Google Guide

Guide
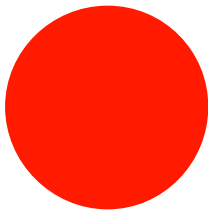
making searching even easier

Nancy Blachman

Google Guide
Making Searching Even Easier

Nancy Blachman   nancy@googleguide.com

The absolutely best tutorial on how to use all of Google's potential. Easy to use, simple to navigate, this is a little jewel for both the novice and advanced search user. The definitive up-to-date guide on how to best leverage the Google search engine and all of its features in a simple and easy to access format. Recommended.
     -- Robin Good, [Master New Media: What Communication Experts Need to Know, February 21, 2004](#)

Nancy Blachman's Google Guide is by far the best guide to using Google, for beginners & more intermediate users, that I've seen so far. I see great potential here for plopping patrons down with this self-guided tutorial, instead of the 20 minute "This is Google, this is how you search" lecture.
     --[LibrarianInBlack: resources and discussions for the "tech-librarians-by-default" among us..., Feb 4, 2004](#)

◀ Previous   Next ▶

Want to Get Started Immediately?

If you're a novice, get a [tour of my favorite features](#) or go straight to [Part I: Query Input](#).

If you're an experienced user, start with one of the following links. These pages may appear to describe basic concepts, but if you read carefully, you'll discover helpful insights into how Google works and how to use it more effectively.

[Favorite Features](#)

Part I: Query Input
- [Interpreting Your Query](#)
- [Crafting Your Query](#) (Using Special Characters)
- [Sharpening Your Query](#) (Advanced Search)
- [Using Search Operators](#) (Advanced Operators)

[Part II: Understanding Results](#)
- [How Google Works](#)

[Part III: Special Tools](#)
- [Google Answers](#)
- [Feature History](#)
- [Prototypes & Demos](#) (Google Labs)

[Part IV: Developing a Website](#)
- [Linking to Search Results](#)

What Google Guide Explains

In this tutorial, you can learn

- [How to select terms and search (more) effectively](#)
- [How Google interprets your query](#)
- [What's included with your results](#)
- [How to search using Google's special tools and shortcuts](#)
- [What to do when you can't find the answer you want](#)
- [Google's Feature History](#)
- [How Google works](#)

Google Guide's Home Page

Google Guide's home page includes a search tip from Google Guide. Clicking on the icon or the title above the search tip will display more information about the tip.

How to Use the Google Guide Tutorial?

If you have time, read all of Google Guide and work through the examples and exercises. Otherwise, look at the Table of Contents or use the search box at the bottom of each page to find the pages or sections that are likely to be most helpful to you.

Why Take the Google Guide Tutorial?

Google is so easy to use, why take this online tutorial? If you're like many people, you use only a small number of Google's services and features. The more you know about how Google works, its features and capabilities, the better it can serve your needs.

Just as the best way to learn how to sail is to sail, the best way to learn how to search with Google is to search with Google. Consequently this Google tutorial contains many examples and exercises designed to give you practice with the material presented and to inspire you to find amusing or useful information.

Try the examples, work the exercises, and click on the links (usually underlined) to see Google in action and to learn more about a topic.

Since the web and Google's algorithms and features constantly evolve, your results may be different from those shown in this tutorial.

In this tutorial, clicking the left mouse button on an example or a link to a page not in Google Guide, will display the results in a new window. Clicking on a link that points to another section in this tutorial, will display the contents of the associated page in the same window. You can make the contents of the linked page appear in a new window by:

- Pointing to any link (press the TAB key to jump to the next link on the page).

- Holding down the SHIFT key while you click on the link (if you use Internet Explorer).
  or
- Pressing the right button of your mouse, and then selecting "Open a New Window" (or the middle button if you use Mozilla or Netscape).

- After viewing the results, close the window and you will return to the tutorial. On Windows, you can kill the top window by pressing the ALT and F4 keys simultaneously. You can switch the active window by pressing the ALT and TAB keys simultaneously.

This tutorial assumes you know how to use a web browser. Although this tutorial is for people new to Google, it contains information of interest to those who have experience with Google or another search engine. Unless you're familiar with all of Google's features, you'll learn something by taking this tutorial.

Who will Benefit from Google Guide?

Practically anyone who uses Google, including students, teachers, researches, journalists, consumers, business people, scientists, web developers, Google employees, purchasing agents, librarians, people looking for jobs, health care professionals, hobbyists, vacationers, and authors. Want a job at Google? Review Google Guide before you apply.

How Much Time Will the Google Guide Tutorial Take?

This online Google tutorial will occupy you from 0.5 to 8 hours, depending on how many sections you elect to skip, and how many of the examples and problems you work through. Most people spend about half an hour at a time, and two hours total.

Navigation Bar

Near the top of each page is a navigation bar. The current section and its subsections are displayed in blue.


```
Intro (Home) | Contents | Query Input | Understanding Results | Special Tools | Appendix
What Google Guide Explains - Start Immediately - Why Take Google Guide? - Who Will Benefit? - How Much Time Will it Take? -
Navigation Bar - Radio Buttons - Why Google ~Guide? - Google Guide vs. How to Do Everything with Google - Radio Interview
```

Click on any name in the navigation bar to be taken to the corresponding section.

Searching Google

Enter a query in the search box at the bottom of any page on Google Guide. Enter your query and followed by site:googleguide.com when you want to restrict your search to just pages on Google Guide's web site.

Why the Name Google ~Guide?

Why did I first name this tutorial Google ~Guide? Putting a tilde in front of a search term (with no space in between) effectively turns that term into any of its synonyms. The tilde is known as synonym operator. So, if you search for "Google ~Guide," Google will find Google Guide as well as other Google tutorials.

History of Google Guide

Jerry Peek, author of Unix Power Tools, gave me the idea of writing a book about using Google. I found the idea appealing because I was a fan of Google, was interested in learning how to use it better, there were no other books about Google when I started writing, and with such a job, I could work flexible hours. I created Google Guide and gave seminars on searching with Google to get feedback from users.

Katie Conley, an editor at Osborne/McGraw Hill, approached Fritz Schneider about writing a book about Google. He had written JavaScript: The Complete Reference for Katie. Because of my having mentioned I was writing a book and creating an online tutorial to some Google engineers, Fritz learned of my Google projects. We teamed up so that we could divide the work and write a book more quickly. Eric Fredericksen, a co-worker of Fritz's, joined us. How to Do Everything with Google was published in November of 2003.

How is Google Guide Different from How to Do Everything with Google?

The book How to Do Everything with Google, which I co-authored with Google engineers Fritz Schneider and Eric Fredricksen, covers material similar to Google Guide, but it's a reference book while Google Guide is a tutorial, with exercises at the end of nearly every section.
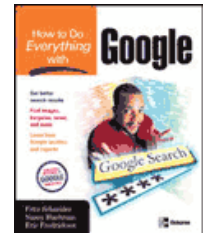
About the Author

To get ideas of what to include in Google Guide, I give free seminars on searching with Google. I've been using Google since the spring of 1999, when Google was less than one year old. I've written over a half dozen tutorial and reference books, including How to Do Everything with Google, Mathematica: A Practical Approach, Mathematica Graphics Guidebook, Mathematica Quick Reference, Maple V Quick Reference, and Putting Your Heart Online. I'm president and founder of Variable Symbols, a company that specializes in software training and consulting. I obtained a B.Sc. in Applied Mathematics from the University of Birmingham, U.K., an M.S. in Operations Research from the University of California at Berkeley, and an M.S. in Computer Science from Stanford University, where I taught for eight years.
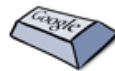
Table of Contents

My Favorite Features

In addition to searching the web, you can use Google to find specific information that is available offline or on specialized sites. In this page I describe how Google works and features that enable me to find more quickly things I want.

Tools

Google Toolbar	Browser Buttons	Translation & Language Tools

Shortcuts

Driving Directions (Street Maps)	Phonebook	Definitions	Google Calculator	More Shortcuts

Special Searches

News Search	Sets	Answers

Other Features

More Relevant Results	Highlighting Terms	Preferences	Restricting Your Search by Date
Diacritic Marks & Accents	Advertising	Advanced Search and Search Operators	Links

To learn more about a particular service or feature, click on the title of a section, which links to a more detailed description in Google Guide, www.googleguide.com, or read How to Do Everything with Google.

Tools

Enter a query even if Google's home page isn't in your browser.

Toolbar - toolbar.google.com

I often access Google from the Toolbar when I use Windows 95/98/ME/NT/2000/XP and Internet Explorer 5.0 or a more recent version or from Googlebar when I use Mozilla. For Mac OS X users, Apple's Safari web browser includes Google search and my other favorite Toolbar features.

My favorite Toolbar features include

Feature	What it can do

Search Box	Access Google's search technology from your browser toolbar.
Highlight	Highlight terms on the current page.
Pop-up Blocker	Stop annoying pop-up windows (new in version 2.0 of Toolbar).

Browser Buttons - www.google.com/options/buttons.html

I often search using Google browser buttons when I don't have access to a Google Toolbar or Deskbar.

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Shortcuts

Google provides shortcuts that seem intuitively obvious once I've learned about them.

- **Want Driving Directions?**

  Instead of visiting an on-line map-providing service, just enter a US address into Google. You can also copy and paste addresses, even ones with embedded carriage returns, into Google's search box. When Google recognizes your query as a location, the results page includes links to map providers for that location.

  Click on either the Yahoo! Maps link or the MapQuest link to view a map showing the Lucie Stern Community Center at 1305 Middlefield Road in Palo Alto, California and links to driving directions.
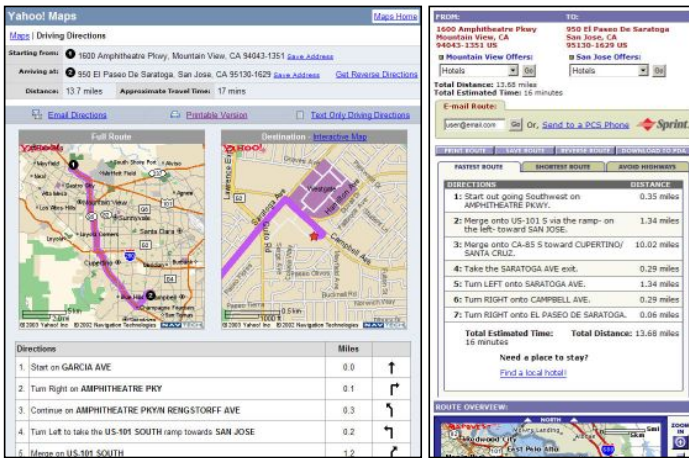
- **Need a US Phone Number or Address?**

Just enter a company or person's name and a city, state, or zip code in the standard web search box. If you have easy access to the web, Google's phonebook feature can be more convenient than your local phonebook and more extensive.
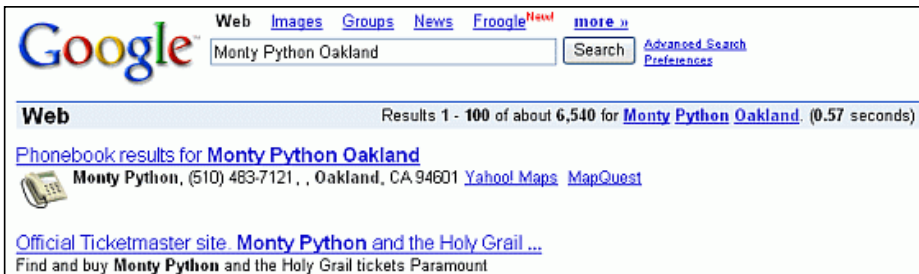
On the results page, phonebook listings are next to a telephone icon.

Google's phonebook feature recognizes inputs in the following formats.

To find a **US residence**, enter either ...	**Examples**
First name (or first initial), last name, city (state is optional)	[Monty Python Oakland]
First name (or first initial), last name, state	[Monty Python CA]
First name (or first initial), last name, area code	[M Python 510]
First name (or first initial), last name, zip code	[Monty Python 94601]
Phone number, including area code	[510-555-1212]
Last name, city, state	[Python Oakland CA]
Last name, zip code	[Python 94601]

Notice that Google supports reverse look up. You can enter a phone number with area code and learn to whom that number belongs.
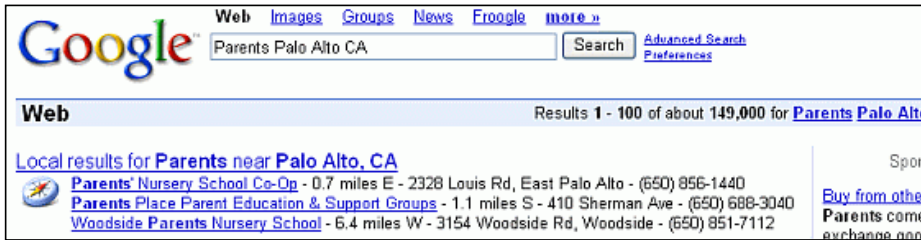
To seek a **US business**, enter ...	**Examples**
Business name, city, state	[Trek Waterloo WI]

Business name, zip code	[Ben & Jerry's 05403]
Phone number including area code	[(650) 930-3500]

Google lists up to three results that match your phonebook query.

To see other listings, click on the "results" link that's just above the phonebook entries.

- **Need a Definition?**

If Google finds any dictionary definitions for your search terms, it shows those words as underlined links or includes a definition link in the statistics bar section of the results page (located below the search box showing your query). For example, learn what co-founders Larry Page and Sergey Brin, and CEO Eric Schmidt mean when they say they run Google as a *triumvirate*.

Click on the underlined terms or the definition link in the statistics bar to link to their dictionary definition, which also may include information on pronunciation, part of speech, etymology, and usage.

triumvirate

\Tri*um"vi*rate\, n. [L. triumviratus: cf. F. triumvirat.] 1. Government by three in coalition or association; the term of such a government.

2. A coalition or association of three in office or authority; especially, the union of three men who obtained the government of the Roman empire.

Source: Webster's Revised Unabridged Dictionary, © 1996, 1998 MICRA, Inc.

When you include *define*, *what is*, or *what are* in your query in front of a word, phrase, or acronym, Google displays one Glossary definition above your search results. In February of 2003, Google acquired Pyra Labs, a company that makes it easy for you to create

your own blog. What's a blog? Let's ask Google to define the term.

When your query includes the "define:" operator, Google displays all the definitions it finds on the web.

- **The Google Calculator isn't Mathematica, Maple, or Matlab**

But it's free and may be good enough for your purposes. It can add up a list of numbers, convert from miles to kilometers, and evaluate some other mathematical expression. Simply enter the expression you'd like evaluated in Google's web search box and hit the ENTER key or click the "Google Search" button. For example, add up some receipts.
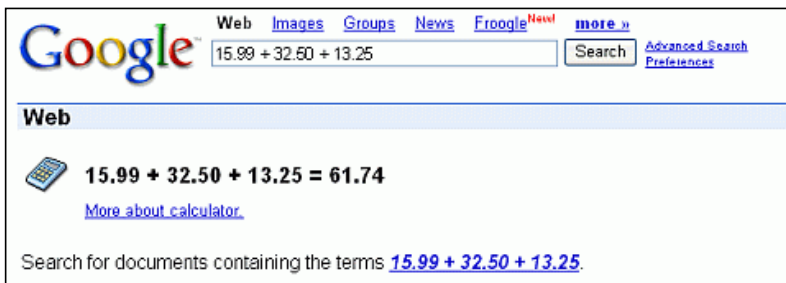
Calculate a tip for a meal that costs $93.45.

Calculate the cosine of 2π.

Convert from one set of units to another.

Many commonly used physical constants are built into Google's calculator.

- **Other Shortcuts**

Special Searches	Examples
Stock Quotes	[csco dell]
Travel Conditions	[ewr airport]
Package Tracking	[999444666222]
Flight Tracking Information	[united 42]
Vehicle Information	[JH4NA1157MT001832]
Patent Search	[patent 5122313]
FAA Airplane Registration Numbers	[n199ua]
UPC Codes	[036000250015]
FCC Equipment IDs	[fcc B4Z-34009-PIR]

Keeping Abreast of the News - News Alerts

Rather than searching Google News every day to find out what's new, I set up Google News Alerts to send me email when news articles of interest to me appear on the web.

I've also set up Google Alert, a third-party service available at www.googlealert.com, to keep up with the latest news about Google, *How to Do Everything with Google*, and Google Guide. Google Alert is more flexible and returns more results than Google's News Alerts.

More Relevant Results

When Google was first launched, it returned only pages that matched *all* your query terms exactly. To increase the number of results, Google now returns pages that match variants of your search terms. For example,

finds pages that contain words that are similar to some or all of your search terms, e.g., "child," "children," or "children's," "bicycle," "bicycles," "bicycle's," "bicycling," or "bicyclists," and "helmet" or "helmets." Google calls this feature *word variations* or *automatic stemming*.

- **Want only Exact Matches?**

    Disable automatic stemming by preceding each term that you want to be matched exactly with the + operator. For example, if you want to see pages that only mention one favorite book rather than lists of favorite books, precede the word "book" by a + sign.

- **Searching for a Phrase or a Proper Name?**

    If you want to search for pages that contain a phrase or proper name and not variations, enclose your search terms in quotes (" "). For example,

finds pages containing exactly the phrase "Dr. Phil." So this query would find pages mentioning host of a popular television show about parenting, but not pages containing "Dr. David Phil " or "Phil Cahil Dr." The query

(without quotes) would find pages containing any of "Dr. Phil," "Dr. David Phil," or "Phil Cahil Dr."

- **One Word, Two Words, or Hyphenated?**

  Because some people spell hyphenated words with a hyphen and others with a space, Google searches for variations on any hyphenated terms.

  When Google encounters a hyphen (-) in a query term, e.g., [pre-school], it searches for:

  - the term with the hyphen, e.g., pre-school
  - the term without the hyphen, e.g., preschool
  - the term with the hyphen replaced by a space, e.g., pre school

  [pre-school] matches "pre-school," "pre school," and "preschool"
  [pre school] matches "pre-school" and "pre school"

  If you aren't sure whether a word is hyphenated, go ahead and search for it with a hyphen.

- **Special Notation**

  I wish Google accepted regular expressions, i.e., a set of symbols and syntactic elements used to match patterns of text. Unfortunately Google doesn't. But you can fine-tune your search query and increase the accuracy of its results by using special characters and operators, such as +, -, ~, .., OR, *, and quotation marks.

  Force Google to include a term by preceding the term with a "**+**" sign.

The **+** operator is typically used in front of stop words that Google would otherwise ignore or when you want Google to return only those pages that match your search terms exactly.

Precede each term you do *not* want to appear in any result with a "**-**" sign.

Find synonyms by preceding the term with a **~**, which is known as the tilde or synonym operator.

Specify synonyms or alternative forms with an uppercase **OR** or **|** (vertical bar).

Use quotes (**" "**) to group compound words and phrases together.

Specify that results contain numbers in a range by specifying two numbers, separated by two periods, with no spaces.

Use an *, known as a wildcard, to match any word in a phrase (enclosed in quotes).

Let's look at other examples that use the * operator.

What are other versus to an army song I learned at camp.

Not sure how someone's name is written?

["Hillary Clinton"]
["Hillary * Clinton"]
["Clinton Hillary"]
["Clinton * Hillary"]

If you're interested in running proximity searches, try out GAPS, a third-party search tool available at http://www.staggernation.com/cgi-bin/gaps.cgi.

This table summarizes how to use basic search operators. You may include any of these operators multiple times in a query.

Notation	Find result	Example
terms1 terms2	with both *term1* and *term2*	[after-school activity]
term1 **OR** *term2* *term1* **|** *term2*	with either *term1* or *term2* or both	[Tahiti OR Hawaii] [Tahiti | Hawaii]
+*term*	with *term* (The **+** operator is typically used in front of stop words that Google would otherwise ignore or when you want Google to return only pages that match your search terms exactly. However, the **+** operator can be used on any terms.)	[+i spy]
-term	without *term*	[twins -baseball]
~term	with *term* or one of its synonyms (currently supported on Web and Directory search)	[google ~guide]
number1.. *number2*	with a number in the specified range	[trail-a-bike $50..$350]
"*phrase***"**	with the exact *phrase*, a proper name, or a set of words in a specific order	["I have a dream"] ["Rio de Janeiro"]
"*terms1 * terms2***"**	with the phrase (enclosed in quotes) and ***** replaced by any single word	["Google * my life"]

- **Diacritic Marks and Accents**

How can you search for a term that might include a diacritic, a mark, such as the umlaut (ö) in *Gödel* or the acute accent of *resumé*?

Note: For queries with diacritics, results vary depending on the language to which you are confining your search.

On the English-language version of Google, a term with an accent doesn't match a term without an accent and vice versa.

["école française"] matches "école française" but not "ecole francaise"
["ecole francaise"] matches "ecole francaise" but not "école française"

Search for pages with these different spellings.

["école française"]
["ecole franciase"]

Or combine these queries into a single one.

["école française" OR "ecole Francaise"]

Note: If your keyboard doesn't have a particular character, check out the Google Ultimate Interface, which provides over two dozen diacritical markings.

- **More Results on Each Page**

  By default, Google returns just 10 results for a search. You can increase the number of results displayed per page to 20, 30, 50, or 100. The more results displayed per page, the more likely you are to find what you want on the first page of results. The downside is that the more results per page, the more slowly the page loads. How much more time it takes depends on your connection to the Internet.

Number of Results	Google's default (10 results) provides the fastest results. Display 20 ▾ results per page.

- **Restricting Your Search by Date**

  Since Google's Advanced Search page offers little flexibility in restricting your search by date, use FreshGoo.com, to access pages that have updated (created or modified), crawled, and added to Google's index

  - today
  - yesterday
  - within the last 7 days
  - last month
  - last 3 months
  - last 6 months
  - last year

  Find pages that have been updated and crawled and added to Google's index between any two specific dates with either

  - Fagan Finder's Search Tool
  - the Google Ultimate Interface

  These are two of many third-party applications developed by Michael Fagan when he was a teenager.

- **Translation and Language Tools**

  Web pages are available in languages other than English.

  Google provides a translation link to enable you to get the gist of pages written in some languages.
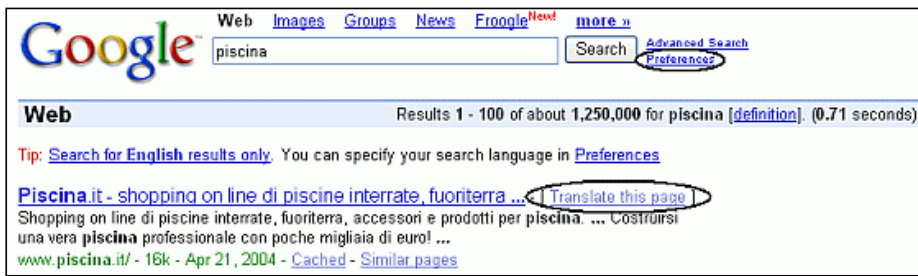
Want to translate some text or a web page? Try the Translate feature available from the Language Tools link on Google's home page.
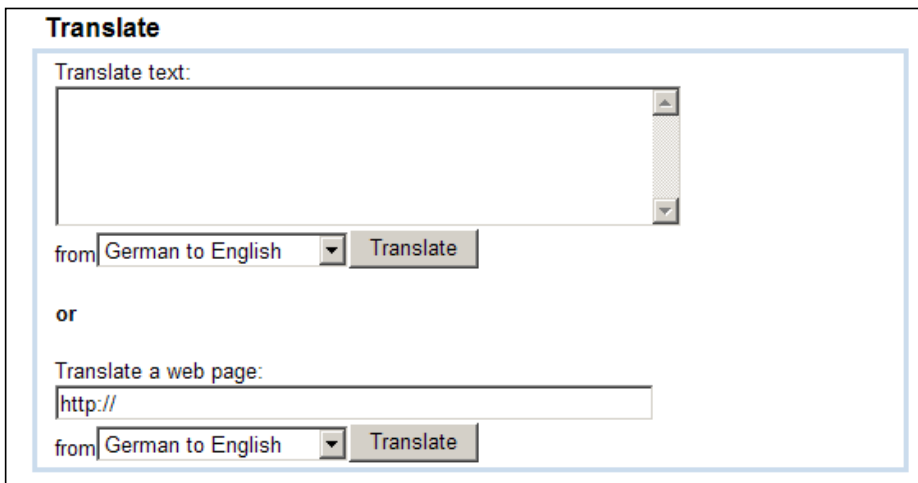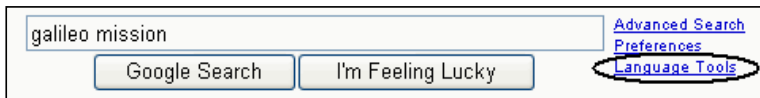
If you want to translate some text or a page into a language other than those Google Language Translation Tool offers, check out Fagan Finder's Translation Wizard.

From the Preferences page, specify your global preferences, including

- ❍ **Interface Language:** the language in which Google will display tips, messages, and buttons for you
- ❍ **Search Language:** the language of the pages Google should search for you
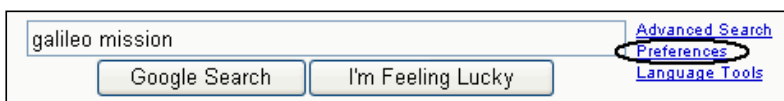
You can restrict your searches to those pages written in the languages of your choice by setting the search language.
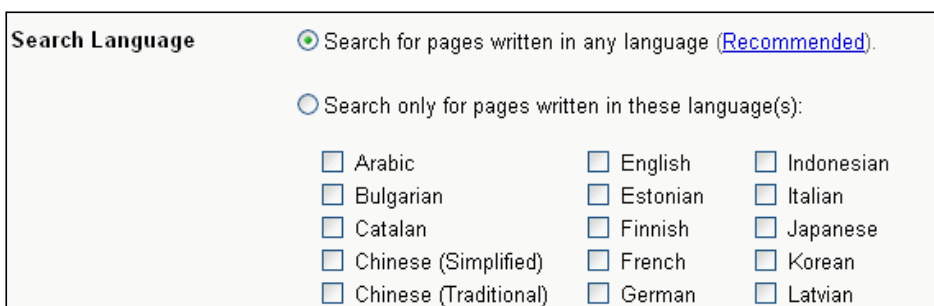
By default, Google Web search includes all pages on the Web.

If you want to restrict results to a single language for a few queries, consider using the Language Tools menu option in the Google Toolbar, the Advanced Search page, or Language Tools.

Where are your Search Terms on a Page?

When Google returns a link to a page that appears to have little to do with my query, or if I can't find the information I'm seeking on the current version of the page, I look at the cached version.
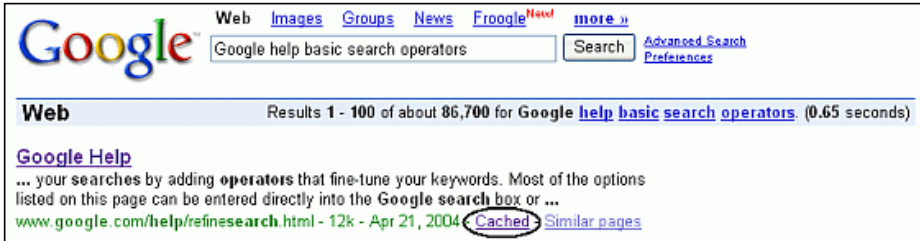
Click on the *Cached* link to view Google's cached version of the page with the query terms highlighted.
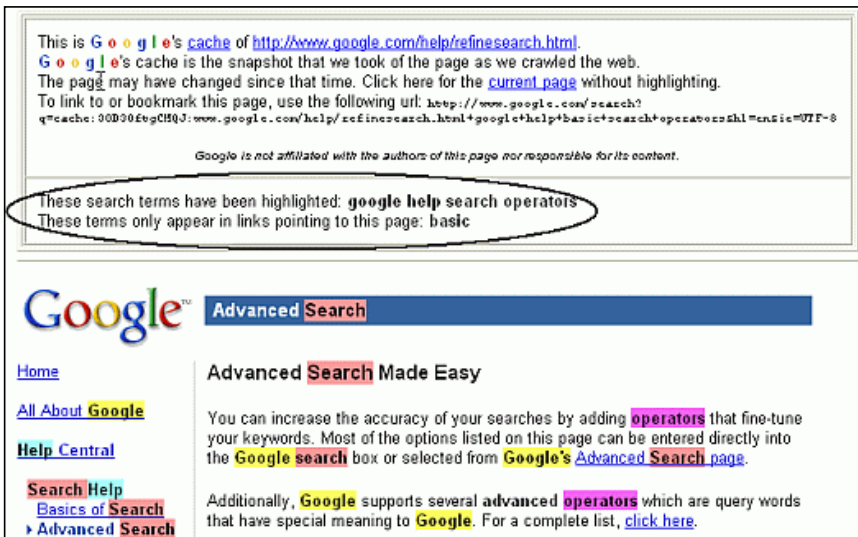
Note: Internet Explorer users may view results or a page with any word(s) highlighted, not just search terms, by using the highlight feature of the Google Toolbar, which I mentioned above.
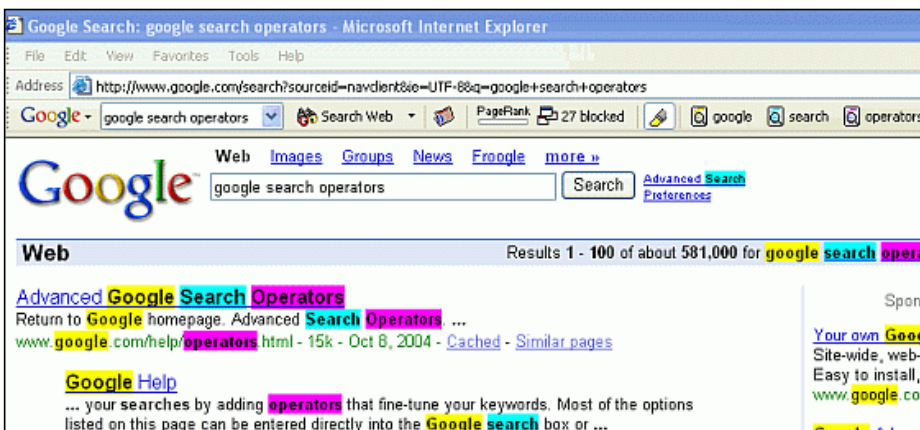
Google Sets

Google showcases some prototypes and products in development on the Google Labs, the web site of Google's research group.

My favorite prototype is Google Sets.

Enter a few items from a set of things.
Google Sets will try to predict other items in the set.

I've used Google sets to find

- potential co-authors
- things to eat for breakfast

Advertising

I never would have imagined that I would be listing Google advertising among my favorite features. I'm both pleased as a user and as an advertiser. Ads have led me to useful information that I might not have otherwise found so easily and my ads have steered thousands of interested users to my Google tutorial for a minimal cost.

Google's approach to ads is similar to its approach to search results: the ads must deliver useful links, or the ads are removed.

- Ads must be relevant to your search.
- Ads must not distract (no pop-up or flashy ads).
- Sponsored links are clearly identified and kept separate from search results.

You can distinguish ads by their format and the label "Sponsored Link." Ads contain a title, a short description, and a web address (URL).
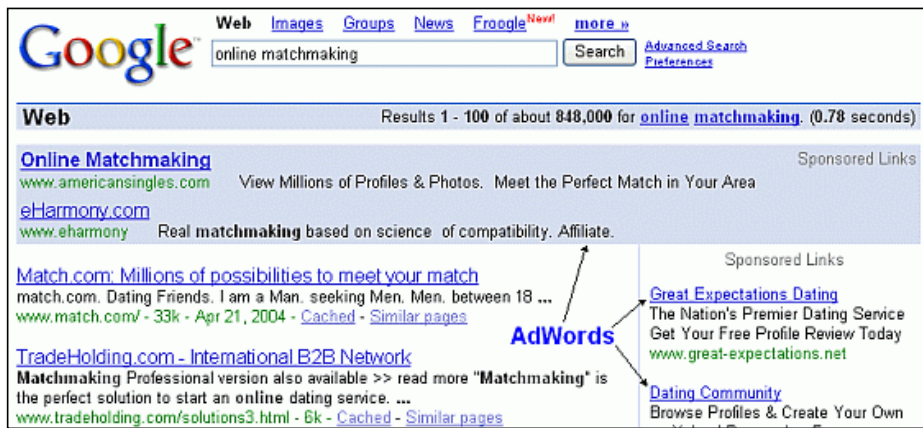
Want Power and Control?

Like a race car, there are special features if you want more control over your searches.

When you don't find what you're seeking, consider specifying more precisely what you want by using Google's Advanced Search feature, which

- is easy to use
- allows you to select or exclude pages with more precision than by only specifying search terms and basic operators (+, -. OR, ~, ..) in Google's standard search box.
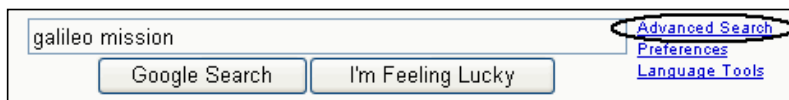
You can specify most of the Advanced Search page options in a regular search box query by using *advanced operators*, i.e., query words that have special meaning to Google.

Want to see examples of advanced operators?

- Fill in the Advanced Search form.
- Now, look at the search box on the results page.
- Your query may now include special notation or special operators of the form **operator:**value.

Note: The colon following the operator name is mandatory.

[head OR hair lice site:edu]
[link:www.pampmothersclub.org]
[allintitle: child safety]
[swimming lessons -adult]
[wills estate planning filetype:pdf]

Advanced operators allow more flexibility than the basic operators and the Advanced Search form.

Find a page by its title.

Find pages whose titles contain the word "security," with the word "e-mail" on the text of the page not on microsoft.com.

Find crime reports in California.

Find pdf documents with information about financial planning for a child's college education.

Search non-commercial organizations, educational, and government sites.

Find every page on a site that is included in Google's index.

Learn about techniques used by hackers to exploit targets and find sensitive data and how to defend your own websites in Johnny Long's Google Hacking Mini-Guide.

