



to the android-Enabled Phone



Web Geek's Guide to the Android™-Enabled Phone

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ISBN-13: 978-0-7897-3972-8

ISBN-10: 0-7897-3972-0

Library of Congress Cataloging-in-Publication Data:

Ledford, Jerri L.

Web geek's guide to the Android-enabled phone / Jerri Ledford, Bill Zimmerly, Prasanna Amirthalingam.— 1st ed.

p. cm.

ISBN 978-0-7897-3972-8

1. G1 (Smartphone) 2. Android (Electronic resource) 3. Cellular telephones. 4. Google. I. Zimmerly, Bill. II. Amirthalingam, Prasanna. III. Title. IV. Title: Android-enabled phone.

TK6570.M6L32 2010

621.3845'6—dc22

2009032560

Printed in the United States of America

First Printing: September 2009

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Introduction

We live in a time when everything in our lives has to do double duty. Cars serve not only as cars but also as traveling offices, and dinner dates become business meetings or event-planning sessions. So it's no surprise that our devices must also do more than just be a phone, an MP3 player, or a GPS unit. If a device can be all of those, so much the better.

Then there's the Web. We use the Web for everything these days. We don't look up phone numbers anymore; we Google them. We don't look up movies; we Google them. And we don't use a dictionary, thesaurus, map, or cookbook anymore; we Google all the information we need.

In fact, Google is the most used search engine today. And upon activating a web-enabled device, one of the first things people do is open a web browser and navigate to Google.

Google isn't blind to this fact. In fact, the company monitors the number of mobile devices that access the Google search engine and other Google applications. Combine that information with the data that's available about the number of web-enabled mobile devices sold each year—about a billion—and then mix in user behavior. Clearly, we need a web-based operating system that is designed to work well on a mobile platform, enabled with all manner of applications to meet user demands.

IN THIS INTRODUCTION

- The Birth of Android
- How It All Comes Together
- Special Features
- Who Should Read This Book?

The Birth of Android

Enter Andy Rubin and his Android idea. Rubin approached Google seeking financing for his idea. He got a purchase offer that lit the rumor mills on fire. Suddenly, the buzz on the Net was that Google would soon release a cellphone to compete with other web-enabled cellphones.

That wasn't quite true. Google wants no part in manufacturing mobile phones and devices. Manufacturing isn't the company's core competency, and branching into devices would take away precious resources from what Google does best: web-based applications.

Instead, the company spearheaded the Open Handset Alliance. Working with more than 40 companies in the alliance, Google developed the core for a new mobile operating system: Android. But Android is more than just an operating system; it enables developers to create web-based applications that work together with the device to give users truly useful programs.

Now stir into the mix a healthy dose of open source programming, and you've got a whole new way to think about mobile development. In the past, Apple has been the most successful company to develop mobile applications. But Apple keeps a tight rein on developers. Applications must be approved before they're released, and the company isn't keen on allowing multiple apps at the same time in the Apple Marketplace.

What's more, Apple's process of approving an application is long and arduous. Some developers who have created applications specifically for the iPhone or iPod waited weeks before Apple ultimately turned them down.

Android is truly different. Because it's open source, people can use it to collaboratively develop applications. Developers can build applications that become the basis for new applications. All applications have access to the core applications and hardware of an Android-based device.

The Android Market also has the true spirit of open source. Developers are welcome to create applications that they think will be useful and can upload them to the Android Market for other users to access for free or through purchase. Developers simply pay a \$25 registration fee and agree to adhere to a simple set of guidelines, basically stating that the developers will do their best to produce quality applications in a straightforward manner without infringing on someone else's copyrights or defrauding users based on bogus claims.

Anyone with a little time and programming knowledge can produce Android applications. That opens up the mobile phone to a whole new world. Users in specific industries can create applications that others in those industries will

find useful. Similarly, users with specific interests can create applications useful to people who share those interests. And anyone who creates an application can build it from predesigned open source components that have been tried and tested. The result is better, more useful applications for users.

How It All Comes Together

Suddenly, you have the perfect operating system for mobile devices. And you have a community of developers ready and willing to create applications for the device. Now all you need is the device. That's how the T-Mobile G1—the first Android-based device—came onto the scene.

The G1 is a simple device that many criticized for not being sleek or flashy when it first hit the market. However, what the device lacks in fashion, it makes up for in usability, as you'll learn in this book. Still, it didn't take T-Mobile and HTC long to rectify the mistake. Less than a year after the release of the G1 a sleeker, sexier Android-based phone—the T-Mobile myTouch—made its appearance. The myTouch has all the great functionality of its predecessor, just in a prettier package.

Part I: Devices

The book is divided into three sections, each devoted to a different aspect of the Android-based device. Part I, "Devices," focuses on the devices and walks you through how to use them. This part is similar to the owner's manual, but with tips, tricks, and observations thrown in to help you get the most out of whichever device you own.

Part I is a short section of the book—only three chapters. In Chapter 1, "The Theory of the Android Phone," you'll learn a lot more about the theory of the Google phone and how it was created. This is your history lesson. This chapter also includes useful information such as user statistics, in case you're interested in developing applications and want to know what your market might look like.

In Chapter 2, "Getting to Know Android Phones," you really get to know your new device. This chapter walks you through the basics of using the phone, including an introduction to hardware and preinstalled applications on the device.

Chapter 3, "Basic Use of Your Android Phone," covers how to use the basic functions of the phone, such as making calls and sending messages. By the time you're finished with this chapter, you'll know how to use those functions

like a pro. You might already know how to use these functions, but we encourage you to skim through all the chapters in this part anyway. You might discover tips and tricks, shortcuts, or useful capabilities that you didn't already know about.

Part II: The Applications

You may have found the device lacking in visual appeal, but this area of the Android phone will likely impress you. The preinstalled applications and other applications available through the Android Market are much richer and more useful than applications for other types of mobile devices.

Each chapter in this section focuses on a different application or set of applications that is considered a *core application*. These core applications are available on all Android-based devices. You don't have to use them, but because they're either Google based or designed specifically for Android, these applications will probably give you the best experiences. Part II, "The Applications," covers these core applications:

- **Chapter 4, "Core Applications"**—This chapter walks you through using several core applications on the Android-based device, including Contacts, Calendar, Alarm, Calculator, and Camera. This information includes not only the basics on how to use these applications, but also tips and tricks that will make you a power user.
- **Chapter 5, "Going Online"**—Because surfing the Web is the number one reason people seek out web-enabled mobile devices, here you'll find everything you need to know about using the installed web browser. That includes information about controls and settings, and alternatives, just in case you don't care for the browser installed on the device.
- **Chapter 6, "Email Anywhere"**—The Android-based device gives you access to two types of email programs: Gmail and everything else. If you're a Gmail user, you'll find that the Android-based device makes your messaging experiences much richer. But not everyone loves Gmail, so you do have other options. This chapter walks you through using both methods for accessing your email from your mobile device.
- **Chapter 7, "Getting Around with GPS and Google Maps"**—One of the most anticipated features of the Android-based device is Google Maps and the available GPS integration. This chapter outlines the capabilities of those features and walks you through all the controls for those capabilities.

