

Chapter 1

Google Saves the Day, Every Day

In This Chapter

- ▶ Getting an overview of Google's many services and search realms
 - ▶ Uncovering the hidden side of Google's business services
 - ▶ Introducing Google's tools for programmers
 - ▶ Understanding why Google is better . . . much better
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You're about to embark on an adventure that will stimulate your mind and gratify the most urgent desires of your soul. Then, when you've finished watching *American Idol*, you'll start discovering Google.

I know what you're saying: You've already discovered Google. Who hasn't? Not since the early Web days of 1994 and 1995, when everybody surfed through Yahoo!, have people flocked so overwhelmingly to a search engine as they do to Google. Google not only revitalized the search industry but also saved worthy information from obscurity and rescued countless users from the frustration of futile searching.

During the time since Yahoo! got the ball rolling, many keyword-oriented search engines have come. Many have gone. Some remain, offering specialty searches or emulating Google. (Imitation and flattery — you know the drill.)

Now, with *Googling* a common term in the mainstream vernacular, general searching of the Web has become standardized into a universal ritual. Anybody wanting to find an online destination follows this three-step process:

1. Go to Google.
2. Type a few words related to the search goal.
3. Click the search results to visit relevant Web sites.

All well and good. Google is lightning fast and devastatingly accurate. And the chapters in Part II dismantle general searching to help you maximize your basic Google experience. But as it turns out, general Web searching is just the tip of the Google iceberg.

Note: The Google home page is located, naturally, at this URL:

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www.google.com
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Any user, worldwide, can use that page to get the American version of Google. However, Google operates national versions of its service, using the domain suffix unique to those countries. Again, each of these national versions can be called up by anyone in any country. Here are a few examples:

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www.google.ca (Canada)
www.google.fr (France)
www.google.co.uk (England)
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Beyond Keywords

The term *search engine*, so apt for the lumbering, early-generation monsters that crunched through the Web looking for sites, seems only fractionally fitting for Google. Rather, Google should be called an information engine. Or a knowledge life-form. The stuff you get from Google might come from its vast and smart index of Web pages, or it might come from other indices seamlessly woven into the core data dump. Some of the usefulness that you can pry out of Google, such as Weblogging, comes from autonomous companies that Google has acquired and put under its service umbrella. However you use Google, greater awareness of what's under the hood is certain to make your online life easier, better informed, and more fluid.

The following sections furnish a quick survey of Google's information engine, including and beyond general keyword searching.

Finding all sorts of stuff

In Google, basic Web searching couldn't be simpler. The next chapter covers the basics, plus powerful ways of grabbing the information you want quickly. In addition to offering traditional Web searching, Google blends other types of searching into the basic keyword process:

- ✓ **Google Directory:** Yahoo! set the standard of integrated searching (through a keyword engine) and browsing (through a topical directory). In the beginning, Yahoo!'s search engine searched the directory, which was carefully hand-constructed by a staff of editors. Yahoo! still builds its directory manually. Google also presents a topical directory for browsing, and you can search it separately from the basic Web search. See Chapter 7.

Life without Google

In my life as an online citizen (no, I don't get out much), two destinations are indispensable. One is Yahoo!, a gargantuan domain that provides more free services than a sane person would try to count. The other is Google, which makes my virtual movements faster and more exact than ever. Online life without either is inconceivable. The amazing thing is that Google has been around only since the fall of 1999. Yahoo! has been building its reputation and service platform for more than ten years. (May 1, 2005, was Yahoo!'s tenth birthday.) And it can be argued that Google has embedded itself into the lifestyles of ordinary Internet citizens and the business practices of companies more profoundly and securely than Yahoo! has. Whereas Yahoo! spent millions on the "Do you Yahoo!?" ad campaign, everybody started saying "Google this" and "Google that" with little or no formal advertising from Google.

