

Database Search Strategy Worksheet

State your search question (in a complete sentence):

Example: What are some applications of robots in biomedical engineering?

Develop concept terms and relationships

- Using your search statement, underline the most important words to convert into search concepts.
- Develop synonyms for the concepts. These can originate from ordinary spoken language, formal terms such as those used in medicine or chemistry, a database's thesaurus or controlled vocabulary, descriptors used in citations, catalog subject headings, and course materials.
- Connect terms by the Boolean operators AND, OR, NOT.
- Identify in which section, or *field*, of a database record the terms should be located: title, author, abstract, body text, keywords. Should the terms be located in the same field?
- Identify opportunities for truncation, wildcards, and stemming.
- Identify opportunities for proximity of terms, e.g. whether terms should be adjacent to one another, separated, or appear in a particular order.

List search “delimiters” such as:

- Language _____
- Publication dates _____
- Document types (journal articles, peer-reviewed articles, dissertations, conference proceedings, trade publications, patents, etc.) _____
- Specific publications or authors _____
- Disciplines (engineering, social sciences, humanities, natural sciences) _____
- Other _____
- Other _____

Tips

- Boolean statements can be nested infinitely, e.g. ((concept term 1 OR concept term 2) AND (concept term 3 OR concept term 4) NOT (concept term 5 or concept term 6)). Use parentheses wherever possible to clarify groups of concepts and make sure that the parentheses are balanced. If the search results appear unsuccessful or confusing, split the search statements into simpler statements and experiment with different ways to connect them.
- In many databases, the NOT Boolean should be the last operator in the sentence.
- Databases vary in how they handle phrases: most use quotes, others use connectors such as w/.
- Most databases ignore terms such as *and*, *not*, *or*, *near*, *a*, *an*, *the*, and non-alphanumeric characters (*, /, !, etc.) unless they are placed in quotes.

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In *most* databases and online catalogs, the following operators help you expand and refine your search statement:

- **AND** use to limit searches and to combine searches, e.g. “*biomedical*” AND “*robots*”
- **OR** use to expand searches and to search on similar topics or synonyms, e.g. *robots* OR “*autonomous agents*”
- **NOT** use to omit or discount a term from a search, e.g. “*biomedical*” NOT *pharmaceuticals*
- ***** use an asterisk (wildcard) to truncate a term in order to search on multiple variations of a root word, e.g. *robot** for *robot*, *robots*, *robotics*, *robotech*, etc. as well as to search on the plural forms of many words; in some databases, an asterick can be placed in the middle of a word, e.g. *wom*n* for *women* OR *woman*
- **()** use parentheses to group or nest searches, e.g. (*biomedical* OR “*medical device*”) AND (“*robots*” OR “*autonomous agents*”); grouping and nesting can be expanded upon infinitely
- **“ ”** use quote marks to specify an exact phrase and to use terms that otherwise could be construed as a search operator, e.g. “red, white, AND blue,” or an article, e.g. “*AN* Wang, *THE* founder of Wang Laboratories”

	Initial Term		Synonym 1		Synonym 2
Search Concept 1		OR		OR	

AND

Search Concept 2		OR		OR	
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AND

Search Concept 3		OR		OR	
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