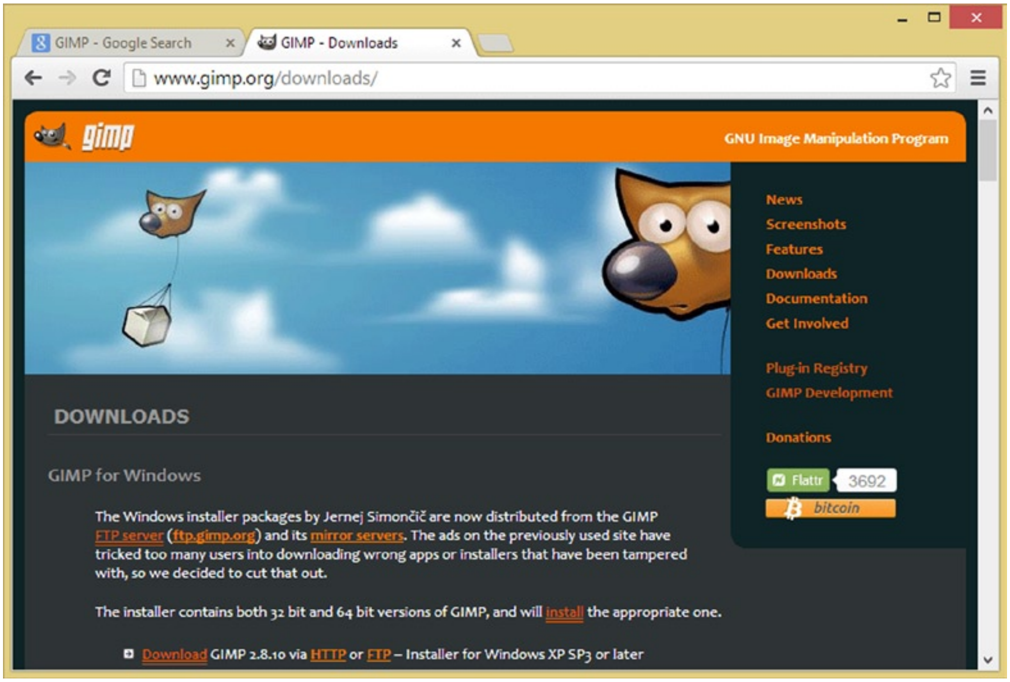
GIMP is the GNU Image Manipulation Program. It is a freely distributed piece of software for such tasks as photo retouching, image composition and image authoring. It works on many operating systems, in many languages. (more...)

This is the official GIMP web site. It contains information about downloading, installing, using, and enhancing it. This site also serves as a distribution point for the latest releases. We try to provide as much information about the GIMP community and related projects as possible.

find what you need here. Grab a properly chilled beverage and enjoy.

***Figure 1-26.** Go to the www.gimp.org website homepage, and click the Download button, or Downloads link*

You could also use Google and the search term “GIMP 2” if you prefer. Once you’re on the GIMP homepage you can then click on their Downloads link, or the Download button, to visit the Downloads page, as shown in Figure 1-27.



DOWNLOADS

GIMP for Windows

The Windows installer packages by Jernej Simončič are now distributed from the GIMP FTP server (ftp.gimp.org) and its mirror servers. The ads on the previously used site have tricked too many users into downloading wrong apps or installers that have been tampered with, so we decided to cut that out.

The installer contains both 32 bit and 64 bit versions of GIMP, and will install the appropriate one.

- Download GIMP 2.8.10 via HTTP or FTP – Installer for Windows XP SP3 or later

***Figure 1-27.** Downloading GIMP 2.8.10 for Windows XP SP3 or later from the www.gimp.org/downloads/ page*

Once GIMP 2.8.10 is downloaded launch the installer executable and accept the license agreement and default installation locations and parameters.