The Google Guide Advanced Operator Quick Reference (www.googleguide.com/advanced_operators_reference.html) provides a nice two-page summary of the search operators grouped by type.

There is an alphabetical list of the search operators in the Using Search Operators (Advanced Operators) section of Google Guide.

For tips on using one or more search operators in a query, see the last section in Using Search Operators (Advanced Operators).

Can't Find What You Want? Try Google Answers

Having trouble creating a query to find the information you seek? Don't have time to research the topic yourself? Consider asking Google Answers, which, for a fee as little as US$2.50, provides assistance from researchers with expertise in online searching.
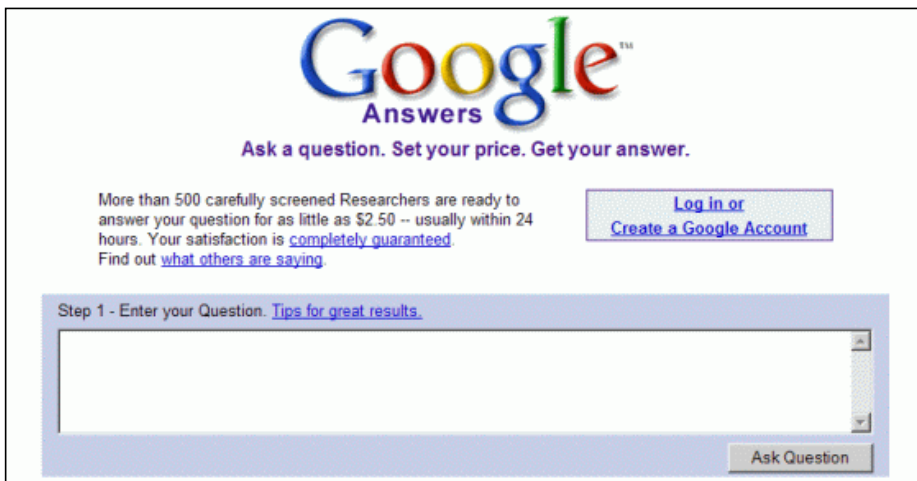
Reluctant to use Google Answers? Think you can find the information you want if you search a bit longer? If you feel that way, you're not alone. Nevertheless, many people, including me, who have asked questions of Google Answers are now fans of the service. Not only has it saved me time, but the answers have been packed with useful information and links. It's a wonderful service that's well worth your checking out, whether you're a novice or an experienced searcher. I'm grateful to Google Answers researchers for their feedback and suggestions for improving Google Guide.

Links to Other Useful Information

Click on any of the following links for more on these topics.

Selecting Search Terms
How Google Interprets a Query
Refining a Query
What Appears on the Results Page
Getting to the Last Result
When Google added features (Feature History)
How Google Works

For more features and services as well as how Google works, read Google Guide (www.googleguide.com) or How to Do Everything with Google.

Part I: Query Input

Google is easy to use, but the more you know about how it works, its features, its capabilities, and how it displays results, the better it can serve your needs.

In this segment, you will learn how to:

- Enter a query
- Go directly to the first result
- Select search terms
- Interpret your query
- Craft your query by using special characters and operators
- Sharpen your query by using Google's Advanced Search form
- Use search operators (aka Advanced Operators)

Entering a Query

If you have little or no experience with Google, read on. Otherwise, skip to the next section, titled "Go to the First Result."

If your browser isn't pointing to Google, visit Google's home page by entering any one of the following web addresses into your browser:

- http://www.google.com/ (the full web address for Google)
- www.google.com (a common abbreviation for Google's web address)
- google.com (for lazy typists)
- google (works on some browsers for the laziest of typists)

When I refer to a web address in this tutorial, I omit the "http://" prefix. For a description of web addresses, see the section "Anatomy of a Web Address."

What is a *query*? It's a request for information from a search engine. A query consists of one or more words, numbers, or phrases that you hope you will find in the search results listings. In Google Guide, I sometimes call a query *search terms*.

To enter a query, type in descriptive words into Google's search box. You can use either the search box on Google's home page (shown above) or the search box that always appears at the top of a Google results page (shown in the next screen shot).

Now press the ENTER key or click on the "Google Search" button to view your search results, which include links to pages that match your query along with relevant snippets (excerpts) with your search terms in a boldface.

This example isn't just a picture of what the search box looks like. If you click the "Google Search" button, you'll go to the Google results page for a search on the words "california" and "driving." Feel free to edit what's in the search box and run other searches.
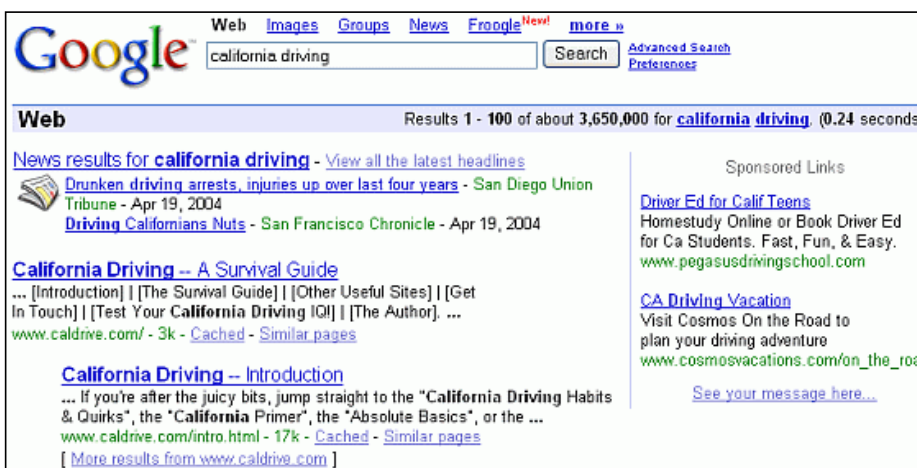
The results page is full of information and links most of which relate to your query. In this screen shot, to the right of Google's search results appear sponsored links, which are paid advertisements. Results Google considers to be most relevant to your query are shown first.

To view a page listed in your search results, click on the page title, the first line in each result. Any of your query words that appear in the title will be in boldface, and the title will be underlined, i.e., it's a link to the web page. Note that when you position your mouse pointer on the title,

the URL for the web page will appear in your browser's status bar, at the bottom of many browsers. Under the title will be excerpts that include one or more of your query words: your query words will be in boldface. These excerpts are known as *snippets*. In our example, click on the California Driving -- A Survival Guide link, which appears just below the blue bar with the text "Searched the web for **california driving**," to view the corresponding California Driving Guide web page.

Your results for a search on "california driving" may be different from what you see here since Google is constantly searching the Web for new pages and adjusting its results algorithms.

Going Directly to the First Result

Click on the *I'm Feeling Lucky* button on Google's home page to go directly to the first result for your query. Instead of showing you a list of pages, Google sends you immediately to the result that may be most relevant to your query. For example, if you enter the query [california driving] (without the square brackets) and click the *I'm Feeling Lucky* button, Google will send you to the home page of Hamish Reid's wonderful California Driving Guide.

This example isn't just a picture of what a search box and the *I'm Feeling Lucky* button look like. In this example and in others like it throughout this tutorial, you can edit what's in the search box and run different searches.
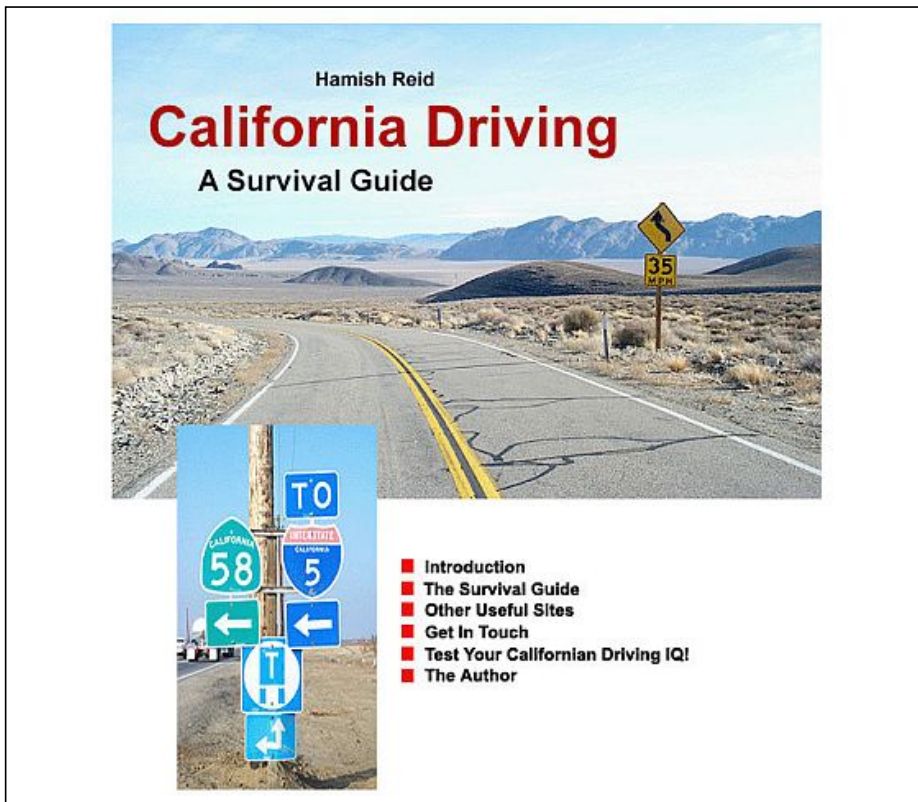
The *I'm Feeling Lucky* button can save you the time it takes to review your results and then click on the first one. Use it when you're confident the page you want is the best fit for your query, which is usually the case when you're seeking *very* popular pages. For example, it's a safe bet that an *I'm Feeling Lucky* search for "Paul McCartney" (one of The Beatles) will send you to his home page www.paulmccartney.com.

Note: I'm Feeling Lucky doesn't consider the various sponsored links on the first results page, which are paid advertisements, when deciding where to take you. In other words, the *I'm Feeling Lucky* button will send you to what Google considers the most relevant result that is not a paid advertisement.

In the Section after the Exercises, we'll look at how to select search terms.

Exercises

These problems give you experience with entering a query. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Point your browser to Google's home page by visiting www.google.com. Find Google tutorials by typing [google tutorial] (without the square brackets) into Google's search box and then clicking the "Google Search" button. Click on the link for Google Guide.

2. After completing the previous exercise, click the back button on your browser twice to return to Google's home page and then search again for [google tutorial] (without the square brackets). Click on the *I'm Feeling Lucky* button.

3. What is the difference between the results of the previous two exercises?

4. Point your browser to Boogle's home page by visiting www.boogle.com. In addition to offering the same search capabilities as Google, Boogle includes an interesting quote.

5. Find recipes for chocolate souffle by typing [chocolate souffle recipes] (without the square brackets) into Boogle's search box and then clicking the "Google Search" button.

6. After completing the previous exercise, click the back button on your browser and then search again for [chocolate souffle recipes] (without the square brackets). Click on the *I'm Feeling Lucky* button.

Selecting Search Terms

The search terms you enter and the order in which you enter them affect both the order and pages that appear in your search results. In the examples below, click on the similar ways of specifying various searches and note how the results differ.

For simplicity sake, this tutorial uses square brackets to denote Google's search box. For example, to search for a cheap hotel in Mykonos, I'll put the words "cheap," "hotel," and "Mykonos" in square brackets, [cheap hotel Mykonos], to indicate you should type those three words in Google's search box. You should not type the brackets, although Google will ignore them if you do type them.

Furthermore, in the examples that follow, I have linked each set of search terms to the results of doing a Google search on those terms. So clicking on [cheap Mykonos hotel] returns the Google results page for a search on those three words.

Use words likely to appear on the pages you want.

[salary negotiation tips]
[sciatica]
[window treatments]

Avoid using a question as a query. For example, the query, [where do I apply for a passport in New Zealand], instructs Google to find pages containing all the terms. Such a query won't necessarily find pages answering your question. A better query might be [passport apply New Zealand].

USE [passport apply New Zealand]
NOT [where do I apply for a passport in New Zealand]

When Google detects very common words such as *where*, *do*, *I*, *for*, and *a*, known as *stop words*, it ignores them so Google may return relevant results. If you're seeking pages that include a stop word, e.g., "how the west was won," learn how to force Google to search for a complete phrase or a specific word in the section Crafting Your Query.

Avoid using words that you might associate with your topic, but you wouldn't expect to find on the designated page(s). For example, queries that include "articles about," "discussion of," "documentation on," and "pages about" are likely to return fewer results since information on the web is rarely labeled with such terms.

USE [lasik eye surgery]
NOT [documentation on lasik eye surgery]

USE [jobs product marketing Sunnyvale]
NOT [listings of product marketing jobs in Sunnyvale]

Suppose you want to know how old someone is, such as Nelson Mandela (the former President of South Africa). Pages with "birthday" or "age" might be more than a year old. Searching for pages that include "Nelson Mandela" and "born" are likely to include either "Nelson Mandela born" or "Nelson Mandela was born" followed by his birth date. You can figure out his age from knowing when he was born.

USE [Nelson Mandela born]
NOT [Nelson Mandela birthday] nor [Nelson Mandela age]

Not sure what word or phrase is likely to appear on pages you want. Consider running a word or phrase popularity contest with Google Smackdown, which you can find at www.onfocus.com/googlesmack/down.asp. This third-party application reports which of two terms or phrases Google estimates to be more prevalent on the web (actually on more web pages that Google has included in its index).
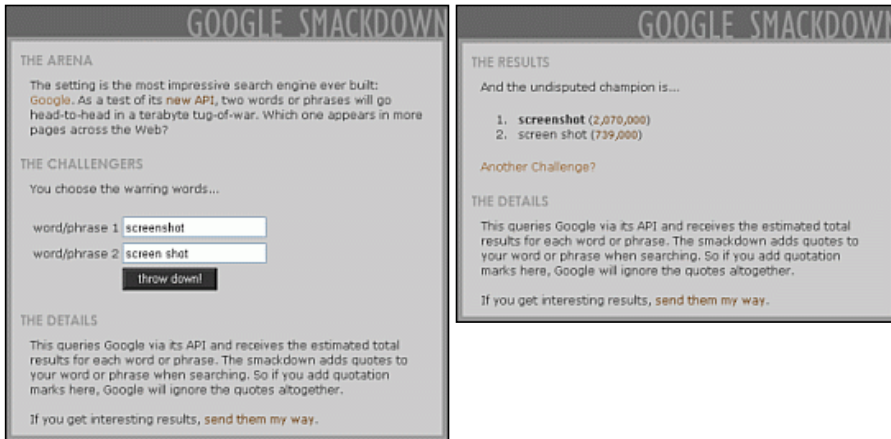
Although not as popular according to Google Smackdown, in Google Guide I use "screen shot" because it's in my online dictionary and "screenshot" isn't.

Note: The section How Google Works describes how Google finds web pages and constructs an index.

Be specific: Use more query terms to narrow your results.

It's better to use a more precise, less ambiguous term than a common one to "flesh out the topic by including facets that interest you," notes Ned Fielden in his book *Internet Research, Second Edition* (McFarland & Company, 2001).

Does your query have enough specific information for Google to determine unambiguously what you're seeking? If your query is too vague, it's unlikely to return relevant results. Consider, for example, the query [java]. What do you suppose Google includes in the first page of results? An island in Indonesia? A beverage consisting of an infusion of ground coffee beans? A computer network-oriented platform-independent programming language developed by Sun Microsystems?

USE [Java Indonesia], [java coffee], or [java programming language]
NOT [java]

How can you come up with more specific search terms? What do you know about the topic? Consider answers to the questions, who?, what?, where?, when?, why?, and how?

When you search for [Tom Watson], on the first page of results you get references to a member of Parliament, the golfer, the IBM executive, and a Populist Party candidate for President in 1900 and 1904. If you're searching for something that could return many different types of results, you should add a term that distinguishes among them. This way you'll get only results about the specific Tom Watson you're interested in.

USE [Tom Watson MP], [Tom Watson golf], or [Tom Watson IBM]
NOT [Tom Watson]

USE [baby development] or [baby milestones]
NOT [babies]

USE [Betty Ford Center drug addiction]
NOT [Ford Center]

Note: Google limits queries to 32 words.

Be brief.

For best results, use a few precise words. For example, a program on quitting smoking is more likely to include the terms "quit smoking program" than the words "program on quitting tobacco cigarette smoking addiction."

USE [quit smoking program]
NOT [program on quitting tobacco cigarette smoking addiction]

You don't have to correct your spelling.

There's a good chance that Google will recognize your mistakes and suggest an alternative more common spelling, usually faster than you can look up the term in an online dictionary.

When you enter: [Anna Kornikova tennis]
Google responds: Did you mean: Anna *Kournikova* tennis

Note: Before clicking on Google's suggested spelling, consider whether it's what you want. Spelling checker, like people, make mistakes.

For more information on Google's spelling correction system, see the section Spelling Corrections.

Note: Even if you use the search tips described in Google Guide, you won't be able to access authoritative information that's available offline, e.g., old reference books, or is stored in specialized databases. For such information is not currently searchable with Google.

Next we'll look at how Google interprets your query.

For more information on the basics of Google search, visit www.google.com/help/basics.html.

Exercises

These problems give you practice in selecting search terms. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Find a page with "Google doodle."

2. Find the Dilbert cartoon that Scott Adams developed by using Google's logo.

3. What's Google's history?

4. Find contact information for your representative(s), e.g., senator, congresswoman (or congressman), or member of Parliament.

5. How long did it take the first person to cross the United States by car and in what year was it first done?

6. In the summer of 1997, an email message was widely circulated featuring the text of a "commencement speech" purportedly given by Kurt Vonnegut at MIT. The imaginary speech began "Wear sunscreen." What's the story behind this email hoax? What did this funny well-written fantasy "commencement speech" say?

7. Learn about the recommended tours of the Hearst Castle.

8. Find a recipe for lamb with mint sauce.

9. Find the full text of the March 2nd, 1998 Time magazine article by George Bush Senior and Scowcroft titled "Why We Didn't Remove Saddam Hussein."

Interpreting Your Query

Understanding how Google treats your search terms will help you devise effective queries and revise ineffective ones.

Google returns only pages that match *all* your search terms.

A search for [compact fold-up bicycle] finds pages containing the words "compact" *and* "fold-up" *and* "bicycle." Because you don't need to include the word AND between your terms, this notation is called an *implicit AND*.

[compact fold-up bicycle]

Because of implicit AND, you can focus your query by adding more terms.

[compact lightweight fold-up bicycle]

Note: If you want pages containing *any* (instead of all) of your search terms, use the OR operator, which is described in the next section Crafting Your Query.

Note: Google sometimes returns pages that don't contain your query terms, as you can see in the example in the Cached Pages section in Part II. Google returns pages in which your query terms are included in the link text (interpreted as a description) to another page or place on the page, more commonly referred to as the anchor text of a link pointing to the page.

Google returns pages that match your search terms exactly.

In his book *Internet Research, Second Edition* (McFarland & Company, 2001), Ned Fielden notes "Google simply matches strings of characters together and doesn't currently base inferences on uses of the language. Although this searching method has some drawbacks, it harnesses one of the fabulous powers of computers, [the ability] to sift through enormous heaps of data quickly and accurately."

If you search for ...	Google won't find ...
cheap	inexpensive
tv	television
effects	influences
children	kids
car	automobile
Calif OR CA	California
NYC	New York City

Google returns pages that match variants of your search terms.

The query [child bicycle helmet] finds pages that contain words that are similar to some or all of your search terms, e.g., "child," "children," or "children's," "bicycle" "bicycles," "bicycle's," "bicycling," or "bicyclists," and "helmet" or "helmets." Google calls this feature *word variations* or *automatic stemming*. Stemming is a technique to search on the stem or root of a word that can have multiple endings.

If you only want to search for pages that contain some term(s) exactly, precede each such term with a plus sign (+) or enclose more than one term in quotes (" ").

Google doesn't match variants when your query consists of a single term.

Note: When you want synonyms or variants that Google doesn't find, consider using either the OR or tilde operator, which is described in the next section Crafting Your Query.

Google ignores some common words called "stop words," e.g., *the*, *on*, *where*, *how*, *de*, *la*, as well as certain single digits and single letters.

Stop words tend to slow down your search without improving the results. Google will indicate if a stop word has been excluded on the results page below the search box.

[lyrics to the Dixie Chicks' songs]

Note: Use the **+** operator or enclose more than one term in quotes (**" "**) to force Google to include terms it would otherwise ignore. I describe these basic operators and others in the next section, 6 Crafting Your Query.

If your query consists only of common words that Google normally ignores, Google will search for pages that match all the terms.

[the who]

Note: Find more pages mentioning the rock band *The Who* by entering ["the who"], a notation you'll learn about in the next section Crafting Your Query.

Google limits queries to 32 words.

Google will indicate in a message below the query box at the top of the page if your query exceeds the 32-word limit. The 32-word limit applies to search terms and operators but not stop words.

The limit was previously 10 words, as shown in the following image.
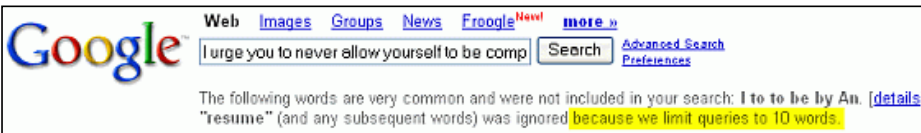
The following query finds sites that have included Google Guide's description of how Google works.

["Google consists of three distinct parts, each of which is run on a distributed network of thousands of low-cost computers and can therefore carry out fast parallel processing. Parallel processing is a method of computation in which many calculations can be performed simultaneously, significantly speeding up data processing."]

Google favors results that have your search terms near each other.

Google considers the proximity of your search terms within a page. So the query [snake grass] finds pages about a plant of that name, while [snake in the grass] tends to emphasize pages about sneaky people. Although Google ignores the words "in" and "the," (these are stop words), Google gives higher priority to pages in which "snake" and "grass" are separated by two words.

[snake grass]
[snake in the grass]

Note: The description of a wildcard in the section Craft Your Query may help you to understand how Google interprets queries containing words that it ignores.

Google gives higher priority to pages that have the terms in the same order as in your query.

Consequently, you should enter search terms in the order in which you would expect to find them on the pages you're seeking. A search for [New York library] gives priority to pages about New York's libraries. While the query [new library of York] gives priority to pages about the new libraries in York.

[New York library]
[new library of York]

Google is NOT case sensitive; it assumes all search terms are lowercase.

Ignoring case distinctions increases the number of results Google finds. A search for [Red Cross] finds pages containing "Red Cross," "red cross," or "RED CROSS."

[Red Cross], [red cross], and [RED CROSS] return the same results

There is no way to instruct Google to pay attention to case distinctions, e.g., you can't tell Google to find only occurrences of "Red Cross" where the first letter of each word is capitalized.

Note: The words "OR" and "AND" have special meanings if entered in uppercase letters.

Google ignores some punctuation and special characters, including ! ? , . ; [ ] @ / # < > .

Because punctuation is typically not as important as the text around it, Google ignores most punctuation in your search terms. There are exceptions, e.g., C++ and $99. Mathematical symbols, such as /, <, and >, are not ignored by Google's calculator.

[Dr. Ruth] returns the same results as [Dr Ruth]

What if you're seeking information that includes punctuation that Google ignores, e.g., an email address? Just enter the whole thing including the punctuation.

[info@amazon.com]

Be aware that web pages sometimes camouflage email addresses to make collecting such information difficult for spammers. For example, on some sites you'll find the @ sign in an email address replaced with the word "at."

Now we'll look at some special characters that Google doesn't ignore.

A term with an apostrophe (single quotes) doesn't match the term without an apostrophe.

A query with the term "we're" returns different results from a query with the term "were."

[we're] matches "we're" but not "were"
[were] matches "were" but not "we're"

A term with a diacritic doesn't match a term without it and vice versa.

"A diacritic is a mark, such as the cedilla of *façade* or the acute accent of *resumé*, added to a letter to indicate a special phonetic value or distinguish words that are otherwise graphically identical," according to Dictionary.com.

[Schröder] matches "Schröder" but not "Schroder" nor "Schroeder"
[Schroeder] matches "Schroeder" but not Schröder" nor "Schroder"
[Schroder] matches "Schroder" but not Schröder" nor "Schroeder"

[Côte d'Ivoire] matches "Côte d'Ivoire" but not "Cote d'Ivoire"
[Cote d'Ivoire] matches "Cote d'Ivoire" but not "Côte d'Ivoire"

[mañana] matches "mañana" but not "manana"
[manana] matches "manana" but not "mañana"

If you want pages containing either "mañana" or "manana", use the OR operator, which is described in the section Crafting Your Query.

Note: For queries with diacritics, results vary depending on the language to which you are confining your search. For example, when I search for *Martín* (a Spanish name), the US version of Google returns only pages that include *"Martín"* but when I restrict my search to pages in Spanish, Google returns pages that include either *"Martín"* or *"Martin."*.

Search all pages: [Martín] matches "Martín" but not "Martin"
Search Spanish pages: [Martín] matches "Martín" and "Martin"

Because some people spell hyphenated words with a hyphen and others with a space, Google searches for variations on any hyphenated terms.

When Google encounters a hyphen (-) in a query term, e.g., [part-time], it searches for:
- the term with the hyphen, e.g., part-time
- the term without the hyphen, e.g., parttime
- the term with the hyphen replaced by a space, e.g., part time

[part-time] matches "part-time," "part time," and "parttime"
[part time] matches "part-time" and "part time"

[e-mail] matches "e-mail," "email," and "e mail"
[email] matches "email"

If you aren't sure whether a word is hyphenated, go ahead and search for it with a hyphen.

The following table summarizes how Google interprets your query.

Search Behaviors	Descriptions
Implicit AND	Google returns pages that match *all* your search terms. Because you don't need to include the logical operator AND between your terms, this notation is called an implicit AND.
Exact Matching	Google returns pages that match your search terms exactly.
Word Variation Automatic Stemming	Google returns pages that match variants of your search terms.
Common-Word Exclusion	Google ignores some common words called "stop words," e.g., the, on, where, and how. Stop words tend to slow down searches without improving results.
32-Word Limit	Google limits queries to 32 words.
Term Proximity	Google gives more priority to pages that have search terms near to each other.
Term Order	Google gives more priority to pages that have search terms in the same order as the query.
Case Insensitivity	Google is case-insensitive; it assumes all search terms are lowercase.
Ignoring Punctuation	Google ignores most punctuation and special characters including , . ; ? [ ] ( ) @ / * < >
Accented Letters	A term with an accent doesn't match a term without an accent and vice versa.

Next we'll look at how to fine-tune your query.

For more information on the basics of Google search, visit www.google.com/help/basics.html.

Exercises

These problems are intended to help you understand how Google interprets your search terms. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Indicate which queries would match a page containing "GoogleGuide."

   [guide]   [leg]   [googleguide]   [GoogleGuide]   [google]

2. What is the usual percentage gratuity (tip) to give in a big city in the United States to a person who provides take-out service, i.e., gives you your orders and accepts payment for the food?

3. Indicate which words the following queries will find:

[non-profit]	non-profit	non profit	nonprofit
[non profit]	non-profit	non profit	nonprofit

[nonprofit]   non-profit   non profit   nonprofit

4. Which queries would you predict to be most likely to find sites with discounted designer linens?

[discounted designer linens]
[discount designer linen]
[designer linen discount]
[linen designer discount]
[linen discounted design]

5. Why doesn't the query [Be Manual] include any results about the Be operating system?

Crafting Your Query by using Special Characters

By using special characters and operators, such as [+](#), [-](#), [~](#), [..](#), [*](#), [OR](#), and [quotation marks](#), you can fine-tune your search query and increase the accuracy of its results.

To search for a phrase, a proper name, or a set of words in a specific order, put them in double quotes.

A query with terms in quotes finds pages containing the exact quoted phrase. For example, [["Larry Page"](#)] finds pages containing exactly the phrase "Larry Page." So this query would find pages mentioning Google's co-founder Larry Page, but not pages containing "Larry has a home page" or "Congressional page Larry Smith." The query [[Larry Page](#)] (without quotes) would find pages containing any of "Larry Page," "Larry has a home page," or "Congressional page Larry Smith."

[["Larry Page"](#)]
[[Larry Page](#)]

A quoted phrase is the most widely used type of special search syntax.

[["close your eyes and I'll kiss you"](#)]
[["what you're looking for is already inside you" Anne Lamott speech](#)]

Use quotes to enter proper names.

[["Julia Robinson"](#)]
[["Rio de Janeiro"](#)]

Find recommendations by searching for pages containing lists.

[["favorite movies"](#)]
[["best non-fiction books"](#)]

Google will search for common words ([stop words](#)) included in quotes, which it would otherwise ignore.

USE [["to be or not to be"](#)]
NOT [[to be or not to be](#)]

USE [["how to change oil"](#)]
NOT [[how to change oil](#)]

Google doesn't perform [automatic stemming](#) on phrases, i.e., searching for pages that match variants of any of your search terms, which I described in the previous section Interpret Your Query. For example, if you want to see pages that mention only one favorite book rather than lists of favorite books, enclose your search terms in quotes.

[["favorite book"](#)]

Some teachers use quoted phrases to detect plagiarism. They copy a few unique and specific phrases into the Google search box, surround them with quotes, and see if any results are too similar to their student's supposedly original work. Find ways to detect and prevent plagiarism.

[["ways to detect plagiarism"](#)]

["how to detect plagiarism"]

You may include more than one quoted string in a query. All quoted query phrases must appear on a result page; the implied AND works on both individual words and quoted phrases.

["The Cat in the Hat" "Green Eggs and Ham"]

Note: You'll learn how to find a page by specifying its title in the section Using Search Operators.

Force Google to include a term by preceding the term with a "+" sign.

To force Google to search for a particular term, put a + sign operator in front of the word in the query. Note that you should not put a space between the + and the word, i.e. [+The Beatles], not [+ The Beatles].

The + operator is typically used in front of stop words that Google would otherwise ignore or when you want Google to return only those pages that match your search terms exactly. However, the + operator can be used on any term.

Want to learn about Star Wars Episode One? "I" is a stop word and is not included in a search unless you precede it with a + sign.

USE [Star Wars +I]
NOT [Star Wars I]

Google excludes common words in English and in other languages, such as "la" (which means "the" in Spanish) and "de" (which means "of" in French, Spanish, Italian, and Portuguese). So if Google ignores a term critical to your search, e.g., LA (common abbreviation for Los Angeles), put a + sign in front of it.

USE [jobs in central +LA California]
NOT [jobs in central LA California]

The query [jobs in central LA California] finds jobs in central California, since the term "LA" is ignored because it's a stop word. Central California is at least a hundred miles (160 km) from central Los Angeles.

Disable automatic stemming, i.e., searching for pages that match variants of your search term(s), by preceding each term that you want to be matched exactly with the + operator. For example, if you want to see only pages mentioning one favorite book rather than lists of favorite books, precede the word "book" by a + sign.

[favorite +book]

What if you're looking for a string that contains a "+" sign? Though the character has special meaning, Google gives special attention to very common terms that include it, e.g., C++ (the name of a widely used computer language).

[C++]

Precede each term you do *not* want to appear in any result with a "-" sign.

To find pages *without* a particular term, put a -sign operator in front of the word in the query. The -sign indicates that you want to subtract or exclude pages that contain a specific term. Do not put a space between the -and the word, i.e. [dolphins -football] not [dolphins - football].

So, to search for a twins support group in Minnesota, but not return pages relating to the Minnesota Twins baseball team:

USE [twins support group Minnesota -baseball]
NOT [twins support group Minnesota]

No pages containing the word "baseball" will be returned by the first query.

Find pages on "salsa" but not the dance nor dance classes.

USE [salsa -dance -class]
NOT [salsa]

Find synonyms by preceding the term with a ~, which is known as the tilde or synonym operator.

The tilde (**~**) operator takes the word immediately following it and searches both for that specific word and for the word's synonyms. It also searches for the term with alternative endings. The tilde operator works best when applied to general terms and terms with many synonyms. As with the + and - operators, put the ~ (tilde) next to the word, with no spaces between the ~ and its associated word, i.e., [~lightweight laptop] not [~ lightweight laptop].

Why did Google use tilde? In math, the "~" symbol means "is similar to ". The tilde tells Google to search for pages that are synonyms or similar to the term that follows.

[~inexpensive] matches "inexpensive," "cheap," "affordable," and "low cost"
[~run] matches "run," "runner's," "running," as well as "marathon"

Looking for a guide, help, tutorial, or tips on using Google?

[google ~guide]

Interested in food facts as well as nutrition and cooking information?

[~food ~facts]

The synonym operator tends not to work well on well-defined terms.

[~cockroach]

If you don't like the synonyms that Google suggests when you use the ~ operator, specify your own synonyms with the OR operator, which I describe next.

Note: Google offers a link to a dictionary and a thesaurus.

Specify synonyms or alternative forms with an uppercase OR or | (vertical bar).

The **OR** operator, which you may abbreviate with **|** (vertical bar), applies to the search terms immediately adjacent to it. The first example will find pages that include either "Tahiti" or "Hawaii" or both terms, but not pages that contain neither "Tahiti" nor "Hawaii."

[Tahiti OR Hawaii] or [Tahiti | Hawaii]
[blouse OR shirt OR chemise] or [blouse | shirt | chemise]

Note: If you write OR with a lowercase "o" or a lowercase "r," Google interprets the word as a search term instead of an operator.

Note: Unlike OR, a **|** (vertical bar) need not be surrounded by spaces.

[bicycle|cycle]

Use quotes (**" "**) to group compound words and phrases together.

["New Zealand" OR "Ivory Coast" holiday package]
[filter OR stop "junk email" OR spam]

Google considers terms with accents different from those without. For example, Google interprets "côte" and "cote" as different terms and indexes them separately. To ensure that you retrieve many relevant pages, include all possible spellings separated by OR.

["Ivory Coast" OR "Côte d'Ivoire" OR "Cote d'Ivoire"]

Specify that results contain numbers in a range by specifying two numbers, separated by two periods, with no spaces.

For example, specify that you are searching in the price range $250 to $1000 using the number range specification $250..$1000.