Yahoo! is certainly more diversified than Google, with a portion of its empire devoted to nearly every activity in which a person could engage online: playing games, booking travel,

researching stocks, meeting a soul mate, chatting about nothing, watching music videos — on and on and on. Yahoo! operates the most popular G-rated, legal, free activity platform on the open Internet; in March 2005 Yahoo! had 165 million registered users and 345 million unique monthly visitors. With all this, Yahoo! has, until recently, forsaken its roots as a search engine and left the fertile field of keyword matching open to Google.

I wrote *Yahoo! For Dummies* and *Google For Dummies*. Each service is a cornerstone of the Internet. Prediction is a risky business, but when I'm in a divining mood, I can easily see Google becoming the most important online service in history, approaching the geek-idealist's dream of indexing every bit of human knowledge and virtual expression, with an awareness of the surrounding context and with each contribution ranked by its peers and instantly accessible. A foolish vision? The surprising part is how closely Google is chasing it already.

Life without Google? With each passing day, the thought becomes more inconceivable.

- ✔ **Newsgroup reader:** Newsgroups make up the portion of the Internet called Usenet, which is far older (and probably still bigger in some measure) than the Web. It has more than fifty thousand groups, organized by topic, covering everything from astrophysics to David Letterman. Usenet is a hangout for academicians, pornographers, armchair pundits, and nearly everyone else. It's a wild-and-wooly realm that's normally accessed through a dedicated computer program called a *newsgroup reader*. Outlook Express and other e-mail programs contain newsgroup-reading features. Google got into the act by purchasing the old Deja News, the groundbreaking company that first put Usenet on the Web. Google presents a deep archive of searchable newsgroup messages. Furthermore, it lets you establish an identity and post messages to groups, all through your Web browser. See Chapter 6.
- ✔ **Image finder:** The Web is a picturesque place. Every photograph and drawing that you see on a Web page is a distinct file residing at a specific Internet location, and Google knows how to search that tremendous store of images. See Chapter 2.

The mythical Internet library

The World Wide Web was developed to bring order to the chaotic Internet, which had been lurking in academia and the government since the 1960s. Because the Internet was regarded primarily as an information source — more than an entertainment medium or a community space — it was natural to imagine the quick construction of a universal, all-inclusive online library. Through the years, I've often heard people mistakenly speak of the Internet as an information realm in which one could find anything, read any book, and access all knowledge.

But the truth splintered away from that ideal. First, the Web became a distinct and autonomous entity with its own content, disregarding for the most part the academic material that was already online. Second, regular folks who stormed into the new virtual playground

were interested in other, more recreational pursuits than learning. So the mecca of unlimited access to knowledge withered away from reality — and even from the imagination.

I am not going to imply that Google single-handedly manifests an Alexandrian library of human knowledge (yet). However, through the astounding accuracy of its search results, Google does ease access to an unprecedented breadth of knowledge. (And the nascent Google Print program, which seeks to digitize entire libraries of books for searching, certainly contributes to the "Internet library" ideal.) To whatever extent the Internet comprises the communal content of the human mind, Google illuminates the gray matter with clarity and usefulness. Want to know something? Google it. That's the modern recipe for learning in this information-saturated age.

- ✔ **Shopping assistant:** This is one of Google's huge, underappreciated strengths. For a long time, Froogle was unknown by just about everybody (who hadn't read *Google For Dummies*, that is). Then Google moved it from obscurity to the home page of the British and American sites, and everybody saw the light. Comparisons to Yahoo! Shopping are difficult to avoid. The two services differ crucially, in that you never actually buy things through a Google transaction system as you sometimes can in Yahoo!. (For example, Google has no Google Wallet for storing credit card information for one-click purchasing.) Google has two main shopping services, Froogle and Google Catalogs. You use Froogle to find shopping sites that sell things you want. Google Catalogs — arguably the more fun of Google's two shopping services — gives you a paper-free sense of accessing a mail-order universe. See Chapter 4.
- ✔ **Local search engine:** Most search pundits and consumer focus groups agree that local searching will eventually be just as important as global Web searching. By *local searching*, I mean a searching for stuff that exists in a physical neighborhood — on streets near your home. All the big search engines are getting into local action, and Google is flat-out winning the race as of this writing. I'm not saying so to sell this book; nobody else has put together a combination of local search, local mapping, and local photography as Google has — and this is just the beginning. See Chapter 8.

