

# SEARCHING THE INTERNET



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# *Searching the Internet*

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## ***Aims***

This course aims to provide you with the skills to successfully perform a search on the Internet using a variety of search tools and techniques. Additionally you will consider issues involved with evaluating and citing Web materials.

## **Outcomes**

On successful completions of this workshop you should be able to:

1. Carry out a pre-search analysis
2. Locate search tools
3. Browse a search directory to find information on a topic
4. Search the Internet using a search engine
5. Use Boolean operators and other search techniques to narrow or broaden the results of a search
6. Use the help pages of a site to learn how to use advanced search techniques
7. Evaluate a web site to determine whether the content is valid and useful
8. Understand plagiarism and how to avoid it
9. Acknowledge others' ideas and text and correctly cite electronic resources

## **Appendix**

Contains a list of search engines, directories and tutorial sites.



## ***Introduction***

Throughout the Internet thousands of computers provide information in the form of text, images, sound and video files. Each is published as a separate source of information. The Internet is not structured or catalogued in the same way as a Library, and with the amount of information on the Internet growing rapidly, search tools on the Web are the primary means of identifying and locating material.

### **What's on the Internet?**

The Internet has been referred to as a virtual library or the world's greatest research tool, but it is more, and less, than that. It is an on-line global community of interaction and communication; a self-publishing medium containing a huge variety of information, media, entertainment, advertising and promotional material but it does not contain everything ever published!

The Internet is a good source of current information such as news, financial and company details. You can also access and search on-line databases to obtain references, citations of printed journal articles, or the full text of articles. Typically a subscription is required to access such databases. They are the first place you should look for scholarly material suitable for university assignments. The Library subscribes to a large number of these databases. The Library course, *Researching a Topic*, covers their use.

### **Web based search tools**

Search directories and search engines are two main Internet search tools available through the World Wide Web. Each has a different method of data collection, techniques for searching, and ways of presenting results. As well as searching Web pages, you can use them to search other Internet sources of information such as Usenet Newsgroups, email and ftp (file transfer protocol) sites.

You can use the search tools in two ways, **browsing** and **searching**.

#### **Browsing**

Browsing is similar to scanning the contents of the shelves in a library or bookstore to see what has been published on a topic.

Use **subject directories** to browse through lists of Internet documents that have been selected and assigned to subject categories by directory staff. A directory is a good starting point for an Internet search.

#### **Searching**

Searching is the process whereby documents are scanned to see if they contain keywords you specify.



Use **search engines** to find information on a narrow or obscure topic, a personal, organization or business name; or the title of a Web page. Search engines provide more comprehensive coverage of the Internet than directories. Most search directories also offer keyword searching of the subject categories and items listed.

## *Carrying out a pre-search analysis*

### **Starting a Search**

The first step of the search process is to define your information needs. Think about what you want to find out, and what you want to do with the information you find. The answer will help you determine the kind of tool to choose, and then how to use it.

You may want to:

- search for information on a specialised topic, or a particular web site
- look for magazines, journals, or newspapers
- find someone's email address or phone number
- look for a job
- search for items in a library catalogue or online database

The words or search terms that you select will determine the type of material you will retrieve in your searching. Carefully consider the terms that could be utilised for your topic.

For example:

- specific subject terms or keywords
- broader terms that may encompass the topic
- synonyms or equivalent terms
- alternative spellings
- acronyms
- abbreviations
- associated organisations or groups
- relevant phrases where word order is important
- formal and informal language

Before you begin your search, write down the broad topic of your search and appropriate keywords.



## *Reading a URL or web address*

Each site on the web has a unique address or URL (Uniform Resource Locator). This address can provide you with useful information about the site. Each address consists of a protocol name, a computer name, a domain name and an optional country code.

Macquarie University Library has the following address:

**<http://www.lib.mq.edu.au>**

### **Country code**

**au** Except for sites from the USA, nearly all countries use a code to indicate their country name. In this case **au** indicates Australia. Other country codes include, **ae** United Arab Emirates, **jp** Japan, and **uk** United Kingdom. A full list of codes can be seen at:

**<http://devito.ssml.ed.ac.uk/WWW/country.html>**

Use this information to assess how relevant the information is to your needs. For example, if you are seeking unemployment statistics for Australia ensure you are in an Australian site.

### **Domain name**

**edu** The Domain name indicates the type of organization the site belongs to. This can be useful in assessing how authoritative the site may be. For example, information from a government site may be more reliable than from a commercial site, whose motives may be to market their products. Traditionally the Domains have been:

|                         |                       |                         |                            |
|-------------------------|-----------------------|-------------------------|----------------------------|
| <b>com</b> or <b>co</b> | commercial            | <b>edu</b> or <b>ac</b> | educational institutions   |
| <b>gov</b>              | government            | <b>mil</b>              | military                   |
| <b>net</b>              | network organizations | <b>org</b>              | organisations (non profit) |

For a list of additional names approved by ICANN see Appendix 2.

*Note:* Organisations are now permitted to register their companies under both com and org, so these Domain names should be used as a guide only.

### **Computer and organisation name**

**www.lib.mq** Indicates the organisation that provides the site **mq** (Macquarie University) and the name of the computer providing the web pages – **www.lib**



### Protocol name

**http://** indicates the transmission protocol to be used on the Internet. **http** stands for hyper text transfer protocol, the set of rules used to transmit graphical information on the World Wide Web. It is not necessary to type **http://** when you type an address, as this is a default on your computer.

In addition to the above basic address, you may find folder and file names attached to the address, for example,

**<http://www.lib.mq.edu.au/economics/statistics/html>**

### *Exercise 1.* *Deconstructing* *URLs*

Decode the following URLs by reading from right to left. Do not try to understand every part of the address, just get a sense of what the site might be about.

1. **<http://www.smh.com.au>**

\_\_\_\_\_

2. **<http://www.math.harvard.edu/people.html>**

\_\_\_\_\_

3. **<http://www.defenselink.mil>**

\_\_\_\_\_

4. **<http://www.health.nsw.gov.au/public-health/ophs99/>**

\_\_\_\_\_



## Locating search tools

Each search tool has its unique Web address or URL (uniform resource locator).

You can find search tools using your Web browser in three ways by:

- Using the links to search tools provided by your browser
  - Entering the URL of the search engine you require
  - Selecting a search tool from a collection provided by an organisation such as a Library or Internet provider
1. Click on the **Search** button on the Netscape or Internet Explorer toolbar to display a selection of directories and search engines.

Figure 1 Sample screen retrieved when selecting the Search button in Netscape



HotBot is the default search engine in the NetSearch screen above but the search tool selected rotates so that a different tool displays with each connection. Use the default tool or select another by clicking on its name on the left side of the screen.

