



## Search Engine Know How

---

### Objective

During this class participants will learn to use Internet search engines effectively to find out exactly what you seek. Learn to search with the right words, to exclude unwanted information and discover what “I’m feeling lucky” means.

---

### Overview

<a href="#">History of Search Engines</a>	<a href="#">Basics Searching</a>
<a href="#">Search Engines</a>	<a href="#">Advanced Searching</a>
<a href="#">Search Engines vs Directories</a>	<a href="#">Web Directories</a>
<a href="#">Basic Searching – Getting Started</a>	

## History of Search Engines

The first Internet search engine was Archie, created in 1990 by Alan Emtage, a student at McGill University in Montreal. The original intent of the name was "archives," but it was shortened to Archie. Essentially Archie became a database of web file names that it would match with the users queries. The main way people shared data back then was via File Transfer Protocol (FTP).

The first World Wide Web site (<http://info.cern.ch/>) was created by Tim Berners-Lee and was put online on August 6, 1991. Berners-Lee proposed that information could be transferred easily over the Internet by using hypertext, the now familiar point-and-click system of navigating through information. The idea was to connect hypertext with the Internet and personal computers, thereby having a single information network for the physicists at the CERN laboratory to share computer-stored information.



The first search tool for the World Wide Web was WebCrawler, which was released on April 20, 1994. It was the first crawler that indexed entire pages. Soon it became so popular that during daytime hours it could not be used. Within 1 year of its debut came many other search engines and directories.

## Search Engines

The World Wide Web has millions of pages and billions of words. According to one estimate, the Web doubles in size every nine months. Universities, associations, individuals, companies, government agencies, museums, and libraries all have sites. With this wealth of potential information how do you find the pages and words that you want?

You can use a search engine to try to find what you want. Search engines are massive databases of World Wide Web sites. Search engines use search agents (a.k.a. "spiders", "robots", or "crawlers") which search the web for information. They are software programs that request pages much like regular browsers do. In addition to reading the contents of pages for indexing spiders also record links. The search agents follow all of these links and send back some portion of the site or the entire text of each page.

To search, the search engine provides you with a search window in which to enter the keywords you want to find. It will then search its database and return a list of the sites that match your keywords. You are also given a variety of methods to organize your keywords that will allow you to increase the relevancy of the results and to cut down on the volume of matches that you retrieve.

**Google.com** and **Yahoo! Search (search.yahoo.com)** are two of the best search engines. **Ask.com** and **MSN Search (msn.com)** are other good search engines. There are numerous search engines from which to choose.

## Metasearch Engines

You can search multiple search engines at one time using metasearch engines. Metasearch engines send your search terms to a variety of search engines at one time. They then either display the search results from each search engine or consolidate the search results into one grouping.



**Clusty.com**, **Metacrawler.com**, and **ixquick.com** are some good metasearch engines to try.

## Subject Directories

You can also use a subject directory to try to find what you want. A **web directory** or **link directory** is a directory on the World Wide Web. It specializes in linking to other websites and categorizes those links.

A web directory is not a search engine, and does not display lists of web pages based on keywords, instead it lists web sites by category and subcategory. The categorization is usually based on the whole web site, rather than one page or a set of keywords, and sites are often limited to inclusion in only one or two categories. Web directories often allow site owners to directly submit their site for inclusion, and an active human intelligence has gathered and organized the sites. You will retrieve far fewer sites to look through and the sites are far more likely to be relevant.

**Yahoo! Directory (dir.yahoo.com)** is the most extensive and useful subject directory. **The Librarians' Index to the Internet (lii.org)** is a tremendous, though quite selective, annotated listing of good Internet sites.



**Michigan Electronic Library or MEL (mel.org)** is an excellent subject directory, particularly strong on Michigan information. **The Ann Arbor District Library's "Select Sites"**, which is found under the "Research" tab on the Ann Arbor District Library Website (aadl.org), is a list of about 1500 web sites within popular subjects.

## Search Engines vs Directories

All major search engines have some limited editorial review process, but major search engines use automated search algorithms to sort out relevant information. In fact, some algorithms bias the search toward trusted sites without requiring a search engine to take on much of an editorial review staff. This makes a link from a trusted site work as a vote towards the relevancy of the site to which it links. Unlike highly automated search engines, directories are manually compiled lists of websites. Directories cost more to maintain because of the human input involved to create each listing and periodically check the quality of the listed websites.

### What kind of search services should you use?

Once you are familiar with one Search Engine, you should be comfortable using any of them. They all offer many of the same options and features, just in a different layout. Learning the distinctions between types of search tools is a useful way of understanding what each search tool is attempting to accomplish. Most search tools have become hybrids. A search engine may also feature a subject directory. A subject directory may send your search to a search engine if it fails to find a match in its subject directory. Also, some search engines get their results by turning to third-party "search providers" to "power" their listings. These search providers may run their own search engine sites, as well.

Each search engine has its own web site and all are organized differently. You should become familiar with the specific search techniques within each search engine.

For information on how search engines and directories are rated you can visit SearchEngineWatch.com.

<http://searchenginewatch.com/showPage.html?page=2156221>

**Google, Yahoo, and Ask** are the three that we will focus on.



## Basic Searching—Getting Started

Let's take a look at the basic layout of a typical search engine home page.

### Google.com

The Google search page is simple and uncluttered, giving you just what you need to complete a basic search. It also allows you access to menus to further tweak your search, and the option to limit your search to an image, map, news, shopping, or blog search.



1. **Query or Search Box**—where you enter keywords or search terms
2. **Search Button**—clicking this or pressing the “Enter” key on the keyboard will begin the search.
3. **“I’m Feeling Lucky” Button**, which is also a search button, is unique to Google
4. **Link to Advanced Search**
5. **Preference and Language Settings**—allows you to set search and language preferences
6. **Types of searches**—right now “Web” search is selected, if you click on the words to the right you can change to search only images, maps, etc.
7. **Sign in**—you can create an account with google and save your settings

## Ask.com

Like Google, Ask also has a simple interface and it also allows you access to menus to further tweak your search, and the option to limit your search to an image, city (map), blog, or news search.



1. **Query or Search Box**—where you enter keywords or search terms
2. **Link to Advanced Search**
3. **Search Button**—clicking this or pressing the “Enter” key on the keyboard will begin the search.
4. **Types of searches**—right now “Web” search is selected, if you click on the words or pictures to the right you can change to search only images, maps, etc.
5. **Option Settings**--allows you to set preferences for your searches
6. **"My Stuff"**—allows you to create an account with Ask and save your settings

## Yahoo.com

Yahoo's main page contains more information up front than Google and Ask. You can search directly from this page, click on different categories, and read the latest news.



### 1. Advertisement

2. **Query or Search Box**—where you enter keywords or search terms

3. **Search Button**—clicking this or pressing the “Enter” key on the keyboard will begin the search.

