

← 1/53 → \*\*\* 9:08:42

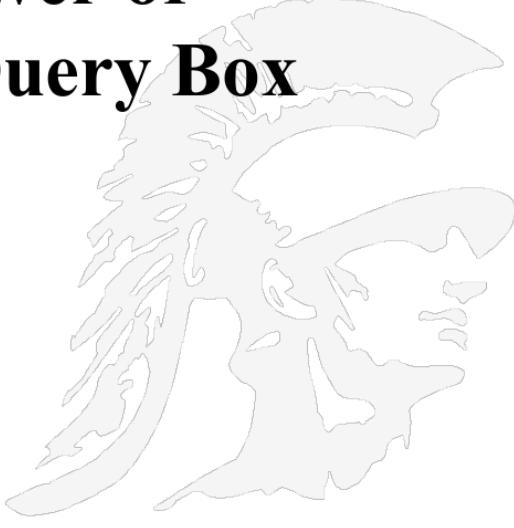
# Query formulation

**how to ask 'properly'**

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# The Power of Google's Query Box

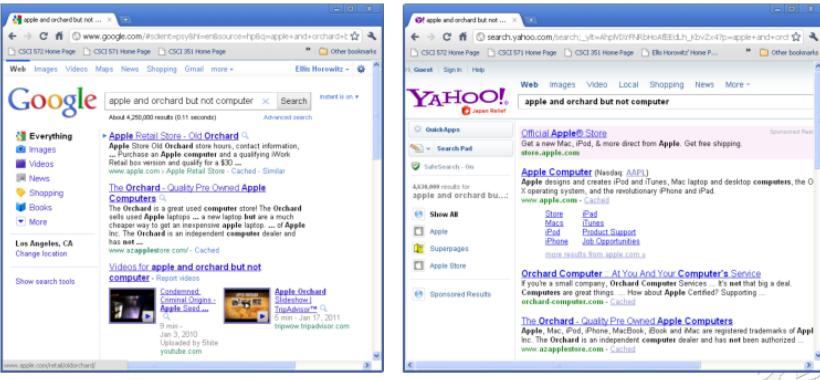
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## Traditional Boolean Queries in a Search Box Don't Work As Expected

**Query:** “apple AND orchard BUT NOT computer” still returns Apple Computer results



The screenshot shows three search engines: Google, Yahoo!, and Bing. Google and Yahoo! return results for Apple computers, while Bing returns results for Apple Orchard.

**Google Results:**

- Apple Orchard - Old Orchard - [apple and orchard but not computer](#)
- Official Apple® Store - [apple and orchard but not computer](#)
- Orchard Computer - [apple and orchard but not computer](#)
- Orchard Computer - At You And Your Computer's Service - [apple and orchard but not computer](#)
- The Orchard - Quality Pre-Owned Apple Computers - [apple and orchard but not computer](#)
- Orchard Computer - At You And Your Computer's Service - [apple and orchard but not computer](#)
- Orchard Computer - At You And Your Computer's Service - [apple and orchard but not computer](#)
- Orchard Computer - At You And Your Computer's Service - [apple and orchard but not computer](#)
- Orchard Computer - At You And Your Computer's Service - [apple and orchard but not computer](#)

**Yahoo! Results:**

- Official Apple® Store - [apple and orchard but not computer](#)
- Apple Computer - [apple and orchard but not computer](#)
- Orchard Computer - [apple and orchard but not computer](#)
- Orchard Computer - At You And Your Computer's Service - [apple and orchard but not computer](#)
- Orchard Computer - At You And Your Computer's Service - [apple and orchard but not computer](#)
- Orchard Computer - At You And Your Computer's Service - [apple and orchard but not computer](#)
- Orchard Computer - At You And Your Computer's Service - [apple and orchard but not computer](#)
- Orchard Computer - At You And Your Computer's Service - [apple and orchard but not computer](#)

**Bing Results:**

- computer not responding | Official Apple Support Communities - [apple and orchard but not computer](#)
- Apple TV will not show my computer under Home S... - [apple and orchard but not computer](#)
- How do I get the same emails on both iPhone and... - [apple and orchard but not computer](#)
- Help! iPad does not show up in Windows8 Computer... - [apple and orchard but not computer](#)
- Apple Orchard - Vintage Computer - [apple and orchard but not computer](#)
- Apple ID working for iPhone but not for iPad - Ask Different - [apple and orchard but not computer](#)
- The Orchard Apple Store - Home | Facebook - [apple and orchard but not computer](#)
- Origin of the Apple I and Apple II Computers | Low End Mac - [apple and orchard but not computer](#)

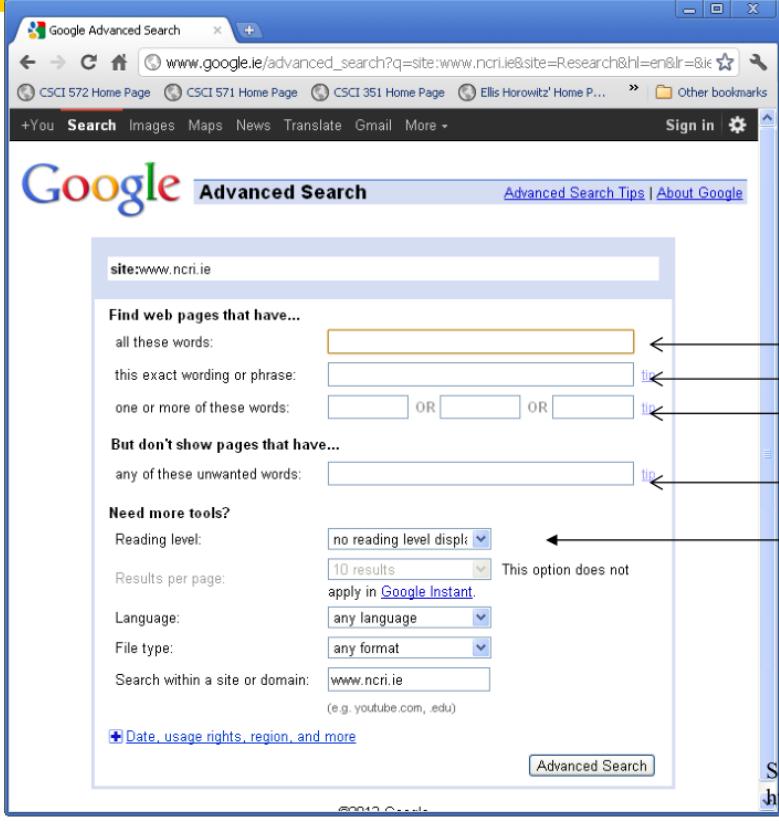
**Notice Related searches**

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# But Google Advanced Search Permits Boolean Queries



Search engines typically offer an “Advanced Search” page where users **can enter**, in effect, a Boolean query; e.g. Here is Google’s “advanced search” screen

ANDing a set of words  
 Exact phrase  
 ORing a set of words  
 NOT words  
 reading level  
 language  
 file type  
 etc

See also  
<https://help.bing.microsoft.com/#apex/bing/en-US/10002/-1>

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# Advanced Search Works Properly

**Google Advanced Search**

apple orchard -computer

Find pages with...

all these words:

this exact word or phrase:

any of these words:

none of these words:

numbers ranging from:  to

Then narrow your results by...

language:

region:

last update:

site or domain:

terms appearing:

SafeSearch:

file type:

usage rights:

**Advanced Search**

**Google**

apple orchard -computer

About 66,700,000 results (0.76 seconds)

**Apple Orchard -Computer**



Rating  Hours

**Little Orchard Music**  
5.0 ★★★★☆ (3) · Orchard  
Topanga, CA · (310) 455-2950  
"Great place. I enjoyed the Little Orchard Music!!!"

**Directions**

**Apple Farm Collections**  
No reviews · Farm  
Sherman Oaks, CA · (818) 788-1529

**Whalley's Orchard**  
4.4 ★★★★☆ (50) · Produce market  
Littlerock, CA · (661) 480-6454  
Open · Closes 5PM  
They also have the best Pluots, grapes, apples, and peaches."

**Directions**

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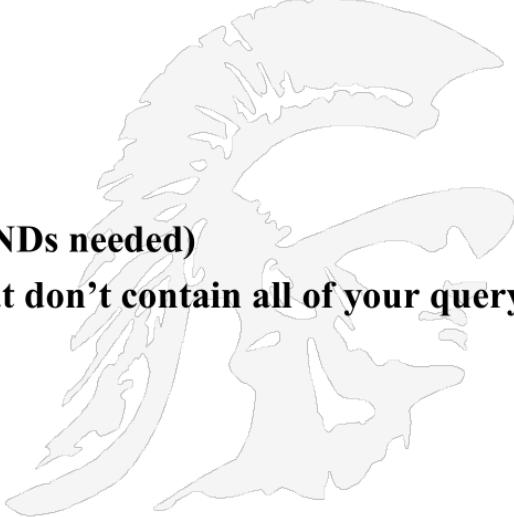
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## Query Box Default is AND

- If you search for more than one keyword at a time, Google/Bing will automatically search for pages that contain ALL of your keywords
  - This is called “implicit AND”
- A search for  
**disney disneyland pirates**  
is the same as searching for  
**disney AND disneyland AND pirates**  
**(without the ANDs needed)**
- Google sometimes returns pages that don't contain all of your query terms



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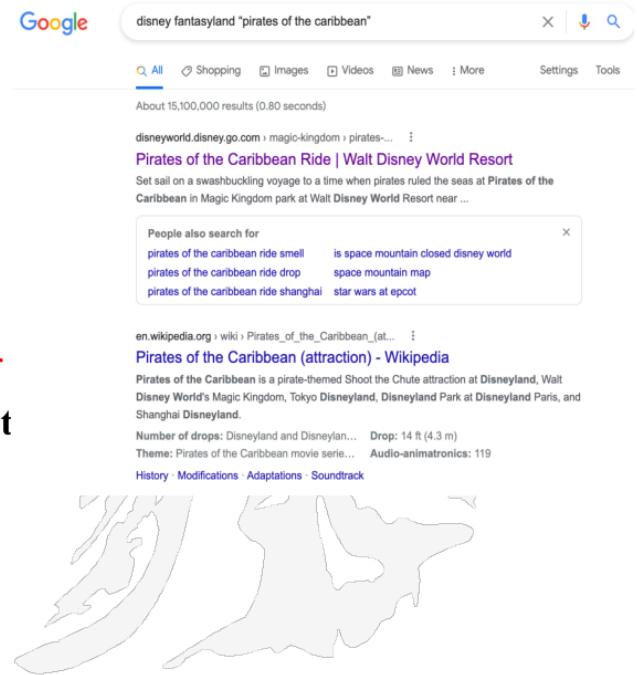
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# Put Exact Phrases in Quotes

- To search for phrases, just put your phrase in quotes.
- For example,

**disney disneyland "pirates of the caribbean"**

- This would show you all the pages in Google's index that contain the word **disney** AND the word **disneyland** AND the exact phrase "**pirates of the Caribbean**" (of course, without the quotes)



The screenshot shows a Google search results page. The search query is "disney disneyland \"pirates of the caribbean\"". The results page includes a snippet from the Wikipedia article on the attraction, showing the ride's outline and some descriptive text. Below the snippet, there are several related search suggestions: "pirates of the caribbean ride smell", "pirates of the caribbean ride drop", "pirates of the caribbean ride shanghai", "is space mountain closed disney world", "space mountain map", and "star wars at epcot".