2. Connect directly to a search tools using its URL or address.

For example, to use Google, type the following URL into the location box of your Web browser.

<http://www.google.com>

For URLs of other search tools see Selected search tools on page 32.

3. Use collections of search tools from the home pages of universities, schools, media sites, meta indexes or Internet Service Providers. Some include searching tips and instructions. Macquarie University Library Web site has a collection of search tools at

<http://www.lib.mq.edu.au/support/training/seathenet.html>



## ***Browsing a directory to find information on a topic***

Now that you have found how to locate the search tools, you will want to find out about choosing and using tools. Which tool should you use? How do tools work?

### **Subject directories**

Subject directories are selections of Internet document organised into broad hierarchical categories and subcategories by subject. Items are assessed for inclusion in directories by editorial teams or experts. Some directories may review or rate the Internet material they list. Documents may be excluded, such as personal home pages, pages with little content, or those considered undesirable for children.

Directories allow you to progressively narrow the scope of a search by dividing the Internet into subject areas.

### **Choosing a directory**

Directories are of three main types:

1. General subject directories which provide review or ratings of documents. See the **WWW Virtual Library** or the **Librarian's Index to the Internet**.
2. Non-reviewing general directories which select, evaluate and describe but do not review. Examples are **Yahoo!** and **Beyond the Black Stump**.
3. Subject or regional specific directories which focus on one topic, language or geographic area. For example, **EdNA**, Education Network Australia; **Yahoo!Japan**; and **Femina**, a women's guide to the Web.

For more directories see **Selected Search Tools, Directories** on page 33.

Directories can be used in two ways to:

- Browse, and
- Search.



## Browsing

Browse through categories and subcategories, move from the general to the specific, until you reach your topic where you may view a range of documents.

For example, the Yahoo! opening screen shows an alphabetical listing of subject categories.

Figure 2 Yahoo!'s home page lists subject categories

The screenshot shows the Yahoo! home page with various navigation links and subject categories. At the top, there are icons for Auctions, Messenger, Check Email, and the Yahoo! logo. Below the logo are links for What's New, Personalize, and Help. A search bar is present with a 'Search' button and a link to 'advanced search'. Below the search bar, there are links for 'Y! Shopping' and 'Depts: Books, CDs, Computers, DVDs'. A list of 'Stores' includes CircuitCity, Eddie Bauer, Gap, and more. A long list of navigation links follows, including Auctions, Classifieds, PayDirect, Shopping, Travel, Yellow Page, Maps, Media, Finance/Quotes, News, Sports, Weather, Connect, Careers, Chat, Clubs, Experts, GeoCities, Greetings, Mail, Members, Messenger, Mobile, Personals, People Search, Personal, Addr Book, Briefcase, Calendar, My Yahoo!, Photos, Fun Games, Kids, Movies, Music, Radio, TV, and more. Below this list, there are several boxes for 'Yahoo! Auctions', 'In the News', 'Arts & Humanities', 'Business & Economy', 'Computers & Internet', 'News & Media', 'Recreation & Sports', and 'Reference'. A box labeled 'Subject categories' points to the 'Computers & Internet' link.

**Yahoo! Auctions** - Bid, buy, or sell anything!

| Categories                  | Items                         |                                |                                |
|-----------------------------|-------------------------------|--------------------------------|--------------------------------|
| <a href="#">Antiques</a>    | <a href="#">Longaberger</a>   | <a href="#">Scooters</a>       |                                |
| <a href="#">Cameras</a>     | <a href="#">PlayStation 2</a> | <a href="#">Dale Earnhardt</a> |                                |
| <a href="#">Coins</a>       | <a href="#">Sports Cards</a>  | <a href="#">MP3 Players</a>    | <a href="#">State Quarters</a> |
| <a href="#">Comic Books</a> | <a href="#">Stamps</a>        | <a href="#">WWF</a>            | <a href="#">Palm Pilots</a>    |

Got Something to Sell? [Auction it Now!](#)

**In the News**

- [Bush backs off pledge to regulate carbon dioxide emissions](#)
- [Cancer spread in mice curbed with common heart drug](#)
- [Study: Black holes once dominated the universe](#)
- [College hoops, NBA, MLE](#)

[more...](#)

**Marketplace**

- [Oscar nominees on DVD - Billy Elliot, Contender and more](#)
- [Tax Center](#) - forms, tips, online filing and more
- [Y! Careers](#) - find a job, post your resume
- [Y! Travel](#) - plan your spring break

**Arts & Humanities**  
[Literature, Photography...](#)

**Business & Economy**  
[B2B, Finance, Shopping, Jobs...](#)

**Computers & Internet**  
[Internet, WWW, Software, Games...](#)

**News & Media**  
[Full Coverage, Newspapers, TV...](#)

**Recreation & Sports**  
[Sports, Travel, Autos, Outdoors...](#)

**Reference**  
[Libraries, Dictionaries, Quotations...](#)

Subject categories

**Note:** The Yahoo! site also provides links to searches on popular topics, a facility to personalise your view of Yahoo! and additional features such as free email accounts. Many search tools provide similar services in their bid to attract customers.



After selecting a category further subcategories are displayed and these lead, ultimately, to links to the web sites themselves.

**Figure 3 Subcategories listed under Arts & Humanities**

**Categories**

- [By Region](#) (131)

---

|   |  |
|---|--|
| • <a href="#">Art History</a> (739) <b>NEW!</b>         | • <a href="#">Education</a> (631) <b>NEW!</b>                        |
| • <a href="#">Artists</a> (3444) <b>NEW!</b>            | • <a href="#">Employment</a> (44)                                    |
| • <a href="#">Arts Therapy@</a>                         | • <a href="#">Events</a> (198)                                       |
| • <a href="#">Awards</a> (16)                           | • <a href="#">Humanities</a> (45791) <b>NEW!</b>                     |
| • <a href="#">Booksellers@</a>                          | • <a href="#">Institutes</a> (38)                                    |
| • <a href="#">Censorship</a> (17)                       | • <a href="#">Museums, Galleries, and Centers</a> (1015) <b>NEW!</b> |
| • <a href="#">Chats and Forums</a> (45)                 | • <a href="#">News and Media</a> (260) <b>NEW!</b>                   |
| • <a href="#">Companies@</a>                            | • <a href="#">Organizations</a> (360) <b>NEW!</b>                    |
| • <a href="#">Crafts</a> (795) <b>NEW!</b>              | • <a href="#">Performing Arts</a> (6047) <b>NEW!</b>                 |
| • <a href="#">Criticism and Theory</a> (30) <b>NEW!</b> | • <a href="#">Reference</a> (35)                                     |
| • <a href="#">Cultural Policy@</a>                      | • <a href="#">Thematic</a> (457) <b>NEW!</b>                         |
| • <a href="#">Cultures and Groups</a> (486) <b>NEW!</b> | • <a href="#">Visual Arts</a> (12055) <b>NEW!</b>                    |
| • <a href="#">Design Arts</a> (5144) <b>NEW!</b>        | • <a href="#">Web Directories</a> (47)                               |

Subcategories

**By Region** displays separate listings for regions, countries and US states

**Web Directories** are collections of guides and directories in the subject area


**New** indicates a new category

**Numbers in brackets** (26) refer to the number of items listed under a subcategory

**The @ sign** after a subcategory means the item is listed under another subject category, but you can still click on the heading there.