- **Chapter 8, “Breaking Boredom with Entertainment Options”**—No device is complete without a good set of entertainment applications. Many people are completely addicted to music, so, of course, there’s a music application. And without YouTube, many of us would waste away to nothing, so the device also has a YouTube application. You can even get games and other applications through the Android Market. This chapter shows you how to use all these functions.
- **Chapter 9, “Adding Applications to Your Device”**—In addition to the core applications, you’ll probably want to give your Android-based device other capabilities. Maybe you want to take notes, record reminders, or level the picture you’re hanging. You can add these capabilities by downloading applications from the Android Market. This chapter walks you through finding, installing, and rating third-party applications.

Android is really more of an experience than a platform. You can do so much more with a mobile device than just make calls and send messages. Android opens the door for limitless possibilities in the mobile arena, and we look forward to seeing how the whole experience grows in the coming months and years.

Part III: The Android Platform

The final part of this book covers creating applications for your Android phone. If you don’t know anything about programming concepts or JavaScript, you might want to find out about those before you tackle this section of the book. At a minimum, you need to understand the principles of programming and the basics of Java.

If you have those qualifications, however, you can write your own Android-based applications. In this section of the book, we show you how. Don’t worry if you’ve never written an application for a mobile phone. We walk you through the process from beginning to end.

In Chapter 10, “Getting to Know Android,” you’ll find a detailed introduction to the Android platform. This includes everything you need to know about how Android works before you begin to create applications based on the Android platform.

Then in Chapter 11, “Developing Native Android Apps,” you’ll move into the basics of creating mobile web applications. This chapter includes information about how web content is designed differently for Android and tips on how to create mobile applications that perform well.

You really get into the meat of developing applications for Android in Chapter 12, “Developing Mobile Web Applications.” This chapter covers topics such as getting started with the Android SDK and using the necessary add-ons during the programming process. Before you finish reading this chapter, you’ll have a complete development environment in which to build your applications.

With the development environment in place, you can actually start developing applications. Chapter 13, “Advanced Android Apps,” introduces you to some of the most advanced Android applications for your device.

Creating applications for the Android-based device is exciting. Because you can build on open source components, you don’t need to waste time rewriting code that already exists. That means you can spend more time creating functions within applications that people will truly find useful. Even if you think that the application you’re designing will be useful only to you, consider sharing it on the Android Market. You might be surprised by how many other people have the same problems or needs.

Appendixes

Finally, you’ll find two appendixes in this book. Appendix A, “Troubleshooting,” is divided into three sections: troubleshooting device issues, troubleshooting application issues, and troubleshooting design issues. You’ll find questions and answers for some of the most common issues that we encountered when using the device and applications and during programming. This is by no means a complete list of the problems you might encounter, but we hope that the answers here will help if you do encounter problems.

You’ll likely use Appendix B, “G1 Keyboard Shortcuts,” more than any other part of the book. This appendix lists the different keyboard shortcuts that you can use with the applications and features of the Android-based device. You might want to copy this reference tool and post it in the areas where you use the device most often. They’re simple shortcuts, but they’ll reduce the amount of time (and the number of key presses or touches) you’ll need to access some of the applications and features you use most often.

Special Features

As you read through the chapters, you’ll come across a set of special features that are designed to help you pull out important bits of information about the subjects we cover:



Geek Speak—Jargon is frustrating. We do our best to avoid jargon whenever possible, but sometimes it's not possible. These boxes define jargon words in clear language.



No Joke—Be careful! You could damage your device or lose data in some places. These boxes offer cautions to help you avoid damaging the device, application, or data as you work through the steps in the book.



Yellow Box—In the Google culture, the Yellow Box is a search appliance that leads to additional information. Our Yellow Box performs the same function. If you need more information—a useful tip or trick or even a few sentences of deeper information to clarify a concept—you can find it using the Yellow Box.

Privileged Information Sidebar—Sometimes really interesting information relates to the topic at hand, but it's not completely relevant to the steps we're walking you through or the information we're giving you. Maybe the additional information makes it easier for you to understand and use a component. For those cases, a sidebar provides the privileged information you need, or at least a pointer to get you headed in the right direction.

Each of these features contains information that makes this book more useful to you, so, keep your eyes open for them.

Who Should Read This Book?

If you've picked up the book and gotten this far into the Introduction, it's a good bet that you're part of the audience for the book. We're writing for both beginners and intermediate users. Beginners will find all the information that they need to get started using the Android-based device, and intermediate users will find additional tips, tricks, and information on programming Android applications.

If you're an advanced user, you'll probably find only review information in these pages, but an occasional review is good. As we advance into the upper levels of the user kingdom, we often forget some of the basic and simple uses, practices, and applications. Even advanced users might benefit from quickly skimming these pages.

Our goal is to help readers use their Android-based device to the fullest extent possible. We want you to be as excited about Android and Android devices as

we are, so we've worked hard to pass on all the information that we can to help you make the most of them.

Of course, things change. By the time this book hits the shelves, many changes will have occurred that we can't cover here. We've set up a website to help you track those changes. The website www.WebGeeksGuide.com includes a blog with regular updates about products, devices, and applications. You'll also find additional training materials as they become available for new features and applications. And, of course, we welcome your comments about this or any of the other Web Geek's Guides on the website. Use the Contact Us link as often as you want.

Okay, we've blabbered on long enough about basics and features of the book. Let's get on with the book itself. We hope that you find the information you seek and that we've presented it in a way that makes it easy for you to use. Thanks for reading!

Going Online

The first thing users want to do when they get an Internet-enabled cellphone is to go online. That's doubly true if you have a touch phone because the screen is bigger, which means you have more capabilities. The Android phone is no exception. It is a little different, though.

Google backs Android, so the whole operating platform is designed with web functionality in mind. That's part of what makes an Android-based phone so special. Other phones enable you to connect to the Internet, but they don't enable you to interact with it. Android does. And it all starts with the web browser and getting online.