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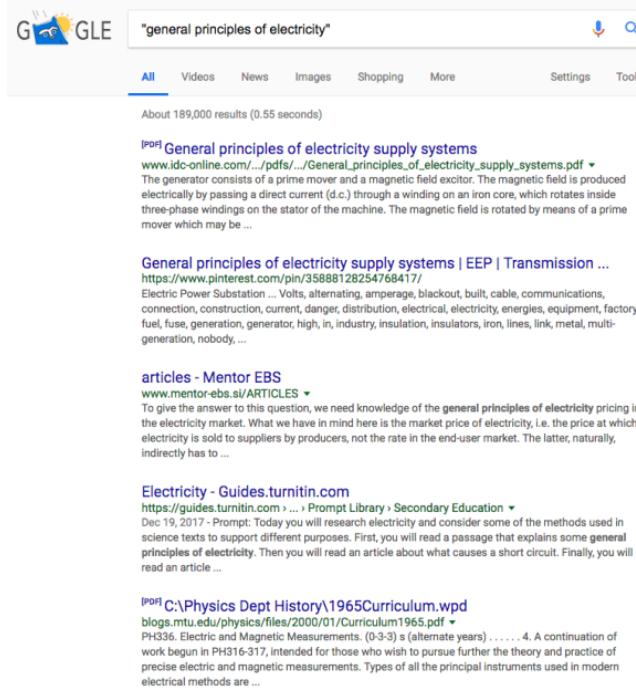
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# Differences With/Without Quotes

## Query: general principles of electricity



**general principles of electricity**

All Videos News Images Shopping More Settings Tools

About 189,000 results (0.55 seconds)

**[PDF] General principles of electricity supply systems**  
[www.idc-online.com/...pdfs/...General\\_principles\\_of\\_electricity\\_supply\\_systems.pdf](https://www.idc-online.com/...pdfs/...General_principles_of_electricity_supply_systems.pdf) ▾  
 The generator consists of a prime mover and a magnetic field excitor. The magnetic field is produced electrically by passing a direct current (d.c.) through a winding on an iron core, which rotates inside three-phase windings on the stator of the machine. The magnetic field is rotated by means of a prime mover which may be ...

**General principles of electricity supply systems | EEP | Transmission ...**  
<https://www.pinterest.com/pin/35888128254768417/>  
 Electric Power Substation ... Volts, alternating, amperage, blackout, built, cable, communications, connection, construction, current, danger, distribution, electrical, electricity, energies, equipment, factory, fuse, generation, generator, high, in, industry, insulation, insulators, iron, lines, link, metal, multi-generation, nobody, ...

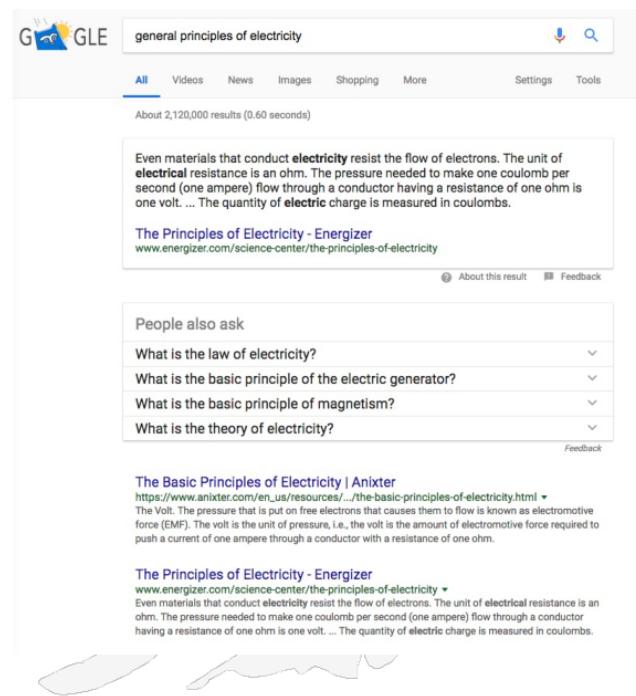
**articles - Mentor EBS**  
[www.mentor-ebs.si/ARTICLES](http://www.mentor-ebs.si/ARTICLES) ▾  
 To give the answer to this question, we need knowledge of the **general principles of electricity** pricing in the electricity market. What we have in mind here is the market price of electricity, i.e. the price at which electricity is sold to suppliers by producers, not the rate in the end-user market. The latter, naturally, indirectly has to ...

**Electricity - Guides.turnitin.com**  
[https://guides.turnitin.com/.../Prompt\\_Library/Secondary\\_Education](https://guides.turnitin.com/.../Prompt_Library/Secondary_Education) ▾  
 Dec 19, 2017 - Prompt: Today you will research electricity and consider some of the methods used in science texts to support different purposes. First, you will read a passage that explains some **general principles of electricity**. Then you will read an article about what causes a short circuit. Finally, you will read an article ...

**[PDF] C:\Physics Dept History\1965Curriculum.wpd**  
[blogs.mtu.edu/physics/files/2000/01/Curriculum1965.pdf](http://blogs.mtu.edu/physics/files/2000/01/Curriculum1965.pdf) ▾  
 PH336. Electric and Magnetic Measurements. (0-3) s (alternate years) ..... 4. A continuation of work begun in PH316-317, intended for those who wish to pursue further the theory and practice of precise electric and magnetic measurements. Types of all the principal instruments used in modern electrical methods are ...

**With quotes**

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**general principles of electricity**

All Videos News Images Shopping More Settings Tools

About 2,120,000 results (0.60 seconds)

**The Principles of Electricity - Energizer**  
[www.energizer.com/science-center/the-principles-of-electricity](http://www.energizer.com/science-center/the-principles-of-electricity)

About this result Feedback

**People also ask**

- What is the law of electricity?**
- What is the basic principle of the electric generator?**
- What is the basic principle of magnetism?**
- What is the theory of electricity?**

Feedback

**The Basic Principles of Electricity | Anixter**  
[http://www.anixter.com/en\\_us/resources/...the-basic-principles-of-electricity.html](http://www.anixter.com/en_us/resources/...the-basic-principles-of-electricity.html) ▾  
 The Volt. The pressure that is put on free electrons that causes them to flow is known as electromotive force (EMF). The volt is the unit of pressure, i.e., the volt is the amount of electromotive force required to push a current of one ampere through a conductor with a resistance of one ohm.

**The Principles of Electricity - Energizer**  
[www.energizer.com/science-center/the-principles-of-electricity](http://www.energizer.com/science-center/the-principles-of-electricity) ▾  
 Even materials that conduct **electricity** resist the flow of electrons. The unit of **electrical resistance** is an ohm. The pressure needed to make one coulomb per second (one ampere) flow through a conductor having a resistance of one ohm is one volt. ... The quantity of **electric charge** is measured in coulombs.

**Without quotes**

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## Google Stemming and Stop Words

- The query [**child bicycle helmet**] finds pages that contain words that are similar to some or all of your search terms,
  - e.g., “child,” “children,” or “children's,” “bicycle,” “bicycles,” “bicycle's,” “bicycling,” or “bicyclists,” and “helmet” or “helmets.”
  - Google calls this feature *word variations* or *automatic stemming*
- Google will often ignore Stop Words
  - However, a query with only Stop Words, e.g. [**the who**] gets treated as significant, returning pages for the Rock Group, the Who
- Google limits queries to 32 words
  - Google will return nonsense results for this nonsense query
  - aardvark aback abacus abalone abandon abashed abbey abbreviate abdicate abdomen abduct aberration abhor abide ability abject able abnormal aboard abode abolish abolitionist abort about above abrade abridge abroad abrupt abscond absent absinthe

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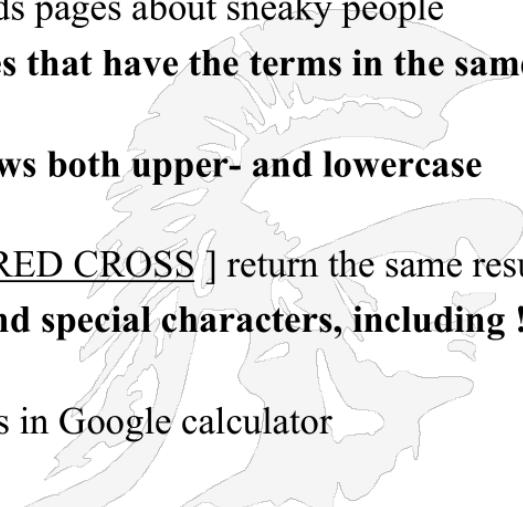
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## Other Google Query Rules

- **Google favors results that have your search terms near each other**
  - The query [snake grass] finds pages about plants;
  - The query [snake in the grass] finds pages about sneaky people
- **Google gives higher priority to pages that have the terms in the same order as in your query**
- **Google is NOT case sensitive; it shows both upper- and lowercase results**
  - [ Red Cross ], [ red cross ], and [ RED CROSS ] return the same results.
- **Google ignores some punctuation and special characters, including ! ? , . ; [ ] @ / # < >**
  - Exceptions: C++, or math symbols in Google calculator



