Web Search Engines: Google

1. What subjects and publication types are included in the database?

   Any subject and every subject. However, it must be freely available. On campus, there are many resources you have access to that are not free because the library pays for them and makes them available to anyone on the Notre Dame network.

   Google Book indexes books and journal articles, Google Scholar indexes journal articles, Google Patent indexes patents, and Google indexes web pages and may also include books, articles, and patents.

2. What are the coverage dates?

   Anything added to a web page since 1992.

3. What Boolean operators are used by the database?

   AND  Space between words or phrases is interpreted by the Google software as an AND
   OR   Capitalized OR (this works some of the time)
   NOT  Minus sign immediately preceding a word or phrase

4. If truncation is allowed then what symbols are used?

   None. Uses word stemming technology so the system automatically truncates.

5. If wildcards are allowed then what symbols are used?

   None

6. How do you search for a phrase?

   a. System automatically determines if something is a phrase
   b. You can force a phrase by putting “quotes around the phrase terms”
      Example: “Notre Dame”

   There is a phrase wildcard – “first-word * last-word”  Google will find phrases where the first word is within 80 characters of the last word.

   Example: “Fighting * Dame” = Fighting Irish of the University of Notre Dame

7. Is it possible to group words from the same concept?

   No

8. Any unique features?

   Definitions…………………………………….. define:library
   Key concepts at a particular web site…………. aspirin site:edu
   Words in the title of a web page………………. allintitle:orienteering maps
Web Search Engines: Google

Key Concepts according to You

A key concept should be a single word or a phrase.

1. Circle the key concept(s) in the following sentence:

What is the effect of aspirin on blood clotting?

Key Concepts according to Google

2. Type the sentence from Q1 into Google. How many results do you get?

3. What key concepts did Google identify? Write them below.  
   (Look at the first page of Google search results for words in **bold**.)

4. Are these key concepts the same as you identified? Yes or No or Some

Keep it Simple – Use only the key concepts  
The order of search terms should not change the outcome

5. A. Based on Q3 – Google identified three key concepts – effect / aspirin / blood clotting.  
   Prioritize those concepts. What is your first priority? Type that key concept into the search box. How many results do you get?

   1st priority: ___________________  Results: ___________________

   B. What is your second priority? Add the second key concept to your first priority into the search box. How many results do you get?

   2nd priority: ___________________  Results: ___________________

   C. What is your third priority? Add the third key concept to your search in 5B. How many results do you get?

   3rd priority: ___________________  Results: ___________________

   D. Compare your answers for Q5A-C. Is there anything strange about the results?
Web Search Engines: Google

Advanced searching
Click on the Settings link (at the top of the page) and select Advanced search.

6. Type *ham pork* into the **all these words** field. This is an AND search.

   How many results?

7. Type *ham pork* into the **any of these words** field. This is an OR search.

   How many results?

8. Type *ham pork* into the **any of these words** field and *BBQ Barbecue* into the **none of these words** field and *Christmas dinner* into the **this exact word or phrase** field and *turducken turkey* into the **all these words** field.

   How many results?

9. Write the text found in the search box on the results page. This is how Google translated your search from the Advanced Search page.

10. Looking at what you wrote for the previous question. What symbol does Google use to represent the Boolean operators? Draw a line connecting the correct items in each column

<table>
<thead>
<tr>
<th>Advanced Search Text</th>
<th>Google translation</th>
<th>Boolean Operator or Proximity</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of these words</td>
<td>minus sign</td>
<td>phrase</td>
</tr>
<tr>
<td>Any of these words</td>
<td>OR</td>
<td>not</td>
</tr>
<tr>
<td>Exact word or phrase</td>
<td>“ ” “ ”</td>
<td>and</td>
</tr>
<tr>
<td>None of these words</td>
<td>&lt;space&gt; between words</td>
<td>or</td>
</tr>
</tbody>
</table>
Web Search Engines: Google

**What are stop-words?** Words that are not key concepts and therefore are not included by the search engine in searching the database. Google replaces stop-words with a space.