Click on a subcategory to see further subcategories and titles of Web sites with brief descriptions as shown in Figure 4. To visit a Web site, click on its hypertext link.

**Figure 4 Web sites listed under Arts & Humanities: Web Directories**

- [Art on the Net](#)
- [Art and Culture.com](#) - interconnected guide to the arts. Includes the design, performing, and visual arts, and literature, music, and film.
- [FineArt Forum WWW Resource List](#)
- [Artyclopedia](#)  - guide to museum-quality fine art on the Internet, with directory of both artist and museums.
- [ArtSource](#) - a gathering point for networked resources on Art and Architecture. Diverse content includes links to resources around the net and original materials submitted by librarians, artists, and art historians.

**Note:** The sunglasses icon indicates noteworthy resources in non-commercial sites.



**Exercise 2.**  
**Browsing Yahoo!**

1. Go to Yahoo! at <http://www.yahoo.com>
2. Select and browse through a category and subcategories
3. View a web site of interest

### Searching within directories

As directories become larger with more subcategories and items, finding the right category to fit your topic is harder. To help with this selection, most directories are also searchable:

- Across the whole directory
- Within a specific category or subcategory.

Searching through a directory's entries is faster than browsing through category levels, with the added advantage that you may locate relevant entries that appear under different subject categories.

For example, to find documents about stolen art, which category do you select? You might start with Arts & Humanities, but which subcategory do you select? Searching a directory identifies both subcategories and documents containing your search words.

Yahoo! has a search option in every category or subcategory but the whole directory is searched by default. To limit a search to the current category or subcategory, select **just this category**.

**Figure 5 Yahoo! Search box from within a category**





## Understanding Yahoo! Search results

The results of a search are presented grouped by category and site.

**Figure 6** Yahoo! search results for *stolen art*

| Categories   | Web Sites | Web Pages | Related News | Shopping <small>NEW!</small> |
|--|-----------|-----------|--------------|------------------------------|
| This search was restricted to <b>Arts</b> . For more matches, try searching <a href="#">all of Yahoo!</a> .        |           |           |              |                              |
| <b>Yahoo! Category Matches (1 - 3 of 3)</b>  |           |           |              |                              |
| <b>Arts</b> > <b>Art History</b> > <b>Regional</b> > <b>United Kingdom@</b>  |           |           |              |                              |
| • <a href="#">Stolen and Looted Art</a>  |           |           |              |                              |
| <b>Arts</b> > <b>Art History</b>   |           |           |              |                              |
| • <a href="#">Stolen and Looted Art and Antiquities</a>  |           |           |              |                              |
| <b>Arts</b> > <b>Art History</b> > <b>Stolen and Looted Art and Antiquities</b>                                    |           |           |              |                              |
| • <a href="#">Stolen Item Registries</a>   |           |           |              |                              |
| <b>Yahoo! Site Matches (1 - 17 of 35)</b>  |           |           |              |                              |
| <b>Arts</b> > <b>Art History</b> > <b>Stolen and Looted Art and Antiquities</b> > <b>Protection and Retrieval@</b> |           |           |              |                              |
| • <a href="#">Stolen Works of Art</a> - cd-rom version of Interpol's <b>stolen works or art</b> database           |           |           |              |                              |

| Categories | Web Sites | Web Pages | Related News | Shopping <small>NEW!</small> |
|------------|-----------|-----------|--------------|------------------------------|
|------------|-----------|-----------|--------------|------------------------------|

Web pages lists the results of a search on the Google search engine.

**Note:** If no items are found within the Yahoo! directory your search is automatically transferred to a the Google search engine which searches outside the Yahoo! collection. You can also choose the same search option by clicking on **Web pages** from the bar at the top of the results listing.

**Yahoo! Category Matches** are category names containing your search words.

**Yahoo! Site Matches** are web sites containing your search words organised by category.

**Web Pages** list sites provided by the Google search engine.

Click on the hypertext category headings to see the web sites listed, or click on the Web site titles listed under Site Matches.

Change the result display by selecting Categories, Web Sites, Web Pages, Related News or Shopping from the bar at the top of the results listing.



## Yahoo Advanced Search Options

To customise or refine a search click on the **advanced search** link on the Yahoo! home page. Advanced search options let you broaden your search and use other spellings.

Figure 7 Yahoo! Options Search screen

stolen art theft Search help

Yahoo!  Usenet

---

The options below apply only to Yahoo Directory searches:

---

Select a search method:                      Select a search area:

Intelligent default                       Yahoo Categories

An exact phrase match                       Web Sites

Matches on all words (AND)

Matches on any word (OR)

**Intelligent default** leaves the word combination to Yahoo!

**Matches on all words (AND)** finds documents containing both words

**An exact phrase match** searches for adjacent words in a document

**Matches on any word (OR)** broadens your search finding documents with either term and is useful for searching for terms with alternative spellings, for example, behavior and behaviour

## Word Spellings

The Internet is a global information resource. Using both American and Australian English spellings ensures fuller retrieval. From its home page, Yahoo! has links to World Yahoo!s, including those in Australian and New Zealand. When searching in Yahoo! Australia, just use Australian spellings.

### **Exercise 3.** *Advanced searching in Yahoo!*

1. Go to Yahoo!'s advanced search feature
2. Search for **jewellery** using the intelligent default
3. Use the alternate spellings, **jewellery** and **jewelry** by selecting the **(OR)** option
4. Compare the results



## Finding more

Searching for information on the Internet involves making choices and trying other avenues. Subject directories offer only a small selection of Internet documents, and in doing so they may filter out other relevant material. If you have browsed and searched through subject directories and still do not have the answers, there are other options,

- Use subject specific directories. See **Selected Search Tools** for options, page 33
- Use **search engines** for a more comprehensive search



## *Searching the Internet Using a Search Engine*

Use search engines for a comprehensive search of the Internet, to look for a narrow or obscure topic, or to find a known item such as a personal name, title of a Web site, organisation or company.

