

WEB SEARCH BASICS

CS 128

Information Retrieval & Big Data

Prof. Donald J. Patterson

Content adapted from Hinrich Schütze
<http://www.informationretrieval.org>

OVERVIEW

OVERVIEW

- Introduction
- Classic Information Retrieval
- Web IR
- Sponsored Search
- Web Search Basics
 - Size of the Web
- Web Users
- Spam



INTRODUCTION

WHERE DID BIG DATA COME FROM?

- Classic IR
- Web IR
- Generalized data processing frameworks
- Cheap cloud storage
- Lots of data
 - Apply the frameworks to them



INTRODUCTION

- Search behavior has changed a lot over time
- How often do you use search?



INTRODUCTION

- Search behavior has changed a lot over time
- How often do you use search?
- How often do you use search engines?



INTRODUCTION

GOOGLE HANDLES 63,000 SEARCHES / SEC

- 2 trillion searches per year
- 5.6 billion searches per day
- 228 million per hour
- 3.8 million per minute



INTRODUCTION

15% OF ALL SEARCHES HAVE NEVER BEEN SEARCHED BEFORE

- 9500 per second
- Where are these coming from?



INTRODUCTION

MORE THAN 200 FACTORS ARE USED TO RANK WEB PAGE RELEVANCE

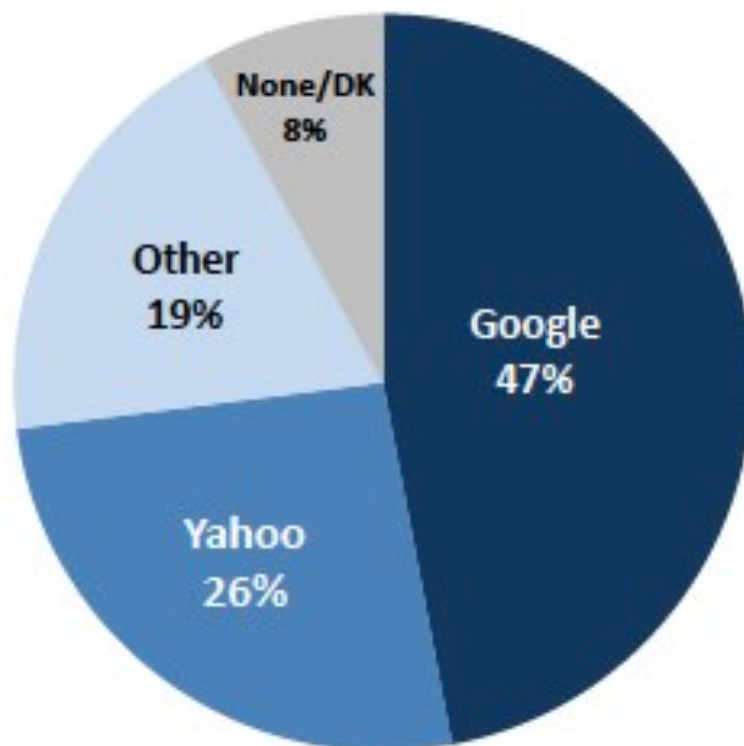
- Domain Factors
- Page-level factors
- Site-level factors
- back link factors
- user interaction
- special Google rules
- brand signals
- spam factors



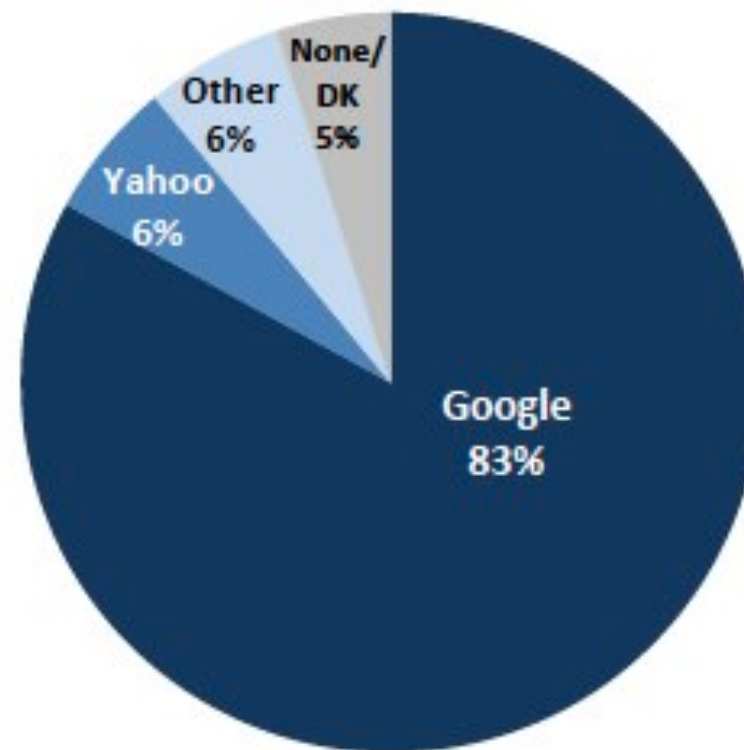
INTRODUCTION

Google is far and away the search engine of choice, preferred by 83% of search users

% of search users who answered the question: Which search engine do you use MOST OFTEN?



2004



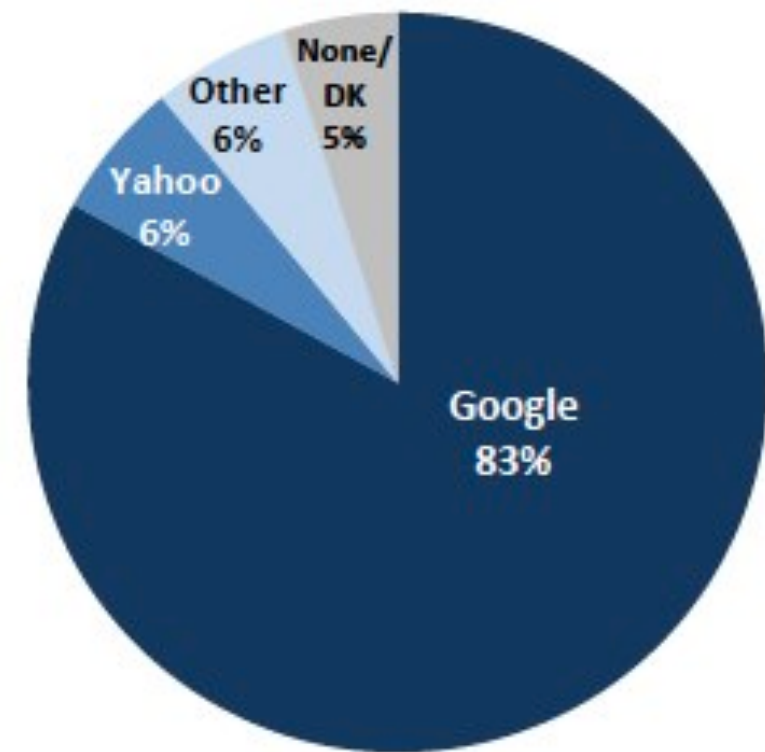
2012

Source: The Pew Research Center's Internet & American Life Project Winter 2012 Tracking Survey, January 20-February 19, 2012. N=2,253 adults, age 18 and older, including 901 cell phone interviews. Interviews conducted in English and Spanish.

Search Engine Watch 2016
Pew Internet 2012

INTRODUCTION

Search engine of choice,
S
search engine do you use MOST OFTEN?



2012

Project Winter 2012 Tracking Survey, January 20-
ing 901 cell phone interviews. Interviews conducted in

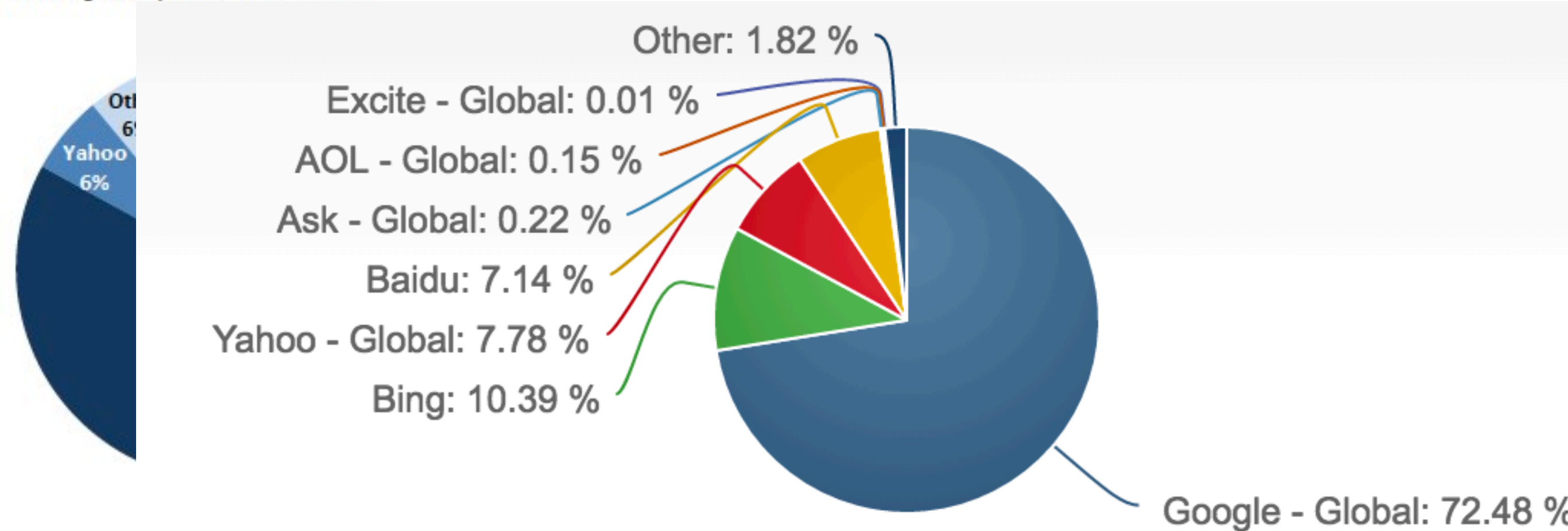
Search Engine Watch 2016
Pew Internet 2012

INTRODUCTION

Search engine of choice,

S

Search engine do you use MOST OFTEN?



Project Winter

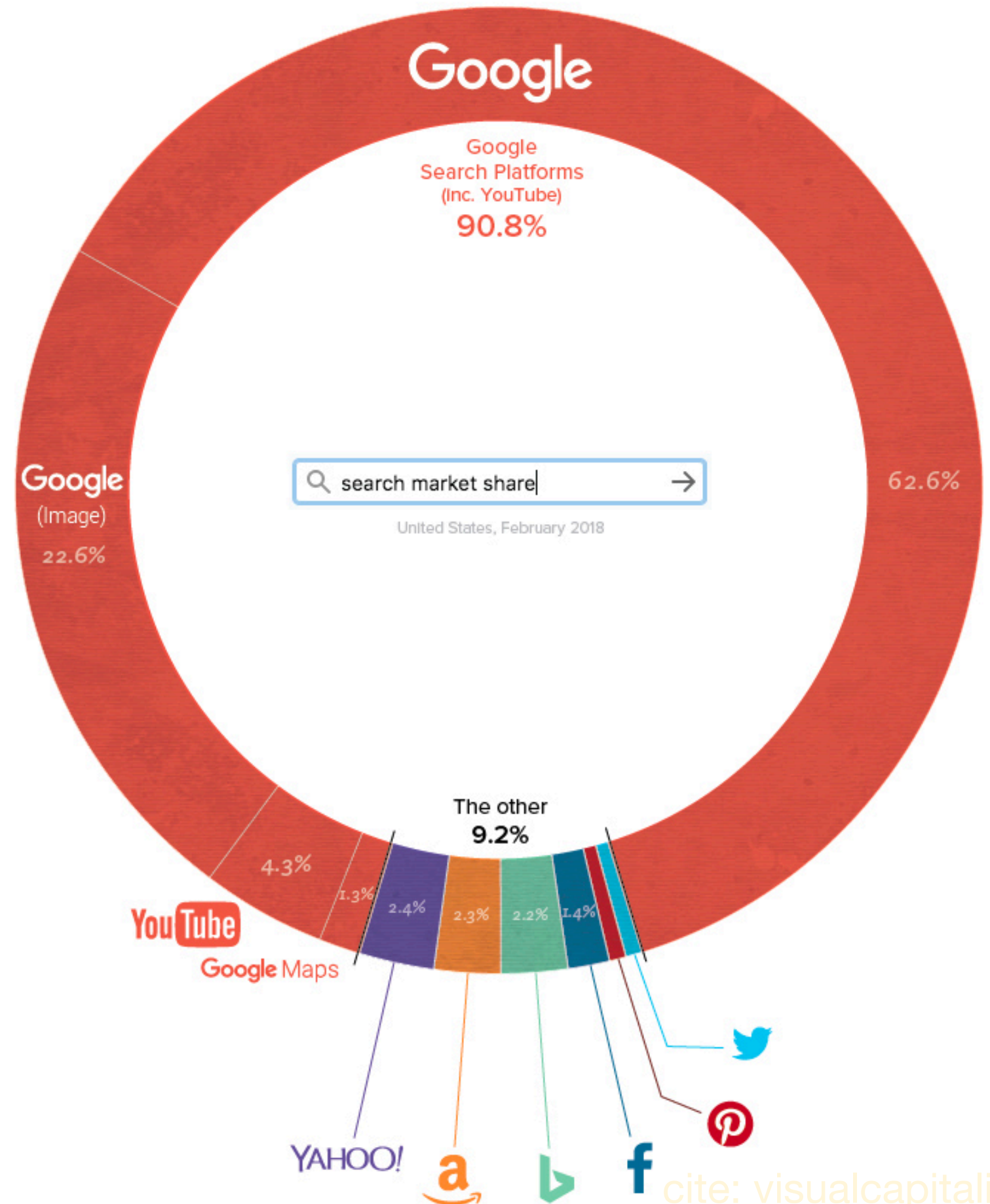
ing 901 cell phone interviews. Interviews conducted in

Search Engine Watch 2016
Pew Internet 2012

INTRODUCTION

GOOGLE HAS
90.46% OF THE
SEARCH ENGINE
MARKET GLOBALLY
(2018)

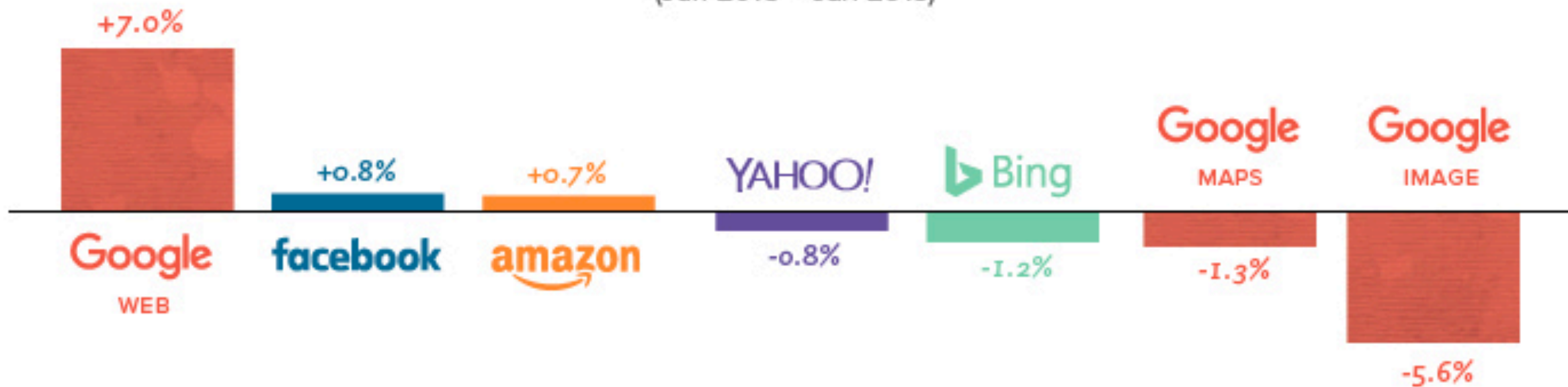
How people find what they're looking for



INTRODUCTION

Change in search market share

(Jan 2016 – Jan 2018)



Excludes platforms that experienced a change of less than 0.5%

INTRODUCTION

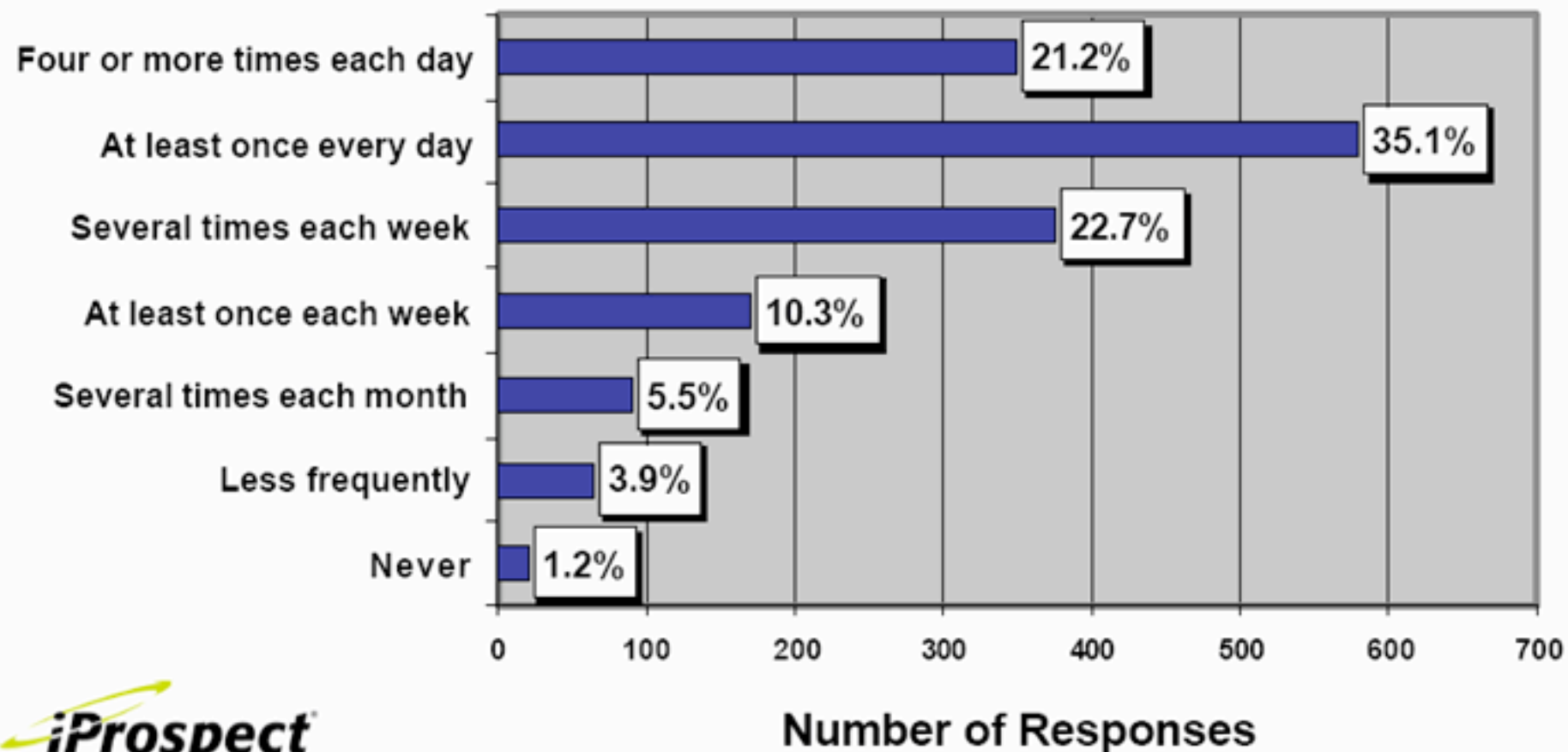
- Search behavior has changed a lot over time

Search use ...

(iProspect Survey, 4/04,

<http://www.iprospect.com/premiumPDFs/iProspectSurveyComplete.pdf>)

How often do you use search engines on the Internet?



INTRODUCTION

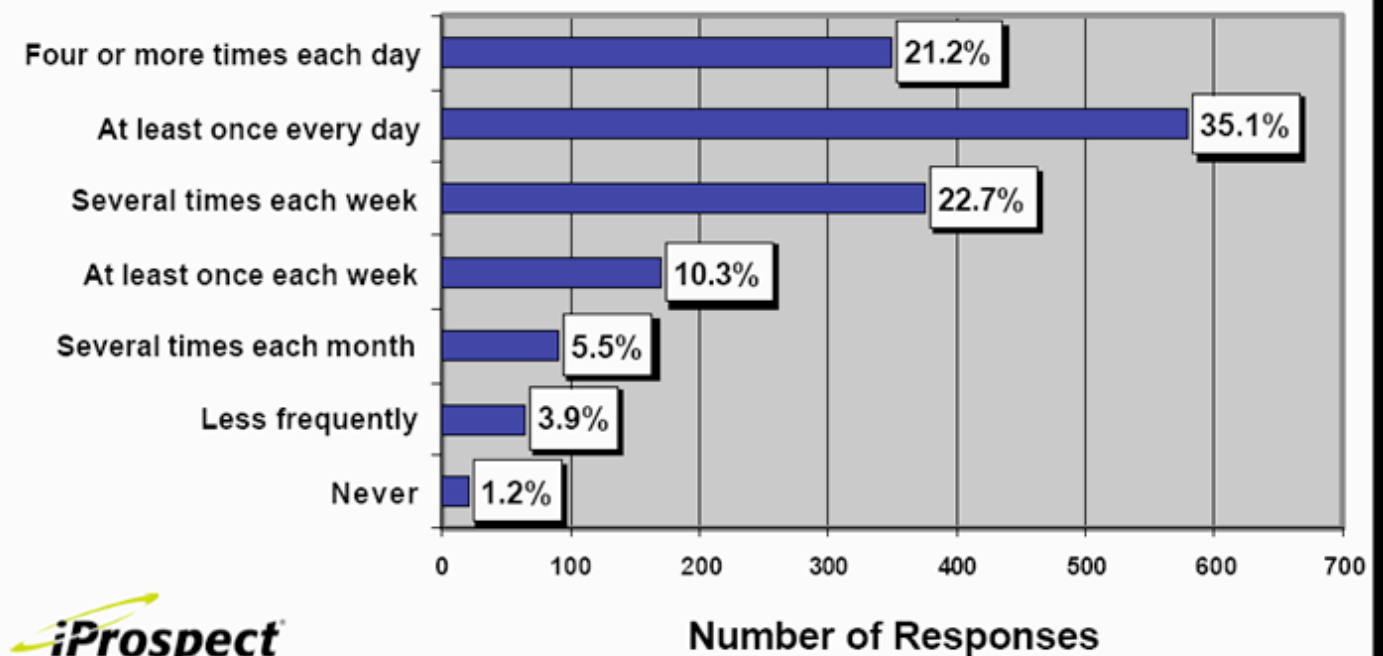
- Search behavior has changed a lot over time
- 2004
- 2018 Estimated 3-4 searches per day
- Why is this hard to figure out?

Search use ...

(iProspect Survey, 4/04,

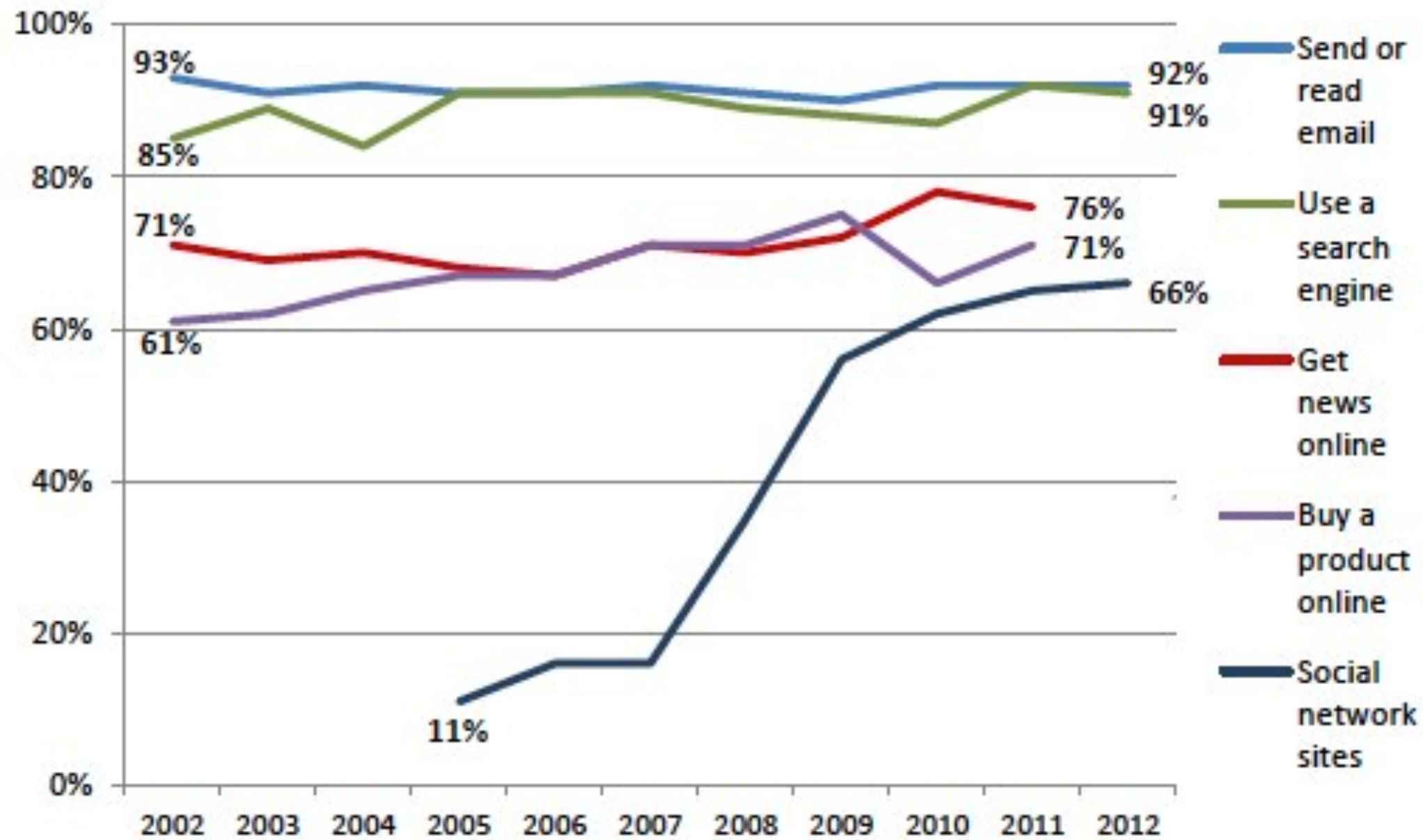
<http://www.iprospect.com/premiumPDFs/iProspectSurveyComplete.pdf>)

How often do you use search engines on the Internet?



INTRODUCTION

% of internet users who do each activity



INTRODUCTION

Who uses search?

