Open Source Center

Advanced Googling for Senior Executives

Google™

Open Source Academy

Internet Science Faculty

September 2009

Intros, Overview, Admin

- Intros
- Basic & advanced search
  - Features, operators, and syntax
  - Google focused, but applies to other search engines.
- Hands-on class
- Explore, experiment, have fun!
- Questions? Comments?

Not an endorsement of Google

Instant Gratification

- Google provides many useful features
  - Definitions
    - define:ontology
    - define:mahdi
  - Global time
    - time Tehran, Iran
  - Global weather
    - weather Paris
  - Calculator
    - 25% of 79.99
  - Unit conversions
    - 1 foot 3 inches in meters
    - 100 USD in Pakistan rupee
  - Area codes
    - area code 571
  - Synonym search
    - ~car loan
  - Spell checking
    - Misissippi

http://www.google.com/help/cheatsheet.html
http://www.googleguide.com/help/calculator.html

Gratifying, But Let's Dig Deeper

- There are ***many*** search engines on the Internet
  - Examples? Capabilities?
- There are ***many*** sites that search engines can't search
  - What are some examples?
- The Internet is not the final answer; some things are just not there
  - Librarians can search databases you cannot!
  - Who's your LIBRARIAN?

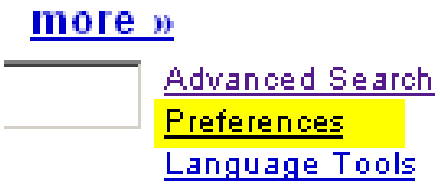
Now that we're hooked, let's step back and ask a few questions …

- What is the Internet & what isn't it?
  - It is a standardized global system of interconnected computer networks that connects millions of people; not all networks connected
  - The Internet is not the final answer; some things just aren't there
- Are search engines always the best answer to a problem?
  - Specialized/vernacular web directories may be the fastest way to research some subject; librarians are often the best answer
- Can these techniques be used elsewhere?
  - Appliances, or ports of search engines to private networks, will sometimes lack features or behave differently
  - Other search engines may have slightly different syntax, check help pages

Caveats!!!

- We cannot cover all aspects of search in one class
  - Internet and all search engines changing at Internet speed
  - Read the manual or help pages even though they're hard to find
- Experiment with more than one search engine
  - Why?
- Some things can’t be explained
  - Dig deep or keep reading
  - Might find answer or maybe not or…
  - It may not matter!
- Techniques can be used with appliances, other engines
  - Appliances--ports of search engines--lack features or behave differently
  - Other search engines may have slightly different syntax, check help pages

Set Google Preferences



- Go to Preferences
- Choose your Interface Language
  - On View menu, choose Encoding, (Unicode) UTF-8
- Search Language: set to any language
- SafeSearch Filtering: Do not filter my results
  - Depending on your cookie settings, this may be reset
- Number of Results: Display 100
- Results Windows: your choice; Click Save Preferences

Search Strategies

- You're getting ready to leave your house. You can't remember what you did with your keys. What do you do? What's the point?
  - Pick peculiarity, turn your question into a query
- For this seminar, we define a continuum of search strategies:
  - No thought required (NTR): just type in your terms
  - Basic: using basic Boolean operators, " "
  - Advanced: using Boolean operators and advanced operators/syntax

Search is often an iterative process!

NTR & Basic

- No thought required (NTR)
  - credit report request form
  - Often NTR produces too many hits: e.g. virus _____

Search Advanced Search Preferences

Results 1 - 100 of about 197,000,000 for virus

- Basic
  - AND (no need to type the AND operator)
    - Space defaults to AND most search engines
    - computer virus _____
    - kim jong il _____
  - OR (must be typed **and** capitalized)
    - computer virus OR worm _____
    - kim jong OR chong il _____