### **How do search engines work?**

Search engines use computer programs called robots, spiders or crawlers which continually crawl the Internet, visit Web sites and collect details from documents found. The search process is completely automated with no human selection or evaluation of material collected, unlike the compilation of directories where documents are selected and evaluated by editorial teams.

The robots collect URLs, titles of Web pages and other words from documents and return them to the search engine computer where they are stored in a database and indexed so that they are searchable. Every search engine's robot uses different criteria for selection of web material, and no two engines contain exactly the same set of document in their databases. When you enter keywords and send your queries to a search engine, it is this database which is searched.

Results from your search are listed in order of relevance. Search engines which have larger databases (more document listings) produce more results. Search engine databases are updated or refreshed at regular intervals each update adds new material, so that the same search on the same engine on different days could produce different answers!

### **Choosing a Search Engine**

Which search engine is the best for my topic?

There are different categories of search engines:

- General search engines which cover all subject areas. See **AltaVista**, **Answers**, **HotBot**, **NorthernLight** and **Google**.
- Specific search engines which limit content to subject, geographical or language subsets of the Internet. See **NEWSIndex**, **Web Wombat** and **Euroseek**.
- Hybrids are search engines and subject directories combined offering selected or reviewed documents. **Excite** and **Lycos** are examples but many search engines now include subject directories.
- Meta or parallel search engines simultaneously search through multiple search tools. **Vivísimo** and **MetaEureka** are examples.

Each search engine has different interfaces and options, techniques and coverage and produces different results. In a competitive market, search engines regularly change their interfaces and offer new features and search techniques.

If you are interested in remaining updated about search engines go the Search Engine Watch <http://searchenginewatch.com>



## Using Search Engines

When you connect to the Web site of a search engine, a search screen displays offering several search options. Finding your way around this screen is the first step in a search. Frequently other services and advertising are present on the opening screen.

The main choices are:

- Where to type your search terms or keywords
- Which parts of the Internet to search e.g. World Wide Web, Usenet, News
- How to combine and search for words
- The number of results to display per screen and the amount of detail for each result
- Finding the search command! Usually pressing **Enter** on your keyboard is sufficient. Most engines also have a clickable button but the name of that button varies. Look at these examples:



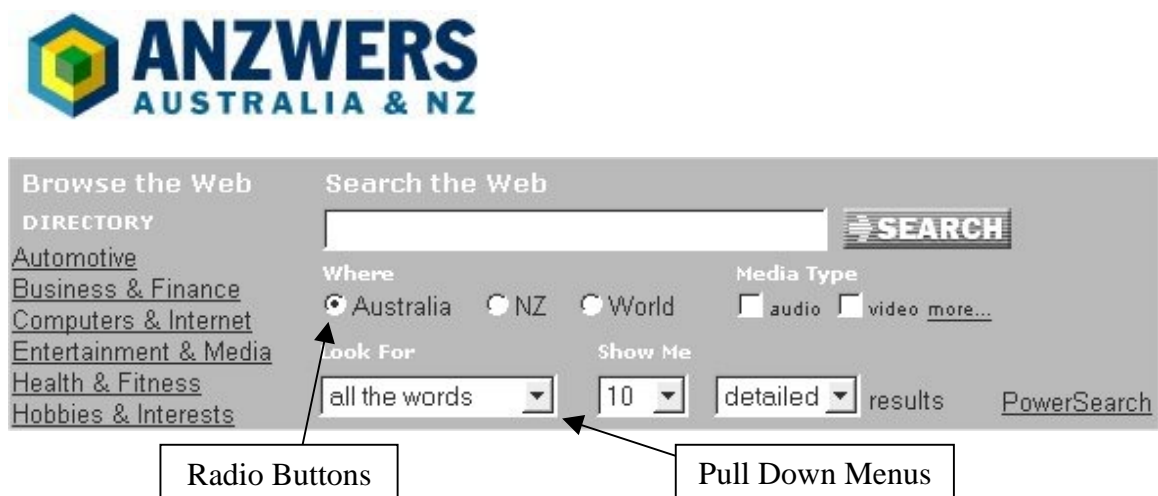
Search engines are mainly of two types:

- Those using pull down menus to further specify the search requirements, e.g. **Answers**.
- Those where operators and connecting symbols must be used with your search words to improve the results, e.g. **Lycos** and **AltaVista**.

## Using Answers

<http://www.answers.com.au>

Figure 8 Answers home page showing search options



From the opening screen use the pull down menus and radio buttons to set search and display options when using Answers.



- Where:** Choose Australia, NZ or The World to search within
- Media Type:** Click on the check box if you require a particular media type
- Look for:** Choose a search method:  
All the words (all words will be present of the documents retrieved)  
Exact phrase (adjacent words will be searched for)  
Page title (searches for words within the Web page title)  
The person (searches for a person's name)  
Links to this URL (searches for links to a specified URL)  
Boolean phrase (use Boolean operators, see Search Techniques)
- Show Me:** Select how you wish your results to display.

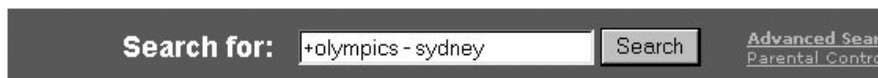
How you use these options makes a difference to your search results. See the section on Search Techniques to find out more.

## Using Lycos

<http://www.lycos.com>

Use operators and connecting symbols in your search query to set search options when using Lycos.

**Figure 9 Lycos home page and search box**





## *Search Results*

Once you have done your search the results will be displayed on the screen.

### **Results display**

The results displayed will show some or all of the following features:

- A short statement of **your search** displaying the search terms, the results for each word, and the total number of documents retrieved.
- A **ranking or percentage score** indicating the relevance of each document, based on the search engine's method of relevance ranking
- The **document title** (a hypertext link) and a brief description or summary of the document. Use this to assess the relevancy of the material
- The **date** the item was updated or collected by the search engine
- The **size** of the document
- The **URL** or address of the site. This will provide useful information about the site. (See page 4.)
- **Further documents** on this topic – Similar or Related pages
- An archive of documents on the topic (Cached in Google)

### **Relevancy Ranking**

Every word you type in as a search request is matched against the search engines database of documents. Documents containing your search terms are displayed in order of relevance. Documents which receive a higher relevancy ranking or score are pushed to the top of the results list. In these documents your search words occur more frequently or are in a prominent location on a web page such as a page title, the first paragraph or URL. Some relevancy algorithms (methods of determining relevancy) use measures of the popularity of a site. Google, HotBot and AltaVista are examples. Other documents containing your search words are also retrieved but are listed further down in the results display.