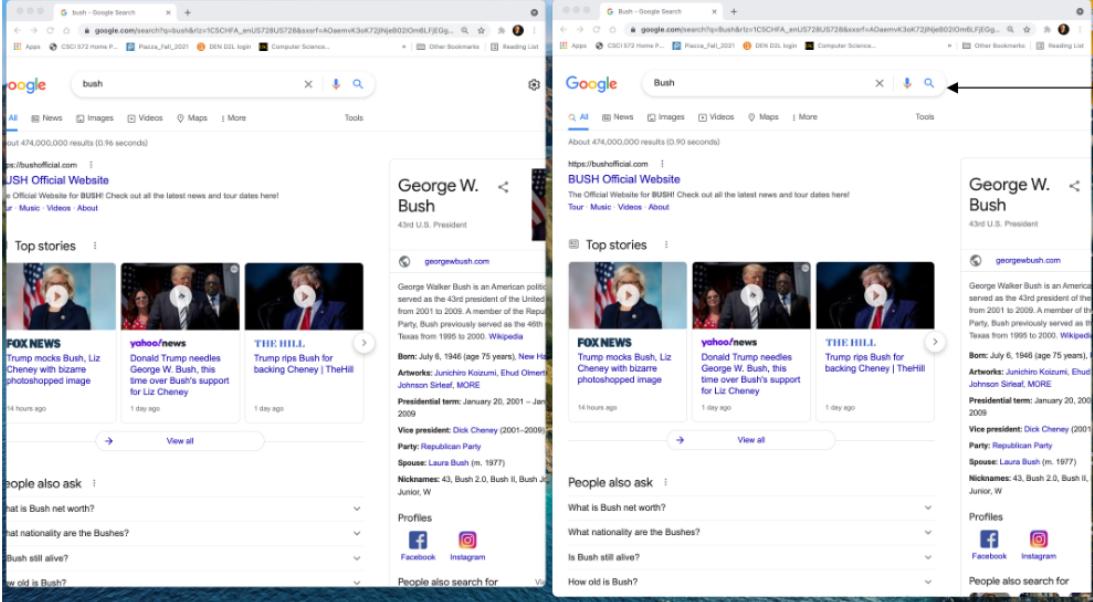
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# Capitalization Does NOT Matter (but there are exceptions)



bush and Bush yield the same results as does “apple” and “Apple”

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# More Exceptions

The image shows two identical Google search results for the query "disney". Both results are from the same session, indicated by the identical URL bar and browser tabs.

**Left Search Result:**

- Search Bar:** Google - disney
- Results:**
  - Ad:** [Disney+ - Start Streaming](https://www.disneyplus.com/)
  - Disney+ - Start Streaming**: Classic favorites. New releases. Disney Channel throwbacks. Exclusive Original series. From classics to new releases, get access to stories you can't stream anywhere else.
  - Disney+**: Entretenimiento Sin Fin Suscibe Ahora
  - Disney+, Hulu, and ESPN+**: The Ultimate Streaming Trio There's something for everyone.
  - Marvel Movie Home**: Captain America, Thor, and More! Stream Your Favorites Today!
  - Stream Disney Throwbacks**: The Vault is Wide Open. Your Disney Favorites Await.
  - Disney.com | The official home for all things Disney**: The official website for all things Disney: theme parks, resorts, movies, tv programs, characters, games, videos, music, shopping, and more!
  - Walt Disney World Resort in Orlando, Florida**: Welcome to Walt Disney World. Come and enjoy the magic of Walt Disney World Resort in Orlando, FL. Plan your family vacation and create memories for a ...

**Right Search Result:**

- Search Bar:** Google - Disney
- Results:**
  - Disney.com | The official home for all things Disney**: The official website for all things Disney: theme parks, resorts, movies, tv programs, characters, games, videos, music, shopping, and more!
  - Walt Disney World Resort in Orlando, Florida**: Come and enjoy the magic of Walt Disney World Resort in Orlando, FL. Plan your family vacation and create memories for a lifetime.
  - Top stories** (with three news cards):
    - THE VERGE**: Disney sues for control of key Marvel characters (2 hours ago)
    - The New York Times**: Disney Sues to Keep Complete Rights to Marvel Characters (2 hours ago)
    - THE WALL STREET JOURNAL**: Disney Isn't Investigating Handling of Sexual-Assault Allegations, After ABC News Boss Urge... (1 day ago)

**Bottom Labels:**

disney      Copyright Ellis Horowitz 2011-2022      Disney

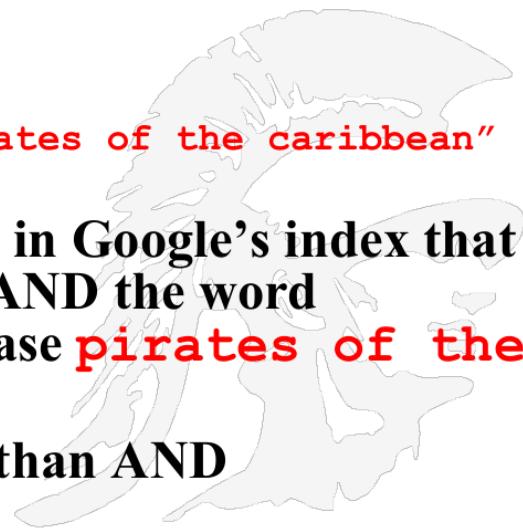
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## Boolean OR

- The Boolean OR operator is acceptable in Google queries, placed between keywords, and **OR** is *always* in all caps
- For example,  
`disney disneyland OR "pirates of the caribbean"`
- This would show you pages in Google's index that contain the word **disney** AND the word (**disneyland** OR the phrase **"pirates of the caribbean"**)
- OR has higher precedence than AND



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## How Google/Bing Treat Queries with Boolean Operators

- All query terms are implicitly ANDed
- OR has higher precedence than AND
- Three examples (a, b, c stand for query terms):
  1. a b OR c d is treated as a AND (b OR c) AND d
  2. a OR b c OR d is treated as (a OR b) AND (c OR d)
  3. a OR “b c” d is treated as (a OR (“b c”)) AND d
- and see  
<https://support.google.com/websearch/answer/2466433?hl=en>
- <https://help.bing.microsoft.com/#apex/bing/en-US/10002/-1>

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# Google and Wildcards

- Google offers full-word wildcard queries
- For example, if you search Google for
- **it's +a \* world,**
- Google shows you all of the pages in its database that contain the phrase, e.g. “it's a small world” ... and “it's a nano world” ... and “it's a Linux world” ... and so on
- The + before a is required because it is a stop word and would otherwise be ignored
- This query works the same in Bing
- There must be a space after the +a

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# Google Advanced Operators

Search Service	Search Operators
Web Search	<u>allinanchor:</u> , <u>allintext:</u> , <u>allintitle:</u> , <u>allinurl:</u> , <u>cache:</u> , <u>define:</u> , <u>filetype:</u> , <u>id:</u> , <u>inanchor:</u> , <u>info:</u> , <u>intext:</u> , <u>intitle:</u> , <u>inurl:</u> , <u>link:</u> , <u>related:</u> , <u>site:</u>
Image Search	<u>allintitle:</u> , <u>allinurl:</u> , <u>filetype:</u> , <u>inurl:</u> , <u>intitle:</u> , <u>site:</u>
Groups	<u>allintext:</u> , <u>allintitle:</u> , <u>author:</u> , <u>group:</u> , <u>insubject:</u> , <u>intext:</u> , <u>intitle:</u>
Directory	<u>allintext:</u> , <u>allintitle:</u> , <u>allinurl:</u> , <u>ext:</u> , <u>filetype:</u> , <u>intext:</u> , <u>intitle:</u> , <u>inurl:</u>
News	<u>allintext:</u> , <u>allintitle:</u> , <u>allinurl:</u> , <u>intext:</u> , <u>intitle:</u> , <u>inurl:</u> , <u>location:</u> , <u>source:</u>
Product Search	<u>allintext:</u> , <u>allintitle:</u>

**Query modifiers**

- **daterange:**
- **filetype:**
- **inanchor:**
- **intext:**
- **intitle:**
- **inurl:**
- **site:**

**Alternative query types**

- **cache:**
- **link:**
- **related:**
- **info:**

**Other information needs**

- **stocks:**

[http://www.googleguide.com/advanced\\_operators\\_reference.html](http://www.googleguide.com/advanced_operators_reference.html)  
 See also  
<https://help.bing.microsoft.com/#apex/bing/en-US/10001/-1>

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# Searching by Date

1. Google search for "html"

2. click on "Search Tools" and "Any Time" appears

3. click on Any Time and select Custom Range

4. calendar appears, enter dates

5. Final Result

<https://bytes.usc.edu/cs572/s23-sear-chhh/lectures/querying/index.html> 17/53

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**filetype:**



- **filetype:** restricts your results to files ending in a specific file suffix, e.g ".doc" (or .xls, .ppt. etc.), and shows you only files created with the corresponding program
- There can be no space between **filetype:** and the file extension
- The “dot” in the file extension – .doc – is optional
- filetype:doc will NOT return docx

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# inanchor:



- **inanchor:** will restrict the results to pages containing the query terms you specify in the anchor text or links to the page.
- For example, **[ restaurants inanchor:gourmet ]**
- will return pages in which the anchor text on links to the pages contain the word “gourmet” and the page contains the word “restaurants.”
- **allinanchor:** restricts results to pages containing all query terms you specify in the anchor text on links to the page.

For example, **[ allinanchor: best museums sydney ]** will return only pages in which the anchor text on links to the pages contain the words “best,” “museums,” and “sydney.”

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**intext:**

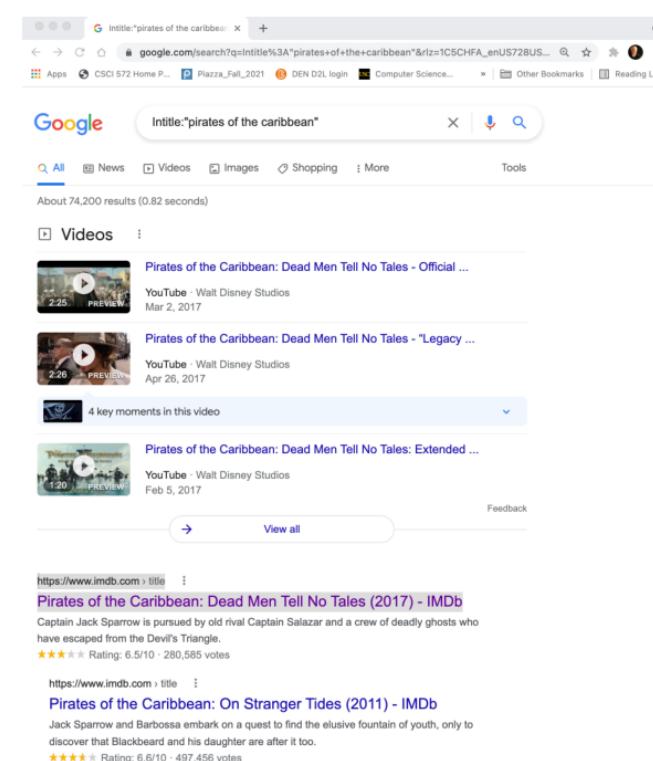
The screenshot shows a Google search results page for the query "pirates intext:"Disney.com"". The results are displayed in a grid format. The first result is a link to the official Disney website for Pirates of the Caribbean. Subsequent results include links to various Disney pages related to the movie, such as "The Curse of the Black Pearl", "Jack Sparrow", and "Hector Barbossa". There are also links to Disney games like "Pirates vs. Mermaids" and "Pirates of the Caribbean - Pirate's Conquest". The results are presented on a yellow background with the USC Viterbi School of Engineering logo at the top.