4. **Page Options**--allows you to set preferences for your searches

5. **Types of searches**—right now “Web” search is selected, if you click on the words or pictures to the right you can change to search only images, maps, etc

6. **Yahoo! Services links**—links throughout the page will take you to different pages within Yahoo.

If you like using Yahoo, but don't want all the extra eye candy, you can use Yahoo! Search (search.yahoo.com), where the interface is simplified more like Google and Ask.



1. **Query or Search Box**—where you enter keywords or search terms
2. **Search Button**—clicking this or pressing the “Enter” key on the keyboard will begin the search.
3. **Page Options**--allows you to set preferences for your searches
4. **Types of searches**—right now “Web” search is selected, if you click on the words or pictures to the right you can change to search only images, maps, etc

## Basic Searching

Now that you know what a typical search engine home page looks like, you are ready to begin a search.

Let’s say you would like to find the Ann Arbor District Library’s Website, but you have forgotten the address. You can use search engine to find it.

Let’s use Google. Go to “Google.com” and type “Ann Arbor District Library into the Query box (1). Then click the “Google Search” button (2) or press enter on the keyboard.



The results will look like this:

The screenshot shows a Google search interface. At the top, there are navigation links for Web, Images, Maps, News, Shopping, Gmail, and more. The search bar contains the text "Ann Arbor District Library" and a "Search" button. Below the search bar, the results are displayed under the heading "Web". The first result is for "Ann Arbor District Library" with a snippet: "History, location, hours, and a catalog with a section for kids and teens. Provides Library card holders with answers to their reference questions via ...". Below the snippet are several links: "Locations", "About Us", "Locations & Hours", "Events", "Login", "Contact Us", "Services", and "Research". There is also a link for "More results from aadl.org".

Google lists the results from what it believes are most relevant to least relevant, and each link includes snippets of text from the page that included your search terms. Let's look more closely at the top result.

This screenshot is an annotated version of the top search result from the previous image. It highlights various elements with numbered callouts (1-6) and labels in yellow boxes:

- 1 Page title**: Points to the main title "Ann Arbor District Library".
- 2 Text from the site**: Points to the snippet of text "History, location, hours, and a catalog with a section for kids and teens. Provides Library card holders with answers to their reference questions via ...".
- 3 URL**: Points to the full URL "www.aadl.org/".
- 4 Size**: Points to the size indicator "- 21k".
- 5 Cached**: Points to the "Cached" link.
- 6 Similar Pages**: Points to the "Similar pages" link.

Other elements visible include the search bar, navigation links, and a list of site-specific links like "Locations & Hours", "About Us", "Events", "Services", "Research", "Login", and "Contact Us".

### **1. Page title**

The first line of each result is a Web Page title, usually descriptive, and hyperlinked to the actual page. Sometimes, if a page has no title or if Google has not yet indexed it, a URL appears instead. Either way, click the link to go to the page.

### **2. Text from the site**

The next line or two gives you a few excerpts from the site, with your search terms in bold letters. This gives you a sense of the context in which your query appears and whether you want to visit the page or not.

### **3. URL**

Next, Google gives you the Web address for that page. If your search words appear in the URL itself, Google displays them in boldface.

### **4. Size**

This number is the size, in kilobytes, of the text part of the page. Of course, text is usually the least voluminous part of a Web page, so this isn't a reliable indicator of how long a site will take to load. Instead, think of it as a clue to the contents. If the page is just one or two kilobytes, and you're looking for detailed information, it may not be much help.

### **5. Cached**

As Google tracks web pages, it keeps copies of them on its servers in a repository called a cache. While the page title link takes you to the current site, the Cached link delivers you to the copy Google made when it recorded the page. Google rerecords most pages every few weeks. This time difference is significant because if a page has changed recently, you can still see a slightly older version, which might include the info you're looking for.

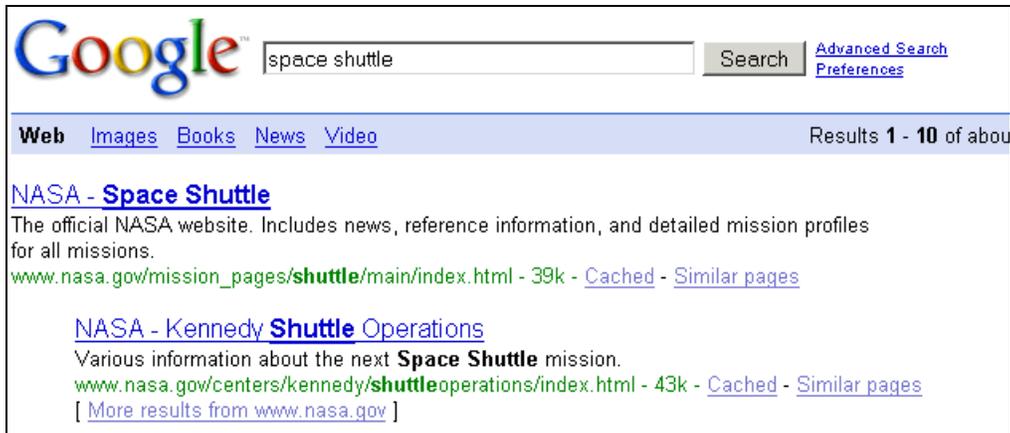
### **6. Similar Pages**

The "Similar pages" link searches the Web for pages that fall into the same general category as that result.

