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ONLINE DATABASES

Complex Syntax Lives On

By Carol Tenopir

ALL THE TALK OF SIMPLISTIC TEXT-box interfaces as the goal leaves the impression that there is no need to know how to use special characters or syntax, that all systems are being dumbed down. Even library school students groan when they are first told to learn the complex commands of an "old-fashioned" power system like Dialog. They expect systems where the complexity is behind the scenes and everything is done for them. Despite these new attitudes, commands and complex syntax are still needed in online searching, even on the web.

In his "On the Net" column in *Online Magazine* (www.onlinemag.net) and his SearchEngineShowdown.com, Gregg Notess, reference librarian at Montana State University, often describes techniques for power searching. The "Search Engines Features Chart" on [SearchEngineShowdown](http://SearchEngineShowdown.com) shows which Boolean operators are supported by each major search engine, as well as what field searching or limiting options are available. If truncation and phrase searching are offered, appropriate symbols or syntax are listed. Narrowing searches by restricting a query word to a field such as "inurl" or "intitle," plus limiting to a specified language, filetype, or domain, though not always intuitive, is particularly useful.

"On the Net" in the September/October 2005 *Online* provides details on restricting a search to a subset of domains, such as ".mil" or ".edu" or even a domain subset such as ".usmc.mil" or ".state.edu" in many search engines. Searchers must know to enter first a domain restrictor command such as "site:" before the domain and how to use the Boolean OR for each system and any restrictions of query length for specific search engines. Google, for example, allows only a 32-word query (up from the previous ten).

Complex, system-specific commands seem less daunting when an effective simple search can be done without

them. Still, librarians and other power searchers must learn them for the same reasons they learn the commands and features of commercial services. Many seemingly effective end user searches are much improved with advanced techniques.

Controlling results

Nearly every major commercial search system lets users better control their results through standard special features. Like web truncation/stemming or wildcards, Boolean operators, phrase searching, and field specification are still the most common advanced features.

Library pathfinders and instruction are still important to teach...potential power users

Almost all allow short field tag searching (such as "au="); Boolean AND, OR, NOT with parenthetical nesting; phrase searching using "double quotes" or special proximity operators such as "SAME" to indicate same paragraph, same sentence, or same field; and restricting by language or document type. It is better now that most systems list all possible values for languages or document types in a drop-down menu or pick list.

Searches can get fairly complex on almost every system—with multiple Boolean operators nested, selected restrictions to a language, stemming to get various word-form endings, etc. Most college students feel that library systems are complicated and difficult to use, but the same students use the same features on a web search engine.

High-power features

Special features are now even more powerful, especially those based on unique content. ISI's Web of Science built much of its uniqueness on cited reference searching and is one of the most frequently used databases by faculty and graduate students. The concept

of searching on citations in an article to find related items or of using the number of times an article is cited to rate it is so widely accepted that the ranking algorithm for Google Scholar is based on times cited.

Academics in every discipline understand citation searching, but understanding of other special search needs varies with content and discipline.

For example, the American Chemical Society's CAS SciFinder and SciFinder Scholar provide special features such as chemical structure searching for the unique content of chemical information and the needs of chemists (www.cas.org).

SciFinder 2006, launched last August, has added similarity searching for substructures of substances and more refined structure queries and chemical reaction searching. These tools are aimed at chemists, who understand chemical reactions and structures, but they also require an understanding of search algorithms and what is being searched and retrieved. Systems like this are allowing more sophisticated precision search tools, rather than "dumbing down" their search engines.

Searchers motivated to find information and who understand the content of their discipline readily cope with complex search features. These features are not intuitive even in the simplest search engines, but they are important. The systems continue to provide the power features, but it takes a skilled searcher to use them well. Library pathfinders and instruction are still important to teach complex search features to potential power users.

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