**BOOLEAN OPERATORS – Proximity searches, truncation, wildcard**

**Boolean operators**: Named after the English mathematician George Boole (1815 – 1864). Boolean operators define the relationships between words or group of words.

Example in Derwent:

<table>
<thead>
<tr>
<th>Project</th>
<th>Reduction</th>
<th>of</th>
<th>odour</th>
<th>in</th>
<th>piggeries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search terms</td>
<td>Reduce remove</td>
<td></td>
<td>odour</td>
<td></td>
<td>Piggeries</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>odor</td>
<td></td>
<td>Pig farms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>malodour</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Search profile: 
- `(reduce or remove) and (odour or odor or malodour) and (piggeries or “pig farms”)`
- Or 
- `(reduce or remove) and (odo$ or malodo$) and (piggeries or “pig farm$”)`

**OVERVIEW**

<table>
<thead>
<tr>
<th>Database</th>
<th>AND</th>
<th>OR</th>
<th>XOR</th>
<th>NOT</th>
<th>ANDNOT</th>
<th>WITH</th>
<th>NEAR</th>
<th>BEFORE</th>
<th>SAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>USPTO</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PATENTSCOPE</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DERWENT</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TRUNCATION / WILDCARD**

<table>
<thead>
<tr>
<th>Database</th>
<th>0 or 1 character</th>
<th>1 character</th>
<th>Unlimited number of characters</th>
</tr>
</thead>
<tbody>
<tr>
<td>PATENTSCOPE</td>
<td>?</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>USPTO</td>
<td>?</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>DERWENT</td>
<td>$</td>
<td>?</td>
<td>*</td>
</tr>
</tbody>
</table>

Definition of boolean operators and proximity searches.

**AND**  
Term1 AND term2  
Records contain all the words it separates

**OR**  
Term1 OR term2  
Records contain any of the words it separates

**XOR**  
Term1 XOR term2  
Records contain any of the words but not both

**NOT**  
Term1 NOT term2  
Records contain term1 but not term2

**ANDNOT**  
Term1 ANDNOT term2  
Records contain term1 but not term2

**WITH**  
Term1 WITH term2  
Records contain both words in the same field

**NEAR**  
Term1 NEARn term2  
Records contain both words separated by at most n words

**BEFORE**  
Term1 BEFOREn term2  
Records in which term2 is preceded by term1 at a distance of at most n words

**SAME**  
Term1 SAME term2  
Records contain both words in the same sentence

**Blank**  
Term1 term2  
Same as AND

**“ “**  
“Term1 term2”  
Phrases – records contain both words as written next to each other

**()**  
(term1 or term2) and (term3 or term4)  
Group of terms or phrases combined with Boolean operators (beware of operator precedence!!)