Each search engine uses a different algorithm to determine relevancy so the same search on different engines will produce different rankings.

Your choice of search words affects the relevance ranking. Less common words have higher weighting, and very common words may be ignored altogether. Some search engines will let you influence the ranking display by adding more words to your search.

The amount of detail and format of results varies among search engines. Those with good summaries and more detail, help you decide which documents to view. HotBot, AltaVista, Excite and Northern Light provide useful results displays.



**Figure 10 Anzwers results showing relevancy ranking**

|     |   |
|-----|---|
| 1.  |  <b><u>Official Mad Cow Disease Home Page</u></b>  |
| 99% | The Internet's largest and most authoritative site for prions, mad cow disease (bovine spongiform encephalopathy or BSE), scrapie, Creutzfeldt-Jakob Disease (CJD and nvCJD), kuru, and chronic wasting disease (CWD). Over 6966 articles, updated twice<br><a href="http://www.mad-cow.org/">http://www.mad-cow.org/</a> , 23505 bytes, 2001/01/27   |
| 2.  |  <b><u>Official Mad Cow Disease Home Page</u></b>  |
| 98% | By far the Internet's largest site for mad cow disease, bovine spongiform encephalopathy (BSE), scrapie, Creutzfeldt-Jacob Disease (CJD) prion disease, kuru, fatal familial insomnia (FFI), Gerstmann-Scheindler-Schinker (GSS), chronic wasting disease<br><a href="http://www.cyber-dyne.com/~tom/mad_cow_disease.html">http://www.cyber-dyne.com/~tom/mad_cow_disease.html</a> , 3122 bytes, 1999/12/24 |
| 3.  |  <b><u>How to spot a mad cow</u></b>   |
| 98% | Mad cow humour<br><a href="http://mats.gmd.de/~steffi/madcow/madcow.htm">http://mats.gmd.de/~steffi/madcow/madcow.htm</a> , 1851 bytes, 1999/12/01  |



As well as presenting a ranked list of all results, Northern Light clusters search results into **Custom Search Folders**. These are designed to help you narrow your search results. The folders contain results clustered by subject (sub categories), source (educational, government, commercial and personal), type (press release, magazine article, book review, product review), languages (materials available in other languages), and discussion (bulletin boards, newsgroups and forums).

**Figure 11 Northern Light clusters results into Custom Search Folders**

**Narrow Your Search with Custom Search Folders™**

Your search returned 20,746 items which we have organized into the following Custom Search Folders:

- Special Collection documents
- Bovine diseases & disorders
- Diseases & Disorders
- Public health
- Agricultural veterinary medicine
- Agriculture industry
- Pharmaceuticals industry
- Hormones
- Electronic publishing industry
- Peptides & proteins
- Animal breeding

- 1. Bovine Spongiform Encephalopathy (BSE)**  
**99% - Articles & General info:** Food Safety and Inspection Service United States Department of Agriculture Washington, D.C. 20250-3700. News and Information. Updated February 20, 2001. Bovine Spongiform Encephalopathy(... 02/20/2001  
**Department of Agriculture:** <http://www.fsis.usda.gov/oa/topics/bse.htm>  
 [More results](#) from this site
- 2. Encephalopathy, Bovine Spongiform**  
**99% - Articles & General info:** Related topics:broader. other. This homepage provided by the British Medical Journal gathers together Government statements and BMJ extracts on Bovine Spongiform Encephalopathy(B... and ... 02/11/2001  
**Educational site:** <http://omni.nott.ac.uk/text/browse/mesh/detail/C0085209L0086067.html>
- 3. Encephalopathy, Bovine Spongiform**  
**99% - Web link lists:** Related topics:broader. other. This homepage provided by the British Medical Journal gathers together Government statements and BMJ extracts on Bovine Spongiform Encephalopathy(B... and ... 02/06/2001  
**Educational site:** <http://omni.ac.uk/text/browse/mesh/detail/C0085209L0086067.html>

Northern Light also searches its **Special Collection** of journal and magazine articles as well as searching the Web. There is a charge to view the full documents from the Special Collection. You may, however, view citations of these documents which may be available through the Library databases.



## *Using operators and other search techniques to narrow or broaden a search*

### **Using connectors**

Plus and minus symbols are used to specify words that must be included or excluded in a search. This technique is often referred to as **pseudo Boolean logic** or **Internet Maths**.

- + a plus directly in front of a word retrieves all documents containing that word. To retrieve all documents containing the words boat and refugees use,  
**+boat +refugees**
  
- a minus sign directly in front of a word excludes documents containing the word. To retrieve documents about boat refugees but not containing the word Vietnamese use,  
**+boat +refugee -Vietnamese**

### **Phrase Searching**

Using quotations marks around your search terms forces search engines to find adjacent words in a document. This will narrow your search results to find more relevant documents. To retrieve documents containing the phrase boat people use,  
**“boat people”**

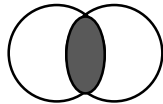
#### ***Exercise 4.*** ***Searching using operators***

1. Go to AltaVista at **<http://altavista.com>**
2. Search for the term **“mobile phones”**
3. Limit the search to include **“radiation”** using the + operator
4. Limit the search to a more specific topic using + before the phrase
5. Possible search terms: radio waves, thermal effects, children, radio frequency radiation, RFR, electromagnetic energy, EME.



## Boolean Searching

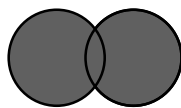
Boolean or logical operators combine search words in a search request, exclude other words, and specify the context of words within a document.



**AND**

**AND** finds documents with both words anywhere:

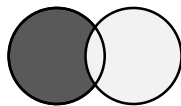
*HIV and AIDS* finds only those documents containing both words, producing a narrower result.



**OR**

**OR** searches for either of the words in the same record, and is useful for synonyms or related words for a search concept:

*HIV or AIDS* finds all records containing either HIV or AIDS, or both, producing a broader result.



**NOT**

**NOT** excludes records containing specified words:

*AIDS not HIV* finds records about AIDS but excludes HIV thereby producing a narrower result.

**NEAR** between words finds words close together in a document, for example, within ten words of each other (Alta Vista uses **near** in its Advanced Search screen)

Some search engines allow the use of standard Boolean operators. Check the Help feature to see how these should be used as methods vary.

- In Alta Vista: select the **Advanced Search Screen**
- In Anzwers, or HotBot: select the **Boolean** expression form the pull down search menu
- In Excite enter Boolean operators in **capital letters** to differentiate them from other search terms
- Northern Light accepts Boolean operators in all search forms. When using a Boolean operator, enclose it in **quotes**, e.g. tall and dark.