- **intext:** ignores link text, URLs, and titles, and only searches body text.
- **intext:** helps you avoid query words that are too common in URLs and links.
- **pirates intext:"Disney.com"** requires Disney.com to be within the body of the web page

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**intitle:**



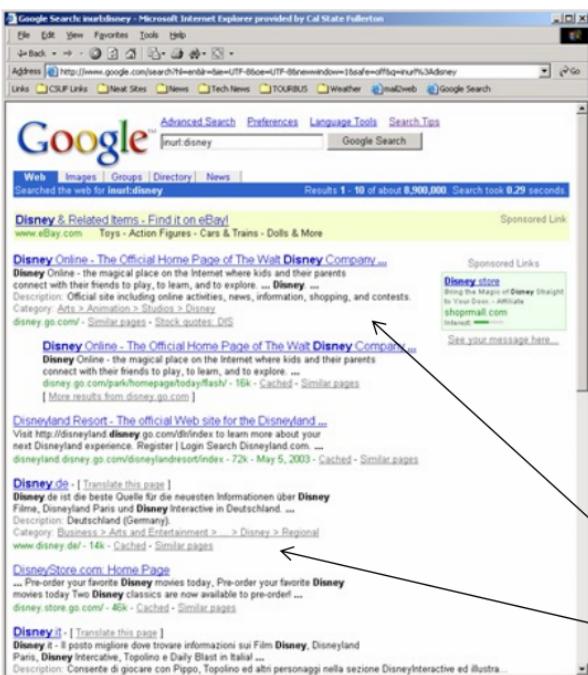
- **intitle:** restricts the results to documents containing a particular word in its title.
- You can also search for phrases. Just put your phrase in quotes
- **intitle:pirates**
- **Intitle:"pirates of the caribbean"**

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**inurl:**



- **inurl:** restricts the results to documents containing a particular word in its URL.
- **inurl:disney**
- Results include **Disney.go.com**
- **www.disney.de**

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The screenshot shows a Google search results page with the query "masters site:cs.usc.edu". The results are filtered to show only websites from the domain cs.usc.edu. The top result is the official website for the Master of Science program at the USC Viterbi School of Engineering. Below it are links for other M.S. programs: Computer Science (General), Intelligent Robotics, Data Science, and Software Engineering. The Game Development program is also listed. The results are presented in a standard Google search format with links, descriptions, and snippet previews.

- **site:** restricts the results to those websites in a domain.
- There can be no space between **site:** and the domain.
- Query is:
- **masters site:cs.usc.edu**

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## Using site:

- You can use **site:** in conjunction with another search term or phrase.  
**pirates site:disney.com**
- You can also use **site:** and negation to exclude sites.  
**pirates -site:disney.com**
- You can use **site:** to exclude or include entire top level domains (and, like with filetype, the dot is optional).  
**pirates -site:com**  
**pirates site:edu**



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# cache:

This is Google's cache of <https://www.cs.usc.edu/>. It is a snapshot of the page as it appeared on Feb 15, 2022 08:53:41 GMT. The [current page](#) could have changed in the meantime. [Learn more](#).

[Full version](#) [Text-only version](#) [View source](#)

Tip: To quickly find your search term on this page, press **Ctrl+F** or **⌘-F** (Mac) and use the find bar.

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**Computer Science**



"Deepfaking the Mind" Could Improve Brain-Computer Interfaces for People with Disabilities

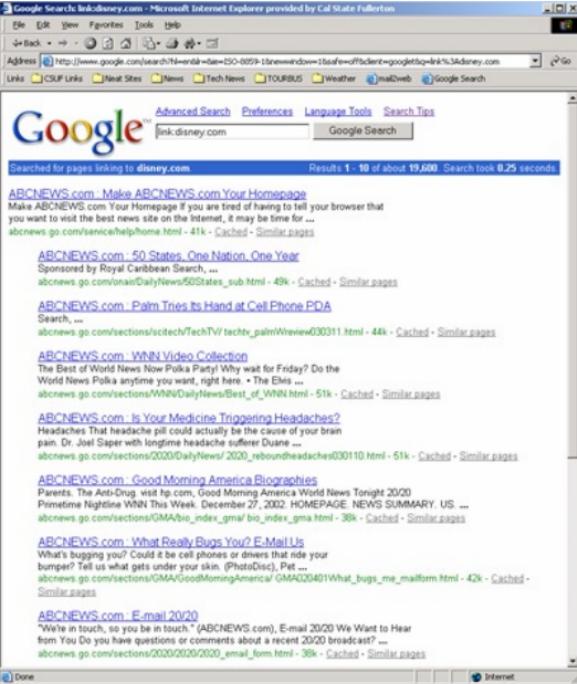
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**link:**



The screenshot shows a Microsoft Internet Explorer window with the following details:

- Title Bar:** Google Search: linkdisney.com - Microsoft Internet Explorer provided by Cal State Fullerton
- Address Bar:** http://www.google.com/search?hl=en&q=ISO-8859-1&safer=off&tbo=q&gl=us&gs\_l=link%3Adisney.com
- Toolbar:** Back, Forward, Stop, Refresh, Home, Favorites, Tools, Help.
- Links:** Links, CITE Links, Next Sites, News, Tech News, Weather, RealWeb, Google Search.
- Google Search Bar:** Advanced Search, Preferences, Language Tools, Search Tips, Link disney.com, Google Search.
- Search Results:**
  - ABCNEWS.com - Make ABCNEWS.com Your Homepage
  - ABCNEWS.com - 50 States, One Nation, One Year
  - ABCNEWS.com - Palm Tries Its Hand at Cell Phone PDA
  - ABCNEWS.com - WNN Video Collection
  - ABCNEWS.com - Is Your Medicine Triggering Headaches?
  - ABCNEWS.com - Good Morning America Biographies
  - ABCNEWS.com - What Really Bugs You? E-Mail Us
- Page Footer:** Done, Internet.

**List Items:**

- **link:** restricts the results to those web pages that have links to the specified URL.
- **link:Disney.com**
- Note: apparently the link operator only returns a sample of web pages pointing to the link

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**related:**

Google related:www.cs.usc.edu

All Images Maps Shopping More Search tools

About 45 results (0.21 seconds)

**CS | Computer Science**  
www.cs.ucla.edu General information about the department and contacts.

**Department of Computer Science, Columbia University | Home**  
www.cs.columbia.edu Established in 1979, the Department of Computer Science is located within the tree-lined Morningside campus on the Upper West Side of Manhattan.

**Donald Bren School of Information and Computer Sciences ...**  
www.ics.uci.edu Department of Information and Computer Science. Teaching and research information.

**Computer Science - Computer Science**  
www.cs.berkeley.edu Course descriptions, course schedules, job positions, events, newsletter, and contact information.

**Stanford Computer Science**  
www-cs.stanford.edu Stanford, California.

**Computer Science Department at Princeton University**  
https://www.cs.princeton.edu The official website for Princeton University's Computer Science Department. Information on programs offered, news, events, and more.

**Computer Science and Engineering: Welcome to CSE at UCR**  
www.cs.ucr.edu Department of Computer Science and Engineering (CSE)

**UCSB Computer Science**  
https://www.cs.ucsb.edu General information about the department and contacts.

• **related:** lists web pages that are "similar" to a specified web page.

• There can be no space between **related:** and the URL.

Google related:disney.com

Advanced Search Preferences Language Tools Search Tips Google Search

Searched for pages similar to disney.com Results 1 - 10 of about 20. Search took 0.12 seconds.

**Disney Online - Where the Magic Comes to You!**  
What should Brett and Candace do while waiting HUGE underwater? Dasher the mail Phoebe the reindeer, and the rest of the reindeer? Get HoHoHo! Get e-Cards! Description: Official site including online activities, news, information, shopping, and contests.

**Yahooligans!**  
Yahoo! Kids - Yahoo! Kids is the magical place on the Internet where kids and their parents connect with their friends to play, to learn, and to have fun. Description: Official site including online activities, news, information, shopping, and contests.

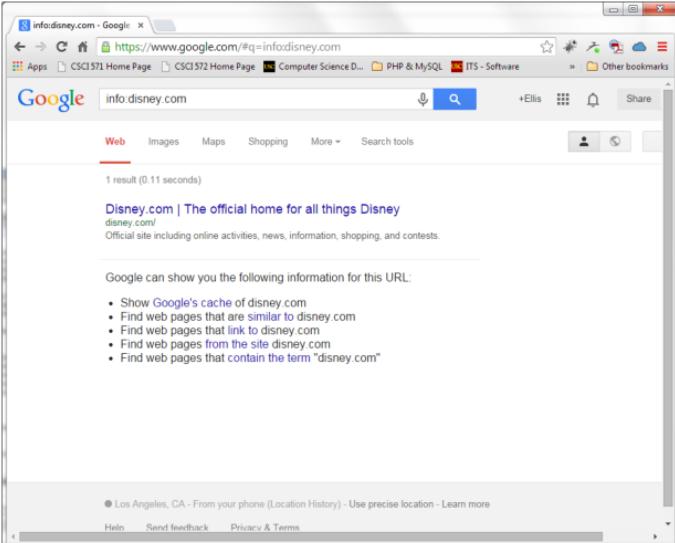
**BaronPicture.com**  
Paramount Pictures - Feature film production and distribution, video and DVD worldwide distribution, and production of... Description: Feature film production and distribution, video and DVD worldwide distribution, and production of...

**Waking Up to Discovery.com**  
Discovery Channel Shows | Current TV Schedules | HD Theater | Newsletter / My Discovery | Discovery School | International Sites ... Description: Discovery Online

**MGM New and Upcoming Movies**  
www.mgm.com/traile... 26 new DVD releases

Category: Business > Major Companies > Publicly Traded > MGM

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The screenshot shows a web browser window with the URL <https://www.google.com/#q=info:disney.com>. The search term 'info:disney.com' is entered in the search bar. The results page displays a single result for Disney's official website. Below the result, a section titled 'Google can show you the following information for this URL:' lists several options related to the Disney website.

