Tips for Searching

Boolean Logic in Computer Searching

When using a computer to retrieve information from a database, Boolean Logic is often utilized to specify certain actions. The premise is that when using the English language, all functions of logic may be executed by the use of one or more of three words, called “operators”.

The operators are: **OR**  **AND**  **NOT**

**OR** enlarges or expands a concept; think of it as meaning “also” or “too”.
The “or” operator allows a search for synonyms, or concepts that are similar to one another.
Example: searching for three different substances, such as silicon, germanium and selenium, and any mention of any of the substances would be useful.
Visually, this might appear as:

![Venn Diagram OR]

**AND** restricts a search to specific topics; in other words it retrieves only the information located where two or more concepts intersect.
The “and” operator requires that all of the terms are included in the search results.
Example: searching for the doping of silicon with boron
Visually, this might appear as:

![Venn Diagram AND]

**NOT** is used to exclude a specific unwanted or unrelated topic. Although this operator is not used as often as the other Boolean Operators, it can be useful.
The “not” operator requires that the term after the “not” be absent from the results.
Example: searching for “ion beam lithography” without any mention of the phrase “electron beam lithography”.
Visually, this might appear as:

![Venn Diagram NOT]