

What is the purpose of this Lab?

- To identify and understand:
- How to get results from ***any database*** using:
 1. Basic and Advanced searches.
 2. Boolean Operators.
 3. Wildcards.

How to get results from any database, Part 1

⦿ What is a **database**?

- A database is “a structured collection of records or data that is stored in a computer”.
- In example, Google is a giant database that contains records of webpages that match certain terms (keywords or keyphrases).

⦿ Let's pretend we are searching Google for webpages about **vehicles**; we will need to search using terms called **keywords** or **keyphrases**.

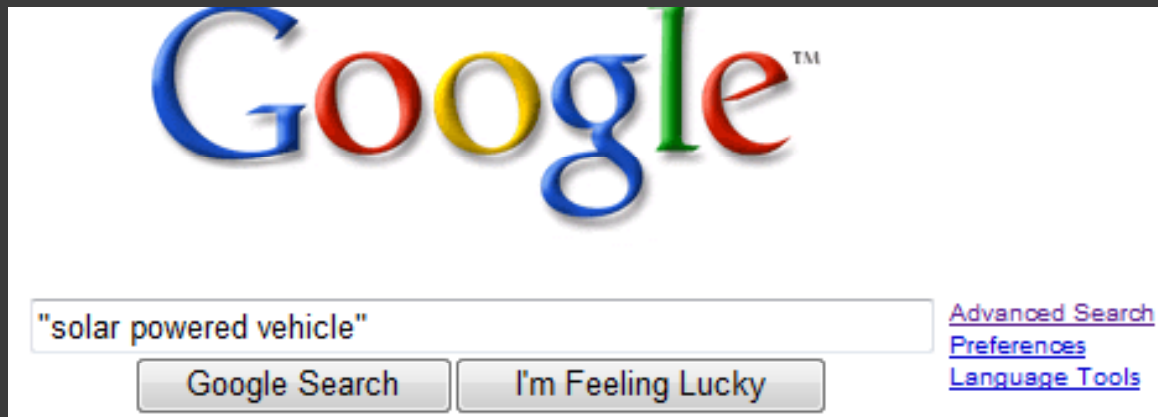
How to get results from any database, Part 2

- What is a **term**?
 - A keyword or keyphrase used for searching databases.
- What is a **keyword**?
 - The exact word you are looking for.
 - Here are some vehicle related keywords:
 - 'vehicles', 'cars', 'trucks', 'automobiles'
 - *Note: Keywords should NOT be enclosed in any quotes; they are only in single-quotes and separated by commas here to identify them separately from each other.*
- What is a **keyphrase**?
 - A keyphrase is the exact **ordered** group of keywords you are looking for.
 - A keyphrase **MUST** be in double-quotes, like this:
 - "solar powered vehicle"
 - Since order matters, the following keyphrases are all different and will give different results! Click on each to prove it to yourself that they are different:
 - Google Search: "[solar powered vehicle](#)" is not the same as...
 - Google Search: "[powered solar vehicle](#)" which is not the same as...
 - Google Search: "[vehicle powered solar](#)"
 - **Think about why there are NO results for "vehicle powered solar"; have you ever heard someone say the exact phrase "vehicle powered solar"? Probably not.**
- **IMPORTANT! A list of keywords gives different results than a keyphrase:**
 - These two searches will give completely different results (click on them to see):
 - Google Search: [solar powered vehicle](#)
 - Google Search: "[solar powered vehicle](#)"
 - Notice that some of the webpages in the results are the same, while others are different, and the pages are listed in a different order!
 - **Think about why this proves that they are not the exact same search.**

How to get results from any database, Part 3

◎ What is a **search**?

- A search is the **action** performed when you give a collection of keywords and/or keyphrases to a database, and it gives you results back.
 - A search can contain keywords, keyphrases, **Boolean Operators**, and **Wildcards**.



◎ What are **results**?

- Results are the collection of records returned; in this case, a collection of links to webpages.

How to get results from any database, Part 4

○ What is a **Boolean Operator**?

- An operator that combines exactly two terms to get results.
- There are exactly THREE Boolean Operators that give **more** or **less** results when combining two terms:

- The operators are: **OR**, **AND** and **NOT**.

