

Search Techniques



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Targets

By the end of this unit you will be able to use the **most suitable methods** to carry out your search.



Process your search strategy

Introduction

According to your needs you will have to **identify your search terms** and **combine** them in order to **narrow** or **broaden** the **results**.



Search by fields and lists

Information retrieval tools ([catalogs](#), [databases](#) etc.) allow search by [fields](#) where you can enter the search terms: [author](#), title / [abstract](#), [subject](#), year, language, type of [document](#) etc.

It is possible to use the list [browsing](#) option as well, in alphabetical order, starting from the term entered.

All search tools allow you to perform a **simple or advanced search**.

A screenshot of a search interface. The top section has four search fields with dropdown menus: 'Free search', 'Author', 'Title', and 'ISBN/ISSN'. The 'Title' field contains the text 'Analytical Chemistry'. To the right of each field are icons for clearing the field and a green document icon. Below this is a section titled 'Title list' which displays a list of search results in red text, each followed by the number of documents found in brackets.

Title list	
Analytical Chemistry	[7 Documents]
Analytical Chemistry: qualitative and quantitative analysis	[1 Document]
Analytical Chemistry: qualitative and quantitative analysis: for technical college	[1 Document]
Analytical Chemistry applied to feed	[2 Documents]

Glossary

CATALOG

Ordered list of documents owned by one or more libraries, described on the basis of consistent standards and uniform principles. The catalog has the fundamental purpose of allowing the user to locate the documents s/he is looking for, owned by the library. In most cases, the catalogs are accessible online and are defined OPAC (Online Public Access Catalog).

DATABASE

Organized collection of information, data and documents on digital support, accessible through multiple query channels.

FIELD

In computer language it indicates the minimum informative unit of a database record (for example: Author, Title, Subject) intended to receive a homogeneous group of data. The term also indicates the relevant query box in a search form.

AUTHOR

The person (personal author) or the institution (collective author) who is primarily responsible for the intellectual content of a work.

ABSTRACT

Essential summary of the content of a document.

SUBJECT

Term or combination of terms, expressed in a controlled language, which describes the topic of a work.

DOCUMENT

An entity in any form and support, containing useful information for consultation, study and research. Written documents (books, articles, manuscripts, etc.), iconographic documents (images, portraits, drawings, photographs, etc.), audio (phonograph records, tapes, etc.), visual (film, microfilm), audiovisual (in which the audio and visual ones are included), realia (coins, medals, reliefs).

BROWSING

In a bibliographic search it indicates the action of scrolling an ordered list of terms.

Insights

A simple search has a single box for entering the terms, which are searched in various sections of the document description.

Ex. *Dante Divine Comedy*

Advanced search involves structuring the query in several fields, combined with boolean operators.

E.g. title field = *Divine Comedy* AND author field = *Dante*

Results

All search techniques require a suitable strategy, otherwise the results may include information not relevant to your research (**noise**).

It is therefore essential to learn how to develop a **search strategy** that allows you to save time and find a proper number of results.

Glossary

NOISE

In information retrieval, the non-relevant documents retrieved in a search.



Combine your search terms

Boolean operators

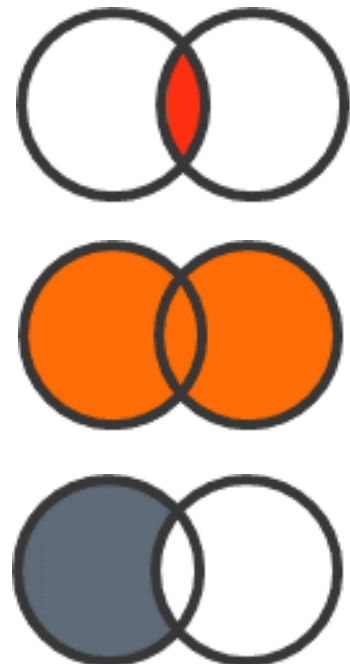
Once identified the terms, you can use them alone or combined with special connectors called **Boolean operators**.

Many research tools do not consider significant those terms that recur often but are not meaningful (**stop words**): articles, prepositions, conjunctions, etc. which can then be filtered out.



The **Boolean operators AND, OR and NOT** help you to combine your search terms.

- ❑ **AND** (+, &): Each item retrieved will contain all the words entered. Usually it is the one inserted by default by the search tools
E.g.: *women AND work*
- ❑ **OR**: Each item will contain at least one of the words entered. It is very useful for searching with synonyms.
E.g.: *women OR females*
- ❑ **NOT** (-, AND NOT): Excludes items containing the word entered after the operator.
E.g.: *women NOT mothers*



All operators must be written in **capital letters**.

Wildcards symbols

Wildcards are symbols that represent one or more letters in a word.

SIMBOLO	ESEMPIO
<p>*</p> <p>Represents more characters; it is typically used at the end of a root word, when it is referred to as "truncation"</p>	<p><i>alcohol*</i> is equivalent to <i>alcoholic</i> OR <i>alcohol</i> OR <i>alcoholism</i></p>
<p>?</p> <p>Represents one character anywhere in the word</p>	<p><i>wom?n</i> is equivalent to <i>woman</i> OR <i>women</i></p>

They are very useful to maximize your search results.

Each database and internet search engine use the wildcard differently. To find out how they work in your favorite database, look for the "help" link (usually along the top of the screen).

Glossario

WILDCARDS

Symbols that replace one or more characters at the beginning, end or middle of a word. Wildcard characters may vary from a database to another (i.e.: *, \$, !).

More operators and symbols

There are **other operators** (NEAR, WITHIN etc.) useful to further refine the search results which may vary by type and method of use, according to the database.