NTR & Basic

- Basic
  - - (exclusion operator aka NOT)
  - Always a space before and never a space after
    - virus –computer
    - bass –fish
    - osama –bin -laden
  - " " (phrase search)
    - "computer virus" -"trojan horse"
    - "kim jong il" OR "kim chong il"
    - "ied stands for" explosive
  - .. (number range)
    - "digital camera" "8..12" megapixels ..$1000

NTR & Basic

- Basic: taking it further
  - * ("fill in the blanks" operator; **not** a "wildcard")
    - "love or * must constantly“
    - "senior * service"
    - "pgt * amplifier"
  - + (inclusion operator)
    - star wars +I
  - ~ (synonyms and related words)
    - matrix ~organization -math
- Peculiarity and patterns are profound: most powerful thing you can take away from this class
  - Peculiar: gadolinium
  - Pattern: en in a url

General Rules

- Google ignores punctation, except
  - Punctuation in popular terms: C++ C#
  - " - $: . _
  - What was the single-dash NOT rule?
- Capitalization does not matter
  - Except for operators: site not SITE
- No spaces before or after colons

Hands-on Advanced Search

- Think about how to turn your natural language question into a query before hitting enter
- Think about how you would apply the advanced operators at work or at home
- We will not cover all advanced operators

Select Advanced Operators

- We will limit our class to seven operators
  - site
  - inurl, intitle, intext
  - filetype
  - date
  - info

Anatomy of a Result

Rocket Motors

Rocket Motors burn solid grain propellant to generate large amounts of thrust. Launch vehicle designers typically have to decide between using liquid **rocket ...**

www.spaceandtech.com/spacedata/**motors/motors**.shtml - 12k - Cached - Similar pages

- Title: **Rocket Motors**
- Snippet (text): **Rocket Motors** burn solid grain propellant to generate large amounts of thrust. Launch vehicle designers typically have to decide between using liquid **rocket ...**
- URL: www.spaceandtech.com/spacedata/**motors/motors**.shtml
- Size: 12k
- Cached - Similar Pages: Instructor will explain

Common Errors

- RIGHT intitle:"politcal stability"
- WRONG intitle: "political stability"
- WRONG "intitle:political stability"
- RIGHT "ammonium diuranate" -site:com
- WRONG "ammonium diruanate - site: com"

␣ = space

site

- site searches within a specific website
  - Learn site well and other operators come easy
    - iraq site:www.cnn.com scan URL results

- site can be used to search top-level domains
  - Search & compare # of hits
    - "brake pads" _____
    - "brake pads" -site:com _____
    - "brake pads" site:edu _____

site

- site can also narrow search to a country domain
  - Jump start research on a topic and country:
    - "opposition party" site:my
  - How could you find a list of internet country codes?
  - Two examples of global reach
    - your_search_terms site:xx
      - Search the world from your desk by changing just two letters
    - site:jp, go to Advanced Search, select Arabic
      - What did we do? What did we find?
      - How else can you use this technique?

site

- Country code doesn't mean server is in country
  - site is registered to xx country domain
  - A Chinese site (cn) could be hosted in Canada
  - site:ws
    - Why might some of these sites be registered in Western Samoa?
- Get specific indexed data from a web site
  - site:kadena.af.mil then click on Images
  - 850 OR 381 site:kcna.co.jp

site

- More site examples
  - Build site queries from right to left
    - site:apple
      - What happened?
    - Compare results and explain
      - site:apple.com
      - site:www.apple.com

URL & site

- This is a URL:
  - protocol://computer.domain.name/pathname/filename.ext
    - For our purposes, site = computer domain name
  - Thinking back to the missing keys example
    - Where in the URL does the site operator search?