IN THIS CHAPTER

- Getting Connected
- Understanding the Android Browser
- Accessing the Browser

Getting Connected

Before we get too deep into connecting to the Internet, we need to take a detour. Don't worry, we'll get back on the right track. But it's important that you know how connected you can be with the Android phone: All that connectedness can work together to give you a richer Internet experience.

Connection Is More Than Just the Internet

Most of this chapter is about connecting to the Internet and using the web browser, but you can connect in more ways with the Android phone. In addition to your wireless carrier's connection, you can connect to other services, such as these:

- **Wi-Fi**—This is a wireless network similar to what you might have in your home or that you'll find in various places such as coffee shops and restaurants. It enables you to connect to the Internet through a router. These networks might not be secure, so you should understand the risks of connecting to them.
- **Bluetooth**—A Bluetooth connection won't help you get connected to the Internet. In fact, the only thing you can currently use Bluetooth for on the Android phone is to connect to a Bluetooth device for hands-free calling. However, future iterations of Android (and the Android phone) should include Bluetooth capabilities for exchanging files and for connecting to other Bluetooth devices such as audio equipment or printers.
- **Global Positioning System (GPS)**—This is a satellite connection that enables location services such as mapping and even device tracking. This is important because many third-party applications work with both the Internet and the GPS capabilities of the Android phone to enable social networking and other services.

Including the wireless carrier's connection, you have four methods of connecting to services on the Android-based phone. Two of those methods—the wireless carrier's network and the Wi-Fi connection—enable you to connect to the Internet. You're required to have a data plan with the Android phone because the wireless carrier connects to the Internet for everything that it does: calls, syncing, and even text messaging.

Although calls are not routed through the Internet unless you're using a Skype service, the Android phone connects to it as calls are incoming or outgoing. Syncing needs to take place over the Internet because, as you learned in Chapter 4, "Core Applications," most of the Android phone's core

applications are actually web-based versions of Google applications. You can use web-based versions of third-party applications to enhance the other applications.

Text messaging is a form of data transfer all wireless carriers use; a data connection instead of a voice connection. That's why all wireless carriers have separate voice and data plans. It's no different on the Android phone. Your text and multimedia messages travel across a data connection that, in essence, is an Internet connection.

A Bit More on Bluetooth and GPS

The other two connections—Bluetooth and GPS—are used for services such as mapping, tracking, and audio connections. These are standalone services, but developers can also connect them to other applications for use in web-based programs.

However, these two services can seriously drain the Android phone's battery life. Both Bluetooth and GPS have *radio* capabilities. That means they're always on and they're always eating battery life, as if it's fine chocolate.



Radio in an application means that the application sends out a search signal periodically. For example, a GPS radio periodically sends out a GPS signal, trying to locate a GPS network to which it can connect. If no such network is found, the application resends the search signal after a specified amount of time. If a compatible network is found, the application tries to connect to that network. When connected, it remains connected until the network is out of range or is manually disconnected.

To help preserve your battery life, you need to know how to enable the Bluetooth and GPS when you need it and disable it when you don't.

Follow these steps to enable or disable Bluetooth:

1. From the **Home** screen, press the **Menu** key and select **Settings**.
Alternatively, from the **Home** screen, touch the applications menu, and then select **Settings**.
2. The Settings screen opens. Touch **Wireless Controls**.
3. The Wireless controls screen opens, as shown in Figure 5.1. To enable Bluetooth, touch the checkbox to the right of **Bluetooth** to place a check mark in it. To disable it, touch the box again to remove the check mark.
4. When you're finished, press the **Home** key to save your settings and return to the Home screen.

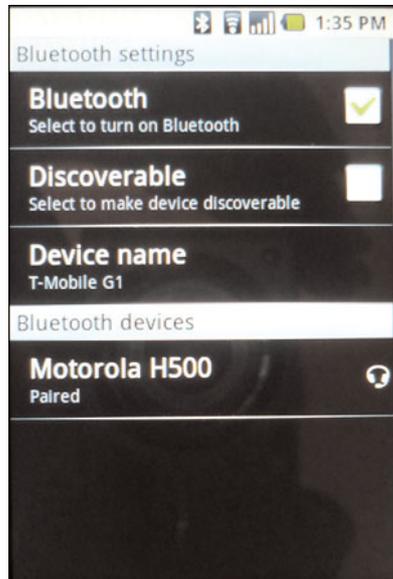
**FIGURE 5.1**

You manage your Bluetooth connectivity and settings from the Wireless Controls screen.

Just because you have Bluetooth enabled doesn't mean that you're connected to another device. To connect the Android phone with a wireless device, you need to go into the Bluetooth Settings menu. When you touch **Bluetooth Settings**, it opens the Bluetooth Settings menu, shown in Figure 5.2. If you want your device to be *discoverable* by other devices, touch the checkbox to the right of **Discoverable** to enable that feature. To turn off discoverability, touch the box again. If you want to have other devices connected to the Android phone, the Discoverable option must be selected.

The Bluetooth settings page also shows your device name and a list of the Bluetooth devices that you have paired with. If you no longer want to connect with a device on that list, long-touch the device name, and then select **Unpair**. This removes the pairing relationship. You can also long-touch a device name to connect to it.

To pair the Android phone with another Bluetooth device, make sure it's discoverable, and then put the other device in pairing mode. That device should recognize the Android phone; then you're prompted on the Android phone to create the pairing. Select the Pairing option and enter the security code (if one exists); the pairing then is complete. After you've paired a device with the Android phone, they will pair up automatically each time the device is operational and the Android phone is discoverable.

**FIGURE 5.2**

Use the Bluetooth Settings menu to turn Bluetooth on, to make it discoverable, or to see what devices you have a pairing relationship with.

**Yellow
Box**

Remember that currently you can use the Android phone only with Bluetooth headsets, not with other Bluetooth devices. Although you might be able to pair the Android phone with other devices, attempting to transfer files between them will result in an error. Hopefully, Bluetooth applications that support additional Bluetooth capabilities will be added to the Android Market in the future.

Enabling and disabling the GPS system works the same way; however, those controls are located in a slightly different spot. Chapter 7, “Getting Around with GPS and Google Maps,” further explains the device’s GPS capabilities and associated applications. For now, these steps will help you enable or disable your GPS capabilities:

1. From the **Home** screen, press the **Menu** key and select **Settings**. Alternatively, from the **Home** screen, touch the **Applications** menu and then select **Settings**.
2. The Settings screen opens. Touch **Security and Location**.

3. The **My Location Sources** screen, shown in Figure 5.3, opens. To enable GPS, touch the checkbox to the right of **Enable GPS Satellites** to place a check mark in it. To disable it, touch the box again to remove the check mark.



FIGURE 5.3

My Location Sources enables you to select whether you want to use the GPS capabilities, in addition to other options.

4. When you're finished, press the **Home** key to save your settings and return to the Home screen.

A third-party application makes it easier to enable or disable GPS, Bluetooth, and a handful of other capabilities. The application, called Toggle Settings, enables you to toggle on and off the different networking services and some of the different settings on your phone (such as brightness and vibrate). If you place a shortcut to the application on your Home screen, you can turn services on or off with two touches, in most cases. You can find Toggle Settings in the Android Market.

**Yellow
Box**

Adding a shortcut to your Home screen is easy. Just open the applications menu and long-touch the application for which you want to add a shortcut. When you feel the device vibrate briefly, drag the icon to the Home screen. If you want to remove the icon, long-touch it again until the device vibrates, drag it to the application menu launcher (which changes to look like a trash can), and release it. The shortcut is removed from your Home screen.

The Important Stuff: Wi-Fi

Connecting through the GPS or Bluetooth applications is cool. It enables you to access some more useful features on the phone. But the real fun comes when you connect to Wi-Fi. Wi-Fi enables you to connect to the Internet through an existing wireless network, without being charged for the data transfer.

This is important. If you're using a limited data plan and you use more than your allotted amount of data transfer (and data transfers every time you connect to the Web, load a web page, download a file, or do anything while you're online), you could wind up with a shocking wireless bill. Avoid the heart attack.

UNDERSTANDING WIRELESS DATA PLANS

Wireless data plans can be confusing. Sometimes you think you're getting unlimited connection capabilities, but then when your bill comes in, you find out that your idea of connection and your wireless company's idea of connection are two different things. That's why it's always best to understand how you use your phone before you purchase a data plan. Then make sure you know what you're getting in the data plan.

You should have a good idea of how much you use your phone to talk, text, surf the Web, and instant-message other people. However, it's best if you have more than a good idea when you're looking at a new data plan. Consider reviewing your last three months' bills and averaging out the number of text messages that you use each month, the number of data transfers that you use each month, and so on. And don't forget to factor in that your new G1 is specifically designed to surf the

Web, so you might spend more time doing some of those activities than you did in the past.

With your usage calculated, you can begin to look for plans. But beware: A data plan doesn't necessarily mean that you're getting web usage *and* messaging. Make sure you understand exactly what's included in the plan before you sign a contract. Some companies offer web usage and messaging as separate packages unless you're willing to shell out a pile of cash.

You can change service plans inside a contract, but it's never good to get that \$500 phone bill because you thought all your messaging was included when it wasn't. Know what you're getting and avoid those nasty surprises.

Instead of risking a ridiculous bill, connect through the available wireless capability on your phone. It's easy. These steps should help you create the connection:

No Joke

The following steps mention connecting to an unsecured wireless network. Always use caution when connecting to an unsecured network, especially on a handheld device that has minimal security. Any information on your device is wide open to hackers who are on the network and know how to access your device from their computers. It's always preferable to connect to a secure network that has a limited number of users.

1. Make sure you're within range of either a wireless network that has open security or one that you have the network key available to access.
2. From the **Home** screen on your device, press the **Menu** key and then touch **Settings**. Alternatively, you can open the applications menu and touch **Settings**.
3. This opens the Settings page. Touch **Wireless Controls**.
4. You are taken to the Wireless Controls page (refer to Figure 5.1).
5. You need to turn on your wireless capabilities so that your phone can connect with an available wireless network. Place a check mark in the checkbox to the right of **Wi-Fi** to turn on the Wi-Fi capabilities.
6. Alternatively, you can turn on the Wi-Fi capabilities by touching **Wi-Fi Settings** and then placing a check mark in the box next to **Wi-Fi** on

the Wi-Fi Settings page, shown in Figure 5.4. When you back out of this option using the **Back** key, you'll see that the **Wi-Fi** option on the previous screen is selected.

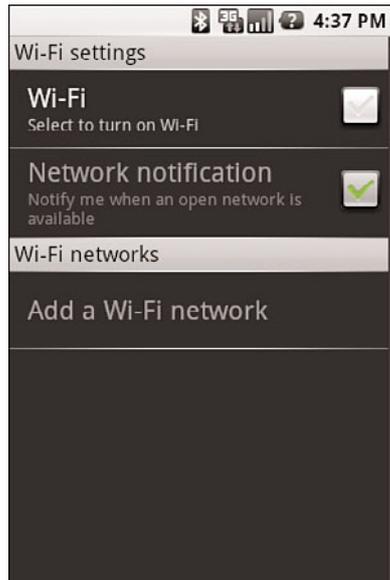


FIGURE 5.4

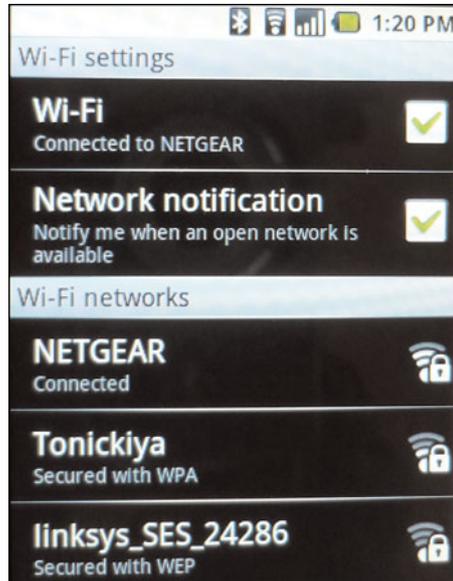
You can turn on Wi-Fi from within the Wi-Fi Settings screen.

7. When you select to enable Wi-Fi on the Wi-Fi Settings page, you should see a list of **Wi-Fi Networks** appear, as shown in Figure 5.5. Select your network.

**Yellow
Box**

If you've never connected to your Wi-Fi network (or if you're connecting to a different network than your own) and your network is secured, you'll receive a connection prompt requesting the password for your network. You can select the **Show Password** option to show the characters of the password you're entering instead of hiding them. When you've entered the network password, touch **Connect** to create your network connection.

8. When you've created a network connection, you will automatically be connected to that network each time your device is in range and your Wi-Fi capabilities are enabled.

**FIGURE 5.5**

Select your wireless network from the list of available networks.

Sometimes your network doesn't appear on the list of available networks. This can occur when you've created a new network and the device has not yet recognized it. To set up a new or unrecognized network so that you can connect to it, use these steps:

1. If your network isn't showing as an available network on the Wi-Fi Networks list, you can always add it by scrolling to the end of the list and touching **Add a Wi-Fi Network**.
2. The Add a Wi-Fi Network form appears. Enter the network Service Set Identifier (SSID—that's the name of the network).
3. From the **Security** drop-down menu, select the network security type.
4. Touch **Save** to add the network to the list.
5. Connect to the network using the same steps you used to connect to other networks.

