

# Search Engines: Keyword Search & Boolean Search

## Transcript

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Hi, I am going to explain keywords search and Boolean search.

What is keywords search?

What is Boolean search?

More importantly, why do we bother with learning these 2 concepts?

First, let's take a look at keywords search.

Keywords are the most important words in your idea or topic. Keywords are also called "search terms" that tell the search engine what you are looking for.

When you see the search box in a search engine, take a moment and think about the words that will appear on the web page that would have your answer. If you were the author of that web site or article, how would you write that page and what words would you use

For example, if I am interested in finding articles about those robot cars that do not require a human driver, what terms should I use?

I can try "robot cars". How about "Google cars" which I know Google has been working on? Mmmm, how about Lexus, Toyota? They are working on this kind of technology too. I sure do not want to type the name of every car manufacturer. Ahhh, I know, how about "self-driving cars, autonomous cars, driverless car"?

You see there are many terms that can be used to describe such technology. If you only use "robot car", you may miss finding the other web sites that use different terms. That's why it may seem redundant, but please do spend a bit of time thinking about the search terms. Sometimes you have to do a few queries in a row to zero in on exactly the key idea. Take a look at the search results because those results may give you an idea of what other terms to use in your search.

-----Next, I will talk about Boolean search?

Having keywords is not good enough to have an effective query.

We have to find a way to combine the keywords. Using Boolean logic is the simplest way to construct a search. What is Boolean search?

Boolean logic is named after the nineteenth-century mathematician George Boole. Why would a nineteenth-century mathematician have anything to do with the search engine that we are using today? Because Boolean logic is an important concept.

Let me give you a simplified version of Boolean search.

When you want a combination of terms, you use AND. When you want at least one of a group of terms, you use OR, and when you don't want something, you use NOT. It really doesn't get any easier than that.

Let me give you examples:

I would like to find images of Minions with banana.

In Google, I will type "Minions and banana". By the way, you do not need to type the word "AND" in Google because Google by default puts the Boolean operator AND between words.

When you look at the search results, each picture has Minion and banana.

Now what happens when I type "Minion OR banana". By the way, in Google, the Boolean operator OR has to be uppercase.

You will see that not every picture I find will have Minion any more. Not every picture I find will have banana either. As long as the picture has banana or Minion, Google will display it.

What if I want to find pictures of Minions that do not have banana, it may not be easy because as Minions loooove banana. We are going to need a little trick. Let's make use of the Boolean operator "not".

In Google, the syntax will be "Minions -banana" Minions minus banana. Instead of typing "not", you will use a "minus" sign.

Most of the pictures of Minions that I find should not have the banana any more. Why did I say "most of the pictures"? Because there are other computer algorithms such as "page ranking" feature that will influence the search results. Search engine like Google is a complex entity and Boolean logic is only part of the search engine!

Even though Boolean logic is very useful to narrow results or expand your search, didn't I tell you that it was over a century old?

Why do we bother with keyword search and Boolean logic?

You may wonder: I can type a whole sentence in Google and ask Google to, let's say, "show me some pictures of Pluto".

Search engines are so powerful that they will take any words you type in the search box and return the search results.

SIRI on your iPhone uses natural language processing to find you information.

Instead of giving her a few keywords such as "Pluto and pictures", you TALK to Siri.

Since we can use this so called "conversational search", some people may even argue that the keyword search and Boolean search are dying art! Is it a waste of time to talk about Keyword search and Boolean search?

Well, not really. First, in many databases at our Libraries, you can still select the "Boolean operators" in your search. Companies like EBSCO, Elsevier use Boolean search operators in their databases such as Academic Search Premier, Business Source Premier or Scopus. Boolean and Keywords go hand-in-hand in library databases.

Going back to the search engines, you may notice that the developers of search engines try very hard to cover up, hide and remove Boolean logic interfaces. You can only see the traces of Boolean Search in Google by going to the Advanced Option.

However, as I have told you earlier, when you enter two words in Google, Google by default will include the Boolean "AND" operator in the search query. For example, when you search chocolate ice-cream, Google will automatically assume that you are searching chocolate AND ice-cream. As you can see, Boolean search is everywhere. Next time when you search Google or library databases, think about keyword search and Boolean search. You will be surprised by the power of these techniques! Thank you for watching!