○ **More** results:

- Boolean operator: **OR**
 - Example Search: **car OR truck**
 - Results include:
 - Pages that **ONLY** have the term 'car', and also...
 - Pages that **ONLY** have the term 'truck', and also...
 - Pages that have **BOTH** the term 'car' and 'truck'.

○ **Less** results:

- Boolean operator: **AND**
 - Example Search: **car AND truck**
 - Results include:
 - Pages that have **BOTH** the term 'car' and 'truck'.
- Boolean operator: **NOT**
 - Example Search: **car NOT truck**
 - Results include:
 - Pages that **ONLY** have the term 'car' but **NOT** the term 'truck'.

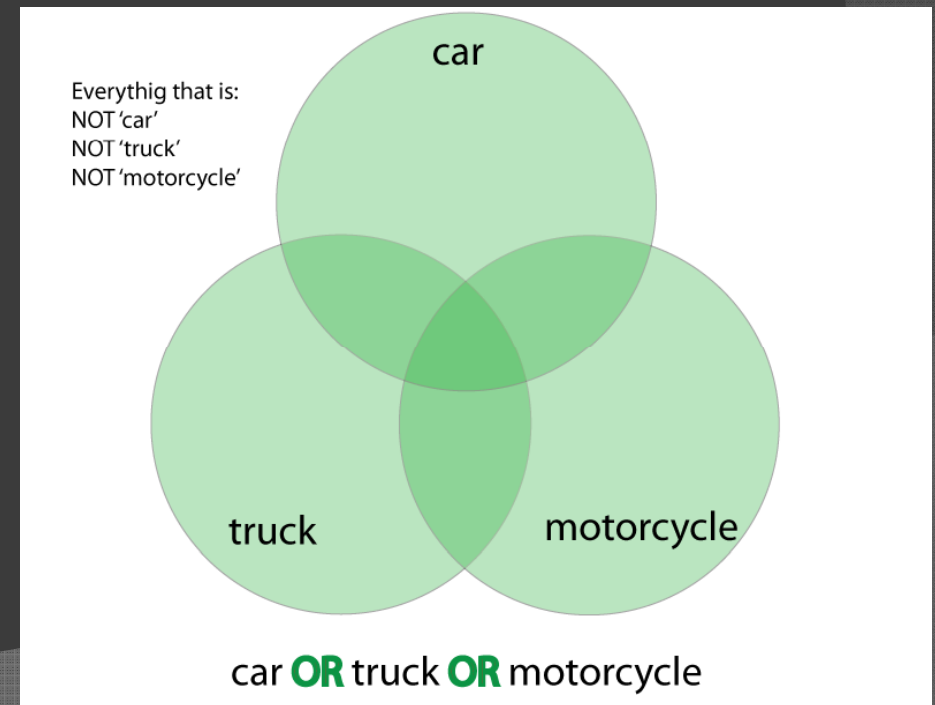
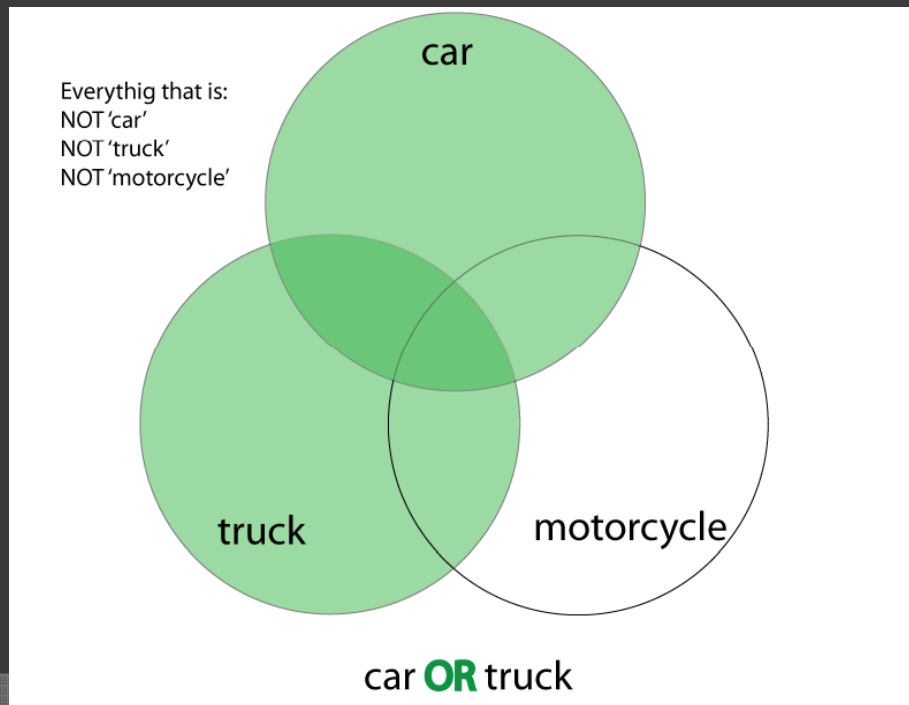
How to get results from any database, Part 5

◎ How can I visualize results from using Boolean Operators?

- We can use “Venn Diagrams” to visualize the results we get back when using Boolean Operators.
- What is a “Venn Diagram”?
 - It’s just a bunch of overlapping circles that help us “see” our results as being either inside or outside of the certain circles.
 - See the next few slides for examples.

How to get results from any database, Part 6

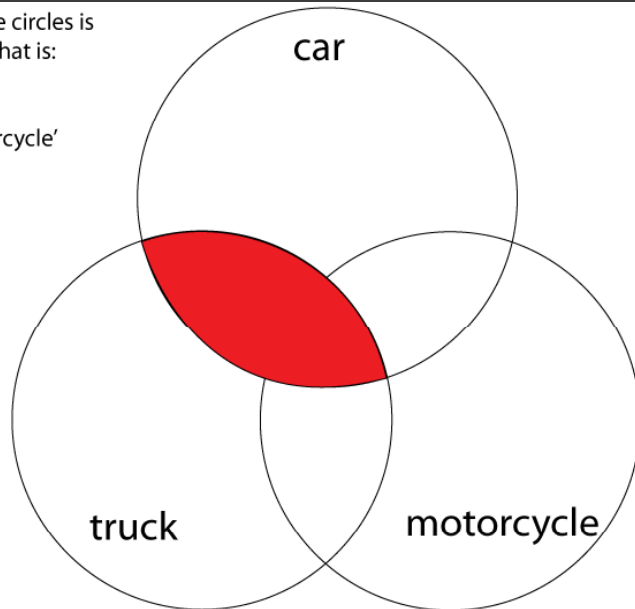
- Below are examples of visualizing the **OR** Boolean Operator with the terms 'car', 'truck', and 'motorcycle' using Venn Diagrams.
- Notice that the more the **OR** operator is used the **more** results you get.



How to get results from any database, Part 7

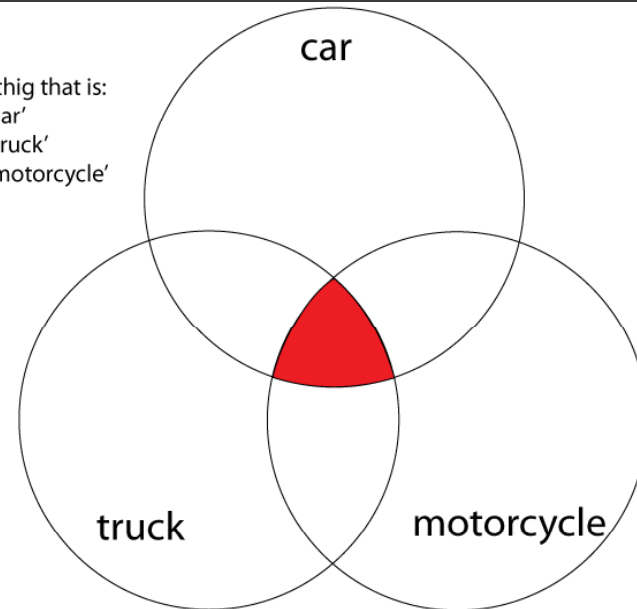
- Below are examples of visualizing the **AND** Boolean Operator with the terms 'car', 'truck', and 'motorcycle' using Venn Diagrams.
- Notice that the more the **AND** operator is used the **fewer** results you get.