- ✔ **International newsstand:** In one of the most dramatic additions to the Google spectrum of features, Google News has replaced Yahoo! News as the default headline engine on countless screens. Almost unbelievable in its depth and range, Google News presents continually updated links to established news sources in dozens of countries, putting a global spin on every story of the day. See Chapter 5.

These features (except for Google Directory) hook into Google's home page, and it is easy to transfer a search from one of these engines to another. (Just click the links above the keyword box after entering a keyword.) At the same time, each of these engines stands on its own as an independent search tool. Other features, sketched next, exist more in the background but are no less important than the high-profile search realms.

Hidden strengths

You might be surprised to find what Google can tell you if prompted in certain ways. Active Googlers stumble across some of these features in the course of daily rummaging, because Google spits out information in unrequested configurations when it thinks you need it. (Yes, Google does seem like a thinking animal sometimes.) Other chapters describe exactly how to coax explicit types of search results from the site. Here, my aim is to briefly summarize power features you might not be aware of:

- ✔ **Document repository:** Most people, most of the time, search for Web pages. But many other types of viewable (or listenable) pieces of content are available on the Internet. For example, almost every modern computer comes with the capability to view PDF files, which are documents such as articles, white papers, research texts, and financial statements that retain their original formatting instead of being altered to fit a Web page. Google includes documents other than Web pages in its general search results and also lets you narrow any search to a specific file type. See Chapter 2.
- ✔ **Government and university tracker:** Not to get all paranoid on you, but if you're into watching your back, the first of these features could prove helpful. More benignly, Google reserves distinct portions of its search engine for government domains and another for university domains. This arrangement has uses explored in Chapter 9.
- ✔ **Scholarly resource:** If you ever imagined that Google was a sort of library card catalogue to the Web, Google Scholar brings that idea closer to home. This dedicated index digs up academic papers and scholarly books — though not to read, in all cases. The Google Scholar engine is great for finding both titles and citations to those titles in other papers and books.

- ✔ **Keyword suggestion tool:** One of the great (if unrecognized) difficulties of high-quality Internet searching is finding the useful keyword or keyphrase. Google Suggest offers productive keyphrase suggestions as you type in the keyword box.

These and other new aspects of the Google experience came from a dedicated technology incubation project called Google Labs. Remember when entire businesses were built solely on cultivating online ideas? Most of them crashed and burned, adding to the rubble of the exploded Internet bubble. Google is modestly, but importantly, continuing the incubating tradition by evolving ways of enhancing its information engine. See Chapter 11.

Answers of all sorts

One problem with the Web as an information source is the question of authenticity. Anybody can put up a Web site and publish information that might or might not be factual. True expertise is difficult to verify on the Web.

Two solutions exist to the verification problem: standard reference sources and on-demand professional research services. Neither is likely to be found on a typical Web site, professional and authoritative though that site might be. The desire for reference-style answers has given birth to dedicated *answer engines* such as Answers.com (formerly Gurunet).

Google, recognizing that its users sometimes need a quick answer rather than a list of Web sites that might (or might not) contain that answer, has built answer-engine capability into its Web engine. In some cases Google delivers the answer directly; in other cases it links you to an outside site that displays your answer. Some of the answers supplied by Google include eminently practical information such as stock quotes, the weather, movie show times, calculator functions, word definitions, phone book information, delivery service tracking, and airport status.