---

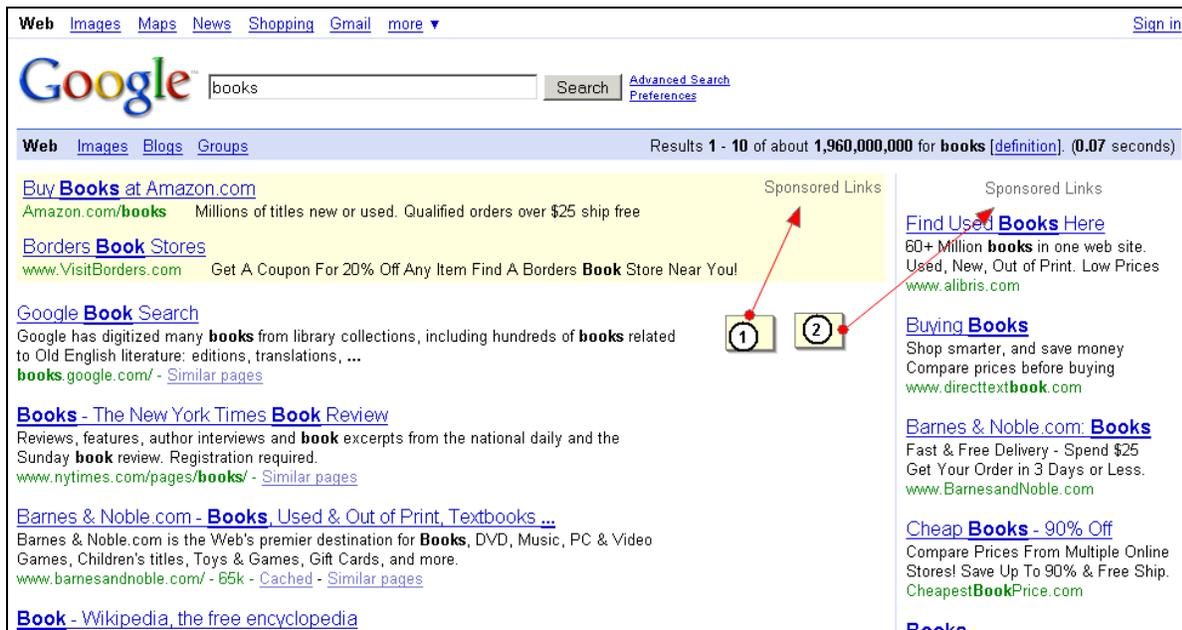
### **Indented Results**

When you run a search and Google finds more than one page with your terms within the same Web site, it lists what it thinks is the most important page first, and then it indents less relevant pages, as shown in this example of a search for "space shuttle".



## Sponsored Links

Results pages also sometimes contain “sponsored links” better known as paid advertisements. These are always separate—along the top and/or right side—and are labeled “sponsored links.” A search for “books” will result in paid results. Two appear at the top of the results (1). Notice that these do not include text from the page in the results. The list to the right (2) contains only “sponsored links.”



## File Format

Web sites often store documents that you can download by clicking a link. Google searches those documents—provided they’re in any of twelve common formats—and tells you if something you’re looking for is in such a file. When your query matches words that Google finds in a formatted document, it lets you know by placing a file format marker before the page title (1).

Google  Search [Advanced Search](#) [Preferences](#)

Web Results 1 - 10 of about 207,000 for **irs form 1040**. (0.12 seconds)

[PDF] [2007 Form 1040](#)  
 File Format: PDF/Adobe Acrobat - [View as HTML](#) (2) [View as Web page](#)  
**Form 1040** (2007). **IRS Use Only**—Do not write or staple in this space: head or household (with qualifying person). (See page 13.) If ...  
[www.irs.gov/pub/irs-pdf/f1040.pdf](http://www.irs.gov/pub/irs-pdf/f1040.pdf) - [Similar pages](#) (1) [File format](#)

[PDF] [2007 Instruction 1040-ALL](#)  
 File Format: PDF/Adobe Acrobat  
**Form 1040**—Line 1. **IRS** e-file takes the guesswork out of preparing your return. .... Do you want the **IRS** to figure the credit for you? **Form 1040**, line 7 ...  
[www.irs.gov/pub/irs-pdf/i1040.pdf](http://www.irs.gov/pub/irs-pdf/i1040.pdf) - [Similar pages](#)  
 [ More results from [www.irs.gov](http://www.irs.gov) ]

Sponsored Links

[Filing a 1040 Form?](#)  
 Uncle Sam Wants Your Money!  
 We're Here to Minimize the Damage.  
[SayUncle.org](http://SayUncle.org)

[Irs Form 1040](#)  
 Download Free Tax Forms Quickly &  
 Easily Here & Get Detailed Tax Info  
[Money.AOL.com](http://Money.AOL.com)

But what if the page with the information you need is a PowerPoint document, and you don't happen to own PowerPoint? Thanks to Google, you can view the document as a Web page. Google converts the documents to HTML—a code your browser can read. If you click the link “View as HTML” (2), the document will open as a Web page.

Every Search Engine displays the “results” or “hits” differently. Let's try the search for “Ann Arbor District Library” again, only this time we will use Ask.com.

Our results will look like this:

Web · Images · City · News · Video · More ▾ AskEraser MyStuff ▾ Options ▾

**Ask.com**

Advanced

**Narrow Your Search**

- City of **Ann Arbor**
- Ann Arbor** Driving School
- Kelly Services **Ann Arbor**
- Ann Arbor** Public Schools
- Ann Arbor** Transportation Authority
- Ann Arbor** News
- Ann Arbor** Art Fair
- Ann Arbor** Restaurants

[More >](#)

**Expand Your Search**

- Washtenaw County Community College
- Map of Michigan

[More >](#)

**ann arbor district library** Showing 1-10 of 182,800

[Ann Arbor District Library](#)  
 University, **Library**, bookstore and community representatives from both **Ann Arbor** and Ypsilanti have been planning **Ann Arbor**/Ypsilanti Reads ...  
[www.aadl.org/](http://www.aadl.org/) · [Cached](#)

[Director's Blog | Ann Arbor District Library](#)  
 The **Ann Arbor District Library** Board has awarded a contract to Providence Associates, LLC for a space needs and facility study of the Downtown ...  
[www.aadl.org/taxonomy/term/86](http://www.aadl.org/taxonomy/term/86) · [Cached](#)  
[More Results from www.aadl.org](#)

[Ann Arbor District Library : Books : World of Reading](#)  
 ATTENTION TEACHERS! If you would like to have your students submit reviews to this site, ... All Rights Reserved. 343 S. Fifth Ave, **Ann** ...  
[www.worldreading.org/](http://www.worldreading.org/) · [Cached](#)

[Superpatron - Friends of the Library, for the net](#)  
 Director's Blog | **Ann Arbor District Library** ... New knitting books at the **Ann Arbor District Library!**  
[vielmetti.typepad.com/superpatron/](http://vielmetti.typepad.com/superpatron/) · [Cached](#)

[AXIS | Ann Arbor District Library](#)  
 ... trainers from in and around **Ann Arbor** to come together, test their mettle, and see if they ...  
[axis.aadl.org/](http://axis.aadl.org/) · [Cached](#)

Notice that the search results are similar, but not exactly the same. The first listing takes you to [www.aadl.org](http://www.aadl.org), which is the same as Google's results. The list is in a format very similar to Google's.

Ask gives you a sidebar that offers suggestions to narrow or expand your search. You are also provided with a way to preview the site before actually visiting it. The binoculars to the left of the "page title" will give you a preview snapshot of the page if you roll over them with the mouse.

Let's try the same search using Yahoo.com.