Note that most search engines offer two alternative search options to Boolean operators:

search for **ANY** words (similar to **or**)

search for **ALL** words (similar to **and**)



## Truncation or Wildcards

**Note:** Most search engines automatically search for plural and singular endings of words. Use truncation when you want to find alternate word spelling or endings. Truncation is controlled through the use of symbols:

- AltaVista uses an asterisk\* after three letters or more:  
**Librar\*** finds documents containing the words, library, libraries, librarian
- Northern Light has three options:
  1. An asterisk\* used after four letters or more:  
**chem\*** finds chemistry, chemical, chemist
  2. An asterisk\* used within words:  
**jewel\*ry** finds all words starting with jewel ending with ry
  3. A % represents a single letter:  
**organi%ation** finds organisation and organization which is useful for global spelling variations

Be careful where you place the truncation symbol as it can produce unwanted results.  
**Geo\*** finds geology, geography, geometry, geophysics

## Field searching

Field searching allows you to specify where within a document you want to search. Examples of fields are **Web Page Title**, **URL** or host address, **domain** and **image**. For example in AltaVista use,

**Title:“boat refugee”** to search for documents with the search words included in the title of the web page  
**+library +host:mq.edu.au** to find everything at Macquarie University

It is also possible to search for pages containing specific media such as MP3 (audio) and image files. AltaVista and Lycos provide such options on their home page.

Northern Light, Anzwers and HotBot allow you to select fields from pull down menus which are presented on their **Advanced** or **PowerSearch** screens.

### **Exercise 5.** *Searching within fields*

1. Go to AltaVista at **http://altavista.com**
2. Limit the search to words in a title, **title:“mobile phone radiation”**
3. Limit the search so that only gov sites are included. Use the word **host:**, followed by the domain category for government, **“mobile phones” =host:gov**



## Natural Language searching

Several search engines, like **Ask Jeeves**, **AltaVista** and **Northern Light** allow plain English search terms to be entered in the search box. Categories are then used to further refine the topic.

This method works best for simple questions like, “What is the capital of Australia?”

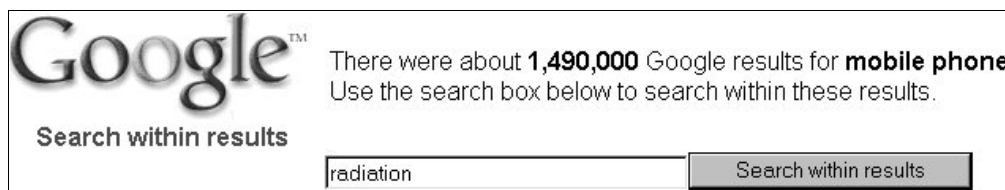
## Modifying or Refining Searches

If a search result is too large or too small, search engines provide a number of options to assist in modifying searches.

1. A **Search within results** option is offered by many search engines to help you your search.

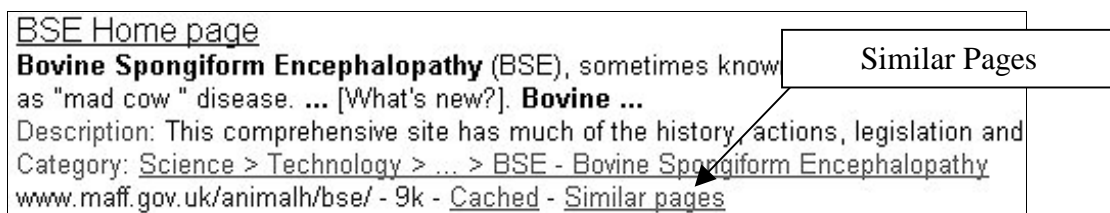
Google offers a **Search within your results** option at the bottom of each page of results.

**Figure 12 Google’s Search within results feature**



2. Some search engines provide links to similar or related pages

**Figure 13 Google search results showing Cached and Similar pages**



3. Search engines may also offer a list of additional search items for your query.
4. Adding more search words can also further refine your search.

## Advanced search features

Advanced search features are usually presented on a separate screen. Look for **Power Search** (Anzwers, Northern Light) and **Advanced Search** (AltaVista, Google, HotBot, Lycos).

## Using Help

Search engines provide more detail about their search options in a Help, Hints or Tips page. Examine these in detail to find out how searches are managed.



## *Developing your Search Query*

The success of a search depends on the words or terminology you use to describe your search topic or concept, as well as the search techniques.

Always consult **Help** or **Tips** on different search engines for ideas as to how to improve your searches.

- Use more than one word in your search but remember to use phrase searching, plus and minus signs or Boolean operators to combine words.
- Use specific or unique words rather than very general words. You may find results listing millions of documents if very general terms are used.
- Use synonyms to describe your topic as well as abbreviations and acronyms. For example, **rock art** can also be expressed as **rock carvings** or **rock paintings**
- Avoid ambiguous terminology. **Rock art** could refer to rock paintings as well as rock and roll and art. Using such words in context with others in a phrase search is a good way to specify meaning.
- Consider the way formal and informal language is used. For example, **mad cow disease** or **Bovine Spongiform Encephalopathy** will return different results.
- Try variations in spelling. The Internet is a global information source which uses regional spellings and different languages. For example, include spellings in both US English and Australian English, **aluminium** and **aluminum**, **colour** and **color**, **behaviour** and **behavior**.
- Use a wildcard or truncation symbol to represent one letter or any letters following if this feature is provided by a search engine.

**Alumin\*um** searches for both aluminium and aluminum

**Jewel\*** searches for jewel, jewellery, jewelry, jewels, jewelled

If truncation is not offered by the search engine you are using, enter different spellings in the same search query.



## Meta or Multi Search Engines

Meta search engines allow search queries to be run against a number of search tools at the same time. Meta search engines do not create their own databases of Internet documents but use the databases of other search tools. Meta search engines, however, do not always recognise the features and strengths of the separate tools.

Use metasearchers when you are more familiar with searching and want to obtain a comprehensive result on a topic instead of searching the search engines and directories separately. Meta searchers are also useful for an overview of a topic.

**QueryServer** and **Vivísimo** display results that are merged so that the same documents found on different engines are only displayed once, and are clustered into groups with similar content. Both **QueryServer** and **Vivísimo** allow Boolean searching. Natural language queries are also available in **QueryServer**.