% of online adults in each group who use search engines

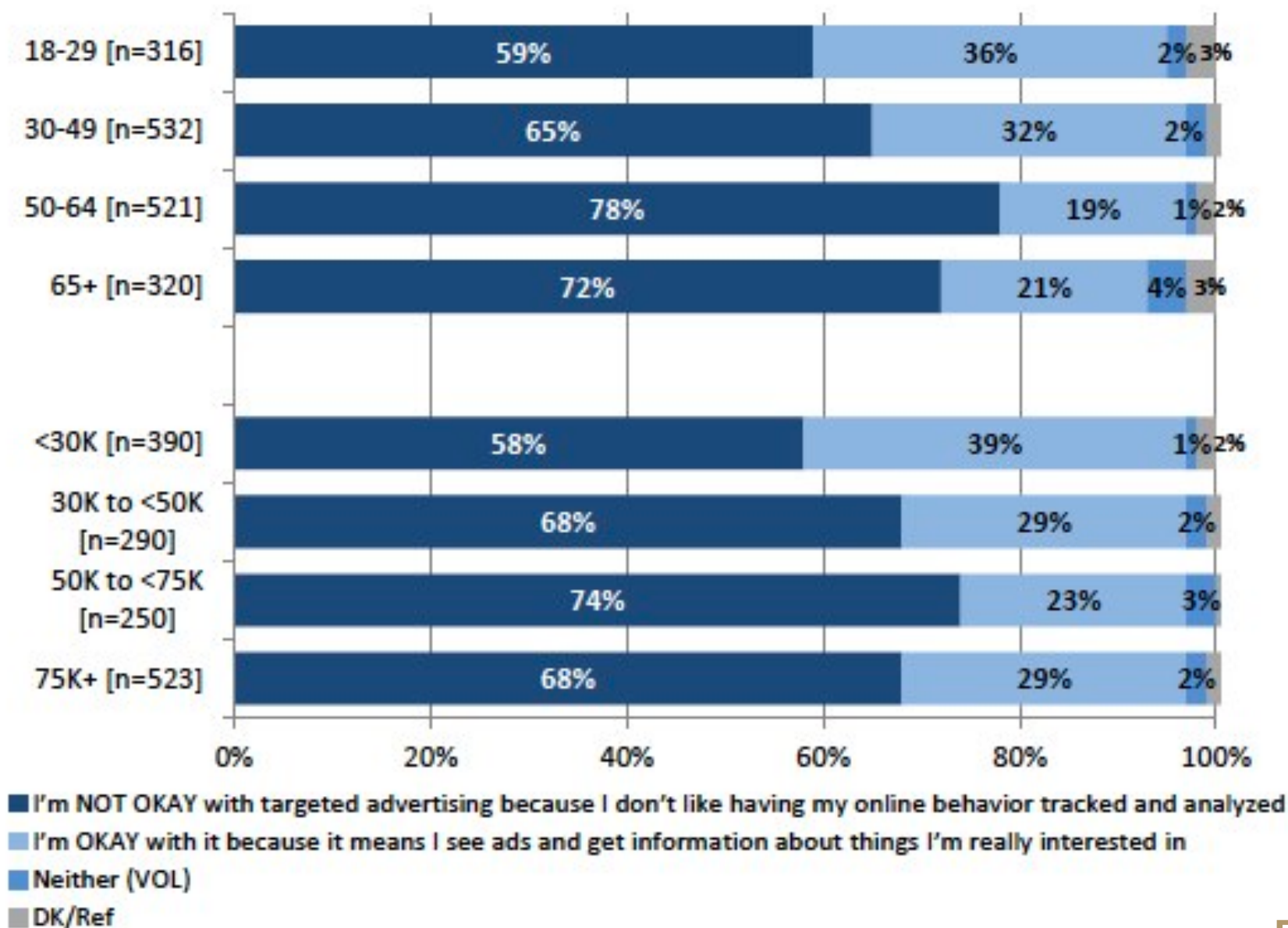
	% of each group who ever use search engines	% of each group who used a search engine yesterday
All online adults	91%	59%
Gender		
Male	90	59
Female	92	60
Race/Ethnicity		
White	93*	63*
African American	89*	44
Hispanic	79	44
Age		
18-29	96	66*
30-49	91	65*
50-64	92	52*
65+	80	38
Education		
Some high school	78	34
High school	88*	45*
Some college	94*	65*
College graduate	95*	74*
Household income		
< \$30,000	84	45
\$30,000 - \$49,999	93*	54*
\$50,000 - \$74,999	97*	66*
\$75,000+	95*	76*

INTRODUCTION

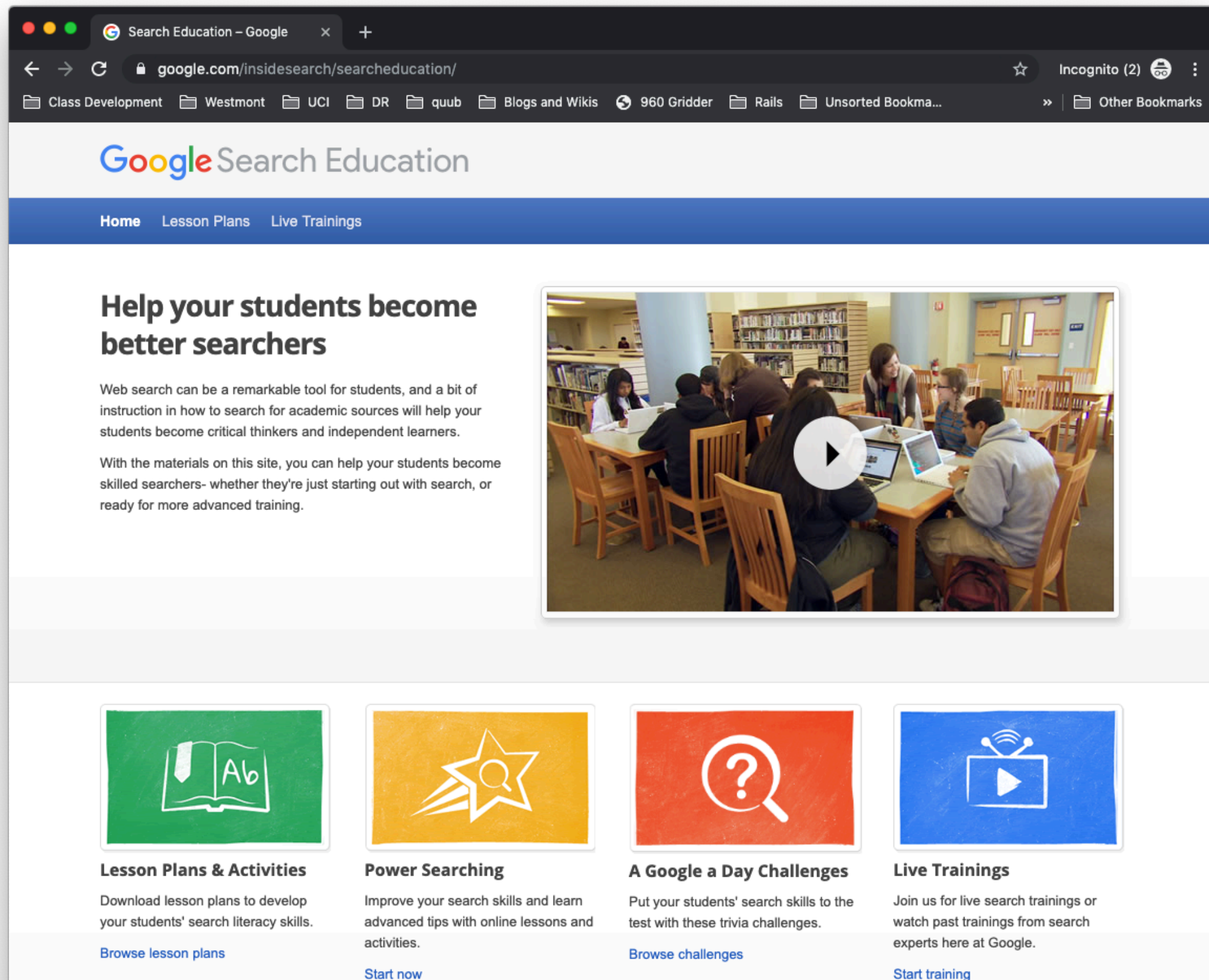
Views of targeted advertising vary by age and income

Which of the following statements comes closest to how you, personally, feel about TARGETED ADVERTISING being used online – even if neither is exactly right?

Asked of adult internet users [n=1,729]



INTRODUCTION



The screenshot shows a web browser window with the address bar displaying "google.com/insidesearch/searcheducation/". The page features the "Google Search Education" logo and a navigation bar with links to "Home", "Lesson Plans", and "Live Trainings". A main section titled "Help your students become better searchers" includes two paragraphs of text and a video player showing students in a library. Below this are four featured sections: "Lesson Plans & Activities", "Power Searching", "A Google a Day Challenges", and "Live Trainings", each with a distinct icon and a call-to-action link.

Search Education – Google

google.com/insidesearch/searcheducation/

Class Development Westmont UCI DR quub Blogs and Wikis 960 Gridder Rails Unsorted Bookma... Other Bookmarks


Google Search Education

Home Lesson Plans Live Trainings

Help your students become better searchers

Web search can be a remarkable tool for students, and a bit of instruction in how to search for academic sources will help your students become critical thinkers and independent learners.

With the materials on this site, you can help your students become skilled searchers- whether they're just starting out with search, or ready for more advanced training.



Lesson Plans & Activities

Download lesson plans to develop your students' search literacy skills.

[Browse lesson plans](#)

Power Searching

Improve your search skills and learn advanced tips with online lessons and activities.

[Start now](#)

A Google a Day Challenges

Put your students' search skills to the test with these trivia challenges.

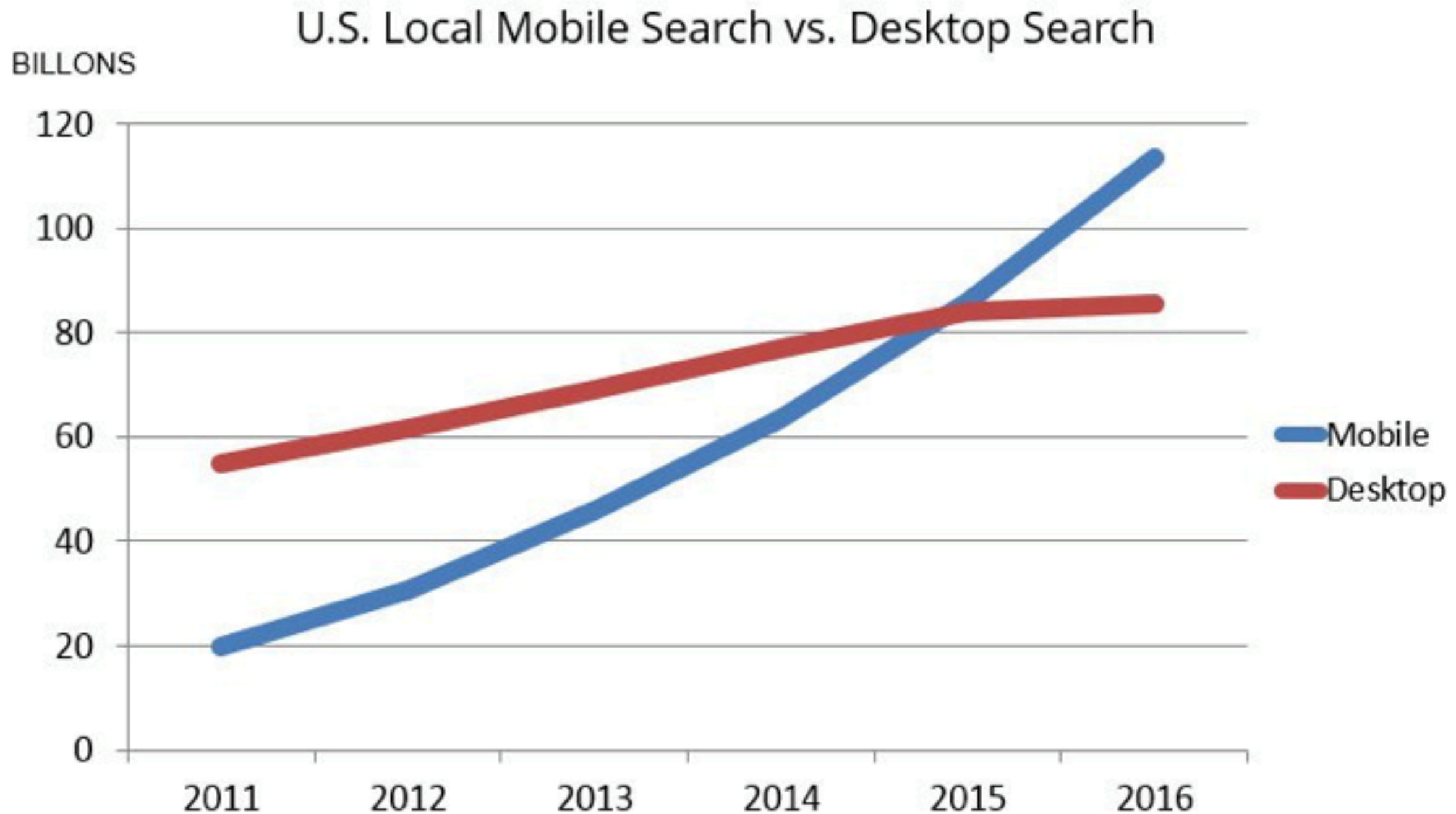
[Browse challenges](#)

Live Trainings

Join us for live search trainings or watch past trainings from search experts here at Google.

[Start training](#)

INTRODUCTION



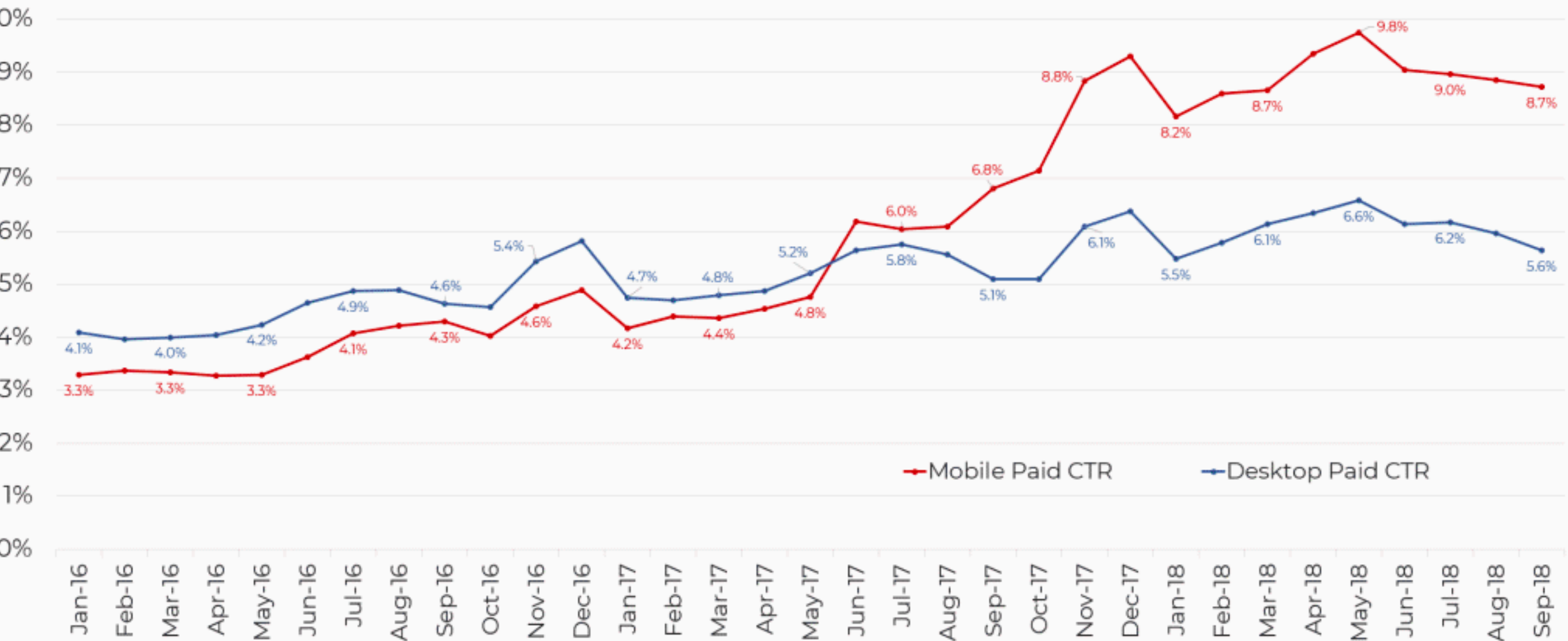
Users searching for local businesses

Smart Insights 2017

INTRODUCTION

Google Paid Ads Click-Through Rate (CTR) Desktop vs. Mobile

Jan. 2016 - Sep. 2018



Clickstream data via **jumpshot**

Assembled by Rand Fishkin from **SparkToro**

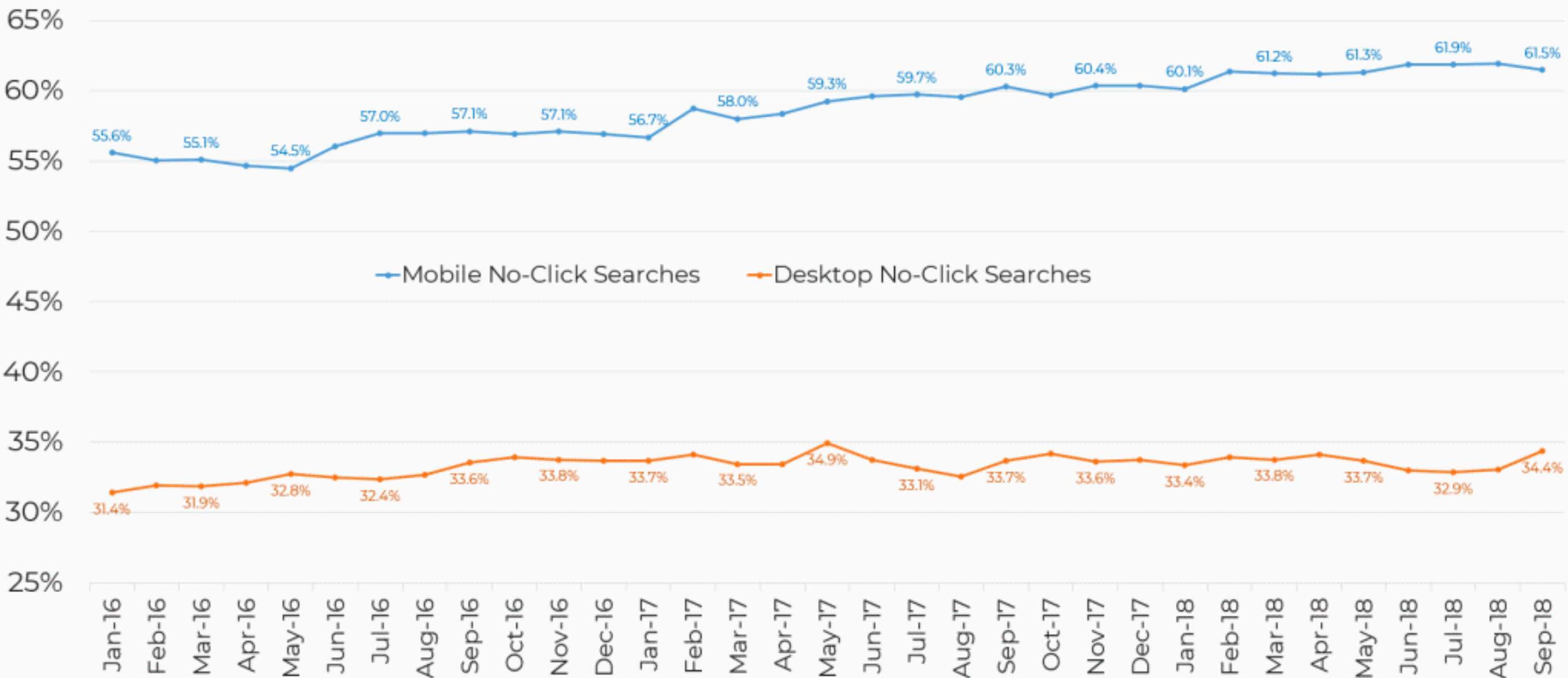
Ads being clicked on

sparktoro.com

INTRODUCTION

Google Searches Resulting in ZERO Clicks

Jan. 2016 - Sep. 2018



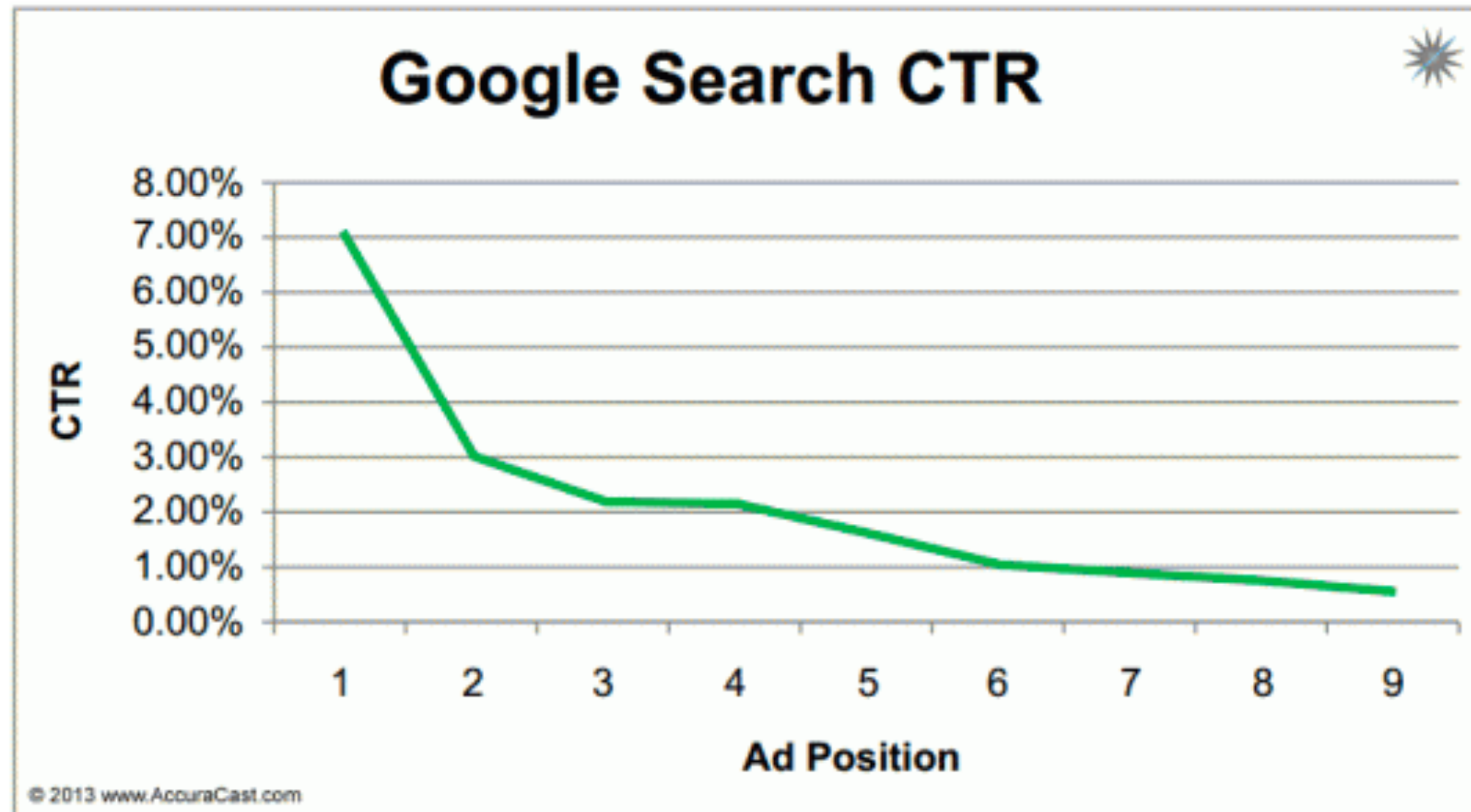
Clickstream data via **jumpshot** Assembled by Rand Fishkin from **SparkToro**

What's going on?

sparktoro.com



INTRODUCTION



CTR on Google Sidebar Ads

INTRODUCTION



The image shows a Google search results page for the query "something". A table is overlaid on the right side of the page, providing statistics for the top organic search results. The table has three columns: the search result title and snippet, the percentage of clicks, and the percentage of time spent. The results are color-coded in a rainbow gradient from red at the top to dark grey at the bottom.

	% of Clicks	% Time Spent
Something Something ... something (and ...), is something	56.36	28.43
"Something" (TV series) October 21, 2006 New comic below - more on today (dunno when), also, Clanne (Aubrey) will be at One-Cat in Houston this weekend! something (and ...), is ...	13.45	25.08
Go Something (Home) Encourages young people to create their own vision for making a difference in their community and provides them with the resources and support needed. ... something (and ...), is ...	9.82	14.72
Something fishy.org Eating Disorders - Anorexia, Bulimia, Binge Eating Disorder, Compulsive Overeating, Eating Disorders: definitions, signs and symptoms, physical dangers, something (and ...), is ...	4.00	8.70
gordonmcleen.co.uk I felt really good as we started the run and pushed myself pretty hard, something noticed by the jog coach who, as we were walking back to the centre to do something (and ...), is ...	4.73	6.02
Something - Wikipedia, the free encyclopedia "Something" was the first song written by George Harrison to appear on the ... "Something" was the only Harrison composition to top the American charts something (and ...), is ...	3.27	4.01
Something - Wikipedia, the free encyclopedia "Something" was the first song written by George Harrison to appear on the ... Initially based on a James Taylor song entitled "Something in the Way She something (and ...), is ...	0.36	3.01
Something Weird Video Specializing in exploitation and exploitation films from the 30's through the 70's on VHS and DVD ... something (and ...), is ...	2.91	3.68
Something Corporate, Official Site Official site. Band profile, multimedia, tour dates, merchandise, and mailing list. ... something (and ...), is ...	1.45	3.01
Sign-Score: Something Fishy Became the biggest fan in the sea by using other fan something (and ...), is ...	2.55	2.34

paid vs
organic?

Stats for organic results

Smart Insights 2017



INTRODUCTION

WITHOUT SEARCH ENGINES THE WEB WOULDN'T SCALE

- No incentive in creating content unless it can be found.
- Taxonomies, bookmarks can't keep up
- Or can they? (del.icio.us)
- The web is both a technology artifact and a social environment
- “The Web has become the ‘new normal’ in the America way of life; those who don’t go online constitute an every-shrinking minority” [Pew Foundation report, January 2005]



INTRODUCTION

WITHOUT SEARCH ENGINES THE WEB WOULDN'T SCALE

- Search engines make aggregation of interest possible:
 - Create incentives for very niche players
 - Economical - specialized stores, providers, etc.
 - Social - narrow interests, specialized communities
- The acceptance of search interaction makes “unlimited selection” stores possible
 - Amazon, Netflix, etc.



INTRODUCTION

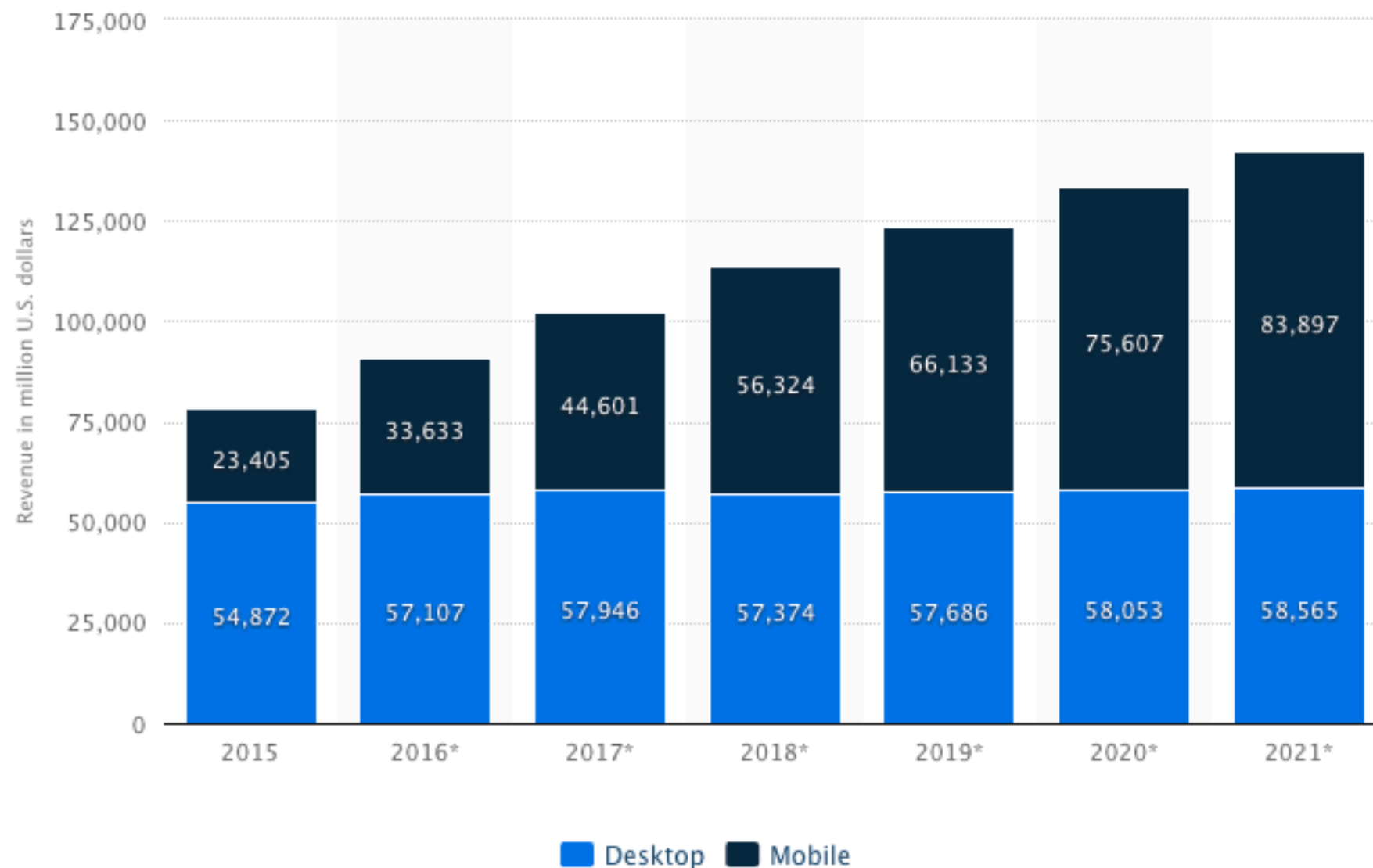
WITHOUT SEARCH ENGINES THE WEB WOULDN'T SCALE

- Search turned out to be the best mechanism for advertising on the web,.
- Growing very fast (entire US advertising industry is \$250 billion though)
- \$15 billion plus industry in 2009
- \$36 billion in 2012
- \$95.4 billion in 2017 ([cite](#))



INTRODUCTION

WITHOUT SEARCH ENGINES THE WEB WOULDN'T SCALE



Digital search advertising revenue worldwide from 2015 to 2021, by device (in million U.S. dollars)

Statista 2017

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CLASSIC INFORMATION RETRIEVAL

CLASSIC IR ASSUMPTIONS

- Corpus: Fixed document collection
- Goal: Retrieve information content relevant to information need



CLASSIC INFORMATION RETRIEVAL

CLASSIC IR GOAL



CLASSIC INFORMATION RETRIEVAL

CLASSIC IR GOAL

- Classic “Relevance”



CLASSIC INFORMATION RETRIEVAL

CLASSIC IR GOAL

- Classic “Relevance”
 - For each query, Q , and stored document, D , in a corpus there exists a relevance score: $R(Q,D)$



CLASSIC INFORMATION RETRIEVAL

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 - Context is ignored
 - Individuals are ignored
 - Corpus is static



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WEB INFORMATION RETRIEVAL

WEB IR: DIFFERENCES FROM TRADITIONAL IR

- On the web, search and ads are intricately connected
- The web is huge
- The web is a rapidly changing collection.
- There is spam on the web
 - Adversarial IR
 - Huge difference from traditional IR
- One interface for hugely divergent needs
 - Queries, Maps, Stocks, Weather, Calculations



WEB INFORMATION RETRIEVAL

HISTORY

- Early keyword-based engines
 - (1995-1997) Altavista, Excite, Infoseek, Inktomi
- Paid placement ranking
 - Goto.com -> Overture.com -> Yahoo!
 - Results based on auction for keyword placement



WEB INFORMATION RETRIEVAL

www.goto.com/d/search/?sessionid\$AQ4214AA40R5QFIEF3QPUQ?type=home&tm=1&Keywords=Wilmington+

Wilmington real estate.