The screenshot shows the Yahoo search interface. At the top, there are navigation links for Web, Images, Video, Local, and Shopping. A search bar contains the text "Ann Arbor District Library" and a yellow "Search" button. To the right of the search bar is the "YAHOO!" logo. Below the search bar, there is a status bar indicating "1-10 of 1,270,000 for Ann Arbor District Library (About) - 0.11 sec". The search results are listed below, starting with "Also try:" followed by suggestions like "ann arbor", "michigan", "malletts creek", and "ann arbor community". The first result is "Ann Arbor District Library" with a description: "Provides Library card holders with answers to their reference questions via E-mail. ... Today's Events at the Ann Arbor District Library: Pokemania Championship ...". The URL is "www.aadl.org" with a cache size of "24k". Other results include "ann arbor district library" (www.aadl.org/catalog - 6k), "Ann Arbor District Library : Community : Making of Ann Arbor" (moaa.aadl.org - 28k), "Ann Arbor District Library : Books : World of Reading" (www.worldreading.org - 27k), and "Ann Arbor District Library - Ann Arbor, MI Libraries @YELLOWPAGES" (Ann Arbor District Library - Libraries in Ann Arbor, MI. Get contact info, directions and more at).

These results are also similar to Google's results. The top result is [www.aadl.org](http://www.aadl.org), but the other choices are different. The layout of the page should look familiar to you as well.

## Advanced Searching

If typing in a simple word or phrase in the search field of a Search Engine does not result in the information you were looking for, an advanced search may have better results. Google, Yahoo, and Ask.com all offer advanced searches.

There are a few different ways to perform an advanced search. You can either enter special "operators" (symbols that let you refine your search) into the basic search box (see the Google Guide Cheat Sheet provided at the end of this handout for a list of these), or you can go to the "Advanced Search" page of the Search Engine, which provides you with search boxes and drop down menus that will perform many of the same functions.

Before we get started with advanced searching, lets go over some of the terminology involved.

## Boolean Searching

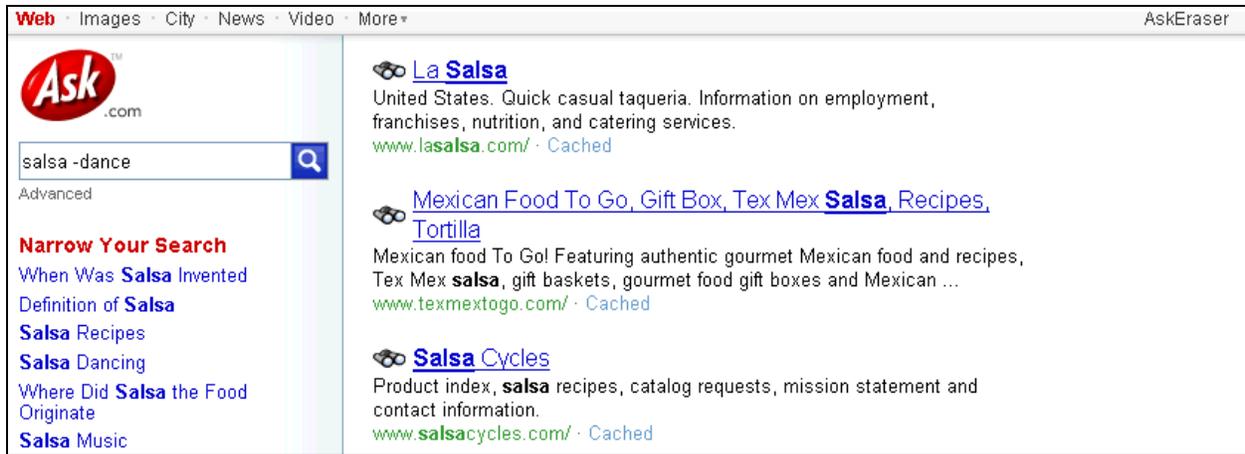
Boolean searching allows you to combine terms using "operators" such as "AND," "OR," "AND NOT" and sometimes "NEAR." "AND" requires all terms appear in a record. "OR" retrieves records with either term. "AND NOT" excludes terms.

Most Search Engines automatically "AND" all of your words. They also allow "OR" and the minus ("-" or "NOT") operator. In some Search Engines, you must enclose terms joined by OR in parentheses.

For example, a search for *salsa* brings up the following results:

The screenshot shows the Ask.com search interface. The search bar contains the word "salsa". The results are displayed in a grid format. On the left, there are navigation links for "Narrow Your Search" (Salsa Recipes, Salsa Dancing, Salsa Music, etc.) and "Expand Your Search" (Merengue, Tango). The main results area shows several links related to salsa, including "Singles for Salsa", "Learn To Salsa Dance", "Buy Salsa Online", "Salsa Web", "Salsa Dance San Francisco", "Salsa Bay Area Salsa Dancing: Dance ...", and "Just Salsa Magazine". On the right, there are sections for "Images" (showing salsa-related photos) and "Encyclopedia" (providing a definition of Salsa dance).

But if you don't want to know about salsa dancing, adding a "-" before the word dance in your search will eliminate results having to do with dance:



The plus sign (+) can be used, but only has significance when used in front of very small common words that would otherwise be ignored as “stop words”.

## Truncation

In a search, this is the ability to enter the first part of a keyword, insert a symbol (usually \*), and accept any variant spellings or word endings, from the occurrence of the symbol forward. (E.g., *femini\** retrieves *feminine*, *feminism*, *feminism*, etc.). None of the three Search Engines we are looking at allow this function. Instead you can use “OR” and list all the variations you would like.

## Field Searching

You can limit your search to a particular “Field” or require that a keyword or phrase appear in a specific field of documents retrieved. This is most often used to limit to the “Title” field in order to find documents primarily about one or more keywords.

This can help you to find very specific information, such as a recipe. By typing *allintext:ingredients cilantro chicken lime:* into the search box, Google will bring up pages where all of these words appear in the text. In this instance, it brings up a variety of recipes which include the ingredients we searched for.

Web [Images](#) [Maps](#) [News](#) [Shopping](#) [Gmail](#) [more](#) ▼ [Sign in](#)

**Google**   [Advanced Search](#)  
[Preferences](#)

**Web** Results 1 - 10 of about 71,700 for **allintext:ingredients cilantro chicken lime**. (0.15 seconds)

[Cooks.com - Recipes - Chicken Lime Cilantro](#)  
SUMMER **LIME CHICKEN** BREAST STIR-FRY BROCCOLI: **Ingredients** for the **lime chicken** breast: Mix all **ingredients** for ... three limes, garlic, fresh **cilantro**, ...  
[www.cooks.com/rec/search/0,1-0,chicken\\_lime\\_cilantro,FF.html](http://www.cooks.com/rec/search/0,1-0,chicken_lime_cilantro,FF.html) - 24k - [Cached](#) - [Similar pages](#)

[Cooks.com - Recipes - Chicken Lime Soup](#)  
Add **chicken**, heat until hot. ... and **cilantro**. Serve with **lime** wedges. Makes 4 servings ...  
General Mills, used with permission. **Ingredients**: 13 (avocado ...  
[www.cooks.com/rec/search/0,1-0,chicken\\_lime\\_soup,FF.html](http://www.cooks.com/rec/search/0,1-0,chicken_lime_soup,FF.html) - 24k - [Cached](#) - [Similar pages](#)  
[ [More results from www.cooks.com](#) ]