Rocket Motors
Rocket Motors burn solid grain propellant to generate large amounts of thrust. Launch vehicle designers typically have to decide between using liquid **rocket** ...
www.spaceandtech.com/spacedata/**motors/motors**.shtml - 12k - Cached - Similar pages

  - Background processing: site & URL, difference?

inurl

- Searches the whole URL (i.e. searches urls of web pages)
- inurl can be useful after you discover a pattern in preliminary search results
  - site:kcna.co.jp
    - Scan URL results for patterns
  - site:kcna.co.jp inurl:item inurl:2009

inurl

- inurl queries using *a priori* (i.e. reasoning/logic/rationalism methodology) info
  - inurl:meshawir
  - inurl:2009 site:state.gov
  - inurl:blog site:xx (choose country code)
  - inurl:english site:xinhuanet.com currency

inurl & site

- What's the difference between site & inurl?
  - site:www.state.gov _____
  - inurl:www.state.gov _____
  - site searches everything before the first /
  - inurl searches the whole URL including everything before and after the first /
  - Unusual to have a site refer back to itself

    Countries, Regions
    Page links to a variety of subjects related to countries and regions of the world.
    www.myday.com.tw/guest/filter.php?http:/ /www.state.gov/countries - 27k - Cached - Similar pages

  - but not www.state.gov/../../www.state.gov

inurl

- The previous material highlights the awesome power of advanced Googling
- Patterns can be exploited to find information that Google has not yet indexed!
  - Bangladesh Chittagong Port Authority site
    - site:cpa.gov.bd inurl:berthing
    - site:cpa.gov.bd inurl:berthing inurl:yymmdd
    - www.cpa.gov.bd/berthing/yymmdd-berthing.html

intitle

- *intitle* restricts search to web page titles
  - intitle:"inspector general" site:treas.gov
  - Useful for specific topic or patterns in preliminary search
    - avian influenza site:oie.int
    - avian influenza site:oie.int intitle:"disease information"
    - avian influenza site:oie.int intitle:"disease information" 2005..2007
    - site:cpa.gov.bd intitle:"index of"

intext

- intext searches for text in body
  - Good for finding e-mail addresses, zip codes, phone numbers, and other information that is URL-like; may help with defunct websites
    - intext:ngsec.com
    - intext:opensource.gov
    - intext:"internal use only" site:gov
    - intext:gmail.com OR intext:hotmail.com site:sy

filetype

- filetype searches for specific file types
  - ipod manual filetype:pdf
  - intext:"limited distribution" filetype:txt
  - "credit report request form" filetype:pdf site:ftc.gov

  - Google's advanced search page allows only one file type per query & limits file type choices to only a handful of the thousands of known file types

date

- Bad news - Good news
  - Searching for info based on content creation date is difficult
    - No standards, no date info, or daily time stamping
    - Date created compared to date indexed
  - Consider 2 pages: one created 19990101, other 20090101
    - Search engine crawls and indexes both today
    - In terms of date indexed, the two pages are now the same
  - Search on how to search dates when you have time
  - "1 March 2009" OR "March 1, 2009"…
    - Predict the future, include 2009..20XX in searches!
    - Don’t forget about cultural dates (e.g. DPRK (Democratic People’s Republic of Korea), Iran)

info

- info provides information about a site
- Google's "nuclear option"
  - info:www.searchlores.org

Fravia's web-searching lore: Main entrance: Finding Information ...
This totally advertisement-free **AND FROZEN** site teaches basic and advanced Internet search techniques for people interested in finding any kind of ...
www.searchlores.org/ - Note this

Google can show you the following information for this URL:

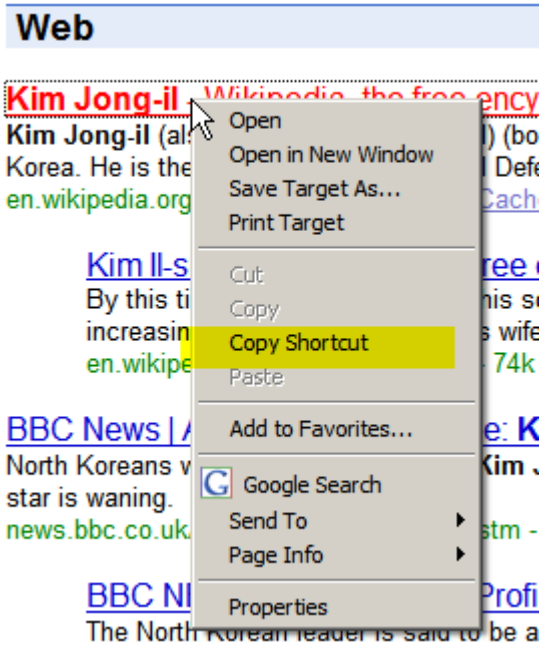
- Show Google's cache of www.searchlores.org
- Find web pages that are similar to www.searchlores.org
- Find web pages that link to www.searchlores.org
- Find web pages from the site www.searchlores.org
- Find web pages that contain the term "www.searchlores.org"

