

## Definition of Truncation and Boolean Operator

### Truncation:

The addition of a symbol at the beginning or end of a word stem in a keywords search to retrieve variants containing the root. Truncation is particularly useful in retrieving both the *singular* and the *plural* forms of a word in the same search.

*Example:*           **\*librar\*** to retrieve records containing: "interlibrary," "intralibrary," "librarian," "librarianship," "libraries," etc.

In most online catalogs and bibliographic databases, the end truncation symbol is the \* (asterisk), but since the truncation symbol is not standardized, other symbols may be used (?, \$, #, +). In some databases, the user may add a number after the symbol to specify how many characters the symbol may represent (*example: facet?1* to retrieve "facets" but not "faceted" or "facetiae"). As a general rule, it is unwise to truncate fewer than four characters (*example: art\** retrieves "artist," "artistic," "artistry," and "artwork," but also "artichoke," "artillery," etc.). Some databases are designed to truncate automatically. Users are advised to read carefully any help screens before truncating in an unfamiliar database. Synonymous with *character masking*. **See also:** wildcard. (1)

### Boolean Operators:

A system of logic developed by the English mathematician George Boole (1815-1864) which allows the user to combine words or phrases representing significant concepts in a keywords search of an online catalog or bibliographic database. Three logical commands (sometimes called "operators") are available in most search software:

The **OR** command is used to *expand* retrieval by including synonyms and related terms in the query. **See also:** logical sum.

*Search statement: violence or conflict or aggression*

The **AND** command is used to *narrow* search results. Each time another concept is added using "and" the search becomes more specific. In some online catalogs and databases, the "and" command is *implicit* (no need to type it in a keywords search). In other interfaces, terms will be searched as a phrase if not separated by "and." **See also:** logical product.

*Search statement: violence and television and children*

The **NOT** command is used to *exclude* unwanted records from search results. **See also:** logical difference.

*Search statement: television not cartoon\**

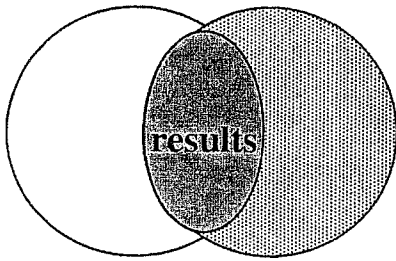
When two *different* Boolean commands are used in the same search statement, parentheses must be included to indicate the sequence in which they are to be executed (syntax). This technique is called nesting.

*Search statement: television and (violence or aggression) and children*

For a detailed discussion of Boolean logic, please see the entry by Gwyneth Tseng in the *International Encyclopedia of Information and Library Science* (Routledge: 1997). **See also:** proximity, truncation, and Venn diagram. (1)

(1) Source: Reitz, Joan M. ODLIS : Online Dictionary of Library and Information Science.  
(URL: <http://www.wcsu.edu/library/odlis.html>)

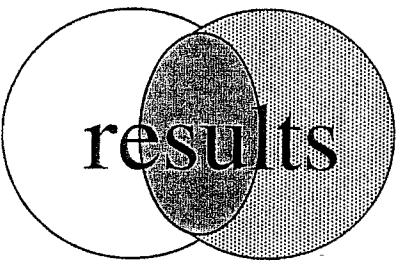
## Boolean Operator: Venn Diagram



public AND library

**AND:** Combining terms with **AND** decreases the number of search results, but increases the precision of the search. All the search terms must be present in each search result.

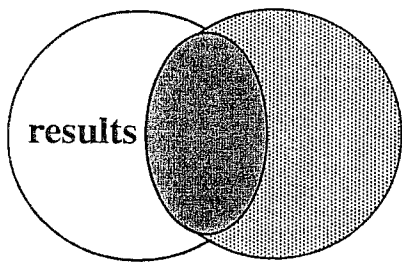
The search “**public and library**” will retrieve results containing both terms; **public** and **library**. The results will not include results containing only the term **public** or only the term **library**. The Venn Diagram illustrates the search results as those included only in the dark shaded area.



internet OR web

**OR:** Combining terms with **OR** increases the number of results, but decreases the precision of the search. At least one of the search terms must be present in each search result.

The search “**internet or web**” will retrieve results containing at least one or all of the terms **internet** or **web**. The Venn Diagram illustrates these results as those included in the shaded, un-shaded, or dotted circles.



college NOT university

**NOT:** Combining terms with **NOT** decreases the number of results.

The search “**college not university**” will retrieve results containing only the term **college**. The results will not include the term **university** (illustrated with the dotted circle) or a combination of the term **college** and **university** (illustrated by the shaded portion).

### Venn diagram

A graphical device in which closed circles (or ovals) are used to illustrate the logical relationship between sets of data: nonintersecting circles for sets with *no* elements in common; overlapping circles for sets with *some* but not all elements in common; and a circle within a circle for a set that is subset of another. Invented by Johann Sturm in 1661 and named after the English logician John Venn (1834-1923) who used them from 1880 onwards, Venn diagrams are used in bibliographic instruction to help students visualize the results of Boolean logic in keyword searching. (1)