[Advanced Search](#) | [Taste of Home Search](#)  
There are 437 results for **cilantro chicken** salad Refine Search ... Fajita Salad with Creamy **Cilantro Lime** Sauce From Cooking Light 1 tablespoon olive oil1 ...  
[recipes.tasteofhome.com/Search/Recipes/cilantro+chicken+salad](http://recipes.tasteofhome.com/Search/Recipes/cilantro+chicken+salad) - 94k - [Cached](#) - [Similar pages](#)

[Howstuffworks "Cilantro-Lime Chicken"](#)  
**Cilantro-Lime Chicken** Photo. **Cilantro-Lime Chicken**. Yield: Makes 4 servings.  
**Ingredients**: 1. pound boneless skinless **chicken** breasts ...  
[recipes.howstuffworks.com/cilantro-lime-chicken-recipe.htm](http://recipes.howstuffworks.com/cilantro-lime-chicken-recipe.htm) - 46k - [Cached](#) - [Similar pages](#)

[Grilled Lime-Cilantro Chicken With Mango Salsa Recipe | Recipezaar](#)  
See other Grilled **Lime-Cilantro Chicken** With Mango Salsa Recipes ... Chop roasted pepper

## Phrase Searching

More than one keyword, searched exactly as keyed (all terms required to be in documents, in the order keyed). Enclosing keywords in quotations " " forms a phrase in most Search Engines.

## Case Sensitivity

Google, Ask.com, and Yahoo are not case-sensitive meaning that entering a search in all lowercase will retrieve both uppercase and lowercase.

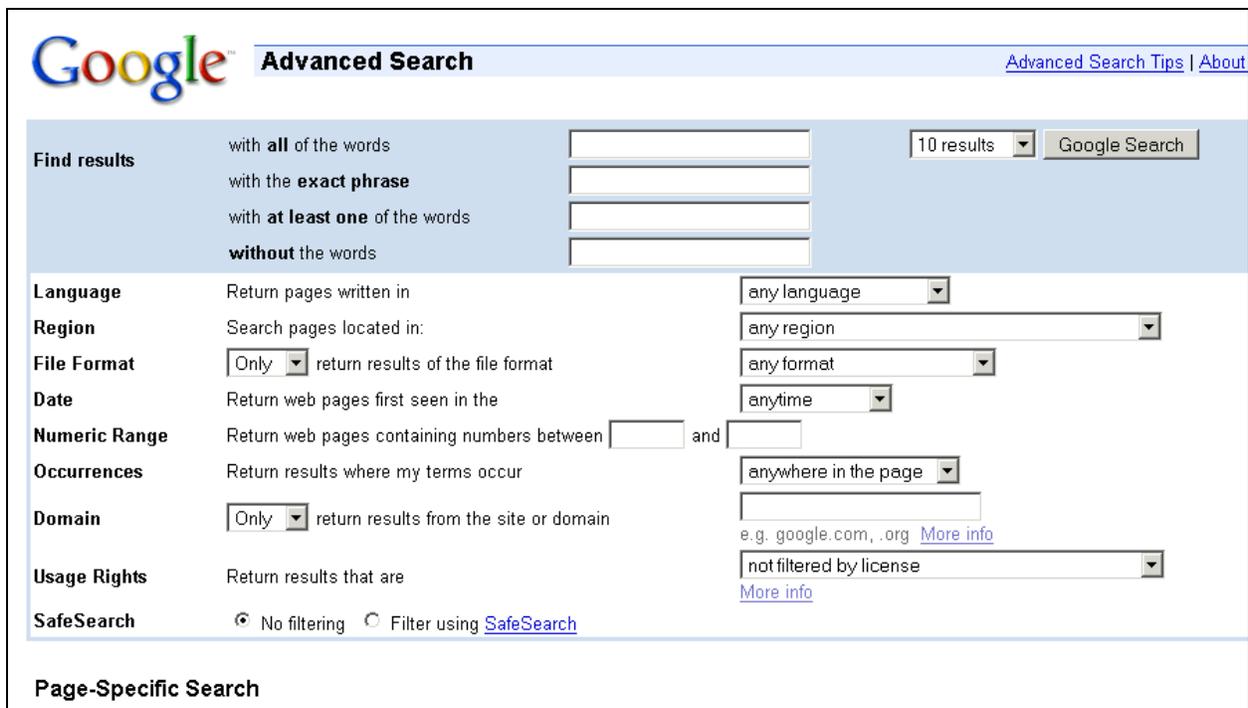
## Nesting

A term used in Boolean searching to indicate the sequence in which operations are to be performed. Enclosing words in parentheses identifies a group or "nest." Groups can be within other groups. The operations will be performed from the innermost nest to the outmost, and then from left to right

## Performing an Advanced Search

You can get to the “Advanced Search” page by clicking the link from the basic search page.

Let’s have a look at Google’s

A screenshot of the Google Advanced Search page. The page has a blue header with the Google logo and the text "Advanced Search". On the right side of the header, there are links for "Advanced Search Tips" and "About". Below the header is a search bar with a dropdown menu showing "10 results" and a "Google Search" button. The main content area is divided into several sections with filters:

- Find results**: with **all** of the words, with the **exact phrase**, with **at least one** of the words, **without** the words.
- Language**: Return pages written in any language (dropdown).
- Region**: Search pages located in: any region (dropdown).
- File Format**: Only (dropdown) return results of the file format any format (dropdown).
- Date**: Return web pages first seen in the anytime (dropdown).
- Numeric Range**: Return web pages containing numbers between [ ] and [ ].
- Occurrences**: Return results where my terms occur anywhere in the page (dropdown).
- Domain**: Only (dropdown) return results from the site or domain [ ]. e.g. google.com, .org. More info.
- Usage Rights**: Return results that are not filtered by license (dropdown). More info.
- SafeSearch**:  No filtering  Filter using SafeSearch.

At the bottom, there is a section for "Page-Specific Search".

If you scroll further down the page you will see even more search options.

SafeSearch  No filtering  Filter using [SafeSearch](#)

---

### Page-Specific Search

Similar	Find pages similar to the page	<input type="text"/>	Search
Links	Find pages that link to the page	<input type="text"/>	Search

---

### Topic-Specific Searches

[Google Book Search](#) - Search the full text of books  
[New! Google Code Search](#) - Search public source code  
[Google Scholar](#) - Search scholarly papers  
[Google News archive search](#) - Search historical news

---

[Apple Macintosh](#) - Search for all things Mac  
[BSD Unix](#) - Search web pages about the BSD operating system  
[Linux](#) - Search all penguin-friendly pages  
[Microsoft](#) - Search Microsoft-related pages

---

[U.S. Government](#) - Search all U.S. federal, state and local government sites  
[Universities](#) - Search a specific school's website

---

©2007 Google

## Query Words

At the top of the page, in the shaded grey section labeled “Find Results, Google gives you four choices for how you would like it to treat your search terms. In order from top to bottom, these mimic the results you can get by using the operators “AND”, quotation marks, “OR” and the minus sign (–). The helpful thing here is that you can use these in combination.

## Language

The language menu lets you specify whether you want your results to include pages written in any language or you can select a specific language.

## File Format

You can specify a specific file type to search for **or** exclude file types that you don’t want included in your results.

## Date

The “Date” option allows you to limit your search results to pages that Google has recorded in the last three months, six months, or year. This search has nothing to do with the date a page was created, but rather when Google indexed it.

## Occurrences

You can specify where on a page to search by using the drop down menu.

## Domain

The “Domain” feature lets you restrict your search to a single site or to a domain (like .edu or .com)

## SafeSearch

“SafeSearch” lets you filter out explicit sexual content when you select “Filter using SafeSearch”.

## Page Specific Searches

**Similar:** When you type a URL in the “Similar” box, Google searches for pages in that general category. For example, the pages related to [www.nascar.com](http://www.nascar.com) are things like NFL.com, MLB.com, NBA.com, ESPN.com and so on.

**Links:** If you have a Web site, you might want to know who has linked to your pages. Just type in a URL here, and Google will give you a list.

## Topic-Specific Searches

In a few broad categories, Google has already done a little filtering for you. Clicking one of these links will take you to the search page for that category.

---

## Tips for Searching

Be specific with your choice of keywords. A Search Engine can’t read your mind. If you search for “apple”, it doesn’t know whether you’re more interested in the fruit, the computer company, the Beatles label, New York City, the singer Fiona, or something else altogether. Search Engines live by the maxim “Garbage in, Garbage out.” So be sure to give hints to locate exactly what you want—the more specific the better. You could try searching for *apple computers* or *Fiona apple lyrics*. For best results, put your search in the form of an answer: “an apple has \* calories” (the asterisk stands in for the word you don’t know). After all, you want to find answers, not questions, so you are more likely to find them if you search for answers.

**Keep in mind that details of your search do matter.**

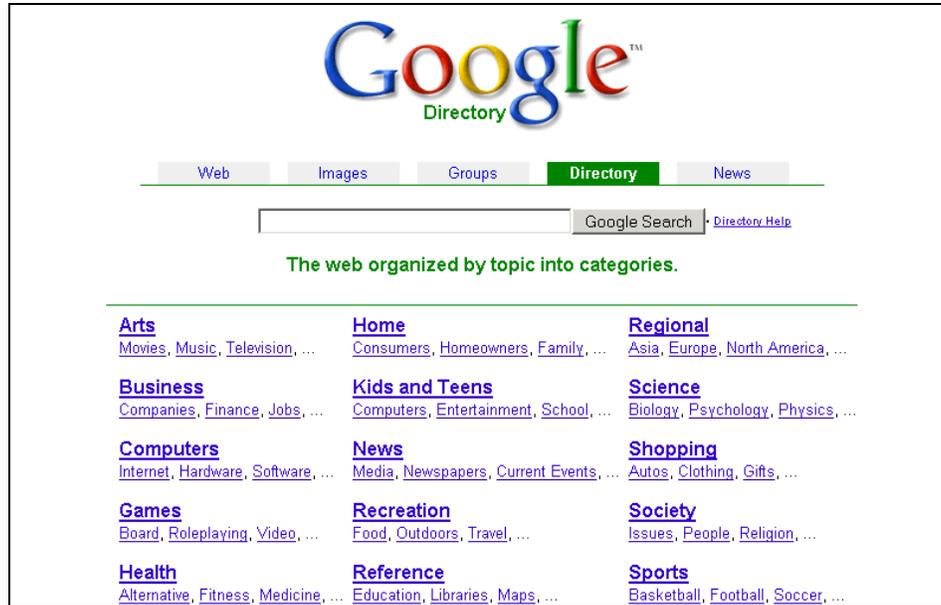
**Singular is different than plural.** Try both forms of a word if you’re not sure which is more appropriate for your query.

**The order of words does matter.** The first word is considered most important, the second word next, and so on. Thus, *brown logo* brings up a lot of pages related to Brown University first, while *logo brown* starts off with logo designers and merchandise with logos.

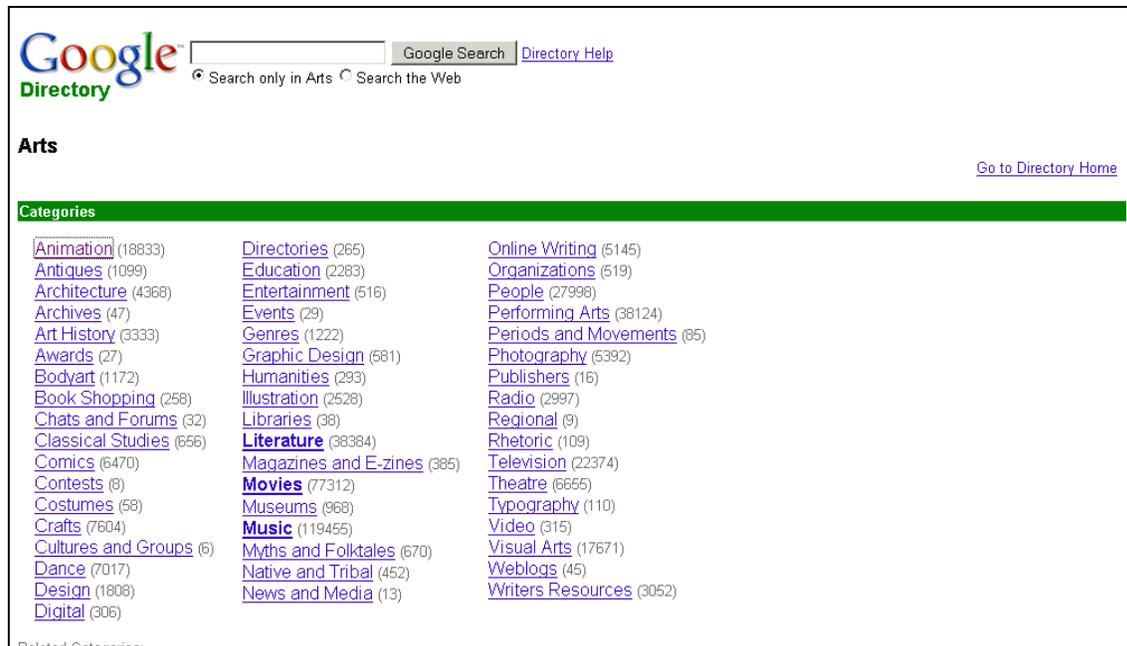
## Web Directories

If you have a general idea of what you are looking for, but don't have specific keywords to enter into a search box, then a directory might be exactly what you need. You can click on the categories listed on the page and get a list of more categories within that general category.

