Searching

Introduction

This unit covers how to choose and use a database correctly, & how to craft your research question (& related vocabularies) into search queries that can be understood by computers.

Objectives:

- Distinguish a database from other types of information collections
- Identify the coverage of a database
- Understand the concept of field, or advanced searching in a database
- Construct effective search queries using logical operators and related strategies

Databases

data·base: noun 1. A collection of data arranged for ease and speed of search and retrieval.


This quality of being "... arranged for ease and speed of search and retrieval" is what distinguishes a database from a computer network like the Internet, which has no standardized organization principle.

Databases may sometimes be accessed through the Internet, but their contents are typically not retrieved by search engine services like Google or Yahoo! Most are available through separate Web sites that charge a fee for use, normally paid by libraries on behalf of their users. But Google or Yahoo! (and many other Internet search utilities) create databases of Web sites and organize them into directories by subject.

Database Coverage

Every database contains only certain types and amounts of information, a characteristic called coverage. This information can typically be found in the database itself under links such as "About [name of database]," "Database information," "Title list," or "Sources," etc. Web-based databases are typically accessed from a link that is annotated with some information about coverage. Databases published in paper form normally locate this information in the front of each volume or in an introduction.

Consider the following elements of database coverage:

Which disciplines? Sociology, music, chemistry, all, none?

What time periods? The current year? 1960-1998? How often is the database updated? Hourly, daily, weekly, monthly, annually?

What languages? English only? Other languages?


What is included in the record? A whole article or chapter (full-text) or just a brief description (bibliographic citation and abstract)? Publisher and title?

Follow the link to the right to try answering a few questions about coverage.

Records and fields

Records: the building blocks of databases, records describe information sources.

It is unrealistic, at this time, to expect all information sources to come directly to a computer screen on demand. The reasons for this will be clearer to you as you become more experienced finding and using information. In the meantime, having a record describing a source that you can then find using your own abilities and knowledge is an excellent starting point. The description in a record uses elements called metadata [information about information]. In many cases, the text itself will have to be located using other finding tools. Some libraries provide links to the text of articles, when available, at their own expense.

Fields: the building blocks of records; these are the sections of a record where information is stored.

For example, your driver's license or ID card is a record about you with fields describing your name, eye color, height, address, and so on. Field names can vary, but in library databases author, title, subject, publisher, and publication date are common.
Field Searching

Most search engines and databases search "words anywhere" or "keywords" automatically unless you select another type of search.

Keyword searching finds matches for your terms in any field of a record or any part of a Web page, so you will typically retrieve more information with less precision. This is sometimes called "recall" searching because it focuses on recalling as much information as possible.

Databases and search engines may allow searching in specific fields such as author, title, url (Web address), or subject and will sometimes refer to this as "advanced," or "expert" searching. These searches will typically retrieve less information with more precision. This is called "precision" searching because it focuses on finding only precisely what you need.

For example

If you are a detective and the only clues you have for a missing persons case are the words "red," "blue," and "green," these people could be a match. This is keyword searching.

RED + BLUE + GREEN

If instead you knew your person had a red tie, blue shirt, and a green beret, you have a better chance of finding the right person. This is field searching.

Tie:RED and Shirt:BLUE and Beret:GREEN

recall v. precision | keyword v. field

We recommend recall/keyword searching when you are doing either a large original research project or are looking for a rare or unique term (e.g. Eminem). Recall allows you to find anything remotely related to a topic. Doctoral students and professional researchers typically perform these searches early in their research in order to identify everything already published about their focus area. Recall/keyword searching can also be an effective strategy for identifying subject terms from a few relevant records to prepare for a subject field search later.

We recommend precision/field searching when you need to find a relatively small number of sources on a specific topic. Precision searching is most useful for smaller projects like course term papers, problem-solving activities, and making consumer choices.

Creating a Search Query
Phrases | logical operators | truncation | wild cards | nesting

Most databases don't understand the natural language we speak and need help understanding what we're looking for. For this, they require a special set of conventions, including:

<table>
<thead>
<tr>
<th>Quotation marks</th>
<th>Around <em>exact</em> phrases (e.g. &quot;university of washington&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logical or Boolean operators</td>
<td>Connecting words that narrow or broaden a search to include only what you need. Examples: OR, AND, NOT</td>
</tr>
<tr>
<td>Wildcards and truncation symbols (* # ? !)</td>
<td>For terms that have variant forms of spelling or different possible endings. Examples: child* for child, children, childhood, childish, etc.</td>
</tr>
<tr>
<td>Nesting</td>
<td>Placing terms in parentheses to indicate separate units. (Like an equation, (A or B) not C</td>
</tr>
</tbody>
</table>

Databases and search engines apply these rules differently, so check HELP files to find out how to use them.

Click on the links below for a demonstration of each strategy. Select either an animated movie or a static image.

<table>
<thead>
<tr>
<th>Function</th>
<th>Search Strategy</th>
<th>Movie</th>
<th>Image</th>
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</thead>
<tbody>
<tr>
<td>Narrowing</td>
<td>AND</td>
<td>movie</td>
<td>image</td>
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<td></td>
<td>NOT</td>
<td>movie</td>
<td>image</td>
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<tr>
<td>Broadening</td>
<td>OR</td>
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<td></td>
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<td>Combining</td>
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