Boolean Operators
and Other Tricks

PUTTING YOUR SEARCH TERMS TOGETHER
There are two things that determine what information we find.... The **places** we look and the **words** we use.

As you do background research note the vocabulary of your topic. These are the search terms you will use to search the scholarly literature in the databases.

The words we collect are called “keywords”.

The database also has a thesaurus where you can learn the language of the database. (See the subject terms tutorial for more about this topic.)
Talk to the Database

- We are very used to writing a complete search question in the search box of a search engine like Google. That is called natural language searching. Some (few) library databases will allow for natural language searches but even those that do will give better results if you use the communication method prescribed by the database.
- That means putting single words or short phrases in the search boxes and connecting them with the built in Boolean operators.
The basic Boolean Operators are:
- AND
- OR
- NOT

Some additional tricks are:
- Truncation
- Quotation Marks
- Parenthesis
Boolean logic can be used to compare and manipulate sets using just three operators: AND, OR and NOT. For example:

- Strawberry OR vanilla OR chocolate
- Strawberry AND vanilla AND chocolate
- (Strawberry OR vanilla) NOT chocolate
Using AND between your search terms will tell the database you want to see all articles that have all of the words (concepts) included in the single article. In this example the article would have all three concepts: Chocolate, Strawberry and Vanilla.

Using AND will narrow your search to fewer retrievals.
Using OR between your search terms will tell the database you want all articles with any of the terms in the search. This will broaden your search. In this example your would see anything about chocolate, strawberry and vanilla.
Using NOT will eliminate the results with the term you use following NOT.

In this case you would get
Strawberry OR Vanilla NOT chocolate

NOT will narrow your search. It is very useful if you are searching for a concept that is common to different topics for example:

Pot AND Pan NOT marijuana
Boolean works wherever you search

- Some Boolean operators are built into the databases but some are not. Boolean operators give you great ways to use the search terms that will help you find what you want.
- It is a particular way to organize and express your search terms so that you have more control over your search results.
- You can use Boolean operators in Search Engines, too, to control your search.
Truncation

- Truncation will help you do more than one search at a time. You put the truncation symbol after a root word to retrieve all of the variations that follow.

- This is especially useful to for searching for the singular and plural of a single word at the same time.
Quotation marks will keep a phrase together. If you do not use the quotation marks, the database might search for each word separately—for instance:

- “relationship marketing” or “Boolean operator”

Parenthesis are used to enclose words that are similar concepts combined with an OR. This can save you from having to do several searches.

- Chocolate and salt, caramel and salt, taffy and salt becomes
- (chocolate OR caramel OR taffy) AND salt
We start with a research question:
- How does relationship marketing work in libraries?

Then identify the main concepts of the question
- In this case relationship marketing and libraries are the main concepts
- These are the words we will use in the database.
  - “relationship marketing” is a phrase so I will put it in quotation marks.
  - I want the singular and plural of library so I will use truncation, librar*
    (This will also give me information about librarian and librarians)

Finally, I want the information to be about both concepts so I will join them with AND

“relationship marketing” AND librar*
Another example

- Question- What types of therapy are used to treat eating disorders?
- Main concepts-- What types of therapy are used to treat eating disorders?
- Search statement—
  therap* AND “eating disorder*”
- Notice: the use of truncation to access plural and singular and the use of parenthesis to keep the phrase together
What kind of dog is the best companion for stress relief?

We have three main concepts, words that are plural, and words that likely have synonyms we will want to try.

Dog* AND companion* AND stress

is the simplest search but may not get what we want because studies are often very specific. ..
(labrador or collie or poodle) AND companion AND stress
or
(labrador or collie or poodle) AND “stress relief”
or
(labrador or collie or poodle) AND companion AND “stress relief”

We have lots of words to use, and different ways to combine them... try several options!!
Two ways to use your Boolean Search Statements

- In a search engine the search would look like this:

  ![Search Engine Example](image)

- In a database the search would look like this:

  ![Database Example](image)
Now you try it!

Remember this:

- When searching it is necessary to try various terms in various places to make sure we get the BEST stuff.
- There is no perfect search phrase.
- Less is best. Be brutal in cutting out words from the research question to make a streamlined search statement.
think about it as a puzzle

- You keep putting the pieces together until they work for you.