

Boolean Operators – Part 1

Welcome to “an introduction to Boolean Operators”

In this brief tutorial, you will learn:

- (1) What Boolean operators are
- (2) What each specific Boolean term means, and
- (3) Why they’re necessary for effective and efficient use of search engines

Let’s start with an example.

Let’s say that you’ve been given a can of cocoa and a carton of milk and asked to do something with them.

Clearly, both items have unique sets of characteristics and uses.

- *Cocoa* is powdered, brown and often used in baking
- *Milk* is liquid, white, and primarily used as a beverage

But because you’ve been asked to do something with both of them, you are only interested in how those two items intersect – that is, in cases where both items can be found in the same place at the same time.

So, being the keen researcher that you are, you decide to look up cocoa and milk in a web-based search engine to figure out what you can do with them.

To make sure you only get results that have both milk and cocoa in them, you know you will have to use Boolean operators – and more specifically, you will need the Boolean operator AND.

When you place the word AND in between two words in a search string, and *write it in capital letters*, you are directing the search engine to *only* retrieve results that include *both* terms in the string – and not results that include just one or the other.

In this case, you will be retrieving results that have both the word *cocoa* and the word *milk* in them, but neither word alone.

AND makes searches more specific, and is generally used to bring unrelated concepts together in a search.

Another commonly used Boolean operator is OR. When you place the word OR – again, in capital letters – between two words, you are directing the search engine to retrieve all results that include *either* one, *or* the other, *or* both words together.

For instance, if you wanted to search for milk substitutes (like soy milk and almond milk) instead of regular milk, you might write the search string:

“soy milk” OR “almond milk”

OR is an inclusive term that is best used to bring related terms together in a search.

The last Boolean operator that you are likely to encounter when using a search engine is the exclusion operator NOT. When you place the capitalized word NOT between two words in a search string, you are

directing the search engine to retrieve articles that include the first term, but that *exclude* the second. For instance, if you wrote *cocoa powder NOT beans* you would get results that talked about cocoa powder, but that do not include the word 'beans' at all.

NOT is very specialized and is used less frequently than AND and OR. In general, NOT is used to eliminate results that are related to your topic but that are not desired.

Boolean operators can also be *combined* with one another to produce a highly effective search string.

For example, if you wanted to search for results that talked about cocoa and at least one milk alternative could enter a search string like:

("soy milk" OR "almond milk") AND cocoa

Or maybe we want to retrieve results that talk about cocoa AND milk AND butter. For that search, our string would look something like this: -----

Combining Boolean operators is a good way to broaden and narrow your results, while maintaining control over what information makes it into your list.

Unfortunately, the results can get confusing and hard to predict when you aren't careful with exactly how you are combining them.

In part 2 of this tutorial, you will learn how to use and combine Boolean operators in an organized, systematic and effective manner.