Figure 14 Vivísimo clusters results by content

The screenshot shows the Vivísimo search engine interface. At the top, the search query 'mir space station' is entered in the search box, with a 'Search' button and dropdown menus for 'All Words' and '200 results'. To the right, there are dropdown menus for selecting search engines: Yahoo, AltaVista, and Lycos. Below the search bar, a tree view on the left shows a hierarchical structure of search results clustered by content. The main content area on the right displays the following information:

- Category **mir space station** > **Space Flight** contains 6 documents.
- Redirect to Human Space Flight Page**  
to the consolidation of the International **Space Station** & the **Space Shuttle** web sites. ... Web (shuttle.nasa.gov), NASA's Shuttle-**Mir** Web (shuttle-mir.nasa.gov ...  
<http://shuttle.nasa.gov/> **Yahoo 4, Fast 1**
- Office of Space Flight - Mir**  
Russia's **Mir Space Station** has been in orbit for over 13 years. The first element of the **station** was launched on February 20, 1986. It is a third-generation Russian **station**.  
<http://www.hq.nasa.gov/osf/mir/> **WebCrawler 1**

See the list of **Selected Search Tools** page 35 for more meta search engines.



## Meta Indexes or All-In-One Searchers

Meta indexes or all-in-one searchers are collections of links to search engines and directories. Meta indexes are useful for finding search tools which specialise in a particular subject, language or location. Beaucoup, one of the earliest meta indexes, groups search tools by function.

Meta indexes frequently include additional features such as meta search tools.

Figure 15 Beaucoup groups search tools by function





### **Exercise 6.**

#### **Locate relevant material on health issues relating to mobile phones**

Possible search terms: mobile phones, radiation, radio waves, thermal effects, children, radio frequency radiation, RFR, electromagnetic energy, EME.

| <b>Search engines and query type</b> | <b>No. of relevant results on the first page</b> |
|--------------------------------------|--|
|--------------------------------------|--|

**AltaVista** <http://av.com> Use connectors and operators

|  |  |
|--|--|
| 1. Search for the term “mobile phones”   |  |
| 2. Limit the search to include ‘radiation’ using the + operator  |  |
| 3. Limit the search to a more specific topic using + before the phrase   |  |
| 4. Limit the search to words in a title, title:“mobile phone radiation”  |  |
| 5. Limit the search so that only gov sites are included. Use = and the word host:, followed by the domain category for government, “mobile phones” =host:gov |  |

**Answers** <http://www.answers.com.au> Use pull down menus

|  |  |
|--|--|
| 1. Use the Power Search display. Select Exact Phrase: Mobile phones. Select Australia.   |  |
| 2. Limit the search further by adding another term in the top search terms box. Select Boolean phrase from the pull down menu. “mobile phones” and radiation |  |
| 3. Limit the search further by adding another term.  |  |
| 4. Select Word Filter and must contain the words: radiation  |  |
| 5. Limit the search by date to information from 1999+ on the pull down menu  |  |

**Ixquick** <http://www.ixquick.com>

|                                    |  |
|------------------------------------|--|
| 1. Use +“mobile phones” +radiation |  |
|------------------------------------|--|



## ***Evaluating Information on the Internet***

Information found on the Internet can come from any source and may not necessarily be assessed or reviewed before publishing. It is essential to evaluate any data you find for authority and validity before using or quoting it in assignments.

Use the **AAOCC** model to evaluate any Internet documents you find.  
**Authority, Accuracy, Objectivity, Currency, Coverage**

### **Authority**

- Does a statement of ownership appear on the document?
- Does the site provide contact details – at least a name and email address?
- Is it the official site of a company or organisation?
- Is there a copyright statement for the owner?
- What type of organisation does the URL domain name indicate for the site.
- What country does the site come from?

### **Accuracy**

- Can you verify factual information provided? Are sources given?
- Are links to other sources given to verify its claims?

### **Objectivity**

- What is the motivation for publishing the information?
- Is bias evident?
- Is advertising clearly differentiated from information content?

### **Currency**

- Are there dates on the page to indicate when the page was written and last updated?
- Are there any other indications that the material is kept current?
- Is past material archived and easy to access?

### **Coverage**

- Is the page completed, or is it still under construction?
- Is adequate detail given?
- How different is the web coverage from coverage in other media?



***Exercise 7.***  
***Evaluating Web***  
***Resources***

A search for **BSE** on Google returns a number of sites from government, organisations, companies and individuals. The issue of BSE and the way it has been handled has been controversial. Use the **AAOCC** model to assess the following site(s) for authority and credibility.

**Mad Cow Disease Home Page**  
<http://www.mad-cow.org/>

**BSE Home Page**  
<http://www.maff.gov.uk/animalh/bse/>

**Information concerning BSE for the Scientific World**  
<http://sparc.airtime.co.uk/bse/welcome>



## ***Checklist for Web Site Evaluation***

### **Authority**

|   | Yes | No |
|---|-----|----|
| Does a statement of ownership appear on the document?                     |     |    |
| Does the site provide contact details – at least name and e-mail address? |     |    |
| Is it the official site of a company or organisation? (How can you tell?) |     |    |
| Is there a copyright statement for the owner or company?                  |     |    |

### **Accuracy**

|   | Yes | No |
|---|-----|----|
| Can you verify factual information provided? Are sources given? |     |    |
| Are links to other sources given to verify its claims?          |     |    |

### **Objectivity**

|  |
|--|
| What is the motivation for information provided? |
|--|

|   |  |  |
|---|--|--|
| Is advertising clearly differentiated from information content? |  |  |
|---|--|--|

### **Currency**

|   | Yes | No |
|---|-----|----|
| Are there dates on the page to indicate:<br>When the page was written?<br>When the page was first placed on the Web?<br>When the page was last updated? |     |    |
| Are there any other indications that the material is kept current?  |     |    |
| Is past material archived and is it easy to access?   |     |    |

### **Coverage**

|   | Yes | No |
|---|-----|----|
| Is the page completed, or still under construction?             |     |    |
| Is adequate detail given?                                       |     |    |
| How different is the web coverage from coverage in other media? |     |    |



## *Using others' ideas and texts*

An important part of study at University is to appraise other people's ideas and theories and to apply them in your own learning. When using other's work in your research papers, convey their ideas accurately using your own words. Ensure you have correctly acknowledged or cited the source of those ideas. Failure to do this is plagiarism. For example, copying and pasting text from electronic sources into your own document without indicating its source, is plagiarism.

Acknowledgement should be made when:

- Work you quote is not common knowledge
- Ideas or theories or opinions of others are used, whether from spoken or written sources
- The actual text others have written is given. Quotation marks should enclose the actual text quoted
- Statistics, table, diagrams, facts or graphs are used.

Remember all material on the Web is protected by copyright.

## *Citations*

Giving the source of the information that you have utilized in your assignments is referred to as citing a particular text. This ensures the information can be verified or retrieved by another person. The references cited should be listed at the end of your work, in alphabetical order by authors' surnames.

Citations usually follow two main styles: APA (American Psychological Association) or MLA (Modern Languages Association). These are subject specific; use the style that is recommended by your lecturer.