If you like you can follow the same work process that we did with Eclipse and place a quick launch short-cut icon on your Taskbar by right-clicking the GIMP 2.8.10 icon, and selecting **Pin to Taskbar**. You can reposition launch icons by dragging them into any position you prefer on the Taskbar.

Next, let's go and get the leading open source 3D software, Blender 2.69, which is available for Windows, Linux, and Macintosh in both 32-bit and 64-bit versions. Blender updates its software monthly, and, for that reason, by the time you read this, version 2.70, or even 2.80, might be available!

3D Modeling and Animation: Download and Install Blender

Next we will need to download and install the professional 3D modeling and animation software called Blender 2.69, which is similar to the popular 3D software packages out there such as 3D Studio MAX, Maya, Cinema 4D, and Lightwave, except that it's completely free for commercial use.

3D modeling, design, rendering or animation software can be very useful in Android development, as well as for User Interface Design, because it allows you to create "out of thin air" what is in your head as a designer.

Since the Android OS allows developers to integrate their own UI graphics design elements into the Android OS, having a professional 3D tool such as Blender 3D 2.69 on your Android app development workstation is important.

Go to `www.blender.org`, or Google "Blender 3D," and when you get to the website (as shown in Figure 1-28), click the blue **Download Blender 2.69** button on the right side of the page.

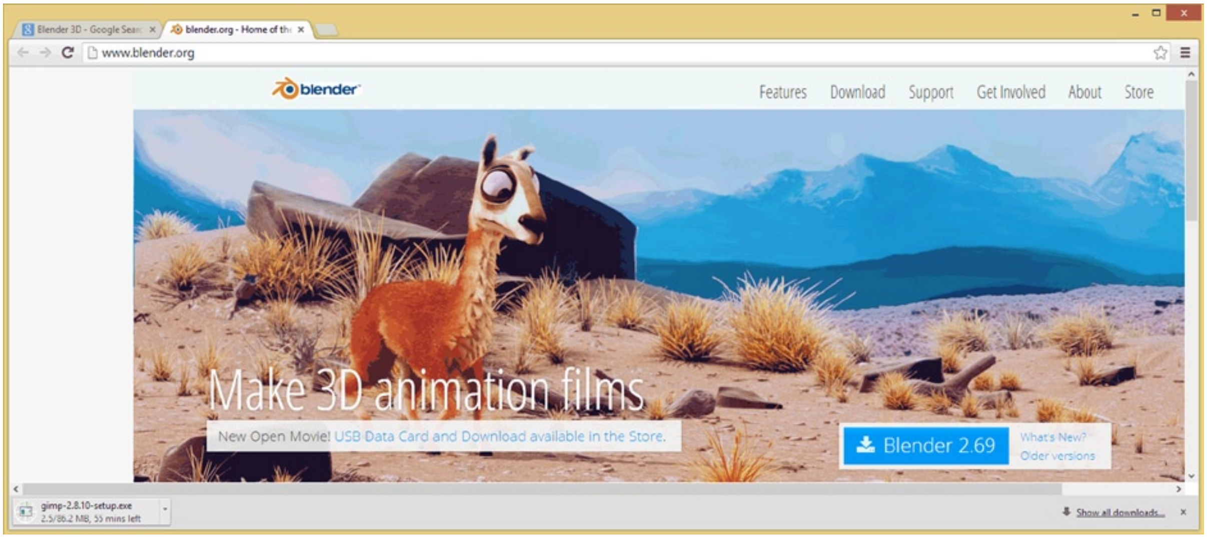
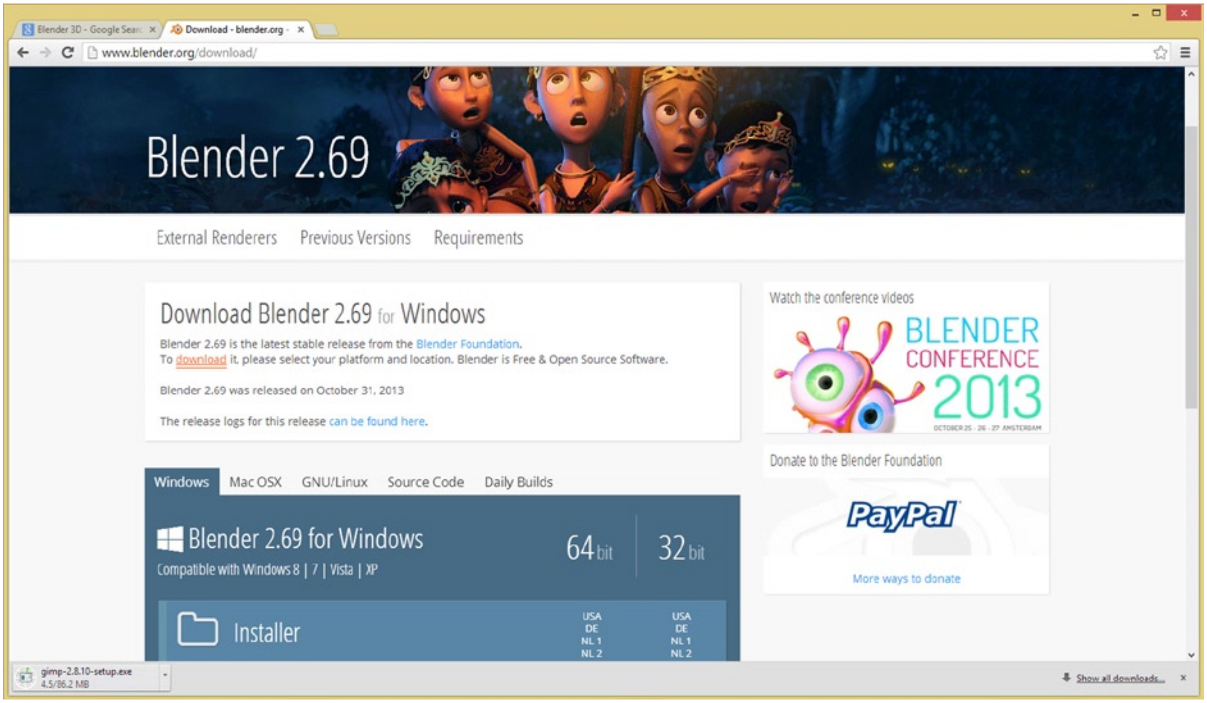