Connecting to the Wi-Fi network is really that easy, and it's your key to being able to surf the Web without running up massive data transfer charges. The best part is that free Wi-Fi hotspots are widely available—in coffeehouses, restaurants, hotels, and even some businesses. Now that you're connected, you can start surfing (and everything else that comes along with a Wi-Fi connection).

Understanding the Android Browser

One of the most anticipated applications on the Android platform is the web browser. Not surprisingly, many people are looking to Android and the Android phone to be a fully functional web device that offers a surfing experience close to that of a laptop or desktop.

With the release of the Google Chrome web browser just weeks before the official announcement of the Android phone, many experts believed that the web browser included with the Android phone would be a mobile version of Chrome that was quickly dubbed “Chrome Lite.” That assumption wasn’t entirely correct, but many people still refer to the browser as Chrome Lite.

The browser that’s included with Android is actually built on an application called WebKit, which is an integral part of Google Chrome. WebKit is an open source rendering engine that enables the web browser to quickly scale and rescale a website to provide the most “normal” view of the Web possible on a mobile device. This means that when you pull up a web page on your Android phone, you see the actual page, not a scaled-down, mobile version of the page.

It also means that the Android phone loads web browser pages faster than most other mobile web devices because of the way WebKit renders the pages. It takes two passes at the pages, loading first the “easy” elements of the page and then the page elements that take longer to download. This gives you the appearance of a faster-loading page and enables you to surf with fewer interruptions.

Users have only one complaint about the web browser so far: It doesn’t support Flash. However, it’s believed that Google will add support for Flash during a future update, and it will most likely appear on future Android-based devices. Of course, this isn’t the official word from Google or the Android developers, so it’s also possible (although not likely) that Flash support will never be part of the Android web browser.

Accessing the Browser

To surf the Web, you must have an application that acts as an interface: a web browser. Having deep roots in web usability, Android comes equipped with a web browser that’s fairly intuitive to use. Accessing the browser is easy: Simply touch the **Browser** icon on the Home screen, as shown in Figure 5.6.

If you’ve deleted your browser icon from the Home screen for some reason, you can also access it by opening the applications menu and then touching the **Browser** icon, as shown in Figure 5.7.

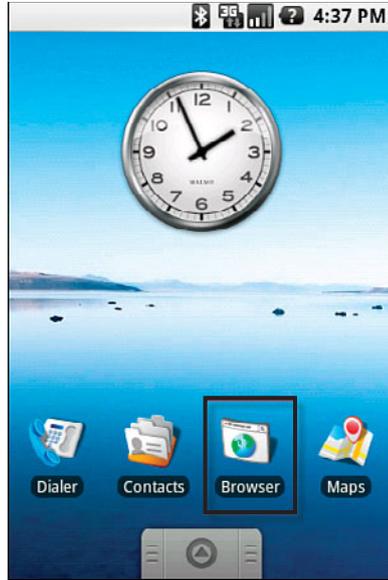


FIGURE 5.6
The Browser icon appears on the Home screen the first time you turn on your Android Phone.



FIGURE 5.7
A Browser icon is also located in the applications menu.

Browser Controls

When opening the web browser, a new page automatically loads. So far, it's close to the same browsing experience that you've always had on your desktop or laptop computer. Navigation is similar, but is controlled by finger gestures and the scroll ball on the device.

The first thing that you'll notice as you're navigating a page is that as soon as you start to move the page around, a small set of controls appears in the lower portion of the web page. These controls, shown in Figure 5.8, enable you to zoom in or out of a web page, and to shrink the page to select a portion of it instead of scrolling from top to bottom or left to right, as shown in Figure 5.9.



FIGURE 5.8

Zoom controls enable you to zoom in or out on any web page. The cross-hair selector enables you to shrink a page and select a specific area of it.



FIGURE 5.9

You can shrink a page and select a portion of that page to jump to instead of scrolling through the whole page.

When you touch either the plus or minus sign to zoom in or out on a page, you'll notice that most pages *reflow* automatically. This means the content on the page redistributes to fit within the browser window and reduces the

amount of left-to-right scrolling needed. It works on most pages, but it's a useful feature in a web browser.



Reflow means to redistribute. In the case of website content, reflowing occurs when a user zooms in or out on a page. The text is resized and redistributed to reduce the amount of right-to-left scrolling that is necessary to see all the content on the page. However, reflowing the page does make it longer, so it becomes necessary to scroll up and down more.

Link Menus

In addition to these onscreen controls, you have some touch and navigation options. For example, when you're on a web page that contains web links, you can touch a link to navigate to that page, or you can long-touch that link to open a new menu of available actions. Those actions include the following:

- **Open**—Opens the page.
- **Open in New Window**—Opens the link in a new window.
- **Bookmark Link**—Adds that link (not the page the link is on) to your bookmarks.
- **Save Link**—Downloads a copy of the link to your download history. After it's there, you can go back and access the page offline when you're ready to view it. Note that when you choose this option, graphics won't display on the page when you load it.
- **Share Link**—Sends the link to someone else using the email application that you have set up on your phone. You'll learn more about email on the Android Phone in Chapter 6, "Email Anywhere."
- **Copy Link URL**—Copies the link address. You can then enter it into the web browser when you're finished looking over the page, or you can open a second page to open the link in.

Multiple Page Instances

You might have noticed that we referred to opening additional web pages. The web browser on the Android Phone doesn't have the tab capabilities that you've probably become accustomed to with PC-based browsers. However, it does have the capability to open multiple web pages as separate instances, similar to tabbed browsing. The difference is in how you access those pages.

To open a separate instance of a web page, you can choose that option from the link menu, as mentioned previously. Or use the following option, which works best if you're not following a link:

1. With the web browser open, press the **Menu** key.
2. Touch the **Window** icon on the menu that appears. You move a **Current Windows** screen, shown in Figure 5.10.



FIGURE 5.10

Your open browser windows appear on this page. You can have up to eight browser windows open at a time.

3. Touch the **New Window** option. A new web page (also called a window) opens to your default home page.
4. To switch between the two windows, use the same steps to display the open windows and select the one you want to view.

You can open up to eight browser windows at a time. When you reach eight, you won't have the **New Window** option again until you close one of the pages.

To close a browser window that you no longer need, just open the **Window** option and then touch the **X** in the bottom-right corner of the page that you want to close.