Access 75% of all users now!
Premium Listings reach 75% of all
Internet users. [Sign up](#) for Premium
Listings today!

1. [Wilmington Real Estate - Buddy Blake](#)
Wilmington's information and real estate guide. This is your one
anything to do with Wilmington.
[www.buddyblake.com](#) (Cost to advertiser: [10.38](#))
2. [Coldwell Banker Sea Coast Realty](#)
Wilmington's number one real estate company.
[www.cbseacoast.com](#) (Cost to advertiser: [10.37](#))
3. [Wilmington, NC Real Estate Becky Bullard](#)
Everything you need to know about buying or selling a home c
on my Web site!
[www.iwwc.net](#) (Cost to advertiser: [10.35](#))

WEB INFORMATION RETRIEVAL

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

Bookmarks Netsite: <http://www.go.to.com/d/search/p/befree/?Promo=beefree00312582013489157625&Promo=beefree&Keywords=lactose+intolerance> What's Related

Instant Message WebMail Calendar Radio People Yellow Pages Download Customize...

GO TO lactose intolerera

Home List your Site Put GoTo on your Site Help

Capital One 0% intro + 9.9% fixed APR 60-sec responses

CLICK HERE

VISA

You searched for lactose intolerance. Search Tips

Computing
Education & Career
Entertainment
Finance
Health
Homelife
Reference
Shopping
Travel

Access 75% of all users now!
Premium Listings reach 75% of all Internet users.
[Sign up](#) for Premium Listings today!

Access 75% of all users now!
Premium Listings reach 75% of all Internet users.
[Sign up](#) for Premium Listings today!

- [No More Lactose Intolerance!](#)**
Try Sammi's best whey and rice. For anyone with lactose intolerance this is it! 75% less lactose, with Acidophillus and bifidus bacteria. Buy factory direct with free shipping.
www.bestlifeint.com (Cost to advertiser: \$0.20)
- [Lactose Intolerance: Whey Drinks](#)**
Lactose intolerance: Swiss Whey Powder. Delicious, natural, refreshing and easy to mix. Low in lactose. Great for beverages, cooking. 5 year shelf life. Money back guarantee. Mix to taste.
www.galaxymail.com (Cost to advertiser: \$0.07)
- [Hocks.com Lactose Intolerance Products](#)**
Hock's online discount pharmacy is your source for lactose intolerance products and smoking aids and more! Hock's pharmacy is quality and service at competitive prices!
www.hocks.com (Cost to advertiser: \$0.06)
- [Sport Drink for Lactose Intolerant](#)**
The GPush Web site provides information on nutrition in endurance sports. GPush sports drinks are scientifically formulated with galactose which is fine for lactose intolerance.
www.gpush.com (Cost to advertiser: \$0.05)
- [Gluten Solutions Foods](#)**
If you have lactose intolerance, then you may also have other food intolerances that make you ill -- find out once and for all!
www.glutensolutions.com (Cost to advertiser: \$0.04)

Document: Done

WEB INFORMATION RETRIEVAL

HISTORY

- (1998+) Link-based ranking pioneered by Google
 - Links added the idea of “authoritativeness” to “relevance”
 - Blew away all early engines save Inktomi
 - Great user experience looking for a business model
 - Meanwhile Goto/Overture’s annual revenues were nearing \$1 billion



WEB INFORMATION RETRIEVAL

HISTORY

- Result
 - Google:
 - Added paid placement ads on the side
 - Differentiated from search results
 - Yahoo! built a similar architecture
 - Buys Overture for paid placement
 - Buys Inktomi for search



WEB INFORMATION RETRIEVAL

HISTORY

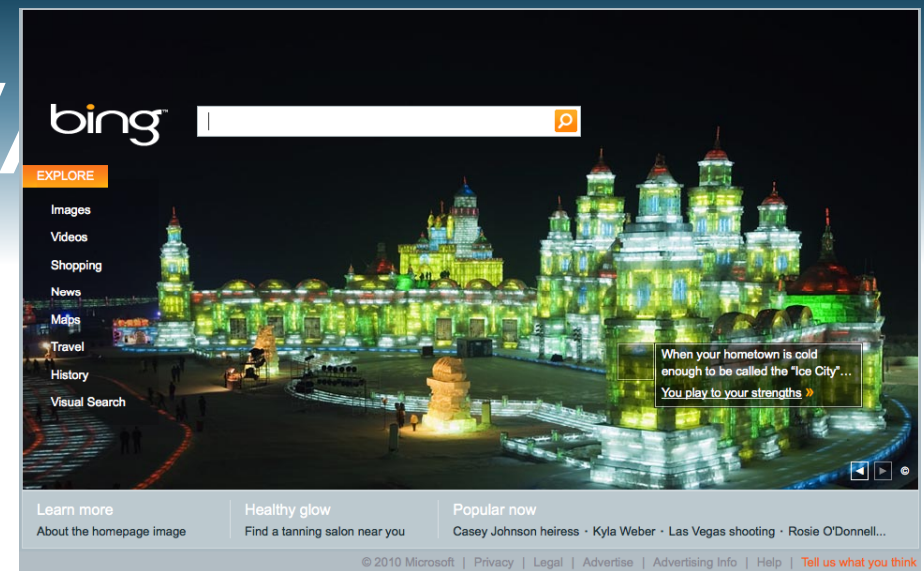
- 2004
 - Microsoft begins in house development of a search engine called Live
- May 28, 2009
 - Microsoft rebrands Live Search to Bing!
 - Search Engine wars intensify
 - New innovations appears at every turn
 - Technology becomes much more closely guarded



WEB INFORMATION RETRIEVAL

HISTORY

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WEB INFORMATION RETRIEVAL

HISTORY

- Internationally
 - Chinese search engine Baidu “owns” Chinese search
 - Launched around 2000, specializes in Chinese content



WEB INFORMATION RETRIEVAL

BEFORE (1/7/2010)

1. google.com
2. facebook.com
3. youtube.com
4. yahoo.com
5. live.com
6. wikipedia.org
7. blogger.com
8. baidu.com
9. msn.com
10. yahoo.co.jp

13. twitter.com
15. google.cn
22. bing.com
29. google.co.jp
56. ask.com
64. cnn.com

- Top sites globally according to alexa.com



WEB INFORMATION RETRIEVAL

(8/29/2015)

- | | | |
|---------------------|-------------------------|-------------------------|
| 1. Google.com | 11. Live.com | 21. Vk.com |
| 2. Facebook.com | 12. Taobao.com | 22. Hao123.com |
| 3. Youtube.com | 13. Sina.com.cn | 23. T.co |
| 4. <u>baidu.com</u> | 14. Linkedin.com | 24. Bing.com |
| 5. Yahoo.com | 15. Yahoo.co.jp | 25. Google.de |
| 6. Amazon.com | 16. Weibo.com | 26. Instagram.com |
| 7. Wikipedia.org | 17. Ebay.com | 27. Msn.com |
| 8. Qq.com | 18. Google.co.jp | 28. Aliexpress.com |
| 9. Twitter.com | 19. Yandex.ru | 29. Microsoft.com |
| 10. Google.co.in | 20. <u>blogspot.com</u> | 30. <u>google.co.uk</u> |



WEB INFORMATION RETRIEVAL

(8/31/2017)

- | | | |
|-----------------|------------------|-------------------|
| 1 Google.com | 11 Taobao.com | 21 Jd.com |
| 2 Youtube.com | 12 Google.co.jp | 22 360.cn |
| 3 Facebook.com | 13 Twitter.com | 23 Google.de |
| 4 Baidu.com | 14 Tmall.com | 24 Google.co.uk |
| 5 Wikipedia.org | 15 Vk.com | 25 Google.ru |
| 6 Yahoo.com | 16 Live.com | 26 Google.fr |
| 7 Reddit.com | 17 Instagram.com | 27 Google.com.br |
| 8 Google.co.in | 18 Sohu.com | 28 LinkedIn.com |
| 9 Qq.com | 19 Sina.com.cn | 29 List.tmall.com |
| 10 Amazon.com | 20 Weibo.com | 30 Google.com.hk |



WEB INFORMATION RETRIEVAL

TODAYISH (9/3/2019)

- | | | |
|-------------------|--------------------|----------------------|
| 1 Google.com | 11 Yahoo.com | 21 netflix.com |
| 2 Youtube.com | 12 360.cn | 22 blogspot.com |
| 3 Tmall.com | 13 Amazon.com | 23 alipay.com |
| 4 Baidu.com | 14 jd.com | 24 csdn.net |
| 5 qq.com | 15 Sina.com.cn | 25 Yahoo.co.jp |
| 6 Sohu.com | 16 Weibo.com | 26 Okezone.com |
| 7 Facebook.com | 17 Pages.tmall.com | 27 Bing.com |
| 8 Taobao.com | 18 live.com | 28 instagram.com |
| 9 login.tmall.com | 19 reddit.com | 29 Google.com.hk |
| 10 Wikipedia | 20 <u>vk.com</u> | 30 <u>office.com</u> |



OVERVIEW

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SPONSORED SEARCH

[Web](#) [Blogs](#) [News](#)

Personalized Results 1 - 10 of 10

[search engine optimization.](#)

[Search Engine Optimize](#)

[SEOP.com](#) Guaranteed Top Ranking w/ Warranty. Free Site Analysis! 877-231-1557

[Guaranteed Page 1 Ranking](#)

[www.berankednumber1.com](#) Guaranteed Page 1 Rankings \$49.95 No Charge Until You are on Page 1

[Search engine optimization - Wikipedia, the free encyclopedia](#)

Search engine optimization (SEO) is the process of improving the volume and quality of traffic to a web site from **search** engines via "natural" ("organic" or ...

[en.wikipedia.org/wiki/Search_engine_optimization](#) - 87k - [Cached](#) - [Similar pages](#) - [Note this](#)

[Search Engine Optimization, Google Optimization - SEO Chat](#)

Search Engine Optimization, Google Optimization - SEO Chat.

[www.seochat.com/](#) - 111k - [Cached](#) - [Similar pages](#) - [Note this](#)

[Search Engine Optimization \(SEO\) Marketing Firm & Placement Company](#)

Offers **search engine optimization** (SEO) marketing services & placement since 1998.

Submit your website URL to 40 major **search** engines for FREE!

[www.submitexpress.com/](#) - 42k - [Cached](#) - [Similar pages](#) - [Note this](#)

[News results for search engine optimization](#)



[CIBER Selected as E-Commerce Vendor by Elite Island Resorts](#) - Jan 3, 2008

Their **search engine** marketing program will help us lower acquisition costs ... CIBER's advanced **search engine** marketing services will help Elite direct more ...

[FOX News](#) - [10 related articles »](#)

[bruceclay.com - Search Engine Optimization - SEO Training, Tools ...](#)

Search Engine Optimization, ranking, placement, and submission tutorial. Free step-by-step **SEO** tools and advice. **SEO** training and services offered. ...

[www.bruceclay.com/web_rank.htm](#) - 87k - [Cached](#) - [Similar pages](#) - [Note this](#)

[Inteliture™ Search Engine Optimization, Internet Marketing, and ...](#)

Inteliture™ a professional **search engine optimization** and internet marketing company.

Offers internet marketing solutions, **search engine optimization** ...

[www.inteliture.com/](#) - 12k - [Cached](#) - [Similar pages](#) - [Note this](#)

Ads

Ads

Algorithmic Results

[Search engine optimizer](#)

Use Network Solutions online tools to drive business to your web site.

[marketing.networksolutions.com](#)

[Search Optimization Firm](#)

Looking for top rankings? Get real

Receive a free analysis.

[customermagnetism.com](#)

[Company](#)

Search Engine Optimization services

since 1998 with proven results.

[www.iClimber.com](#)

[Get Optimization Help Now](#)

Top SEO Firms Want Your Business.

Fast, Free Competitive Quotes!

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PPC vs Natural **search** Keyword ranks

costs & robot stats: 15 days free

[www.ClickTracks.com/15_Days_Free](#)

[Search Engine Marketing](#)

Boost Online Traffic and Sales!

Free Site **Optimization** Analysis.

[www.corporatesearchoptimization.com](#)

[Free Website Visitors](#)

Free Visitors Plus Top 10 Positions

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SPONSORED SEARCH

The image shows a screenshot of a Google search results page for the query "search engine optimization". The browser's address bar shows the URL "https://www.google.com/search?q=search+engine+optimization&oq=search+engine+optim...". The search bar contains the text "search engine optimization". Below the search bar, the results are categorized by "All", "News", "Videos", "Books", "Images", "More", "Settings", and "Tools". The results show "About 36,400,000 results (0.58 seconds)".

Two sponsored search results are highlighted with green speech bubble annotations:

- The first result is "Revana Digital - Search Engine Optimization - revanadigital.com". It is marked with an "Ad" icon and includes the URL "go.revanadigital.com/Performance/Marketing". A green speech bubble with the word "Ads" points to this result.
- The second result is "Search Engine Optimization - Award-Winning SEO Service". It is also marked with an "Ad" icon and includes the URL "www.180fusion.com/". A green speech bubble with the word "Services" points to this result.

Below the sponsored results, there is a "Dictionary" section. It contains a search bar with the text "search engine optimization" and a magnifying glass icon. Below the search bar, the word "search engine optimization" is displayed in a large font. Underneath, it is labeled as a "noun" and "COMPUTING". The definition provided is: "the process of maximizing the number of visitors to a particular website by ensuring that the site appears high on the list of results returned by a search engine." A quote follows: "the key to getting more traffic lies in integrating content with search engine optimization and social media marketing".

Dictionary

search engine optimization



search en·gi·ne op·ti·mi·za·tion

noun **COMPUTING**

the process of maximizing the number of visitors to a particular website by ensuring that the site appears high on the list of results returned by a search engine.

"the key to getting more traffic lies in integrating content with search engine optimization and social media marketing"



Translations, word origin, and more definitions

Feedback

What Is SEO / Search Engine Optimization? - Search Engine Land

searchengineland.com/guide/what-is-seo ▼

Get started learning all about **SEO** from the industry's most trusted source, Search Engine Land. This guide covers the basics of **search engine optimization**, ranking factors ...

Beginner's Guide to SEO (Search Engine Optimization) - Moz

<https://moz.com/beginners-guide-to-seo> ▼

Dec 18, 2015 - New to **SEO**? Need to polish up your knowledge? The Beginner's Guide to **SEO** has been read over 3 million times and provides the ...

[Keyword Research](#) · [How Usability, Experience and ...](#) · [Measuring & Tracking](#)

Search engine optimization - Wikipedia

https://en.wikipedia.org/wiki/Search_engine_optimization ▼

Search engine optimization (SEO) is the process of affecting the visibility of a website or a web page in a web search engine's unpaid results—often referred to as ...

[History](#) · [Methods](#) · [As a Marketing Strategy](#) · [International markets](#)

SEO basics: 22 essentials you need for optimizing your site | Search ...

<https://searchenginewatch.com/seo> ▼

Jan 21, 2016 - Quite simply, **SEO** is the umbrella term for all the methods you can use to ensure the visibility of your website and its content on search engine ...

[PDF] Search Engine Optimization Starter Guide - Google

www.google.com/webmasters/docs/search-engine-optimization-starter-guide.pdf ▼

Services

Algorithmic
Results

SPONSORED SEARCH

ADS VS. SEARCH RESULTS


- Google maintains that ads (based on vendors bidding for search queries) do not affect vendors ranking in search results

Search engine optimization - Wikipedia, the free encyclopedia
Search engine optimization (SEO) is the process of improving the volume and quality of traffic to a web site from search engines via "natural" ("organic" or ...
en.wikipedia.org/wiki/Search_engine_optimization - 87k - [Cached](#) - [Similar pages](#) - [Note this](#)

Search Engine Optimization, Google Optimization - SEO Chat
Search Engine Optimization, Google Optimization - SEO Chat.
www.seoChat.com/ - 111k - [Cached](#) - [Similar pages](#) - [Note this](#)

Search Engine Optimization (SEO) Marketing Firm & Placement Company
Offers search engine optimization (SEO) marketing services & placement since 1998. Submit your website URL to 40 major search engines for FREE!
www.submitexpress.com/ - 42k - [Cached](#) - [Similar pages](#) - [Note this](#)

News results for search engine optimization

 [CIBER Selected as E-Commerce Vendor by Elite Island Resorts](#) - Jan 3, 2008
Their search engine marketing program will help us lower acquisition costs ... CIBER's advanced search engine marketing services will help Elite direct more ...
[FOX News](#) - [10 related articles »](#)

Sponsored Links

Search engine optimizer
Use Network Solutions online tools to drive business to your web site.
marketing.networksolutions.com

Search Optimization Firm
Looking for top rankings? Get real results. Receive a free analysis.
www.customermagnetism.com

SEO Company
Search Engine Optimization services since 1998 with proven results.
www.iClimber.com

SPONSORED SEARCH

RANKING OF ADS

- Other search engines (Yahoo!, MSN) have made similar statements on occasion
 - Any of them can change at any time
 - Facebook had a class action lawsuit over testing the waters with “Beacon” social ads
- We will ignore the possibility of paid placement ads being interspersed in search results.



SPONSORED SEARCH

The image shows a screenshot of a Facebook profile page. The profile owner is a woman named Thi. The page is annotated with red boxes and arrows to highlight sponsored search results. Two specific posts are highlighted with red boxes:

- Top Post:** "Thi added Sony Professional HVR-Z1U 3CCD High Definition to her wishlist on Expo TV. 10:52am". A red arrow points from this post to a similar post in the feed.
- Bottom Post:** "Thi reviewed KitchenAid KSM150PSER Artisan Series 5-Quart Mixer, on Expo TV. 11:05pm". A red arrow points from this post to a similar post in the feed.

The feed also shows other posts, including one about signing up for a member profile on Expo TV and another about reviewing a KitchenAid mixer. The left sidebar contains a search bar, a list of applications (Photos, Groups, Events, Marketplace, My Aquarium, SuperFaker), and a section titled "FREE COACH PURSE!" featuring images of handbags. The right sidebar shows contact information and a link to "Fill out your Profile".

SPONSORED SEARCH

RANKING OF ADS

- Goto model:
 - Rank according to how much advertiser pays
- Current model:
 - Balance auction price and relevance
 - Irrelevant ads (few click-throughs)
 - Decrease opportunities for relevant ads
 - Harm the user experience
 - Idea: Well-targeted advertising is good for everyone



SPONSORED SEARCH

PAYING FOR ADVERTISEMENTS - TERMS

- CPM
 - “Cost Per Mil”
 - Pay for 1000 eyeballs
 - Important for branding campaigns
- CPC
 - “Cost per Click”
 - Pay for clicking on ads
 - Important for sales campaigns
 - Related “CTR” = Click Through Rate



SPONSORED SEARCH

WHAT ARE THE STAKES HERE?

- What role is Google playing?

Google Dreams of a World After Apps but It's a Nightmare for Rivals



It's a hazy world after apps.

/ MOBILE

Shutterstock



By Mark Bergen | [@mhbergen](#) | EMAIL | ETHICS

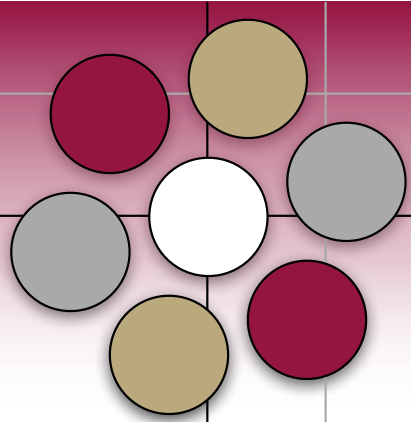
September 3, 2015, 11:37 AM PDT

OVERVIEW

OVERVIEW

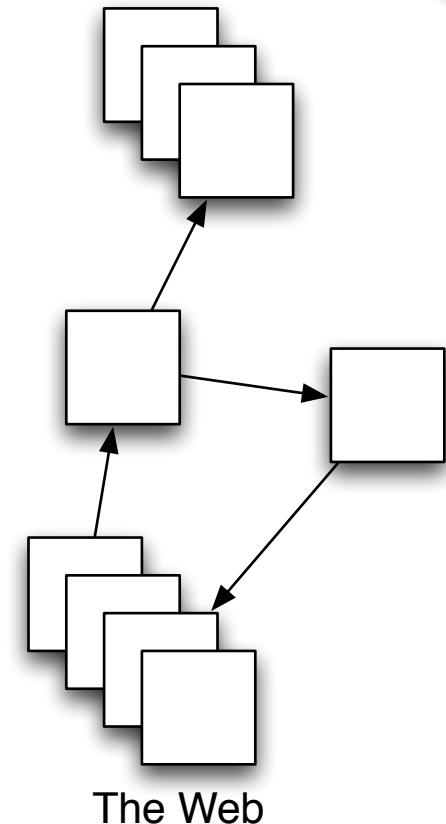
- Introduction
- Classic Information Retrieval
- Web IR
- Sponsored Search
- Web Search Basics
 - Size of the Web
- Web Users
- Spam

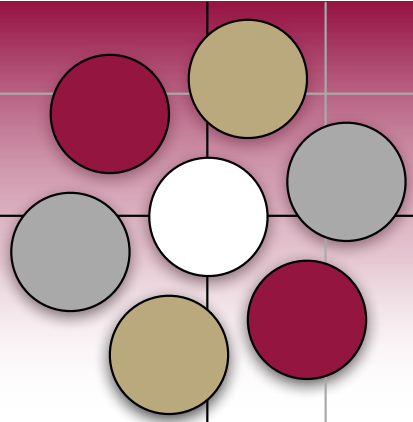




The Web Corpus

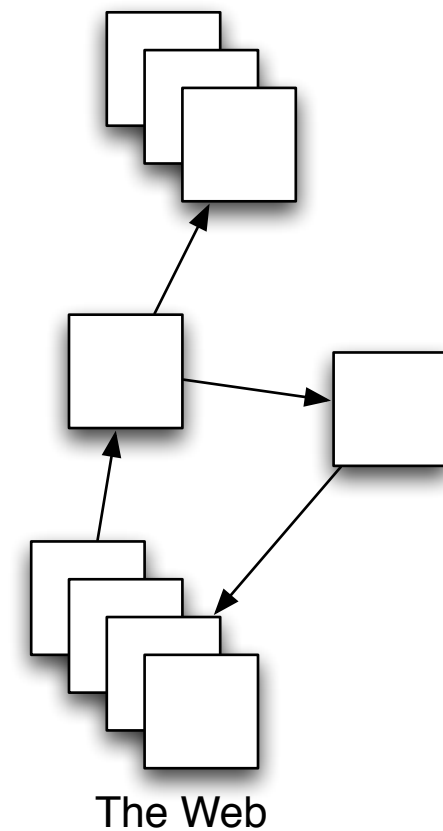
- No design/coordination
- Distributed content creation, linking
- “Democratization of publishing”
- Content includes truth, lies, contradictions, etc.
- Unstructured Data (text, html)
- Semi-Structured (XML, annotated photos)
- Structured (Databases)
- Scale is much larger than previous text corpora





The Web Corpus

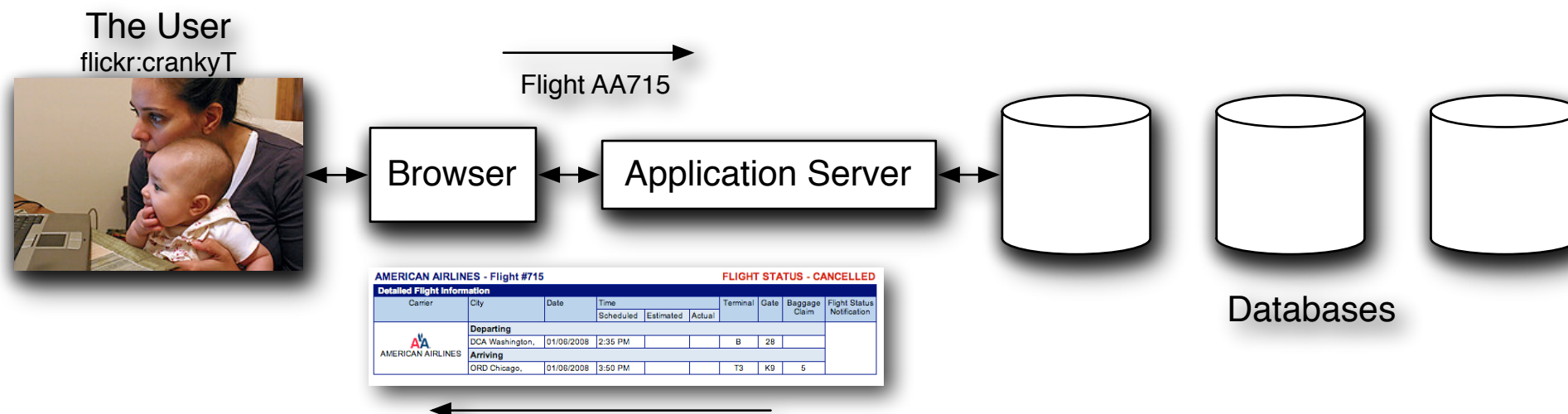
- Growth - slowing from “doubling every few months”, but still expanding

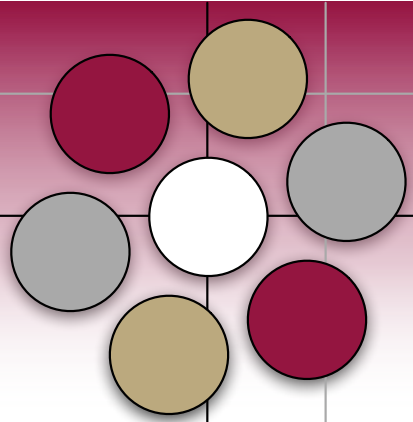


Web Search Basics

Dynamic Content

- Content can be dynamically generated
- There is no static html version
 - Flight status information, event responses
- Assembled on request (“?” in URL is a clue)





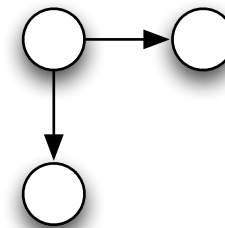
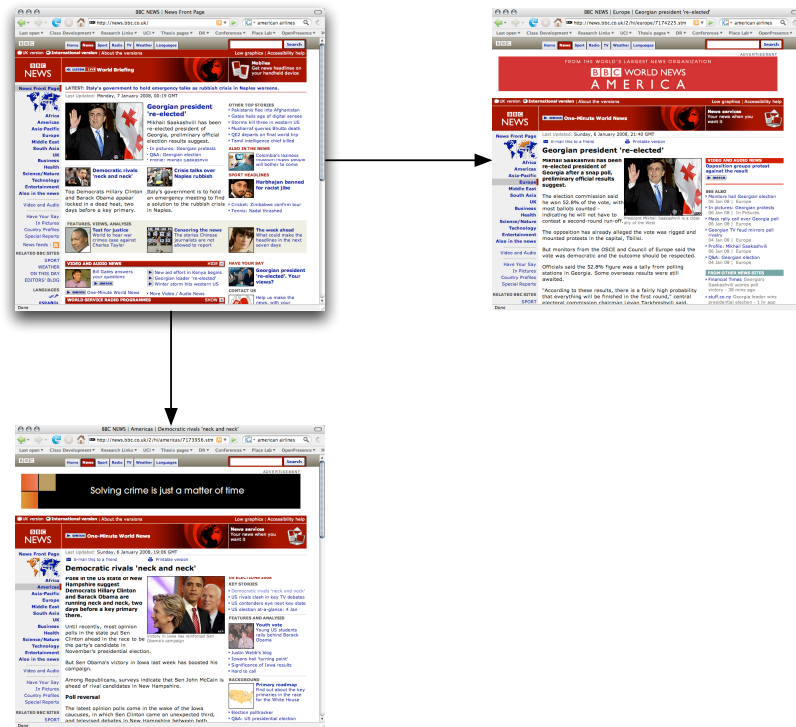
Dynamic Content

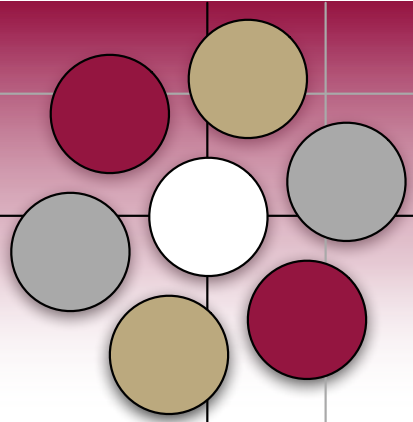
- Most (truly) dynamic content is ignored by search engines
 - Too much to index
 - Static information is more important for search
 - Spider Traps look dynamic
- Actually a lot of “static” content is assembled on the fly also
 - ASP, PHP, JSP, ads, etc....

Web Search Basics

The Web as a graph

- Web pages are nodes
- Hyperlinks are directed edges

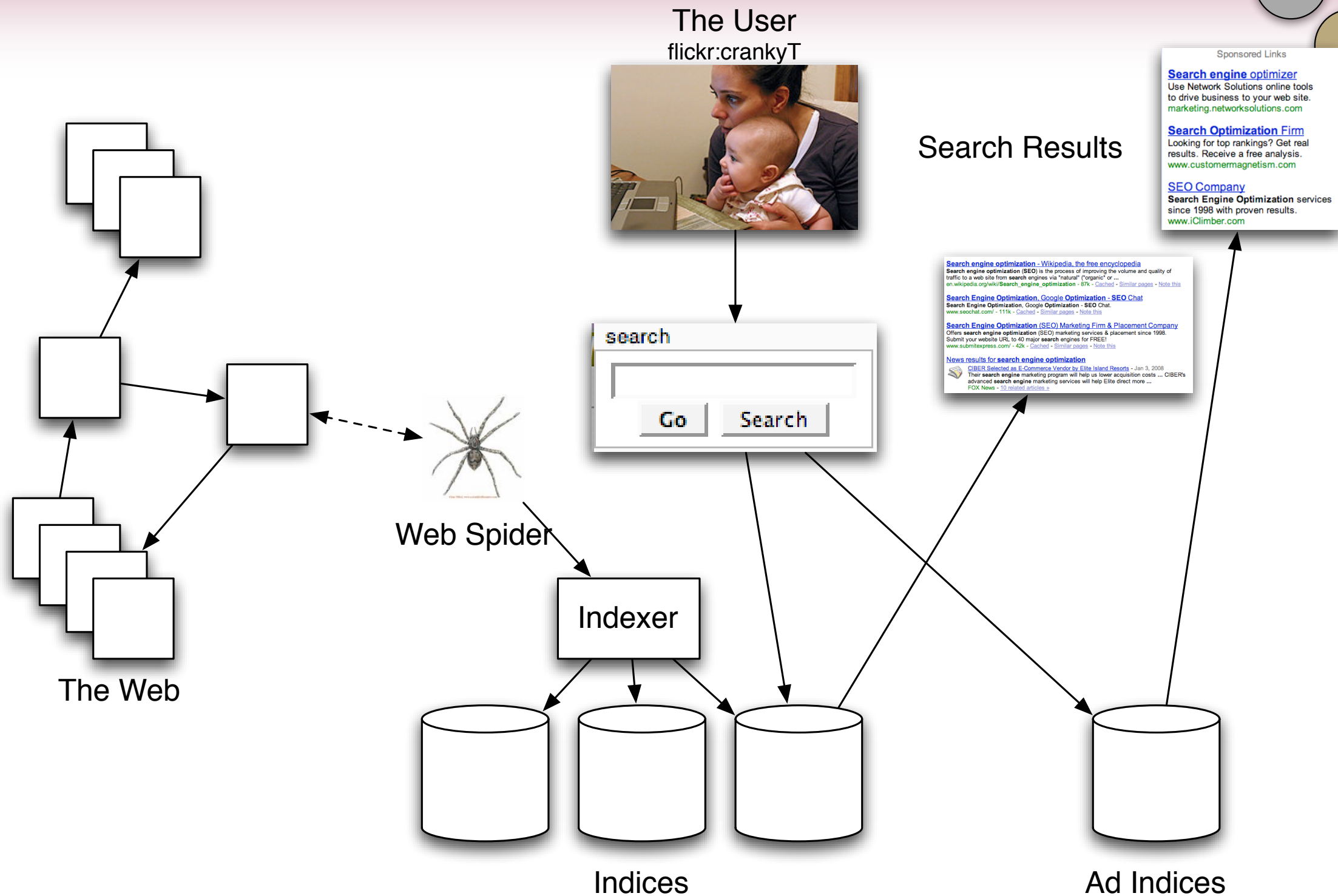


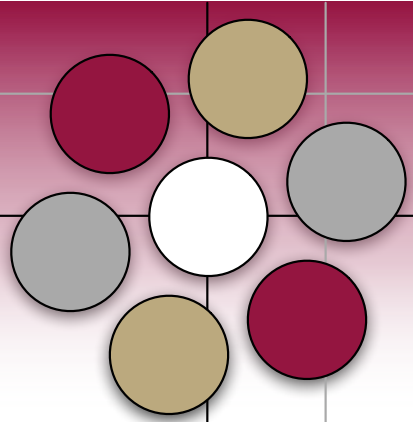


Characteristics of the web

- Significant Duplication
 - 30%-40% in some studies [Brod97, Shiv99]
 - www.copyscape.com
- High linkage
 - more than 8 links per page on average
- Spam
 - Billions of pages of it.

Web Search Basics

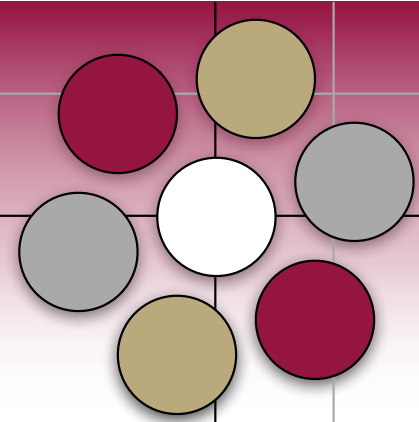




How big is the web?

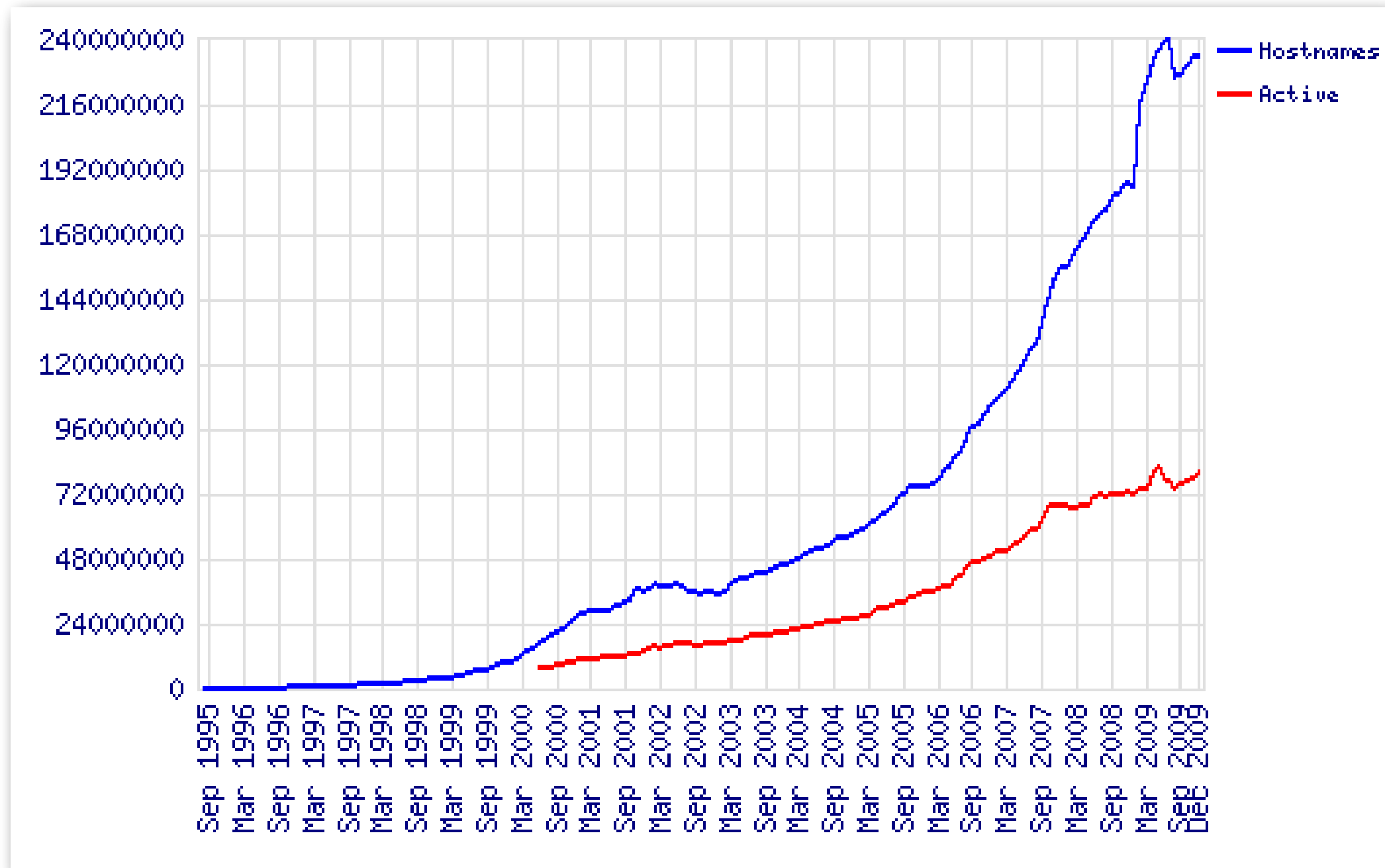
- What is measured?
 - Number of hosts
 - Number of “static” html pages
- Number of hosts - netcraft survey
 - http://news.netcraft.com/archives/web_server_survey.html
 - Monthly report on hosts and servers
- Number of pages
 - Lots of estimates which warrant further discussion

Web Search Basics: Size of the web

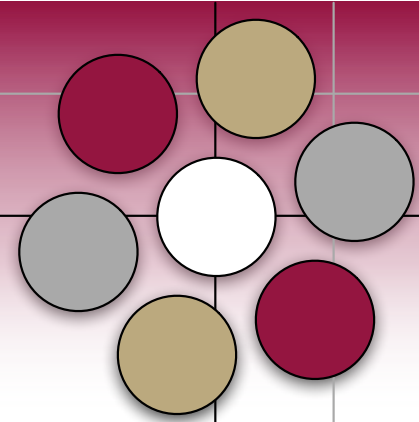


How big is the web?

- Netcraft Web Server Survey

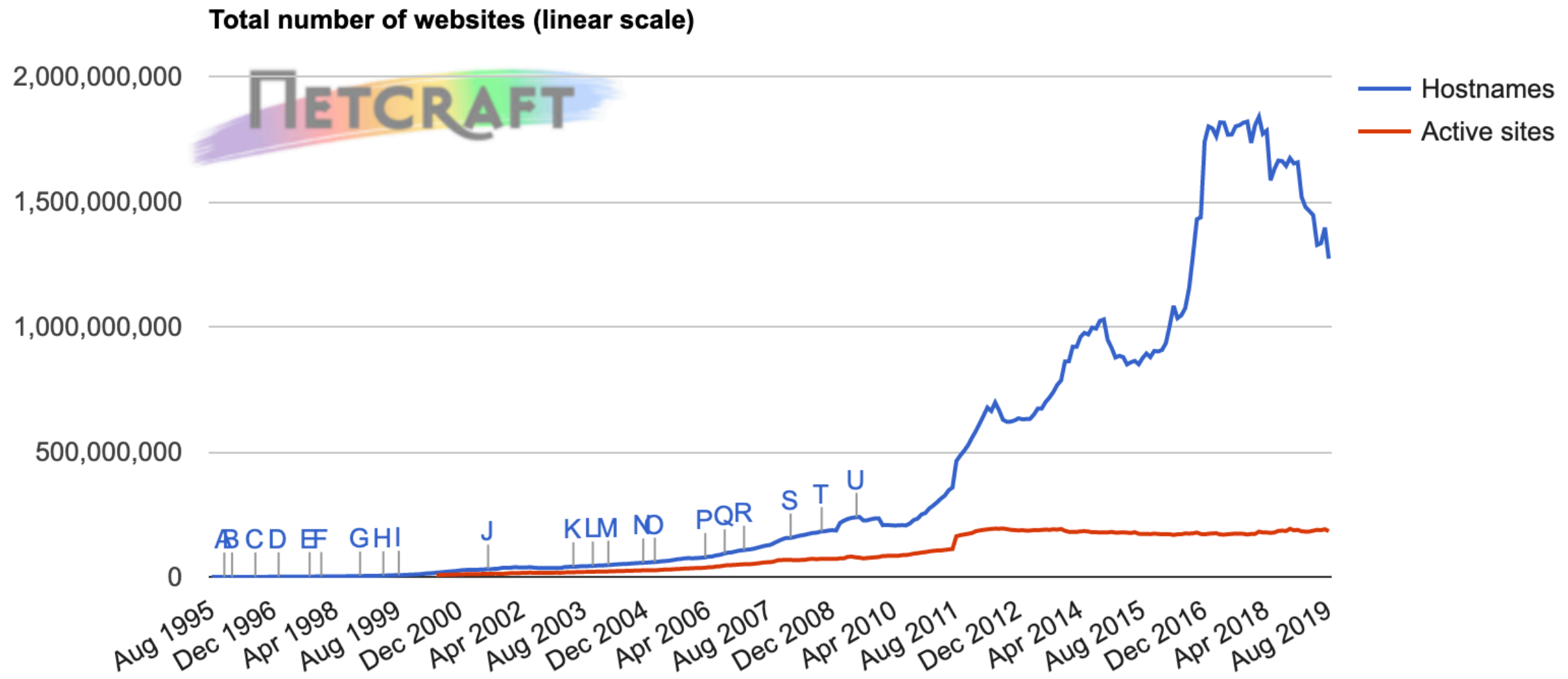


Web Search Basics: Size of the web

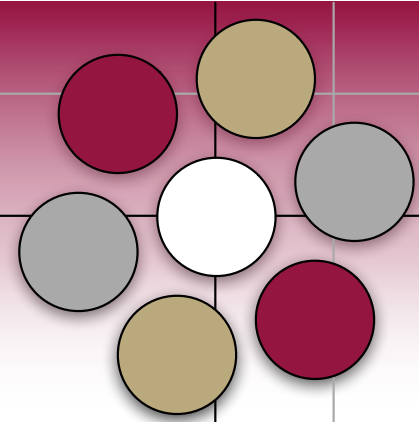


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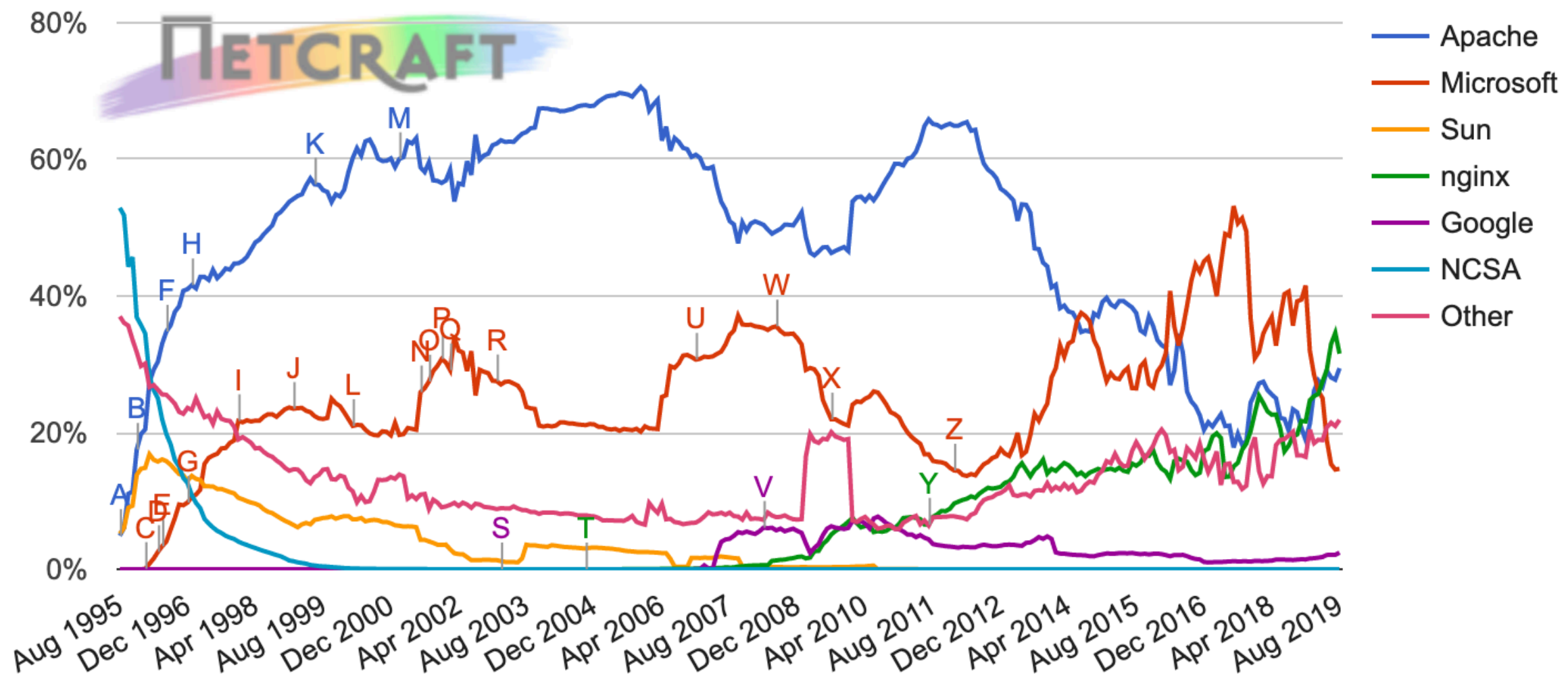


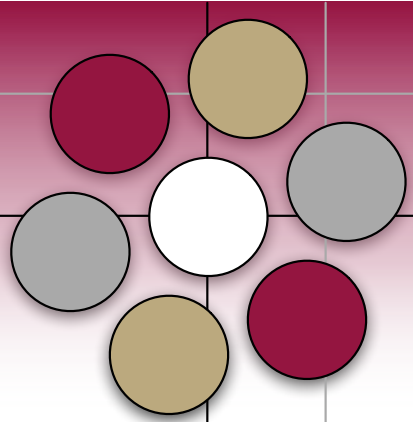
Web Search Basics: Size of the web



- Netcraft Web Server Survey

Web server developers: Market share of all sites

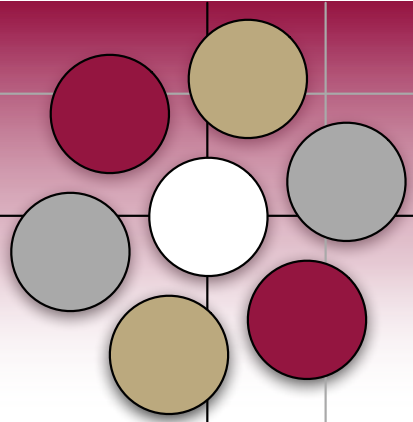




Rate of change

- [Cho00] 720k pages from 270 popular sites sample daily for 5 months in 1999
 - 40% changed weekly, 23% daily
- [Fett02] Massive study: 151M pages checked over a few months
 - Significant changes 7% weekly
 - Any change 25% weekly

Web Search Basics: Size of the web

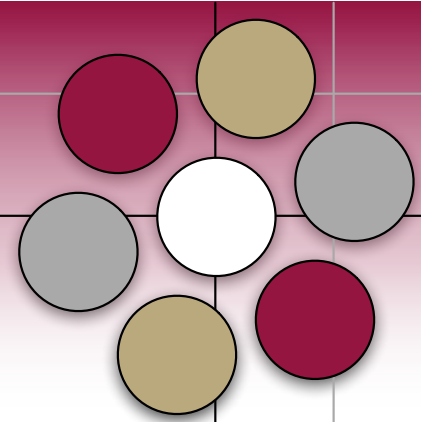


Rate of change

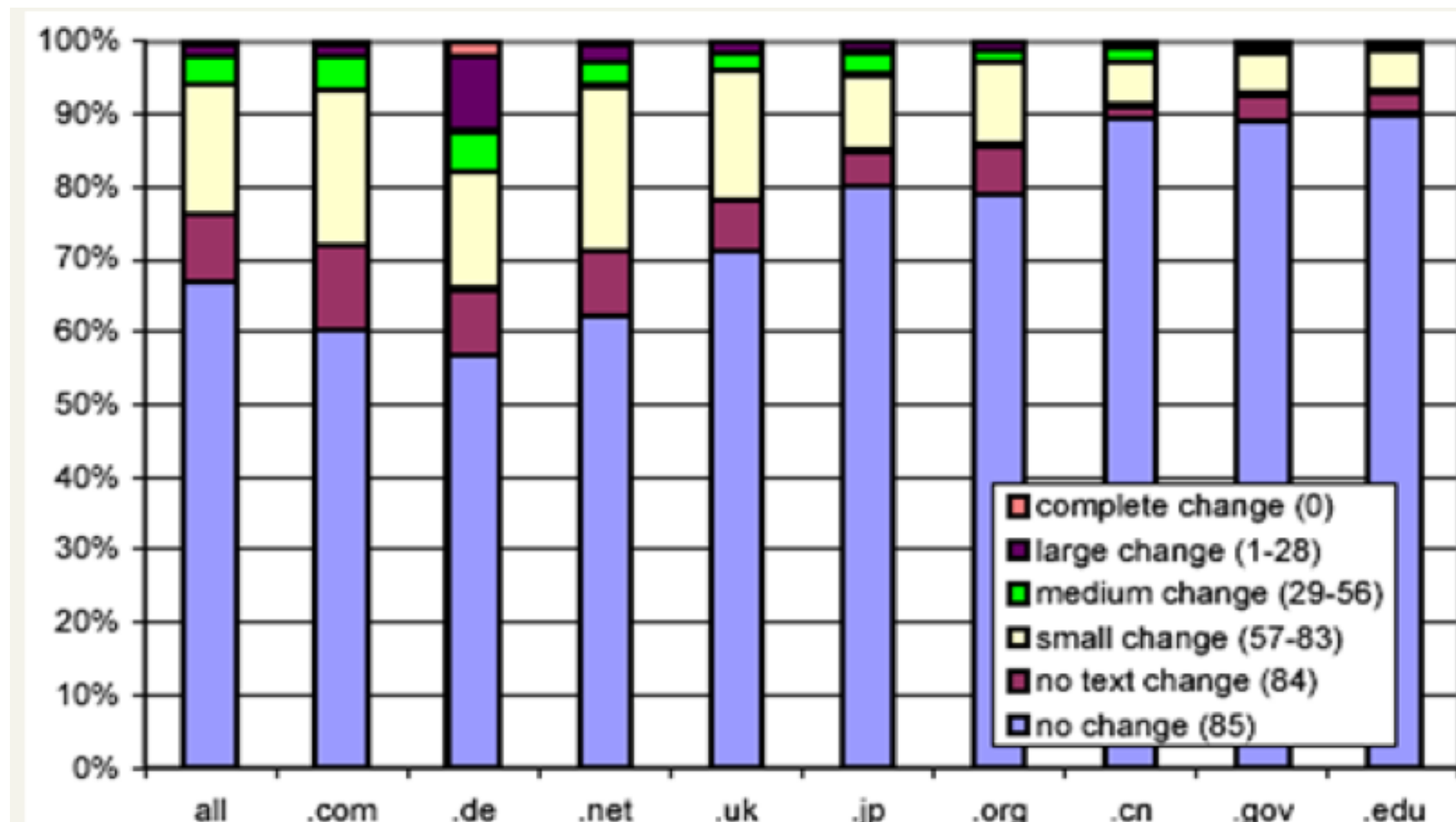
- [Ntul04] 154 large sites recrawled from scratch weekly
 - 8% had new pages ever week
 - 8% die
 - 5% new content
 - 25% new links per week

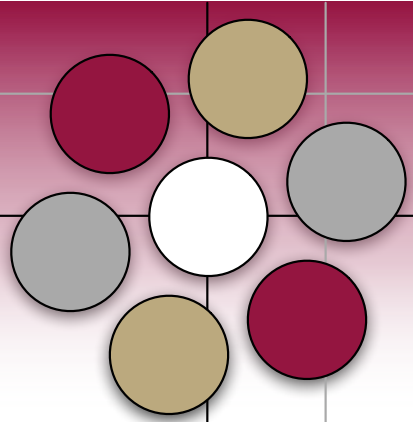
Web Search Basics: Size of the web

Rate of change



- Fetterly et al. study in 2002
- 150 million pages over 11 weekly crawls
- Bucketed into 85 groups according to amount of change

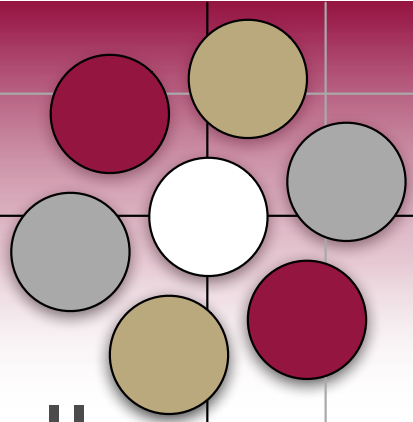




Web Evolution

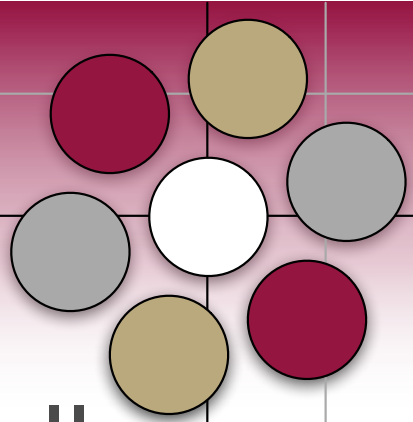
- The nature of the web is change
- Not much work on studying web evolution
 - Exception is Fetterly et. al, 2003
- Some effort has been made to extrapolate from small samples using fractal models [Dill et. al. 2001]

Web Search Basics: Size of the web



The very nature of the web is changing as well

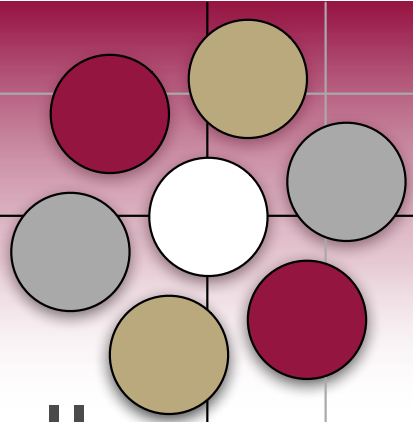
Web Search Basics: Size of the web



The very nature of the web is changing as well

- Transforming from a source of information

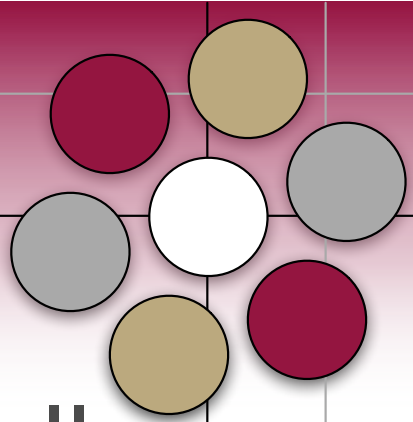
Web Search Basics: Size of the web



The very nature of the web is changing as well

- Transforming from a source of information
- to what?

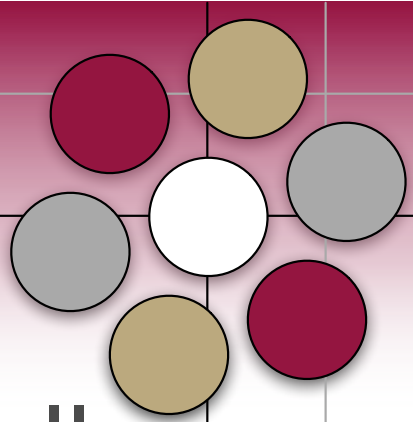
Web Search Basics: Size of the web



The very nature of the web is changing as well

- Transforming from a source of information
- to what?
 - a communication platform?

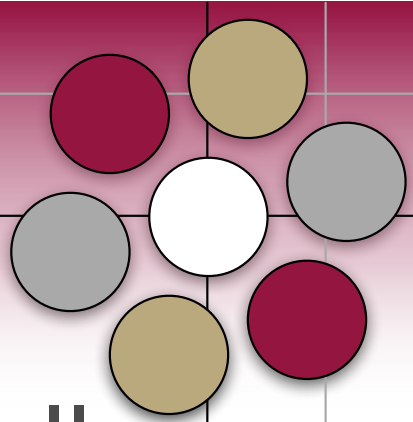
Web Search Basics: Size of the web



The very nature of the web is changing as well

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 - a source of computation?

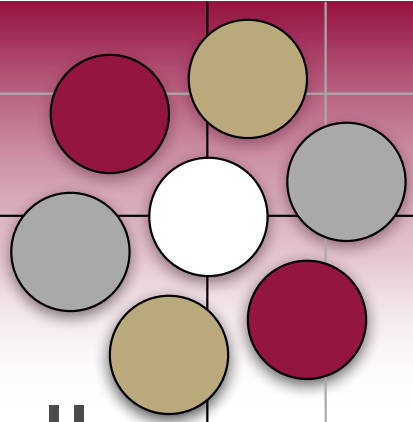
Web Search Basics: Size of the web



The very nature of the web is changing as well

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 - an application-space?

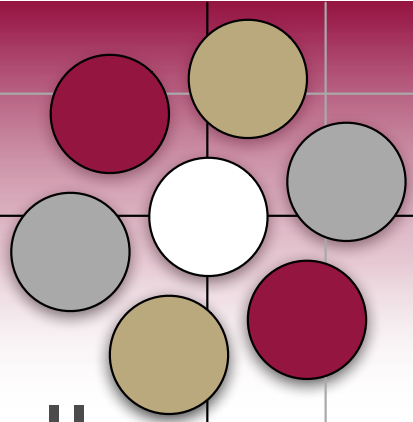
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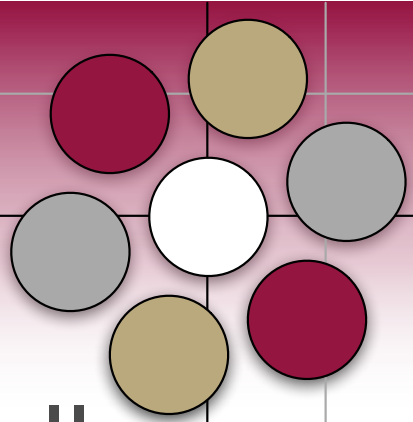
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 - an augmentation of reality?