Figure 1-28. *Going to the `www.blender.org` website homepage, and then clicking on the blue Blender 2.69 button*

Once you do this you'll be taken to a "Download Blender" page, which has Blender versions for a plethora of different operating systems, including Windows, Macintosh, Linux, and Unix.

Since my operating system is Windows 8.1 64-bit, I downloaded the 64-bit version for Windows, as shown in Figure 1-29, at the bottom of the screenshot in the dark blue area.


Blender 3D - Google Searc
Download - blender.org
www.blender.org/download/
Blender 2.69
External Renderers
Previous Versions
Requirements
Download Blender 2.69 for Windows

Blender 2.69 is the latest stable release from the Blender Foundation.
To download it, please select your platform and location. Blender is Free & Open Source Software.

Blender 2.69 was released on October 31, 2013

The release logs for this release can be found here.

Figure 1-29. Downloading Blender 2.69 for Windows 64-bit or 32-bit from the www.blender.org/download/page

I chose the .EXE installer version, because it was easier to install than a ZIP and smaller in filesize, resulting in a faster download.

Once your installer file has been downloaded, launch it, and install this impressive 3D software package, using its default settings.

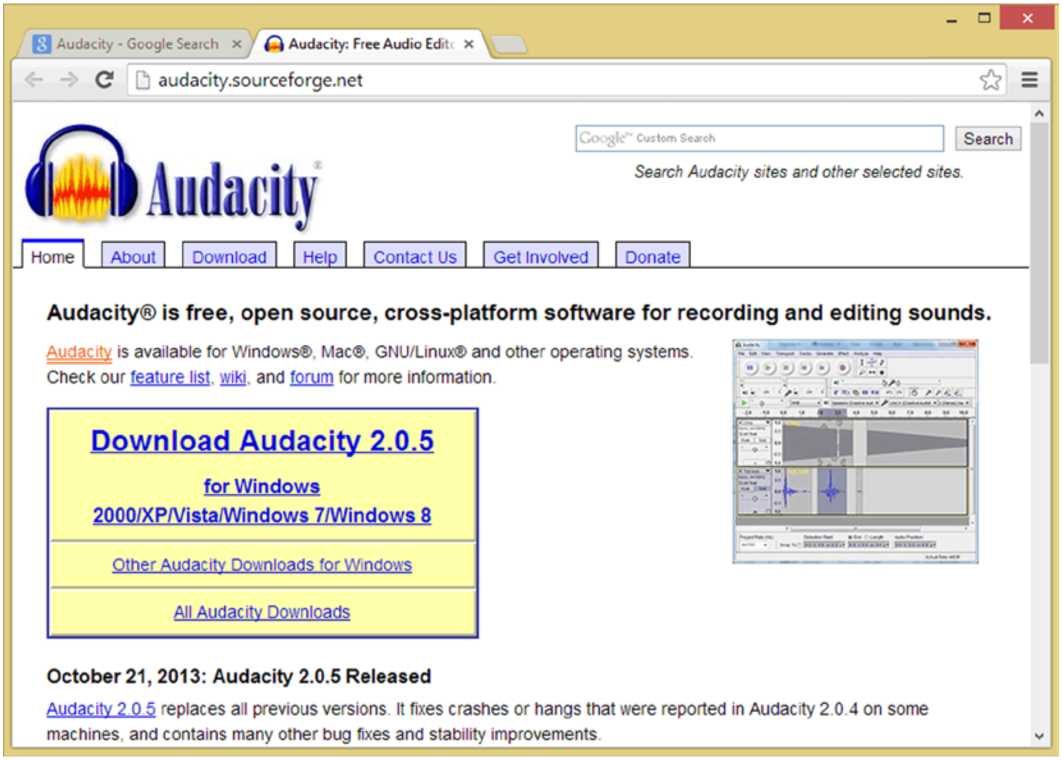
If you like, you can follow the same work process that we did with Eclipse and place a quick launch shortcut icon on your Taskbar by right-clicking the Blender 2.69 icon and selecting Pin to Taskbar. You can reposition launch icons by dragging them into any position you prefer on the Taskbar.

Next, let's download the leading open source Digital Audio software package, Audacity 2.0.5, which is available for Windows, Macintosh, Linux, and other operating systems, in a 32-bit format version.

Digital Audio Editing: Downl oad and Install Audacity 2.0.5

The Audacity project is hosted on **sourceforge.net**, an open source software development website, which you might find extremely interesting, to search for software that interests you if you didn't know about the site already, that is!

To reach the Audacity project, go to the **audacity.sourceforge.net** URL, and you will see the **Download Audacity 2.0.5** link, shown in Figure 1-30.



Audacity® is free, open source, cross-platform software for recording and editing sounds.

Audacity is available for Windows®, Mac®, GNU/Linux® and other operating systems. Check our feature list, wiki, and forum for more information.