Go to URL

When you pressed the Menu key from inside the browser, you probably noticed several other options. One of those options was **Go to URL**. When you touch this button, an address bar opens at the top of whatever web page you're on, as shown in Figure 5.11.

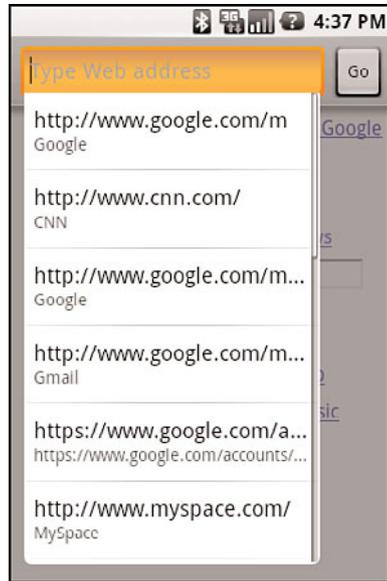


FIGURE 5.11

Type a web address into the address bar or select from the addresses that are shown in the drop-down menu.

Below the address bar, a drop-down menu appears. This menu contains a list of all the web addresses you've visited since the last time you cleared the browser cache. It's easier just to select the address you need from the list than to open the keyboard and type it again if you're visiting a web page that you've visited in the recent past.

Search

One of the neat features about the Android phone and other Android-based devices is that you have a search window available without needing to open a web browser. On the Android phone, the search window is on the right side of the Home screen. You can't see it all the time, but if you sweep your finger to the left, the page scrolls and you see the search box shown in Figure 5.12.

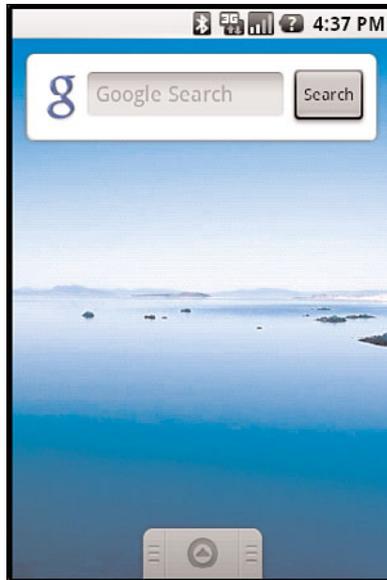


FIGURE 5.12

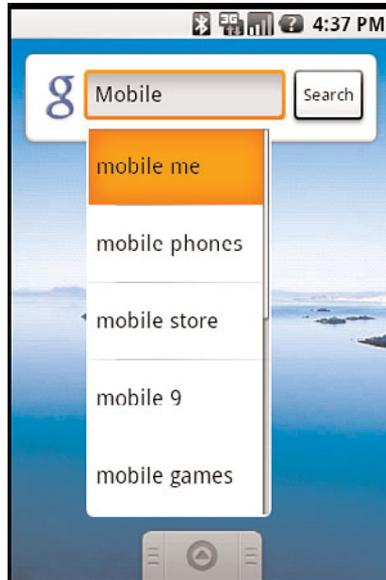
A Google search box is built into the Home screen of the Android phone; you just need to sweep your finger to the left side of the screen to find it.

But what if you're already surfing the Web and don't want to close out of the browser to have access to search? That option is available in the Browser menu. Just press the **Menu** key from within the browser and touch **Search**.

The page that you're currently viewing dims and a search box opens at the top of the screen. However, when you type your search term into the box and touch the **Search** key, the search results replace the web page that you were previously surfing. A new window doesn't open.

One cool feature of both search options is that suggestive search terms appear as you're typing, as shown in Figure 5.13. Just begin typing the term that you want to search for, and the search bar begins suggesting autofills that might be appropriate. If you see the search term you want in the suggested list of terms, just touch it to perform the search.

The search on an Android-based phone, even the Android phone, is Google based. This makes sense, because Google is the driving force behind Android. But the Google search engine is also one of the easiest to use, and it returns some of the best search results on the Web.

**FIGURE 5.13**

As you begin to type a term into the search bar, a list of suggested keywords and phrases appears. The list narrows as you type.

Bookmarks

As you surf the Web, you're sure to find pages that you want to return to at another time. The browser has a bookmark option that you can find by pressing the **Menu** key.

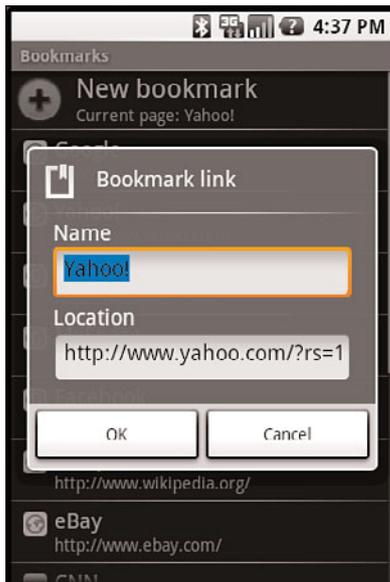
To add a bookmark, press the **Menu** key. Then when the **Bookmarks** menu shown in Figure 5.14 appears, touch the **New Bookmark** option.

The **Bookmark Link** window appears, as shown in Figure 5.15. Enter a **Name** for the bookmark if you don't want the one that's suggested, and then check the **Location** to be sure it's the URL you want to bookmark. If it's not, you can change it. When you're done, touch **OK** to save the bookmark.

One option that you won't find on the Bookmarks page is the option to manage your bookmarks—rearrange, edit, and delete them. You can edit and delete them, but you can't rearrange them. The order in which the bookmarks appear in the window is the order in which you've entered them, from oldest to newest, and that's the only order option that you have.

**FIGURE 5.14**

The Bookmarks page shows a list of the bookmarks you've created and an option for creating new bookmarks.

**FIGURE 5.15**

Use the Bookmark Link window to create a bookmark for the page that you're on or for any other page that you know the web address to.

However, you have options to edit or delete your bookmarks. You can find these capabilities in the individual menu for each bookmark. To get to that menu, long-press the bookmark that you want to change or delete. A menu such as the one shown in Figure 5.16 appears.

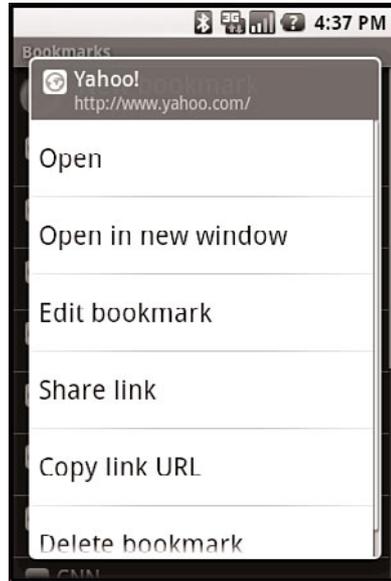


FIGURE 5.16

Each bookmarked link has an individual menu that enables you to open, edit, and delete the bookmark.