Web Search Basics: Size of the web

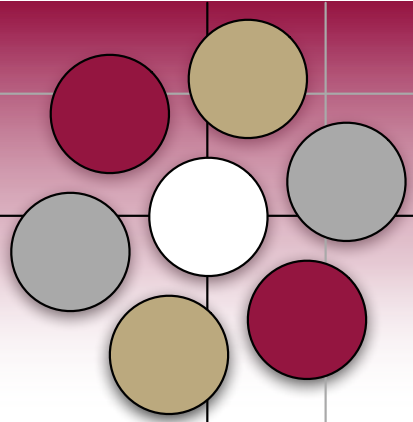


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 - an application-space?
 - a mirror-world?
 - an augmentation of reality?
 - a cognitive orthotic?

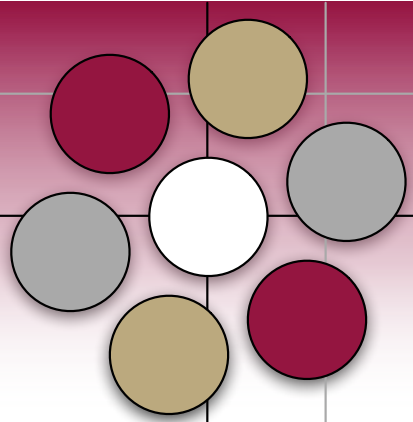


Overview

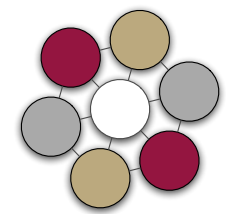


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- Web IR
- Sponsored Search
- Web Search Basics
 - Size of the Web
- Web Users
- Spam

Overview

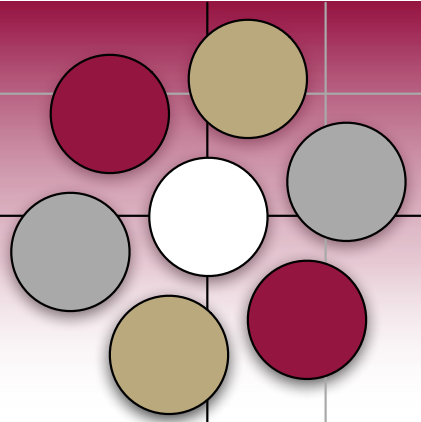


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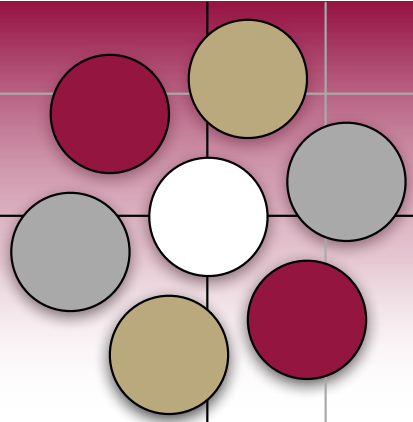


Web Users

- Spam

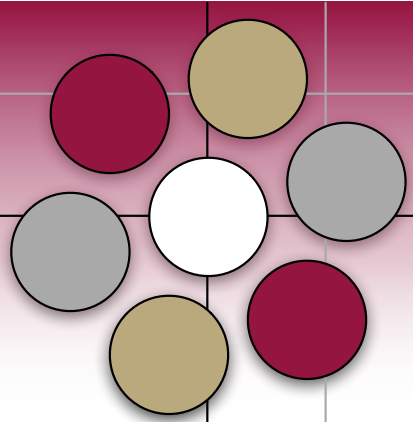


User Search Needs in Brod02/RL04



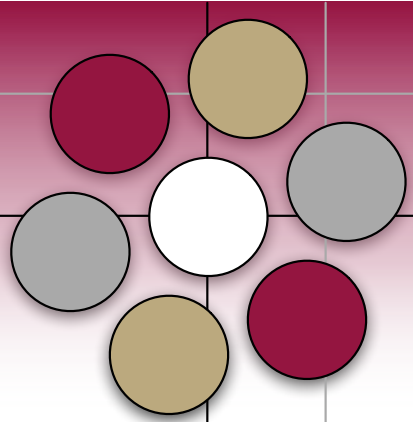
User Search Needs in Brod02/RL04

- Informational
 - Want to learn about something (~40%/65%)



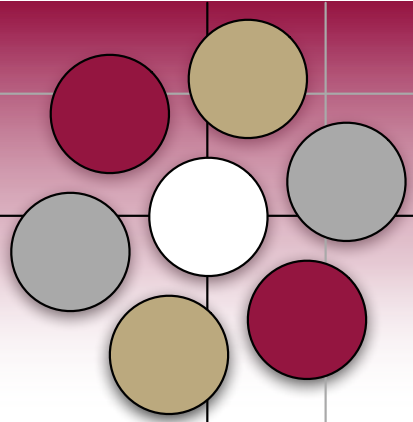
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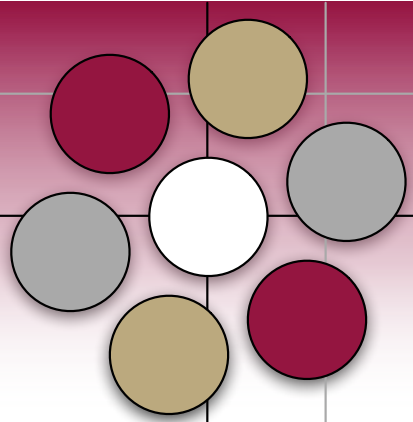
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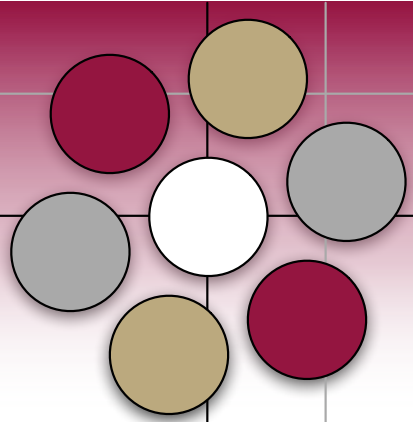
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 - Want to do something (~35%/20%)
 - Access a service, download, shop
- Others?
 - Exploration, social, etc...



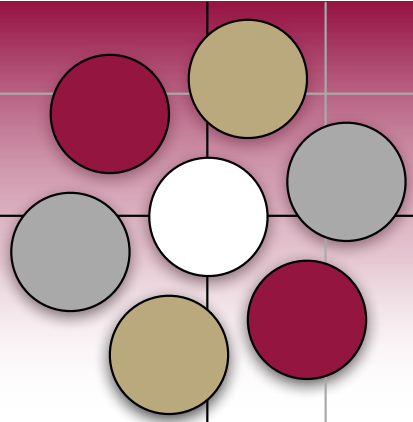
Web Users

- Make ill defined queries
 - Short
 - Reported in 2012: ~3.5 (Dan Russell personal conv.)
 - Allegedly in 2009: 3-4 terms (lots of nuance)
 - Average in 2001: 2.54 terms (80% < 3 words)
 - Average in 1998: 2.35 terms (88% < 3 words) [Silv98]
- Imprecise terms
- Suboptimal syntax (no operators)
- Low effort (spelling mistakes)



Web Users

- Wide Variance in
 - Needs
 - Expectations
 - Knowledge
 - Bandwidth



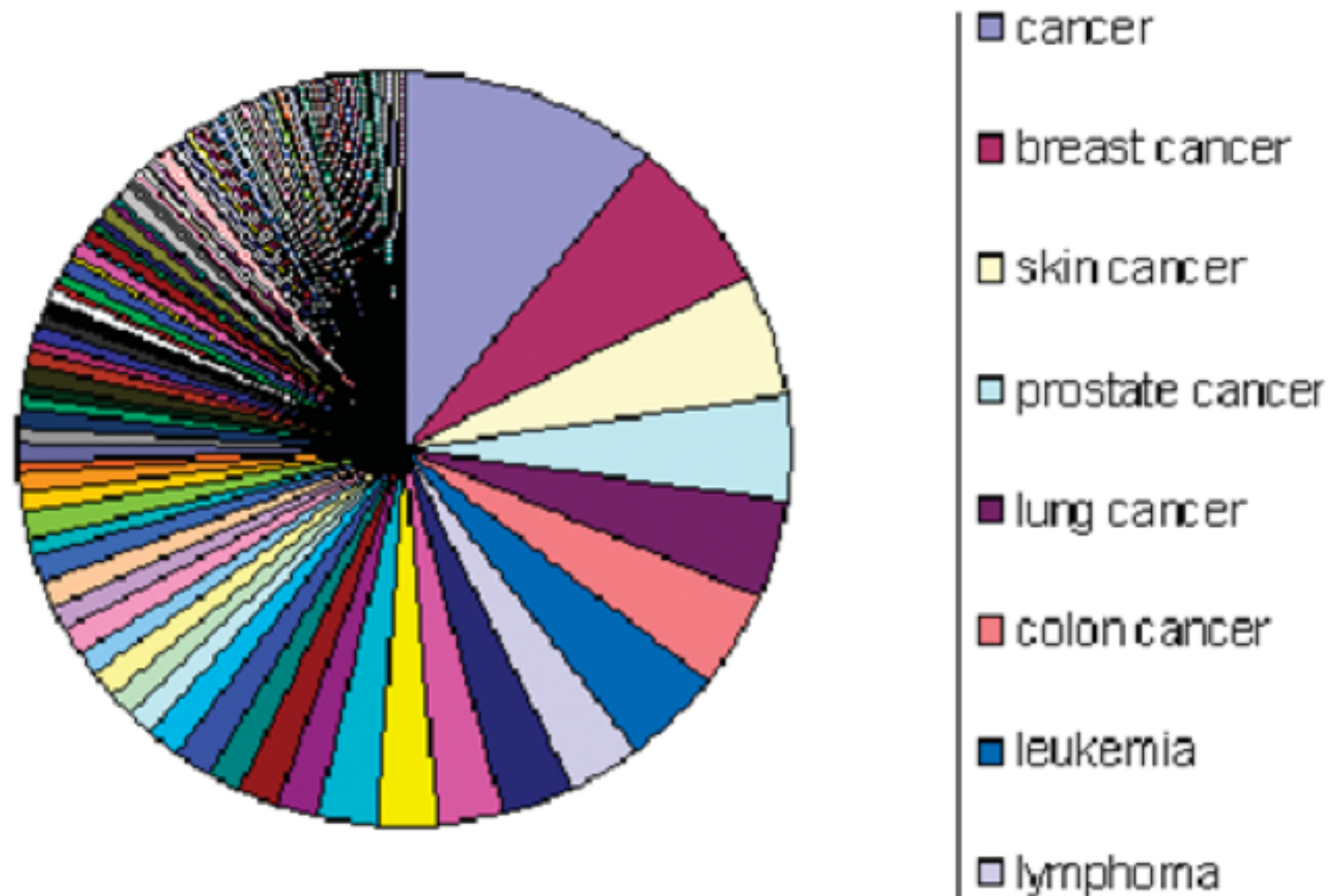
Web Users

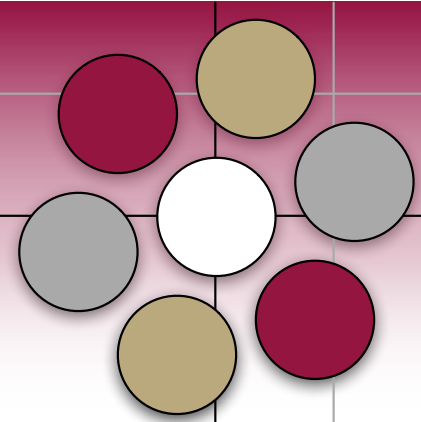
- Behavior
 - 85% look over one result screen only
 - 78% of queries are not modified
 - Follow links (“the scent of information”)

Web Users

Power law

- Few popular broad queries
- Many rare specific queries





Top queries

- Many are related to sex
- 2008 Who What How (Google)

Who is...

1. who is obama
2. who is mccain
3. who is palin
4. who is lil wayne
5. who is miley cyrus
6. who is dolla
7. who is jonas brothers
8. who is chris brown
9. who is biden
10. who is martin luther

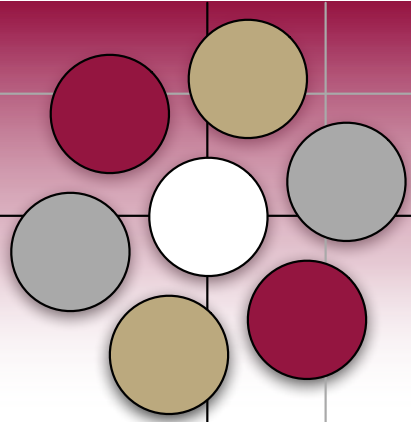
What is...

1. what is love
2. what is life
3. what is java
4. what is sap
5. what is rss
6. what is scientology
7. what is autism
8. what is lupus
9. what is 3g
10. what is art

How to...

1. how to draw
2. how to kiss
3. how to write
4. how to cook
5. how to tie
6. how to hack
7. how to run
8. how to cite
9. how to paint
10. how to spell

- <http://www.google.com/intl/en/press/zeitgeist2008/mind.html>



Top queries

- Differences today
- 01/2014 Who What How (Google)

who is|

who is
who is **red john**
who is **banksy**
who is **gossip girl**

Press Enter to search.

what is|

what is **my ip**
what is **obamacare**
what is **bitcoin**
what is **my ip address**

Press Enter to search.

how to|

how to **tie a tie**
how to **take a screenshot on a mac**
how to **make french toast**
how to **get rid of acne**

Press Enter to search.

- 09/2015

who is

who is **a**
who is **job**
who is **the next bachelor**
who is **the arkham knight**

Press Enter to search.

what is

what is **my ip**
what is **flakka**
what is **my ip address**
what is **gluten**

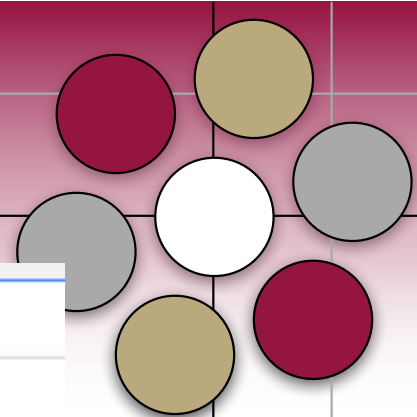
Press Enter to search.

how to

how to **tie a tie**
how to **take a screenshot on a mac**
how to **write a cover letter**
how to **screenshot on pc**

Press Enter to search.

Web Users



who is|

who is
who is **red john**
who is **banksy**
who is **gossip girl**

Press Enter to search.

what is|

what is **my ip**
what is **obamacare**
what is **bitcoin**
what is **my ip address**

Press Enter to search.

how to|

how to **tie a tie**
how to **take a screenshot on a mac**
how to **make french toast**
how to **get rid of acne**

Press Enter to search.

who is

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Press Enter to search.

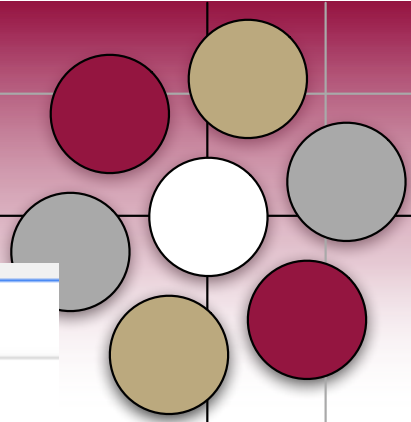
how to

how to **tie a tie**
how to **take a screenshot on a mac**
how to **write a cover letter**
how to **screenshot on pc**

Press Enter to search.

9/2019

Web Users



who is|

who is
who is **red john**
who is **banksy**
who is **gossip girl**

Press Enter to search.

what is|

what is **my ip**
what is **obamacare**
what is **bitcoin**
what is **my ip address**

Press Enter to search.

how to|

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how to **screenshot on pc**

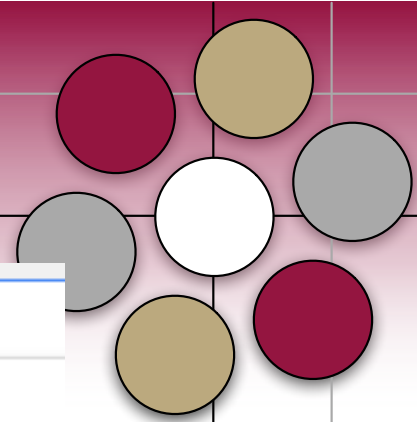
Press Enter to search.

9/2019

who is

who is
who is **brock turner**
whois domain
who is **allah**
who is **in custody**
who is **america**
who is **banksy**
who is **the next bachelor**
who is **cardi b**
who is **mac miller**

Web Users



who is|

who is
who is **red john**
who is **banksy**
who is **gossip girl**

Press Enter to search.

what is|

what is **my ip**
what is **obamacare**
what is **bitcoin**
what is **my ip address**

Press Enter to search.

how to|

how to **tie a tie**
how to **take a screenshot on a mac**
how to **make french toast**
how to **get rid of acne**

Press Enter to search.

who is

who is **a**
who is **job**
who is **the next bachelor**
who is **the arkham knight**

Press Enter to search.

what is

what is **my ip**
what is **flakka**
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what is **gluten**

Press Enter to search.

how to

how to **tie a tie**
how to **take a screenshot on a mac**
how to **write a cover letter**
how to **screenshot on pc**

Press Enter to search.

9/2019

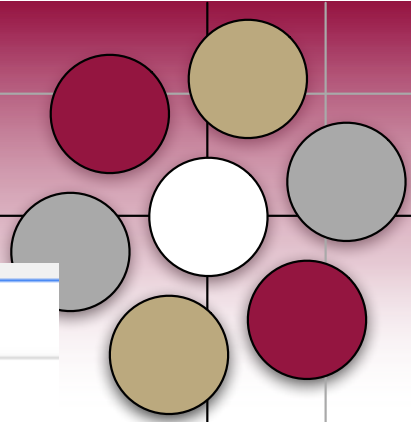
who is

who is
who is **brock turner**
whois domain
who is **allah**
who is **in custody**
who is **america**
who is **banksy**
who is **the next bachelor**
who is **cardi b**
who is **mac miller**

what is

what is
what is **the name**
what is **the capital of**
what is **the meaning of**
what is **my ip**
what is **your name**
what is **google**
what is **my name**
what is **science**
what is **the definition of**

Web Users



who is|

who is
who is **red john**
who is **banksy**
who is **gossip girl**

Press Enter to search.

what is|

what is **my ip**
what is **obamacare**
what is **bitcoin**
what is **my ip address**

Press Enter to search.

how to|

how to **tie a tie**
how to **take a screenshot on a mac**
how to **make french toast**
how to **get rid of acne**

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who is

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what is **gluten**

Press Enter to search.

how to

how to **tie a tie**
how to **take a screenshot on a mac**
how to **write a cover letter**
how to **screenshot on pc**

Press Enter to search.

9/2019

who is

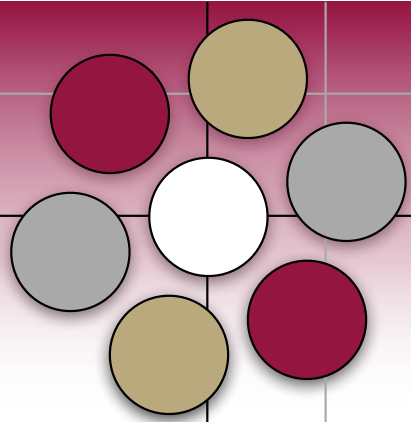
who is
who is **brock turner**
whois domain
who is **allah**
who is **in custody**
who is **america**
who is **banksy**
who is **the next bachelor**
who is **cardi b**
who is **mac miller**

what is

what is
what is **the name**
what is **the capital of**
what is **the meaning of**
what is **my ip**
what is **your name**
what is **google**
what is **my name**
what is **science**
what is **the definition of**

how to

how to **screenshot on mac**
how to **tie a tie**
how to **delete your instagram**
how to **write a check**
how to **make slime**
how to **train your dragon**
how to **screenshot on pc**
how to **hard boil eggs**
how to **write a cover letter**
how to **lose weight**

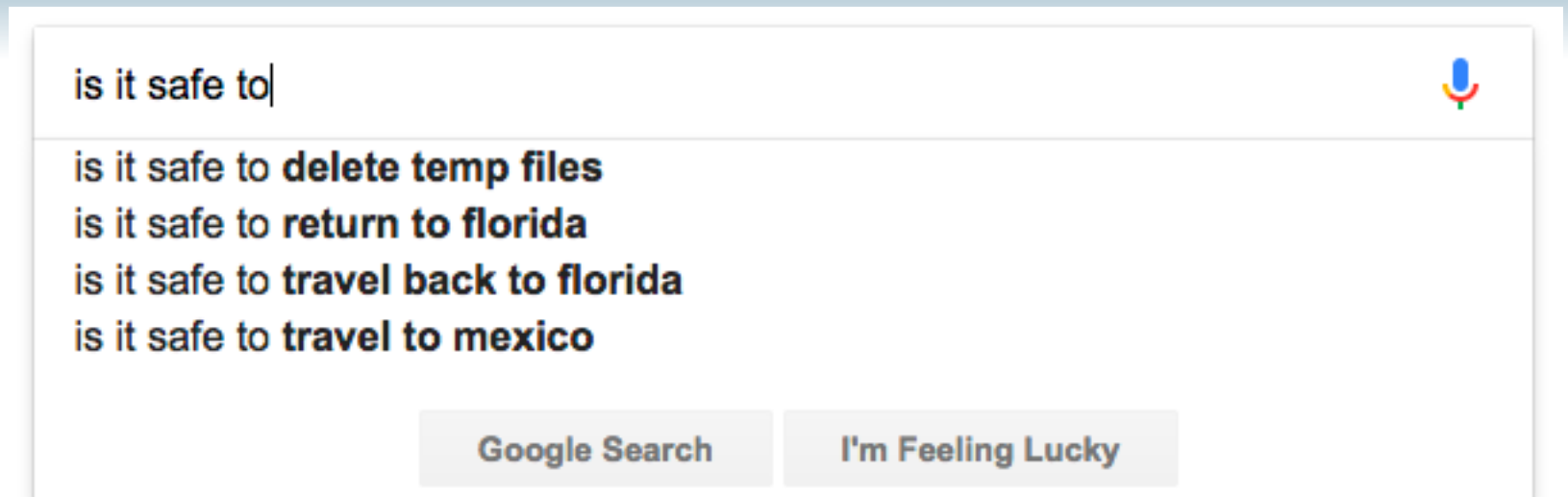


Top queries

- Live demo - WARNING this is not very safe....
 - “Is it safe to”
 - “Is it legal to”
 - “why does”
 - “why doesn’t
 - “why is there”
 - “why isn’t”
 - “americans are”

EXERCISE

WORK IN TEAMS

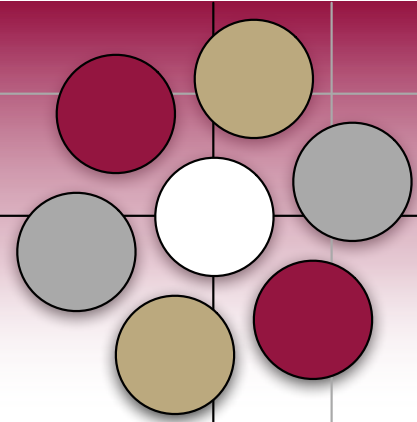


A screenshot of a Google search interface. The search bar contains the text "is it safe to". Below the search bar, four suggested queries are listed: "is it safe to delete temp files", "is it safe to return to florida", "is it safe to travel back to florida", and "is it safe to travel to mexico". To the right of the search bar is a microphone icon. Below the suggestions are two buttons: "Google Search" and "I'm Feeling Lucky".

[Report inappropriate predictions](#)

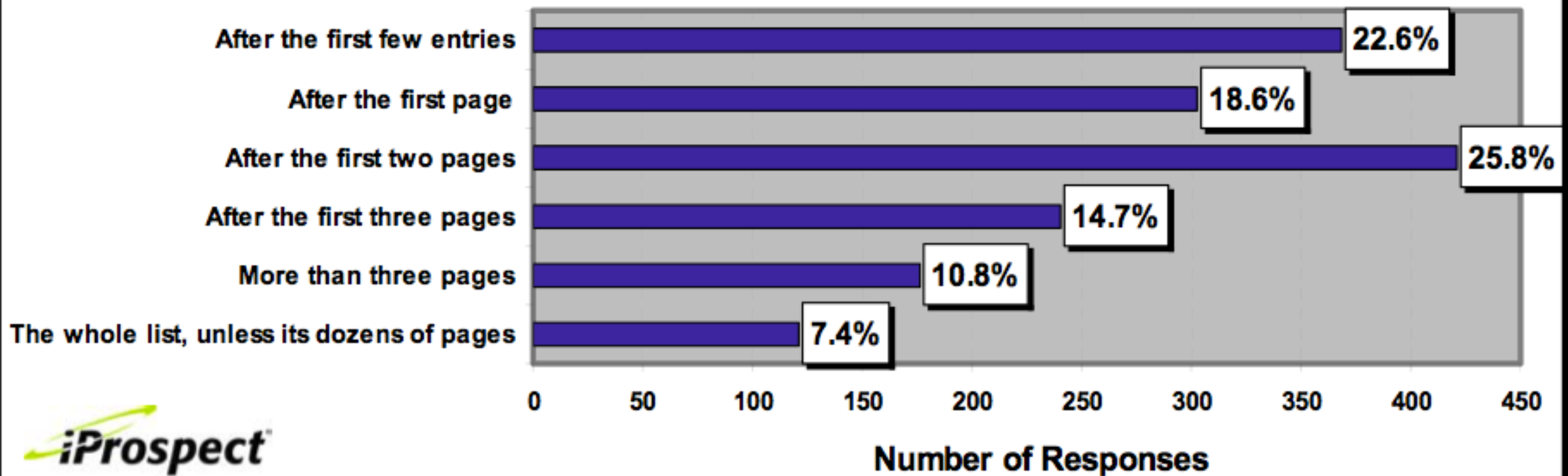
Imagine you have the resources of Google. Propose a way to generate query completions queries like the above example. Present your proposal.



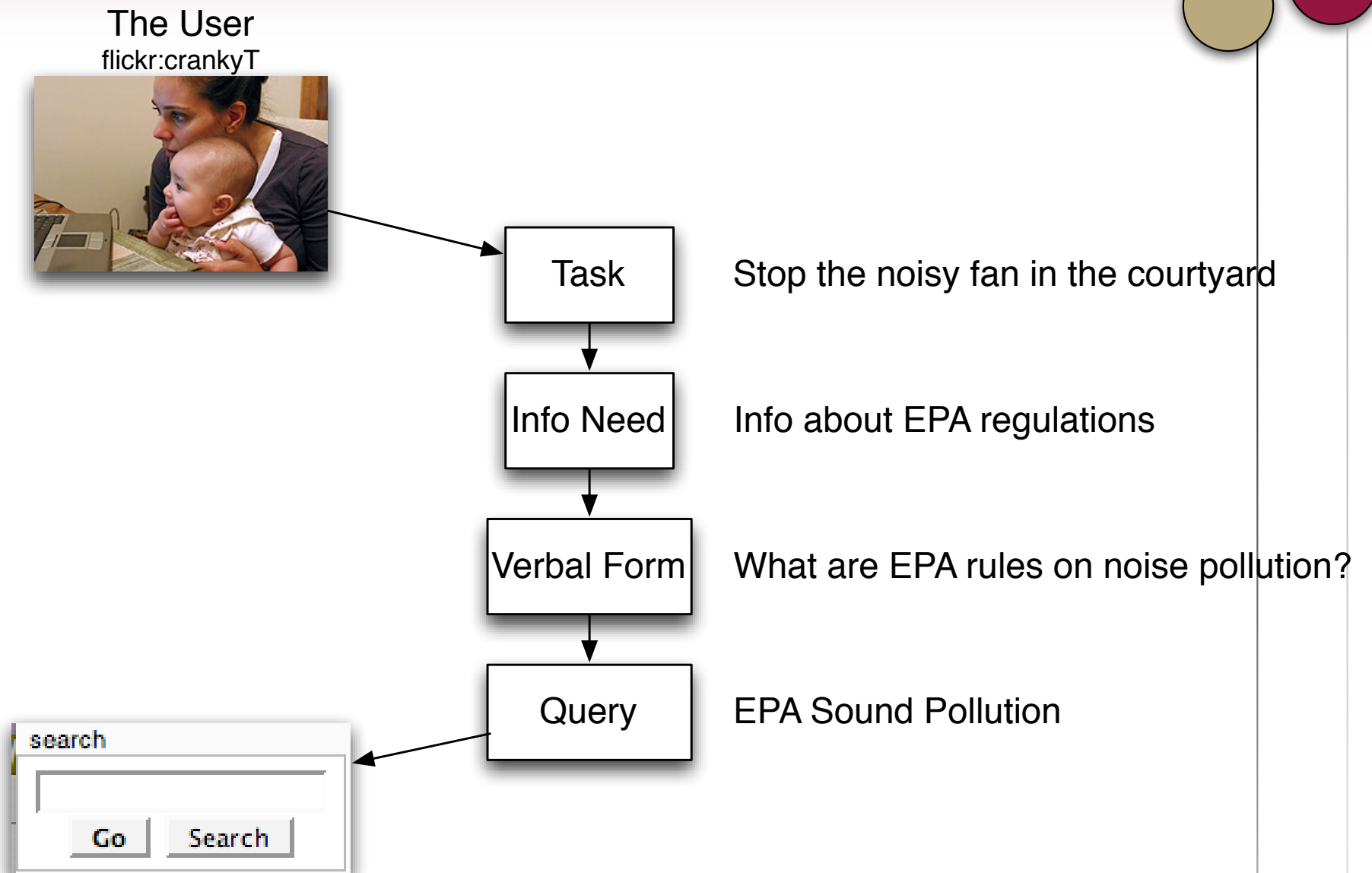


How far do people look for results?

If you don't find what you are looking for, at what point do you move on either to another search engine or to another search on the same engine?