- Show Google's cache of disney.com
- Find web pages that are similar to disney.com
- Find web pages that link to disney.com
- Find web pages from the site disney.com
- Find web pages that contain the term "disney.com"

At the bottom of the browser window, there is a location bar indicating 'Los Angeles, CA - From your phone (Location History) - Use precise location - Learn more'.

**• info: presents some information that Google has about a particular web page.**

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**stocks:**

Google stocks:aapl

All News Videos Shopping Images More Tools

About 13,900,000 results (0.77 seconds)

**Apple Inc** NASDAQ: AAPL Overview News Compare Financials

Market Summary > Apple Inc

**170.74 USD**  
+1.85 (1.10%) ↑ today  
Feb 15, 10:36 AM EST • Disclaimer

1D | 5D | 1M | 6M | YTD | 1Y | 5Y | Max

172  
171 170.83 USD 10:36 AM  
170  
169 .. Previous close 168.88  
168 10:00 AM 12:00 PM 1:00 PM 2:00 PM 3:00 PM 4:00 PM

Open	170.97	Mkt cap	2.79T	CDP.score	A-
High	171.45	P/E ratio	28.36	52-wk high	182.94
Low	170.25	Div yield	0.52%	52-wk low	116.21

About

apple.com

Apple Inc. is an American multinational technology company that specializes in consumer electronics, software and online services. [Wikipedia](#)

CEO: Tim Cook (Aug 24, 2011–)  
Founded: April 1, 1976, Los Altos, CA  
Headquarters: Cupertino, CA  
Number of employees: 154,000 (2021)  
Subsidiaries: Beddit, NextVR, Inc., Beats Electronics, [MORE](#)  
Founders: Steve Jobs, Ronald Wayne, Steve Wozniak

Disclaimer

Financials

- If you begin a query with **stocks:** Google will treat the rest of the query terms as stock ticker symbols, and will link to a finance page showing stock information for those symbols.

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## Even More Special Features of the Google Query Box

- **Math expressions are evaluated:**  $12 + 34 + 10 * (150 / 7) = 260.285714$
- **Dictionary definitions:** define:antidisestablishmentarianism
- Put @ in front of a word to search social media. For example: @twitter.
- Put \$ in front of a number and search for a price. For example: camera \$400.
- Put .. between two numbers and search in a range.  
For example, **camera \$50..\$100**.
- Put a valid tracking number from FedEx or UPS and it will take you to the tracking site
- Put a valid airline and flight number and it will give you its status
- Put a tilde, ~car repair and it queries on ALL synonyms of car, like auto
  - See the following links to further discussion of Google's operators
  - <http://www.google.com/support/websearch/bin/answer.py?hl=en&answer=136861>
  - [http://www.googleguide.com/advanced\\_operators\\_reference.html](http://www.googleguide.com/advanced_operators_reference.html)
  - <http://searchengineland.com/google-power-user-tips-query-operators-48126>

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## Even More Things One Can Do with Google

**Google** 53493439531=english

All Videos Images News Maps More Settings Tools

10 results (0.61 seconds)

53 493 439 531 =  
fifty-three billion four hundred ninety-three  
million four hundred thirty-nine thousand  
five hundred thirty-one

More info

**Google** mortgage calculator

Mortgage calculator

Monthly cost	Maximum loan	
Mortgage amount \$ 100,000	Interest rate (%) 3.92	Mortgage period (years) 30
Total cost of mortgage \$170,213	Monthly payments \$473	

Feedback

### Speaking/writing out a number

**Google** what's my ip

All Books News Shopping Maps More Settings Tools

About 2,040,000,000 results (0.78 seconds)

What's my IP  
172.248.32.30  
Your public IP address

→ Learn more about IP addresses

### Mortgage calculator

**Google** spinner

All Images Shopping Videos News More Settings Tools

About 369,000,000 results (1.73 seconds)

5 numbers ▾ Number Fidget



SPIN

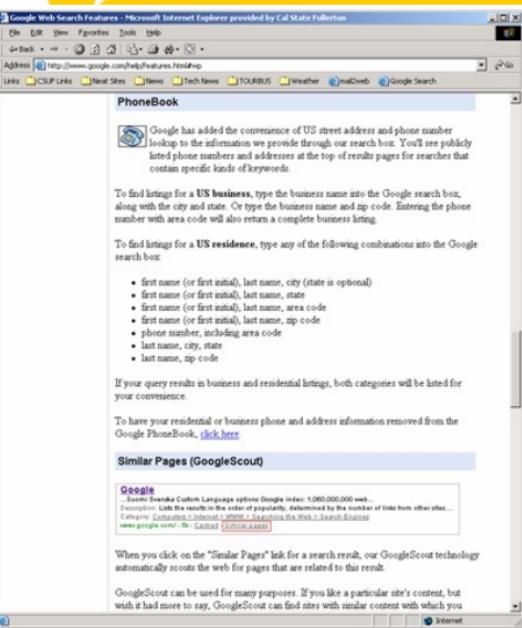
### What is my IP address

### Spinners for Games

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## A Failed Google Experiment - phonebook: operator



- There were actually three different Google phonebook operators.
- **phonebook:** searches the entire Google phonebook.
- **rphonebook:** searches residential listings only.
- **bphonebook:** searches business listings only

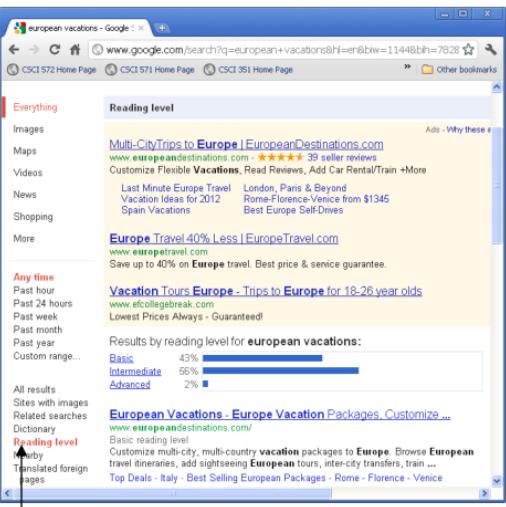
**As of 2010, Google's phone book feature has been officially retired. Both the phonebook: and the rphonebook: search operator have both been dropped due to many complaints about privacy violations**

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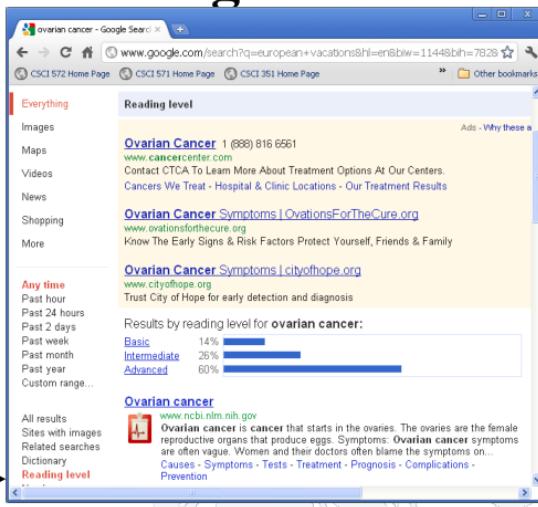
# A Failed Google Experiment - Reading Level Examples



**Query: European vacations**

The feature is based primarily on statistical models built with the help of teachers. Google paid teachers to classify pages for different reading levels, and then took their classifications to build a statistical model. With this model, they can compare the words on any webpage with the words in the model to classify reading levels.

**Google dropped this feature in 2015.**



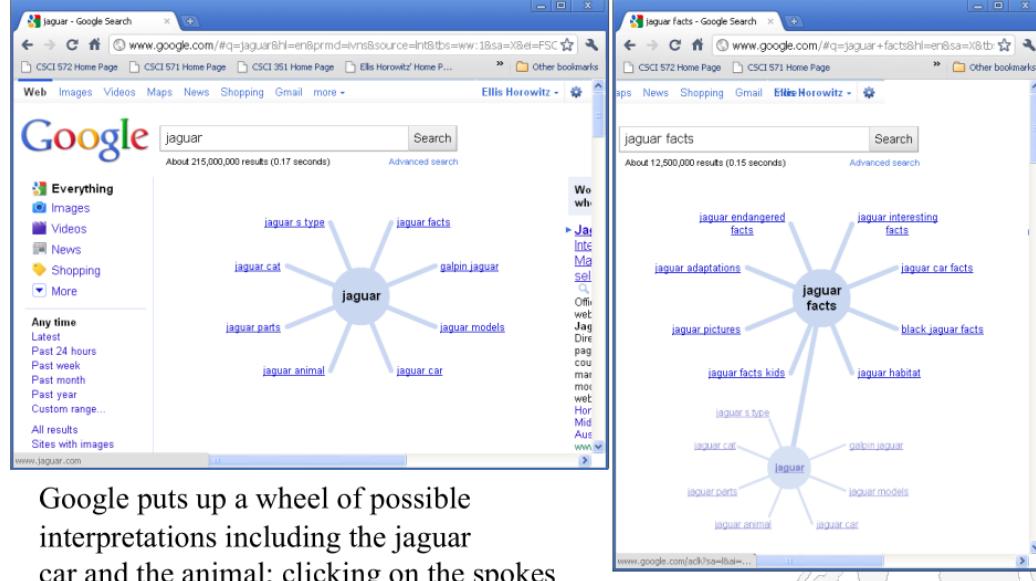
**Query: ovarian cancer**

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## A Failed Google Experiment - The Wonder Wheel



Google puts up a wheel of possible interpretations including the jaguar car and the animal; clicking on the spokes of the wheel bring up a refined wheel which eventually lead to a modified query

In 2011 Google removed the Wonder Wheel

In 2009 Google introduced the Wonder Wheel, a flash-based interface

In 2011 Google removed the Wonder Wheel but provided no concrete explanation for why it did so;

In 2012 Google restored the wonder wheel, renaming it the Contextual Targeting Tool

In 2014 it was re-focused to help advertisers chose their keywords

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# A Failed Google Experiment - Google Code Search

**Google Code Search**

From Wikipedia, the free encyclopedia

*Not to be confused with [Google Code](#).*

**Google Code Search** was a free beta product from [Google](#) which debuted in [Google Labs](#) on October 5, 2006, allowing web users to search for open-source code on the Internet. Features included the ability to search using operators, namely `lang:`, `package:`, `license:` and `file:`.

The code available for searching was in various formats including `.tar.gz`, `.tar.bz2`, `.tar`, and `.zip`, [CVS](#), [Subversion](#), [git](#) and [Mercurial](#) repositories.