More options appear on this menu than just editing and deleting. The full list of menu options includes the following:

- **Open**—Opens the bookmarked URL in the same browser window that you’re currently using.
- **Open in New Window**—Opens the bookmarked URL in a new browser window, preserving the browser window that you’re currently using.
- **Edit Bookmark**—Opens the Bookmark Link window to enable you to edit the name or URL of the bookmark.
- **Share Link**—Opens a Gmail message to enable you to send the link to someone else. Enter the email address of the intended recipient, add a subject and body text if you want, and then touch **Send** to send the message with the link included.

- **Copy Link URL**—Copies the URL to the Clipboard so you can paste it in a different location.
- **Delete Bookmark**—Deletes the bookmark completely. When deleted, the only way to add back a bookmark is to re-create it from scratch. When you select the delete option, you receive a confirmation message before the bookmark is deleted completely.

One last option on the Bookmarks page that you might find useful is the capability to bookmark the last page you viewed. From the **Bookmarks** page, press the **Menu** key. The option **Bookmark Last-Viewed Page** comes up. Touch that option to open the **Bookmark Link** window. As with creating a new bookmark, the bookmark information is already filled in. All you have to do is ensure that it's correct.

Refresh

Some web pages change frequently. For example, if you're on a web-based email page, new emails might be coming in at any time. However, on most pages that have changing content, either you have to wait for the browser to refresh automatically—usually that option is scheduled to happen every few minutes—or you can refresh the page.

In the Android phone's web browser, you can refresh at any time by selecting the **Refresh** option from the browser menu. Just touch the option and the page reloads. Then any changes appear that have taken place on the page since the last time it automatically refreshed or since you entered the page.

Additional Browser Options

One last option on the browser menu is the **More** icon. When you open the More option, it brings up a whole new menu (or submenu) of available options, as shown in Figure 5.17. Those options include the following:

- **Back**—Takes you back to the previous page.
- **Forward**—If you navigated back to a previous page, returns you to the last page.
- **Home Page**—Takes you to your home page.
- **History**—Shows a history of the pages you've visited. You can clear the history by pressing the **Menu** key while on the history page. The **Clear History** option appears; touch it to delete your entire history.

- **Downloads**—Takes you to a page that displays your download history. Touch any one of the files to go to that file, or press the **Menu** key to open the options to **Clear List** or **Cancel Download** (if a download is in progress).
- **Page Info**—Shows the title and web address of the page you're currently visiting. This information opens in a pop-up window. When you're done viewing it, touch **OK** to close the window.
- **Bookmark Page**—Takes you to the New Bookmark page that you saw previously. This is just an alternative way to bookmark web pages.
- **Share Page**—Opens a Gmail message with the URL for the current page included. Enter an email address, add a subject and any body text that you want to add, and then press **Send** to send the message with the link included.
- **Flip Orientation**—Changes the orientation of the browser from landscape to portrait. You can also accomplish the same task by opening the slide-out keyboard. However, when you use the **Flip Orientation** option in this menu to display the browser in landscape mode, it remains that way even when the keyboard is closed.
- **Zoom**—Opens the zoom controls for the web page. You can access the same controls by moving the page with your finger.

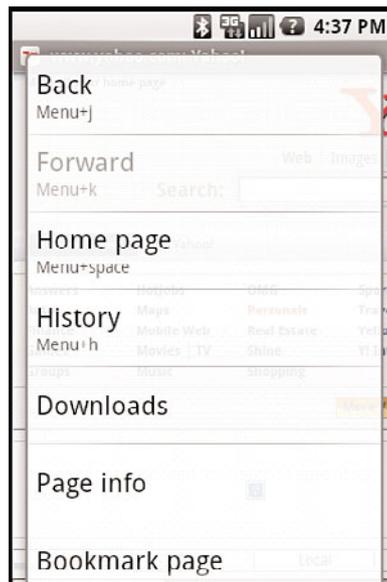


FIGURE 5.17

Additional browser options give you more navigation capabilities when surfing the Web.

Settings

A whole world of options is available in the **Settings** option within the **More** option of the browser menu.

An extensive menu appears when you touch the Settings option. It enables you to make adjustments to Page Content settings, Privacy settings, Security settings, and Advanced settings.

Page Content Settings

Page Content settings are pretty basic. The first option you have is **Text Size**. This enables you to adjust the text on a displayed web page to **Tiny**, **Small**, **Normal**, **Large**, or **Huge**. Just touch the text size that you want to use and then touch **OK** to set it. You might want to play with it to find the size that works best for you.

Your next option is **Block Pop-Up Windows**. Just place a check mark in the checkbox to the right of the option to turn on pop-up blocking, or remove the check mark to turn it off. Some websites require you to disable pop-up blocking to interact with the site, but we recommend that you keep pop-up blocking enabled unless you're on a site for which you know you need to disable it. *Phishers* and other cybercriminals often use pop-ups to load malware to your system or to entice you to provide personal information that they use to commit identity theft.



Phishers are cybercriminals that “fish” around trying to collect bits and pieces of your personal information for the purposes of stealing your identity. These criminals might use emails to entice you to send personal information such as usernames and passwords, or even credit card or banking information online. When you do, the criminal collects it, resells it to someone else, who uses it for their own personal financial gain, no matter what the cost to you.

Load Images is another option in the Page Content settings. This option determines whether images on web pages are automatically loaded. For the best web experience, enable Load Images; for the fastest experience, disable it. In the past, surfing the Web on a mobile device was a painful process because you got either scaled-down pages meant for mobile surfing or pages that weren't made to display on small screens. The reflowing capability of the Android phone makes surfing the Web on your device a more pleasant experience. However, if you don't want pages that are automatically scaled to fit your screen, you can manage that feature through the **Auto-Fit Pages** option. Turn on the option to reflow pages to your device size; turn it off to show the

original size of the page. Just be aware that with the Auto-Fit option turned off, you need to do a lot more left-to-right scrolling.

The capability to access JavaScript content in the browser is another Android phone feature that makes surfing the web more enjoyable. JavaScript content provides richer capabilities when searching online. However, some people worry that it can be a security risk. If you're one of those people, you can turn JavaScript off (or back on) using the **Enable JavaScript** option.