True Example *

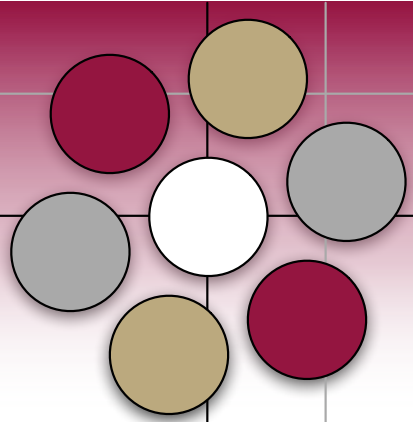


EXERCISE

WORK IN TEAMS

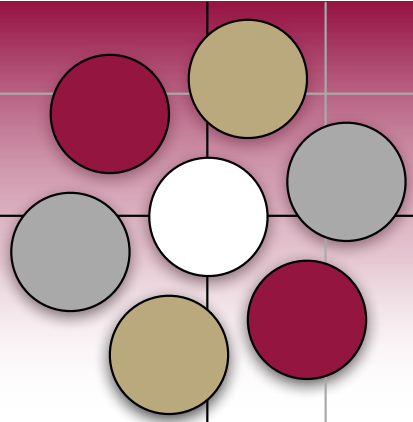
What are 4 things that would have to be true about a page of search engine results for you to consider them high-quality?





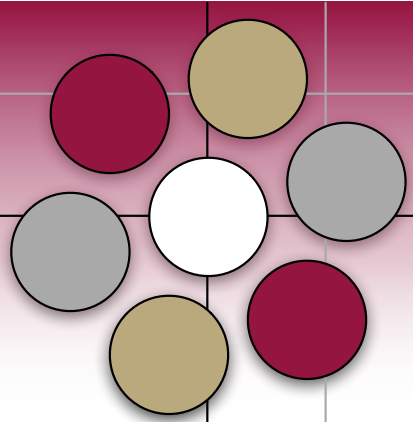
How do users evaluate search engines?

- Quality of pages
 - Classic IR relevance
 - Also important:
 - Trust
 - Duplicate elimination
 - Readability
 - Fast Access
 - No pop-ups



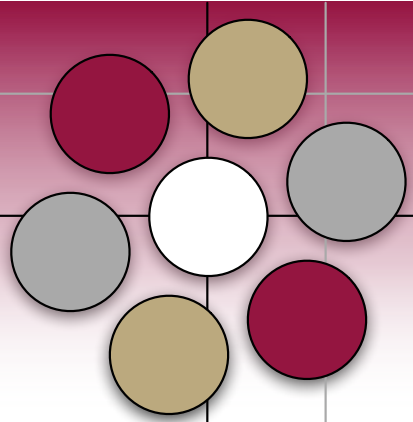
How do users evaluate search engines?

- Precision is more important than recall
 - Precision:
 - How precise is a portal in locating relevant results?
- Recall
 - How thorough is the coverage of available relevant results?
- Precision with 1 result, 10 results, 2-3 pages of results.
- When is recall important?



How do users evaluate search engines?

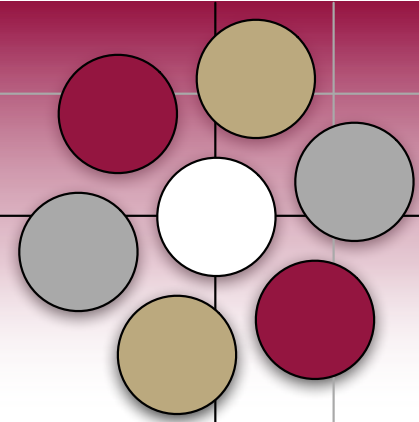
- Recall is sometimes important:
 - Googling for a new doctor
 - Googling a prospective employee
 - Googling your date



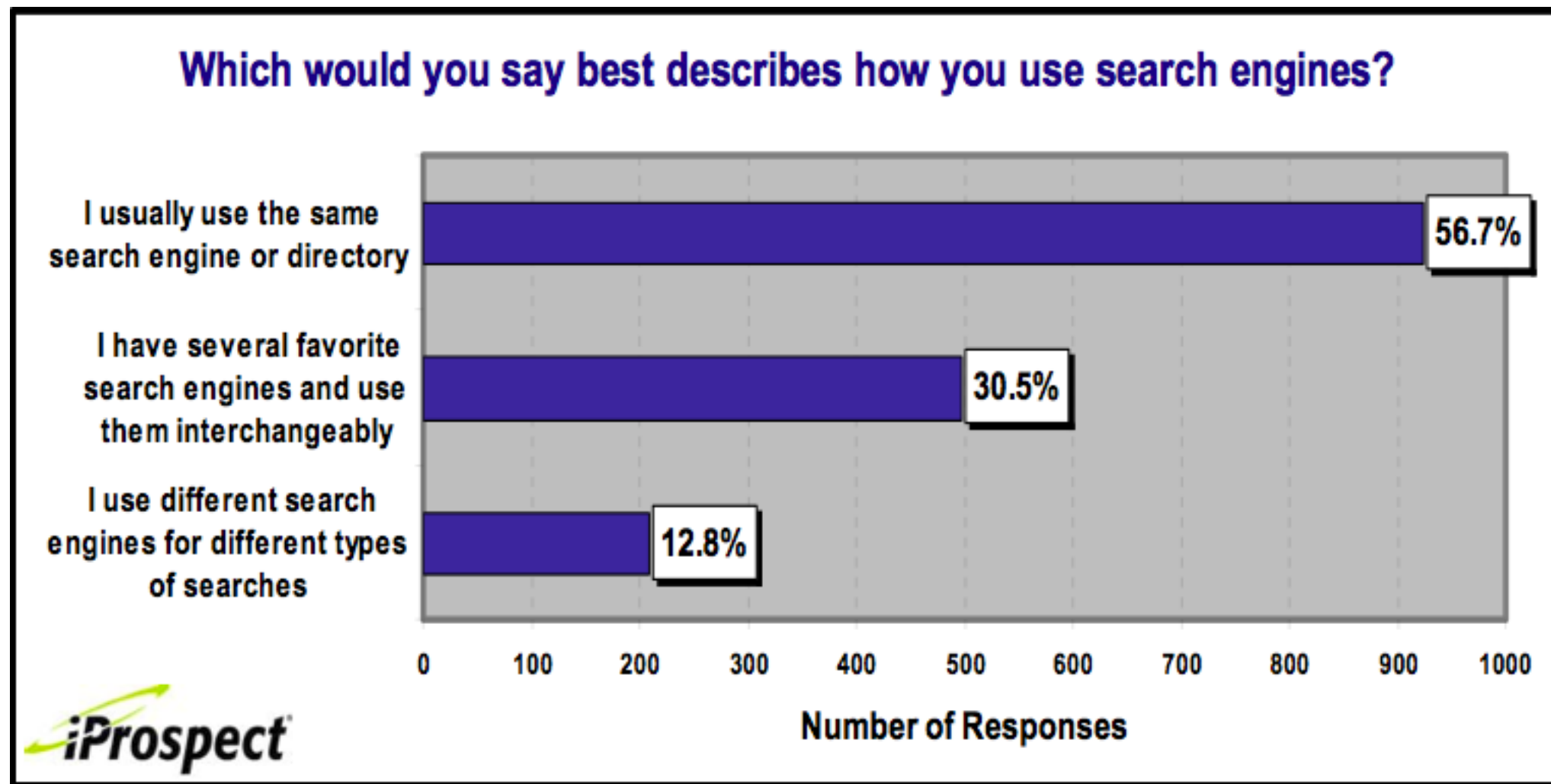
How do users evaluate search engines?

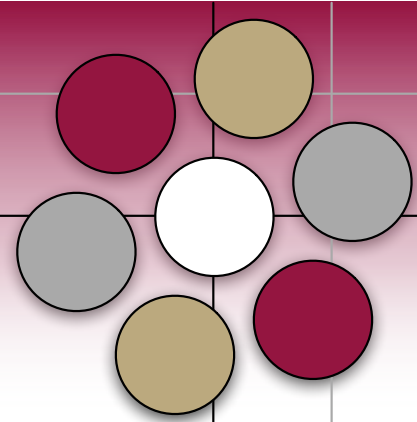
- Good U/I
 - Simple
 - No Clutter
- Pre and post processing tools
 - Spell check (“Did you mean?”)
 - Suggested alternative searches
 - Links to resources (maps, images, stock quotes)
- Able to deal with typical behavior
 - e.g., a URL typed into a search box

Web Users



Loyalty to a given search engine





True Example *

The User
flickr:crankyT



Task

Stop the noisy fan in the courtyard

Info Need

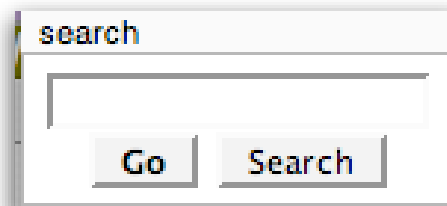
Info about EPA regulations

Verbal Form

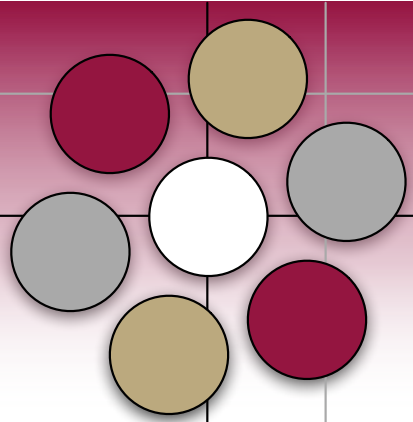
What are EPA rules on noise pollution?

Query

EPA Sound Pollution



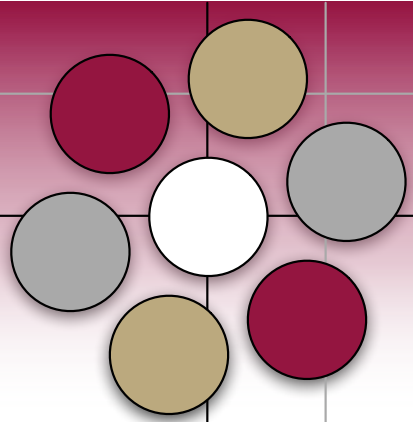
Web Users: Helping the User



Answering “the need behind the query”

- The query is often an imprecise indicator of what the user really wants
- What can we do to get a better handle on the underlying information need?
- Query language
 - Adjust rank of English results for a Japanese query
- Use user context
 - In particular geographic context

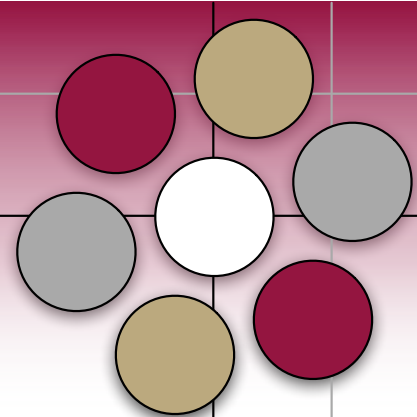
Web Users: Helping the User



Answering “the need behind the query”

- Guess what type of information the user wants
 - a web page?
 - a map?
 - a stock price?
 - what else?
- Correct queries
 - Suggest correct spellings
 - Suggest related searches (google-fu)

Web Users: Helping the User



Example

- Google

-

-

-

-

- C

-

-

The screenshot shows a Google search results page for the query 'kitakurihama'. The browser window title is 'kitakurihama - Google Search'. The address bar shows the URL 'http://www.google.com/search?hl=en&cli'. The search bar contains the text 'kitakurihama' and a 'Search' button. The results show 'Results 1 - 10 of about 276 for kitakurihama. (0.12 seconds)'. The first result is 'MySpace.com - Nasty - Kitakurihama, Kanagawa - Hip Hop - www ...' with a description of the band's profile. The second result is 'Kitakurihama - [Translate this page]' with a description of a karaoke box and hair clinic. The third result is '保育所ちびっこランド 北久里浜園 - [Translate this page]' with a description of a childcare facility. The fourth result is 'YuDiary' with a personal blog entry about waiting for a friend at Kitakurihama station. The fifth result is 'Takenori Co.,Ltd Kanagawa/Yokosuka Construction work Renovation ...' with a description of construction work.

kitakurihama - Google Search

http://www.google.com/search?hl=en&cli

keitei

Last open ▾ Class Development ▾ Research Links ▾ UCI ▾ Thesis pages ▾ DR ▾ Conferences ▾ Place Lab ▾ >>

Web Images Maps News Shopping Gmail more ▾

donald.j.patterson.iii@gmail.com | Web History | My Account | Sign out

Google kitakurihama Search Advanced Search Preferences

Web Results 1 - 10 of about 276 for kitakurihama. (0.12 seconds)

Did you mean: [kujukurihama](#)

[MySpace.com - Nasty - Kitakurihama, Kanagawa - Hip Hop - www ...](#)
MySpace music profile for Nasty with tour dates, songs, videos, pictures, blogs, band information, downloads and more.
[profile.myspace.com/index.cfm?fuseaction=user.viewprofile&friendid=1000891776](#) - 48k - [Cached](#) - [Similar pages](#) - [Note this](#)

[Kitakurihama](#) - [[Translate this page](#)]
Kitakurihama. 1 to 7 out of 7 Glee land (グリーランド) Karaoke box HAIR CLINIC TAIRA (ヘアークリニック タイラ) Hairdressing and cosmetics TAKOCHU (たこ忠) ...
[p.bari3.net/.../lookup2.asp?agntcd=1802&ct1=&ct1_nm=&ct2=007&ct2_nm=Kitakurihama&lv=1](#) - 5k - [Cached](#) - [Similar pages](#) - [Note this](#)

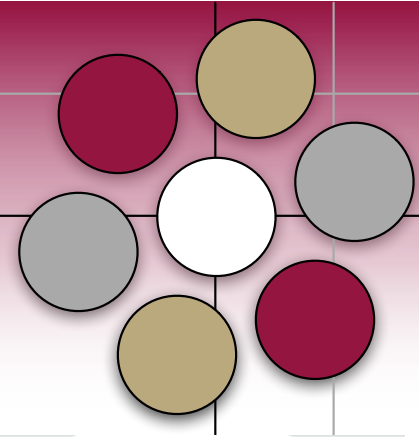
[保育所ちびっこランド 北久里浜園](#) - [[Translate this page](#)]
混合自由保育で三育法を実践。
[www.kidslink.jp/chibikko-kitakurihama/](#) - 2k - [Cached](#) - [Similar pages](#) - [Note this](#)

[YuDiary](#)
i waited for my friend on kitakurihama station at 1:00pm. there are a lot of fields in misakiguchi. i drove my car from kitakurihama station to his house. ...
[idauyutajifu.blogspot.com/](#) - 61k - [Cached](#) - [Similar pages](#) - [Note this](#)

[Takenori Co.,Ltd Kanagawa/Yokosuka Construction work Renovation ...](#)
Miura/Fuzisawa Bank(Kitakurihama Branch).Shounan Bank(Kitakurihama Branch) ... JA Yokosuka/Hayama farm cooperative(Kitakurihama Branch)

Web Users: Helping the User

Examples - language



google.com/search?q=kitakurih...

Google kitakurihama

About 13,400 results (0.90 seconds)

Kitakurihama Station - Wikipedia
https://en.wikipedia.org/wiki/Kitakurihama_Station
Kitakurihama Station is a railway station operated by the Keikyū Kurihama Line located in Yokosuka, Kanagawa Prefecture, Japan. It is located 1.7 rail ...
Station code: KK66 Line(s): Kurihama Line

The Top 10 Things to Do Near Kitakurihama Station ... - TripAdvis...
https://www.tripadvisor.com/.../Yokosuka/Things_to_Do_in_Yokosuka
Things to do near Kitakurihama Station on TripAdvisor: See 1016 reviews and 4940 candid photos of things to do near Kitakurihama Station in Yokosuka, ...

THE 10 BEST Restaurants Near Kitakurihama Station in Yokosuka...
https://www.tripadvisor.com/.../Yokosuka/Yokosuka_Restaurants
Restaurants near Kitakurihama Station, Yokosuka on TripAdvisor: Find traveler reviews and candid photos of dining near Kitakurihama Station in Yokosuka, ...

Mermaid, Kitakurihama, Yokosuka-Shi - Facebook
<https://www.facebook.com/.../Yokosuka,Kanagawa> Translate this page
Phone, +81 46-830-1148 · Address. 根岸町3丁目3-10; Yokosuka, Kanagawa 239-0807 ...
Mermaid, Kitakurihama, Yokosuka-Shi, Yokosuka, Kanagawa.
Address: : 根岸町3丁目3-10; Yokosuka, Kanag...

The Top 10 Things to Do Near Kitakurihama Station ... - TripAdvis...
https://www.tripadvisor.co.za/.../Yokosuka/Things_to_do_in_Yokosuka
Things to do near Kitakurihama Station on TripAdvisor: See 1011 reviews and 4841 candid photos of things to do near Kitakurihama Station in Yokosuka, ...

google.co.jp/search?source=hp...

Google kitakurihama

約 10,200 件 (0.51 秒)

もしかして: 北久里浜

北久里浜駅 - Wikipedia
<https://ja.wikipedia.org/wiki/北久里浜駅>
北久里浜駅（きたくりはまえき）は、神奈川県横須賀市根岸町二丁目にある京浜急行電鉄久里浜線の駅である。駅番号はKK66。目次. 1 年表; 2 駅構造. 2.1 のりば. 3 利用状況; 4 駅周辺; 5 バス路線; 6 隣の駅; 7 脚注; 8 出典; 9 関連項目; 10 外部リンク ...
所属事業者: 京浜急行電鉄 駅番号: ○KK66
所属路線: ■久里浜線 駅構造: 地上駅
年表 · 利用状況 · 駅周辺 · バス路線

Kitakurihama Station - Wikipedia
https://en.wikipedia.org/wiki/Kitakurihama_Station このページを訳す
Kitakurihama Station is a railway station operated by the Keikyū Kurihama Line located in Yokosuka, Kanagawa Prefecture, Japan. It is located 1.7 rail kilometers from the Horinouchi Station, and 54.0 rail kilometers from the northern terminus ...
Station code: KK66 Line(s): Kurihama Line

The Top 10 Things to Do Near Kitakurihama Station ... - TripAdvisor
<https://www.tripadvisor.com/AttractionsNear-g298174-...> このページを訳す
Things to do near Kitakurihama Station on TripAdvisor: See 1016 reviews and 4940 candid photos of things to do near Kitakurihama Station in Yokosuka, Kanagawa Prefecture.

THE 10 BEST Restaurants Near Kitakurihama Station in Yokosuk...
https://www.tripadvisor.com/.../Yokosuka_Restaurants このページを訳す
Restaurants near Kitakurihama Station, Yokosuka on TripAdvisor: Find traveler reviews and candid photos of dining near Kitakurihama Station in Yokosuka, Kanagawa Prefecture.

Web Users: Helping the User

Examples - query spelling

werstmont college - Google Se x

google.com/search?q=werstmont+college&rlz=1C5CHFA_enUS808US810&oq=werstmont+college&aqs=chrome..69i57j0l5.2448j0j7&sourceid=chrome&ie=UT...

Apps Class Development Westmont UCI DR quub Blogs and Wikis 960 Gridder Rails Unsorted Bookma... Netflix: Search Re... Bookmarks Bookmarks Other Bookmarks

Google werstmont college

All News Images Maps Videos More Settings Tools

About 5,900,000 results (0.75 seconds)

Showing results for **westmont college**
Search instead for **werstmont college**

Westmont College | Deeper Thinking. Wider Impact.
<https://www.westmont.edu>
A Christian, liberal arts college offering 26 bachelor of science degrees, 12 pre-professional programs and an elementary and secondary credential program.

Results from westmont.edu

Westmont
A Christian, liberal arts college in Santa Barbara, California for ...

Westmont College Athletics
The official athletics website for the Westmont College Warriors.

Degrees & Programs
Economics and Business -
Kinesiology - Art - ...

Admissions & Aid
Affording College - Admitted Students - Apply to Westmont

Academics
Student to faculty ratio. Degrees & Programs. of students stay at ...

Current Students
myWestmont Email Canvas
WebAdvisor We are high ...

People also ask


What is Westmont College known for?


Is Westmont College hard to get into?

What GPA do you need to get into Westmont?

Is Westmont College accredited?

Feedback

 See photos



Westmont College

Website Directions Save

Liberal arts college in Santa Barbara, California


Westmont College, founded in 1937, is an interdenominational Christian liberal arts college in Montecito near Santa Barbara, Santa Barbara County, California. [Wikipedia](#)


Avg cost after aid	Graduation rate	Acceptance rate
\$35K	78%	83%


Graduation rate is for first-time, full-time undergraduate students who | more
Source: US Dept of Education · Learn more


Address: 955 La Paz Road, Santa Barbara, CA 93108
Phone: (805) 565-6000
Undergraduate enrollment: 1,277 (2016–17)

Profiles

 Facebook

 LinkedIn

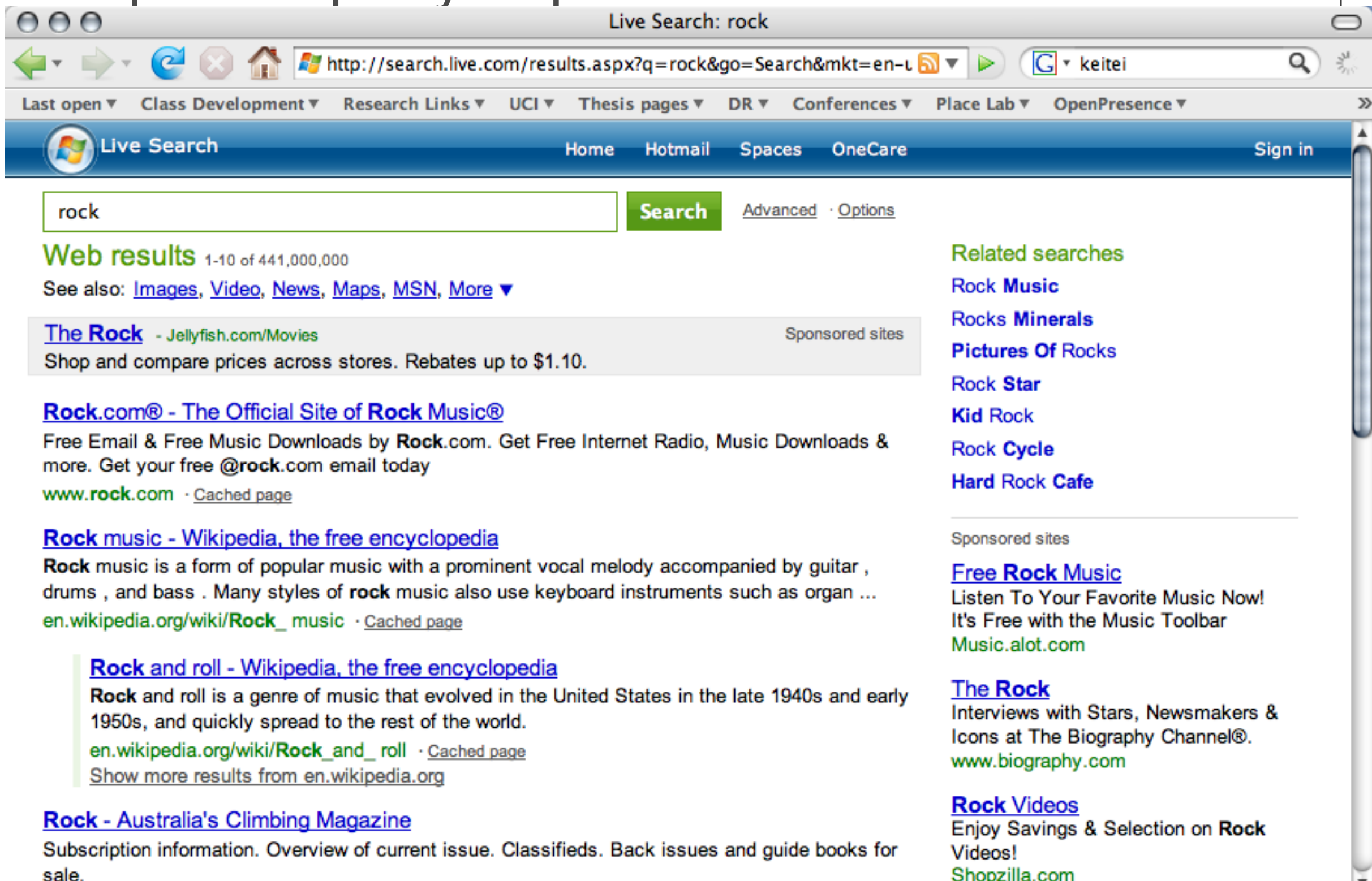
 Twitter

 YouTube

Notable alumni

Web Users: Helping the User

Examples - query expansion



The screenshot shows a web browser window titled "Live Search: rock". The address bar displays the URL <http://search.live.com/results.aspx?q=rock&go=Search&mkt=en-us>. The search bar contains the text "rock" and a green "Search" button. Below the search bar, the results are categorized into "Web results" and "Related searches".

Web results 1-10 of 441,000,000
See also: [Images](#), [Video](#), [News](#), [Maps](#), [MSN](#), [More](#) ▼

The Rock - [Jellyfish.com/Movies](#) Sponsored sites
Shop and compare prices across stores. Rebates up to \$1.10.

Rock.com® - The Official Site of Rock Music®
Free Email & Free Music Downloads by **Rock.com**. Get Free Internet Radio, Music Downloads & more. Get your free **@rock.com** email today
www.rock.com · [Cached page](#)

Rock music - Wikipedia, the free encyclopedia
Rock music is a form of popular music with a prominent vocal melody accompanied by guitar , drums , and bass . Many styles of **rock** music also use keyboard instruments such as organ ...
en.wikipedia.org/wiki/Rock_music · [Cached page](#)

Rock and roll - Wikipedia, the free encyclopedia
Rock and roll is a genre of music that evolved in the United States in the late 1940s and early 1950s, and quickly spread to the rest of the world.
en.wikipedia.org/wiki/Rock_and_roll · [Cached page](#)
[Show more results from en.wikipedia.org](#)

Rock - Australia's Climbing Magazine
Subscription information. Overview of current issue. Classifieds. Back issues and guide books for sale.

Related searches
[Rock Music](#)
[Rocks Minerals](#)
[Pictures Of Rocks](#)
[Rock Star](#)
[Kid Rock](#)
[Rock Cycle](#)
[Hard Rock Cafe](#)

Sponsored sites
Free Rock Music
Listen To Your Favorite Music Now!
It's Free with the Music Toolbar
Music.alot.com

The Rock
Interviews with Stars, Newsmakers & Icons at The Biography Channel®.
www.biography.com

Rock Videos
Enjoy Savings & Selection on **Rock** Videos!
Shopzilla.com



rock



Web

Images

Videos

Maps

News

My saves

241,000,000 RESULTS

Any time ▾

Rock.com: Band T-Shirts Rock Music Apparel Rock Merchandise

www.rock.com

Rock band t-shirts, apparel, music posters, & more by Rock.com. Shop for rock and roll band merchandise, accessories, plus hard to find rock band t-shirts

Music · Men's T-Shirts · Login · Search at Rock · Kiss · Beatles

Rock - definition of rock by The Free Dictionary

www.thefreedictionary.com/rock

rock 1 (rŏk) n. 1. Relatively hard, naturally formed mineral or petrified matter; stone. 2. a. A relatively small piece or fragment of such material. b. A relatively ...

Acronyms · Legal · Financial · Idioms

Images of rock

bing.com/images



[See more images](#)

Rock | Define Rock at Dictionary.com

www.dictionary.com/browse/rock

Rock definition, a large mass of stone forming a hill, cliff, promontory, or the like. See more.

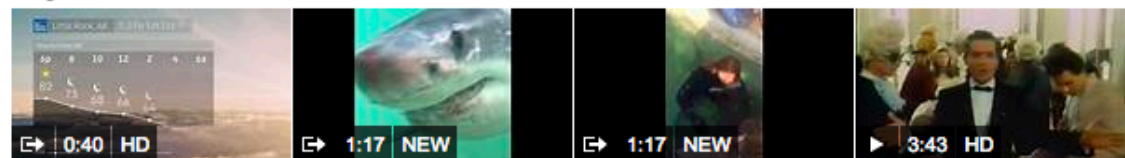
RockAuto

www.rockauto.com

RockAuto ships auto parts and body parts from over 300 manufacturers to customers' doors worldwide, all at warehouse prices. Easy to use parts catalog.

Videos of rock

bing.com/videos



Little Rock, AR 60
Second Forecast

MSN

Beached baby shark
gets rock pool refuge

MSN

Beached baby shark
gets rock pool refuge

MSN

Rock Me Amadeus -
Falco

VEVO

[See more videos of rock](#)

See results for

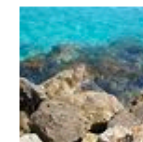
Dwayne Johnson (Actor)

Dwayne Douglas Johnson, also known by his ring name The Rock, is an American actor, producer and professional wrestler. Johnson was a college football player for the University of Miami, where he won a national champions...

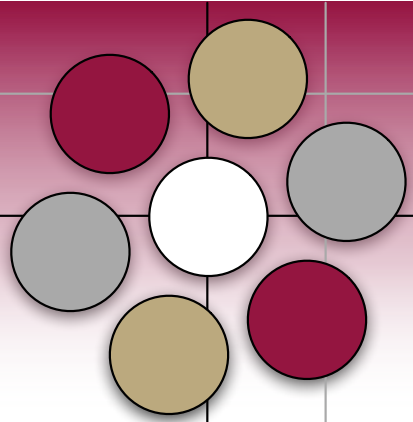


Rock (Geology)

Rock or stone is a natural substance, a solid aggregate of one or more minerals or mineraloids. For example, granite, a common rock, is a combination of the minerals quartz, feldspar and biotite. The Earth's outer solid layer, the lith...