[recumbant bicycle $250..$1000]

Use an *, known as a wildcard, to match any word in a phrase (enclosed in quotes).

Each * represents just one word. Google treats the * as a placeholder for a word. For example, ["Google * my life"] tells Google to find pages containing a phrase that starts with "Google" followed by a word, followed by "my life." Phrases that fit the bill include: "Google changed my life," "Google runs my life," and "Google is my life."

["Google * my life"]

If you know there's a date on the page you're seeking but you don't know its format, specify several common formats. For example:

[California election "Oct * 2003" OR "10/*/03" OR "October * 2003"]

When you know only part of the phrase you wish to find, consider using the * operator. Find the title of Sherry Russell's book that can help you deal with the tragedies of 9/11 or losing a loved one.

["Conquering the * and * of Grief"]

You can use the symbol * to search for terms that are a specified number of words from each other on any page (see below for examples specifying the number of words). This type of searching, known as *proximity searching*, is great when you know the start and end of a title or quote, but are unsure of the words in between. By trying each of these searches you will find the answer:

["Conquering the * Grief"]
["Conquering the * * Grief"]
["Conquering the * * * Grief"]
["Conquering the * * * * Grief"]
["Conquering the * * * * * Grief"]
["Conquering the * * * * * * Grief"]
["Conquering the * * * * * * * Grief"]
["Conquering the * * * * * * * * Grief"]

Proximity searching can be useful when you want to find pages that include someone's name in any of the following orders: first middle last, last first middle, first last, last first. To search for "Francis" adjacent or separated one word from "Coppola," requires four queries:

["Francis Coppola"]
["Francis * Coppola"]
["Coppola Francis"]
["Coppola * Francis"]

If you want to search for two terms separated by no more than two words, you'll need six queries. If you're interested in running proximity searches, try out GAPS, a third-party search tool available at http://www.staggernation.com/cgi-bin/gaps.cgi.

Note: You can get around Google's 10-word limit on the number of words in your query by substituting an * in place of each stop word or common word in your query. Wildcards are not counted.

USE [All grown-ups * once children--although few * them remember *]
NOT [All grown-ups were once children--although few of them remember it]

Google chose the symbol * to match any word because in some computer systems, such as Unix, Linux, and DOS, * stands for one or more unspecified characters. In those languages it is typically used for selecting multiple files and directories.

Note: Stemming is a technique to search on the stem or root of a word that can have multiple endings. For example, on some search engines the query *bicycl** will return results that match words including bicycle, bicycles, bicycling, bicycled, and bicyclists. Google ignores asterisks (*) that are not surrounded by spaces. The query [bicycl*] finds documents that contain "bicycl." Google automatically provides *stemming*.

This table summarizes how to use the basic search operators, described on this page. You may include any of these operators multiple times in a query.

Notation	Find result	Example
terms1 terms2	with both *term1* and *term2*	[carry-on luggage]
term1 **OR** *term2* *term1* **|** *term2*	with either *term1* or *term2* or both	[Tahiti OR Hawaii] [Tahiti | Hawaii]
+*term*	with *term* (The **+** operator is typically used in front of stop words that Google would otherwise ignore or when you want Google to return only pages that match your search terms exactly. However, the **+** operator can be used on any terms.)	[+i spy]
-*term*	without *term*	[twins minnesota -baseball]
~*term*	with *term* or one of its synonyms (currently supported on Web and Directory search)	[google ~guide]
number1.. number2	with a number in the specified range	[recumbant bicycle $250.. $1000]
"*phrase***"**	with the exact *phrase*, a proper name, or a set of words in a specific order	["I have a dream"] ["Rio de Janeiro"]
"*terms1 * terms2***"**	with the phrase (enclosed in quotes) and ***** replaced by any single word	["Google * my life"]

Queries that use Google's special notation may also be entered by using Google's Advanced Search, which we'll look at next.

Exercises

This problem set is designed to give you practice in refining your queries and in using Google's commands with special notation. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Find the Google "cheat sheet" that lists search operators and services.

2. How long before you go outside should you apply sunscreen?

3. Find advice on writing a will.

4. Search for your own name. Does Google find any references to you or a namesake?

   See if there is any difference in your results if you type a period between your names rather than enclosing your name in quotes and if you just enter the opening quote, i.e., compare the results from [Nancy.Blachman], ["Nancy Blachman"], and ["Nancy Blachman].

5. Find pages on daily life in Afghanistan that do not mention war or the Taliban.

6. What is the history of the McIntosh Apple (the fruit), not the computer?

7. Find the terms that Google considers approximately equivalent to the term "cheap."

8. Find the terms that Google considers approximately equivalent to the term "volunteer."

9. Find today's weather forecast/condition.

10. Find recipes for zucchini, also known as courgette in the UK and France.

11. Find studio apartments for rent in Minneapolis or St. Paul, Minnesota.

12. Find Iranian restaurants in New Jersey and New York.

13. Which of the following phrases matches the query ["Google * my life"]?
    "Google has enriched my life"
    "Google changed my life"
    "Google runs my life"
    "Google has revolutionized my life"
    "Google: I love my life"
    "Google is my life"

14. I vaguely remember a song I learned as a child that contained the following verses.

    The donuts in the army, they say are mighty fine. One rolled off the table and killed a friend of mine.

    Chorus
    Oh, I don't want no more of this army life.
    Gee mom, I want to go. But they won't let me go.
    Gee mom, I want to go home.

    The nurses in the army, they say are mighty fine. Most are over 90, the rest are under 9.
    Chorus
    The coffee in the army, they say is mighty fine. Taste like muddy water and looks like iodine.
    Chorus
    The money in the army, they say is mighty fine. Give them $100 dollars, they'll give you back a dime.

    Find other verses for this song and see how this song has been adapted by the Girl and Boy Scouts.

    Note: The verses changed as they got passed around camps and schools.

15. Why does the query ["the who"] give more priority to results about the rock band *The Who* than the query [the who] but return significantly fewer results?

16. How do the results of the following two queries differ?
    ["how might I"]
    ["how might I *"]
    ["how might I *"]?

Sharpening Your Query by using Google's Advanced Search Form

When you don't find what you're seeking, consider specifying more precisely what you want by using Google's Advanced Search feature. Don't be frightened by the name "Advanced Search"; it's easy to use, and it allows you to select or exclude pages with more precision than Google's standard search box. Click on the Advanced Search link, which is located to the right of Google's search box

or visit www.google.com/advanced_search and fill in the form. The Advanced Search form is automatically filled in with appropriate information from your previous query — if you entered a query just before you clicked on the Advanced Search link. If you searched for a phrase, the phrase appears in the phrase search box. If you restricted your search to a specific site or domain, the domain appears in the domain box.

Filling in the top portion of the Advanced Search form is an easy way to write restricted queries without having to use the " ," +, -, OR notation discussed in the previous section Crafting Your Query.

Advanced Search Find results	Basic Search Example	Basic Search Find results
with **all** of the words	[tap dance]	with **all** search terms
with the **exact** phrase	["tap dance"]	with terms in quotes in the specified order only
without the words	[tap -dance] [-tap dance]	including none of the terms preceded by a **-**
with **at least one** of the words	[tap OR ballet]	with **at least one** of the terms adjacent to **OR**

Let's look at some examples. If you click on the screen shots in this section, you'll be taken to the results of running the corresponding search.

- To find tutorial introductions to Google, specify [google] in the top field (find results with **all** the words), and [tutorial guide intro introduction] in the third field (find results with **at least one** of the words).

  Note: Instead of specifying your own synonyms for tutorial, you can instruct Google to suggest its own by using the tilde operator, [google ~tutorial] or [google ~guide], see Crafting Your Query.

- Find how to export addresses from a Palm address book to print labels.

The next part of the Advanced Search page lets you put restrictions on the types of pages listed in your search results.

Next I describe each line in the form.

- **Language:** limit results to pages written in a specific language. For example, find pages in Spanish with recommendations for hotels in Andalucía, Spain.

If you always want only results in a certain language or set of languages, then change your search language in your Google preferences. See the section Customizing Your Results by Using Preferences to learn how to change your Google preferences to modify the way your search results appear.

- **File Format:** restrict your results to a particular file format, or exclude a format from your results. Choices include:

File Format	Suffix	Description
Adobe Acrobat PDF	.pdf	A publishing format commonly used for product manuals and documents of all sorts.
Adobe PostScript	.ps	A printing format often used for academic papers.
Microsoft Word	.doc	A common word processing format.
Microsoft Powerpoint	.ppt	A format for presentations and slides.
Rich Text Format	.rtf	A format used to exchange documents between Microsoft Word and other formats.

Since documents in PDF format tend to be better written than web pages, let's search for documents on estate planning in PDF format.

You can restrict your search to other file formats by using the filetype: search operator, which I will discuss in the Using Search Operator (Advanced Operators) section.

- **Date:** restrict your results to pages that have been updated (created or modified), crawled, and added to Google's index (indexed) in the past three, six, or twelve months. Popular pages that are updated often are crawled and indexed frequently. *Note:* Any change in the page counts as an update, even a spelling correction.

  This option is useful when searching for timely information such as annual events, specifications for a new model of car or appliance, or what people have been doing lately.

  Recently, scientists reported new findings about the risks and benefits of hormone therapy used by 40% of postmenopausal American women to relieve menopause symptoms. We're more likely to find links to this information by searching only for web pages updated in the last three months.

  Visit the Wayback Machine if you want to see what a site looked like months or years ago or if a site is currently inaccessible. The Wayback Machine, also known as the Internet Archives, maintains a digital library of snapshots of many Internet sites.

- **Numeric Range:** when you want pages containing numbers in a specified range.

  Since I'm interested in a "half-bicycle" trailer for my three and a half year old twins, let's search for one called Trail-a-Bike in the price range $50-$1000.

- **Occurrences:** specify where your search terms **must** occur on the page. Choices are anywhere on the page, in the title, in the text, in the URL, or in links to the page.

  Find pages on Google whose URL contains FAQ, an abbreviation for either Frequently Asked Questions or Frequently Answered Question. In the solution below I look for pages containing both Google and FAQ in the URL.

- **Domain:** search only a specific website (e.g., www.eff.org) or domain (e.g., .org) or exclude that site or domain completely from your search. The section Anatomy of a Web Address at the end of the Sharpening Your Query section explains how to figure out the website or domain for a web page if you know its address.

  Let's look at a couple of examples. If you click on the screen shots in this section, you'll be taken to the Advanced Search form specifying the corresponding search.

  Larry Page and Sergey Brin, Google's founders, were graduate students at Stanford when they wrote a paper describing their prototype search engine. Let's search for it by entering their names and restricting our search domain to Stanford University's site, stanford.edu.

  To find information on volunteering for an organization, search for results with the word "volunteering" and restrict the domain to ."org."

- **SafeSearch:** specify whether to filter out sites that contain pornography or explicit sexual content and eliminate them from search results. Be aware that Google's automated filtering doesn't guarantee that you won't be shown offensive content.

  When you turn off SafeSearch filtering and search for non-pornographic content, Google will order your results in a way that adult sites won't be listed prominently. For example, searching for [breast cancer treatment] with SafeSearch turned off, you're unlikely to run across sites with provocative images of breasts.

  In an effort to return as many useful results as possible, SafeSearch doesn't currently filter out hate speech, anarchy, criminal activity, crude and tasteless material, illegal weapons, bomb making, etc., content that other filtering systems attempt to exclude.

Froogle Product Search

In an effort to make many features and services available from one form, the Advanced Search form includes a search box for Froogle, Google's product search service. To browse bicycles that can be folded up quickly and compactly making them easy to transport on a car, train, or airplane, fill in the Products search box and then click on the associated *Search* button.

Page-Specific Searches

The Advanced Search form also offers page-specific searches for finding pages similar to a page for which you have a web address (URL) and for finding out what pages link to a particular page.

- To find pages similar to Consumer Reports' web page, fill in the similar page-specific search box and then click on the associated *Search* button. For a description of how Google determines when pages are similar, see the Similar Pages section in Part II.

- Web pages link from one to another. Links are unidirectional; you can follow links from one page to another. You cannot traverse the link the other way around, i.e., go from a page to the pages that link to it. However, Google keeps track of this information and makes it available. When you want to know who links to your website or to someone else's, fill in a web address (URL) in the links page-specific search section of the Advanced Search form. Let's find who links to the Doctors without Borders, aka Médecins Sans Frontières (MSF), website www.doctorswithoutborders.com.

The most common users of backward links are webmasters and website publishers who are curious to know what sites link to theirs. People also use them to find out who links to competitors' sites.

Unlike the other fields in the Advanced Search form, the page-specific searches can't be combined with other query terms. Consequently each has its own *Search* button.

You can easily run these page-specific searches from Google's Toolbar, which is described in the section Making Google Easier with Google Tools.

Instead of going to the Advanced Search form, you can search for a web site by entering its address in the search box and Google returns a link to the website, as well as links to:

- Google's cache of the site
- Web pages that are similar to the site
- Web pages that link to the site
- Web pages that contain the URL

For example, to find out about the wonderful reference site www.refdesk.com, enter www.refdesk.com into Google's search box.

Web Alerts - www.google.com/webalerts

If you like keeping up with the latest updates and new web pages, consider setting up one or more Google Web Alerts. After you've set up a

Web Alert, Google finds and delivers links to web pages once a day or once a week. Consider using Google Web Alerts to:

- keep current on a competitor or industry
- learn where you are or your company is cited or quoted
- find when people link to your site
- discover new websites on a certain topic

Google Ultimate Interface

If you want to specify what you're looking for with more precision than Google's Advanced Search form offers, try out the Google Ultimate Interface, a third-party application available at www.faganfinder.com/google.html. With the Ultimate Interface you can:

- Search with any of Google's search engines, i.e., Web Search or some of the tools in Part III Special Tools.
- Find pages that have been updated between any two specific dates
- Select letters with practically every different kind of diacritical marking, such as umlauts or accent marks, from the keyboard near the bottom of the page.
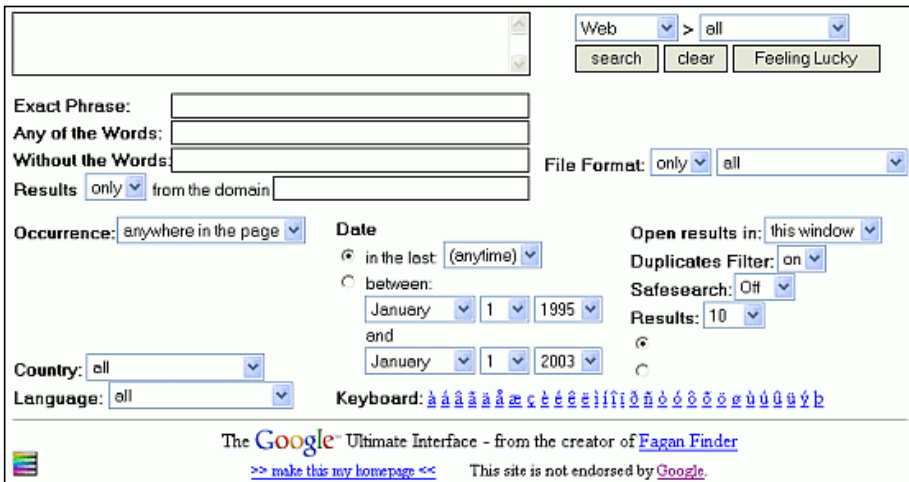
Note: Michael Fagan developed Google Ultimate Interface when he was a teenager.

If you're not sure of all the types of information that you can search for with Google, check out Soople, www.soople.com/soople_int.php.
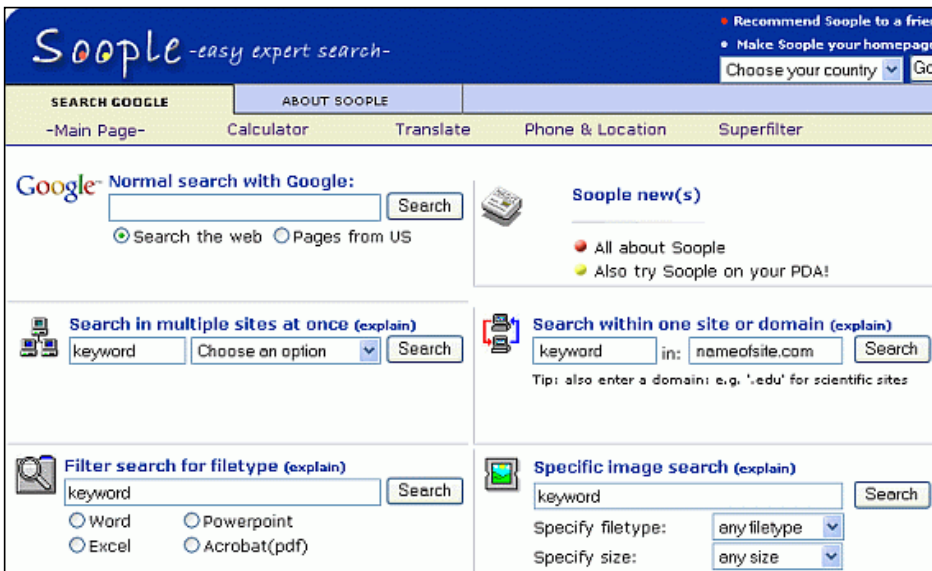
I describe many of the capabilities included in Soople in Part II: Understanding Search Results and Part III: Special Tools.

If you want to enter several queries simultaneously, try GoogleBlaster, http://www.googleblaster.com.

Refining a Query

Refining a query means changing or adding to the set of search terms to do a better job of returning the pages you're seeking. Successful researchers frequently enter several queries to find what they're seeking.

The search boxes at the top and bottom of the results page show the query for the current results page. If the query uses special operators that you entered either directly or indirectly through the advanced search form, they will appear in the search box as well. To refine your query, edit what's in the search box and then click the "Google Search" button or hit the ENTER key.

Let's look at a few examples.

- Get ideas for subsequent searches by reviewing your results, including the snippets that Google returns and the pages they came from.

  Should you get a flu shot this winter?
  TRY [flu shot]

  Many of the results refer to influenza vaccine.
  REFINE [flu OR influenza shot OR vaccine]

- Exploit successful queries: look deeper within your results.

  Scroll to the search box at the bottom of your results page and click on the link "Search within results." This causes Google to run a new search using your newly specified terms (those in the search box) *only* on the pages it found from your initial query, rather than a search over the entire web.
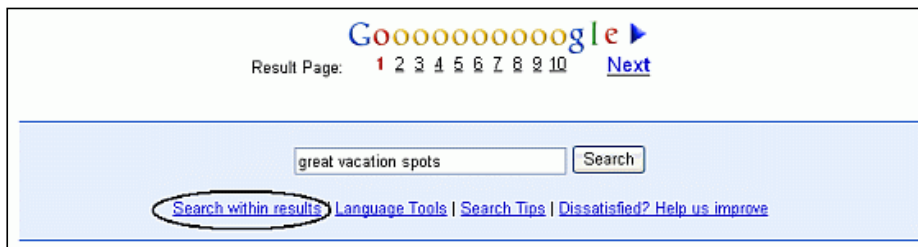
  Search within results

  You can get the same results in one step fewer by simply specifying additional terms to your previous query.

  On Internet Explorer and on some other browsers, you can double click on a term to highlight it. Then type a new term or hit the DELETE key to remove the term. Triple click in the search box to highlight your entire query. Enter a new query or hit the DELETE key to remove the old query.

- Instead of searching for related topics with a single query, divide the query into several parts. Looking for a job? By searching for tips on each aspect, you'll find more sites than by searching for sites that describe all the aspects of a job search.

USE [job application tips], [cover letter tips], [interviewing tips]
NOT [job application cover letter interview tips]

The following table presents suggestions to narrow or focus a search, as well as tips for broadening a search that has produced few useful results. Click on a link in the table to be taken to the section in Google Guide that describes features and ways to refine your query.

Too many results? Focus the search by...	Too few results? Broaden the search by...
adding a word or phrase	removing a word or phrase
specifying the order in which you want words to appear	specifying words instead of phrases
using a more specific term	using more general terms
identifying ineffective terms and removing them	including synonyms or variant word forms or using a more common version of the word's spelling
limiting to a domain or site	broadening the domain or searching the entire web
limiting to a date range or including a date	removing a date range
limiting where terms occur	removing redundant terms or splitting a multi-part query
restricting type of file	searching any type of file
limiting pages in a particular language	translating your search terms into other languages and searching for the translated terms
limiting pages to a particular country	searching the entire web

For a tutorial on how to use Advanced Search, visit www.lib.monash.edu.au/vl/google/goog06.htm.

Anatomy of a Web Address

If you already know how to read a web address or URL (pronounced "you are ell" and stands for Universal Resource Locator), skip this section. A website is usually the host or server between the `http://` and the first `/`. Consider the web address http://www.googleguide.com/searchEngines/google/searchLeader.html. (This page lists reasons why Google is a search leader.) Here's what it all means:

`http`	transfer protocol (type of information being transferred)
`www.googleguide.com`	site name
`googleguide`	second-level domain name
`com`	top-level domain name
`searchEngines`	directory name
`google`	sub-directory name
`searchLeader`	file name
`html`	file format

Here's a list of some common top-level domain names:

`.edu`	educational site (usually a university or college)
`.com`	commercial business site
`.gov`	U.S. government/non-military site
`.mil`	U.S. military sites or agencies
`.net`	networks, Internet service providers, organizations

`.org`	U.S. non-profit organizations and others

Because the Internet was created in the United States, `"US"` was not originally assigned to U.S. domain names; however, it's used to designate American state and local government hosts, including many public schools, and commercial entities, e.g., `well.sf.ca.us`. The domain .ca represents Canada, unless it's followed by `.us`, in which case it represents California.

Domain Codes	State
`.ca.us`	California
`.nv.us`	Nevada
`.tx.us`	Texas

Other countries have their own two letter codes as the top level of their domain names.

Domain Codes	Country
`.ca`	Canada
`.de`	Germany
`.dk`	Denmark
`.jp`	Japan
`.il`	Israel
`.uk`	United Kingdom
`.za`	South Africa

To limit results to a single site or domain, specify the site name (e.g., `www.googleguide.com` or `googleguide.com`) or a top-level domain name (e.g., `.com` or `.edu`) in Google's domain selector.

Exercises

This problem set is designed to give you practice with specifying more precisely what you're seeking by using the Advanced Search form. For hints and answers to selected problems, see the <u>Solutions</u> page in the Appendix.

1. What are some home remedies for getting rid of ants?

2. Find facts about declawing cats.

3. What is Google's privacy policy? How do I stop my previous queries from appearing when I type in a new search term?

4. Some movie stars attend Botox parties. What goes on at such parties and why do they attend? Which stars have used Botox?

5. When was Nina Totenberg, National Public Radio's (NPR) legal affairs correspondent, born, where was she educated, what degrees does she have? Did she attend law school?

6. When you search Google for a URL, such as `www.guardian.co.uk`, what links are included with your results?

   What is shown in the search box when you click on the "Find web pages that contain the term "www.guardian.co.uk" link?

7. What country has the domain code `.at`?

8. What country has the domain code `.bm`?

9. Run several queries on Soople.

10. Run several queries simultaneously using Google Blaster.

Using Search Operators (Advanced Operators)

Skip to Part II: Understanding Search Result unless you're an experienced Google user or you want to know how to use Google's advanced operators.

You can specify most of the Advanced Search page options in a regular search box query by using *advanced operators*, i.e., query words that have special meaning to Google. Since the advanced operators are convenient for searching, Google Guide calls them "search operators."

Want to see examples of search operators? Visit the Google Guide Advanced Operator Quick Reference or fill in the Advanced Search form. Now, look at the search box on the results page. Your query may now include special notation or special operators of the form **operator: value**.

Note: The colon following the operator name is mandatory.

[Larry Page search engine site:stanford.edu]
[volunteering site:.org]
[link:www.doctorswithoutborders.org]
[allintitle: detect plagiarism]
[Google tutorial OR introduction OR overview OR help]
[bush -george -kate]
[web page evaluation checklist filetype:pdf]

The following table lists features available on the Advanced Search page that are accessible via search operators.

Advanced Search Features	Search Operators
File Format	filetype:

Occurrences
    in the title of the page
    in the text of the page
    in the URL of the page
    in the links to the page
	allintitle:
	allintext:
	allinurl:
	allinanchor:

Domain	site:
Similar	related:
Links	link:
Safesearch	safesearch:

The following is an alphabetical list of the search operators. This list includes operators that are not in Google's online help. Each entry typically includes the syntax, the capabilities, and an example. Some of the search operators won't work as intended if you put a space between the ":" and the subsequent query word. If you don't care to check which search operators require no space after the colon, always place the keyword immediately next to the colon. Many search operators can appear anywhere in your query. In our examples, I placed the search operator as far to the right as possible. We did this since the Advanced Search form writes queries in this way. Also, such a convention makes it clearer as to which operators are associated with which terms.

allinanchor:
> If you start your query with **allinanchor:**, Google restricts results to pages containing all query terms you specify in the anchor text on links to the page. For example, [allinanchor: best museums sydney] will return only pages in which the anchor text on links to the pages contain the words "best," "museums," and "sydney."
>
> Anchor text is the text on a page that is linked to another web page or a different place on the current page. When you click on anchor text, you will be taken to the page or place on the page to which it is linked. When using allinanchor: in your query, do not include any other search operators. The functionality of allinanchor: is also available through the Advanced Web Search page, under Occurrences.

allintext:
> If you start your query with **allintext:**, Google restricts results to those containing all the query terms you specify in the text of the page. For example, [allintext: travel packing list] will return only pages in which the words "travel," "packing," and "list" appear in the text of the page. This functionality can also be obtained through the Advanced Web Search page, under Occurrences.

allintitle:

If you start your query with **allintitle:**, Google restricts results to those containing all the query terms you specify in the title. For example, [allintitle: detect plagiarism] will return only documents that contain the words "detect" and "plagiarism" in the title. This functionality can also be obtained through the Advanced Web Search page, under Occurrences.

In Image Search, the operator **allintitle:** will return images in files whose names contain the terms that you specify.

In Google News, the operator **allintitle:** will return articles whose titles include the terms you specify.

allinurl:

If you start your query with **allinurl:**, Google restricts results to those containing all the query terms you specify in the URL. For example, [allinurl: google faq] will return only documents that contain the words "google" and "faq" in the URL. This functionality can also be obtained through the Advanced Web Search page, under Occurrences.

In URLs, words are often run together. They need not be run together when you're using allinurl:.

In Google News, the operator **allinurl:** will return articles whose titles include the terms you specify.

author:

If you include **author:** in your query, Google will restrict your Google Groups results to include newsgroup articles by the author you specify. The author can be a full or partial name or email address. For example, [children author:john author:doe] or [children author: doe@someaddress.com] return articles that contain the word "children" written by John Doe or doe@someaddress.com.

Google will search for exactly what you specify. If your query contains [author:"John Doe"], Google won't find articles where the author is specified as "Doe, John."

bphonebook:

If you start your query with **bphonebook:**, Google shows business white page listings for the query terms you specify. For example, [bphonebook: google mountain view] will show the phonebook listing for Google in Mountain View.

cache:

The query **cache:***url* will display Google's cached version of a web page, instead of the current version of the page. For example, [cache:www.eff.org] will show Google's cached version of the Electronic Frontier Foundation home page.

Note: Do not put a space between **cache:** and the URL (web address).

On the cached version of a page, Google will highlight terms in your query that appear after the *cache:* search operator. For example, [cache:www.pandemonia.com/flying/ fly diary] will show Google's cached version of Flight Diary in which Hamish Reid's documents what's involved in learning how to fly with the terms "fly" and "diary" highlighted.

define:

If you start your query with **define:**, Google shows definitions from pages on the web for the term that follows. This advanced search operator is useful for finding definitions of words, phrases, and acronyms. For example, [define: blog] will show definitions for "Blog" (weB LOG).

ext:

This is an undocumented alias for **filetype:**.

filetype:

If you include **filetype:***suffix* in your query, Google will restrict the results to pages whose names end in *suffix*. For example, [web page evaluation checklist filetype:pdf] will return Adobe Acrobat pdf files that match the terms "web," "page," "evaluation," and "checklist." You can restrict the results to pages whose names end with pdf and doc by using the OR operator, e.g. [email security filetype:pdf OR filetype:doc].

When you don't specify a File Format in the Advanced Search Form or the **filetype:** operator, Google searches a variety of file formats, see the table in the File Type Conversion section.

group:

If you include **group:** in your query, Google will restrict your Google Groups results to newsgroup articles from certain groups or subareas. For example, [sleep groups:misc.kids.moderated] will return articles in the group misc.kids.moderated that contain the word "sleep" and [sleep groups:misc.kids] will return articles in the subarea misc.kids that contain the word "sleep."

id:

This is an undocumented alias for **info:**.

inanchor:

If you include **inanchor:** in your query, Google will restrict the results to pages containing the query terms you specify in the anchor or links to the page. For example, [restaurants inanchor:gourmet] will return pages in which the anchor text on links to the pages contain the word "gourmet" and the page contains the word "restaurants."

info:

The query **info:***url* will present some information about the corresponding web page. For instance, [info:gothotel.com] will show information about the national hotel directory GotHotel.com home page. *Note:* There must be no space between the **info:** and the web page url.

This functionality can also be obtained by typing the web page url directly into a Google search box.

insubject:

If you include **insubject:** in your query, Google will restrict articles in Google Groups to those that contain the terms you specify in the subject. For example, [insubject:"falling asleep"] will return Google Group articles that contain the phrase "falling asleep" in the subject.

Equivalent to **intitle:**.

intext:

The query **intext:***term* restricts results to documents containing *term* in the text. For instance, [Hamish Reid intext:pandemonia] will return documents that mention the word "pandemonia" in the text, and mention the names "Hamish" and "Reid" anywhere in the document (text or not). *Note:* There must be no space between the **intext:** and the following word.

Putting intext: in front of every word in your query is equivalent to putting allintext: at the front of your query, e.g., [intext:handsome intext:poets] is the same as [allintext: handsome poets].

intitle:

The query **intitle:***term* restricts results to documents containing *term* in the title. For instance, [flu shot intitle:help] will return documents that mention the word "help" in their titles, and mention the words "flu" and "shot" anywhere in the document (title or not). *Note:* There must be no space between the **intitle:** and the following word.

Putting intitle: in front of every word in your query is equivalent to putting allintitle: at the front of your query, e.g., [allintitle: google search].

inurl:

If you include **inurl:** in your query, Google will restrict the results to documents containing that word in the url. For instance, [inurl:healthy eating] will return documents that mention the words "healthy" in their url, and mention the word "eating" anywhere in the document (url or no). *Note:* There must be no space between the **inurl:** and the following word.

Putting **inurl:** in front of every word in your query is equivalent to putting **allinurl:** at the front of your query, e.g., [inurl:healthy inurl:eating] is the same as [allinurl: healthy eating].

In URLs, words are often run together. They need not be run together when you're using inurl:.

link:

The query **link:***URL* shows pages that point to that *URL*. For example, to find pages that point to Google Guide's home page, enter:

[link:www.googleguide.com]

Find links to the Google home page not on Google's own site.

[link:www.google.com -site:google.com]

location:

If you include **location:** in your query on Google News, only articles from the location you specify will be returned. For example, [queen location:uk] will show articles that match the term "queen" from sites in the United Kingdom.

movie:

If you include **movie:** in your query, Google will find movie-related information. For examples, see Google's Blog.

msgid:

If you include **msgid:** in your query, Google will restrict your Google Groups results to a newsgroup article with the specified message ID. For example, [msgid:<hamishxyz-B270D1.09001126112003@news.supernews.com>] will return the article whose message id is <hamishxyz-B270D1.09001126112003@news.supernews.com>.

phonebook:

If you start your query with **phonebook:**, Google shows all white page listings for the query terms you specify. For example, [phonebook: Krispy Kreme Mountain View] will show the phonebook listing of Krispy Kreme donut shops in Mountain View.

related:

The query **related:***URL* will list web pages that are *similar* to the web page you specify. For instance, [related:www.consumerreports. org] will list web pages that are similar to the Consumer Reports home page. *Note:* Don't include a space between the **related:** and the web page url. You can also find similar pages from the *Similar pages* link on Google's main results page, and from the similar selector in the Page-Specific Search area of the Advanced Search page. If you expect to search frequently for similar pages, consider installing a GoogleScout browser button, which scouts for similar pages.

rphonebook:

If you start your query with **rphonebook:**, Google shows residential white page listings for the query terms you specify. For example, [rphonebook: monty python Oakland] will show the phonebook listing for Monty Python in Oakland.

safesearch:

If you include **safesearch:** in your query, Google will exclude adult-content. For example, [safesearch:breasts] will search for information on breasts without returning adult or pornographic sites.

site:

If you include **site:** in your query, Google will restrict your search results to the site or domain you specify. For example, [admissions site:www.lse.ac.uk] will show admissions information from London School of Economics' site and [peace site:gov] will find pages about peace within the .gov domain. You can specify a domain with or without a period, e.g., either as .gov or gov.

Note: Do not include a space between the "site:" and the domain.

You can use many of the search operators in conjunction with the basic search operators +, -, OR, " ." For example, to find information on Windows security from all sites except Microsoft.com, enter:

[windows security -site:microsoft.com]

You can also restrict your results to as ite or domain through the domains selector on the Advanced Search page.

source:

If you include **source:** in your query, Google News will restrict your search to articles from the news source with the ID you specify. For example, [election source:new_york_times] will return with the word "election" that appear in the New York Times.

To find a news source ID, enter a query that includes a term and the name of the publication you're seeking. You can also specify the publication name in the "news source" field in the Advanced News Search form. You'll find the news source ID in the query box, following the **source:** search operator. For example, if the search box contains [peace source:ha_aretz], then the news source ID is ha_aretz. This query will only return articles that include the word "peace" from the Israeli newspaper Ha'aretz.

stocks:

If you start your query with **stocks:**, Google will interpret the rest of the query terms as stock ticker symbols, and will link to a page showing stock information for the symbols you specify. For instance, [stocks:brcm brcd] will show information about Broadcom Corporation and Brocade Communications System. *Note:* Specify ticker symbols not company names. If you enter an invalid ticker symbol, you'll be told so and taken to a page where you can look up a valid ticker symbol. You can also obtain stock information by entering one or more NYSE, NASDAQ, AMEX, or mutual fund ticker symbols in Google's query box, e.g., [brcm brcd] and then clicking on the "Show stock quotes" link that appears near the top of the results page.

store:

If you include **store:** in your query, Froogle will restrict your search to the store ID you specify. For example, [polo shirt store:llbean] will return listings that match the terms "polo" and "shirt" from the store L. L. Bean.

To find a store ID, enter the name of the store and click on the link "See all results from *store*." You'll find the store ID in the query box, after the **store:** search operator.

weather

If you include **weather** in your query, Google will include weather for the location you specify. Since weather is not an advanced operator, there is no need to include a colon after the word. For example, [weather Sunnyvale CA] will return the weather for Sunnyvale, California and [weather 94041] will return the weather for the city containing the zip code 94041, which is Mountain View, California.

The following table lists the search operators that work with each Google search service.

Search Service	Search Operators
Web Search	allinanchor:, allintext:, allintitle:, allinurl:, bphonebook:, cache:, define:, filetype:, id:, inanchor:, info:, intext:, intitle:, inurl:, link:, phonebook:, related:, rphonebook:, safesearch:, site:, stocks:
Image Search	allintitle:, allinurl:, filetype:, inurl:, intitle:, site:
Groups	allintext:, allintitle:, author:, group:, insubject:, intext:, intitle:, msgid:
Directory	allintext:, allintitle:, allinurl:, ext:, filetype:, intext:, intitle:, inurl:
News	allintext:, allintitle:, allinurl:, intext:, intitle:, inurl:, location:, source:
Froogle	allintext:, allintitle:, store:

The Google Guide Advanced Operator Quick Reference (www.googleguide.com/advanced_operators_reference.html) provides a nice summary of the search operators grouped by type. It includes search operators not yet documented by Google, e.g., allinanchor:, allintext:, author:, ext:, group:, id:, insubject:, intext:, intitle:, location:, phonebook:, source:, and store:. Be forewarned that Google may change how undocumented operators work or eliminate them completely.

Using More than One Search Operator

You may use many of the basic operators and search operators with each other. However, there are some that must be used by themselves and others that you should be careful about using together.

- **Search Operators that Can't Be Combined**

  There are about a dozen search operators that can't be combined with any other. If you do, Google probably won't return any matching documents. Search operators that shouldn't be mixed include:

  ○ All the search operators whose names begin with "allin," e.g., allinanchor:, allintext:, allintitle:, and allinurl:.

  ○ Syntaxes that request special information, e.g., define:, phonebook, bphonebook, rphonebook, stocks:.

  ○ Page-specific search operators, e.g., cache:, info:, related:.

- **Combine Search Operators Carefully**

  Be careful not to cancel out the effect of a search operator when including more than one in your query. Here are some rules to follow:

  ○ Don't use search operators that will cancel each other out. For example, [admission site:stanford.edu -inurl:stanford] searches for pages that are on the site stanford.edu that do not contain the string "stanford" in their URL or web addresses. None fit the bill.

  ○ Take care not to exclude all results when using certain search operators more than once in a query. For example, [sleep recommendations site:edu site:cdc.gov] will not return any sleep recommendation since the query looks for results appearing on both the .edu domain and the cdc.gov sites simultaneously. If you want results from both, include OR between the two site: specifications, i.e., [sleep recommendations site:edu OR site:cdc.gov]. Search operators that should either be used once in a query or in combination with OR include: filetype: site:, and group:.

○ Focus your search by using several search operators. For example, [intext:e-mail intitle:security -site:microsoft.com] finds pages whose titles contain the word "security," with the word "e-mail" on the text of the page and not on the site microsoft.com.

Exercises

This problem set is designed to give you experiences with search operators and practice with specifying more precisely what you're seeking by using the Advanced Search form. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Use the site: operator to search for armchairs on Ikea's site, www.ikea.com.

2. Use the Advanced Search form to find the page whose title is "Some Ways to Detect Plagiarism." When the title is entered in lowercase letters, the query box on the results page contains [allintitle; "ways to detect plagiarism"].

3. Find all pages on google.com but not on answers.google.com nor on directory.google.com whose titles include the words "FAQ" or "help."

4. Use the link: operator to see who links to googleguide.com, your company's website, or your favorite website.

5. Find pages whose titles include surfing that are not about surfing the World Wide Web.

6. Find out where the upcoming international conference on AIDS is being held.

Part II: Understanding Search Results

Google strives to make it easy to find whatever you're seeking, whether it's a web page, a news article, a definition, something to buy, or text in a book. By understanding what appears on a results page, you'll be better able to determine if a page includes the information you're seeking or links to it.

After you enter a query, Google returns a results list ordered by what it considers the items' relevance to your query, listing the best match first. Sponsored links sometimes appear above to the right of the search results.

In this course segment, you'll learn:

- **How Google works**
- **What information and links may be included with your results**
- **How to customize your results by using Preferences**
- **What approach Google uses for ads**
- **How to evaluate what you find**

How Google Works

If you aren't interested in learning how Google creates the index and the database of documents that it accesses when processing a query, skip this description. I adapted the following overview from Chris Sherman and Gary Price's wonderful description of How Search Engines Work in Chapter 2 of The Invisible Web (CyberAge Books, 2001).

Google consists of three distinct parts, each of which is run on a distributed network of thousands of low-cost computers and can therefore carry out fast parallel processing. Parallel processing is a method of computation in which many calculations can be performed simultaneously, significantly speeding up data processing.

- Googlebot, a web crawler that finds and fetches web pages.
- The indexer that sorts every word on every page and stores the resulting index of words in a huge database.
- The query processor, which compares your search query to the index and recommends the documents that it considers most relevant.

Let's take a closer look at each part.

Googlebot, Google's web Crawler

Googlebot is Google's web crawling robot, which finds and retrieves pages on the web and hands them off to the Google indexer. It's easy to imagine Googlebot as a little spider scurrying across the strands of cyberspace, but in reality Googlebot doesn't traverse the web at all. It functions much like your web browser, by sending a request to a web server for a web page, downloading the entire page, then handing it off to Google's indexer.

Googlebot consists of many computers requesting and fetching pages much more quickly than you can with your web browser. In fact, Googlebot can request thousands of different pages simultaneously. To avoid overwhelming web servers, or crowding out requests from human users, Googlebot deliberately makes requests of each individual web server more slowly than it's capable of doing.

Googlebot finds pages in two ways: through an add URL form, www.google.com/addurl.html, and through finding links by crawling the web.

Unfortunately, spammers figured out how to create automated bots that bombarded the add URL form with millions of URLs pointing to commercial propaganda. Google rejects those URLs submitted through its add URL form that it suspects are trying to deceive users by employing tactics such as including hidden text or links on a page, stuffing a page with irrelevant words, cloaking (aka bait and switch), using sneaky redirects, creating doorways, domains, or sub-domains with substantially similar content, sending automated queries to Google, and linking to bad neighbors.

When Googlebot fetches a page, it culls all the links appearing on the page and adds them to a queue for subsequent crawling. Googlebot tends to encounter little spam because most web authors link only to what they believe are high-quality pages. By harvesting links from every page it encounters, Googlebot can quickly build a list of links that can cover broad reaches of the web. This technique, known as deep crawling, also allows Googlebot to probe deep within individual sites. Because of their massive scale, deep crawls can reach almost every page in the web. Because the web is vast, this can take some time, so some pages may be crawled only once a month.

Although its function is simple, Googlebot must be programmed to handle several challenges. First, since Googlebot sends out simultaneous requests for thousands of pages, the queue of "visit soon" URLs must be constantly examined and compared with URLs already in Google's index. Duplicates in the queue must be eliminated to prevent Googlebot from fetching the same page again. Googlebot must determine how often to revisit a page. On the one hand, it's a waste of resources to re-index an unchanged page. On the other hand, Google wants to re-index changed pages to deliver up-to-date results.

To keep the index current, Google continuously recrawls popular frequently changing web pages at a rate roughly proportional to how often the pages change. Such crawls keep an index current and are known as *fresh crawls*. Newspaper pages are downloaded daily, pages with stock quotes are downloaded much more frequently. Of course, fresh crawls return fewer pages than the deep crawl. The combination of the two types of crawls allows Google to both make efficient use of its resources and keep its index reasonably current.

Google's Indexer

Googlebot gives the indexer the full text of the pages it finds. These pages are stored in Google's index database. This index is sorted alphabetically by search term, with each index entry storing a list of documents in which the term appears and the location within the text where it occurs. This data structure allows rapid access to documents that contain user query terms.

To improve search performance, Google ignores (doesn't index) common words called *stop words* (such as *the*, *is*, *on*, *or*, *of*, *how*, *why*, as well as certain single digits and single letters). Stop words are so common that they do little to narrow a search, and therefore they can safely be discarded. The indexer also ignores some punctuation and multiple spaces, as well as converting all letters to lowercase, to improve Google's performance.

Google's Query Processor

The query processor has several parts, including the user interface (search box), the "engine" that evaluates queries and matches them to relevant documents, and the results formatter.

Google considers over a hundred factors in determining which documents are most relevant to a query, including the popularity of the page, the position and size of the search terms within the page, and the proximity of the search terms to one another on the page. PageRank is Google's system for ranking web pages. (View a websites's PageRank from Google's ToolBar and from the Google Directory.)

Google also applies machine-learning techniques to improve its performance automatically by learning relationships and associations within the stored data. For example, the spelling-correcting system uses such techniques to figure out likely alternative spellings. Google closely guards the formulas it uses to calculate relevance, and tweaks them to improve quality and performance, and to outwit the latest devious techniques used by spammers.

Indexing the full text of the web allows Google to go beyond simply matching single search terms. Google gives more priority to pages that have search terms near each other and in the same order as the query. Google can also match multi-word phrases and sentences. Since Google indexes HTML code in addition to the text on the page, users can restrict searches on the basis of where query words appear, e.g., in the title, in the URL, in the body, and in links to the page, options offered by the Advanced-Search page and search operators.

Let's see how Google processes a query.

Query

Google User

Google Web Server

3. The search results are returned to the user in a fraction of a second.

1. The web server sends the query to the index servers. The content inside the index servers is similar to the index in the back of a book--it tells which pages contain the words that match any particular query term.

2. The query travels to the doc servers, which actually retrieve the stored documents. Snippets are generated to describe each search result.

Index Servers

Doc Servers

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For more information on Google's technology, visit www.google.com/technology/. There are numerous pages explaining Google's PageRank, including Pagerank Explained Correctly with Examples, which you can find at www.iprcom.com/papers/pagerank/ and Google's PageRank Explained and How to Make the Most of It by Phil Craven, which you can find at www.webworkshop.net/pagerank.html.

What Appears on the Results Page

The results page is filled with information and links, most of which relate to your query.

- **Google Logo:** Click on the Google logo to go to Google's home page.

- **Statistics Bar:** Describes your search, includes the number of results on the current results page and an estimate of the total number of results, as well as the time your search took. For the sake of efficiency, Google estimates the number of results; it would take considerably longer to compute the exact number. Every underlined term in the statistics bar is linked to its dictionary definition.

- **Tips:** Sometimes Google displays a tip in a box just below the statistics bar.

- **Search Results:** Ordered by relevance to your query, with the result that Google considers the most relevant listed first. Consequently you are likely to find what you're seeking quickly by looking at the results in the order in which they appear. Google assesses relevance by considering over a hundred factors, including how many other pages link to the page, the positions of the search terms within the page, and the proximity of the search terms to one another.

  Below are descriptions of some search-result components. These components appear in fonts of different colors on the result page to make it easier to distinguish them from one another.

  - **Page Title:** (blue) The web page's title, if the page has one, or its URL if the page has no title or if Google has not indexed all of the page's content. Click on the page title, e.g., Brassiere History, to display the corresponding page.

  - **Snippets:** (black) Each search result usually includes one or more short excerpts of the text that matches your query with your search terms in **boldface** type. Each distinct excerpt or snippet is separated by an ellipsis (...). These snippets, which appear in a black font, may provide you with

    - The information you are seeking
    - What you might find on the linked page
    - Ideas of terms to use in your subsequent searches

    When Google hasn't crawled a page, it doesn't include a snippet. A page might not be crawled because its publisher requested no crawling, or because the page was written in such a way that it was too difficult to crawl.

  - **URL of Result:** (green) Web address of the search result. In the screen shot, the URL of the first result is www.porvo.com/fashionbra.htm.

  - **Size:** (green) The size of the text portion of the web page. It is omitted for sites not yet indexed. In the screen shot, "5k" means

that the text portion of the web page is 5 kilobytes. One kilobyte is 1,024 (2^{10}) bytes. One byte typically holds one character. In general, the average size of a word is six characters. So each 1k of text is about 170 words. A page containing 5K characters thus is about 850 words long.

Large web pages are far less likely to be relevant to your query than smaller pages. For the sake of efficiency, Google searches only the first 101 kilobytes (approximately 17,000 words) of a web page and the first 120 kilobytes of a pdf file. Assuming 15 words per line and 50 lines per page, Google searches the first 22 pages of a web page and the first 26 pages of a pdf file. If a page is larger, Google will list the page as being 101 kilobytes or 120 kilobytes for a pdf file. This means that Google's results won't reference any part of a web page beyond its first 101 kilobytes or any part of a pdf file beyond the first 120 kilobytes.

○ **Date:** (green) Sometimes the date Google crawled a page appears just after the size of the page. The date tells you the freshness of Google's copy of the page. Dates are included for pages that have recently had a fresh crawl.

○ **Indented Result:** When Google finds multiple results from the same website, it lists the most relevant result first with the second most relevant page from that same site indented below it. In the screen shot, the indented result and the one above it are both from the site www.porvo.com.

Limiting the number of results from a given site to two ensures that pages from one site will not dominate your search results and that Google provides pages from a variety of sites.

○ **More Results:** When there are more than two results from the same site, access the remaining results from the "More results from..." link.

When Google returns more than one page of results, you can view subsequent pages by clicking either a page number or one of the "o"s in the whimsical "Gooooogle" that appears below the last search result on the page.
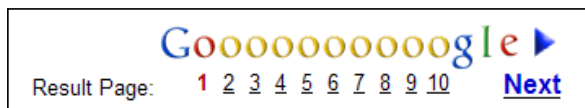
If you find yourself scrolling through pages of results, consider increasing the number of results Google displays on each results page by changing your global preferences (see the section Changing Your Global Preferences).

In practice, however, if pages of interest to you aren't within the first 10 results, consider refining your query instead of sifting through pages of irrelevant results. To simplify such refinements, Google includes a search box at the bottom of the page you can use to enter your refined query

● **Sponsored Links:** Your results may include some clearly identified sponsored links (advertisements) relevant to your search. Google displays your search terms that appear in the ads in **boldface** type, e.g., Brassiere on the top ad on the right.

● **Spelling Corrections**, **Dictionary Definition**, ` **Cached**, **Similar Pages**, **News**, **Product Information**, **Translation**, **Content of a Book and its Cover (Google Print):** Your results may include these links, which are described on the next few pages.

Here's another screen shot of the results page in case the one at the top of this page scrolled off your screen.

For more on what's included on Google's results page, visit www.google.com/help/interpret.html.

Links Included with Your Results

Google may include links to the following types of information above or along side your results.

- **A Spelling Correction (suggestion)**
- **Dictionary Definitions**
- **Cached Pages**
- **Similar Pages**
- **News Headlines**
- **Product Search (Froogle)**
- **File-Type Conversion**
- **A Translation**
- **Content of a Book and its Cover (Google Print)**

The shortcut links that often appear to the left of an icon are known as OneBox results.

Spelling Corrections (Suggestions)

Not sure how to spell something? Don't worry, try phonitick spewling or gessing. In just the first few months on the job, Google engineer Noam Shazeer developed a spelling correction (suggestion) system based on what other users have entered. The system automatically checks whether you are using the most common spelling of each word in your query.

Want to know the approximate value of a used car? Check out its "Blue Book" value.

Notice that Google suggests the correct spelling if you fail to type the final "e" in "blue."

Since an alternative spelling is more common, Google asks: Did you mean: **blue** book. Click the suggested spelling link to launch a new search on the "blue book" spelling instead of the original "blu book."

Google's checker is particularly good at recognizing frequently made typos, misspellings, and misconceptions. It analyzes all terms in your query to recognize what you most likely intended to enter. For example, when you search for [untied stats], the spelling checker suggests Did you mean: **"united states"**, although each individual word is spelled correctly.

Regardless of whether it suggests an alternative spelling, Google returns results that match your query if there are any. If there aren't any that match your query, Google may offer an alternative spelling, search tips, and a link to Google Answers. The last is a service that provides assistance from expert online researchers for a fee.
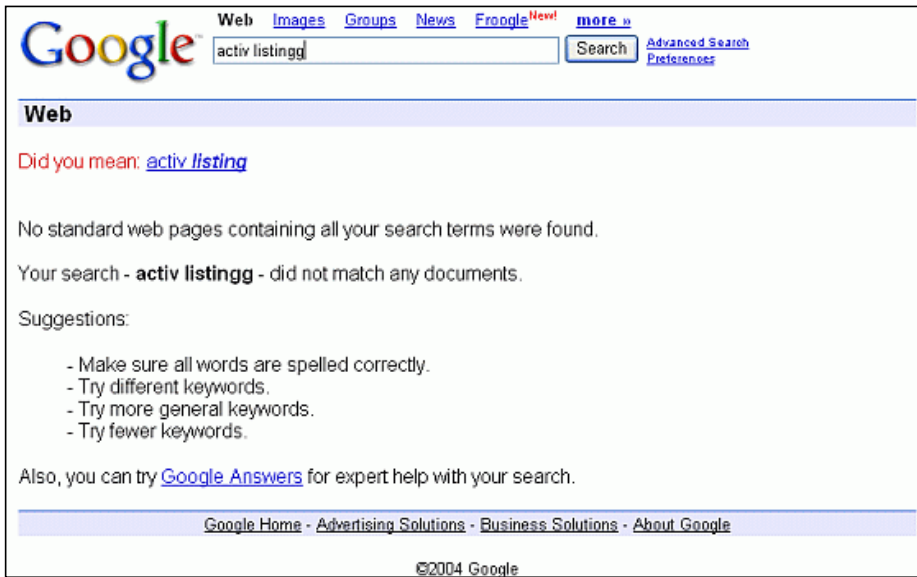
Google figures out possible misspellings and their likely correct spellings by using words it finds while searching the web and processing user queries. So, unlike many spelling correctors, Google can suggest common spellings for:

- Proper nouns (names and places)
- Words that may not appear in a dictionary

People searching for Britney Spears have clearly found the spelling checker useful, as it has corrected spellings of her first name ranging from "Brittany" to "Prietny." Visit www.google.com/jobs/britney.html to see hundreds of other ways people have misspelled her name.

Be aware that the spelling checker isn't able to distinguish between a variant spelling and a word or name that is spelled similarly. So, before clicking on what Google suggests, check that it's what you intended. For example, when looking up the San Francisco Bay Area web designer Mistrale, Google asks: Did you mean: *Mistral*, though I spelled the name correctly.

Exercises

The first problem gives you practice in using Google's spelling-correction system. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. On National Public Radio (NPR), you heard a researcher at Stanford University whose name sounded like Jeff Naumberg and want to send him email. What is Jeff's email address?

2. From Google's home page, www.google.com, search for "french military victories" and then click on the *I'm Feeling Lucky* button to see Albino Blacksheep's parody of a Google spelling correction result.

   Note: Though the page looks like a Google page, if you enter another query in the search box, it will be processed by the hosting site, listed in your browser's address box.

Definitions

Want a definition for your search terms? It's just a click away.

Google looks for dictionary definitions for your search terms. If it finds any definitions, it shows those words as underlined links or includes a definition link in the statistics bar section of the results page (located below the search box showing your query). Google is able to find definitions for acronyms, colloquialisms, and slang, as well as words that you would expect to find in a dictionary.

Click on the underlined terms or the definition link in the statistics bar to link to their dictionary definition, which also may include information on pronunciation, part of speech, etymology, and usage.

For example, learn what co-founders Larry Page and Sergey Brin, and CEO Eric Schmidt mean when they say they run Google as a triumvirate by clicking on the link triumvirate.

Phrases with idiomatic meanings that aren't necessarily implied by the definitions of the individual words will be linked to their dictionary definitions, e.g., "to get wind," "happy hour," "put off," "greasy spoon," and "raise the roof."

To take wind, or To get wind, to be divulged; to become public; as, the
story got wind, or took wind.

If Google doesn't find a definition for a term, try using Google Glossary.

The online dictionary page includes a link to an online thesaurus. Use an online thesaurus to find suggestions for expressing yourself, whether for a document, a speech, a book, or a query.

To view the thesaurus, first type the terms for which you want a synonym or antonym. Click on the link to the dictionary definition in the statistics bar. Google will display a page with the dictionary definition(s).
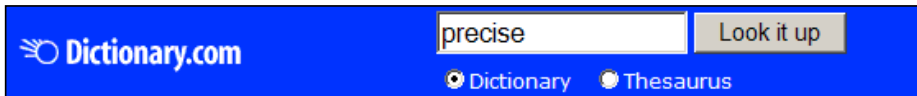
Then select the "Thesaurus" radio button
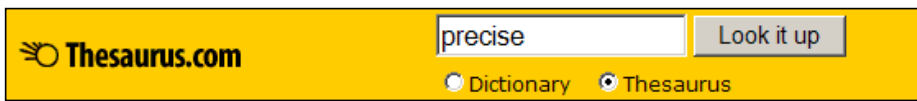
and click the "Look it up" button or hit the ENTER key and your browser will display synonyms. The following screen shot shows two of the 80 entries from Thesaurus.com for the word "precise."

80 entries found for *precise*.

Entry: **precise**
Function: adjective
Definition: exact
Synonyms: absolute, accurate, actual, categorical, circumscribed, clear-cut, correct, decisive, definite, determinate, explicit, express, fixed, individual, limited, literal, narrow, nice, particular, proper, restricted, right, rigid, rigorous, specific, strict, stringent, unequivocal, very, well-defined
Concept: specificity
Source: *Roget's Interactive Thesaurus, First Edition (v 1.0.0)*
Copyright © 2003 by Lexico Publishing Group, LLC. All rights reserved.

Entry: **precise**
Function: adjective
Definition: meticulous
Synonyms: careful, ceremonious, choosy, exact, fastidious, finicky, formal, fussy, genteel, inflexible, nice, particular, persnickety, picky, priggish, prim, prissy, prudish, punctilious, puritanical, rigid,

Exercises

These problems give you practice in finding dictionary definitions. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. According to the dictionary, what is an "urban legend"?

2. Find the history of the word 'chivalry.' From which language does it come and from what word?

3. Does Google provide a link to dictionary for definitions of terms in languages other than English?

4. What does 'zeitgeist' mean? What's on the Google Zeitgeist page www.google.com/press/zeitgeist.html?

Cached

Google takes a snapshot of each page it examines and caches (stores) that version as a back-up. The cached version is what Google uses to judge if a page is a good match for your query.

Practically every search result includes a *Cached* link. Clicking on that link takes you to the Google cached version of that web page, instead of the current version of the page. This is useful if the original page is unavailable because of:

- Internet congestion
- A down, overloaded, or just slow website
- The owner's recently removing the page from the Web

Sometimes you can access the cached version from a site that otherwise require registration or a subscription.

Note: Since Google's servers are typically faster than many web servers, you can often access a page's cached version faster than the page itself.

If Google returns a link to a page that appears to have little to do with your query, or if you can't find the information you're seeking on the current version of the page, take a look at the cached version.

Let's search for pages on the Google help basic search operators.
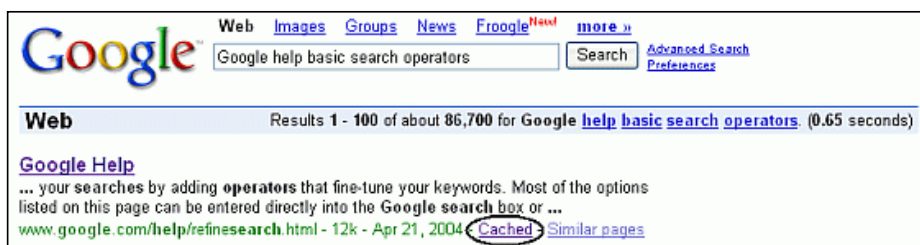
Click on the *Cached* link to view Google's cached version of the page with the query terms highlighted. The cached version also indicates terms that appear only on links pointing to the page and not on the page itself.

Note: Internet Explorer users may view a page with any word(s) highlighted, not just search terms, by using the highlight feature of the Google Toolbar, which is mentioned in Part III.

When Google displays the cached page, a header at the top serves as a reminder that what you see isn't necessarily the most recent version of the page.

The *Cached* link will be omitted for sites whose owners have requested that Google remove the cached version or not cache their content, as well as any sites Google hasn't indexed.

If the original page contains more than 101 kilobytes of text, the cached version of the page will consist of the first 101 kbytes (120 kbytes for pdf files).

You can also retrieve Google's cached version of a page via the cache: search operator. For example, [cache:www.pandemonia.com/flying/] will show Google's cached version of Flight Diary in which Hamish Reid documents what's involved in learning how to fly.

On the cached version of a page, Google will highlight terms in your query that appear after the *cache:* search operator. For example, in the snapshot of the page www.pandemonia.com/flying/, Google highlights the terms "fly" and "diary" in response to the query [cache:www.pandemonia.com/flying/ fly diary].

Use the Wayback Machine when you want to visit a version of a web page that is older than Google's cached version.

Exercises

These problems give you practice accessing Google's cached version of a page. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. After Nelson Blachman received reprints of a paper he wrote for the June 2003 issue of *The Mathematical Scientist*, he wanted to discover what other sorts of papers appear in the same issue of this semiannual publication. Find a table of contents for *The Mathematical Scientist* for Nelson.

2. Compare the dates on the current page with the dates on the cached version for the following organizations:
   - ❍ CNN
   - ❍ New York Times
   - ❍ Java Pro Magazine
   - ❍ North Texas Food Bank

   Note: Google indexes a page (adds it to its index and caches it) frequently if the page is popular (has a high PageRank) and if the page is updated regularly. The new cached version replaces any previous cached versions of the page.

3. Check the dates that the Wayback Machine archived versions of Google Guide.

Similar Pages

Do you like a result Google found and want more like it? For example, if you're interested in finding sites similar to that of Consumer Reports, first search for their site.

Click on the *Similar pages* link that appears on the bottom line for the Consumer Reports result.

The link may be useful for finding more consumer resources, or information on Consumer Reports' competitors.

You can also find similar pages by using the Page-Specific Search selector on the Advanced Search page, see Sharpening Your Query section or by using the related: search operator, described in the section Using Search Operators, both of which are in Part I. If you expect to search frequently for similar pages, you may want to install a GoogleScout browser button as described in the section Making Google Easier with Google Tools in Part III.

Note: The similar pages feature is most effective on pages that are popular, i.e, that are linked to from many pages.

How does Google find similar pages?

By finding other sites listed on pages that link to the specified page. Let's see how Google chooses sites similar to Google Guide. I use the related: search operator, which returns the same results as the *Similar pages* link.

Now let's look at one of the sites that link to Google Guide. On the Michigan State University (MSU) Libraries page, www.lib.msu.edu/sowards/ home/home5.htm, Google Guide is listed near the top of the page just after a link to Google's Zeitgeist page, www.google.com/press/zeitgeist. html. The next three sites listed as being similar to Google Guide (Metaspy, the MEL Internet Myths and Hoaxes, and Web Characterization) are also listed on the MSU page. Google automatically selected these sites by considering many factors including the popularity of the pages containing links to Google Guide, the positions, sizes, and proximities of other links to the Google Guide link.

Another resource for similar results is the category link that may appear just below the snippet or above your search results, which is described next. If there isn't a category link, try using Google's Directory.

For more information about the *Similar pages* link, visit www.google.com/help/features.html#related.

Exercises

These problems give you practice in using Google's *Similar pages* feature. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Find a site that will get your name off mailing lists so that you receive less commercial advertising mail. Click on the *Similar pages* link to find other such sites.

2. What sites are similar to the Internet Movie Database.

News Headlines

When Google finds current news relating to your query, Google includes up to three headlines that link to news stories above your search results. Why at most three? So as not to push the web search results off the page.

Of course, since news by definition reports recent events, you'll see the most recent headlines about the United Nations when you enter the query [United Nations].

For more news stories or to browse the latest headlines, visit Google News Search at news.google.com, which I describe in Part III.

Exercises

These problems give you practice in searching for news headlines. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Find the latest news about Google.

2. Find the latest news on Iraq.

Product Search (Froogle)

When Google finds products relevant to your query, above your search results, you may find up to three links to items that merchants list in Froogle, Google's product search service.

Exercises

These problems give you practice in searching for products. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Find polo shorts.

2. Find cell phones.

File Type Conversion

Google converts all file types it searches to either HTML or text (unless, of course, they already are in one of these formats). Google searches a variety of file formats including

File Format	Suffix	Description
Adobe Acrobat PDF	pdf	A publishing format commonly used for product manuals and documents of all sorts.
Adobe PostScript	ps	A printing format often used for academic papers.
Hypertext Markup Language	html or htm	The primary language for web pages.
Lotus 1-2-3	wk1, wk2, wk3, wk4, wk5, wki, wks, or wku	A spreadsheet format.
Lotus WordPro	lwp	A word processing format.
MacWrite	mw	A word processing format.
Microsoft Excel	xls	A spreadsheet format.
Microsoft PowerPoint	ppt	A format for presentations and slides.
Microsoft Word	doc	A common word processing format.
Microsoft Works	wks, wps, or wdb	A word processing format.
Microsoft Write	wri	A Macintosh word processing format.
Rich Text Format	rtf	A format used to exchange documents between Microsoft Word and other formats.
Plain Text	ans or txt	Ordinary text with no special formating.

Clicking on a link to a non-HTML file will launch the associated program for reading the file, provided it's installed on your system.

If you can't view the page in the native format -- for instance, if you don't have Adobe Acrobat on your computer -- or if you want faster access to the file, click on either the "View as HTML" or "View as Text" link. *Note:* Portions of some files converted to HTML or text may be difficult to read.

You can use the Advanced Search form (see the Sharpening Your Query section in Part I) or the filetype: search operator (see the section Using Search Operators also in Part I) to restrict your results to a particular format.

For more information about file types that Google supports, visit www.google.com/help/faq_filetypes.html.

Exercises

These problems give you practice viewing files of different types. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Find a document with tips on job interviewing and salary negotiation that is in PDF/Adobe Acrobat format. What differences in the appearance of the document result from viewing it in its native format, Adobe Acrobat versus HTML?

2. Find a Power Point slide presentation on first aid and choking. View the presentation as HTML.

3. Find pdf or Postscript documents and course notes on symplectic geometry that are on university and other educational sites.

This problem was inspired by Julian Uschersohn.

Translation

As the web has spread across the world, more and more web pages are available in languages other than English. Google provides a translation link and language tools to enable you to read pages written in unfamiliar languages.

Google translates pages by computer. Machine translation is difficult to do well and tends not to be as clear as human translation. But it can give you the gist of what's written or suggestions for translating something into another language.

Your results may include a "Translate this page" link when a results page is written in a language different from your interface language (as specified by your Google Preferences, which is described in the next section). Your interface language is the language in which Google displays messages and labels, buttons, and tips on Google's home page and results page. You can translate pages written in English, French, German, Italian, Portuguese, and Spanish into another language from that set.
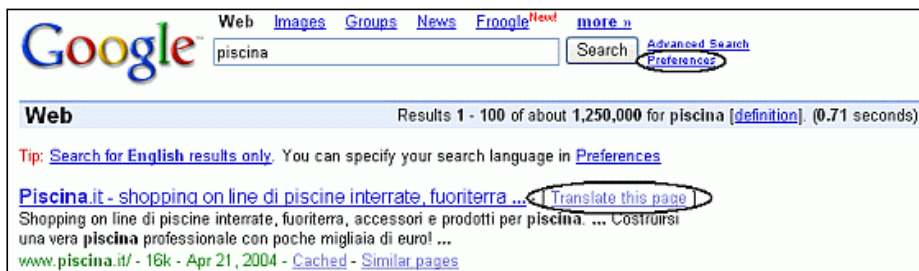
Google's Language Tools overcome language barriers. Click on the "Language Tools" link to the right of the search box on Google's home page,
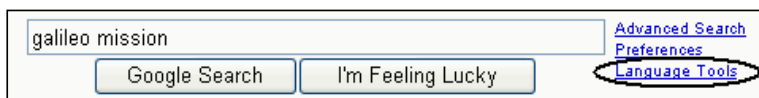
or visit www.google.com/language_tools, or select the Language Tools menu option in the Google Toolbar (in Part III, section Making Google Search Easier with Google Tools) to:

- Search for pages written in specific languages
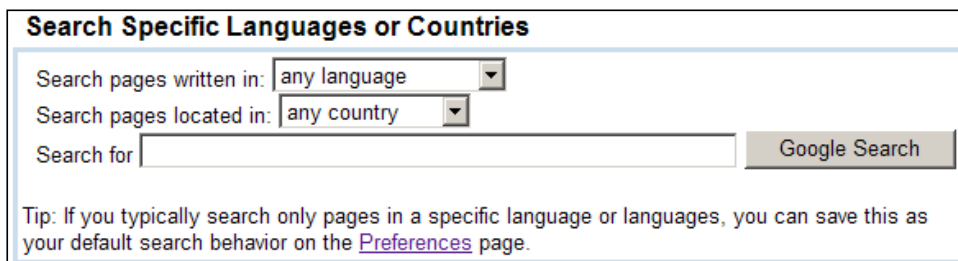
- Search for pages located in specific countries

- Use the Google interface in another language,
  e.g., set Google's home page, messages and labels, and buttons to display in a specific language

- Visit Google's site in a specific country,
  e.g., www.google.com.ch in Switzerland

- Translate any text or web page from a limited set of languages including English, French, German, Italian, Portuguese, or Spanish into another language in that set.
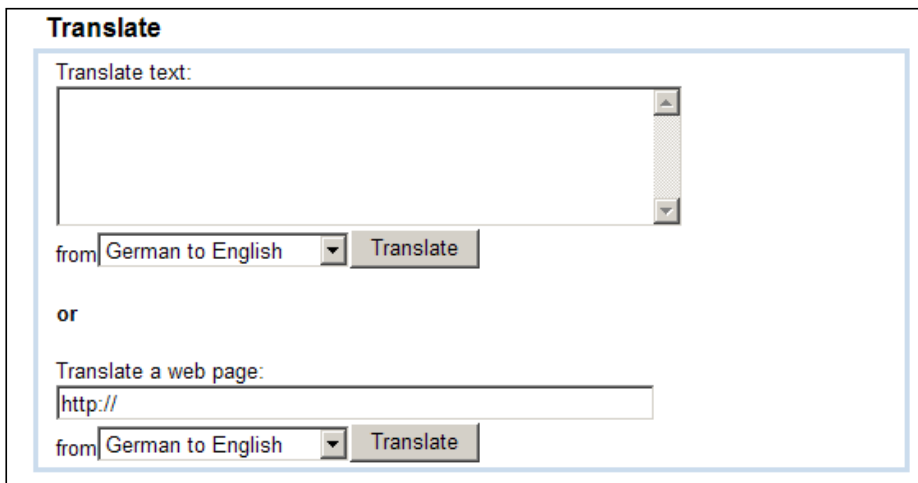
If you want to translate some text or a page into a language other than those Google Language Translation Tool offers, check out Fagan Finder's Translation Wizard.

If you're interested in translating Google Guide, send email to feedback(at)googleguide.com (replace "(at)" by "@") and review Erik Hoy's advice for Google Guide translators. The Danish Google, Guide, bibliotek.kk.dk/soeg_bestil_forny/googleguide, is available through the Copenhagen Central Library's website.

Exercises

These problems give you practice with translating words, pages, and results, and with finding pages in specific countries. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Find out about public swimming pools that you can use when visiting Naples, Italy. *Hint:* Find the Italian words for "public swimming pool" and then search for them on pages in Italy.

2. Find a reception hall, local caterer, disc jockey, and bartender that you can hire for a wedding reception at a small winery in Burgundy, France.

3. Translate "I wish to mail a package. Where is the nearest post office? Thank you." into Spanish.

4. Find the first chapter of *Le Petit Prince* online and have Google translate it into English. Compare this translation with the first chapter of *The Little Prince* translated by Katherine Woods, which you can find online if you don't have a handy copy of this lovely book.

5. Restrict your search to France and search for pages in English on the war in Iraq.

Customizing Your Results by Using Preferences

> Whenever I run a new piece of software, ... I [first] ... look at the program's 'preferences' panel. By clicking through the options, I rapidly learn what a program can do and what its shortcomings are. Google is no different. — Simson Garfinkel, Getting More from Google, Technology Review, June 4, 2003 (To view the entire MIT's Alumni magazine article, click on the link and complete the registration form.)

You can customize the way your search results appear by configuring your Google global preferences, options that apply across most Google search services. To change these options, click on the Preferences link, which is to the right of Google's search box, or visit www.google.com/preferences.
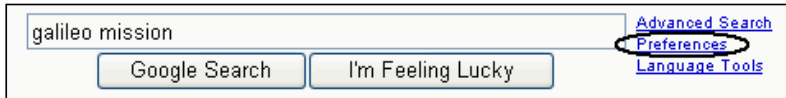
From the Preferences page, specify your global preferences, including

- **Interface Language:** the language in which Google will display tips, messages, and buttons for you
- **Search Language:** the language of the pages Google should search for you
- **SafeSearch:** automatic filtering and blocking of web pages with explicit sexual content
- **Number of results:** how many search results are to be displayed per page
- **Results window:** when enabled, clicking on the main link (typically the page title) for a result will open the corresponding page in a new window

When you set your preferences, Google stores your settings in a "cookie" on the computer you are using. Google doesn't associate that cookie with any other computer you use. So, if you want Google to work similarly on all the computers you use, you will need to set these preferences on each one of them.

Interface Language

The set of languages in which you want to allow messages and labels, text on buttons, and tips to be displayed. Your choice of interface languages is *much* larger than the "translate" set of languages (those that can be translated into your interface language) and includes relatively obscure languages, such as Catalan, Maltese, Occitan, and Welsh, and frivolous languages, such as Bork, bork, bork!, Esperanto, Hacker, Interlingua, and Pig Latin.

If you set your interface language to Greek, message and text on links, tabs, and buttons will be displayed in Greek.
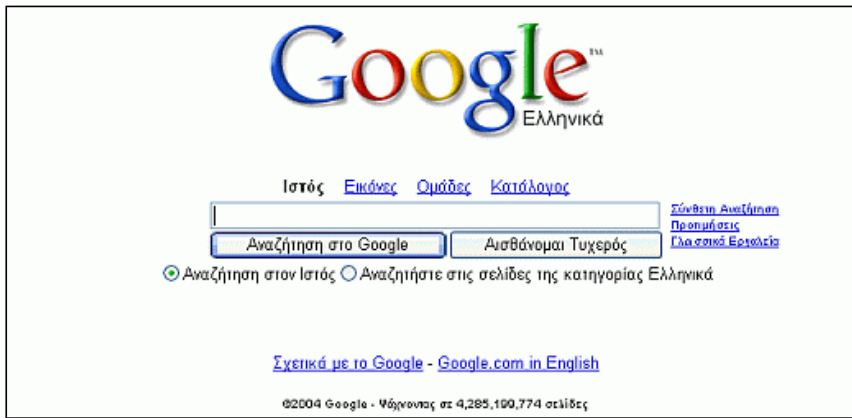
The interface language is configured on the Preferences page. The pull-down menu allows you to choose from over 80 languages.
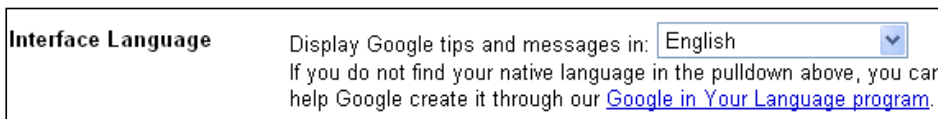
Note: If you don't find your preferred language in the list, you can volunteer to translate Google's help information and search interface into that language via the Google In Your Language program, which you can find out about by visiting services.google.com/tc/Welcome.html.

If you select an interface language other than English, when using Google Web search you will be given the option of searching the entire web or just pages written in your interface language. For example, with French as the interface language the search box looks like this:

Note: Most non-English Google home pages have a "Google.com in English" link in case you can't read the rest of the page.

Search Language

By default, Google Web search includes all pages on the Web. You can choose to restrict your searches to those pages written in the languages of your choice by setting the search language.

If you want to restrict results to a single language for a few queries, consider using Google's Advanced Search page, see the section on Sharpening Your Results.

SafeSearch Filtering

Google's SafeSearch filters out sites with pornography and explicit sexual content. Moderate filtering, the default, is set to exclude most explicit images from Google Image search results but not Google Web search or other Google search services.

Google's philosophy is to filter no more than necessary, i.e., as little as possible. Google considered adding the capability to filter other controversial content besides pornography, e.g., hate speech, anarchy, bomb making, etc. But these are much more difficult to filter automatically. For example, if you try to filter hate speech, you may filter out sites that discuss hate speech.

Number of Results

The most important setting, located near the bottom of the page, is "Number of Results." By default, Google returns just 10 results for a search. Since Google's search algorithms are so accurate, this default saves Google both computer resources and downloading time. But I always increase the default to 100. Although such searches take a little longer to download (especially over a dial-up connection), getting back 100 results saves me time when I'm searching for anything out-of-the-ordinary; it's much faster to scroll through a Web page than to manually click through 10 pages of intermediate results. — Simson Garfinkel, Getting More from Google, Technology Review, June 4, 2003 (MIT's Alumni magazine)

You can increase the number of results displayed per page to 20, 30, 50, or 100. The more results displayed per page, the more likely you are to find what you want on the first page of results. The downside is that the more results per page, the more slowly the page loads. How much more time it takes depends on your connection to the Internet.

The Number-of-Results setting applies to Google's Web, Groups, News, Froogle, and Directory search services. It does not apply to Images and Answers.

New Results Window

After you set the Results Window option on the Preferences page, when you click on the main link (typically the page title) for a result, Google will open the corresponding page in a new window.

You can display the contents of the associated page in a new window in Internet Explorer by holding down the SHIFT key while you click on the link or pressing the right button and selecting "Open a New Window" after clicking on the link. In Mozilla or

Netscape, simply click your mouse's middle button on the link that you wish to display in a new window.

Exercises

These problems give you practice in changing preferences. After you've changed your preferences, run a couple of searches. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Change your preferences to display 20 results per page.

2. Change your preferences to use strict filtering, i.e., filter both explicit text and explicit sexual content.

3. Set your preferences to open search results in a new browser window.

4. Configure your preferences to suit your needs.

5. If you would like to have more than one set of preferences on your computer, e.g., one of searching French language sites and to search all sites, then find tools for enabling you to specify more than one set of preferences using more than one cookie.

Google's Approach to Ads

Some search engines sell their search results, in addition to showing ads. A sold result means that a link to the buyer's page is put at or near the top of the results page, just as if the search engine thought it was one of the best results. Usually, there is no indication that the page's result location was bought and paid for.

Google ***never*** sells its search results. If a web page appears in Google's search results, it's because Google thought it was a relevant result for your search, not because someone paid Google to put it there.

Google's approach to ads is similar to its approach to search results: the ads must deliver useful links, or the ads are removed.

*   Ads must be relevant to your search.
*   Ads must not intrude, distract, or annoy (no pop-up or flashy ads).
*   Sponsored links are clearly identified and kept separate from search results.
*   At most, two sponsored links appear above Google's search results.

You can distinguish ads by their format and the label "Sponsored Link." Ads contain a title, a short description, and a web address (URL).
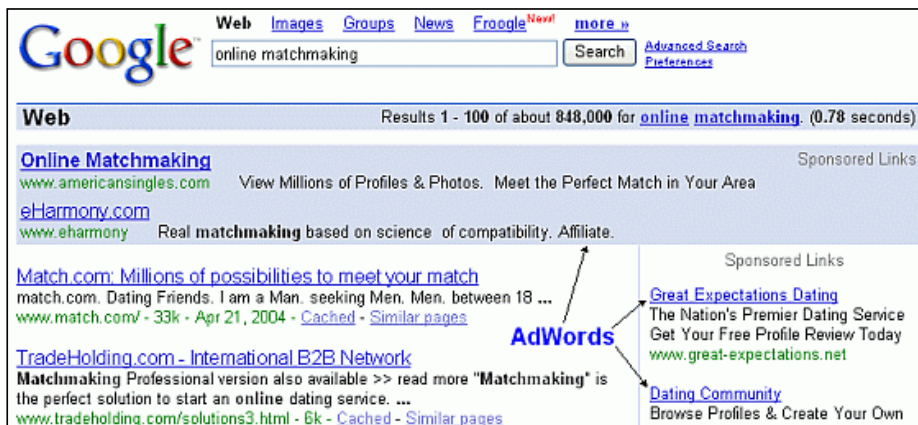
Advertisers decide which queries their ads should match, and then Google decides on placement, i.e., which ads to show and in what order. Google determines placement by an auction; the auction not only considers what the advertiser will pay for the ad, but also its click-through rate, i.e., how often users click on the ad. If users often click on an ad, Google will likely place the ad higher up on the results page. If the click-through rate of an ad falls below a certain level, indicating an ad isn't relevant to the query, Google removes the ad.

For the most part, you'll find advertisements pertinent to your query. However, Google's automatic matching to words on a page sometimes places an ad inappropriately. For example, in September of 2003, adjacent to a New York Post article about a

gruesome murder in which the victim's body parts were stashed in a suitcase, Google listed an ad for suitcases. Since that incident, Google has improved its filters and automatically pulls ads from pages with disturbing content. So Google is unlikely to make another *faux pas* on a par with this one.

Some web pages display ads provided by Google's AdSense service. The hosting website and Google share the amount an advertiser pays when a user clicks on an ad, which varies between US$0.05 and US$50.00. Web publisher typically place Google AdSense ads near the top, on the right, or on the left side of a page to catch your attention. In Google Guide, I've included such ads at the top of each page.

For why Google sells advertising and not search results, visit www.google.com/honestresults.html.
For more information on Google's advertising programs, visit www.google.com/ads.
For tips on advertising, visit www.google.com/ads/tips.html.
For what to do if you find a pop-up ad on Google, visit www.google.com/help/nopopupads.html.

Exercises

For hints and answers to selected problems, see the Solutions page in the Appendix.

1. How many sponsored links (ads) appear on the first search-results page with the answer to the following questions?

    a. Where can you stay in central London at a moderate price?

    b. What's going on with NASA's Mars Exploration Program?

2. Click on the most interesting sounding Adsense ads shown at the top of this page.

3. If you have a website, sign up for an AdWors account so that you can purchase ads to bring users to your site

4. If you have a website, sign up for an AdSense account so that you can make revenue from advertising on your site.

Evaluating What You Find

Google's web-page-ranking system, PageRank, tends to give priority to better respected and trusted information. Well-respected sites link to other well-respected sites. This linking boosts the PageRank of high-quality sites. Consequently, more accurate pages are typically listed before sites that include unreliable and erroneous material. Nevertheless, evaluate carefully whatever you find on the web since anyone can

- Create pages
- Exchange ideas
- Copy, falsify, or omit information intentionally or accidentally

Many people publish pages to get you to buy something or accept a point of view. Google makes no effort to discover or eliminate unreliable and erroneous material. It's up to you to cultivate the habit of healthy skepticism. When evaluating the credibility of a page, consider the following **AAOCC** (Authority, Accuracy, Objectivity, Currency, Coverage) criteria and questions, which are adapted from www.lib.berkeley.edu/ENGI/eval-criteria1001.html.

Authority

- Who are the authors? Are they qualified? Are they credible?
- With whom are they affiliated? Do their affiliations affect their credibility?
- Who is the publisher? What is the publisher's reputation?

Accuracy

- Is the information accurate? Is it reliable and error-free?
- Are the interpretations and implications reasonable?
- Is there evidence to support conclusions? Is the evidence verifiable?
- Do the authors properly list their sources, references or citations with dates, page numbers or web addresses, etc.?

Objectivity

- What is the purpose? What do the authors want to accomplish?
- Does this purpose affect the presentation?
- Is there an implicit or explicit bias?
- Is the information fact, opinion, spoof, or satirical?

Currency

- Is the information current? Is it still valid?
- When was the site last updated?
- Is the site well-maintained? Are there any broken links?

Coverage

- Is the information relevant to your topic and assignment?
- What is the intended audience?
- Is the material presented at an appropriate level?
- Is the information complete? Is it unique?

Search for [evaluate web pages] or [hints evaluate credibility web pages] to find resources on how to evaluate the veracity of pages you view.

For a printable form with most of the questions that you will probably want to ask, visit www.lib.berkeley.edu/TeachingLib/Guides/Internet/EvalForm.pdf. If you're unable to view PDF files, you can get a free PDF viewer from Adobe by visiting www.adobe.com/products/acrobat/readstep2.html.
For more information on evaluating what you find, visit www.lib.berkeley.edu/TeachingLib/Guides/Internet/Evaluate.html.

Exercises

Find documents on the web that provide the answers to the following questions. What's your level of comfort with the referring site(s) and why? For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Is it true that if you touch a cold halogen bulb with clean fingers, you will shorten its lifespan?

2. Are 75% of Americans chronically dehydrated?

3. Are you less likely to get dental cavities if you drink fluoridated water?

4. Is clumping kitty litter a major health hazard to cats?

5. What are the benefits and drawbacks of a flu (influenza) shot?

6. Does microwaving food in plastic containers or plastic cling wrap release harmful chemicals into the food? Check whether this is an urban legend.

Want more experience assessing the authenticity and integrity of some websites? Try the exercises listed on www.lib.berkeley.edu/TeachingLib/Guides/Internet/EvaluateWhy.html.

Part III: Special Tools

In this course segment, you will learn how to:

- **Enter a query even if Google's home page isn't in your browser**
- **Access shortcuts for finding commonly sought utilities and information**
- **Take advantage of Google's specialized search services**

Google started by providing generalized web search and now offers specialized searches that are accessible by clicking on the links above Google's search box. Each link, except the last, represents a separate search service. Click on any of the following links to learn more about the corresponding specialized search service(s).

Web   Images   Groups   News   Froogle^New!   **more »**

Google displays the current service link in black and the others in blue.

After running a search on one service, you can click on another service's link to run a search on that service using the same terms. For example, when you click on the News link, your search will be repeated on Google's News service.

Topic-specific searches are accessible from the Advanced Search form.

New! Local - Find local businesses and services on the web
Catalogs - Search and browse mail-order catalogs online

Apple Macintosh - Search for all things Mac
BSD Unix - Search web pages about the BSD operating system
Linux - Search all Linux-friendly pages
Microsoft - Search Microsoft-related pages

U.S. Government - Search all .gov and .mil sites
Universities: Narrow your search to a specific school's website, such as Stanford, Brown, BYU, etc.

Sacramento State's Google QuikRef (available from www.csus.edu/uccs/documents/quikrefsite/PDFs/googleqr.pdf) and Google's cheat sheet (www.google.com/help/cheatsheet.html) provide nice one-page summaries of some of Google's features and services.

The word "Beta" beside a service's name indicates that Google is testing and refining the service. Use the service, and if you are so inclined, provide feedback to Google on how the service can be improved.

Next, we'll look at many of the special search tools listed above, as well as:

- **Answers**
- **Google Prototypes and Demos (Google Labs)**

This section ends with Google's feature history.

The search tips and behaviors described in Part I of Google Guide work with Google's special search tools, except in the following few cases. The synonym operator (~) currently works only on Web and Directory searches.

For more information on Google special services and tools, visit www.google.com/options/.

Making Google Easier with Google Tools

You can use Google even if the www.google.com page isn't currently in your browser provided you're currently connected to the Internet by using one or more of the following tools and features.

- **Google Toolbar, Googlebar, or Apple's Safari web browser**
- **Deskbar**
- **Browser Buttons**
- **Setting Google as your home page**
- **Setting Google as your default search engine**

Here's how.

- **Toolbar** (well worth installing if you use Windows 95/98/ME/NT/2000/XP and Internet Explorer 5.0 or a more recent version) - toolbar.google.com

Access Google from your Internet Explorer toolbar. The following table lists just some of the many wonderful features available through the Google Toolbar.

Feature	Allowing you to ...
Search Box	Access Google's search technology from your browser toolbar.
Search Site	Search only the pages of the site you're currently visiting.
Highlight	Highlight terms on the current page.
Word Find	Find your search terms on a page and navigate to them.
Pop-up Blocker	Stop annoying pop-up windows (new in version 2.0 of Toolbar).
AutoFill	Automatically fill in a form (new in version 2.0 of Toolbar).

Below are links to more information on Google's Toolbar:

❍ An overview and installation - toolbar.google.com
❍ A description of the features - toolbar.google.com/button_help.html
❍ Answers to frequently asked questions - toolbar.google.com/faq.html
❍ How to clear your search history in the Toolbar - toolbar.google.com/faq.html#clear_history

Google's Toolbar is now available for Firefox.
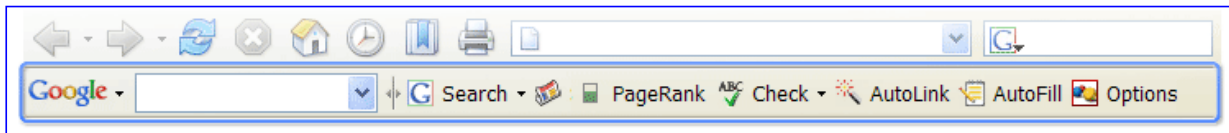
If you use Mozilla or Netscape, try Googlebar, googlebar.mozdev.org, which emulates all of the basic search functionality of Google's Toolbar, allowing you to easily access almost all of Google's specialty searches (some of which are not yet supported by the Google Toolbar!) from one convenient toolbar. Googlebar works on recent versions of Mozilla and Netscape, but may not work on older ones.

If you use Mac OS X, note that Apple's Safari web browser includes Google search feature.

● **Deskbar** (well worth installing if you use Windows 98/ME/2000/XP and Internet Explorer 5.5 or a more recent version) - toolbar.google.com/deskbar/
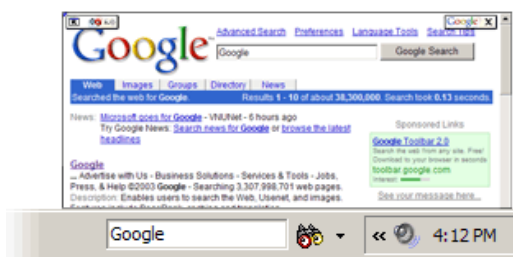
Access Google from your Windows desktop toolbar. The following table lists the Deskbar key features.

Feature	Allowing you to ...
Search Box	Access Google's search technology even when your browser isn't running.
Preview	Preview search results in a small inset window that closes automatically.
Accessibility	Access Google from any application by pressing the CTRL, ALT, and the G keys simultaneously (CTRL+ALT+G).

Search Selected Text	Select text within a Word document, e-mail, browser page, or any other application, and then use that selected text as your search query by pressing the CTRL, ALT, and the G keys simultaneously (CTRL+ALT+G).
Keyboard Shortcuts	Access Google News by pressing the CTRL and the N keys simultaneously (CTRL+N), Google Images (CTRL+I), Froogle (CTRL+F), Web Search (CTRL+W), Groups (CTRL+U), I'm Feeling Lucky (CTRL+L), Definitions (CTRL+D), Stock Quotes (CTRL+Q), and Thesaurus (CTRL+T).

For more information on what the Deskbar can do, visit toolbar.google.com/deskbar/help/cmds.html.

- **Browser Buttons** - www.google.com/options/buttons.html
  Access Google's search technology by adding buttons to your browser's toolbar.
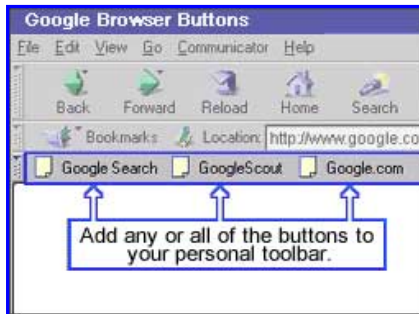
Copyright © 2003 Google Inc. Used with permission.

GoogleSearch
Performs search on any highlighted text or pops up a search box and prompts you for search terms.

Copyright © 2003 Google Inc. Used with permission.

- ❍ Use your mouse to highlight this phrase: Stanford University.
- ❍ Click the "Google Search" button and Google searches the web for the highlighted phrase.

  OR

- ❍ Simply click the button and enter your search terms in the pop-up Google search box.

GoogleScout
Delivers links to sites and information related to whichever page you are viewing.

- ❍ Go to a website such as www.stanford.edu.
- ❍ Once the page has loaded, click the GoogleScout button to find other web pages similar to Stanford's page.

Google.com
Click the Google.com button to go directly to the www.google.com page.

NOTE: *The Google Browser Buttons should work for recent versions of most browsers, but may not work on older ones.*

Google Browser Buttons are available at www.google.com/options/buttons.html.

- **Make Google Your Homepage**
  To have the Google home page appear whenever you start your browser, click on the "Make Google Your Homepage" link on Google's home page. If the link is missing, follow the instructions listed on www.google.com/options/defaults.html.

- **Make Google Your Default Search Engine**
  For instructions, visit www.google.com/options/defaults.html#default.

Exercises

Set up your system to make Google easier to access. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. If you use Windows 98/ME/2000/XP and Internet Explorer 5.5 or a more recent version, install the Google Deskbar on your system.

2. If you use Internet Explorer, install the Google Toolbar on your system. If you use another browser, install Google Browser Buttons on your system.

3. Make Google your home page.

4. Make Google your default search engine.

Shortcuts

Google provides shortcuts for finding commonly sought utilities and information, which you may have previously found offline or on specialized sites, including

Calculator
Phone Numbers and Addresses
Street Maps
Stock Quotes
Definitions (Google Glossary)
Travel Conditions
Search by Number
    Area Code Maps
    Package Tracking
    Flight Tracking Information
    Vehicle Information
    Patent Search
    FAA Airplane Registration Numbers
    UPC Codes
    FCC Equipment IDs
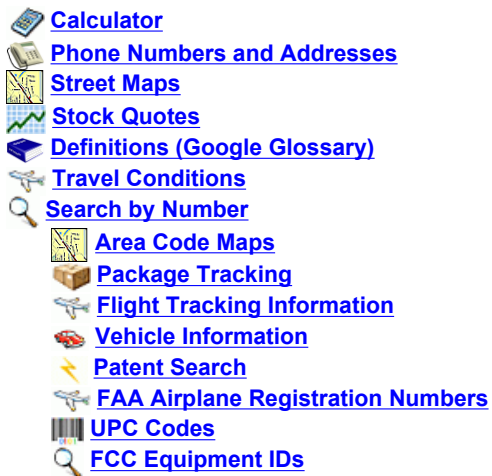
The results of these shortcuts appear to the right of a tag or specialized icon and above your search results.

Calculator

Want to add up a list of numbers, convert from miles to kilometers, or evaluate some other mathematical expression? Instead of using a piece of paper, your calculator, or a computer math software program, you can now solve mathematical problems with Google's built-in calculator function.

Simply enter the expression you'd like evaluated in Google's web search box and hit the ENTER key or click the "Google Search" button.
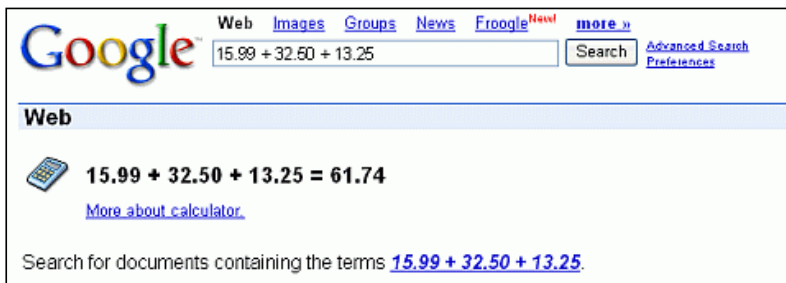
The Google Guide Calculator Reference provide a nice summary of some of Google's calculator features.

The calculator can evaluate mathematical expressions involving:

Basic Arithmetic

Compute expressions containing standard mathematical symbols. The following table lists operators that come between the two numbers on which they operate, e.g., to multiply 2 times 3, use 2 * 3.

Operator	Function	Example
+	Addition	[15.99 + 32.50 + 13.25]
-	Subtraction	[79 - 18 - 19]
*	Multiplication	[2 * 3 * 7]
/	Division	[378 / 9]
^ or **	Exponentiation (raise to a power of)	[4^10] or [4**10]
% of	Percent	[15% of 93.45]
mod or %	modulo (the remainder after division)	[15 mod 9] or [15 % 9]
the *n*th root of	calculates the *n*th root	[4th root of 16] [cube root of 109] [square root of 42] or [sqrt(42)]

Note: To do multiplication, you must include the * symbol; [3 * 4] will be calculated, 3 4 won't.

Advanced Math

Compute results involving mathematical constants, such as *e*, *pi*, *i* (the square root of -1), and mathematical functions. The following table lists just some of the functions built into Google's calculator.

Operator	Function	Example
sin, cos, tan, sec, csc, cot, etc.	Trigonometric functions (arguments are assumed to be in radians)	[cos(pi/6)] [cosine(pi/6)]
arcsin, arccos, arctan, arccsc, etc.	Inverse trigonometric functions	[arccos(.5)]
sinh, cosh, tanh, csch, arsinh, arccsch, etc.	Hyperbolic functions	[cosh(6)]
ln	Logarithm base e	[ln(16)]
log	Logarithm base 10	[log(16)]
lg	Logarithm base 2	[lg(16)]
exp	Exponential function	[exp(16)]
!	Factorial	[5!]

choose	x choose y calculates the number of ways of choosing a set of y elements from a set of x distinct elements	[5 choose 3]

The following table lists just a few of the commonly used mathematical constants known to the calculator function.

Name and description	Example
base of the natural system of logarithms	[e]
pi, the ratio of the circumference to the diameter of a circle	[pi/6]
imaginary number, i, which represents one of the two square roots of -1	[i^2]
Euler's constant, gamma	[e^gamma]

Units of Measure and Conversions

Compute expressions involving different units. By default, units are converted to and results expressed in meter-kilogram-second (mks) units. Many units have both long and short names. Use whichever name you prefer.

Type of Units	Examples
Mass	kilogram or kg, grams or g, grains, pounds or lbs, carats, stones, tons, tonnes, etc.
Length	meters or m, miles, feet, Angstroms, cubits, furlongs, etc.
Volume	gallons, liters or l, bushels, teaspoons, pints, etc.
Area	square kilometers, acres, hectares, etc.
Time	days, seconds or s, centuries, sidereal years, fortnights, etc.
Electricity	volts, amps, ohms, henrys, etc.
Energy	Calories, British thermal units (BTU), joules, ergs, foot-pounds, etc.
Power	watt, kilowatts, horsepower or hp, etc.
Information	bits, bytes, kbytes, etc.
Quantity	dozen, baker's dozen, percent, gross, great gross, score, etc.
Numbering systems	decimal, hexadecimal or hex, octal, binary, roman numerals, etc. Prefix hexadecimal numbers with 0x, octal numbers with 0o and binary numbers with 0b. For example: 0x7f + 0b10010101.

Here are calculations that involve units.

[2 meters + 5 feet]

Convert from one set of units to another by using the notation, *x units* in *y units*.

[three quarters of a cup in teaspoons]
[98.6 degrees Fahrenheit in degrees Celsius]
[130 lbs in kg]
[130 lbs in stones]
[65 mph in kph] or [65 mph in km/h]

Warning: When your query includes "Calories" with a capital "C," Google returns kilocalories called "calories" by nutritionists.

[160 pounds * 4000 feet in Calories]

Convert from one numbering system to another.

[1500 in hex] or [1500 in hexadecimal]
[64 in binary]
[LVII in decimal]

Physical Constants

The following table lists just a few of the many commonly used physical constants known to the calculator function. For other physical constants available in Google's calculator, see the table at the end of David W. Ward's article Physics the Google Way. *Note:* Sometimes Google's calculator interprets lower case letters different from upper case letters.

Long Name	Shorthand Notation	Click the Link for the Approximate Value
atomic mass units	amu or u	[u] or [atomic mass units]
Astronomical Unit	au	[au] or [astronomical unit]
Avogadro's number		[N_A] or [Avogadro's number]
Boltzmann constant	k	[k] or [Boltzmann constant]
electric constant, permitivity of free space		[epsilon_0]
electron mass		[m_e]
electron volt	eV	[eV]
elementary charge		[elementary charge]
Faraday constant		[Faraday constant]
gravitational constant	G	[G] or [gravitational constant]
magnetic flux quantum		[magnetic flux quantum]
mass of a proton		[mass of a proton]
mass of each planet and of the sun		[m_mars], [m_earth], [m_uranus], [m_sun]
molar gas constant		[molar gas constant]
permeability of free space		[permeability of free space]
Planck's constant	h	[h] or [Planck's constant]
radius of each planet and of the sun		[r_earth], [r_pluto], [r_sun]
speed of light in a vacuum	c	[c] or [speed of light]
speed of sound in air at sea level		[speed of sound]

Here are some calculations using built-in constants.

[1 AU/c]
[1.21 MW / 88 mph]
[(G * mass of earth) / (radius of earth ^ 2)]

Parentheses can be used whenever they'll serve to make complicated expressions unambiguous, and also sets of parentheses can be used within parentheses; don't use brackets for grouping.

The following are tips from Google's online help for the calculator, which can be found on the web at www.google.com/help/calculator.html.

You can force the calculator to try to evaluate an expression by putting an equals sign (=) after it. This works only if the expression is arithmetically computable. For example, 1-800-555-1234= will return a result, but 1/0= will not.

Parentheses can be used to enclose the parts of your expression that you want evaluated first. For example, (1+2)*3 causes the addition to happen before the multiplication.

Feel free to experiment with the calculator as not all of its capabilities are listed here.

If you want a visual interface to a fraction of the capabilities of Google's calculator, visit Soople's Calculator page, www.soople.com/index.php?sub=calculator.

Exercises

This problem set is designed to give you practice in using Google's new calculator function. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Convert 1 mile to meters.

2. Convert 1 kg (kilogram) to lbs (pounds).

3. Convert 0 degrees Kelvin to Fahrenheit or Celsius.

4. Compute the number of minutes in a 365-day year.

5. Which is larger pi^e or e^pi? The same relationship holds between x^e and e^x for all non-negative values of x except e. The exponential constant, e, is approximately 2.72 and the ratio of the circumference to the diameter of a circle, pi, is approximately 3.14.

6. How many lottery combinations are there if the winning combination consists of 5 distinct integers between 1 and 99, i.e., there are 99 balls in an urn and once one is selected, it isn't returned to the box.

7. Compute the probability of your winning the lottery if you buy 1,000 tickets each bearing five distinct independently randomly chosen integers between 1 and 99.

Phone Numbers and Addresses

Use Google if you want to look up a phonebook listing for someone who lives in the United States. Just enter a person's name and a city, state, or zip code in the standard web search box. Then hit the ENTER key or click the "Google Search" button.

If you have easy access to the web, Google's phonebook feature can be more convenient than your local phonebook and more extensive.