As you're navigating the Web, you might find it frustrating that pages opening in a new window appear in front of the page you were surfing on. Remember that you can switch between windows. You can also enable the **Open in Background** option to open new windows behind the page that you're currently visiting. This enables you to finish your surfing on the page that you're viewing before you're forced to move on to the next window.

The last option in the Page Content settings window is **Set Home Page**. If you have a favorite website that you want to use as your home page, you can set that up here. Just touch the option, and the **Set Home Page** window appears, as shown in Figure 5.18. Type the URL of the web page that you want to use as your home page into the box provided and select **OK** to save it. The next time you open your browser, you'll be taken to that page instead of the default home page.

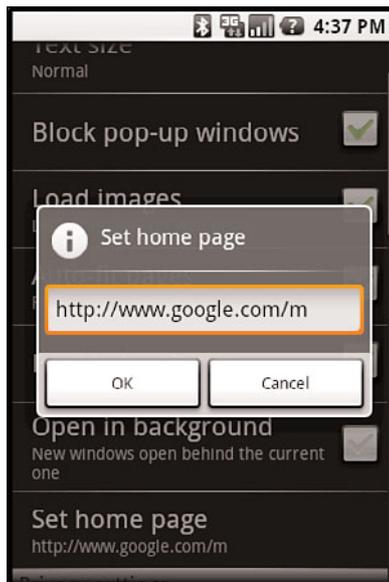


FIGURE 5.18

Enter the URL for the web page that you want to use as your home page, and touch OK to save it.

Privacy Settings

Privacy is a big deal on the Internet, including the mobile web. You don't want other people to have access to your personal information or be able to track your movements while you're online.

The first three options in the Privacy Settings section of the Settings menu—Clear Cache, Clear History, and Accept Cookies—are options that you can use to protect your privacy. Touch **Clear Cache** and **Clear History** to remove past web pages and cookies from your browser cache. This makes it harder for others to track your movements online.

Enable or disable **Accept Cookies** to accept or decline cookie data. Cookies are small snippets of data that websites place in your browser cache to help them recognize you when you navigate to them. This is how Amazon.com always knows who you are, even when you're not technically signed into your account. It's also how many websites remember your personalization settings, and how they know what pages you visit while you're on their site. Declining cookies removes some of the personalization from your browsing experience, but it also keeps you safe if you're worried about your online movements being tracked.

If you want to clear your cookie data, you can select the **Clear All Cookie Data** option. This opens a confirmation window. Select **OK** to clear the data or **Cancel** to return to the Settings menu without clearing the data.

The final two options in this section of the menu relate to form data. Form data is the information that you enter into forms on the Web. This includes your name, usernames, passwords, addresses, and other information that might be requested when you're filling out a form online.

Entering that information from a mobile device can be time consuming, so the browser has the option to **Remember Form Data**. Select this option to enable it, or deselect to disable it. If you deselect the option, you'll need to enter form data each time you encounter a form.

You can clear the form data at any time by selecting the **Clear Form Data** option. When you touch this option, a confirmation window appears prompting you to confirm that you want to clear the data. Touch **OK** to clear it and **Cancel** to return to the settings menu.

Security Settings

You'll find only three options in the Security Settings section of the menu. Two of these options relate to passwords. You can choose to remember website passwords by selecting the **Remember Passwords** options, or you can turn off this option by deselecting it.

Because passwords change, you might need to clear the passwords that you have stored and reenter them. Touch the **Clear Passwords** option to remove all the passwords that you have stored. The next time you enter a password-protected website, you'll be prompted to enter your password again. But if you have the **Remember Passwords** option enabled, you won't be prompted to enter it on subsequent visits. Also, you'll receive a confirmation message before the passwords are cleared. Touch **OK** to clear the passwords and **Cancel** to return to the menu without clearing them.

The other option in Security Settings is **Show Security Warnings**. If this option is enabled and you try to enter a website that has problems with a security certificate, you'll see a warning about the site. When it's disabled, you'll receive no warnings. If you want to be sure that you always know the website you're surfing is safe, leave this option enabled.

Advanced Settings

The last section of the Settings menu includes three advanced settings that you might find useful. Two of the settings relate to Google Gears, a browser extension that enables developers to create browser-based applications that can run offline. For example, some databases can run within a browser, but Google Gears can make it possible to run that database within the browser, even when your device is not signed in online.

To enable or disable Google Gears on your device, touch the **Enable Gears** option. The other Gears option is **Gears Settings**. Touch this option to open a window that shows a table of the sites that you have granted permission to use Gears. At this time, Gears isn't commonly used, so your list might be small or even nonexistent (see Figure 5.19). In the future, however, as more developers take advantage of Gears, that list will grow.

The last option in the Settings menu is **Reset to Default**. This option clears all your browser data—including bookmarks, passwords, and all the settings that you have personalized—and returns everything to the original settings that your browser had when you first turned on the device. Use this option only if you're sure that you want to completely reset your browser. When you touch the **Reset to Default** option, you'll receive a confirmation message. Select **OK** to reset everything and **Cancel** to return to the Settings page.

The browser has more capabilities than you might expect when you first open it. But because Android is designed to take full advantage of the Web on a mobile level, you should expect no less. Still, some people find that the browser isn't quite what they're looking for. For those people, Opera Mini is

available in Android Market as an alternative to the browser that's pre-installed on the G1. If you're an Opera user, you might be more comfortable with the Mini than with the Android browser.

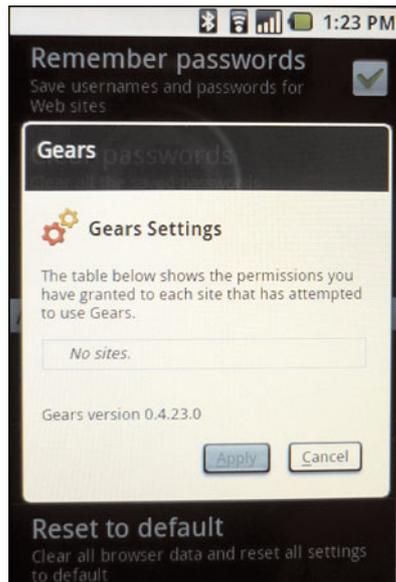


FIGURE 5.19

The Gears Settings window shows a table of the websites that you have enabled to use Gears on your device.

Closing the Door

Whew! We've given you a lot of browser information. You can start surfing the Web the instant you turn on your phone, but so many customization options exist and so many navigation controls are available that it can take a little time to get everything set up the way you're most comfortable using it.

Now that you've set up the browser to work the way you want it to, it's time to have a little fun. In the next chapter, we look at the email capabilities of your Android phone. Those capabilities include Gmail, but you can also access other web-based email programs. You'll learn how in Chapter 6.

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