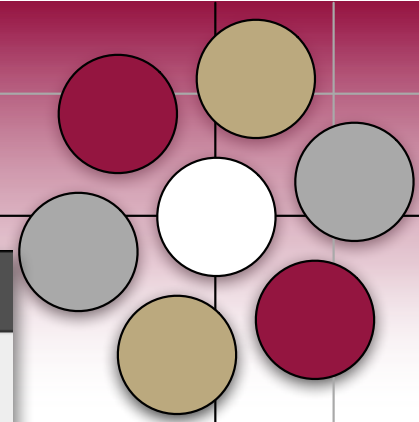
Web Users: Helping the User



Query shortcuts

- Map: “santa barbara, ca 93108” vs the wrong zip code
- Calculation: “5+4”
- Flight Info: “american airlines 715”
- Stock price: “msft”
- Unit conversion: “1 dollar in euro”
- Music: “White Stripes”
- “Instant Answers” -> “animal noises”

Web Users: Helping the User



← → ↻ Secure | <https://translate.google.com/#auto/en/%E6%A3%AE> ☆ ⋮


Google Sign In

Translate Turn off instant translation

English Spanish French Japanese - detected ↕ English Spanish Arabic Translate

0/5000

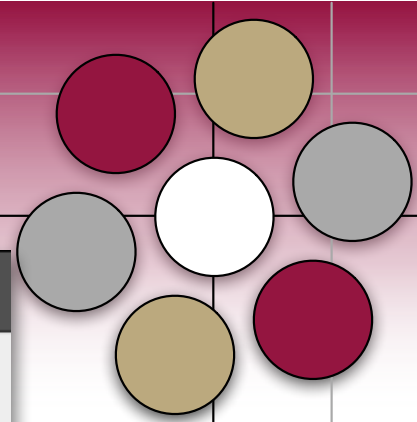
Type text or a website address or [translate a document](#).



→ [JOIN THE TRANSLATE COMMUNITY](#)

Google Translate for Business: [Translator Toolkit](#) [Website Translator](#)

Web Users: Helping the User



← → ↻ Secure | https://translate.google.com/#auto/en/%E6%A3%AE ☆ ⋮


Google Sign In

Translate Turn off instant translation

English Spanish French Japanese - detected ↕ English Spanish Arabic Translate

0/5000

Type text or a website address or [translate a document](#).



→ [JOIN THE TRANSLATE COMMUNITY](#)

Google Translate for Business: [Translator Toolkit](#) [Website Translator](#)

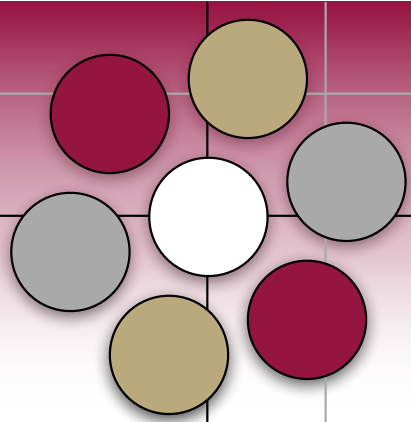
EXERCISE

WORK IN TEAMS

**Try the queries on the next page in
Google**

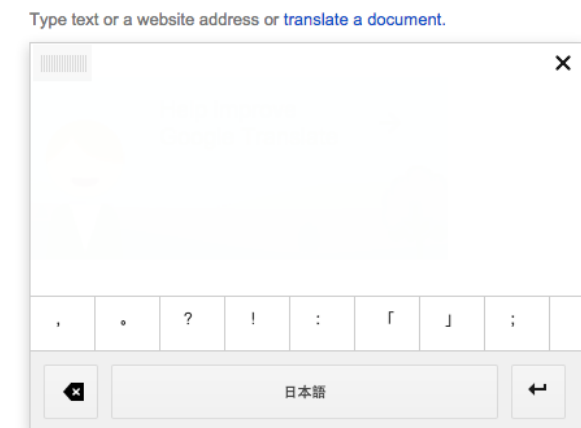


Web Users: Helping the User

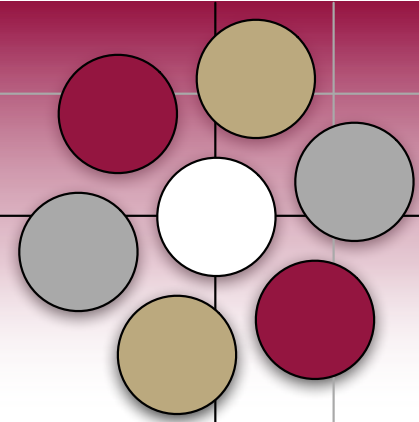


Query shortcuts

- roll a die
- flip a coin
- tip calculator
- recursion
- 88921384914 in english
- atari breakout
- google pacman
- do a barrel roll
- askew
- google gravity
- googler in 1998
- anagram
- zerg rush
- Bacon Number Matthew Broderick



Web Users: Helping the User



Query shortcuts taken to the extreme



when is the next solar eclipse?



Input interpretation:

next solar eclipse after today

Eclipse type:

annular

Eclipse date:

11:06 pm PST | Thursday, January 14, 2010 (7.344 days from now)

Eclipse path:

Show 3D | Orthographic projection



Web Users: Helping the User

White Stripes - Yahoo! Search Results

http://search.yahoo.com/search;_ylt=A0oGkmbxeZdH0nsBWtZXNyo. yahoo search

Last open ▾ Class Development ▾ Research Links ▾ UCI ▾ Thesis pages ▾ DR ▾ Conferences ▾ Place Lab ▾ OpenPresence ▾

american airlines 715 - Googl... Live Search: white stripes White Stripes - Yahoo! Search ...

Web | Images | Video | Local | Shopping | more ▾

White Stripes Search Options ▾

YAHOO!

1 - 10 of about 53,700,000 for White Stripes (About this page) - 0.11 sec.

The White Stripes - Official Site
www.whitestripes.com
[Albums](#) | [Lyrics](#) | [Photos](#) | [Videos](#)

Watch Music Videos

Play Popular Songs

- Icky Thump
- You Don't Know What Love Is (You Jus...
- 300 M.P.H. Torrential Outpour Blues

[More Songs...](#)

White Stripes
Official site for The **White Stripes**, the Detroit-based garage/blues duo featuring Jack and Meg White.
www.whitestripes.com - 2k - [Cached](#)

White Stripes v2
Jack and Meg **White** fansite includes news and tour information, forum, links, release details, and more.
www.whitestripes.net - 72k - [Cached](#)

SPONSOR RESULTS

White Stripes Ringtones
Complimentary **White Stripes** Ringtones. Get Them Instantly.
www.TheBombRingtones.com

White Stripes Ringtones
White Stripes Ringtones. Get Them Complimentary Now.
ChartRingers.com/whitestripes

The White Stripes
Find, compare & buy. Compare & Buy from 1000's of Stores.
www.Dealtime.com

The White Stripes at Amazon.com
Low prices on new & used music. Qualified orders over \$25 ship free.
Amazon.com/music

[See your message here...](#)

Done

Web Users: Helping the User

The screenshot shows a web browser window titled "Live Search: Don Patterson irvine ca". The address bar displays the URL "http://search.live.com/results.aspx?q=Don+Patterson+irvine+ca&g...". The browser has several tabs open: "american airlines 715 - Googl...", "Live Search: Don Patterson irvin...", and "White Stripes - Yahoo! Search ...". The Live Search interface includes a search bar with the text "Don Patterson irvine ca", a "Search" button, and links for "Advanced" and "Options".

Web results 1-9 of 253,000
See also: [Images](#), [Video](#), [News](#), [Maps](#), [MSN](#), [More](#) ▼

» [Top local listings for Don Patterson near Irvine, CA](#) (1 more) Is this useful? [Yes](#) | [No](#)

- **Don Patterson** (626) 918-1974 15626 Dubesor St, La Puente
- **Don Patterson** (213) 389-7583 226 S Berendo St Apt 205, Los Angeles
- **Don Patterson** (760) 729-6941 2768 Dundee Ct, Carlsbad

[DBLife: University of California-Irvine](#)
Jadwiga Indulska, University of Queensland, Australia **Don Patterson**, University of **California Irvine**, USA Tom Rodden, Nottingham University, UK Program Committee:
dblife.cs.wisc.edu/search.cgi?entity=entity-13655&begin=60 · [Cached page](#)

[DBLife: University of California-Irvine](#)
Jadwiga Indulska University of Queensland, Australia **Don Patterson** University of **California Irvine**, USA Tom Rodden Nottingham University, UK...
dblife.cs.wisc.edu/search.cgi?entity=entity-13655&begin=90 · [Cached page](#)
[Show more results from dblife.cs.wisc.edu](#)

[Jerry M. Patterson](#)
Professor: University of **California** at **Irvine** (2000-) Moulton **Patterson** Associates ... Partner (1967-75) State Bar of **California** 1967. Do you know something we **don't**?
www.nndb.com/people/406/000163914 · [Cached page](#)

Sponsored sites

- [Irvine CA Book Hotel](#)
Visiting California & Need a Hotel?
Reserve Rooms for **Irvine CA!**
www.calibex.com/hotels
- [Locate Don Patterson](#)
Current address and phone available.
Instant results.
www.usa-people-search.com
- [Don Patterson at Amazon](#)
Low prices on new & used music.
Qualified orders over \$25 ship free
amazon.com/music
- [Irvine CA - Cheap Rates](#)
Visiting California & Need a Hotel?
Compare Top Sites for **Irvine CA!**
www.nextag.com/hotels

[See your message here...](#)

Done

Web Users: Helping the User

The screenshot shows a web browser window titled "diabetes - Yahoo! Search Results". The address bar displays the URL "http://search.yahoo.com/search;_ylt=A0oGkl24d5dHeL0A2gZXNyof". The search bar contains the word "diabetes" and a "Search" button. The page shows search results for "diabetes" with a count of "1 - 10 of about 222,000,000 for diabetes (About this page) - 0.09 sec.".

SPONSOR RESULTS

Free Diabetes Supplies
www.LibertyMedical.com - Medicare Diabetics - Your supplies Could be 100% covered. Learn more.

Diabetes and Pain
www.Cymbalta.com - Diabetic peripheral neuropathic pain (DPNP) -learn about managing it.

Learn About Diabetes
www.Type2Diabetes-Info.com - Learn more about type 2 **diabetes** including treatment options.

Diabetes Learning Center
Educational site explains how to manage type 1 and type 2 **diabetes**.
www.bddiabetes.com

Manage Diabetes Naturally
Sugar Free Psyllium Fiber Products for Type 2 **Diabetes**. Order Online.
www.konsyl.com

Diabetes
Get a Free Meter from Liberty if You have **Diabetes** & on Medicare.
www.Diabetic-Testing-Supplies.com

Diabetes Is Info
Get Info on **Diabetes** Is from 14 search engines in 1.
www.info.com

Losing Income Due to Diabetes?
Unable to work due to **Diabetes**?

Diabetes Information - Health Results

Articles	Community	Other Resources
Symptoms	Yahoo! Groups	National Institute of Diabetes &...
Treatments	Ask a Question	American Diabetes Association
Medications	Read Q & A	MedlinePlus: Diabetes

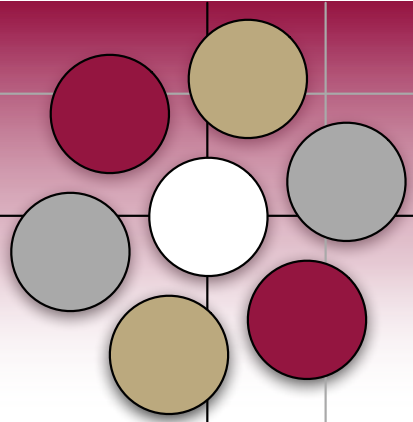
Yahoo! Shortcut - [About](#)

CDC: Basics About Diabetes
Fact sheet about **diabetes** covering its common symptoms, risk factors, and management options.
www.cdc.gov/diabetes/faq/basics.htm - 36k - [Cached](#)

American Diabetes Association
Provides extensive news and information about **diabetes** including symptoms, nutrition, weight

Done

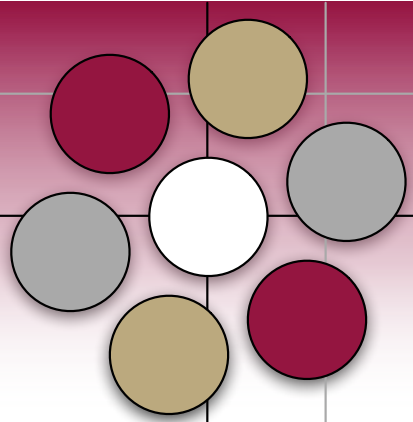
Web Users: Helping the User



Context

- Context determination
 - Spatial
 - User Location
 - IP geocoding
 - cell phone localization
 - User input (“make this my home”)
 - Web page location
 - Target Location
 - “SNA” maps to a latitude and longitude

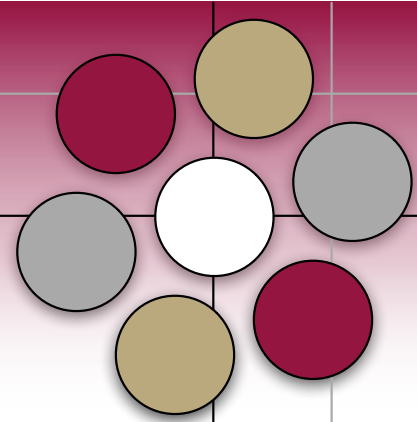
Web Users: Helping the User



Context

- Query Stream
 - Previous queries have influence
- Personal Search
 - Your profile and history have influence
- Explicit
 - You choose to use a vertical search engine

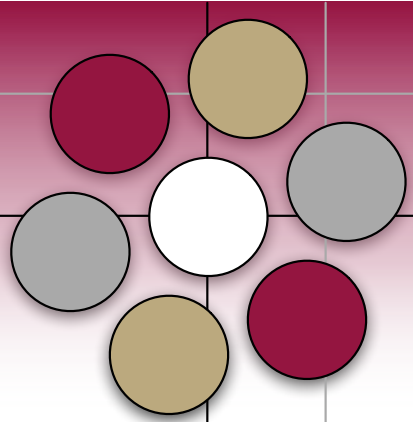
Web Users: Helping the User



Context

- Implicit Context
 - google.fr is the default in france
 - User Location and Target Location





Context Use

- Restrict Results / Delete inappropriate results
- Rerank results based on context
- Change the content presentation
 - Language etc.
- Specifying a context is built into some of the search APIs

EXERCISE

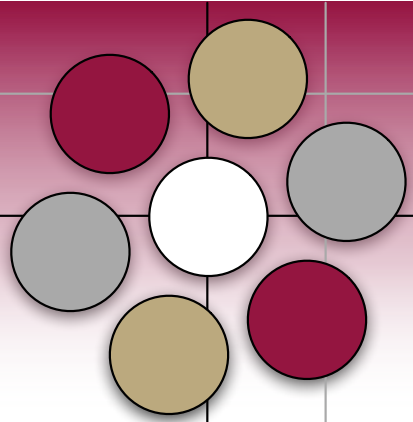
WORK IN PAIRS

Search the Lumen database to find a site that has been removed as a result of a government removal order

<https://www.lumendatabase.org>



Web Users: Helping the User



Context Transfer

- Move Search Context with the User

Web Users: Helping the User

C

The screenshot shows a Firefox browser window titled "single cookbook - Google Search". The address bar displays the URL "http://www.google.com/search?hl=en&client=firefox-a&rls=org.mozilla". The search bar contains the text "single cookbook". The search results page shows "Personalized Results 1 - 10 of about 488,000 for single cookbook. (0.12 seconds)".

Product search results for single cookbook

	Eating in: The Official Single Man's ...	\$6.90 - Desktop Music, LLC
	Kristian Whitney Page: The Single Mother ...	\$24.52 - Eruditor.com
	Eating in: The Official Single Man's ...	\$6.90 - A1Books

[See single cookbook results available through Google Checkout](#)

Salvatore's Single Fathers' Kitchen, recipe, cooking, kitchen ...
Salvatore's **Single Fathers' Kitchen**. A Free Online **Cook Book** designed specifically for **Single Fathers**. Get lots of recipies that are Fast, Fun, ...
www.singlefatherskitchen.com/ - 22k - [Cached](#) - [Similar pages](#) - [Note this](#)

A 19th-century cookbook gives new twist to 'soul food ...
Nov 22, 2007 ... The evidence of a **single cookbook** is not enough to rewrite culinary history. Still, Russell's book suggested that a more nuanced view might ...
www.iht.com/articles/2007/11/22/arts/cookbook.php - 68k - [Cached](#) - [Similar pages](#) - [Note this](#)

New Module: phpwsCookBook - phpWebSite Support Forums
I'm not completely satisfied with the layout of the pages for viewing the list of cookbooks, a **single cookbook**, or a section. But I'm not sure how I want to ...
phpwsforums.com/showthread.php?t=130 - 56k - [Cached](#) - [Similar pages](#) - [Note this](#)

Amazon.com: B. Marold's review of Joy of Cooking: 75th Anniversary ...
IF I were limited to a **single cookbook**, my personal choice between these two is 'Joy of Cooking', simply because it's recipes are just as good as 'Better ...
www.amazon.com/review/R199EBZOY1WQZM - 116k - [Cached](#) - [Similar pages](#) - [Note this](#)

Sponsored Links

Borders Book Stores
Get A Coupon For 20% Off Any Item
Find A Borders **Book** Store Near You!
www.VisitBorders.com

Serious Singles Only 30+
Tired of online dating games ?
Meet real, quality singles now !
www.SeriousSinglesOnly.com
San Francisco-Oakland-San Jose, CA

Cookbook
Get Recipes, Menus, Cooking Secrets & More at AOL® Food - Visit Now!
Food.AOL.com

Single Cookbook at Amazon
Buy books at Amazon.com and save.
Qualified orders over \$25 ship free
Amazon.com/books

Design Your Own Cookbook
Create Your Own **Cookbook** &
Send it to Family & Friends!
www.Bookemon.com

Done

Web Users: Helping the User

C

Amazon.com: single cookbook

http://www.amazon.com/exec/obidos/search-handle-url/index=blend... yahoo search

Last open ▾ Class Development ▾ Research Links ▾ UCI ▾ Thesis pages ▾ DR ▾ Conferences ▾ Place Lab ▾ OpenPresence ▾ Blogs and Wikis ▾

Amazon.com: single cook... Live Search: Don Patterson ... White Stripes - Yahoo! Sear... Google


amazon.com Hello. Sign in to get [personalized recommendations](#). New customer? [Start here](#).


Your Amazon.com Today's Deals ▾ Gifts & Wish Lists ▾ Gift Cards ▾ Your Account | Help

Shop All Departments ▾ Search Amazon.com single cookbook GO Cart Your Lists ▾

Category
Any Category
Books (395)
Software (2)
Home & Garden (1)

Listmania!


Cooking - Just the two of us/you: A list by Laura

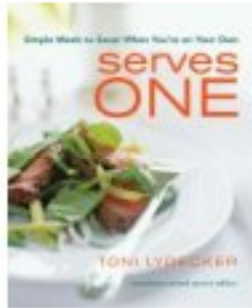

Best Books for Health and Diet in 2007: A list by Moni Jeddian "PWR"

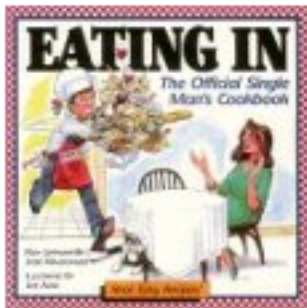
► Create a Listmania! list

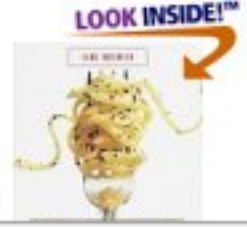
Search Listmania! GO!

"single cookbook"

Showing Top Results [« Previous](#) | **Page: 1** 2 3 | [Next »](#)

- 

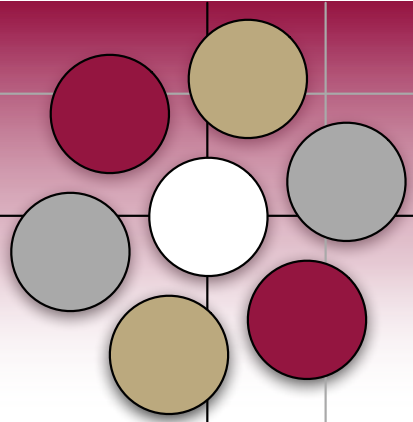
Serves One: Simple Meals to Savor When You're on Your Own by Toni Lydecker (**Paperback** - Dec 25, 2005)
Buy new: ~~\$16.95~~ **\$11.53** [26 Used & new](#) from **\$7.94**
Get it by **Thursday, Jan 24** if you order in the next **5 hours** and choose one-day shipping. Eligible for **FREE** Super Saver Shipping.
★★★★☆ (8)
Books: See all 395 items
- 

Eating in: The Official Single Man's Cookbook by Rich Lippman, Jose Maldonado, and Joe Azar (**Paperback** - Oct 1988)
Buy new: **\$8.95** [11 Used & new](#) from **\$5.92**
Not in stock; order now and we'll deliver when available
Eligible for **FREE** Super Saver Shipping.
★★★★☆ (2)
Books: See all 395 items
- 

Going Solo in the Kitchen by Jane Doerfer (**Paperback** - Aug 25, 1998)
Buy new: ~~\$16.95~~ **\$11.53** [33 Used & new](#) from **\$7.45**
Get it by **Thursday, Jan 24** if you order in the next **5 hours** and choose one-day shipping. Eligible for **FREE** Super Saver Shipping.

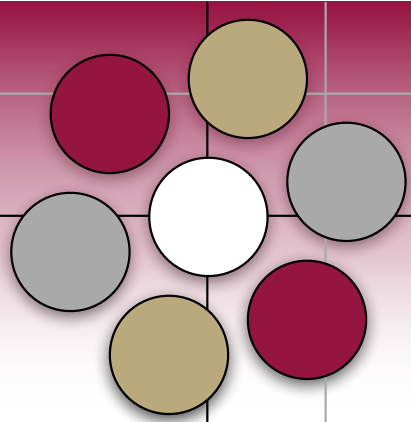
Done

Overview

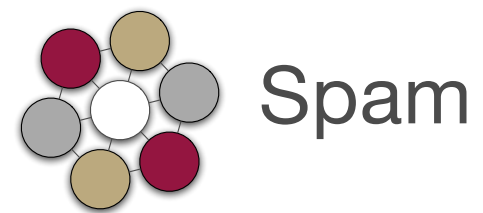


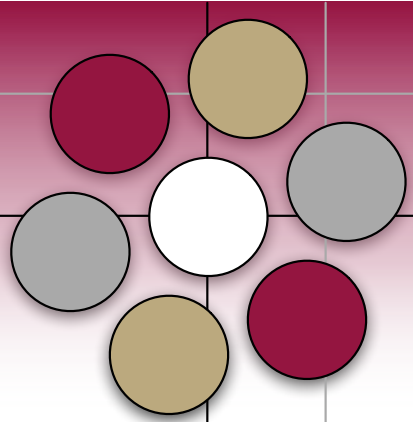
- Introduction
- Classic Information Retrieval
- Web IR
- Sponsored Search
- Web Search Basics
 - Size of the Web
- Web Users
- Spam

Overview



- Introduction
- Classic Information Retrieval
- Web IR
- Sponsored Search
- Web Search Basics
 - Size of the Web
- Web Users

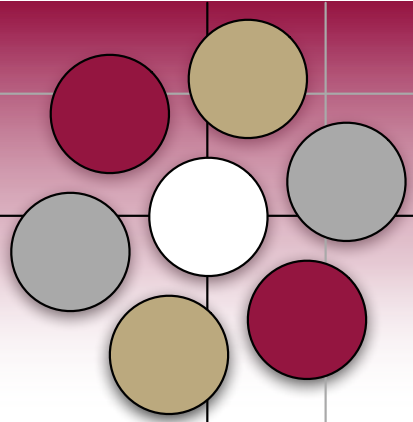




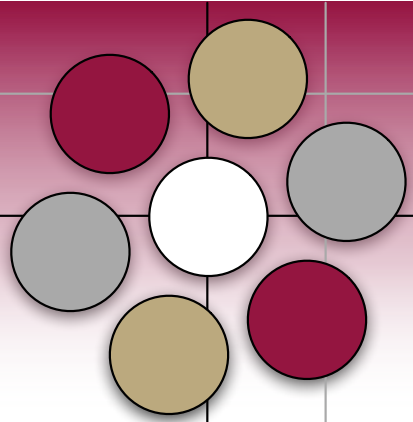
The trouble with paid placement (aka ads):

- It costs money... so instead
- Search Engine Optimization (“SEO”)
 - define: “Tuning” your web page to rank highly in the search results for select queries
- Alternative to paying for placement
- It is marketing. Getting your content to your audience.

Spam

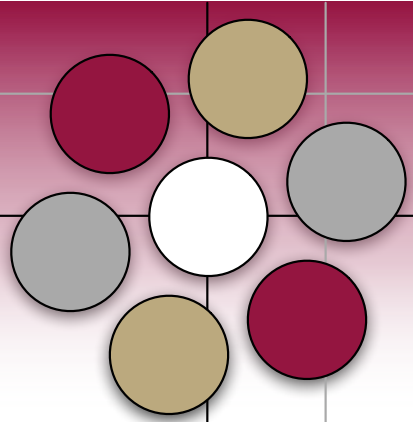


Search Engine Optimization



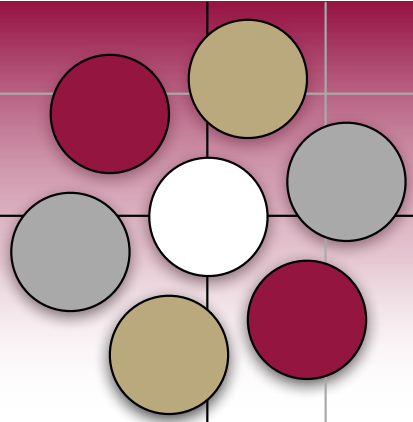
Search Engine Optimization

- Motives



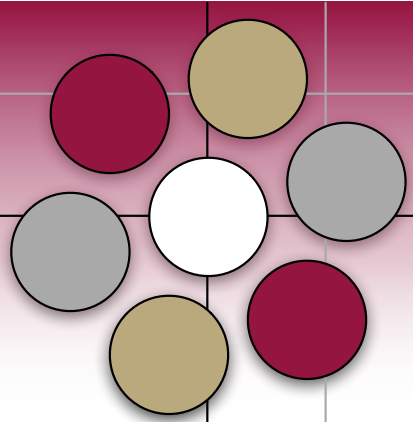
Search Engine Optimization

- Motives
 - Commercial



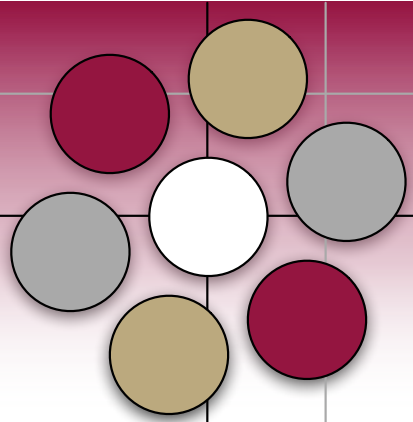
Search Engine Optimization

- Motives
 - Commercial
 - Political



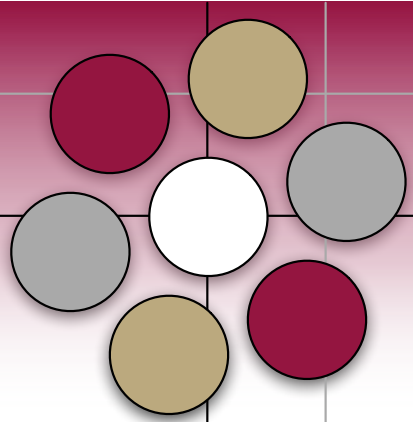
Search Engine Optimization

- Motives
 - Commercial
 - Political
 - Religious



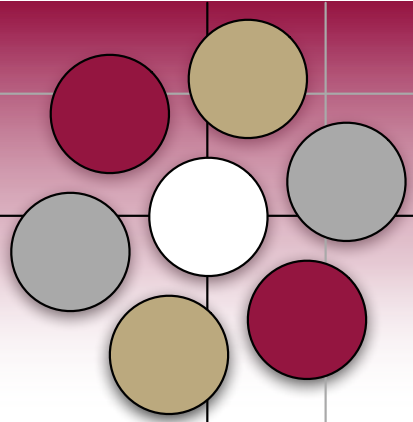
Search Engine Optimization

- Motives
 - Commercial
 - Political
 - Religious
 - Lobbying



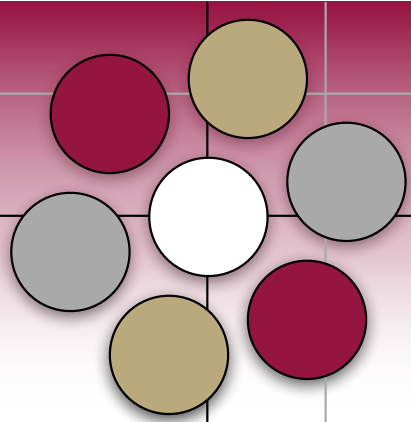
Search Engine Optimization

- Motives
 - Commercial
 - Political
 - Religious
 - Lobbying
- Who does this?