On the results page, phonebook listings are next to a telephone icon.
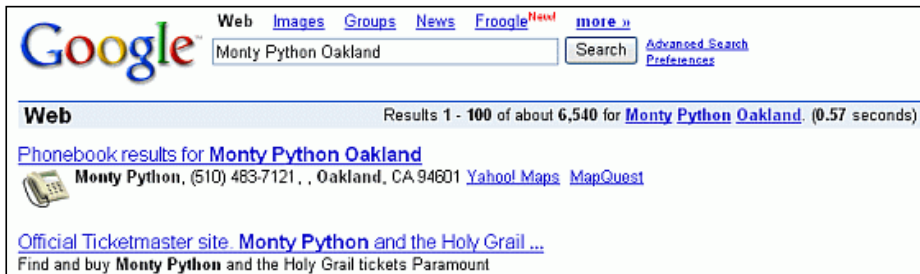
Google's residential phonebook feature recognizes inputs in the following formats.

To find a **US residence**, enter either ...	Examples
First name (or first initial), last name, city (state is optional)	[Monty Python Oakland]
First name (or first initial), last name, state	[Monty Python CA]
First name (or first initial), last name, area code	[M Python 510]
First name (or first initial), last name, zip code	[Monty Python 94601]
Phone number, including area code	[510-555-1212]
Last name, city, state	[Python Oakland CA]
Last name, zip code	[Python 94601]

Notice that Google supports reverse look up. You can enter a phone number with area code and learn to whom that number belongs.

Be aware that some listings are out of date, including the examples in the previous table.

When you want a US business white-page phonebook listing, enter a business name and location or phone number.

To seek a **US business**, enter ...	Examples
Business name, city, state	[Trek Waterloo WI]
Business name, zip code	[Ben & Jerry's 05403]
Phone number including area code	[(650) 930-3500]

Google lists up to three results that match your phonebook query.

To see other listings, click on the "Phonebook results" link that's just above the phonebook icon.

Notice that when Google provides an address, it includes links to map providers. In the next section, we'll look at how to obtain a map and directions.

If Google doesn't return a phonebook link, try using the phonebook: search operator.

Need an email address? Though it would be a nice feature for you and me, Google doesn't offer an email-lookup service, since spammers could use it to get your address and send you unsolicited spam email.

Exercises

This problem set gives you practice with looking up phone numbers and addresses. For hints and answers to selected problems, see the Solutionspage in the Appendix.

1. What is the address of the Empire State Building in New York City in the state of New York (the two-letter state code is NY)?

2. Check whether Google knows your phone number and address. If you wish to remove your listing from Google's PhoneBook, complete the name removal form, which you can find at www.google.com/help/pbremoval.html or by searching for [remove phone number Google].

Street Maps

Want to find where something is or how to get there? Instead of visiting an online map-providing service, just enter an address into Google. You can also copy and paste addresses, even ones with embedded carriage returns, into Google's search box. When Google recognizes your query as a location, the results page includes links to map providers for that location. Clicking on a map-provider link takes you to a map showing the location result.

Enter a U.S. street address, including zip code or city/state. Often, the street address and city name will be enough.

Beside an icon of a map are links to map providers, as shown below.
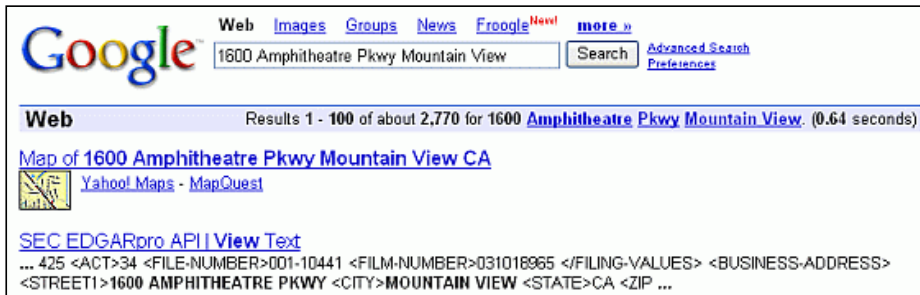
Click on either the Google Maps link , Yahoo! Maps link, or the MapQuest link to view a map showing 1600 Amphitheatre Pkwy in Mountain View, California.

Sometimes the Google Local service, which I describe in Part III, can find where something is located without your providing an address.
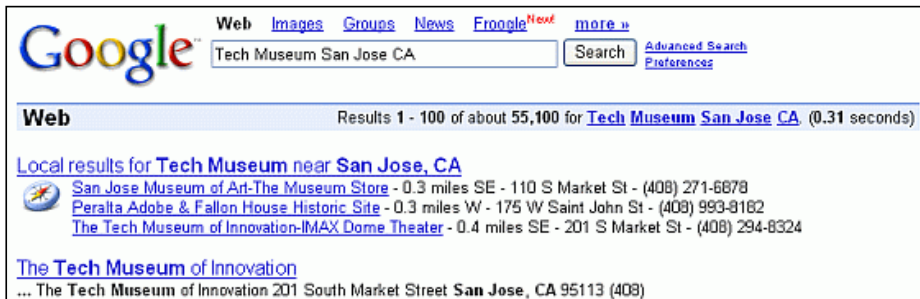
Click on the link to a map provider to obtain a map.
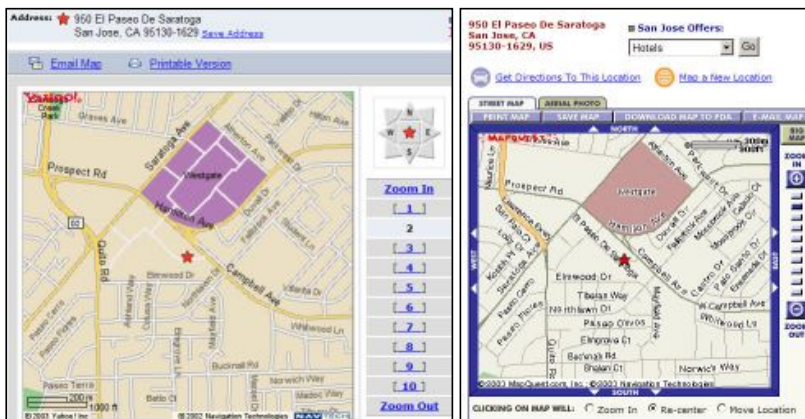
Click on the link "To this location" in Yahoo!Maps or on the radio button "Driving Directions from this location" in MapQuest and specify your starting location.

Then you'll get a nice set of directions that you can print out and take with you when driving.

Exercises

This problem set gives you practice with looking up addresses and with getting directions. For hints and answers to selected problems, see the Solutionspage in the Appendix.

1. Get a map showing the most crooked section of Lombard Street in San Francisco, which is between 1000 and 1100 Lombard Street.

2. Get a map showing Japanese restaurants in Topeka, Kansas by entering [Japanese restaurants in Topeka KS] in the Google Maps search box.

3. If you live in the United States, obtain a map showing where you live by entering your address into Google and clicking the link to a map provider.

4. If you live in the United States, get directions from your house to either a good friend's place or a great restaurant.

Stock Quotes

Looking for Google's stock symbol or price? It's **GOOG** on Nasdaq.

Want info on a publicly traded stock or mutual fund? Enter one or more NYSE, NASDAQ, AMEX, or mutual fund ticker symbols and Google will return the latest stock price (with a 15-minute delay for NASDAQ or a 20-minute delay for AMEX and NYSE), along with an intra-day chart, the daily high and low, and other useful, as well as a link to other financial information.

Click on the stock symbol link to see financial information, which may include the price of the last trade, the range of prices for the day and for the year, a one-year target price estimate, the previous days closing price, the opening price for the day, the volume of shares traded during the day, the PE radio, dividends per share, the dividend date, and a chart.
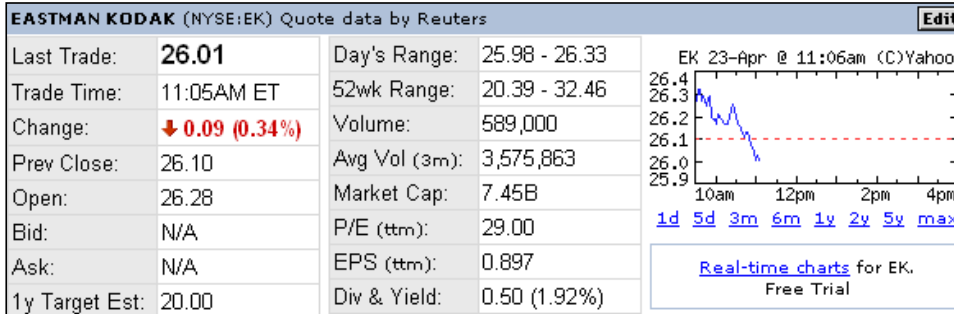
Note: Entering a ticker symbol in the search box and then clicking on *I'm Feeling Lucky* will not take you to that symbol's financial information page. Instead, Google displays the first search results, whose link appears just below the box enclosing the stock information link.

Click on the "Stock quotes" link to view a chart for each stock symbol in your query.
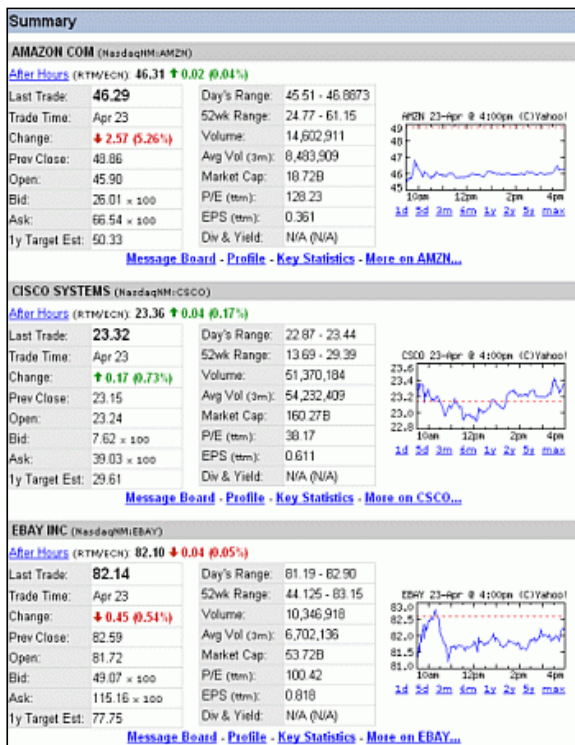
You can also retrieve stock information via the stock: search operator. For example, [stock:brcm brcd] will return a link to stock information about Broadcom Corporation and Brocade Communications System.

Exercises

This problem set gives you practice in obtaining financial information for US publicly traded companies. For hints and answers to selected problems, see the Solutionspage in the Appendix.

1. Obtain a chart of Ebay's stock price for the past 5 years by entering Ebay's stock symbol, ebay, clicking on the link "Show stock quotes" and then selecting a 5-year chart.

2. Find current financial information for Yahoo and Amazon.

3. Using the similar pages feature, find competitors to google.com that are run by public companies. Check whether their stock prices have been climbing or dropping in the past three months.

Definitions (Google Glossary)

When you include "define," "what is," or "what are" in your query in front of a word, phrase, or acronym, Google displays one Glossary definition above your search results. Google Glossary provides definitions for words, phrases, and acronyms that Google finds on web pages. The Glossary is good for finding definitions for terms that aren't in some dictionaries, e.g., slang words, technical terms, ethnic words and other specialized terms.

In February of 2003, Google acquired Pyra Labs, a company that makes it easy for you to create your own blog. What's a blog? Let's ask Google to define the term.

You can search for blogs with Google, in the same way that you search for other documents. You can easily create a weblog (blog) post pointing to the web page you're visiting by pressing the "BlogThis!" button on the Google Toolbar and publish your thoughts on the web so others may find them. You can learn more about this feature on toolbar.google.com/button_help.html.

Google Glossary can also find definitions of acronyms.

One definition appears to the right of the words "Web Definition,"below the statistics bar and above Google's search results.

When your query includes the "define:" operator, Google displays all the definitions it finds on the web.

If you want a dictionary definition, learn about a shortcut in the Dictionary Definitions section in Part II.

Exercises

These problems give you practice in finding definitions. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. What does aka mean?

2. What is Google bombing? If Google Glossary doesn't find the definition, find it yourself.

3. Google is named after the word 'googol.' What is a googol?

4. What does the abbreviation IRL commonly stand for?

Google Local (Search by Location)

Restrict your search to a particular geographic area.

Google Local, aka Search by Location, local.google.com, scouts the web for addresses and clues to pinpoint where things are located.

Not only is Search by Location good for finding businesses and landmarks, but it can find locations of places that aren't listed in phonebooks. For example, you can find places that appeared in the film Sleepless in Seattle.
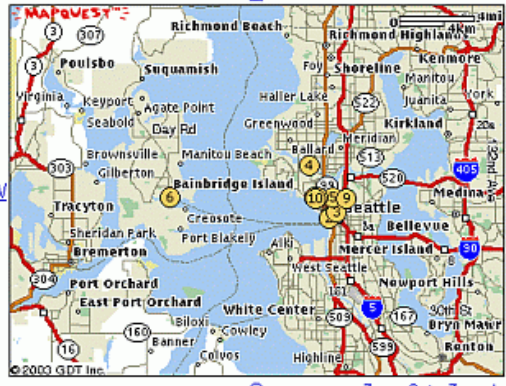
See these results on a map by clicking on the link just above your search results.

Exercises

This problem set gives you practice with using Google Local. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Find Thai restaurants in the zip code 94041 in Mountain View, California.

Travel Conditions

Google provides a shortcut for learning about delays and weather conditions at a US airport. Just enter the airport's three-letter code followed by the word "airport" into Google's search box.

Note: This feature may not work if you search from any of Google's non-US sites, e.g., google.de, google.com.co, google.ca nor from a foreign-language site, e.g., Swahili or Latvian.

For example, find conditions at Honolulu International Airport. If you don't know the airport code, look it up on Google. If your city has more than one major airport, include the airport name as well as the city in your query.

You don't need to click on the first result to see that the airport code for one of Honolulu's airports is HNL, because you can find that code in the first line of the snippet.

If you find the snippet difficult to read, just click on the title to view the Honolulu Airport entry from World-Airport-Codes.com.

Now let's request travel conditions at Honolulu International Airport.
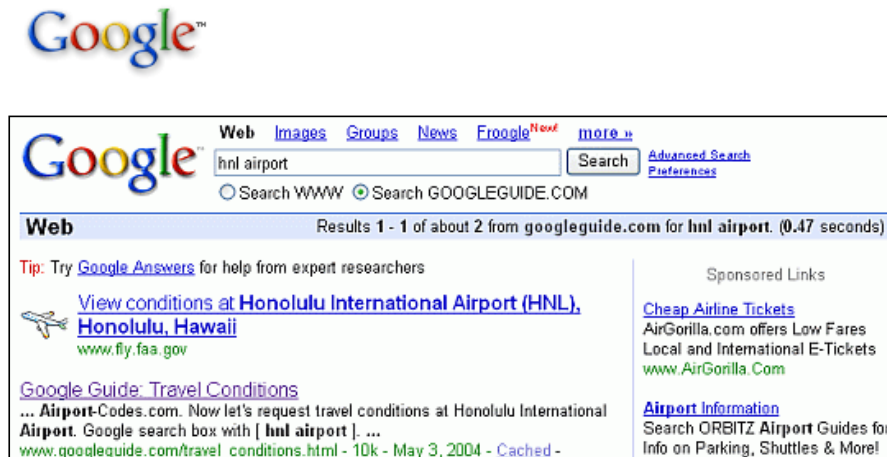
Click on the "View conditions" link to see the FAA's airport status information.

AIRPORT STATUS INFORMATION
provided by the FAA's Air Traffic Control System Command Center

Honolulu International Airport (HNL) Real-time Status

The status information provided on this site indicates general airport conditions; it is not flight-specific. Check with your airline to determine if your flight is affected.

Delays by Destination: No destination-specific delays are being reported.

General Departure Delays: Traffic is experiencing gate hold and taxi delays lasting 15 minutes or less.

General Arrival Delays: Arrival traffic is experiencing airborne delays of 15 minutes or less.

This information was last updated: **Jan 2, 2004 2:49:32 AM** EST

Exercises

These problems give you practice in finding travel conditions. For hints and answers to selected problems, see the Solutionspage in the Appendix.

1. Find the travel conditions for Los Angeles International Airport.

2. Find the travel conditions for Kennedy Airport in New York City.

Search by Number

"Parcel tracking IDs, patents, and other specialized numbers can be entered into Google's search box for quick access to information about them," according to the Google Web Search Features page, www.google.com/help/features.html.

Special searches by number types include:

		Examples
	Area Code Map	[212]
	Package Tracking	[999444666222]
	Flight Tracking Information	[united 42]
	Vehicle Information	[JH4NA1157MT001832]
	Patent Search	[patent 5122313]
	FAA Airplane Registration Numbers	[n199ua]
	UPC Codes	[036000250015]
	FCC Equipment IDs	[fcc B4Z-34009-PIR]

The rest of this page contains examples of input and output for most of these types of searches.

 Area Code Map
Want to see a map of where a US telephone area code is used? Just enter the area code in Google's search box.

Click on the link to view a map.

![Package icon] **Package Tracking**

Instead of going to the FedEx (www.fedex.com), UPS (www.ups.com), or US Postal Service (www.usps.com) sites to find out where your package is located, now you can enter parcel tracking IDs directly into Google's search box.
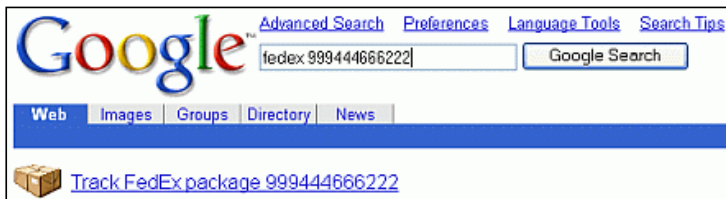
Click on the link to view tracking information for a parcel.
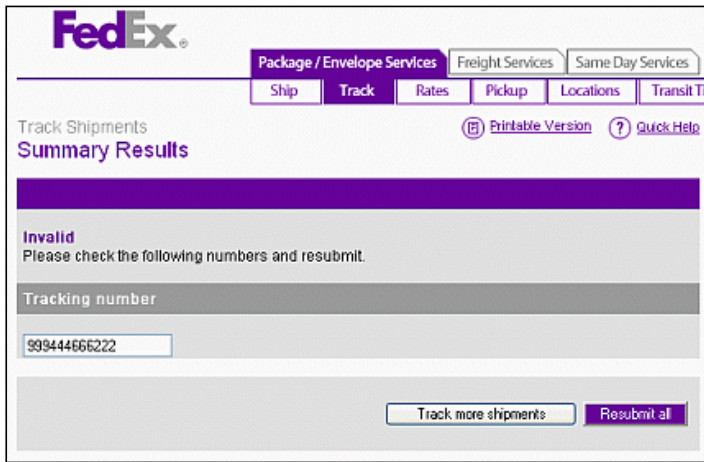
Find the latest information about your UPS package by entering the tracking ID into Google's search box. (I haven't been able to get a link to UPS package tracking information. Perhaps I haven't entered a valid UPS tracking ID.)

Flight Tracking Information

Look up information on a flight by typing the airline name or code followed by a space and a flight number.
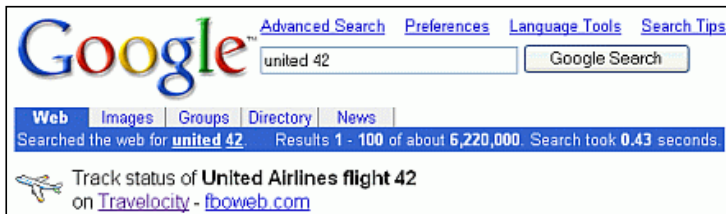
Click on the Travelocity link to view tracking information on the flight.

Click on the fboweb.com link to view how the actual flight is progressing.

🚗 Vehicle Information
Look up automobile vehicle information by entering a vehicle ID (VIN) number.
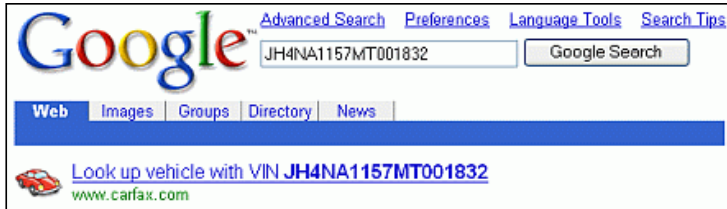
Click on the link to view information on the specified vehicle.

Patent Search

Look up a patent by typing "patent" followed by a space and a patent number.

Click on the link to view information on the patent.

✈ FAA Airplane Registration Numbers

Find out about a particular airplane by entering its FAA airplane registration number into Google's search box. An airplane's FAA registration number is typically painted on its tail.

Click on the link to view information about the aircraft.

▐▌▐ UPC Codes

Find information about an item by entering its UPC code into Google's search box.
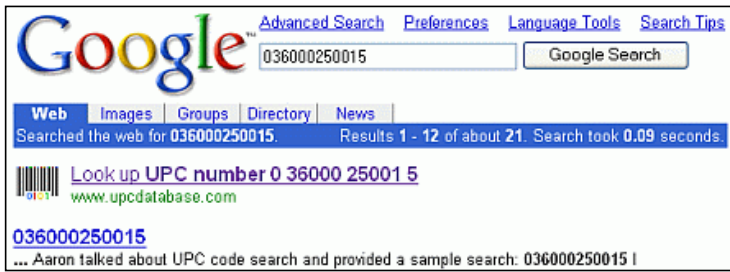
Click on the link to view information about this item.
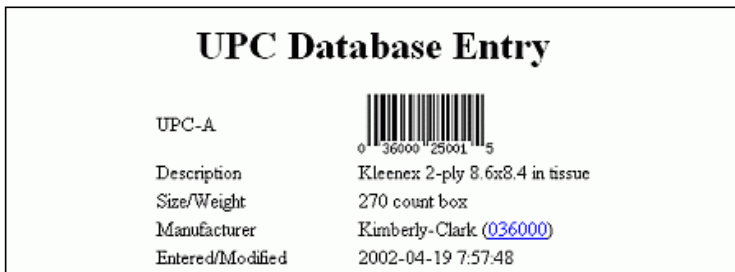
FCC Equipment IDs

Find information about FCC equipment by typing "fcc" followed by a space and the equipment's ID number.

Click on the link to view information about this equipment.

Image Search

Web   **Images**   Groups   News   Froogle[New!]   **more »**

Looking for an image, map, graphic, photo, design or drawing? Try Google's Image Search by clicking on the *Images* link above Google's search box or visiting images.google.com.

Enter your query and click on the "Google Search" button. Alternatively, enter your query and then click on the *Images* tab. Google Image Search works best when there are many images available to choose from, e.g., photos of Anna Kournikova, the most photographed tennis player.

Click on the image that interests you. You'll go to a framed page with two parts. On top, you'll see Google's image thumbnail. On the bottom, you'll see the full page on which the image appears.

Clicking on the thumbnail image or on the "See full-size image" link that appears just below the thumbnail image will display the full-size image.

Save the image to your hard disk by either selecting "Save As" or "Save Page As" from the File menu of your browser or by clicking the mouse's right button and selecting "Save As" or "Save Page As" from the pop-up menu.

To view the page containing the image without the thumbnail image on top, click on the page's URL, which appears between the thumbnail image and the page itself following the text "Below is the image in its **original context** on the page."

How Does Google Image Search Work?

Notice that when you search for images of Google founders Larry Page and Sergey Brin, Image Search returns some photographs of Google CEO Eric Schmidt.
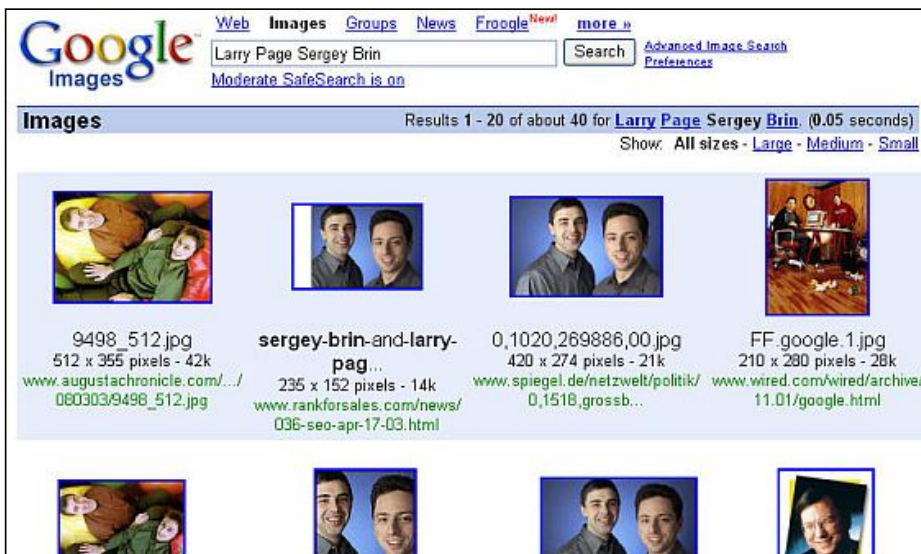
The words "Larry Page" and "Sergey Brin" appear near images of Eric Schmidt, or in image captions, or in links to those images. Google makes a guess that the words are related to the image. Google technology isn't yet to the point where it can tell what's in an image by looking

at it directly.

Focusing Your Image Search

As with text searches, you can focus your search when it finds too many images. Restrict your results to images that are large, medium, or small by clicking on one of the links that is in the upper right corner on the Images results page.

Alternatively, narrow your query by using Google's Advanced Image Search form. To get there, either click on the Advanced Image Search link or go to images.google.com/advanced_image_search.
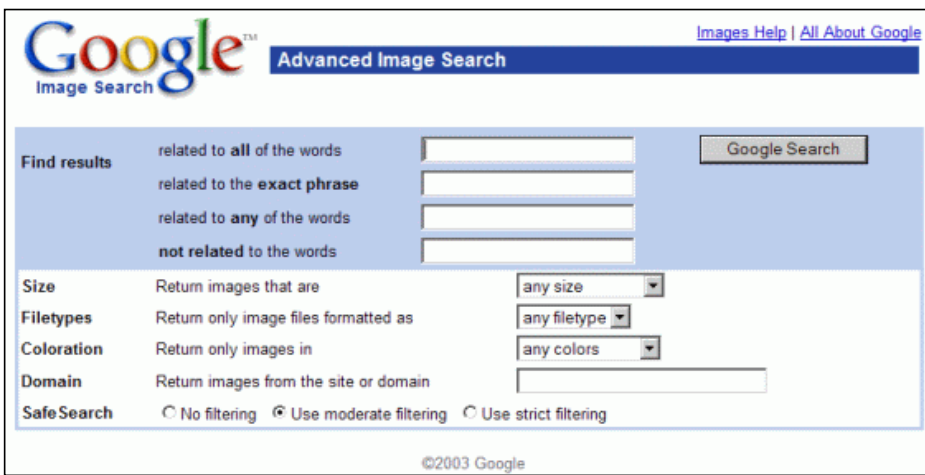
You can specify:

Option	Restrict results to	Values
Size	images of these relative dimensions	small, medium, large
Filetype	image files whose names end with the specified suffix	jpg, gif, png
Coloration	images with the specified color depth	black and white, grayscale, full color
Domain	a specific site or domain (for a description of site and domain names, see Anatomy of a Web Address in the Sharpen Your Query section in Part I)	Domains such as .com, .edu, .nl, or sites such as pandemonia.com
SafeSearch	the specified level of filtering. Be aware that Google's automatic filtering doesn't guarantee that you won't be shown offensive content.	none, moderate, strict

The Size restriction refers to the height and width of the image in pixels. The following table lists the approximate dimensions for each relative size specification.

Size Value	Approximate Dimensions in pixels
small	150 x 150 or smaller
medium	larger than 150 x 150 and smaller than 500 x 500
large	500 x 500 or larger

For more information on Google's Image Search visit images.google.com/help/faq_images.html.

Exercises

These problems give you practice with finding images. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. I used a color chart to select colors for this tutorial. Find some color charts that show the HTML input to render at least 100 colors.

2. Google displays special logos on its home page on holidays and birthdays. Find some of these logos. Click on the link "repeat the search with the omitted results included" to view more amusing logos.

3. Find a photograph of the Alhambra in Granada, Spain to see whether you want to take a vacation and visit the Alhambra.

4. Obtain a map of the London Underground.

Groups (Discussion Forums)

Web   Images   **Groups**   News   Froogle^New!   **more »**

Want advice, opinions, and recommendations that haven't necessarily been edited?

Then consider using Google Groups, which provides access (posting and reading) to Usenet discussion forums, an enormous storehouse of discourse, including

- Forums on practically everything from aviation to zymurgy (brewing beer)
- Opinions, advice, and resource information, e.g.,
  - Opinions on lasik eye surgery
  - Reviews for small OR compact digital cameras
  - Travel tips from nonprofessionals
  - Security fixes for Windows 2000
  - New digital scanner setup files
- Annoying posts
  - Spam (widely distributed junk messages)
  - Gripes
  - Flames (insulting criticism or remarks meant to incite anger)

The Internet connects people from all over the world. When the Internet was initially established, people used it to send email messages to each other. As with physical mail, email must have the address of the recipient. In 1979-1980, Steve Bellovin, Jim Ellis, Tom Truscott, and Steve Daniel at Duke University and the University of North Carolina at Chapel Hill implemented a distributed bulletin board system supported mainly by UNIX computers. It became known as Usenet, which was short for *Users Network*, and, because it was free and non-proprietary, it swiftly became international in scope. Usenet discussion forums became popular in the 1980s before the birth of the World Wide Web. In 1995, a company named DejaNews began archiving Usenet. In 1999, during the .com boom, DejaNews changed its name to Deja.com. Like many .com companies, Deja.com didn't do well financially. In February of 2001, Deja.com sold its Usenet archives to Google for an undisclosed amount. Google made Deja's entire archive (dating back to 1995) as well as lots of material posted earlier available from the Google Groups home page.

Click on *Groups* link above Google's search box or visit groups.google.com to access this comprehensive archive of human conversation, dating back to 1981.

Note: Particularly in the latter part of the 1980s, there are some significant gaps in the archive. As traffic expanded, volunteers who had been saving Usenet traffic at their own expense were overwhelmed, and stopped archiving some groups. While the Google Groups archive is the most complete Usenet Archive known to exist, it is not a complete archive prior to the 1990s.

Newsgroups or forums are grouped into several large areas, each of which is broken into subareas. The different parts are always separated by a "." (period). The first part of a name is called its *hierarchy*. Consider, for instance, the name rec.sport.tennis. The newsgroup is in the rec or recreation area, in the sports subarea. Within each newsgroup, there are messages (also referred to as articles or postings) that look like email from one user to another. But instead of just being exchanged between two people, these messages are available to everyone who accesses the Usenet or Google Groups. The top level hierarchies on Google Groups are:

alt.	Alternative discussions (any conceivable topic)
biz.	Business products, services, reviews, etc.
comp.	Relating to computers
humanities.	Fine art, literature, philosophy, etc.
misc.	Miscellaneous topics, e.g., employment, health, etc.
news.	Relating to Usenet netnews itself
rec.	Relating to recreation, e.g., games, hobbies, sports
sci.	Relating to the sciences
soc.	Relating to social issues, culture
talk.	Long arguments, current issues and debates, frequently political

Below are some examples of newsgroup names.

alt.graphics.photoshop	misc.jobs.offered
alt.atheism.moderated	rec.aviation.soaring
alt.fan.letterman	rec.food.recipes
alt.personal.ads	rec.music.classical.guitar
biz.books.technical	soc.feminism
misc.invest.real-estate	talk.politics.misc

Discussion groups can be unmoderated (anyone can post) or moderated (submissions are automatically directed to a moderator, who edits and filters out inappropriate and irrelevant material). Some discussion groups have parallel mailing lists, with postings to a group automatically propagated to its mailing list and vice versa. Some moderated groups are even distributed as digests, groups of postings periodically being collected into a single large posting with an index. The names of some moderated groups include the suffix .moderated, e.g., rec.martial-arts.

moderated.

Click on a topic (hierarchy) or enter your query.

Click the title to view the original article with your search terms highlighted.

Click on the "View Thread" link to see the original article together with followup articles. (Google Groups displays the entire contents of articles and does not clip the right side as I have done so the following screen shot is no wider than any other screen shot in Google Guide.)

Want to participate in a discussion? For information on how to post messages, click on the "Groups Help" link above or to the right of the

Google Groups' search box or visit the Google Groups Frequently Asked Questions (FAQ) about posting at groups.google.com/googlegroups/ posting_faq.html. Also be sure to read the first answer in Google Groups Posting Style Guide. Usenet has a very strong culture, and well-established ways of doing things. In order to get the best responses to your post, you should try to conform to Usenet standards.

If you post to Usenet via Google Groups, your email address will be distributed widely and you may receive lots of spam as a result. Consider getting another email address from Yahoo, Hotmail, or some other free service to use for your public postings.

Want to search for a specific message or those written by a certain person? Click on the Advanced Groups Search link or visit www.google. com/advanced_group_search.

For more information on Google Groups visit groups.google.com/googlegroups/help.html.

Exercises

These problems give you practice in searching Google Groups. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Find recommendations for sites for booking flights online.

2. Find travel tips for places to stay and visit in central London.

3. Find reviews of online banking services.

4. What are some ways to automatically block spam?

5. How can you remove varnish from a maple coffee table?

6. Click on the link "rec." and browse the names of the recreational subgroups.

7. Find the list of especially memorable articles and threads from Usenet that Google has compiled.

News Search

Web   Images   Groups   **News**   Froogle^New!   **more »**

After the tragedies of September 11, 2001, Krishna Bharat, a Google engineer, built a tool to crawl news sites and organize news into ranked clusters. Because of its popularity, Google expanded the demo into Google News.

Google News:

- Presents information culled from thousands of news sources worldwide.
- Updates entries continuously throughout the day.
- Groups together related headlines and photos.
- By default, automatically displays the latest headlines.

Click on the *News* link above Google's search box or visit news.google.com.

Google news indicates how fresh a story is by listing how long ago it was posted, e.g., 30 minutes ago for the top story on the left in the screen shot above. Click on the title to display the article. Notice the "and 565 related" link at the bottom of the entry of the story on the left of the above screen shot. If you click an entry's "and XXX related" link, you'll see a page listing all articles related to the same topic.