Special Topics

- Privacy issues
- No more mono-lingual manacles
- Supplemental Material (for home study)

Privacy

- To protect privacy
  - Do not click on titles
  - Instead copy & paste URL in address line



Multi-Lingual Search Tips I

- Use search engine translation tools
  - Translate "native" terms into "foreign" terms
    - Copy, paste, and search

Enter text or a webpage URL. Translation: English » Thai

Pyongyang เปียงยาง

  - Search, find, copy "foreign" terms
    - Translate "foreign" terms into "native" terms

Enter text or a webpage URL. Translation: Chinese » English

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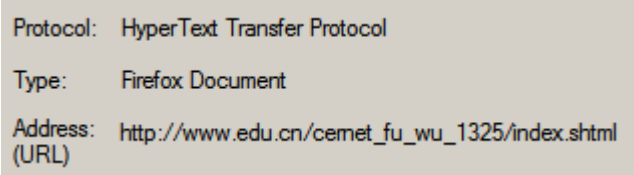
Multi-Lingual Search Tips II

- Use language variants of same site creatively
  - Compare menus, figure captions, addresses, etc

www.edu.cn

- Right click and view "Properties" of links on both pages



- View and use webpage source
  - Be prepared for a lot of hexadecimal jibberish; call IT guys

Translation help

- Multi-lingual searches
  - Combine full, unknown vernacular with partially known English (or vice versa); no operators needed
  - Good for technical terms, organizations, individuals
    - "차기 전차" tank
  - Number of results can help with translation decisions
    - "차기 전차" future tank
    - "차기 전차" next generation tank
      - Even useful for English terms and phrases

Advanced Search Form

Google **Advanced Search** Advanced Search Tips | About Google

Find results	with **all** of the words		100 results · Google Search
	with the **exact phrase**		
	with **at least one** of the words		
	without the words		
Language	Return pages written in	any language	
Region	Search pages located in:	any region	
File Format	Only return results of the file format	any format	
Date	Return web pages first seen in the	anytime	
Numeric Range	Return web pages containing numbers between and		
Occurrences	Return results where my terms occur	anywhere in the page	
Domain	Only return results from the site or domain	e.g. google.com, .org More info	
Usage Rights	Return results that are	not filtered by license More info	
SafeSearch	No filtering · Filter using SafeSearch		

Page-Specific Search

Similar	Find pages similar to the page	e.g. www.google.com/help.html	Search
Links	Find pages that link to the page		Search

Supplemental Material

- Useful information
- Tips and techniques
- Free stuff

Other Google Features

- A few examples, can you find more?
  - Base/notation conversions
    - 1977 in roman numerals
    - (0x0F + 0x0F) in arabic numerals
  - Stock information
    - stocks:intc
  - Phonebook
    - John Doe VA

Interpret specialized numbers

Google recognizes pattern of specialized numbers, including:

- UPS, Fedex, and USPS tracking numbers
- VIN numbers
- UPC codes
  - 073333531084
- Map area codes
  - 571
- Track flights (powered by flightstats.com)
  - United 134

Not all Queries are Logical

- Logical and illogical queries
  - site:cn site:com.cn
  - site:cn -site:com.cn
  - -site:cn site:com.cn
  - -site:cn -site:com.cn
    - What happened and why?
    - Which queries are redundant?
    - Which are logical? Which are not?