<b>Google Code Search</b>	
	<a href="#">labs</a>
<b>Developer(s)</b>	Google
<b>Initial release</b>	October 5, 2006
<b>Development status</b>	Discontinued
<b>Operating system</b>	Any (web-based application)
<b>Type</b>	Code search engine
<b>Website</b>	<a href="http://www.google.com/codesearch">www.google.com/codesearch</a>

**Contents** [hide]

- 1 Regular expression engine
- 2 Discontinuation
- 3 See also
- 4 References
- 5 External links

**Regular expression engine** [edit]

The site allowed the use of [regular expressions](#) in queries, which at the time was not offered by any other search engine for code.<sup>[citation needed]</sup> This makes it resemble [grep](#), but over the world's public code. The methodology employed combines a [trigram index](#) with a custom-built, [denial-of-service](#) resistant [regular expression](#) engine.<sup>[1]</sup>

In March 2010, the code of [RE2](#), the regular expression engine used in Google Code Search, was made open source.<sup>[2]</sup>

Google Code Search supported POSIX extended regular expression syntax, excluding back-references, collating elements, and collation classes.

Languages not officially supported could be searched for using the `file:` operator to match the common file extensions for the language.

**Discontinuation** [edit]

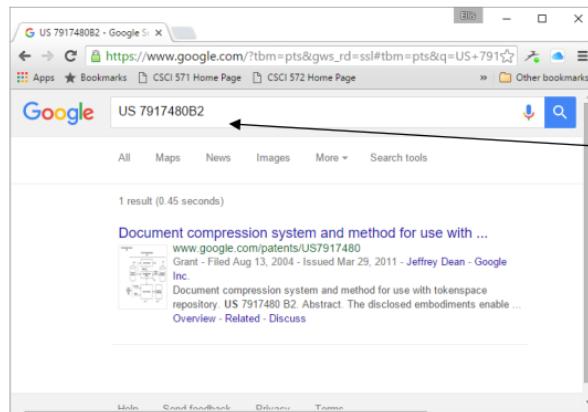
In October 2011, Google announced that Code Search was to be shut down along with the Code Search API.<sup>[3]</sup> The service remained online until March 2013,<sup>[4]</sup> and it now returns a **404**.

In January 2012, Russ Cox published an overview of history and the technical aspects of the tool, and open-sourced a basic implementation of a similar functionality as a set of standalone programs that can run fast indexed regular expression searches over local code.<sup>[5]</sup>

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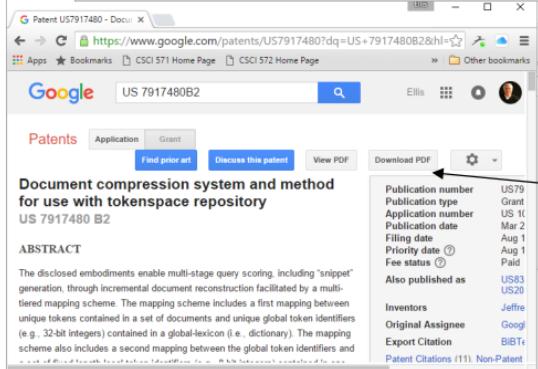
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## Special Content Search Engines Google Patents



patent query using patent number

Initial Google Patents Page



Sample patent results page;  
Note download

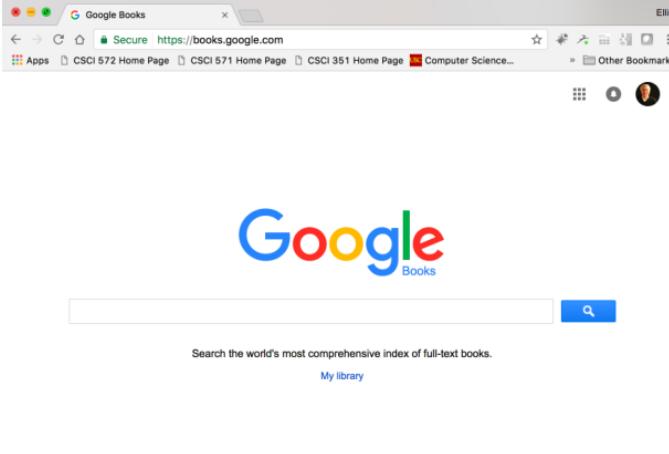
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## Special Content Search Engines Google Books



**Google Books** is a service that searches the full text of books and magazines that Google has scanned, converted to text using optical character recognition (OCR), and stored in its digital database.

**Books are provided** either by

- publishers and authors, through the Google Books Partner Program, or by
- Google's library partners, through the Library Project.

**Controversy:**  
Google has been criticized for potential copyright violations, and lack of editing to correct the many errors introduced into the scanned texts by the OCR process.

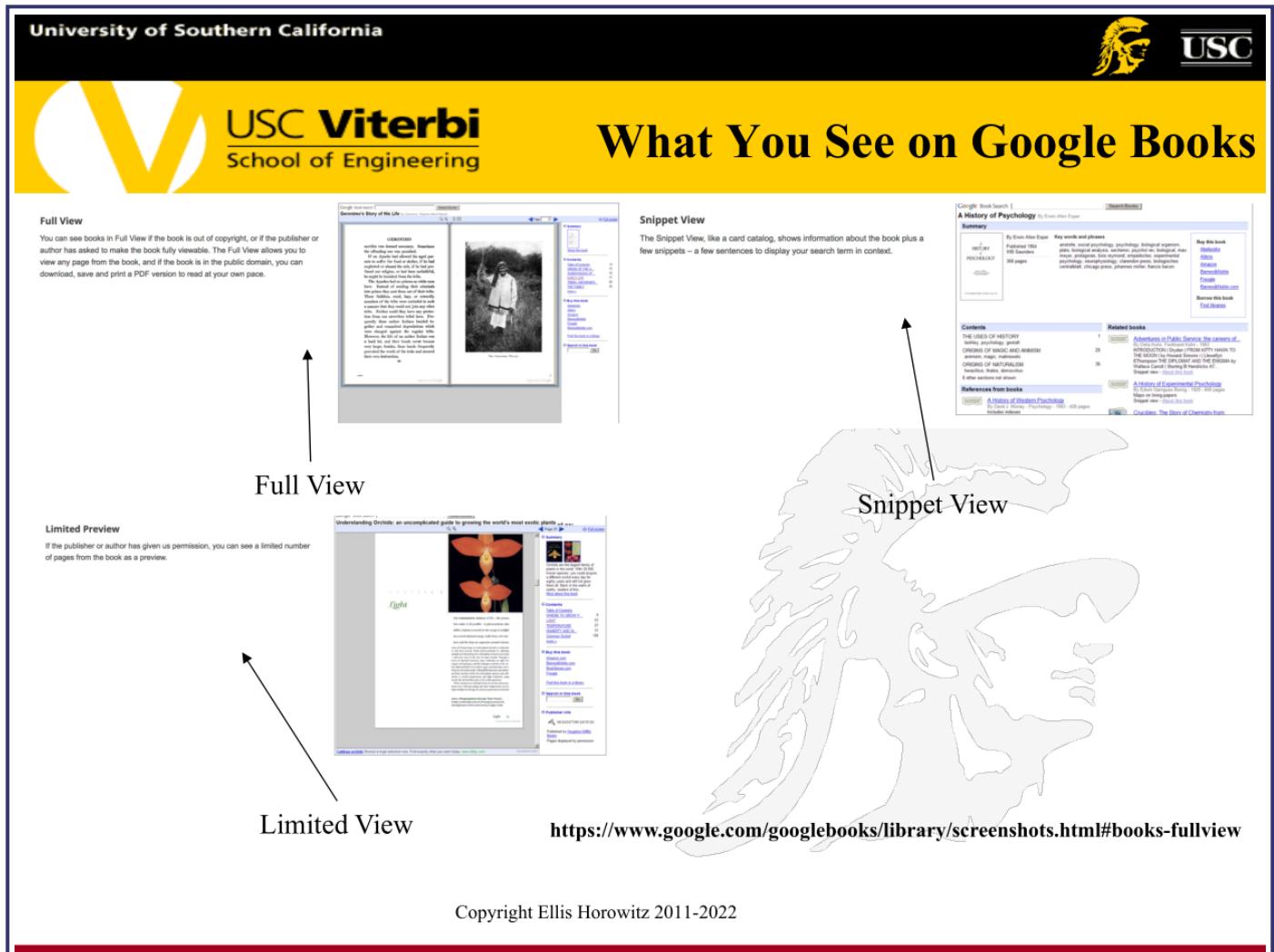
As of October 2015, the number of scanned book titles was over 25 million.

Google estimated in 2010 that there were about 130 million distinct titles in the world, and stated that it intended to scan all of them.

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## What You See on Google Books



**Full View**  
You can see books in Full View if the book is out of copyright, or if the publisher or author has asked to make the book fully viewable. The Full View allows you to view any page from the book, and if the book is in the public domain, you can download, save and print a PDF version to read at your own pace.

**Limited Preview**  
If the publisher or author has given us permission, you can see a limited number of pages from the book as a preview.

**Snippet View**  
The Snippet View, like a card catalog, shows information about the book plus a few snippets – a few sentences to display your search term in context.

<https://www.google.com/googlebooks/library/screenshots.html#books-fullview>

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The screenshot shows a web browser window with the following details:

- Header:** University of Southern California, USC Viterbi School of Engineering.
- Title:** Special Content Search Engines Google Scholar
- Browsing:** https://scholar.google.com
- User:** ehorowitz1@gmail.com
- Search Bar:** A search bar with a dropdown menu set to "Articles (✓ include patents) Case law".
- Updates:** My updates: recommended based on My Citations (Learn more). Two recent updates are listed:
  - A discrete particle swarm optimisation algorithm for geographical map contour reconstruction by B Fergani, MK Kholladi - ... Information and Communication Technology and its ..., 2016
  - Dynamic character grouping based on four consistency constraints in topographic maps by P Xu, Q Miao, R Liu, X Chen, X Fan - Neurocomputing, 2016
- Footer:** Stand on the shoulders of giants

**List of bullet points:**

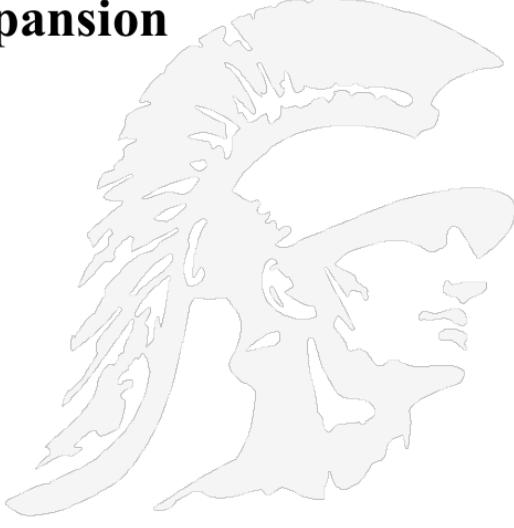
- **Google Scholar** is a freely accessible search engine that indexes the full text or metadata of scholarly literature across an array of publishing formats and disciplines.
- The Google Scholar index includes most peer-reviewed online academic journals and books, conference papers, theses, dissertations, etc

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# Relevance Feedback & Query Expansion



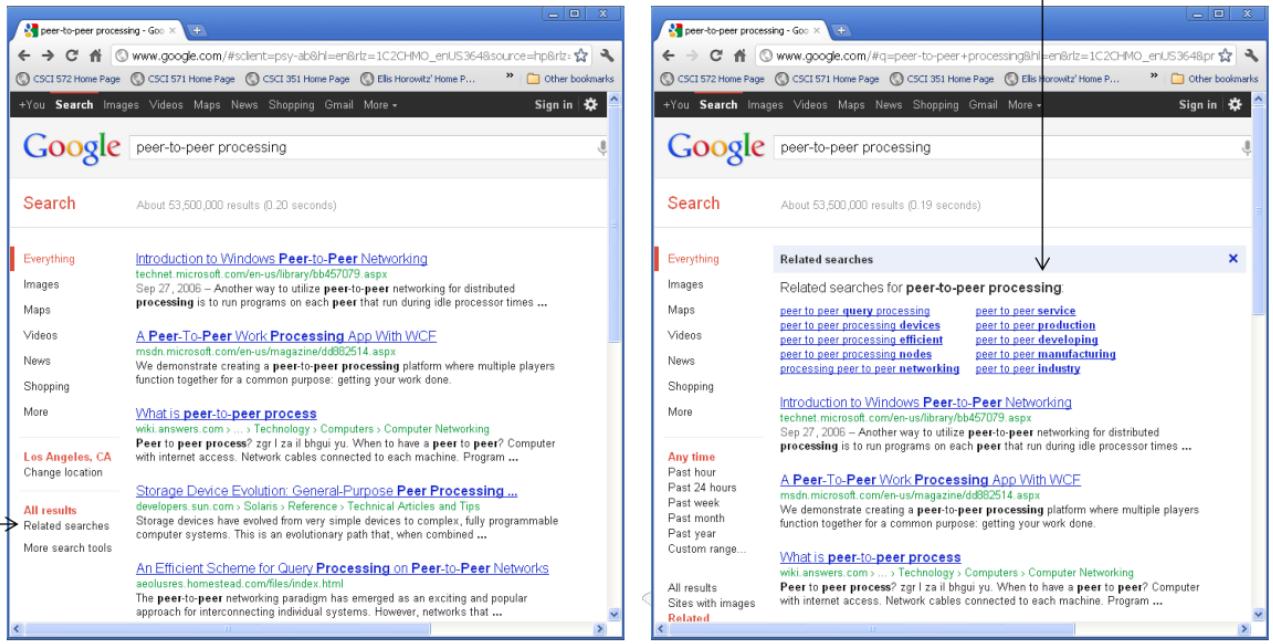
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## Relevance Feedback

- After initial retrieval results are presented, allow the user to provide feedback on the relevance of one or more of the retrieved documents
  - Google offers this but not very prominently (see 10 related searches below)

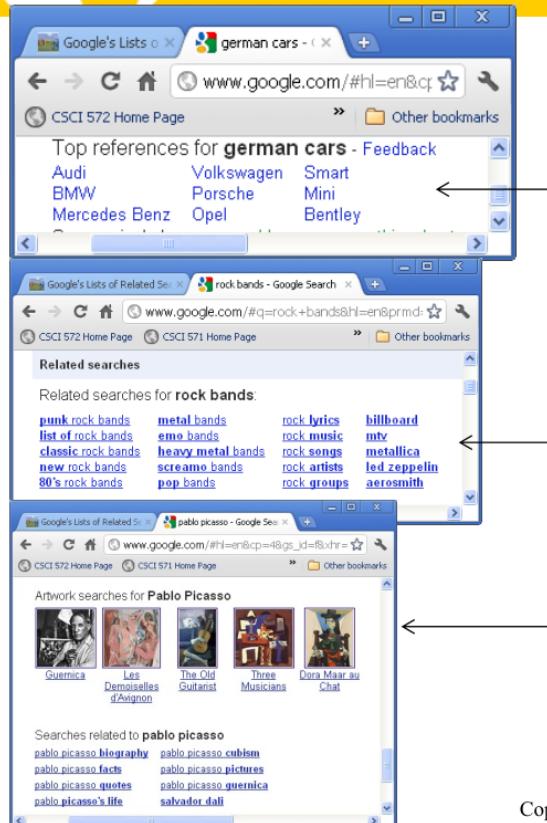


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## Google Related Searches



- Google has enhanced their related searches, e.g.
- If you search for the name of a category, Google will show the most popular members, e.g. “german cars”
- If you search for a category like “rock bands” You get related searches including a few top rock bands such as metallica and led zeppelin
- If you search for famous people you get photos of their work, e.g. Pablo Picasso returns photos of his famous painting

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**Search Engines and Relevance Feedback**

On the query “jaguar” yahoo’s 3rd result is the animal; Bing’s 2<sup>nd</sup> result is the animal; all have extensive ads for the car at the top and side indicating that the query for the animal is far rarer; Bing, on the left, puts up alternatives, e.g. Jaguar Luggage, Jacksonville Jaguars; Yahoo also provides related searches but only for the car: bmw, lexus, etc

Bing and Yahoo clearly mark Related Searches

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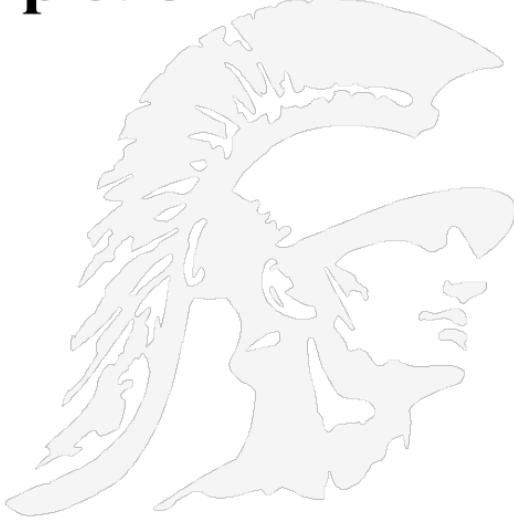
42

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# Auto-Completion



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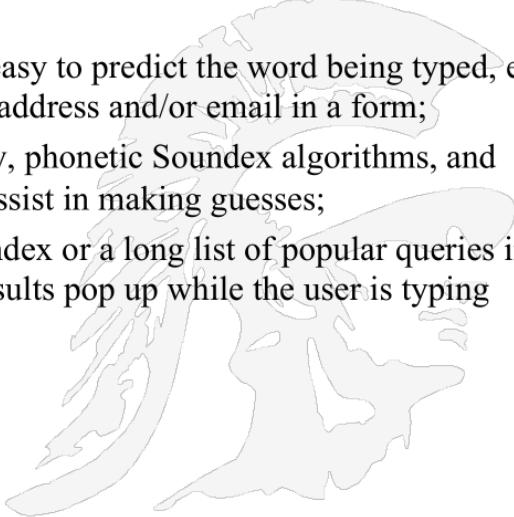
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## Auto-Completion

- ***Auto-completion* is the process of predicting a word or phrase that the user wants to type in without the user actually typing it in completely**
- **Auto-completion is a form of relevance feedback**
  - This feature is effective when it is easy to predict the word being typed, e.g. when a browser fills in your name, address and/or email in a form;
  - Search engines may use past history, phonetic Soundex algorithms, and spelling corrections algorithms to assist in making guesses;
  - The challenge is to search a large index or a long list of popular queries in a very short amount of time so the results pop up while the user is typing



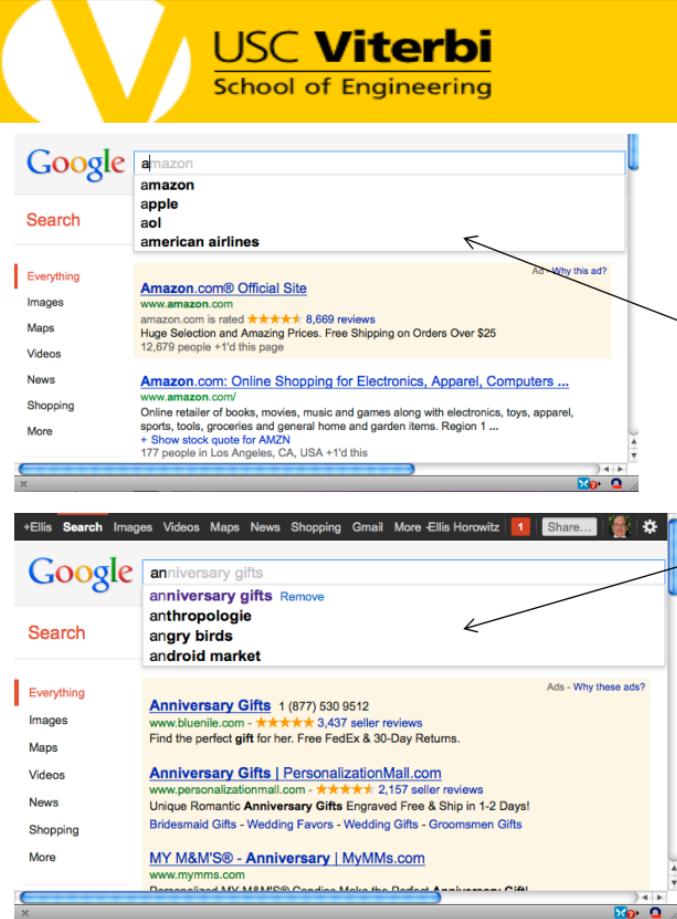
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## Google Auto-Completion

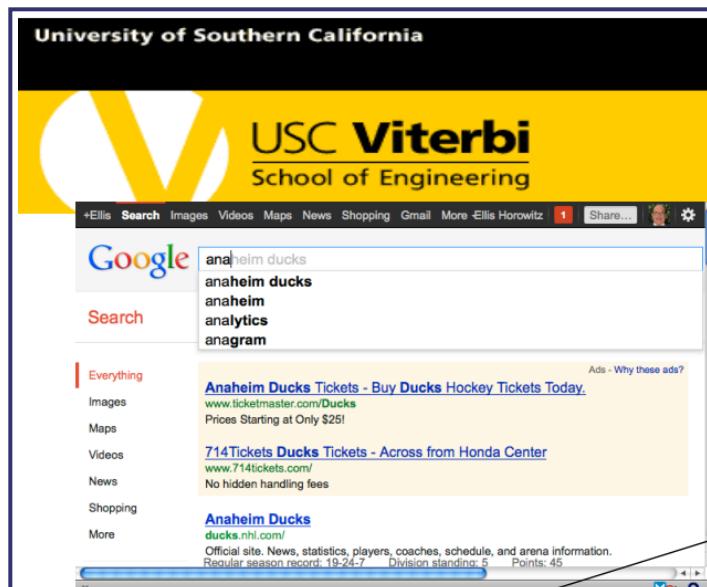


- Google has been offering auto-completion since 2008, though it was an experimental feature as far back as 2004.
- Google does automatic completion even after the user enters just the first character
- When the second character is entered a totally different set of possibilities may be offered

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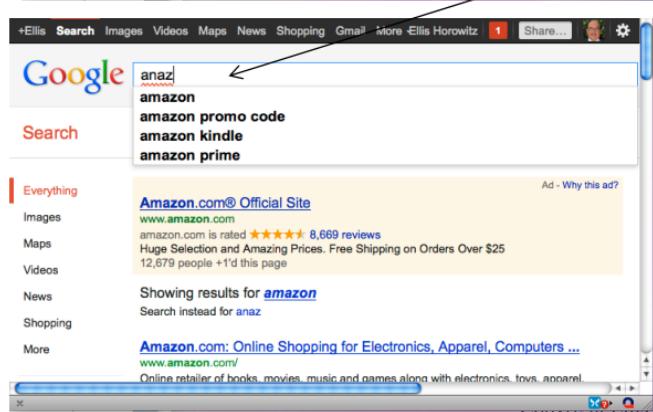
45

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**Google Auto-Completion**

- By the time the fourth character is entered Google has already guessed that the word has been misspelled, and shows this by the squiggly red line; so auto-completion and spelling correction are intertwined



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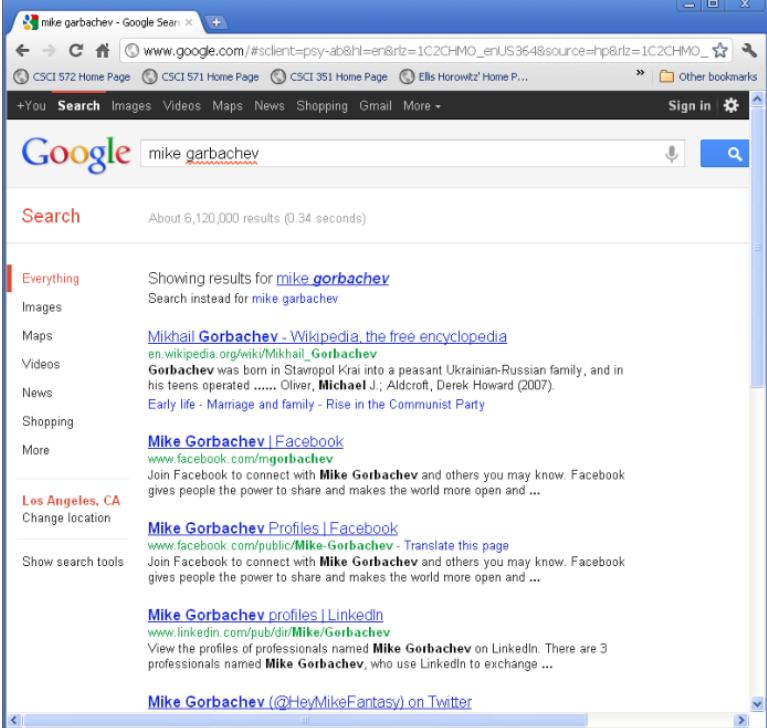
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## Google Combines Spelling Correction and Auto Completion

After hitting Enter, Google will display results for “Mikhail Gorbachev”, but also provide a link if instead the user actually wanted to search for “mike garbachev”



The screenshot shows a Google search results page for the query "mike garbachev". The results include links for Wikipedia, Facebook, LinkedIn, and Twitter. A red box highlights the first result, "Mikhail Gorbachev - Wikipedia, the free encyclopedia", which is a spelling correction suggestion for the misspelled query.

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# Yahoo Auto-Completion



The screenshot shows the USC Viterbi School of Engineering website. A search bar at the top contains the text "mike garb". Below the search bar, a dropdown menu displays several auto-complete suggestions: "mike garber", "mike garbut", "mike garbarino", "mike garbe", "mike garbe", "mad mike garbage pail kids", "mike garbut transport", "mike garbus", "mike garbut impressionist", and "mike garble".



The second screenshot from the same website shows the same search bar with the text "mike garb". The dropdown menu now only contains two suggestions: "mike garbac" and "mike garbacki".

- **Yahoo does auto-completion though it starts after typing the *third* character, whereas Google starts on the *first* character**
- **As the user types more characters in this example Yahoo runs out of alternatives and when one more character is added there will be no more auto-complete suggestions**

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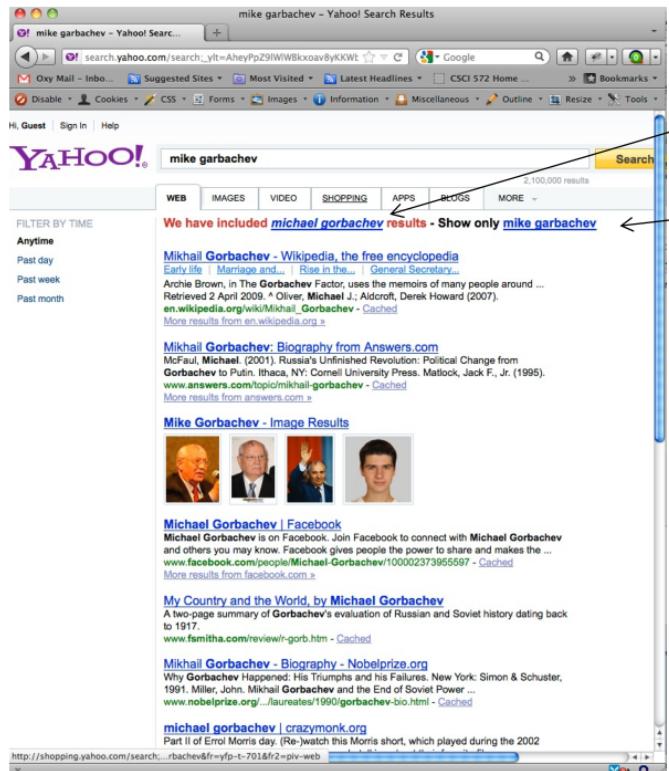
48

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## Yahoo Also Offers Spelling Correction

After hitting Enter, Yahoo does offer the correct spelling of “Gorbachev” and returns many results; in case the user actually wanted to search for “garbachev” it provides a link to produce those results, but after clicking Yahoo delivers more results for Gorbachev and none for Garbachev



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**Bing Auto-Completion**

- On the other hand, Bing does not even wait for the first character to be entered, as seen on the left they make use of previous queries and enter some possibilities before the user even types a single character
- After entering “mike garbac” bing finally comes up with the correct spelling, see below

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**Bing Final Result  
with Spelling Corrected**

As with Google and Yahoo, Bing will offer results using the corrected spelling and include a link for the user spelling

mike garbachev - Bing

www.bing.com/search?q=mike+garbachev&qs=n&form=QBL

ALL RESULTS 1-10 of 2,160,000 results - Advanced

Including results for [michael gorbachev.](#) ←

Do you want results for mike garbachev?

**Mikhail Gorbachev - Wikipedia, the free encyclopedia**

Early life - Marriage and family - Rise in the Communist ...  
Andropov's death in December 1982 triggered the memoirs of many people around ...  
Retrieved 2 April 2009. · Oliver, Michael J.; Aldcroft, Derek Howard (2007). en.wikipedia.org/wiki/Mikhail\_Gorbachev

**Mikhail Gorbachev: Biography from Answers.com**

McFaul, Michael. (2001). Russia's Unfinished Revolution: Political Change from Gorbachev to Putin. Ithaca, NY: Cornell University Press. Matlock, Jack F., Jr. ... www.answers.com/topic/mikhail-gorbachev

**Images of mike garbachev**

[bing.com/images/search?q=mike garbachev](#)

**Michael Gorbachev | Facebook**

Lives in Tanjungbalai - From Medan - Worked at PT.KALAPAOON  
**Michael Gorbachev** is on Facebook. Join Facebook to connect with Michael Gorbachev and others you may know. Facebook gives people ... www.facebook.com/people/Michael-Gorbachev...

**My Country and the World, by Michael Gorbachev**

A two-page summary of Gorbachev's evaluation of Russian and Soviet history dating back to 1917. www.fsmitha.com/review/w-gorb.htm

**Mikhail Gorbachev - Biography - Nobelprize.org**

Why Gorbachev Happened: His Triumphs and His Failures. New York: Simon & Schuster, 1991. Miller, John. **Mikhail Gorbachev** and the End of Soviet Power ... www.nobelprize.org/nobel\_prizes/peace laureates/1990/gorbachev-bio...

**michael gorbachev | crazymonk.org**

Part II of Errol Morris' day (Re-)watch this Morris short, which played during the 2002 Oscar telecast, depicting a bunch of people talking about their favorite films. crazymonk.org/topics/michaelgorbachev

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## Judging the Quality of Answers: Mean Reciprocal Rank (MRR) Scoring

- The mean reciprocal rank is a statistical measure for evaluating any process that produces a list of possible responses to a sample of queries, ordered by probability of correctness.  
The **reciprocal rank** of a query response is the multiplicative inverse of the **rank** of the first correct answer
- The mean reciprocal rank is the average of the reciprocal ranks of results for a sample of queries
- For example, suppose we have the following three sample queries for a system that tries to translate English words to their plurals. In each case, the system makes three guesses, with the first one being the one it thinks is most likely correct:

$$\text{MRR} = \frac{1}{|Q|} \sum_{i=1}^{|Q|} \frac{1}{\text{rank}_i}.$$

Query	Results	Correct response	Rank	Reciprocal rank
cat	catten, cati, <b>cats</b>	cats	3	1/3
tori	torii, <b>tori</b> , toruses	tori	2	1/2
virus	<b>viruses</b> , virii, viri	viruses	1	1

the mean reciprocal rank as  $(1/3 + 1/2 + 1)/3 = 11/18$  or about 0.61.

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