The second solution to the verification problem, on-demand professional research, is provided at Google Answers. Google Answers is . . . well, the answer. Staffed by a large crew of freelance researchers in many subjects, Google Answers lets you ask questions and receive customized answers — for a price. How much? That's up to you; an auction system is used whereby you request an answer for a specified price, and individual researchers either take on your question or not. See Chapter 10.



One nice touch: Google maintains a directory of previously asked and answered questions, sorted by topic. Browsing through the archives is a nice way to audition the quality of the service (it's good), and you might find that your query has already been solved.

Portable information butler

Google provides excellent results for the lazy, one-stop Internet searcher. And don't we all deserve a search engine that works hard on our behalf? Well, Google goes beyond the call of duty by following you around even after you've left the site. Only if you want it to, of course.

You can rip the Google engine right out of its site (so to speak) and take it with you while traipsing around the Web in three main ways:

- ✓ **Google Toolbar:** If you're aware of Google Toolbar, you're probably using it. You should be, anyway. If this is the first you've heard of it, today is the first day of the rest of your online citizenship. Internet life will never be the same. Google Toolbar bolts right into your browser, up near the top where your other toolbars reside. It enables you to launch a Google search without surfing to the Google site. I bet that in some dictionaries a picture of the Google Toolbar is next to the definition of *cool*. See Chapter 12.
- ✓ **Google Deskbar:** Deskbar takes independence even further by separating Google from the Web browser entirely. Google Deskbar sits right on your computer desktop, and displays search results in its own window. See Chapter 12.

Google searching is made easy and portable by Mozilla browsers — Firefox and Netscape, which incorporate search bars within the browser that are naturally configured (and can be customized) to take your search queries directly to Google.

Google's portable features insinuate the service into your online life more deeply than merely bookmarking the site. Google will take over your mind. But that's a good thing.

And now for something completely different

The Google empire is young and relatively small compared to the Yahoo! powerhouse. In building itself out, Google has made a few key acquisitions:

- ✓ **Blogger.com:** One of the most used platforms for Weblogging (easy online journaling), Blogger.com provides easy tools for creating online journals and amateur news sites.
- ✓ **Picasa:** Picasa is an image-sorting and image-editing program that was popular when Google got its hands on it, and then became much more popular when Google eliminated the price and gave the program away.

✔ **Keyhole:** A satellite-imaging company, Keyhole offers a subscription service through which users can view the earth and zoom down to see details with amazing precision.

All three of these companies operate somewhat independently of Google, while definitely being under Google's direction. For the Google user searching with Google, Blogger and Picasa don't play any part in the Google experience. Keyhole is somewhat integrated with Google Local (see Chapter 8).

Google the Business Partner

With the Google AdWords program, Internet advertising has been brought to the masses — and boy, people are eating it up.

AdWords (see Chapter 17) is a revolutionary system that lets anybody with a Web site advertise for a reasonable cost on the Google search results page. This exposure, on one of the Internet's most highly trafficked domains, was inaccessible and unthinkably expensive in the past.

AdWords is stunningly innovative but also complicated. Here's the gist: You hook a small ad to certain keywords and assign a price you're willing to pay. That price is based on *clickthroughs*, which occur when a Googler conducts a search with one of your keywords, sees your ad on the results page, and clicks the ad to visit your Web site. Other site owners might have hooked their ads to the same keyword(s); if they offered a higher price per click-through, their ads are listed above yours. No matter how much you pay, your final bill is determined by actual visits to your site, and you can set a limit to the total amount you pay.

All this is handled automatically, making AdWords a surprisingly sophisticated system. The complexities are explained in Chapter 17. AdWords isn't a search service, but the program is definitely part of the Google lifestyle for entrepreneurial types with Web sites ready for increased traffic.

Note: You might be wondering whether the AdWords system destroys the famous integrity of a Google search. Have hordes of Internet advertisers purchased placement in the search results pages, warping the accuracy of Google's engine? It's a good question because other search engines have been in public-relations trouble over this issue. The answer, emphatically, is no — Google AdWords don't pollute the purity of search results. The ads are placed over to the side, easily visible but not mingled with search results. And higher-priced sponsorships are placed above the search listing, in a manner that clearly differentiates them from the objective results.