<http://directory.google.com> looks like this:



If you click on *Arts* you will get this list:



From there you can select another category to click, and you will be given another list of categories to choose from. This will continue until you get to very specific choices that will just give you links to pages.

The screenshot shows the Google Directory interface. At the top, there is a search bar with the text "Google Search" and "Directory Help". Below the search bar, there are radio buttons for "Search only in New York" (selected) and "Search the Web". The main content area is titled "New York" and includes a breadcrumb trail: "Reference > Museums > Arts and Entertainment > Art Museums > North American > American > New York". There is a link "Go to Directory Home". Below this, there are two tabs: "Web Pages" (selected) and "Viewing in Google PageRank order". The main list of results is titled "View in alphabetical order" and includes the following entries:

- Brooklyn Museum of Art** - <http://www.brooklynmuseum.org/>  
Includes programs, current exhibits, press releases, and special events. Located in Brooklyn, New York.
- The Morgan Library & Museum** - <http://www.morganlibrary.org>  
Both a museum and a center for scholarly research, the Morgan Library is a complex of buildings in the heart of New York City. Closed for major expansion and renovation, and scheduled to reopen in 2006.
- Bronx Museum of the Arts** - <http://www.bronxmuseum.org>  
Provides details of exhibitions, hours, admission fees, educational programs, and directions to its Bronx, New York location.
- Queens Museum of Art** - <http://www.queensmuseum.org/>  
Features details of collections and exhibitions, the history of the building, panorama tours, events, workshops, memberships, hours, admission fees, and directions to the location in Queens, New York.
- The Castellani Art Museum of Niagara University** - <http://www.niagara.edu/cam/>  
Collection of over 3,000 works including works from the Hudson River School. Located in Niagara Falls, New York.
- Art In General** - <http://www.artingeneral.org>  
New York alternative art space with exhibitions curated by artists. Gallery also maintains an art-in-residence program.
- Burchfield-Penney Art Center** - <http://www.burchfield-penney.org/>  
Only museum dedicated to the art and design of Western New York. Collections feature contemporary and historic paintings, sculpture, Roycroft pieces and craft art. Includes hours, tours, events, exhibitions, membership details, admission and directions. Located in Buffalo, New York.
- Memorial Art Gallery of the University of Rochester** - <http://mag.rochester.edu/>  
Offers a panorama of the world's art, from the relics of antiquity to works in the vanguard of contemporary movements. Includes details of collections, hours, admission rates, events and directions.
- Everson Museum of Art** - <http://www.everson.org/>

Yahoo! Directory (<http://dir.yahoo.com>) looks a bit different than Google's, but does the same thing—lists categories. Clicking on *Arts & Humanities* will get you similar results, but not identical.

The screenshot shows the Yahoo! Directory interface. At the top, there is a search bar with the text "Search: the Web | the Directory" and a "Search" button. Below the search bar, there are links for "Advanced Search", "Suggest a Site", and "Email This Page". The main content area is titled "Yahoo! Directory" and includes a list of categories on the left:

- Arts & Humanities** (selected) - [Photography, History, Literature...](#)
- Business & Economy** - [B2B, Finance, Shopping, Jobs...](#)
- Computers & Internet** - [Hardware, Software, Web, Games...](#)
- Education** - [Colleges, K-12, Distance Learning...](#)
- Entertainment** - [Movies, TV Shows, Music, Humor...](#)
- Government** - [Elections, Military, Law, Taxes...](#)
- Health** - [Diseases, Drugs, Fitness, Nutrition...](#)
- News & Media** - [Newspapers, Radio, Weather, Blogs...](#)
- Recreation & Sports**

The main content area features an article titled "The Spark: 20 Years of Anti-Depression" by Dave Sikula, dated Fri, December 28, 2007, 12:01 am PST. The article text reads:

It's hard to believe there was ever a time when Americans were incapable of overcoming [depression](#) without the aid of [chemistry](#). Such a time there was, though, and it was only as recently as [1951](#) that it became medically possible to relieve the otherwise-crippling [effects](#) of depression. Drug companies weren't as savvy then as they are now (it was estimated that fewer than [100](#) Americans in a million would benefit from anti-depressants), so such drugs as [isoniazid](#), [iproniazid](#), and [Imipramine](#) were more or less ignored.

In 1987, however, the good people at [Eli Lilly](#) finally saw the benefits (and marketing potential) of [Fluoxetine hydrochloride](#), and on December 29 of that year, began selling it under the trade name of [Prozac](#). While Prozac had some [minor side effects](#) -- headaches, fever, insomnia, and homicidal rages among them -- millions of people (over [20 million](#) in 2006) have been able to lead productive lives over the last two decades thanks to a little blue and white [capsule](#) filled with C17 H18 F3 NO.

Below the text is a photo of a small metal bowl filled with several white and blue capsules. The photo is credited to "BitterScripts".

At the bottom of the article, there is a section titled "Suggested Sites..."

On the right side of the page, there is an advertisement for "The World of Star Wars" with the text "Rediscover the Force" and "Watch Exclusive Clip".

You can see that their listing for Museums looks different than the results we got from Google Directory. So try a different directory, if you aren't finding exactly what you hoped to find.

The screenshot shows the Yahoo! Directory interface. At the top, there's a search bar with options for 'the Web', 'the Directory', and 'this category'. Below the search bar, the main heading is 'Arts > Museums, Galleries, and Centers'. There are links for 'Email this page', 'Suggest a Site', and 'Advanced Search'. A 'Save to My Web' button is also visible. The main content area is divided into 'SPONSOR RESULTS' and 'CATEGORIES'. The 'SPONSOR RESULTS' section includes 'Islamic Art, Contemporary' from Smarter.com and 'Contemporary Art Gallery' from Panamericanart.com. The 'CATEGORIES' section lists various sub-categories like Architecture, Art Deco, Ceramics, etc., with some having item counts in parentheses.

The Internet Public Library (<http://www.ipl.org/>) features a searchable, subject-categorized directory of authoritative websites; links to online texts, newspapers, magazines, and reference materials.

The screenshot shows the Internet Public Library homepage. At the top left is the 'ipl The Internet Public Library' logo. On the right, there's a search box with the text 'Search the IPL' and instructions: 'Now you can "Grok" the IPL by selecting "Grok It" below! Then hit "Map View" for a visualization of your results.' Below the search box are radio buttons for 'Traditional (fast)' and 'Grok It (clustered)'. The main content area is divided into three columns. The left column is a navigation menu with categories like 'About the IPL', 'Subject Collections', 'Ready Reference', and 'Reading Room'. The middle column is a 'Spotlight' section titled 'THING OF THE WEEK' with the text 'What are young people thinking...? If only there was someone we could ask!' and a link to 'teenspace'. The right column is an 'Inside' section with a red announcement: 'The IPL's Ask a Question Reference Service will close for the holidays, beginning December 17, 2007.' Below this is the 'ipl.org The Internet Public Library' logo and a paragraph about the library's history.