Download Audacity 2.0.5
for Windows
2000/XP/Vista/Windows 7/Windows 8

Other Audacity Downloads for Windows

All Audacity Downloads

October 21, 2013: Audacity 2.0.5 Released

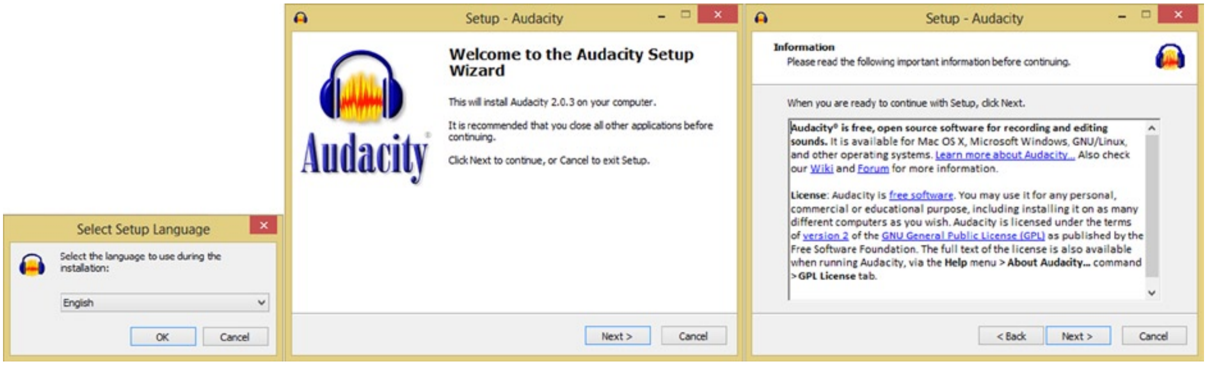
Audacity 2.0.5 replaces all previous versions. It fixes crashes or hangs that were reported in Audacity 2.0.4 on some machines, and contains many other bug fixes and stability improvements.

Figure 1-30. Going to the audacity.sourceforge.net website page and clicking the Download Audacity link

Notice that the 32-bit Audacity supports decades-ancient operating systems such as Windows 2000, well over a decade old, and Windows XP, now almost a decade old. I am hoping that you are using either a Windows 7 or a Windows 8 operating system for your Android development workstations, as these newer two OSes, especially Windows 8.1, which at this point is now almost as memory efficient as Linux OSes are.

Once your Audacity installer file has been downloaded, you can launch it, and proceed to install this feature-filled digital audio editing software.

The first thing that it will ask you is in what language you want to run the software, I selected the default, English, as is shown in Figure 1-31.



Select the language to use during the installation:

English

Welcome to the Audacity Setup Wizard

This will install Audacity 2.0.3 on your computer.

It is recommended that you close all other applications before continuing.

Click Next to continue, or Cancel to exit Setup.

Information

Please read the following important information before continuing.

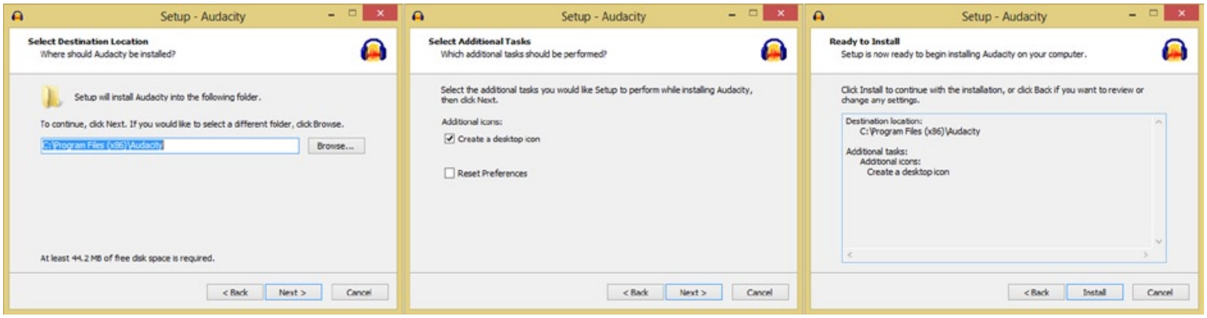
When you are ready to continue with Setup, click Next.

Audacity® is free, open source software for recording and editing sounds. It is available for Mac OS X, Microsoft Windows, GNU/Linux, and other operating systems. Learn more about Audacity... Also check our Wiki and Forum for more information.

