

# Database Searching with Boolean Operators: A Quick Guide

To get the best results, it is important to search your topic in a way that the database will understand. While database search interfaces can look very different, most of them use the same commands to state the relationship between search terms. These common commands are known as **Boolean operators**.

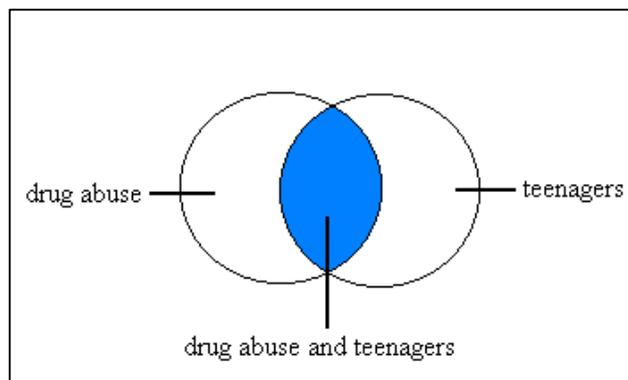
The Boolean operators **AND**, **OR**, and **NOT** tell the the database how to group your search terms and in what order to search for each term. They can be used individually to join two terms, or they can be used in combination, to create more complex search statements. Note that some databases require you to put the Boolean operators in uppercase letters (e.g., PubMed).

In the examples below, the area shaded in blue indicates the results that would be retrieved by each search statement.

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**AND** is used between keywords with different meanings. AND will **narrow** a search.

Example search statement:     **drug abuse AND teenagers:**

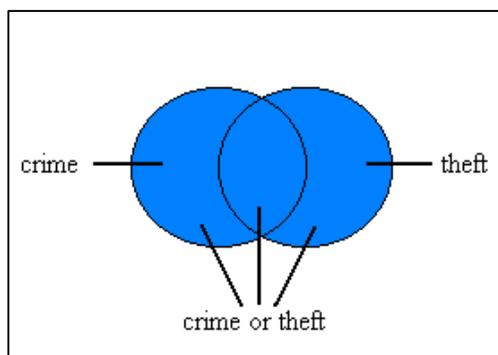


This search retrieves only item records that contain **all** of the words entered. That is, both the words "drug abuse" and the word "teenagers" must be present in the same record.

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**OR** is used between keywords that are similar or related in meaning. OR will **broaden** a search.

Example search statement:     **crime OR theft**

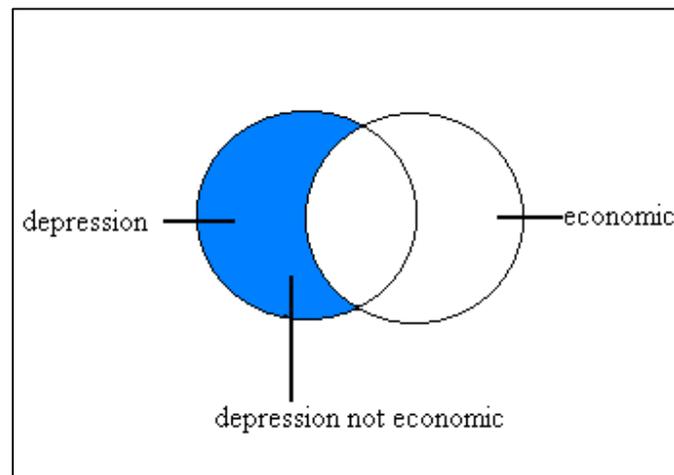


This search (crime or theft) retrieves records that contain **any** of the words entered. The records may contain either the word "crime" or the related word "theft" and possibly (but not necessarily) both. As you can see by the shaded area, using OR increases the number of search results you will get.

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**NOT** is used to **exclude** concepts from a search. For example, if you wanted information about mental depression, a simple keyword search for "depression" would retrieve many results. Some results would deal with mental depression, but others might be about such topics as economic depression. To eliminate these unnecessary results, you can use the Boolean operator NOT. (Note: Some databases use AND NOT.)

Example search statement:      depression NOT economic



As you can see by the shaded area above, this search would retrieve documents that contain the word "depression." Of these documents, however, the computer would eliminate any that also contain the word "economic." NOT should be used sparingly, however, as you may unintentionally eliminate useful documents from your results when you use it.

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## Combining Boolean Operators

You can use Boolean operators to combine related terms to do a more complex search rather than having to do multiple searches using variations on the words that best express the key concepts in your topic.

If using both AND and OR in a search, you must also use brackets (parentheses) to group together synonyms or related words for the same concept. This clarifies in what order to execute the search. Otherwise the database may not be able to interpret your search and you might get no results at all.

Examples:                      crime AND (workplace OR employment)

(crime OR theft) AND (workplace OR employment)

The advanced search screens in many databases can make this grouping easier. In the following example, use each box joined by AND to enter the separate concepts in your topic, and within each box use OR to add additional keywords that express the same concept:



The screenshot shows the EBSCO Academic Search Premier search interface. At the top left is the EBSCO logo. The text "Searching: Academic Search Premier" is displayed, followed by a link "Choose Databases". Below this are three search input rows. The first row contains the text "crime or theft" in a text box, a dropdown menu labeled "Select a Field (optio...", and a green "Search" button. The second row starts with an "AND" dropdown, followed by a text box containing "workplace or employment", another "Select a Field (optio..." dropdown, and a plus/minus button. The third row starts with another "AND" dropdown, followed by an empty text box, a "Select a Field (optio..." dropdown, and a plus/minus button. At the bottom of the interface are three links: "Basic Search", "Advanced Search", and "Search History".

For assistance with your research, including formulating search strategies using Boolean operators, please visit the Research Help Desk in the Library.



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Patrick Power Library, 2015