## Glossary

**Boolean Logic:**

Way to combine terms using "operators" such as "AND," "OR," "AND NOT" and sometimes "NEAR." AND requires all terms appear in a record. OR retrieves records with either term. AND NOT excludes terms.

**crawler:**

A component of a search engine that roams the Web, storing the URLs and indexing the keywords and text of each page encountered. Also referred to as a robot or spider.

**directory:**

A place where human editors organize web sites into categories.

**field searching:**

Requiring that a keyword or phrase appear in a specific field of documents retrieved. Most often used to limit to the "Title" field in order to find documents primarily about one or more keywords.

**Fuzzy AND**

In [ranking of results](#), documents with all terms (Boolean AND) are ranked first, followed by documents containing any terms (Boolean OR) are retrieved. The farther down, the fewer the terms, although at least one should always be present.

**Hypertext:**

A computer-based text retrieval system that enables a user to access particular locations or files in WebPages or other electronic documents by clicking on links within specific WebPages or documents.

**HTML:**

*H(yper)t(ext) M(arkup) L(anguage)*. A markup language used to structure text and multimedia documents and to set up hypertext links between documents, used extensively on the World Wide Web.

**HTTP:**

*(Hypertext Transfer Protocol)* Is an application protocol which defines how files on the World Wide Web are transferred. HTTP is the framework for how browsers will display and use file formats. When you enter in a URL with HTTP at the beginning, you are requesting a web page which can contain other elements (such as pictures) and links to other resources.

**Internet:**

The vast collection of inter-connected networks that are connected using the *TCP/IP* protocols and that evolved from the *ARPANET* of the late 1960's and early 1970's.

**keyword:**

A word searched for in a search command. Keywords are searched in any order. Use spaces to separate keywords in simple keyword searching.

**metasearch:**

An Internet search tool that simultaneously searches multiple search engines or directories

**nesting:**

A term used in Boolean searching to indicate the sequence in which operations are to be performed. Enclosing words in parentheses identifies a group or "nest." Groups can be within other groups. The operations will be performed from the innermost nest to the outmost, and then from left to right.

**operators:**

Symbols that let you refine your search. See also "Boolean Logic".

**spiders:**

Search engines use "spiders" which search (or spider) the web for information. They are software programs which request pages much like regular browsers do. In addition to reading the contents of pages for indexing spiders also record links.

**stop words:**

In database searching, "stop words" are small and frequently occurring words like *and*, *or*, *in*, *of* that are often ignored when keyed as search terms. Sometimes putting them in quotes " " will allow you to search them.

**sub-searching**

Ability to search only within the results of a previous search. Enables you to refine search results, in effect making the computer "read" the search results for you selecting documents with terms you sub-search on.

**subject directories:**

Lists of World Wide Web sites arranged by categories or subject headings.

**truncation:**

In a search, the ability to enter the first part of a keyword, insert a symbol (usually \*), and accept any variant spellings or word endings, from the occurrence of the symbol forward. (E.g., *femini\** retrieves *feminine*, *feminism*, *feminism*, etc.)

**World Wide Web (WWW):**

The universe of hypertext servers (*HTTP servers*) which are the servers that allow text, graphics, sound files, etc. to be mixed together. A client-server information system uses the Internet to access computers containing millions of hypertext documents.

## Comparison of Search Engines

Search Engine	<a href="http://www.google.com">Google</a> <a href="http://www.google.com">www.google.com</a>	<a href="http://search.yahoo.com">Yahoo! Search</a> <a href="http://search.yahoo.com">search.yahoo.com</a>	<a href="http://www.ask.com">Ask.com</a> <a href="http://www.ask.com">www.ask.com</a>
Links to help	<a href="http://www.google.com/support/">http://www.google.com/support/</a>	<a href="http://help.yahoo.com">http://help.yahoo.com</a>	<a href="http://help.ask.com">http://help.ask.com</a>
Size of Index	HUGE. Size not disclosed in any way that allows comparison.	HUGE. Claims over 20 billion total "web objects."	LARGE. Claims to have 2 billion fully indexed, searchable pages.
Noteworthy features and limitations	Popularity ranking using <a href="#">PageRank™</a> . Indexes the first 101KB of a Web page, and 120KB of PDF's. ~ before a word finds synonyms sometimes (~help > FAQ, tutorial, etc.)	Shortcuts give quick access to dictionary, synonyms, patents, traffic, stocks, encyclopedia, and more.	Subject-Specific Popularity™ ranking. Suggests broader and narrower terms.
Boolean logic	Partial. AND assumed between words. Capitalize OR. - excludes. No ( ) or nesting. In "Advanced Search", partial Boolean available in boxes.	Accepts AND, OR, NOT or AND NOT, and ( ). <i>Must be capitalized.</i> You must enclose terms joined by OR in parentheses (classic Boolean).	Partial. AND assumed between words. Capitalize OR. - excludes. No ( ) or "nesting".
+Requires/ - Excludes	- excludes + will allow you to retrieve "stop words" (e.g., +in)	- excludes + will allow you to search common words: "+in truth"	- excludes + will allow you to retrieve "stop words" (e.g., +in)
Sub-Searching	Sort of . At bottom of results page, click "Search within results" and enter more terms. Adds terms.	Add terms.	Sort of . Add terms.
Results Ranking	Based on page popularity measured in links to it from other pages: high rank if a lot of other pages link to it. Fuzzy AND also invoked. Matching and ranking based on "cached" version of pages that may not be the most recent version.	Automatic Fuzzy AND.	Based on Subject-Specific Popularity™, links to a page by related pages.
Field limiting	link: site: intitle: inurl: Offers U.S. Government Search and other special searches. Also Patent search.	link: site: intitle: inurl: url: hostname:	intitle: inurl: site:
Truncation Stemming	No truncation. Stems some words. Search variant endings and synonyms separately, separating with OR (capitalized): <i>airline OR airlines</i>	Neither. Search with OR as in Google.	Neither. Search with OR as in Google.
Language	Yes. Major Romanized and non-Romanized languages in "Advanced Search".	Yes. Major Romanized and non-Romanized languages. Use "Advanced Search" to limit.	Yes. Major Romanized languages. Use "Advanced Search" to limit.
Translation	Yes, in <a href="#">Translate this page</a> link following some pages. To and sometimes from English and major European languages and Chinese, Japanese, Korean.	Yes. Uses Babel Fish <a href="http://babelfish.yahoo.com/">babelfish.yahoo.com/</a>	No.

<http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/SearchEngines.html#Boolean>