Human-Engine Interface

- How would you move from one to the other?

- Natural language query ⇨ Google advanced query
  - I want information from the OIE about the avian flu outbreak in 2005
  - I want to find blogs in Japan that talk about Iran's nuclear program
- Google advanced query ⇨ Natural language query
  - filetype:pdf site:edu intitle:"google search"
  - invisible OR hidden web inurl:blog -site:searchenginewatch.com

Specialty Searches & Custom Search Engines

www.google.com/options/specialsearches.html

- University
  - Narrow search to specific school website
- U.S. Government
  - Search for content located on either U.S. federal, state and local government websites
- Apple
  - Search for Mac specific information, eliminate false hits
- Patent (www.google.com/advanced_patent_search)
  - Search full text of U.S. Patent files
- inurl:cse inurl:coop site:google.com your_topic

Good Help is Hard to Find…

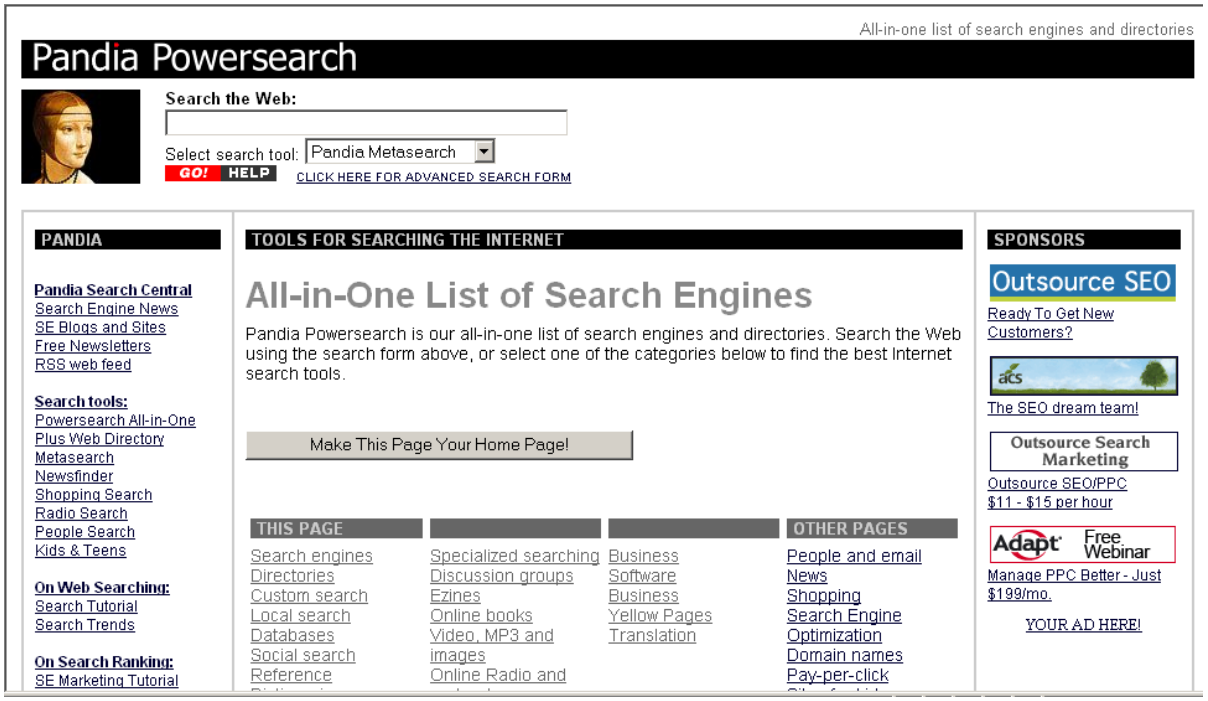
- Google
  - http://www.google.com/intl/en/help/refinesearch.html
  - http://www.google.com/intl/en/options/
- Yahoo
  - http://help.yahoo.com/l/us/yahoo/search/basics/basics-08.html
- Windows Live!
  - http://help.live.com/help.aspx?project=wl_searchv1&market=en-us