Search news by entering your query and clicking on the "Google Search" button.

By default, results are sorted by relevance to your search terms. When you wish to see articles ordered chronologically, click on the "Sort by date" link, located in the upper right corner of the results window.

Advanced News Search, accessible from the Advanced Search link on the News page, enables you to search by news source, location, date range, and other criteria. It's also available at news.google.com/advanced_news_search.

International versions of Google News are available for countries including Australia, Canada, France, Germany, India, Italy, New Zealand, Spain, and the U.K.

Making Google News Your Home Page

If you like keeping up with the latest news, consider making Google News your home page and/or setting up Google News Alerts. Make Google News your home page by clicking on the "Make Google News Your Home Page" link, which appears on the left of Google News' home page, if the option works on your browser. If the link is missing, follow the instructions listed on www.google.com/options/defaults.html.

Google News Alerts - www.google.com/newsalerts

Set up Google News Alerts to get email when news articles on topics of interest to you appear on the web.

In February of 2003, Google engineer Naga Sridhar got tired of regularly visiting Google News to check for developments in the imminent US war with Iraq. So he put together an application that would email him when a news story broke that matched a specified query. Naga demonstrated his prototype to co-founder Sergey Brin, who set up a news alert for "google." With encouragement from both Sergey and Marissa Mayer (Google's Director of Consumer Products), Naga began working full-time on what has become News Alerts. Six months later, links to News Alerts were added to Google Labs' home page and to Google News.

After you've set up a News Alert, Google finds and delivers links to news articles as they appear online or once a day.

Consider using Google News Alerts to:

- monitor a developing news story
- keep current on a competitor or industry
- get the latest on a celebrity or event
- keep tabs on your favorite sports teams
- learn where you are or your company is cited or quoted

Note: News Alert is just one of several different services that will email you Google search results. Google Alert, a third-party service available at www.googlealert.com, will automatically email you results from several search queries either daily, every other day, twice weekly, or every week.

For more information on Google News visit news.google.com/help/about_news_search.html.

If you're a news junkie, check out Topix.net, which you can find at http://www.topix.net/ and Columbia Newsblaster, which you can find at http://newsblaster.cs.columbia.edu/. Like Google News, Topix.net and Newsblaster are systems that automatically track the day's news. Why am I including non-Google sites in a tutorial on Google? To make you aware of sites offering capabilities different from Google News's and to publicize a friend's site.

According to the About Columbia Newsblaster page, which you can find at http://newsblaster.cs.columbia.edu/faq.html, "There are no human editors involved -- everything you see on the Newsblaster main page is generated automatically, drawing on the sources listed on the left side of the screen." Unlike Google News, Newsblaster summarizes clusters of articles about the same topic. "The end result is a Web page that gives you a sense of what the major stories of the day are, so you don't have to visit the pages of dozens of publications," according to About Newsblaster page.

Exercises

This problem set gives you practice with using Google News. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Find today's current top stories listed on Google News.

2. Find the latest news about Google.

3. Set up a Google News Alert to automatically email you news about Google features and services or some other topic of interest to you.

Froogle (Search and Browse Items for Sale)

<u>Web</u>   <u>Images</u>   <u>Groups</u>   <u>News</u>   **Froogle**^{New!}   **more »**

Froogle is a searchable and browsable shopping index tuned to finding products for sale online. Click on the *Froogle* link above Google's search box or visit <u>froogle.google.com</u>. Search results include price, brand, description, and, if available, a photograph. Note that unlike other online shopping services, Froogle doesn't actually sell things.

Froogle obtains listings for products from vendors and from scouring the web. When Google runs across a page that appears to sell something, it feeds the information it collects to Froogle. Vendors don't pay to have their products included in Froogle's search results. However, they can purchase sponsored links, which appear along the right side of Froogle's results pages.

No need to bookmark Froogle or remember its name, which is a combination of the words "Google" and "frugal." Just use Google to find it or any other service you desire.

You can browse products by clicking on a category or you can search by entering your query in Froogle's search box. Interested in buying a watch for a child? Try searching on Froogle for [<u>watches children</u>].

The results included the verb "watch" and pages selling children's jewelry. Study results to get ideas for more effective search terms. Consider searching for specific brands.

Search for specific types of watches.

When Froogle finds more than one product from a site, it includes the link "See all results from *vendor*." Limiting the number of results from a given site to just one ensures products from a single vendor won't dominate your search results and that Froogle provides pages from a variety of sites.

Want products with prices in a specified range? Enter a price range just above the results or fill in a field in Froogle's advanced search form. Access the advanced search form by clicking on the Advanced Froogle Search link next to the search box on a Froogle page or visiting froogle.google.com/froogle_advanced_search.

For more information on Froogle visit froogle.google.com/froogle/about.html.

Exercises

These problems give you practice with shopping on Froogle and Google Catalogs. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Find 100% cotton comforter covers on Froogle.

2. Find unbreakable 8 oz. drinking glasses in the price range $10 - $30.

3. Tired of putting on sun screen? Find sun-protective clothing with Froogle.

4. Find heated toilet seats with Froogle.

More Search Services

Web   Images   Groups   News   Froogle ^{New!}   **more »**

Click on the **more »** link above Google's search box to learn about many of Google's search services and tools. In Google Guide, click on any of the following images or links to learn more about these services and tools.

Google Services

Answers

Catalogs

Directory

Froogle

Groups

Images

Google Labs

Google Local

News Search

Special Searches

University Search

Web Search

Wireless

Google Tools

Blogger
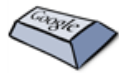
Browser Buttons

Google in your Language

Google Toolbar

Translate Tool

Web APIs

Catalogs (Search and Browse Mail-Order Catalogs)

After acquiring a fancy scanner, Larry Page, co-founder of Google, encouraged engineers to come up with a search service that would take advantage of its speed and flexibility. Lauren Baptist started by developing a service around mail-order catalogs because they posed the least copyright issues. Some vendors have better pictures in their catalogs than on the websites. Now you can throw out your mail-order catalogs and browse or search for their contents online, even if the company hasn't listed them on the web. Visit catalogs.google.com. But, if you don't have a high speed connection, the catalog pages load slowwwwly.

Since Ikea gives out their catalogs sparingly, check out their catalog online.

Like Froogle, Catalogs doesn't sell things. Instead, use this service to browse and/or search print page catalogs. For example, search for a sun hat.

For more information on Google Catalogs visit catalogs.google.com/googlecatalogs/help.html.

Exercises

These problems give you practice with shopping with Google Catalogs. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Find 100% cotton comforter covers.

2. Find unbreakable 8 oz. drinking glasses in the price range $10 - $30.

3. Tired of putting on sun screen? Find sun-protective clothing.

4. Find heated toilet seats.

5. Check out the prices of flying saucers, superballs, night lights, or whatever interests you in the wholesale Rhode Island Novelty catalog.

Directory

There are two basic ways to find information systematically on the Web: browsing and searching. Chris Sherman and Gary Price offer the following description of browsing versus searching in their book *The Invisible Web.*

> ... think of how you use a library. If you're familiar with a subject it's often more useful to *browse* in the section where books [on that] subject are shelved. Because of the way the library is organized, often using either the Dewey Decimal or Library of Congress Classification system, you know that all of the titles in the section are related, and serendipity often leads to unexpected discoveries that prove quite valuable.

> If you're unfamiliar with a subject, however, browsing is both inefficient and potentially futile if you fail to locate the section of the library where the material you're interested in is shelved. *Searching,* [with the aid of] specialized tools offered by a library's catalog, is far more likely to provide satisfactory results.

> Using the web to find information has much in common with using the library. Sometimes browsing provides good results, while other information needs require nothing less than sophisticated, powerful searching to achieve the best results.

Up until now, I've shown you how to choose search terms and craft your queries to locate the information you seek. This section describes how to browse by following links on Google's Directory.

Google organizes the Directory into categories that are classifications of pages by subjects. The Directory is similar to the table of contents in a book. Browsing a book's table of contents, which includes the titles of chapters and sections, allows a reader to quickly find interesting sections of the book. Similarly, browsing a subject-oriented directory, enables a user to quickly locate categories containing related documents. However, there's no assurance that what you're seeking will be in the book or web page.

See the top level classifications by visiting directory.google.com.
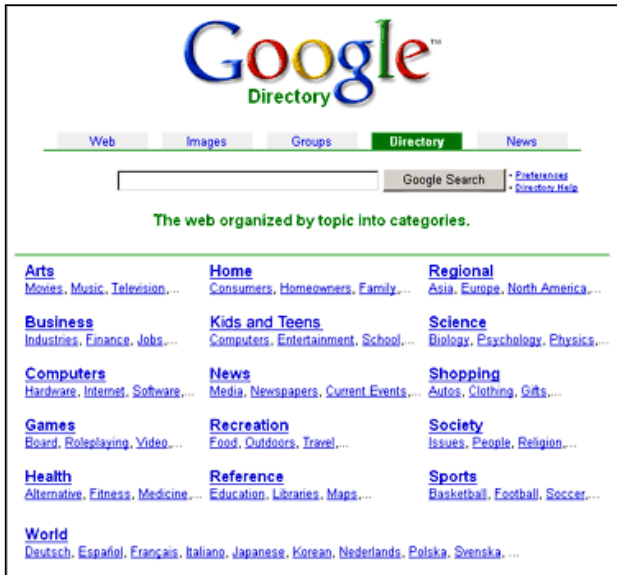
Google's web-search index is built automatically by computers that crawl the web. Google's Directory is created by volunteer human-subject matter experts who contribute to the Open Directory Project (www.dmoz.org). The raw open-source directory is used not just by Google, but also by Netscape Search, AOL Search, Lycos, HotBot, and DirectHit. The volunteers evaluate, classify, and annotate each entry. The entries are then ranked by Google's PageRank algorithms.

Consider using the Directory instead of Google's web search whenever you want to:

- Familiarize yourself with a topic.
- Get suggestions for ways to narrow your search.
- Find ideas for query terms.
- Figure out the scope of a given category,
  e.g., the number of newspapers in California.
- View only pages that have been evaluated by a human editor.

Fewer sites are included in the Directory than in Google's web search but those that are included tend to be of high quality.

Use Google's Directory when you want to explore by clicking on topics, i.e., browse. For example, learn about travel by clicking on the Travel category, which is included in the top-level category Recreation, which in the future I'll abbreviate as Recreation > Travel.

To broaden your search, consider browsing subcategories or related categories, which the Directory includes on your results page. Next to each subcategory is a number in parentheses (), which is the number of links included in that category. Names of categories with lots of entries are shown in boldface.

With Google's Directory, you can browse and/or search to find pages of interest to you. If you're unfamiliar with a topic, browse through a few levels of categories and then restrict your search to a particular branch of the Directory by selecting the "Search only in ..." radio button before entering your query in the search box. If you're familiar with a topic, search the Directory by entering your query and clicking on the "Google Search" button. Then you can either refine your search by changing your search query or entering additional terms or browse by clicking on a subcategory or a related category.
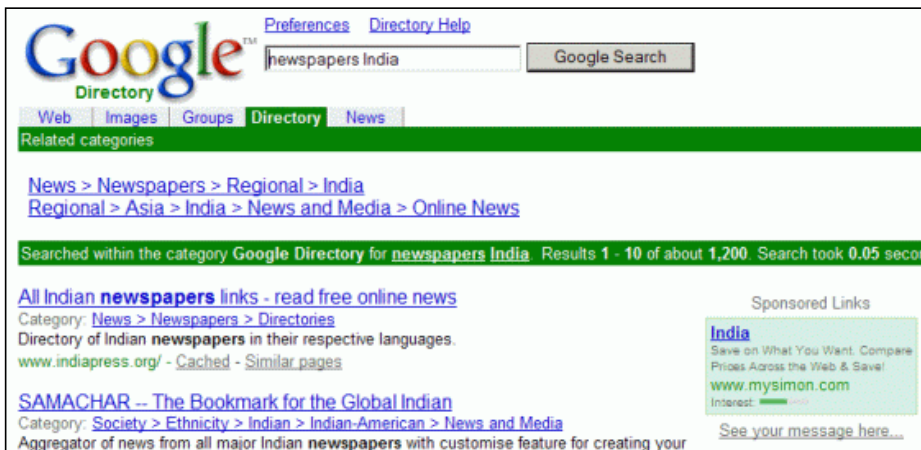
Directory drawbacks include: size, timeliness, and coverage. Since computers can crawl the web and add index entries much faster than humans can travel the web and evaluate pages, most directories, including Google's, have significantly fewer entries than searchable indices. Since directory links are maintained by hand, upkeep and maintenance are time-consuming. It's difficult for editors to keep up with the dynamic nature of the web. Because different people edit, annotate, and add entries, some categories in a directory are well-populated and others are sparse.

For more information on Google Directory visit www.google.com/dirhelp.html.

Exercises

This problem set gives you practice in using the Google Directory. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Find bed and breakfast sites in Florence, Italy.

2. Find sites that focus on changing careers.

3. What are the names of the California state parks and their points of interest?

4. List categories where you can find lawn furniture.

Special Searches

Looking for an easier way to find information on a specific topic or at a specific website?

Google provides the following specialized search engines:

Apple Macintosh
www.google.com/mac
Search for Mac & Apple things

BSD
www.google.com/bsd
Search for the BSD operating system

Linux
www.google.com/linux
Search all Linux-friendly pages

Microsoft
www.google.com/microsoft.html
Search Microsoft-related pages

U.S. Government
www.google.com/unclesam
Search all .gov and .mil sites

University Search
www.google.com/options/universities.html
Narrow your search to a specific institutions's website

Why these topics? Early on in Google history, some engineers created these specialized search engines to serve their own interests. They've remained part of the site though Google has turned its attention to other types of search services and features.

You can find links to these specialized search engines, as well as Froogle and Google Catalogs, on the Advanced Web Search form.

Exercises

This problem set gives you practice in using Google's specialized search engines. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. What was special about the Apple Lisa computer, and why did it fail?

2. What are the advantages of Linux over Windows and vice versa?

Answers

Having trouble creating a query to find the information you seek? Don't have time to research the topic yourself? Consider asking a reference

librarian, an experienced online researcher, or Google Answers, which, for a fee of your choosing, provides assistance from researchers with expertise in online searching.

If your query returns few results or none, there may be a link to Google Answers on the results page. Otherwise, visit answers.google.com.

Reluctant to use Google Answers? Think you can find the information you want if you search a bit longer? If you feel that way, you're not alone. Nevertheless, many people who have asked questions of Google Answers are now fans of the service. Not only does it save them time, but the answers they get are packed with useful information and links. It's a wonderful service that's well worth your checking out, whether you're a novice or an experienced searcher.

Here's how it works:

- Enter a question.
- Specify an amount between US$2 and US$200 that you're willing to pay for an answer. Google adds on a US$.50 listing fee, which you are charged regardless of whether your question is answered or not.
- A Google Answers researcher will search for the information you want and post an answer. The researchers are screened and approved independent contractors who get paid for posting "answers" to the site.
- You will be notified via email when any responses are posted to your question, unless you specify in your Google Answers' Profile that you would rather not receive status information on your questions.

Before posting your first question, check out Google's tips for getting a better answer to your question, which can be found on the web at answers.google.com/answers/help.html.

Want the answer to a question? First, create a Google Account by providing your email address, a password, and a nickname. Your nickname will be shown on every Google Answers question, answer, or comment that you post. Then enter the topic of your question, your question, the amount between US$2 and US$200 you're willing to pay for an answer, and the category most appropriate for your question. For example:

> **Subject:** Enter the topic of your question for our researchers (e.g. "Hiking in New Mexico").
> Nina Totenberg, NPR legal affairs correspondent, birthday, education, and degree
>
> **Question:** The more details you provide, the better the results you'll receive.
> When was Nina Totenberg, National Public Radio's (NPR) legal affairs correspondent, born, where was she educated, and what degrees does she have? Did she attend law school?
>
> **Price:** Set a price between $2.00 and $200.00.
> $2.00 (Google Answers bills your credit card this amount after a researcher answers your question.)
>
> **Category:** Select the category most appropriate for your question.
> Reference, Education and News > General Reference

The more you're willing to spend on an answer, the more likely a researcher will answer it and the more likely the answer will be comprehensive.

When a Google Answers researcher or anyone else writes a response to your question, the answer and/or comments will be posted to Google Answers. You may request in your Google Answers' Profile to be notified by email either once a day or whenever there is new activity with any

of your questions.

After a researcher has answered your question, you are given an opportunity to rate the answer from one star (very poor answer) to five stars (great answer), provide comments that anyone who uses Google Answers can access, and tip the researcher between US$1 and US$100, if you feel that you have received an exceptional answer.

Click on a researcher's handle to see the ratings and comments that researcher has received from users who have posted questions. You may specify which researcher(s) should deal with your question when you submit it.

You can search or browse previously asked questions, both those that have been answered and those that haven't. At the bottom of the Google Answers home page, find questions (some with answers) by either:

- Entering search terms.
- Clicking on one of the topic headings.
- Selecting a link to a recently asked question.
- Clicking on the view all the questions link.

By default, Google Answers displays questions, their associated comments, and their answers in reverse chronological order (most recently asked question is listed first). Click on either the Date or Price links just above all the questions to sort on that field. When you sort by date, a triangular icon indicates whether the field is sorted with the most recent listed first (triangle points down) or is sorted with the oldest listed first (triangle points up). Click on the triangle to reverse the order.

You'll find answers there to many already asked questions, including

- How can I rid my apartment of ants?
- When did Title Insurance and Trust Company in Los Angeles go out of business?
- How can I get a divorce in the US? I was married in Brazil and I'm in the US on a student visa.
- Using Photoshop Elements 2, how can I eliminate moiré patterns from a scanned photo or page?
- What is the story of the diaper genie?

Answers to many questions can be found on the web. Users also seek and obtain answers to questions of a more personal nature,

- Please review Google Guide, and let me know ways in which I can improve its content, including but not limited to search tips, clearer explanations, inaccuracies, typos, omissions, better or additional exercises.

- How do I get www.ostrovcoaching.com to appear in Google search results using key phrases such as: "personal coaching" "life coaching" "executive coaching" "business coaching" "Tracy Ostrov" "Ostrov Coaching" "Denver" "Colorado" "Golden"?

Some of the answers are indexed by Google and then searchable through Google's web search.

For more information on Google Answers visit answers.google.com/answers/help.html and answers.google.com/answers/faq.html. To see what users are saying about the service and how they are using it, visit answers.google.com/answers/testimonials.html.

Exercises

These problems give you practice in asking questions and in browsing those that have been posted to Google Answers. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. View a recently asked question.

2. View a recently answered question.

3. Click on the "view all questions" link in the lower right corner of the Google Answers home page and browse some of the questions that have been answered.

4. Look up the answer to the question "How can I rid my apartment of ants?"

5. Look up in Google Answers whether clicking on an unsubscribe or remove link in a spam message does what it's advertised to do.

6. Look up in Google Answers the recommended gratuity to give to the server when purchasing take-out food.

7. Review tips for great answers, which you can access by clicking on the "Tips for great results" link that appears in the border of the box for entering your question.

8. Enter a question you have or one of the exercises in this tutorial that you haven't been able to answer. Provided you have a credit card, offer to pay the minimum amount, i.e., US$2. When your question is answered, your credit card will be billed US$2 for the answer plus a US$.50 listing fee.

   Note: If you go through the entire question-posting process and actually post a question, and if someone answers it, your credit card *will* be charged for the amount you specified. Finish this exercise only if you are willing to spend that amount.

9. Find Jessamyn West's article about her experience as a Google Answers researcher.

Prototypes and Demos (Google Labs)

Google's mission is to "organize the world's information and make it universally accessible and useful." To this end, Google showcases some prototypes and products in development on the Google Labs, the web site of Google's research group.

Visit Google Labs' home page at labs.google.com.

Note: Google Labs updates its site periodically. So you may find prototypes or demos different from the ones shown here.

In Parts II and III, I mention graduates of Google Labs, services and tools that have been refined and made available through Google's home page.

   Search by Location (Google Local)
   Google News Alerts
   Google Glossary

In this final lesson of the Special Tools section, I describe a couple of Google Labs' prototype search tools including

   Google Sets
   Personalized Web Search

Google will likely refine some of these demos and make them available through Google's home page. If you want to become part of Google's development process, try out these prototypes and provide feedback to the engineers who developed them.

Google Sets - labs.google.com/sets
   Automatically create sets of items from a few examples.

   Enter a few items from a set of things. Then press the "Large Set" button or the "Small Set" button and Google Sets will try to predict other items in the set. For example, if you enter Golden Gate Bridge, Palace of Fine Arts, and Coit Tower, Google Sets suggests other places worth visiting in San Francisco.
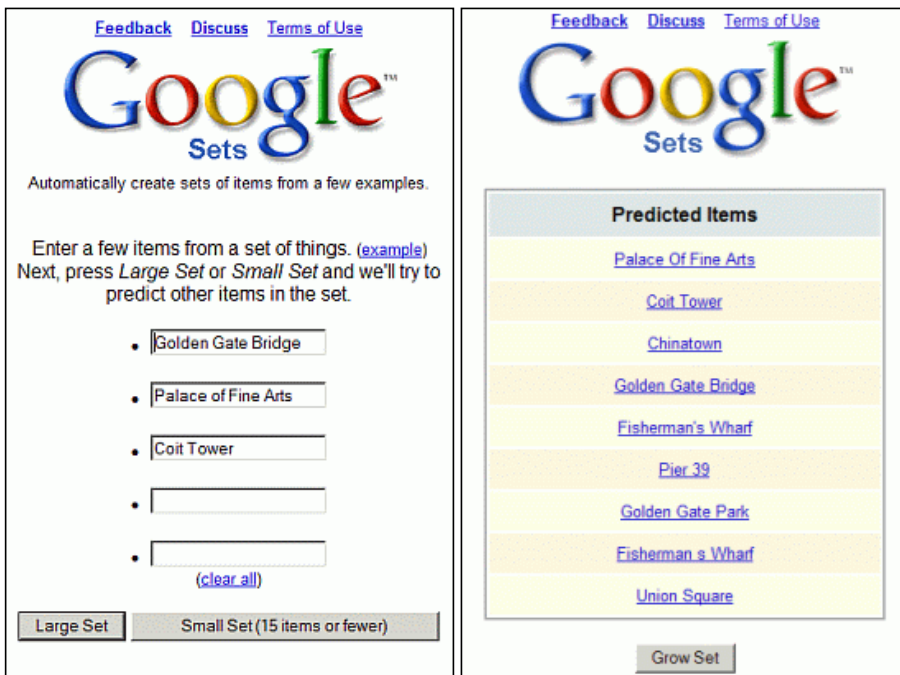
Use Google sets to suggest: people who might share interests with you, places to visit, books to read, movies to see, synonyms, food you might enjoy, stores where you can buy a particular type of item, etc.

🔵 **Personalized Web Search** - labs.google.com/personalized
   Delivers custom search results that are based on a profile you create describing your interests.
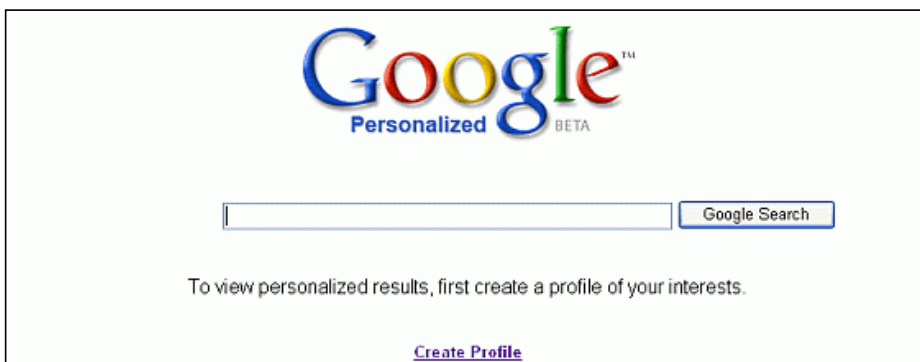
Click on the Create Profile link to reate a profile of your interests.

Answers to frequently asked questions about Google Personalized Web search are available at www.google.com/personalized/faq.html.

Exercises

These problems give you practice in using Google Labs prototypes and demos. For hints and answers to selected problems, see the Solutions page in the Appendix.

1. Visit Google Labs and try out two of the prototypes and demos that are listed on the site.

2. Get suggestions for books by entering some of your favorite authors or titles and asking Google Sets to predict other members of the set.

3. Enter some of your favorite movies and see if Google Sets recommends either movies you haven't seen or other of your favorite movies.

Feature History

Google is constantly enhancing its search engine. The following table lists when Google and Google Guide added services and features and links to where they are described in Google Guide or on the web.

August 2005	• Google Desktop 2	• Google Talk
July 2005	• Toolbar for Firefox	
June 2005	• Currency Conversion	• Google Sitemaps
May 2005	• Enterprise Desktop Search Tool • Google Web Accelerator	• Personalize Your Homepage
April 2005	• Google Q&A • Multilingual Google Definitions • My Search History	• Satellite View from Google Maps • Google Mobile - Local Search
March 2005	• Google Weather • Live stock quotes • Results Prefetching	• Google News: Customized News • Google Ride Finder • Google Suggest in Japanese
February 2005	• Google Maps	• Google Movies

January 2005	• Raised search limit to 32 words • Picassa 2	• Google Video
December 2004	• Google Library • Froogle Product Reviews	• Google Suggest
November 2004	• Google Scholar • Froogle Wish Lists	• Google Help: Cheat Sheet
October 2004	• Google Desktop Search	• Google SMS
June 2004	• Site-Flavored Google Search Box	
May 2004	• Google Groups 2 Added mailing list support to Google Groups	
April 2004	• GMail	
March 2004	• Google Local • User Interface (UI) redesign • Personalized Web Search • Web Alerts	• New Froogle home page • Images in Google News search results • Number range (numrange) command
February 2004	• Danish Google Guide	
January 2004	Search by Number	• Orkut (Social Networking Service)
December 2003	Travel Conditions • Google Print	• Product Search Shortcut • Word Variation (Automatic Stemming)
November 2003	• Deskbar	
October 2003	• Definitions (Google Glossary)	
September 2003	• Search by Location	
August 2003	Calculator ~ Synonym Operator	• News Alerts
June 2003	• Toolbar 2.0 with a pop-up blocker	
December 2002	• Froogle	• Google Viewer
September 2002	• Google News	
May 2002	• Google Answers Searchable • Google Labs	• Google Glossary • Google Sets
April 2002	• Google Answers	
Jan 2002	* Wildcard	
December 2001	+ Operator • Catalogs	• Diacritics searching (terms with accents)
November 2001	• Search stop words in phrases	• File type conversion
October 2001	• Home page tabs	• Language Tools
June 2001	• Google Image Search	

May 2001	• Spelling Corrections • Google Groups	• Translation
March 2001	Phonebook	
November 2000	• Toolbar	
October 2000	Stock Quotes • AdWords	• OR Operators
July 2000	• Date Restricted Search • Dictionary Link • Advanced Search	• Preferences • Phrase Search - Operator
June 2000	• News Headlines	Street Maps
May 2000	• SafeSearch Filtering	
April 2000	• Google Directory	
March 2000	• Browser Buttons	
February 2000	• Microsoft-Specific Search Engine	
January 2000	• Make Google Your Default Engine • Apple-Specific Search Engine	• University Search Feature
September 1999	• Similar Pages aka GoogleScout	
September 1998	• Cached Pages	• Google Web Search

Resources helpful in putting together this table include Google Press Releases, the archive of Google-Friends Newsletters, Google: Search Engine Showdown News Archive, and Google News.

Part IV: Developing a Website

If you don't have a website and aren't interested in developing one, skip to the Appendix. This part covers

- **Creating Content**
- **Linking to Search Results**
- **Getting Listed**
- **Improving Your PageRank**
- **Advertising Your Website**
- **Generating Revenue by Running Ads**

Most of the information in this section is based on my experience in designing and developing Google Guide, which is now the top result for the queries [Google tutorial], [Google guide], [Google ~guide], [Google stock symbol], and [Google favorite features].

There are thousands of sites devoted to developing a website and optimizing its performance. So should you need or want more detailed information, just search for it. But be careful: there are sites that charge good money for bad information.

Creating Content for Your Website

When putting together content for this page, I came across wonderful pages on creating content for websites. So, rather than writing yet another, here are links to two of my favorites.

- Site Builder: 26 Steps to 15k a Day by Brett Tabke

- [Google Webmaster Guidelines](#)

If you know or run across any other great sites on creating content for your website, please let me know.

Exercise

This problem set gives you practice in developing a page for your website. For hints and answers to selected problems, see the [Solutions](#) page in the Appendix.

1. Create a web page with names of friends and colleagues whose contact information you desire. On the page, ask these people (or anyone who has their contact information) to get in touch with you.

   When these people search for themselves, they may run across your page and get in touch with you.

   At the 30th Asilomar Microcomputer Workshop, Bill Chewsick suggested this approach to searching for people if you don't find them in Google's phonebook.

Developing Links to Google Search Results

If you know HTML, it's relatively easy to make links to Google's search results. Following each link in the examples below is the code that produces it.

[[Google tutorial create link](#)]

[Google tutorial create link]

The following code creates a link that will open up a new window that contains the search results for the query [[Google tutorial create link](#)].

[Google tutorial create link]

Provide a search box and search results to your visitors like the following

The search box was generated by using a service that's called Google Free.

```
<!-- Search Google -->
<FORM method=GET action="http://www.google.com/search">
<TABLE bgcolor="#FFFFFF"><tr><td>
<A HREF="http://www.google.com/">
<IMG SRC="http://www.google.com/logos/Logo_40wht.gif"
border="0" ALT="Google search box with [ define blog ]." align="absmiddle"></A>
<INPUT TYPE=text name=q size=25 maxlength=255 value="Google ~Guide">
<INPUT type=submit name=btnG VALUE="Google Search">
</td></tr></TABLE>
</FORM>
<!-- Search Google -->
```

Learn more about Google Free at [www.google.com/searchcode.html](#).

Exercises

These problems are intended to give you practice in creating links to Google's search results. For hints and answers to selected problems, see the [Solutions](#) page in the Appendix.

1. On one of your web pages, create a link to a Google search result.

2. On one of your web pages, create a link that opens a new window and displays a Google search result.

3. On one of your web pages, make a Google search box.

Getting Your Website Listed on Google

Get other sites to link to your website. When Google's robots or spiders, known as Googlebot, crawl the web, they should run across your site within a month or so. As I mentioned in the How Google Works page, there are two types of crawls, fresh crawls and deep crawls. Your site most likely will first get a fresh crawl in which only pages Google deems most important are crawled. After Google runs a deep crawl of your site, most, if not all of the pages on your website that contain links from other pages will be crawled and subsequently listed on Google, except pages that are included in the file robots.txt, which contains pages that you don't want Google to crawl and pages that contain code that Google is unable to parse.

Submit your site to Google by completing its add URL form which you can find at www.google.com/addurl.html.

For more about how to get your site listed on Google, visit www.google.com/webmasters/1.html.

How do you remove websites, individual pages, cached pages, and outdated or dead links from Google's index? Visit www.google.com/remove.html.

The best way to get your products listed on Froogle is to submit a datafeed with your products. Among the sites that simplify the process of setting up a data feed is www.siteall.com/froogle.

Improving Your Website's PageRank

Include useful high-quality information on your site and then publicize your website. Getting others' websites to link to yours usually helps your PageRank and ranking on Google. But if Google suspects that you've traded links with other sites for the sole purpose of improving your ranking, it might penalize or blacklist your site. Find more suggestions for improving your Google PageRank on Google Advisor and Buzzle.com.

Obtain the PageRank of one or more pages with thePageRank Value Report.

See the PageRank of a page with the PageRank meter in the Google Toolbar (an advanced feature). The more green the higher the PageRank.

Compare the relative PageRank of your site with other related sites by viewing the green bar to the left of a website in the web page section (near the bottom of the page) of Google Directory page.

When I first made this site publicly available, Google Guide wasn't in the first 100 sites on searches for [Google guide]. Thanks to the sites that linked to Google Guide and users who clicked on Google Guide in their search results, Google Guide is the top result for the queries [Google tutorial], [Google guide], [Google ~guide], [Google stock symbol], and [Google favorite features]. Being listed so highly on Google has improved the traffic flow to this site.

Since I'm a fan of Brompton's lightweight folding bicycles and wish to improve the PageRank of www.foldabikes.com, I'm including a link to my local Brompton authorized dealer's website.

In the next section, Advertising Your Website, I'll tell you how I increase traffic through running inexpensive ads.

Advertising Your Website

To generate traffic, I first told my friends and colleagues about Google Guide. Then I told people in the press and the search-engine field about it. When Google Guide was mentioned in an article or website, traffic would increase. To increase traffic to Google Guide and to learn what it's like to be a Google advertiser, I became an AdWords advertiser.

I created my own ads, choose queries and keywords my ads should match, and specified the maximum I was willing to spend on an advertising campaign. Google charges me only when someone clicks on one of my ads.

I increased the effectiveness of my advertising by following wonderful suggestions from Perry Marshall's free 5-day course and from his Definitive Guide to Google AdWords, which you can learn about at www.perrymarshall.com/google/. I tested lots of ads targeted on many different queries and keywords until I found ones that got favorable responses from users, i.e., the ads that users clicked on. And Google has rewarded me by overrunning my ads, i.e., showing some of them from time to time at no cost to me.

Generating Revenue by Running Ads on Your Website

"Google AdSense is for web publishers who want to make more revenue from advertising on their site while maintaining editorial quality. AdSense delivers Google ads that are relevant to what your readers see on your pages — and Google pays you." —www.google.com/adsense/

At first I was reluctant to run ads on Google Guide. I didn't want to create any distractions that would lure visitors away from my site. But visitors leave even if I don't run ads. So at first I ran ads at the bottom of a page because I thought they would only distract viewers that weren't interested in my site. Few users clicked on the ads. Later I moved the ads to the top of a page. The response rate more than doubled and so did revenue. Now I use some of the money generated through AdSense to buy AdWords ads that increase the traffic to Google Guide. This increased traffic, in turn, increases the revenue I receive from customers and AdSense ads.