Outside the circles is
everything that is:
NOT 'car'
NOT 'truck'
NOT 'motorcycle'



car **AND** truck

Everything that is:
NOT 'car'
NOT 'truck'
NOT 'motorcycle'



car **AND** truck **AND** motorcycle

How to get results from any database, Part 8

◎ What is a **Wildcard**?

- A character that substitutes for a character or series of characters in a search.
- Wildcards are often used when searching for a partial term that is found in multiple other terms.

◎ What are the **Wildcard Characters**?

- They can be different, depending on the database but they are usually the asterisk(*) and question mark(?):
 - Asterisk: * → Stands for 0 or more characters.
 - Question: ? → Stands for exactly 1 character.

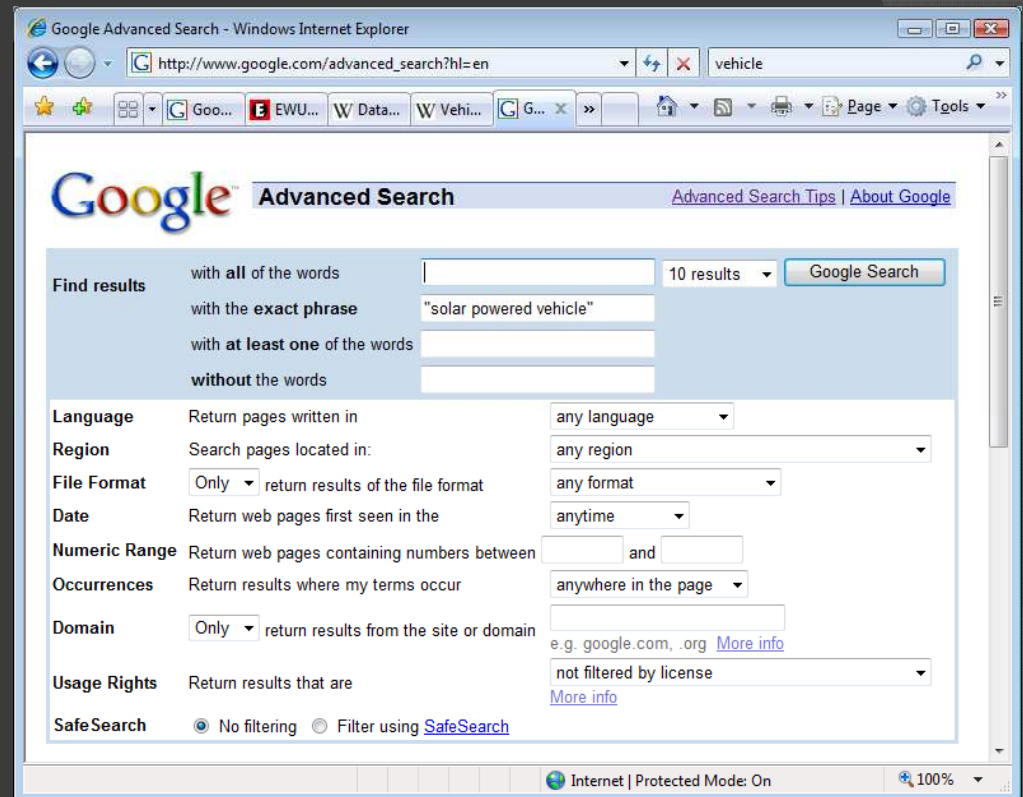
◎ Let's see some examples:

- Search: **car***
 - Results include words with **0 or more substituted characters**:
 - **car**
 - **cars**
 - **cartoon**
- Search: **car?**
 - Results include words with **exactly 1 substituted character**:
 - **cars**
 - **cart**
 - **card**

How to get results from any database, Part 9

What is an advanced search?

- A search that gives you **more options** than just supplying keywords and/or keyphrases.
- Additional options in an advanced search include limiting results by:
 - Language (i.e. English, French, etc.),
 - File Format (i.e. .htm, .pdf, etc.),
 - Location of keywords/phrases (i.e. title, URL, etc.)
 - And much more!



Important Links

- ◎ Google Search Help

- <http://www.google.com/support/bin/topic.py?topic=352>

- ◎ [Persistent Link to results.](#)