License: Audacity is free software. You may use it for any personal, commercial or educational purpose, including installing it on as many different computers as you wish. Audacity is licensed under the terms of version 2 of the GNU General Public License (GPL) as published by the Free Software Foundation. The full text of the license is also available when running Audacity, via the Help menu > About Audacity... command > GPL License tab.

Figure 1-31. Selecting an installation language, starting the Audacity installation, reading the licensing agreement

Then I clicked the Next button and read the information given and then I clicked the Next button again, accepted a default installation location, as shown in Figure 1-32, and Created a desktop icon, in the next dialog.



Select Destination Location

Where should Audacity be installed?

Setup will install Audacity into the following folder.

To continue, click Next. If you would like to select a different folder, click Browse.

C:\Program Files (x86)\Audacity

At least 44.2 MB of free disk space is required.

Select Additional Tasks

Which additional tasks should be performed?

Select the additional tasks you would like Setup to perform while installing Audacity, then click Next.

Additional icons:

☑ Create a desktop icon

□ Reset Preferences

Ready to Install

Setup is now ready to begin installing Audacity on your computer.

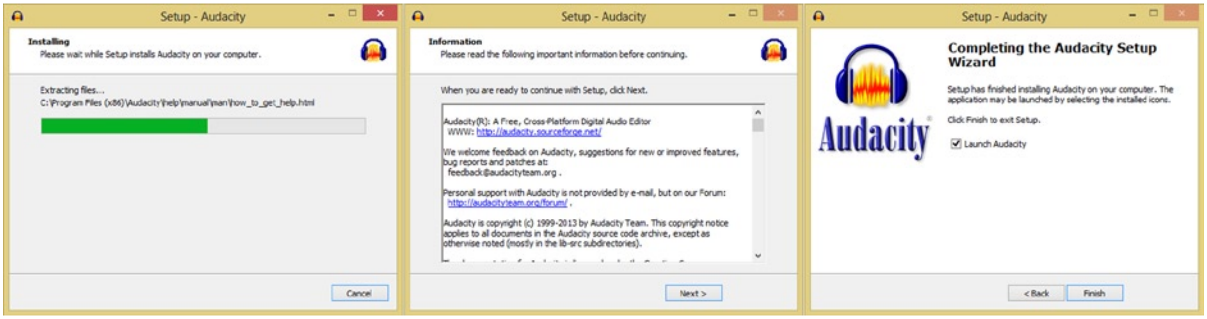
Click Install to continue with the installation, or click Back if you want to review or change any settings.

Destination location:
C:\Program Files (x86)\Audacity

Additional tasks:
Additional icons:
Create a desktop icon

Figure 1-32. Selecting Install Location, Creating a desktop icon and beginning the installation process

Finally, I clicked **Install**, and got the **Installing** progress bar dialog, as shown in Figure 1-33, as well as more information regarding the Audacity project, and a final dialog where I could click the **Finish** button to exit the installer software. Now that Audacity 2.0 is installed, we can launch the software, and make sure that it's working on our system.



Installing

Please wait while Setup installs Audacity on your computer.

Extracting files...
C:\Program Files (x86)\Audacity\help\manual\man\how_to_get_help.html

Information

Please read the following important information before continuing.

When you are ready to continue with Setup, click Next.

Audacity(R): A Free, Cross-Platform Digital Audio Editor
WWW: http://audacity.sourceforge.net/

We welcome feedback on Audacity, suggestions for new or improved features, bug reports and patches at:
feedback@audacityteam.org .

Personal support with Audacity is not provided by e-mail, but on our Forum:
http://audacityteam.org/forum/ .

Audacity is copyright (c) 1999-2013 by Audacity Team. This copyright notice applies to all documents in the Audacity source code archive, except as otherwise noted (mostly in the lib-src subdirectories).

Completing the Audacity Setup Wizard

Setup has finished installing Audacity on your computer. The application may be launched by selecting the installed icons.

Click Finish to exit Setup.

☑ Launch Audacity

Figure 1-33. Extracting installation files, reviewing open source information, finishing the install, and launching Audacity