NEAR: is a proximity operator and requires that the terms occur simultaneously (as using AND) but close together, separated by a maximum of N words.

*Ex: NEAR women / 5 work
means that the term work must appear within 5 words from the term women.*

The **brackets** are used to group and specify the priority order of terms in the search. What is included in brackets takes precedence. You can use multiple sets of brackets in the same search string.

Eg. (Women OR females) AND work ((teenager OR adolescent) AND media) NOT television

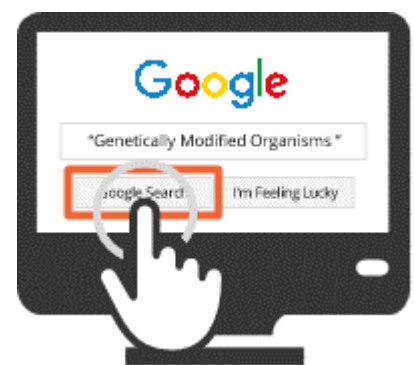


Narrow down your search results

Inverted commas

The use of **quotation marks** (" ") allows the exact search of the entered sentence.

This device can significantly narrow down the results and is useful when searching for **details or idiomatic expressions**, titles of works, proper names of people or authorities, concepts that are commonly expressed with a set of words.



Insights

Usually the so-called stop words are not taken into account. If we want these words to be included in the search results, we need to type a plus (+) in front of the word at issue or enclose the expression in quotes.

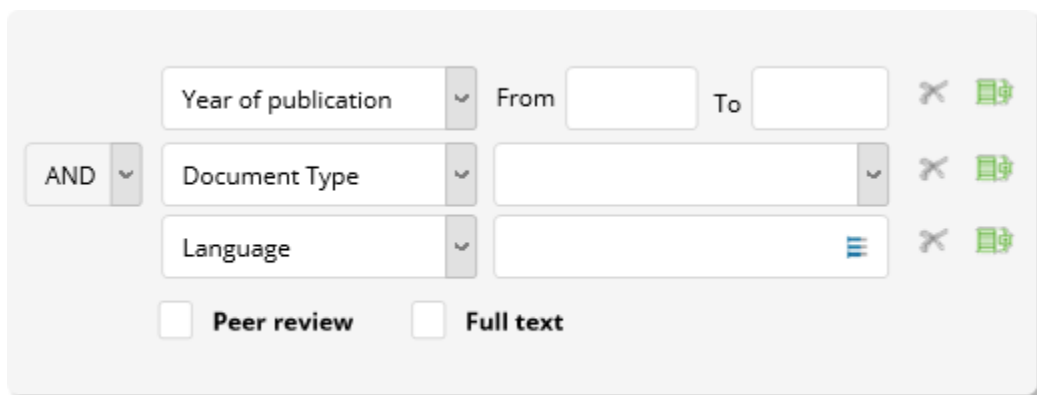
Eg. *Baggage + hand* or *"hand baggage"*

Filters

Filters allow you to **narrow down the results of your search** and may vary depending on the tool you use.

Eg:

- ☐ **Year of publication:** to select documents referring to a given period (eg 2003, 1990-2000, 2000-)
- ☐ **Document Type:** to select particular types of documents (eg articles, books, patents, etc.)
- ☐ **Language:** to select documents written in a specific language
- ☐ **Peer review:** to select items evaluated by experts
- ☐ **Full text:** to select fully accessible documents online.



The image shows a search filter interface with the following elements:

- A dropdown menu labeled "Year of publication" with a downward arrow, followed by "From" and "To" input fields.
- A button labeled "AND" with a downward arrow, followed by a dropdown menu labeled "Document Type" with a downward arrow, and an empty input field.
- A dropdown menu labeled "Language" with a downward arrow, followed by an empty input field.
- Two checkboxes: "Peer review" and "Full text".
- On the right side, there are three icons: a green 'X', a green list icon, and a green document icon.

Summary

By the end of this unit you should be able to:

- effectively **formulate your search strategy**
- usefully combine terms with **boolean operators**
- use **wildcards and filters**.



End of unit test

Choose the correct option, select it and read the feedback for your choice.

Indicates which of these statements is true.

The search with the words *solar** OR *eolic** results in:

1. All documents containing the term solar but not the term eolic
2. All documents containing the term solar and also the term eolic
3. Both the documents containing the term solar and the documents containing the term eolic
4. The search cannot find documents containing the terms "solar panels"

The search *protons AND gluons* produced few results. Which operator do you use to increase the number of results found?

1. You can use AND NOT
2. You can use filters
3. You can use OR
4. You can use NOT

Select the correct answer.

You have to search for information on the Beatles and John Lennon's solo career; will you enter:

1. John Lennon
2. Lennon AND NOT Beatles
3. Lennon OR Beatles
4. Beatl *

You are looking in the catalogue for books written on Leonardo in the 20th century:

1. Enter the subject field "Leonardo da Vinci"
2. Enter the subject field "Leonardo da Vinci" and use a year filter: "1900-1999"
3. Enter the title field "Leonardo da Vinci in the 20th century"
4. Enter the title field "Leonardo da Vinci" AND "1900"

You have to do a research on the socialist movement in Sicily. Which of the given combinations will let you get more targeted results?

1. Socialism AND NOT Sicily
2. Socialism AND Sicily
3. Socialism OR Sicily
4. "Socialism in Sicily"

If you enter "eutrof*" in a bibliographic database which results can you get?

1. No results because the word does not exist
2. All results containing words starting with 'eutrof'
3. Only the results in the singular
4. No results containing the term eutrophy