Beyond Google…

www.pandia.com

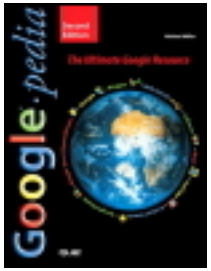
Comprehensive list of search engines and directories

- Custom search
- Local search
- Social search
- Reference
- Specialized searching
- Discussion groups
- Ezines
- Online books
- Video, MP3 and images
- Radio and podcasts
- RSS and blogs



Free Guides

Available as e-books via Safari database on OpenSource.gov



Google™pedia: The Ultimate Google Resource

Second Edition, 2007

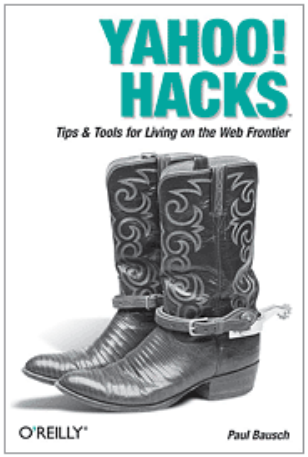
Web Search Garage

by Tara Calishain, *2004*

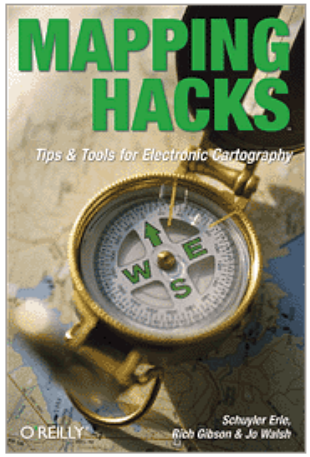
Google® Power Tools Bible

by Ted Coombs; Roderico DeLeon, 2007

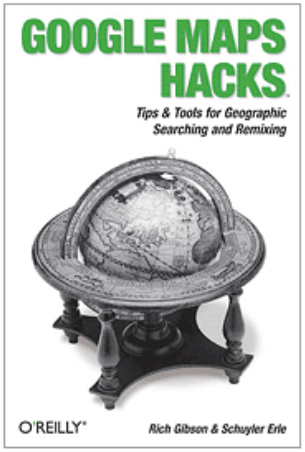
Want to program Google hacks?



Yahoo! Hacks
Tips & Tools for Living on the Web Frontier
By Paul Bausch
First Edition October 2005
Pages: 489 (More details)



Mapping Hacks
Tips & Tools for Electronic Cartography
By Schuyler Erle, Rich Gibson, Jo Walsh
First Edition June 2005
Pages: 564 (More details)



Google Maps Hacks
By Rich Gibson, Schuyler Erle
First Edition January 2006
Pages: 366 (More details)

Google Hacks, Second Edition
Tips & Tools for Smarter Searching

By Tara Calishain, Rael Dornfest
Second Edition December 2004
Series: Hacks
ISBN: 0-596-00857-0
479 pages, $24.95 US, $36.95 CA, £17.50 UK

All available in e-book format via Safari database on OpenSource.gov

Search Engine Showdown

Compares and evaluates Internet search engines from the searcher's perspective.

- Search engine features chart
- Detailed search engine reviews
- An online newsletter
- Statistical analysis
- Search strategies