**Advanced searching - without going to the advanced search screen**

11. Recreate your Q5C search (you will have 3 concepts in the same order as Q5C). This time put quotes around “blood clotting” How many results do you get?

12. Is this different from your answers in questions Q2 & Q5C? Yes or No

13. Write the title of the sixth entry in your results for Q11.

14. Can you get to the 60th results page? Yes or No. If no, then how far can you get?

15. Compare your answers for Q13 with someone else. Are they the same. If no, then what is different?

All the results in Q11 have blood right in front of clotting and this is a more focused set of search results which is usually better for you as the searcher because you have fewer items to look through.

**Beyond Advanced Searching – Allintitle:**

Examples: allintitle:caffeine
           allintitle:notre dame
           (no space on either side of the colon.)

16. How many web pages have the two key concepts (aspirin blood clotting) in their title?

Google will search for words in the title of a web page. Words in the title are more important than words in the web page because they describe the content of the page.
Web Search Engines: Google

Search engine bias? Are search engines trying to manipulate what you think?

Search engines utilize artificial intelligence (AI) to generate autocomplete suggestions and to display the results. Autocomplete suggestions help you to construct a better search query. Most people assume that autocomplete suggestions is neutral and unbiased. But is it?

During the past year, there have been several accusations of bias directed toward big tech companies, such as Google, Patreon, Twitter, and YouTube (see references on the back page). The bias seems to be in favor of ideas that are “woke”. This bias could be manifested in the programming of the AI, which might show itself in the autocomplete suggestions of the search engine, e.g., by what it suggests or doesn’t suggest.

On July 30, 2019, I searched several search engines for the phrase “voter fraud is ”. I took screen shots of the autocomplete suggestions. View those screen shots on the next page to answer the next three questions.

One can group all the autocomplete suggestions into three groups

A. Voter fraud doesn’t happen or rarely happens  
B. Voter fraud is common or it happens  
C. Voter fraud is a crime

17. From how many of the groups listed above does each search engine suggest (0, 1, 2, 3)?

- Bing
- Gibiru
- Swisscows
- DuckDuckGo
- Google
- Yahoo
- Ecosia
- Search encrypt
- Yandex

18. Of the search engines that provide autosuggestions, which might be trying to “manipulate” your view of Voter Fraud?

19. Are some search engines using the same AI? Look at the autocomplete suggestions. Are there any that have the same text in the same order? If so, then which ones?
Web Search Engines: Google

Bing:

Ecosia:

DuckDuckGo:

Swisscows:

Yandex:
Web Search Engines: Google

20. Now it is your turn to test the autocomplete suggestions generated by the AI used by search engines. Think of a controversial topic (a single word or a short phrase). There are at least three forms you can use to test the autocomplete suggestions. Be sure to add a space at the end. Type the same search in each search engine you test.

<topic> is  /  <topic> can  /  <topic> have  /  why are <topic> so

What did you type? ______________________________

Which search engines did you test? (search at least 3 of them)

___Bing  ___Gibiru  ___Swisscows
___DuckDuckGo  ___Google  ___Yahoo
___Ecosia  ___Search encrypt  ___Yandex

How did the autocomplete suggestions compare?

Yes  No  Are they the same?
Yes  No  Are they slightly different?
Yes  No  Are they completely different?
Yes  No  Is there something puzzling about the suggestions? If yes, then what?

21. How trendy is the <topic> you selected in previous question compared with <Minecraft> over the past 5 years in the United States? Go to trends.google.com

<topic> is MORE trendy than Minecraft
<topic> is about the SAME as Minecraft
<topic> is LESS trendy as Minecraft

Two quotes:

“During testing, autocomplete suggestions were found to directly alter how and what the test subjects searched for. A lot of the test subjects perceived the autocomplete suggestions to be “recommendations” by the site, and therefore showed a bias towards selecting them over using their own query.”


“My [Robert Epstein’s] recent research demonstrates that Google’s “autocomplete” search suggestions can turn a 50/50 split among undecided voters into a 90/10 split without people's awareness.”

Web Search Engines: Google

22. What do you think about those two quotes on the previous page?

References:


