

Google® Search Tips and Techniques for SAS® and JMP® Users

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Abstract

Google® (www.google.com) is the world's most popular and widely-used search engine. As the premier search tool on the Internet today, SAS® and JMP® users frequently need to identify and locate SAS and JMP content wherever and in whatever form it resides. This paper provides insights into how Google works and illustrates numerous search tips and techniques for finding articles of interest, reference works, information tools, directories, PDFs, images, current news stories, user groups, and more to get search results quickly and easily.

Introduction

As the world's information continues to grow to astronomical levels the world's largest search engine, Google, and its proprietary software, organizes this information and makes it useful and accessible to everyone. Google users are well aware of the speed, accuracy, and reliability that a Google search provides. Because of this, SAS and JMP users frequently turn to Google for their search needs because of its ability to find the information they want, when they want it, providing them with the speed, accuracy, and organization of the searched results. In this paper, the authors take you on a journey into the world of Google by starting with the Google user interface, showing you how Google works, exploring various search techniques, all the while sharing an assortment of tips and techniques that SAS and JMP users can use to achieve better searches and better results.

Note: SAS and JMP users have a wonderful repository of papers at <http://www.lexjansen.com> where more than 17,360 presentations / papers from SAS Global Forum (SGF) and SUGI international conferences; MWSUG, NESUG, PNWSUG, SCSUG, SESUG, and WUSS regional conferences; and PharmaSUG, PhUSE, and CDISC special-interest conferences can be searched.

The Google User Interface

Google's "free" and easy-to-use Internet search service begins with a very familiar user interface (or home page). Using a web browser such as Google Chrome®, Mozilla Firefox®, Internet Explorer®, or Safari®, the web address, www.Google.com, is entered as shown in Figure 1. By entering a keyword (or phrase) in the search box (section 1) and clicking the "Google Search" button (section 2), a basic user-initiated search can be requested. In addition to using the Google home page to search relevant results on the World Wide Web, users are also able to perform specific searches (i.e., You, Search, Images, Maps, Play, YouTube, News, Gmail, Documents, Calendar, and More) by clicking the links located at the top of the Google page (section 3).

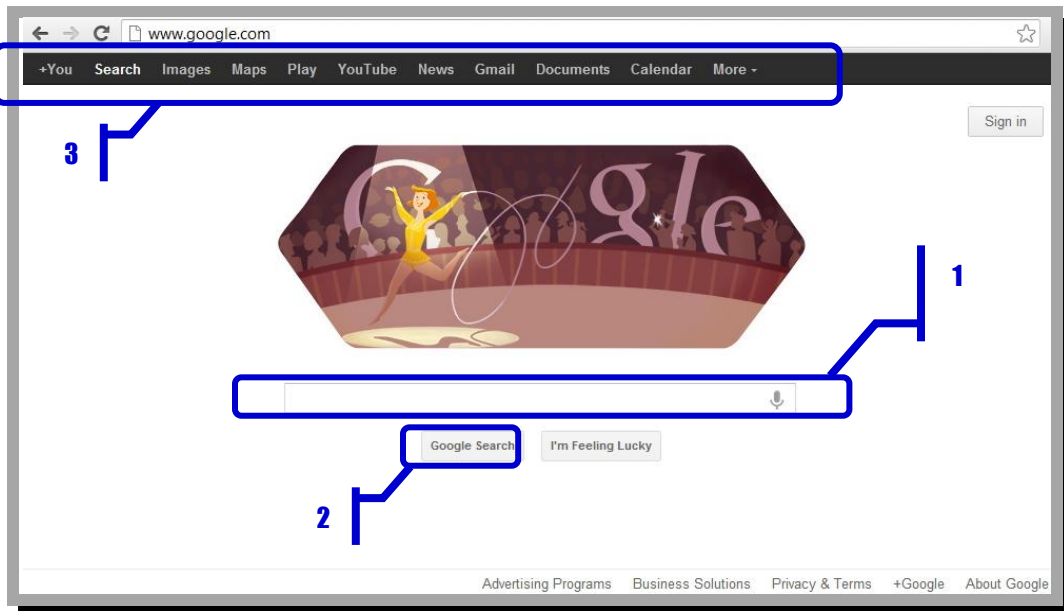


Figure 1. The Google User Interface

How Google Works

So, how does Google work? You're definitely not the first to ask this question, and you won't be the last. Our explanation of how Google works will be separated into two distinct phases: 1) Google's web crawling, extraction and indexing process, and 2) Google's query processor process. The web crawling, extraction and indexing process, as illustrated in Figure 2, shows Google's automated web crawler, or a computer program (aka spider or Googlebot), browsing, extracting, and indexing (organizing) content from the World Wide Web by thousands of Google computers. Essentially, the Googlebot crawls (searches) broad expanses of the Internet harvesting web page links creating a list of links. The list of links are organized and indexed and then stored in databases.

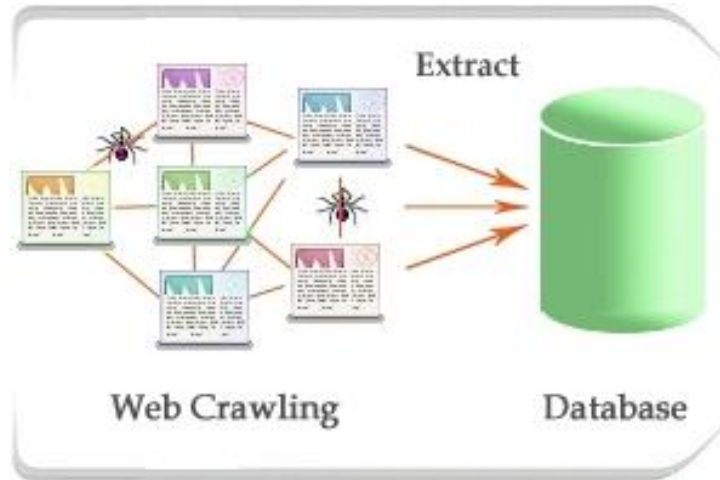


Figure 2. Web Crawling, Extraction, and Indexing Process

The query processor process, as depicted in Figure 3, shows as a query is submitted, the Google web servers automatically send the query to the index servers to determine the pages that contain the word(s) that match one or more query terms. The query is then sent to the doc servers where the stored documents are retrieved. The search results are then sent immediately back to the Google user.

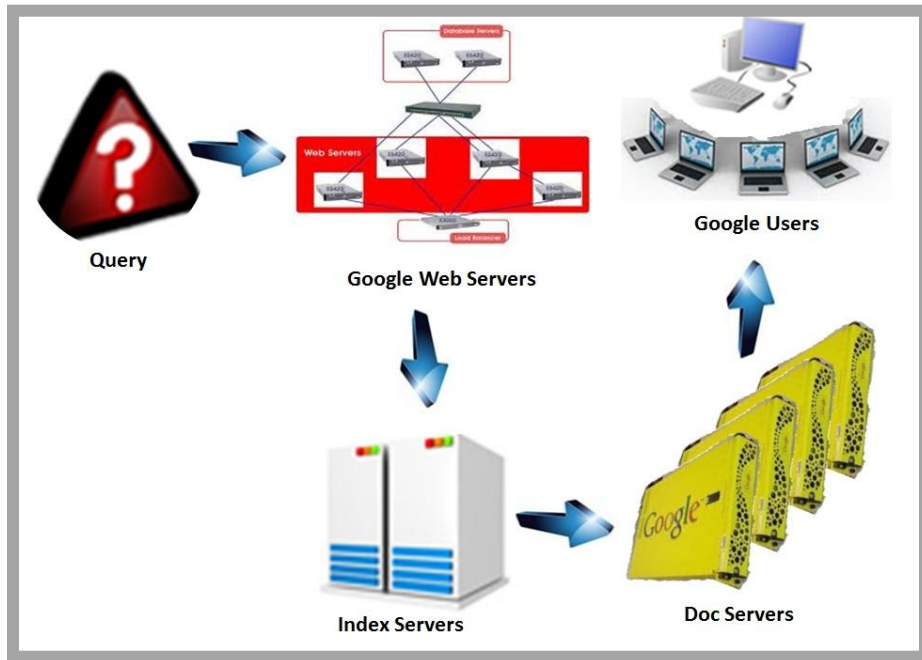


Figure 3. Query Processor Process

Better Searches, Better Results

For many SAS and JMP users, the importance of conducting successful searches is not only important, it may be an essential activity in conducting effective research required by your job. Because the Google search engine adheres to rules and processes the built-in algorithms in an attempt to interpret your search requests while delivering the “best” results possible; in the end, the derived results are only as good as the search terms provided. In an attempt to alleviate the many challenges of finding the right combination of keywords or phrases along with the frustration associated with unsuccessful searches and massive listings, the following tips and techniques are meant to help you achieve better searches and better results. After all, becoming a savvy Google search user begins with learning and applying effective tips and techniques.

Basic Search Tips and Techniques

Understanding basic search techniques gives you incredible power to find what you are looking for quickly and easily. In addition to this, you may actually find content you didn’t plan for, but adds value to your query results. Table 1 below, presents a number of basic search tips and techniques you may find useful the next time you prepare a search query.

Tip/Technique	Description	Example
Keep it Short	Limit the number of search words specified for greater accuracy in the generation of search results.	sascommunity
Be Specific	When entering your search, be as specific as possible. Avoid generic (or vague) references when entering search words.	BOOK proc sql <or> BOOK jmp
Use Quotes	Search the words in the exact order specified.	“sas hash” <or> “proc sql”
Search a Website	Have your search results come from a specific website.	hash SITE:www.sas.com
Wildcard (*)	The asterisk (*) is used as a placeholder (or wildcard) for unknown words.	sas blogs * <or> jmp blogs *
OR <or> 	The OR (in all CAPS) tells Google to search either one of several words. The pipe symbol () can be substituted for the OR.	sas OR jmp
AND <or> and	The AND (CAPS doesn’t matter) tells Google to search for both words together. Specifying ‘and’ in lowercase or ‘AND’ in UPPERCASE produces the same results.	sas AND jmp <or> sas and jmp
– (Minus sign)	A word you don’t want in your search query can be excluded by specifying a – (minus sign) before the word. Note: A blank space should precede a – (minus sign) to avoid confusing it with a hyphenated word.	sas -airline <or> jmp -medical
Excluding Words	More than one word can be excluded from your search query by specifying a – (minus sign) before each word.	sas -airline -shoes
Computations	Google can perform basic arithmetic computations.	77 x 119 <or> pi x 7

Table 1. Basic Search Tips and Techniques

Advanced Search Tips and Techniques

Google offers advanced search tips and techniques which are worth knowing, as shown in Table 2.

Tip/Technique	Description	Example
FILETYPE: (File Type)	Google automatically displays all available file types by default but can be told to display specific file types using the FILETYPE: operator. The values for FILETYPE: include: DOC, DWF, KML, KMZ, PDF, PPT, PS, RTF, SWF, and XLS.	sas FILETYPE:PDF
\$nn...\$nn (Price Range)	Google can show search results for PROC SQL books priced \$19 to \$50 by using three dots between the numeric values.	proc sql book \$19...\$50
DATERANGE:yyyymm (Date Search)	Google can show search results containing information and news from a specified date using the DATERANGE: operator. Note: The date range value is expressed as DATERANGE:YYYYMM where YYYY=year and MM=month.	‘sas hash’ DATERANGE:201206
RELATED: (Sites that are Similar)	Google can show search results from websites that are similar (in the opinion of Google) by specifying the RELATED: operator.	jmp RELATED:www.jmp.com

Table 2. Advanced Search Tips and Techniques

“Powerful” Specialized Google Operators

Google provides a number of specialized operators to help you with your search queries by finding information about a specific book, population number, investment fund, movies, public stock, unemployment rate, weather, or website; identifying and displaying information that Google has collected about backlinks (or incoming links) for a specific website; and display maps about a specific country, state, city, or location, as shown in Table 3.

Operator	Description	Example
AREA CODE	Display the geographical location for any three-digit area code.	AREA CODE 619 <or> AREA CODE 310
BOOK	Search and display book-related information.	BOOK proc sql <or> BOOK google
DEFINE	Display a definition for a specific word or phrase.	DEFINE quasar <or> DEFINE San Diego
INFO	Display information that Google has collected for a specific website.	INFO www.sas.com
LINK	Display backlinks (or incoming links) for a specific website or web page that is received from another website.	LINK www.sas.com
MAP	Display a map of a specific country, state, city or location.	San Diego map
MOVIE	Search and display where a movie is currently playing and a description of all movies currently playing in a specific location.	MOVIE bourne <or> MOVIE 91978 <or> MOVIE spring valley
POPULATION	Display the population of a U.S. state or county.	POPULATION San Diego
SITE	Display the number of indexed pages for a specific website.	SITE www.sas.com
STOCK	Display the market data for a specific company’s stock or fund.	STOCK goog <or> STOCK siri
TIME	Display the current time in a city.	TIME Honolulu
UNEMPLOYMENT RATE	Display unemployment rate trends of a U.S. state, county or zipcode.	UNEMPLOYMENT RATE San Diego <or> UNEMPLOYMENT RATE 91978
WEATHER	Display the weather conditions, temperature, humidity, wind, and forecast for many cities or zipcodes.	WEATHER San Diego
~ word	Search and display a synonym or similar word.	~ statistician

Table 3. Specialized Google Operators

Conclusion

As the world’s information continues to grow to astronomical levels the world’s largest search engine, Google, and its proprietary software, organizes this information and makes it useful and accessible to everyone. In an attempt to reduce the frustration levels often produced from ineffective searches and search results, we offer numerous tips and techniques which, if used, should help you take advantage of the speed, accuracy, and reliability that a Google search provides. As a result, SAS and JMP users frequently turn to Google (or LexJansen.com) for their search needs because of its ability to find the information they want, when they want it, while providing them with the speed, accuracy, and organization of the searched results.

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Charles Edwin Shipp is a programmer, consultant and author, and has been using the SAS and JMP software since 1980. He is credited in the original JMP manual for his roles in the early days. He has written more than one hundred papers and has been an invited speaker at more than one hundred International, regional, local, and special-interest groups. He is the recipient of 11 “Best” contributed paper and poster awards. Charlie is the co-author of three books including the ever-popular Books by Users (BBU) book, Quick Results with SAS/GRAPH Software. Currently, Charlie is involved as an eBook author, App developer for Apple iPad, sasCommunity.org Advisory Board member, consultant for 4Life, AdvoCare, Genesis Pure, Melaleuca, Trivani Foundation International, and consultant in JMP and JMP Genomics.

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