Consult the following resources for examples of how to cite electronic materials:

- Harnack, Andrew and Kleppinger, Gene. Beyond the MLA Handbook: Documenting Electronic Sources on the Internet.  
<http://english.ttu.edu/kairos/1.2/inbox/mla.html>
- Electronic Reference Formats Recommended by the American Psychological Association  
<http://www.apa.org/journals/webref.html>
- Library & Information Science: Citation Guides for Electronic Documents  
<http://www.ifla.org//training/citation/citing.htm#style>

### *Exercise 8. Citing Web Resources*

Use one of the resources above and correctly cite a web site.

---



# ***Appendix 1***

## ***Selected Search Tools***

### **Search Engines**

#### **Alta Vista:**

**<http://altavista.com/>**

Alta Vista searches in depth within Web pages, offering two search modes - Simple Query and Advanced Query. Simple query allows the use of operators to limit your search. Advanced Query allows the use of Boolean operators and date limits. A translation service is also provided.

#### **Answers:**

**<http://www.answers.com.au/>**

An Australian based search engine which uses pull down menus. Has simple and advanced (Power Search) modes. Power Search allows modifying the search and searching by location and media type.

#### **Euroseek:**

**<http://www.euroseek.com/>**

Search in the European language of your choice.

#### **Excite:**

**<http://www.excite.com/>**

Combines a search engine and directory. Provides Zoom In terms to assist in refining a search.

#### **Google**

**<http://www.google.com/>**

Largest database that also retrieves links that have been made to database documents. Gives fast, accurate results. Easy to refine searches by adding terms.

#### **Hotbot**

**<http://www.hotbot.com/>**

Uses pull down menus, with simple and advanced search choices which include domain and media searches.

#### **Lycos**

**<http://www.lycos.com/>**

Contains simple and advanced searching using pull down menus (and, or, exact phrase). Also searches by language type and fields.



### **Northern Light:**

<http://www.northernlight.com/>

Has simple and advanced searches. Uses Boolean terms (and, or, not) or + and – operators. Results are organised into subject categories, including the Special document collection. A charge is made for the full text from the Special Collection. These documents may be available from the Library databases.

### **Web Wombat:**

<http://www.webwombat.com.au>

A search engine for Australian Internet sites. Includes links to online newspapers, magazines and telephone directories throughout the world.

## **Directories**

### **Argus Clearinghouse**

<http://www.clearinghouse.net/>

An evaluated and rated selection of subject directories or collections of web sites. Regularly checked and updated. An excellent finding tool.

### **Ask Jeeves**

<http://www.askjeeves.com/>

Sites are selected by humans, rather than using software programs. Aims to answer your query by presenting one search page. Uses natural language searching and then returns a series of questions to clarify the search topic.

### **Yahoo!**

<http://www.yahoo.com/>

Yahoo! selects and classifies Internet resources under subject headings with a searching facility at each level of subheading. Scroll down the page to locate the Australian Yahoo site. Has an advanced search with option to search discussion groups.

### **Librarians' Index to the Internet**

<http://lii.org/>

A directory of reviewed material suitable for both academic and general public use.

### **Beyond the Black Stump**

<http://www.blackstump.com.au/>

A search facility and directory for Australia and international topics. Regularly updated.

### **EdNA: Education Network Australia:**

<http://www.edna.edu.au/EdNA/>

A collection of Australian and international educational resources that allows browsing or searching.



### **Education World: US based educational resources**

<http://www.education-world.com/>

Browse topics as well as simple searching and advanced. Uses pull down menus with Boolean terms (all words (and), any words (or) and exact phrase). Allows searching at a particular educational level.

### **Femina: a searchable directory of women's Internet resources**

<http://femina.cybergrrl.com/>

Allows searching and directory browsing.

### **Matilda**

<http://www.aaamatilda.com/>

Both a directory and search facility

### **The WWW Virtual Library**

<http://vlib.org>

A non-commercial subject catalogue maintained at CERN, the home of the WWW. Includes over 100 subject areas maintained by different organisations over the world.

## **Australian Sites**

### **Aussie Index: Directory of Australian business sites**

<http://www.aussie.com.au>

### **Australian University Directories**

<http://staff.connect.com.au/mrp/phone.html>

### **Guide to Australia**

<http://www.csu.edu.au/education/Australia.html>

### **Web Wombat**

<http://www.webwombat.com.au/wombat/>

Search engine for international and Australian sites.

### **White Pages Online**

<http://www.whitepages.com.au/wp/>

### **Yellow Pages Online**

<http://www.yellowpages.com.au>



## Meta Search Engines

### Dogpile

<http://www.dogpile.com>

Searches simultaneously through 13 directories and search engines with results listed under individual engines and directories.

### Metacrawler:

<http://www.metacrawler.com/>

Searches across 10 search engines, lists results by relevance and indicates the search engine source.

### QueryServer

<http://www.queryserver.com>

An efficient searcher which allows searching for financial, news, government and health information. Results are logically clustered.

### Vivisimo

<http://www.searchenginecolossus.com/>

Comprehensive and relevant, this metasearcher clusters results by content.

## Meta Indexes

### All-in-One Search page

<http://www.AllOneSearch.com/>

An extensive collection of World Wide Web search engines and directories, people, software, news/weather, publications /literature, technical reports.

### Beaucoup

<http://www.beaucoup.com/>

Both a directory and search engine. Searches over 2,000 indexes and search engines.

### CUI-W3

<http://cui.unige.ch/meta-index.html>

A CERN site with links to search engines and directories.

### Search Engine Collosus

[www.searchenginecolossus.com](http://www.searchenginecolossus.com)

An international directory of search tools from over 150 countries. Searching is available in the language of that country and in many cases in English as well.



## Tutorials

A selection of tutorials and documents on the web that provide information and instruction on using web based tools to search the internet.

### Finding Information on the Internet Tutorial

<http://www.lib.Berkeley.edu/TeachingLib/Guides/Internet/FindInfo.html>

### Search Engine Showdown

<http://www.notess.com/search>

### Search Engine Watch

<http://searchenginewatch.com>

### University at Albany

<http://library.Albany.edu/internet>

## *Appendix 2*

### *Additional Names approved by ICANN*

The following additional names have been approved by ICANN who regulate Internet names

|               |               |             |                      |
|---------------|---------------|-------------|----------------------|
| <b>aero</b>   | aviation      | <b>biz</b>  | general business     |
| <b>coop</b>   | cooperatives  | <b>info</b> | information business |
| <b>museum</b> | museums       | <b>name</b> | personal names       |
| <b>pro</b>    | professionals | <b>tv</b>   | video images         |