Google for Programmers



All search engines operate by building an index of both Web pages and the content of those pages. This index is constructed with the help of *bots* (software robots), sometimes called spiders or crawlers. The index is a search engine's prime asset, the ever-shifting body of information that the engine matches against your keywords to deliver results. The formula that each search site uses to compile and search the index is a closely guarded secret.

Although Google doesn't breathe a word about its indexing formulas, it does do something else that's unprecedented and exciting. Google has released its application programming interface (API) to the public. An API enables software programmers to incorporate one program or body of data into another program. For example, Microsoft releases its Windows APIs to authorized developers who write stand-alone Windows software. Google's API lets software geniuses write programs that can access Google's index directly, bypassing the familiar interface at Google's site.

The public API is more important than it might seem at first. In the short time that the API has been available, many alternate Googles have sprung up, each a legitimate and authorized new method of Googling. A few people have created instant-message conduits to Google, so you can launch a search while chatting in certain IM programs. Some graphic presentations of Google search results that are being developed are, frankly, mind-blowing. These and many other Google stunts are explored in Chapters 19 and 20.

Google's expansion through third-party development lends variety to a search experience that is basically a rather drab chore — no matter how skillfully accomplished. And, like other Google innovations, the public API will probably serve to drive Google even deeper into the mass consciousness of the Internet community. Google will take over your soul. This, too, is a good thing.



If you're of a particularly geekish mindset or have some programming skills, you should know about Google Code, a clearinghouse for the publication of Google APIs. Check it here:

code.google.com

The Greatness of Google

In this chapter, I serve a sample platter of Google's buffet of services. But one central question remains: What makes Google so great in the first place? How did it become so rampantly popular that it started a new era of competition among search engines? Those, of course, are two questions, not one, and my inability to count is one reason Stephen Hawking doesn't return my phone

calls. (In typing that little quip, I wasn't sure how to spell Hawking's first name. Naturally, I Googled it.)

Google's success depends to some extent on the size of its index, which has long passed the billion-page mark — Google claims to have the largest Web search index in the world.



But the big index is hardly the entire story. More important is a certain intelligence with which the index interprets keywords. Google's groundbreaking innovation in this department is its capability to not only find pages but also rank them based on their popularity. The legendary Google page rank is determined largely by measuring how many links to that page exist on other sites all over the Web. The logic here is simple and hard to refute: Page A links to page B for one reason only, and that is because page B contains something worthwhile. If pages C, D, E, F, and G also link to page B, odds increase that page B has something important going for it. If five-hundred thousand pages link to page B, it is without question truly important in some way.

This explanation is grossly simplified, and Google isn't divulging details. But the backlink feature is the advantage that makes Google search results so fantastic. Google can still dish up a clunker from time to time, frequently because of poor keywords entered by the user. And dead pages haven't been eliminated. But when it comes to finding basic information or Web destinations, Google delivers stunning results with incredible speed and accuracy.



Beyond Google's legendary indexing algorithm lies another aspect to its success. Users like Google not only for the quality of its results but also for the speed and reliability with which they are delivered. In Google's early days, as I was getting to know the service, my first and strongest impression was *speed!* Google receives hundreds of millions of daily search queries. It distributes the ponderous computing strain placed upon its system by using a gigantic global network of computers. How many? Google doesn't say, but the figure is certainly in the tens of thousands. Google values numbers more than pricey quality, and its computers are average machines. The software linking them keeps the system robust, and when a computer fails (which happens every day), others pick up the slack. So part of Google's winning formula lies in raw computing horsepower and resiliency to system failures.

Google calmly digests keywords in almost ninety languages. Googling is the one activity that unites the entire Internet citizenry, and Google has forever altered the Internet landscape and the ease with which we move through it.