Appendix

You've reached the end of the tutorial. The following sections contain additional information that you may find useful.

- Summary
- Useful Links
- Solutions to Selected Problems

The remainder of this appendix is filled with compliments and appreciative remarks, how to submit feedback, linking instructions, licensing information, and acknowledgments.

- What Users Think About Google Guide
- Google Guide in the Press
- Submitting Feedback
- Link to Google Guide
- Creative Commons License
- Acknowledgments

Summary

Google strives to make it easy to quickly find whatever you're seeking, whether it's a web page, a recent news story, a photograph, advice, or a present for a friend. Sacramento State's Google QuikRef (available from www.csus.edu/uccs/documents/quikrefsite/PDFs/googleqr.pdf), Google's cheat sheet (www.google.com/help/cheatsheet.html), and Google Guide Advanced Operator Quick Reference (www.googleguide.com/advanced_operators_reference.html) provide nice summaries of some of Google's features and services. The following table lists the major search services Google offers along with the URLs.

Search Service	Description	Website
Web	Search the web. This service includes shortcuts for finding commonly sought utilities and information, such as dictionary definitions, definitions on the web, news headlines, phone numbers, addresses, street maps, stock quotes, travel conditions, package tracking information, calculations of mathematical expressions, and translations of any text or web page.	www.google.com
Images	Find images, graphics, photos, drawings, maps, etc.	images.google.com
Groups	Search, browse, and participate in online discussions. This service is wonderful for finding advice, opinions, and recommendations that haven't necessarily been edited.	groups.google.com
News	Search and browse online news sources.	news.google.com
Froogle	Find and browse products for sale from across the web.	froogle.google.com
Catalogs	Find and browse mail-order catalogs online.	catalogs.google.com
Directory	Browse web pages by category.	directory.google.com
Answers	For as little as US$2.50, obtain assistance from researchers with expertise in online searching.	answers.google.com
Google Labs	Try Google prototypes and demos.	labs.google.com

When you forget where to find one of Google's search tools or services, just look it up on Google. For example, if you don't remember the name or web address of Google product shopping search service, search for [Google product shopping].

Query Input

- In Google's search box, enter up to 32 descriptive words that are likely to appear on pages you're seeking.
- Click on *I'm Feeling Lucky* on Google's home page to go directly to the first result.
- Be specific: Use more query terms to narrow your results.
- Evaluate carefully whatever you find.
- Understand how Google evaluates your query.

Search Behaviors	Descriptions
Implicit AND	Google returns pages that match *all* your search terms. Because you don't need to include the logical operator AND between your terms, this notation is called an implicit AND.
Exact Matching	Google returns pages that match your search terms exactly.
Word Variation Automatic Stemming	Google returns pages that match variants of your search terms.
Common-Word Exclusion	Google ignores some common words called "stop words," e.g., the, on, where, and how. Stop words tend to slow down searches without improving results. (Provided on all search services except Froogle).
32-Word Limit	Google limits queries to 32 words.
Term Proximity	Google gives more priority to pages that have search terms near to each other.
Term Order	Google gives more priority to pages that have search terms in the same order as the query.
Case Insensitivity	Google is case-insensitive; it assumes all search terms are lowercase.
Ignoring Punctuation	Google ignores some punctuation and special characters including , . ; ? [ ] < > @ /
Accented Letters	A term with an accent doesn't match a term without an accent and vice versa.

- Use special characters and operators to fine-tune your query and increase the accuracy of your searches:

Notation	Find result	Example
terms1 terms2	with both *term1* and *term2*	[carry-on luggage]
term1 **OR** *term2* *term1* **|** *term2*	with either *term1* or *term2* or both	[Tahiti OR Hawaii] [Tahiti | Hawaii]
+*term*	with *term* (The **+** operator is typically used in front of stop words that Google would otherwise ignore or when you want Google to return only pages that match your search terms exactly. However, the **+** operator can be used on any terms.)	[+i spy]
-*term*	without *term*	[twins minnesota -baseball]
~*term*	with *term* or one of its synonyms (currently supported on Web and Directory search)	[google ~guide]
number1.. *number2*	with a number in the specified range	[recumbant bicycle $250.. $1000]
"*phrase***"**	with the exact *phrase*, a proper name, or a set of words in a specific order	["I have a dream"] ["Rio de Janeiro"]
"*terms1 * terms2***"**	with the phrase (enclosed in quotes) and ***** replaced by any single word	["Google * my life"]

- When you don't find what you're seeking, consider specifying more precisely what you want by using Google's Advanced Search feature. Filling in the top portion of the Advanced Search form is an easy way to write restricted queries without having to use the basic

operators, e.g., " ," +, -, or OR.

Advanced Search Find results	Basic Search Example	Basic Search Find results
with **all** of the words	[tap dance]	with **all** search terms
with the **exact** phrase	["tap dance"]	with terms in quotes in the specified order only
without the words	[tap -dance] [-tap dance]	including none of the terms preceded by a **-**
with **at least one** of the words	[tap **OR** ballet]	with **at least one** of the terms adjacent to **OR**

- You can specify most of the Advanced-Search page options in a regular search box query by using search operators, i.e., query words that have special meaning for Google. The Google Guide Advanced Operator Quick Reference (www.googleguide.com/advanced_operators_reference.html) provides a nice summary of the search operators grouped by type.

- If you don't succeed, run another search.

Too many results? Focus the search by...	Too few results? Broaden the search by...
adding a word or phrase	removing a word or phrase
specifying the order in which you want words to appear	specifying words instead of phrases
using a more specific term	using more general terms
identifying ineffective terms and removing them	including synonyms or variant word forms or using a more common version of the word's spelling
limiting to a domain or site	broadening the domain or searching the entire web
limiting to a date range	removing date range
limiting where terms occur	removing redundant terms or splitting a multi-part query
restricting type of file	searching any type of file
limiting pages in a particular language	translating your search terms into other languages and searching for the translated terms
limiting pages to a particular country	searching the entire web

Now that you've seen the versatility of the Google search engine, you'll understand why many users rarely use bookmarks and either use the Google Deskbar, the Google Toolbar, or leave their browsers pointing to Google; they can find practically any site using Google's many search services and features.

I sincerely hope that Google Guide has helped you become (more) proficient in using Google. I have tried to anticipate your questions and problems. Please let me know if I have missed something or if you have corrections or suggestions for improving Google Guide, by emailing feedback(at)googleguide.com (replace "- at -" by "@"). I welcome all comments. I look forward to hearing from you.

Colophon

Hamish Reid, a principal at Mistrale, enhanced this site by improving its visual design and by making it easier to maintain and to traverse. I created most of the screen shots with TechSmith's SnagIt and resized and sharpened them with IrfanView.

Useful Links

If the following topics are of interest to you, check out the following links:

- Why is Google Popular? - www.googleguide.com/searchLeader.html

- Google's Online Help
    - [Google Help Central](#) - www.google.com/help/
    - [Google Site Map](#) - www.google.com/sitemap.html
    - [Google's History](#) - www.google.com/corporate/history.html
    - [Google Privacy Policy](#) - www.google.com/privacy.html
    - [Google Friends Newsletter Map](#) - www.google.com/contact/newsletter.html
    - [Google Wireless Services](#) - www.google.com/options/wireless.html
- Information for Webmasters
    - [Google Information for Webmasters](#) - www.google.com/webmasters
        - [How to Get Google to List Your Site](#) - www.google.com/webmasters/1.html
        - [Webmaster Guidelines](#) - www.google.com/webmasters/guidelines.html
        - [Webmaster Frequently Asked Questions](#) - www.google.com/webmasters/faq.html
    - [Site Builder: How to Build a Successful Site](#) - www.searchengineworld.com/misc/guide.htm
    - [Pandia Search Central: A guide to search engine marketing and optimization](#) - www.pandia.com/
    - [SearchEngineWatch.com: Information on Search Engine Marketing and Optimization](#) - searchenginewatch.com/
- [Google Web API](#) - www.google.com/apis/
    API stands for Application Program Interface. This API provides commands that non-Google computer programs can use to run Google searches. Only of interest if you want to write a computer program yourself or use some third-party products.
- Search Engine Resources and News
    - [The Unofficial Google Fan Club](#) - www.ugfc.org
    - [Google Weblog](#) - google.blogspace.com/
    - [Watching Google Like a Hawk: News & Commentary - No Bias - No Agenda, The Good, The Bad, and The Indifferent](#) - www. watchinggooglelikeahawk.com
    - [ResourceShelf: Resources and News for Information Professionals](#) - www.resourceshelf.com/
    - [Microdoc News: Online Magazine about exercising personal power in the Information Age](#) - microdoc-news.info/
    - [ResearchBuzz: Search Engine News](#) - www.researchbuzz.com/
- [Error messages you might see and what they mean](#) - www.w3schools.com/html/html_httpmessages.asp
- [Frequently asked question of Berners-Lee, the inventor of the World Wide Web](#) - www.w3.org/People/Berners-Lee/FAQ.html

Please let me know of other sites that may of interest to Google Guide readers by emailing nancy(at)googleguide.com (replace "(at)" by "@").

Answers to Selected Exercises

This page contains hints for or solutions to some of the exercises in Google Guide. If you suggest a better way to solve any problem or other problems to include in Google Guide and I include your solution(s) or your problem(s), I will include your name beside your contribution. Please email problems and solutions to exercises(at)googleguide.com (replace "(at)" with "@").

Below is a list of links to the exercises together with the name of the file where they can be found in Google Guide. Click on the links to see the entire problem set. See an answer below the section in which the corresponding problem appears.

[**Going Directly to the First Result**](#) - first_result.html

1. Point your browser to Google's home page by visiting [www.google.com](#). Find Google tutorials by typing [google tutorial] (without the square brackets) into Google's search box and then clicking the "Google Search" button. Click on the link for Google Guide.

   Search for [[google tutorial](#)] and you'll find links to many resources that offer help with Google, including this one.

2. After completing the previous exercise, click the back button on your browser twice to return to Google's home page and then search again for [google tutorial] (without the square brackets). Click on the *I'm Feeling Lucky* button.

   If you tell your friends about Google Guide and they use it and tell their friends about it, then hopefully Google Guide will become the top ranked result for the query [google tutorial].

3. What is the difference between the results of the previous two exercises?

   The first problem returns links to all pages that match your query while the second returns the first result, which Google speculates is the most relevant to your query.

[**Selecting Search Terms**](#) - select_terms.html

1. Find a page with "Google doodle."

   Search for [Google doodle] and you'll find a page with the special Google home page logos used to commemorate holidays and special events.
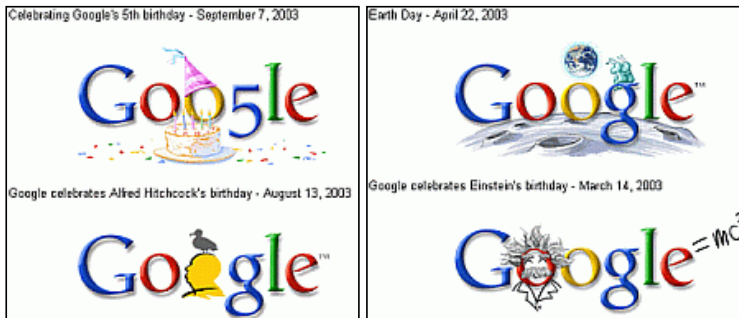
3. What's Google's history?

   Search for [Google history] and you will find a page entitled "Google Corporate Information: Google History."

5. How long did it take the first person to cross the United States by car and in what year was it first done?

   It took Dr. Horatio Nelson Jackson sixty-three and a half days to drive from San Francisco to New York City in 1903, according to the Public Broadcasting Service site www.pbs.org/kenburns/films/horatio.html.

   Possible search strategy:
   [first cross United States road trip]
   [first cross country road trip America]

7. Learn about the recommended tours of the Hearst Castle.

   Search for [Hearst Castle recommended tour] and you'll learn about an incredible mansion, which is now a historical monument. It is located in San Simeon nearly half way from Santa Barbara to San Jose and is worthwhile visiting when you're in the area.

Interpreting Your Query - interpreting_queries.html

1. Indicate which queries would match a page containing "GoogleGuide."

Just those that contain the name in its entirety.

[guide]   [leg]   [**googleguide**]   [**GoogleGuide**]   [google]

3. Indicate which words the following queries will find:

[non-profit]   **non-profit** <—   **non profit** <—   **nonprofit** <—
[non profit]   **non-profit** <—   **non profit** <—   nonprofit
[nonprofit]   non-profit   non profit   **nonprofit** <—

4. Which queries would you predict to be most likely to find sites with discounted designer linens?

Since Google returns pages that match variants of your search terms, all the following queries are likely to find sites with discounted designer linens. But the last query is least likely to rank sites with discounted designer linens because it includes the term "design" rather than "designer."

[discounted designer linens]
[discount designer linen]
[designer linen discount]
[linen designer discount]
[linen discounted design]

The idea for this problem came when I thought about what queries might generate traffic to my friend's Designer Linen Outlinet site, designerlinensoutlet.com.

5. Why doesn't the query [Be Manual] include any results about the Be operating system?

The word "be" is a stop word, which Google ignores, unless you precede it with the **+** operator or enclose the entire query in quotes **(" ")**.

Crafting Your Query - crafting_queries.html

2. How long before you go outside is it recommended that you apply sunscreen?

For best results, apply sunscreen approximately 30 minutes before going into the sun so that it can be absorbed by your skin and so that it's less likely to wash off when you perspire.

Possible search strategy:
[+when apply sunscreen]
[tips apply sunscreen]

3. Find advice on writing a will.

Since "will" is a stop word, either precede it by a + sign or enclose it in quotes.

Possible search strategy:
[advice drafting +will]
[legal help "drafting will"]
[tips +will estate planning]

5. Find pages on daily life in Afghanistan that do not mention war or the Taliban.

Possible search strategy:
[Afghanistan daily life -war -Taliban]

7. Find the terms that Google considers approximately equivalent to the term "cheap."

Looking at the results of the query [~cheap], you can see that Google considers the following terms approximately equivalent to the term "cheap": buy, discount, cheapest, last minute, inexpensive, low cost, and bargain.

9. Find today's weather forecast/condition.

   Possible search strategy:
   [weather forecast OR condition]

11. Find studio apartments for rent in Minneapolis or St. Paul, Minnesota.

   Possible search strategy:
   [studio available OR rent Minneapolis OR "St Paul"]
   ["studio apartment" available OR rent Minneapolis OR "St Paul"]

13. Which of the following phrases match the query ["Google * my life"].

   Just those that substitute a single word for "*."

   "Google has enriched my life"
   "**Google changed my life**" <—
   "**Google runs my life**" <—
   "Google has revolutionized my life"
   "Google: I love my life"
   "**Google is my life**" <—

14. How do the results of the following two queries differ?
   ["how might I"]
   ["how might I *"]

   The first query matches pages that contain exactly the phrase "how might I" and in the results those words appear in a bold typeface. The second query matches the phrase "how might I" followed by a single word. So matches pages that include phrases such as "how might I write," "how might I quote," "how might I build," "how might I enroll," and "how might I learn." In the results, the words in the phrase and the following word appear in a bold typeface.

15. Why does the query ["the who"] give more priority to results about the rock band *The Who* than the query [the who] but return significantly fewer results?

   The query ["the who"] returns results with the words "the" and "who" in that specific order. The query [the who] returns results with the words "the" and "who" in any order.

Sharpening Your Query - sharpening_queries.html

1. What are some home remedies for getting rid of ants?

   Possible search strategy:
   [get rid ants home remedy]
   [ants "pest control" "home remedies"]

3. What is Google's privacy policy?

   Possible search strategy:
   [google privacy policy site:google.com]

   How do I stop my previous queries from appearing when I type in a new search term?

   The following is from the Google General Frequently Asked Questions (FAQ), which can be found at http://www.google.com/help/faq.html#iehistory

   > Fortunately (and unfortunately), this has nothing to do with Google. It's a feature of Internet Explorer 5.0, which is possible to disable using its menu. (You can verify this by going elsewhere on the web to fill out a form and then return to that same page on which you filled out the form.)

   > To disable this feature on Internet Explorer 5.0, go to the Tools menu; select Internet Options; select the Content tab. Within the Personal Information area, select AutoComplete. Click on Clear Forms. You can also uncheck the Forms box in this same window to keep this from occurring in the future.

Alternatively, you can delete individual entries from the history by using the Down arrow key to select a previous search, and then pressing Delete while an unwanted search is highlighted.

Possible search strategy:
[delete query history]

5. When was Nina Totenberg, National Public Radio's (NPR) legal affairs correspondent, born, where was she educated, what degrees does she have? Did she attend law school?

Here's part of the answer that juggler-ga posted to Google Answers, which can be found at answers.google.com/answers/threadview?id=224951.

Nina Totenberg was born January 14, 1944 in New York, NY. She doesn't have any degrees and did not attend law school.

Possible search strategy:
["Nina Totenberg" born]
["Nina Totenberg" 1944] (Nina Totenberg was born in 1944)
["Nina Totenberg" "Roman Totenberg"] (Roman Totenberg is Nina's father)
["Nina Totenberg" "law school"]

7. What country has the domain code .at?

Austria's domain code is .at. Google ignores "at" in a query unless you enclose it in quotes or precede it by a + sign.

Using Search Operators (Advanced Operators) - advanced_operators.html

1. Use the site: operator to search for armchairs on Ikea's site, www.ikea.com.

Possible search strategy:
[armchairs site:ikea.com]

3. Find all pages on google.com but not on answers.google.com nor on directory.google.com whose titles include the words "FAQ" or "help."

Possible search strategy:
[intitle:FAQ OR intitle:help site:google.com -site:answers.google.com -site:directory.google.com]

5. Find pages whose titles include surfing that are not about surfing the World Wide Web.

Possible search strategy:
[intitle:surfing -WWW -"World Wide Web"]

Spelling Corrections - spelling_corrections.html

1. On National Public Radio (NPR), you heard a researcher at Stanford University whose name sounded like Jeff Naumberg and want to send him email. What is Jeff's email address?

The spelling corrector suggests the correct spelling of Jeff's last name.

Did you mean: "Jeff ***Nunberg***" NPR "Stanford University"

I clicked on the link and the first result was Geoffrey Nunberg's home page, which included his email address, i.e., email: nunberg(at) csli.stanford.edu (replace "(at)" with "@").

Possible search strategy:
["Jeff Naumberg" NPR "Stanford University"]

Definitions - dictionary.html

1. According to the dictionary, what is an "urban legend"?

    Possible search strategy:
    [define: urban legend]

3. Does Google provide a link to dictionary for definitions of terms in languages other than English?

    Instead of checking Google's documentation, find out through experimentation. Search for some non-English words and then see any of the words are underlined in the statistics bar section of the results page and linked to their dictionary definitions.

    Based on the experiments I ran today, the US version of Google provides links to dictionary definitions of some non-English words.

    Possible search strategy:
    [vino queso]

Cached Pages - cached_pages.html

1. After Nelson Blachman received reprints of a paper he wrote for the June 2003 issue of *The Mathematical Scientist*, he wanted to discover what other sorts of papers appear in the same issue of this semiannual publication. Find a table of contents for *The Mathematical Scientist* for Nelson.

    Possible search strategy:
    ["The Mathematical Scientist" June 2003 contents]

    Since the previous query doesn't appear to return a table of contents, let's remove the date from our query.

    ["The Mathematical Scientist" contents]

    This snippet looks promising since it mentions the journal by name and includes the word "contents."

    The first result is the Journal's web page but it doesn't contain the table of contents. Clicking on the *Cached* link and viewing Google's cached version of the page with the query terms highlighted makes it easy to find the section(s) of the page relevant to our query.

This is G o o g l e's cache of http://www.shef.ac.uk/uni/companies/apt/tms.html.
G o o g l e's cache is the snapshot that we took of the page as we crawled the web.
The page may have changed since that time. Click here for the current page without highlighting.
To link to or bookmark this page, use the following url: http://www.google.com/search?
q=cache:O8as0uIHkQcJ:www.shef.ac.uk/uni/companies/apt/tms.html+%22The+Mathematical+Scientist%22+contents&hl=en&ie=UTF-8

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These search terms have been highlighted: the mathematical scientist contents

APPLIED PROBABILITY TRUST

The Mathematical Scientist

Editor-in-Chief: J Gani FAA (Australian National University)

Home Page

Applied Probability Journals

The Mathematical Scientist

Mathematical Spectrum

Unlike most other mathematical research journals, *The Mathematical Scientist* does not aim to publish articles written by specialists for other specialists. Its main theme is the use of mathematical theory, methods and models to provide insight into engineering, physical, biological and social phenomena, in terms accessible to any interested mathematician.

Contents and abstracts from recent issues are available here.

Similar Pages - similar_pages.html

1. Find a site that will get your name off mailing lists so that you receive less commercial advertising mail, also known as junk mail. Click on the *Similar pages* link to find other such sites.

   The more search strategies you try, the more information you are likely to find.

   Possible search strategy:
   ["reduce junk mail"]
   ["reducing junk mail"]
   ["end junk mail"]
   ["less junk mail"]
   ["stop junk mail"]
   ["unwanted mail"]
   ["opt out" "junk mail"]
   ["mail preference service"]
   [remove name from mailing list]
   [get off mailing list]
   [reduce unwanted junk mail]

   Note: Most of the results from these searches assume you are in the United States.

News Headlines - news_headlines.html

1. Find the latest news about Google.

   Possible search strategy:
   [google]

Click on any of the following:

- ❍ any of the news headlines that appear above your search results and after the heading News:
- ❍ the Search news for **google** link
- ❍ the browse the latest headlines link

File Type Conversion - file_type.html

1. Find a document with tips on job interviewing and salary negotiation that is in PDF/Adobe Acrobat format. What differences in the appearance of the document result from viewing it in its native format, Adobe Acrobat versus HTML?

   Possible search strategy:
   [interviewing salary negotiation filetype:pdf]

   In the pdf version, the spacing between words in section headings is more uniform. Items that are vertically aligned in the pdf version are not vertically aligned in the html version.

3. Find pdf or Postscript documents and course notes on symplectic geometry that are on university and other educational sites.

   Possible search strategy:
   ["symplectic geometry" site:edu filetype:pdf OR filetype:ps]

Translation - translation.html

1. Find out about public swimming pools that you can use when visiting Naples, Italy. *Hint:* Find the Italian words for "public swimming pool" and then search for them on pages in Italy.

   Possible search strategy:
   [piscine pubbliche Napoli Italia]

3. Translate "I wish to mail a package. Where is the nearest post office? Thank you." into Spanish.

   Use Google's Language Tools Translate text feature.
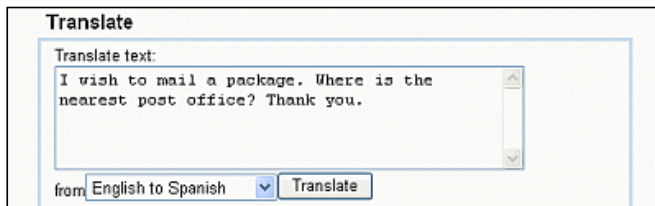
Select "English to Spanish" and click on the *Translate* button.
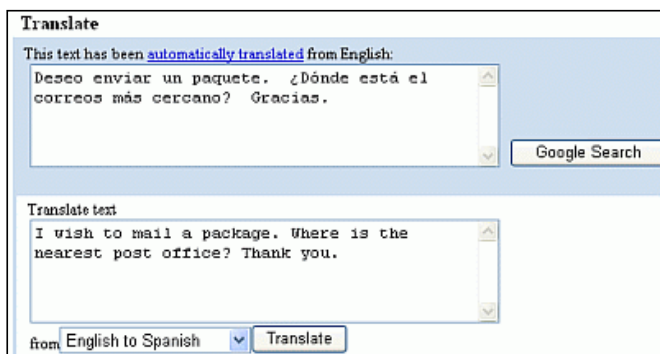
Google provides the following Spanish translation:

   Deseo enviar un paquete. ¿Dónde está el correos más cercano? Gracias.

5. Restrict your search to France and search for pages English on the war in Iraq.

    Use Google Language Tools to restrict the query [war Iraq] to pages located in France that are written in English.

Customizing Your Results by Using Preferences - preferences.html

5. If you would like to have more than one set of preferences on your computer, e.g., one of searching French language sites and to search all sites, then find tools for enabling you to specify more than one set of preferences using more than one cookie.

    Possible search strategy:
    [managing cookies]

Google's Approach to Ads - ads.html

1. How many sponsored links (ads) appear on the first search-results page with the answer to the following questions?

    a. Where can you stay in central London at a moderate price?

        Possible search strategy:
        [hotel central London moderate price]

        There are 2 ads above and 8 ads to the right of the search results.

    b. What's going on with NASA's Mars Exploration Program?

        Possible search strategy:
        [NASA's Mars Exploration Program]

        I've seen any where from zero to two ads appearing along side the search results.

Evaluating What You Find - evaluating_results.html

Find documents on the web that provide the answers to the following questions. What's your level of comfort with the referring site(s) and why?

I posted the following questions to Google Answers, service that provides assistance from expert online researchers for a fee. If no results match your query, Google offers search tips. The following solutions include information Google Researchers provided as well as a link to their complete answers.

1. Is it true that if you touch a cold halogen bulb with clean fingers, you will shorten its lifespan?

    Here's part of the answer that sublime1-ga posted to Google Answers, which can be found at answers.google.com/answers/threadview?id=286499.

    Yes, healthy skin, even recently cleaned, will produce natural oils, and, these oils on halogen bulb will shorten its lifespan.

    Possible search strategies:
    [touch ruin "halogen bulb"]
    [touch oil "halogen bulb"]

[[+why not touch "halogen bulb"](#)]

3. Are you less likely to get dental cavities if you drink fluoridated water?

    Here's part of the answer that [jon-ga posted to Google Answers](#), which can be found at answers.google.com/answers/threadview?id=286599.

    > The short answer to your question is yes - fluoride is good for the teeth and so water containing fluoride is a good thing for cavity-prevention.

    Possible search strategies:
    [["fluoridated water"](#)]
    [["fluoridated water" "dental cavities"](#)]

4. Is clumping kitty litter a major health hazard to cats?

    Here's part of the answer that [missy-ga posted to Google Answers](#), which can be found at answers.google.com/answers/threadview?id=286497.

    > Whether or not clumping kitty litter is a health hazard for cats is a matter of some debate. Since there haven't been any clinical studies, it really comes down to whom you ask and which brand you're asking about. Most of the current controversy swirls around brands that use Sodium Bentonite, a highly absorbent clay. Brands that do not contain Sodium Bentonite seem to be considered safer.

    Possible search strategies:
    [["clumping litter" hazardous](#)]
    [["clumping litter" safe](#)]
    [[scoopable litter hazardous](#)]
    [[scoopable litter safe](#)]

5. What are the benefits and drawbacks of a flu (influenza) shot?

    Here's part of the answer that [crabcakes-ga posted to Google Answers](#), which can be found at answers.google.com/answers/threadview?id=286471.

    > There are far more documented reasons to get the vaccine (injectable or nasal spray versions) than to refuse it, but plenty of flu vaccine controversy exists.

    Possible search strategies:
    [[flu vaccine](#)]
    [[pros cons flu vaccine](#)]

6. Does microwaving food in plastic containers or plastic cling wrap release harmful chemicals into the food? Check whether this is an urban legend.

    Here's part of the answer that [crabcakes-ga posted to Google Answers](#), which can be found at answers.google.com/answers/threadview?id=286529.

    > The short answer is: Yes, chemicals can migrate into the food. The issue is whether they are harmful.

    Possible search strategies:
    [[toxic chemicals plastic wrap](#)]
    [[plastic wrap microwave cooking](#)]

[Making Search Easier with Google Tools](#) - tools.html

1. If you use Windows 98/ME/2000/XP and Internet Explorer 5.5 or a more recent version, install the Google Deskbar on your system.

    Visit [toolbar.google.com/deskbar/](#) and click on the "Download Google Deskbar."

2. If you use Internet Explorer, install the Google Toolbar on your system. If you use another browser, install Google Browser Buttons on

your system.

Visit toolbar.google.com/ and click on the "Download Google Toolbar."

3. Make Google your home page.

   To have the Google home page appear whenever you start your browser, click on the "Make Google Your Homepage" link on Google's home page. If the link is missing, follow the instructions listed on www.google.com/options/defaults.html.

4. Make Google your default search engine.

   Follow the directions listed on www.google.com/options/defaults.html#default.

Calculator - calculator.html

1. Convert 1 mile to meters.

   One mile is equal to 1609.344 meters.

   Possible calculation strategy:
   [1 mile in meters]

3. Convert 0 kelvin to Fahrenheit or Celsius.

   0 kelvin is approximately equal to -273.15 degrees Celsius.

   Possible calculation strategy:
   [0 degrees kelvin in Celsius]

5. Which is larger pi^e or e^pi? The same relationship holds between x^e and e^x for all non-negative values of x except e. The exponential constant, e, is approximately 2.72 and the ratio of the circumference to the diameter of a circle, pi, is approximately 3.14.

   e^pi > pi^e

   Possible calculation strategy:
   [e^pi-pi^e]

7. Compute the probability of your winning the lottery if you buy 1,000 tickets each bearing five distinct independently randomly chosen integers between 1 and 99.

   The following answer was contributed by Nelson Blachman (my father).

   You might try [1 - (1 - 1/(99 choose 5))^1000], but this is well approximated by [1000/(99 choose 5)], which is roughly 0.00001 . If each ticket costs $1, the prize had better be at least $100 million to be fair to you--and higher if you might have to share the prize with other winners.

Phone Numbers and Addresses - phonebook.html

1. What is the address of the Empire State Building in New York City in the state of New York (the two-letter state code is NY)?

   The address of the Empire State Building is 350 5th Ave, New York, NY 10118.

   Possible search strategy:
   [Empire State Building New York NY]

Street Maps - maps.html

1. Get a map showing the most crookedest section of Lombard Street in San Francisco, which is between 1000 and 1100 Lombard Street.

   Possible research strategy:
   [1100 Lombard Street San Francisco CA]

Stock Quotes - stock_quotes.html

1. Obtain a chart of Ebay's stock price for the past 5 years by entering Ebay's stock symbol, ebay, clicking on the link "Show stock quotes" and then selecting a 5-year chart.

   Possible research strategy:
   [ebay]

3. Using the similar pages feature, find competitors to google.com that are run by public companies. Check whether their stock prices have been climbing or dropping in the past three months.

   Possible research strategy:
   [related:google.com]
   [yhoo askj] (stock symbols for Yahoo and Ask Jeeves respectively)

Definitions (Google Gossary) - glossary.html

1. What does aka mean?

   Aka is short for "also known as."

   Possible search strategy:
   [what is aka]

3. Google is named after the word "googol." What is a googol?

   The result of this query includes a link to the dictionary definition in the statistics bar, the value of 1 googol provided by Google's built-in calculator function, and a definition provided by Google Glossary.

   Possible search strategy:
   [what is googol]

4. What does the abbreviation IRL commonly stand for?

   IRL commonly stands for "In Real Life."

   Possible search strategy:
   [define:irl]

Google Local (Search by Location) - local.html

Travel Conditions - travel_conditions.html

1. Find the travel conditions for Los Angeles International Airport.

   First, I find the code for the Los Angeles International Airport.

   [Los Angeles International Airport code]

   Then I look up the travel conditions.

[lax airport]

Images - images.html

1. I used a color chart to select colors for this tutorial. Find some color charts that show the HTML input to render at least 100 colors.

   Possible search strategy:
   [html color chart]

3. Find a photograph of the Alhambra in Granada, Spain to see whether you want to take a vacation and visit the Alhambra.

   Possible search strategy:
   [Alhambra]
   [Alhambra Granada]
   [Alhambra Spain OR España]

Groups (Discussion Forums) - groups.html

1. Find recommendations for sites for booking flights online.

   Possible search strategy:
   [recommendations booking flights online]
   [recommendations book flights online]
   [recommendations flights online]

3. Find reviews of online banking services.

   Possible search strategy:
   [online banking reviews]

5. How can you remove varnish from a maple coffee table?

   Possible search strategy:
   [remove varnish maple]

7. Find the list of especially memorable articles and threads from Usenet that Google has compiled.

   Possible search strategy:
   [memorable articles Usenet]

News - news.html

1. Find today's current top stories listed on Google News.

   Just visit news.google.com.

Froogle - froogle.html

1. Find 100% cotton comforter covers on Froogle.

   Possible search strategy:
   [100% cotton comforter covers]
   [100% cotton duvet cover]

3. Tired of putting on sun screen? Find sun-protective clothing with Froogle.

   Possible search strategy:
   [sun protective clothing]
   [uv protective clothing OR hats]

Catalogs - catalogs.html

1. Find 100% cotton comforter covers.

   Possible search strategy:
   [100% cotton comforter covers]
   [100% cotton duvet covers]

3. Tired of putting on sun screen? Find sun-protective clothing.

   Possible search strategy:
   [sun-protective clothing]

5. Check out the prices of flying saucers, superballs, night lights, or whatever interests you in the wholesale Rhode Island Novelty catalog.

   Possible search strategy:
   [Rhode Island Novelty]

If there's interest, I'll consider adding answers to the following problem sets.

Directory (Categories of Topics) - directory.html
Special Searches - special_searches.html
Google Answers - answers.html
Google Prototypes and Demos - labs.html
Creating Content for Your Website - content.html
Creating a Link to Search Results - search_link.html

If you suggest a way to solve any exercise that I include in Google Guide, I will include your name beside your contribution. Please email problems and solutions to exercises(at)googleguide.com (replace "(at)" with "@").

Submitting Feedback

I sincerely hope that Google Guide helps you become (more) proficient in using Google. I have tried to anticipate your questions and problems. Please let me know if I have missed something or if you have corrections or suggestions for improving Google Guide by emailing nancy(at)googleguide.com (replace "(at)" by "@"). I welcome all comments, including answers to the following questions.

- What was useful in Google Guide?
- What was confusing in Google Guide?
- What would you like to see added to Google Guide?
- How much time have you spent on Google Guide?

I would appreciate hearing from you. Feedback, both positive and negative, motivates me to improve Google Guide.

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