www.searchengineshowdown.com

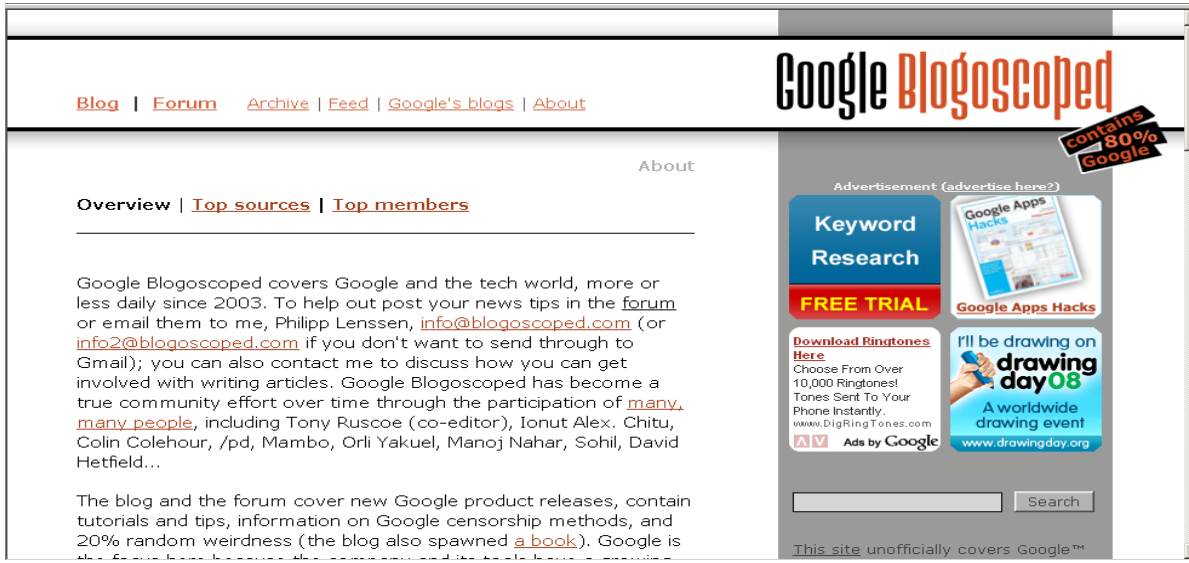
Useful Blogs

www.researchbuzz.org

Check out the list of Google Custom Search Engines…

www.blogoscoped.com

Great way to track Google product releases



Conclusion

- Parting thoughts
  - Start simple and refine your searches
  - FAVOR THE OBSCURE!!!
  - Be careful of spaces and typos
  - Too many operators or overuse of quotes can yield too few results

- Comments/Questions

Exercises I

1. Find a list Live Search advanced search keywords. Note similarities and differences among Google's advanced operators

2. Use Live's language and site keywords to find Chinese Simplified pages registered to Thailand's domain. You will need to find Live Search language codes first.

3. Use Live's language and site keywords to find Chinese Traditional pages registered to Thailand's domain.

4. What language-CHS or CHT-has the larger presence in Thailand's domain?

5. Find a listing of Yahoo! search meta words. Note similarities and differences among Google's advanced operators.

6. Use Google to find information that Google has NOT yet indexed.

Exercises II

1. Find other sites that discuss googling. Suggest using site:edu.

2. Find and explore some sites that compare search engines.

3. Go to www.touchgraph.com/TGGoogleBrowser.html & experiment with, say, www.cnn.com

4. Go to www.alexa.com; choose "Top Sites by Country"; choose a country; choose some website that interests you; explore that website using site; find a pattern in the URLs, then use site & url to explore that pattern.

5. Find bbc.co.uk pages that don't start with www

Exercises III

6. Do the queries below & explain the results
   - site:pref.*.jp at Google
   - site:pref.*.jp at Yahoo!

6. Translate Pyongyang into Hebrew and find images of North Korea using the Hebrew

8. Compare and explain; # results make sense?
   - inurl:media analysis _____
   - inurl:"media analysis" _____

9. Find www.state.gov in domains outside state.gov

Exercises IV

10. site:gov.cn finds all Chinese government web sites: T or F and explain.

11. Compare and explain; # results make sense?
    - site:cnn.com/news _____
    - site:cnn.com inurl:news _____

12. Find comma separated value files from educational sites; view as HTML

Exercise V

13. inurl:2009 site:usgs.gov
    - Enter above query at
        - www.dogpile.com
        - www.mamma.com
        - www.vivisimo.com
    - What happened? Why?
    - What do these results tell you?
14. Try www.browsys.com