

Boolean Search Tips

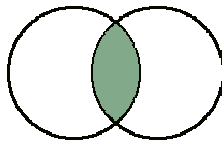
<http://www.lscclib.org/library/guides/boolsea.htm>

Boolean searching is based on a system of symbolic logic developed by George Boole, a 19th century English mathematician. Boolean logic is used for database searching and is supported by most Web search engines and library databases. Boolean search techniques may be used to perform accurate searches and should eliminate many irrelevant search results.

When you perform a Boolean search, you search the computer database for the keywords that best describe your topic. The power of Boolean searching is based on combinations of keywords with connecting terms called **operators**. The three basic operators are the terms **AND**, **OR**, and **NOT**.

AND

The operator **AND** narrows a search by combining terms and retrieves every document that contains **both** of the words specified. To locate information on Internet security issues use:



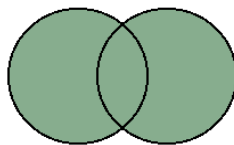
Internet AND security

The Venn diagram above illustrates the **AND** search. The left circle includes all records including the word *Internet*. The right circle includes all records including the word *security*. When the computer searches its database and retrieves every record containing both of the words *Internet* and *security*, only the records from the intersecting, green shaded area will be retrieved.

Several keywords may be used to narrow searches with the **AND** operator. To find information on the safety of Internet security in the banking industry you might use *Internet AND security AND banking*

OR

The **OR** operator broadens or widens a search to include documents containing **either** keyword. The **OR** search is particularly useful when there are several common synonyms for a concept or variant spellings of a word. To find information on the topic of weight lifting use:

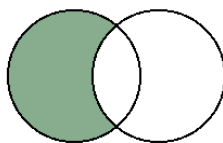


weightlifting OR body building

As the diagram shows, the computer searches for all documents containing *weightlifting* (left circle) and all documents containing *body building* (right circle). All documents represented by both circles will be retrieved. **OR** searches often produce large numbers of documents.

NOT

Combining search terms with the **NOT** operator narrows a search by **excluding** unwanted terms. To find information on gambling but not the lottery use:



gambling NOT lottery

The diagram illustrates the search by retrieving documents including the keyword *gambling* (left circle) and excluding documents with the term *lottery* (right circle). Retrieved documents are shown in the green shaded area.

Boolean search terms may be combined in various ways to carefully refine searches. Examples:

oceans **OR** lakes **AND** pollution

nurses **AND** malpractice **NOT** doctors

children **NOT** infants **AND** psychology

Most databases and search engines support complex Boolean searches. If you have a complex search using more than one operator, you can **nest** your search terms. Search terms and operators included in parentheses will be searched for first, then terms and operators outside the parentheses. A search for:

(ADD OR attention deficit disorder) AND college students

will search for documents containing either the acronym *ADD* or the phrase *attention deficit disorder*, then narrow the search results only to those documents which also contain the words *college students*.

Many library databases and Internet search engines also support variations on the basic Boolean operators. Known as **proximity operators**, these include **ADJACENT**, **WITH**, **NEAR**, and **FOLLOWED BY**. **ADJACENT** and **WITH** require that the words appear next to each other, **NEAR** requires that the search terms appear in close proximity and **FOLLOWED BY** requires that one term follow another.

Pay attention to **phrases** in search strings. If you are looking for information on the *capital gains tax*, you need to enter that part of your search string as a phrase. Otherwise you will retrieve irrelevant documents which contain all of the keywords, in any order, anywhere in the document. Most search engines and databases support phrase searches. Internet search engines usually require quotation marks to indicate phrases: "*capital gains tax*". The FirstSearch databases use the proximity operator **w** (with) to paste phrases together: *capital w gains w tax*.

Another useful search parameter that may be used with some search engines and databases is **truncation**. Truncation allows the searcher to insert a truncation symbol, usually an ***** or **?** For example, the search term *teen** will locate the terms *teens*, *teenagers*, and *teenaged*. Some search engines automatically truncate your search terms to find plural, -ing, or -ed endings. FirstSearch requires a **+** as a wildcard at the end of a word to find simple plural forms: -s or -es, but does not support truncation in the middle of a word.

All databases and search engines use different combinations and/or symbols for proximity operators, phrase searches and truncation symbols. If you try a term or symbol that does not work check the help files of the individual database or search engine for the correct combination.