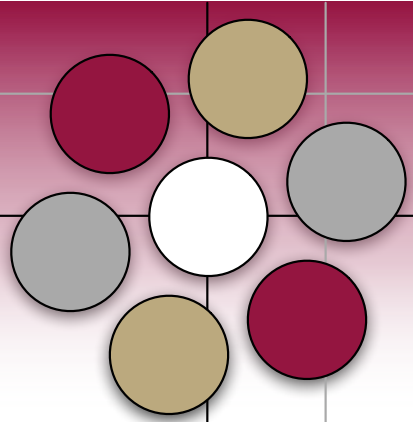
Search Engine Optimization

- Motives
 - Commercial
 - Political
 - Religious
 - Lobbying
- Who does this?
 - Internally: webmasters



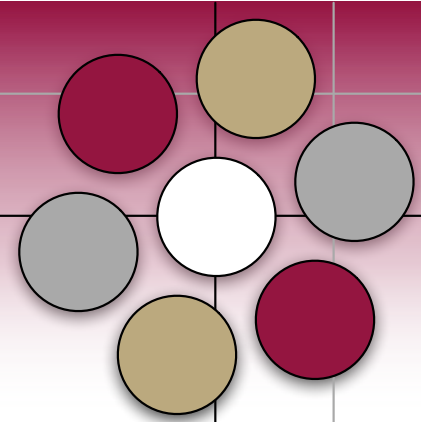
Search Engine Optimization

- Motives
 - Commercial
 - Political
 - Religious
 - Lobbying
- Who does this?
 - Internally: webmasters
 - Commercially: companies, consultants



Search Engine Optimization

- Motives
 - Commercial
 - Political
 - Religious
 - Lobbying
- Who does this?
 - Internally: webmasters
 - Commercially: companies, consultants
 - Hosting services



Search Engine Optimization

- Learn more about how to do it online:
 - Web-Master World
 - <http://www.webmasterworld.com>
 - Search Engine Specific Tricks
 - Discussions about academic papers and results

Content creation vs link building

Let's get the IncrediBills and the like to pitch in on this one

Moved: 2 pages on site %55 similar - duplicate content or not?

Post was moved here: <http://www.webmasterworld.com/google/3537427.htm>

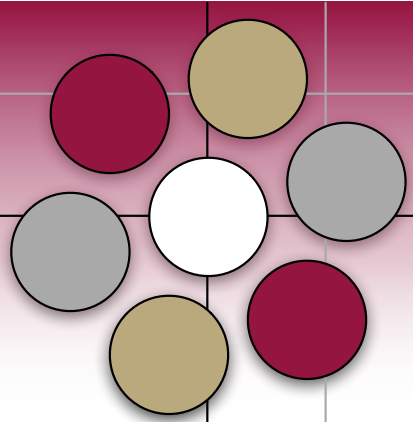
Ideal length of content for SEO purposes?

How long should an article be?

Source of Competitor's Traffic from a Major .com?

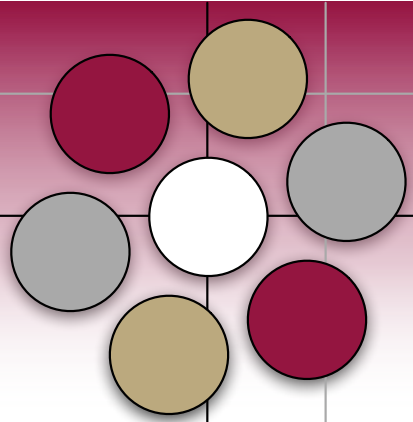
No apparent outlinks from the site to competitor's site

Moved: week old website ranked #14 in google for main keyword



Search Engine Optimization

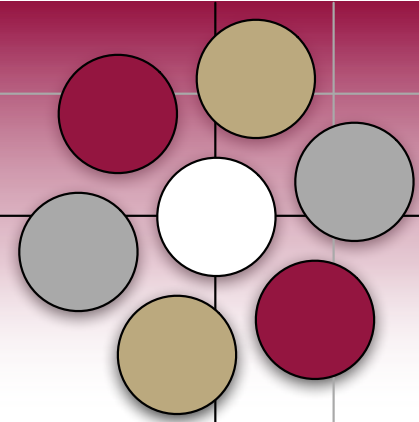
- There are ethical and inethical ways to approach SEO
- Legitimate approach is to:
 - create valuable content
 - make it widely accessible
 - clearly organize it
 - keep it up to date
 - use web standards
 - use web validation tools
 - get high visibility sites to link to your content



Search Engine Optimization

- Inethical approaches (aka spam):
 - lots of tricks
 - make lots of fake pages which point to your site
 - make lots of fake comments on sites which point to your site
 - In a nutshell, “lie”
- Sometimes legitimate and illegitimate techniques are hard to differentiate. It can be a fine line between them.

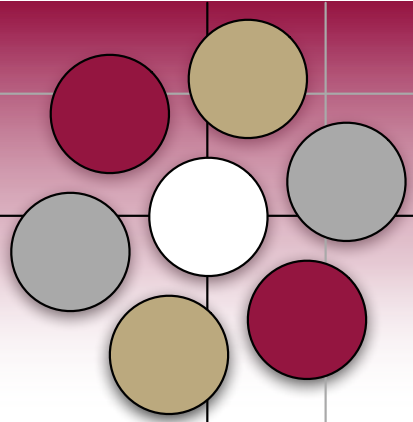
Spam



Search Engine Optimization

- Ranking depends on the data center
 - http://www.flickr.com/photos/the_impression_that_i_get/1321041609/
- Examine the different results:
 - <http://www.mcdar.net/dance/index.php>

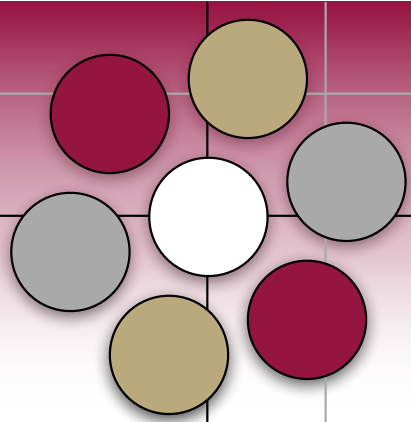




Keyword Stuffing

- First Generation Search Engines
 - Heavily relied on tf/idf ratio.
 - E.G. The highest ranking page for the query “brilliant computer scientist” had the most examples of those words.

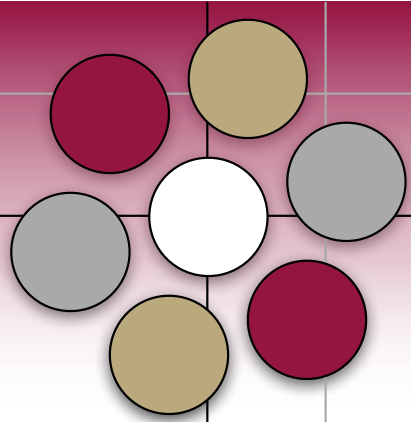
Spam



Keyword Stuffing

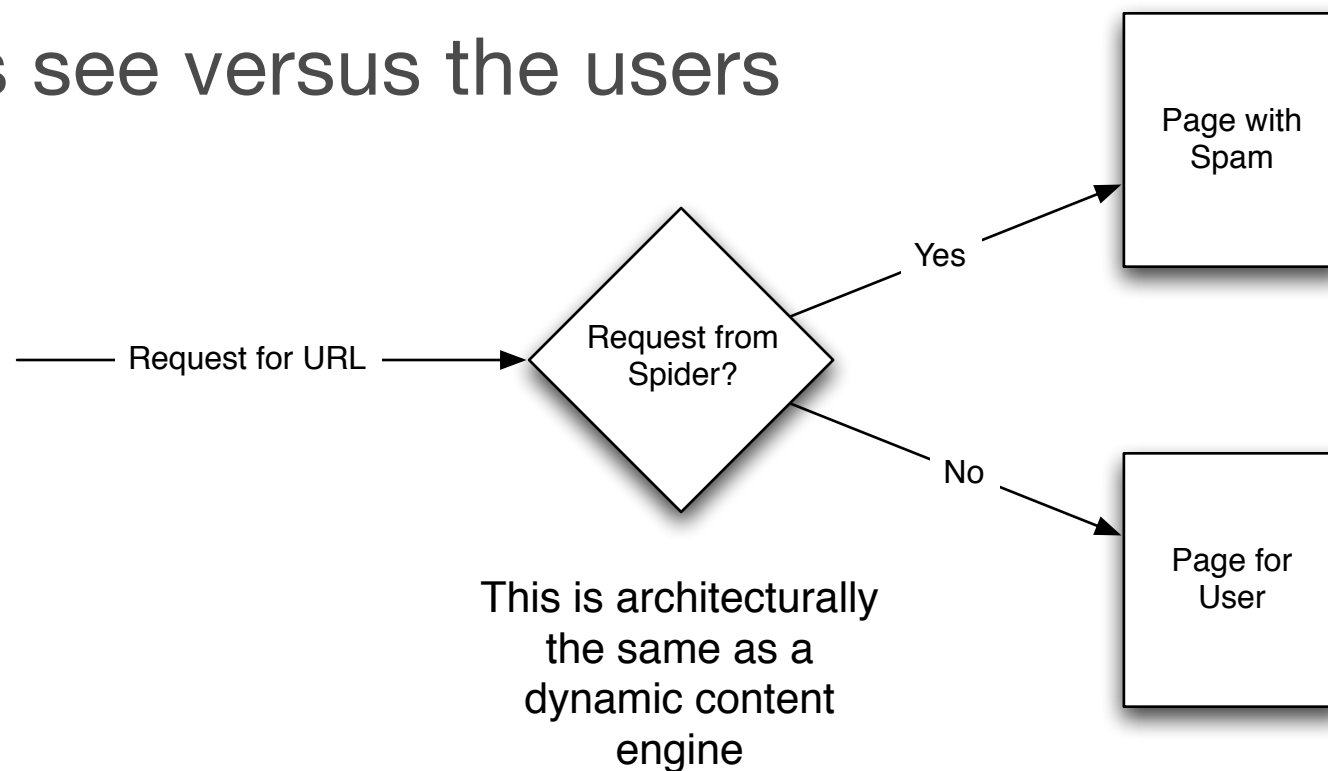
- So SEOs responded by screwing around with keywords
 - Misleading meta-tags
 - Repeating keywords over and over and over and....
 - Playing games with colors. (white on white keywords)
 - visible to spiders but not users in browsers

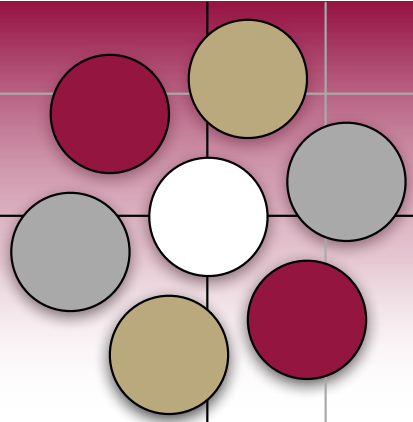
```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.c
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<COMMENT TITLE="MONITOR"></COMMENT>
<meta http-equiv="Content-Language" content="en-us" />
<meta http-equiv="Content-type" content="text/html; charset=iso-8859-1"/>
<META NAME="ROBOTS" CONTENT="NOODP"><meta name="verify-v1" content="aeVxP6zTHeQzT620ipj5+ikXd/VXcdlKoYUJ/C6vVdY=" />
<META NAME="keywords" content="Expedia, Travel, Cheap Airfare, Car, Hotels, Vacations, Airfare, Car Rental, Cruises,
<META NAME="description" content="Purchase airline tickets, make hotel reservations, find vacation packages, car rent
```



Keyword Stuffing

- Cloaking
 - define: Serving different content to a spider than to a user.
 - More sophisticated versions of differentiating what the spiders see versus the users





Other spam techniques

- Doorway pages
 - Like cloaking but using a redirect
 - Initial page is optimized for a keyword then a redirect takes the user to the “real” page
- Link spamming
 - Programs that search for blogs and automatically leave comments with links
- Robot Clicker-Fraud
 - Programs that “click” on query results to up their value.

Spam

Spam Industry

Advanced Traffic:

Get a **first page listing on Google** - **GUARANTEED!** For maximum search engine traffic - the best of SEO and search advertising. Visitors in just 48 hours from \$7/day. Discover the traffic potential!

[Find out more](#)



WARNING: This site contains sneaky, underhanded Black Hat Seo tactics.

Black Hat Seo is responsible for more online fortunes than you'd care to imagine but it's NOT for everybody.

Make Money Blogging

See How I Earn Over [Six Figures](#) a year Blogging

I Will Get Your Website to the Top of Google!

The art of search engine optimization...gaining **top spots on Google**...is no easy chore. I know...this is my job...

I assist people in getting top positions for their websites on Google, Yahoo, MSN and all the other major search engines.

There are a few givens on the internet when it comes to trying to market goods and services:

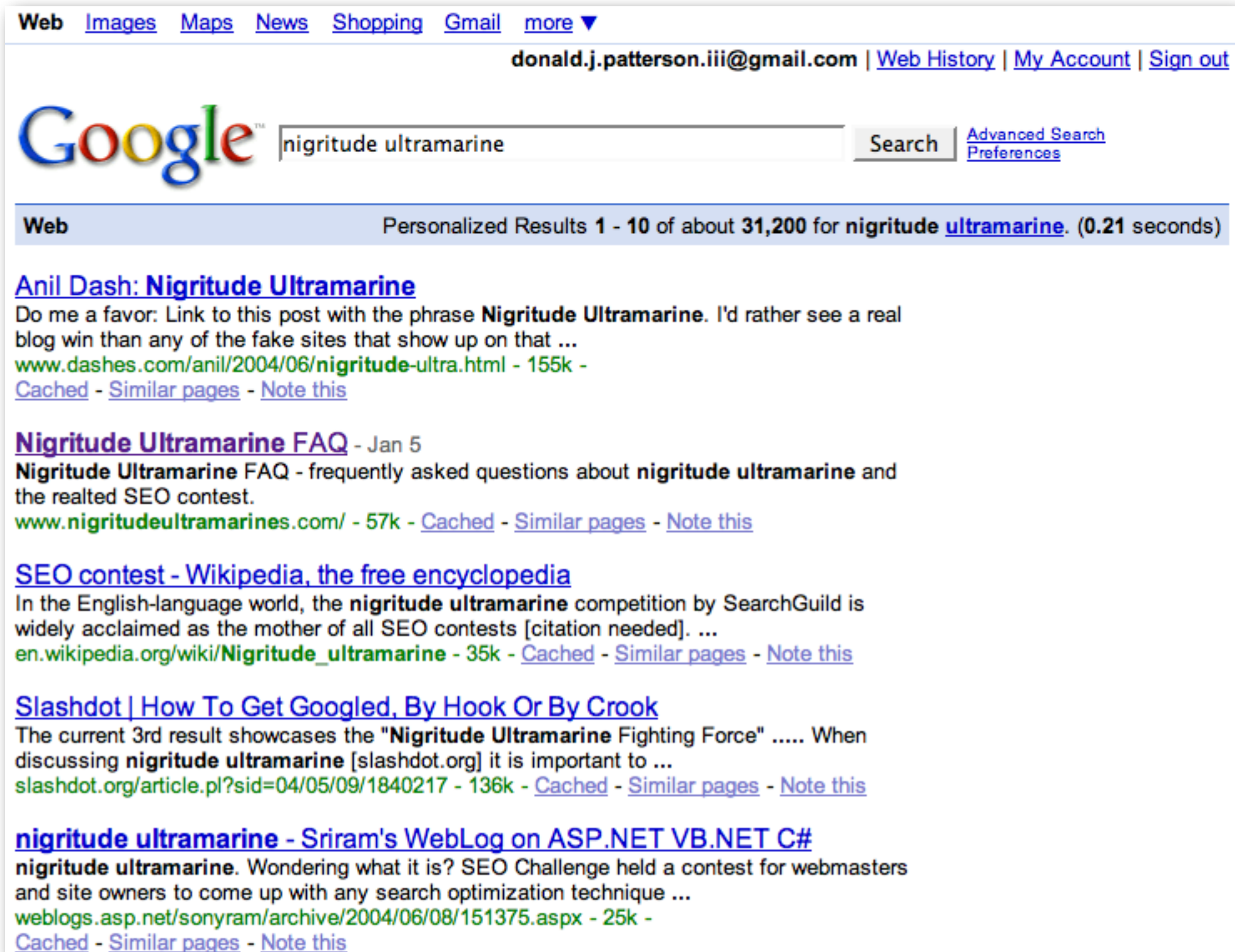
No Traffic=No Sales!

End of story...that's it...bottom line!

If you have a website...

Spam

Spam Contest



The image shows a screenshot of a Google search results page. At the top, there are navigation links: Web, Images, Maps, News, Shopping, Gmail, and a 'more' dropdown arrow. Below these, the user's email address 'donald.j.patterson.iii@gmail.com' is displayed, along with links for 'Web History', 'My Account', and 'Sign out'. The Google logo is on the left, and the search bar contains the text 'nigritude ultramarine'. To the right of the search bar is a 'Search' button and links for 'Advanced Search' and 'Preferences'. Below the search bar, a blue bar indicates 'Personalized Results 1 - 10 of about 31,200 for nigritude ultramarine. (0.21 seconds)'. The search results are listed below, each with a title, a brief description, and a URL. The first result is 'Anil Dash: Nigritude Ultramarine' with a description asking for a link to a post. The second result is 'Nigritude Ultramarine FAQ' dated Jan 5, with a description about frequently asked questions. The third result is 'SEO contest - Wikipedia, the free encyclopedia' with a description about the Nigritude Ultramarine competition. The fourth result is 'Slashdot | How To Get Googled, By Hook Or By Crook' with a description about the current 3rd result showcasing the 'Nigritude Ultramarine Fighting Force'. The fifth result is 'nigritude ultramarine - Sriram's WebLog on ASP.NET VB.NET C#' with a description about wondering what it is and a contest for webmasters.

Web Images Maps News Shopping Gmail more ▼

donald.j.patterson.iii@gmail.com | [Web History](#) | [My Account](#) | [Sign out](#)

Google™ [Advanced Search](#)
[Preferences](#)

Web Personalized Results 1 - 10 of about 31,200 for **nigritude ultramarine**. (0.21 seconds)

[Anil Dash: Nigritude Ultramarine](#)
Do me a favor: Link to this post with the phrase **Nigritude Ultramarine**. I'd rather see a real blog win than any of the fake sites that show up on that ...
www.dashes.com/anil/2004/06/nigritude-ultra.html - 155k - [Cached](#) - [Similar pages](#) - [Note this](#)

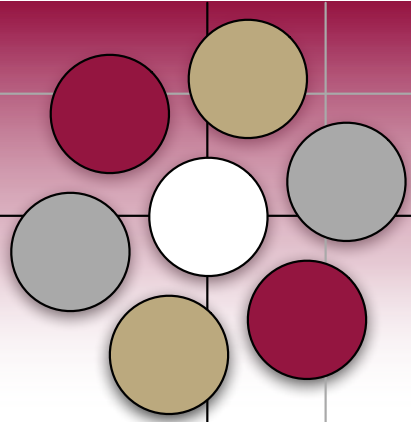
[Nigritude Ultramarine FAQ](#) - Jan 5
Nigritude Ultramarine FAQ - frequently asked questions about **nigritude ultramarine** and the realted SEO contest.
www.nigritudeultramaries.com/ - 57k - [Cached](#) - [Similar pages](#) - [Note this](#)

[SEO contest - Wikipedia, the free encyclopedia](#)
In the English-language world, the **nigritude ultramarine** competition by SearchGuild is widely acclaimed as the mother of all SEO contests [citation needed]. ...
en.wikipedia.org/wiki/Nigritude_ultramarine - 35k - [Cached](#) - [Similar pages](#) - [Note this](#)

[Slashdot | How To Get Googled, By Hook Or By Crook](#)
The current 3rd result showcases the "**Nigritude Ultramarine** Fighting Force" When discussing **nigritude ultramarine** [slashdot.org] it is important to ...
slashdot.org/article.pl?sid=04/05/09/1840217 - 136k - [Cached](#) - [Similar pages](#) - [Note this](#)

[nigritude ultramarine - Sriram's WebLog on ASP.NET VB.NET C#](#)
nigritude ultramarine. Wondering what it is? SEO Challenge held a contest for webmasters and site owners to come up with any search optimization technique ...
weblogs.asp.net/sonyram/archive/2004/06/08/151375.aspx - 25k - [Cached](#) - [Similar pages](#) - [Note this](#)

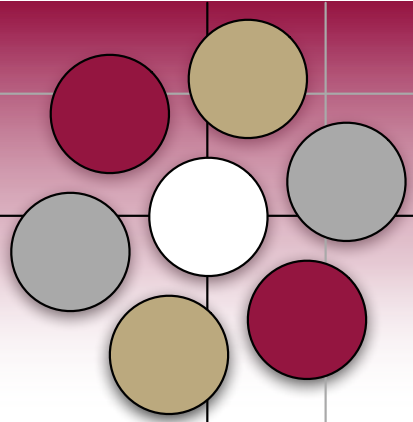
Spam



The war on spam

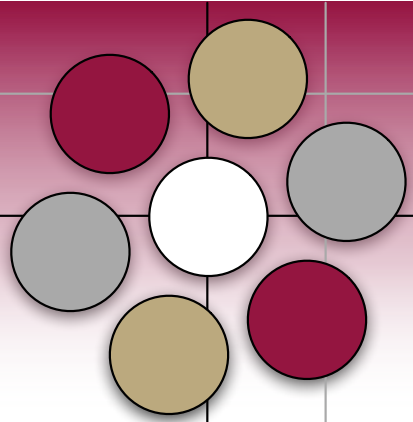
- Quality Indicators
 - Statistical Analysis of Links (aka PageRank)
 - votes from authors
 - Usage indicators (users visiting a page)
 - votes from users
- Anti-Robot techniques
 - “Captchas”
 - Completely Automated Public Turing Test to Tell Computers and Humans Apart





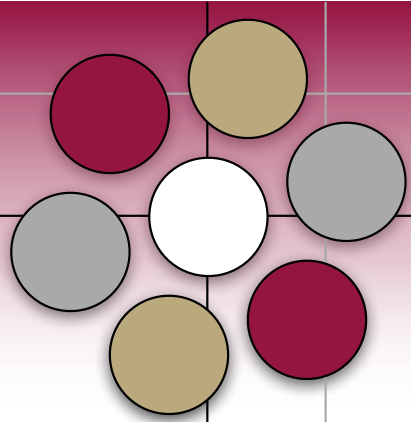
The war on spam

- Limits on meta keywords
- Spam Recognition by machine learning
- “no-follow” attribute
- Family Friendly filters
- Automatic Detection of Pornography
 - Often the spammers desired landing page
- Text Analysis
 - Look for keywords and variants



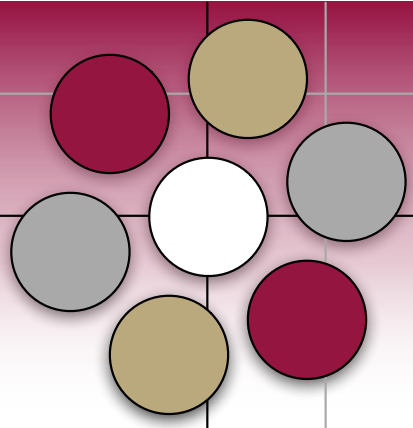
The war on spam

- Robust Link Analysis
 - Ignore statistically improbable links
 - Use link analysis to detect spammers
 - “Guilt by association”



The war on spam

- Editorial Intervention
 - Blacklists
 - Query Reviews
 - Customer Complaints
 - Visualization Tools

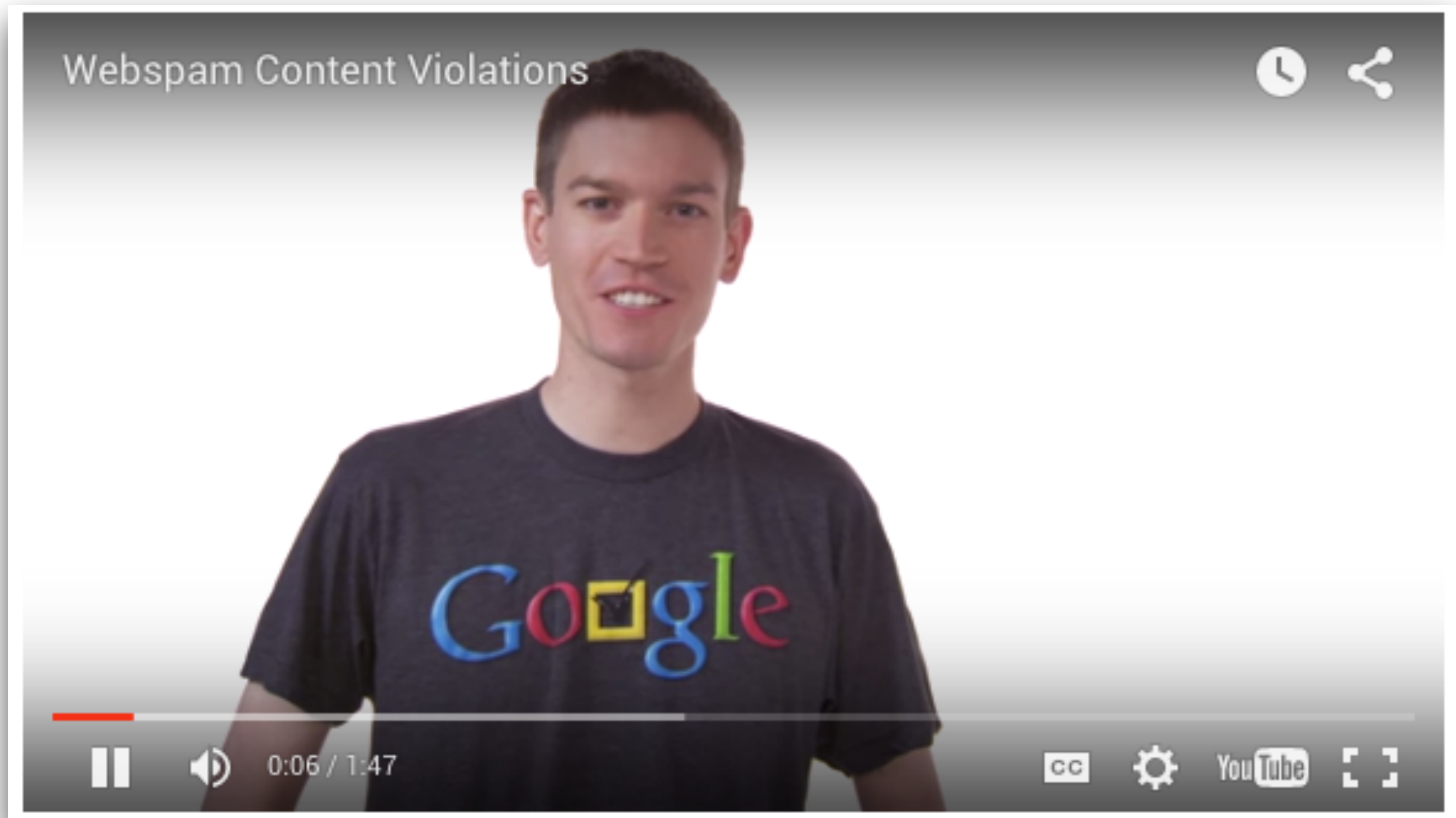
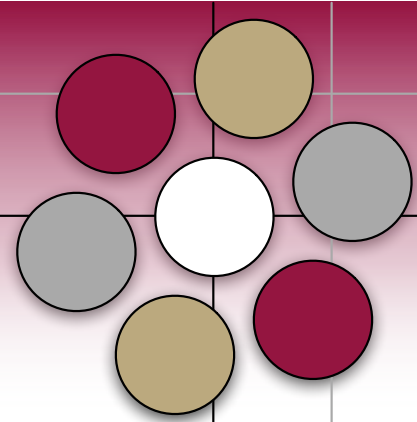


Webmaster Guidelines

- Search Engines have SEO policies
 - What is allowed and not allowed
- Example: Search for “google webmaster guidelines” or “msn guidelines for successful indexing”
- Ignore them at your own risk
- Once you are blacklisted by a search engine you will disappear from the web
 - Remember how search engines enable scalability?
- Adversarial IR Research:
 - <http://airweb.cse.lehigh.edu/>

Spam

Webmaster Guidelines



Spam - Extra Credit

banksoopy brickle

Dashboard | 9/5 in Class Exercise | banksoopy brickle - Google Search

google.com/search?q=banksoopy+brickle&rlz=1C5CHFA_enUS808US810&oq...


Apps | Class Development | Westmont | UCI | DR | quub | Blogs and Wikis | 960 Gridder | Rails | Unsorted Bookma... | Other Bookmarks

Google

banksoopy brickle

All | Shopping | Images | Maps | Videos | More | Settings | Tools

10 results (0.38 seconds)

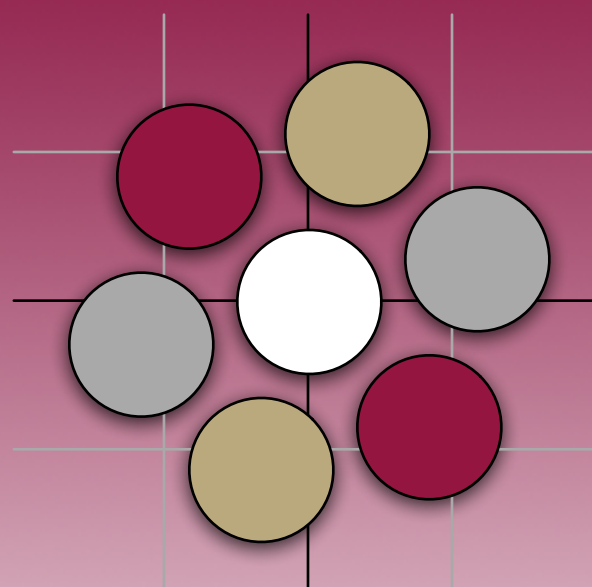
 Search performance for this query
http://djp3.westmont.edu/

Last 7 days ▾

Clicks 5 -17%	Impressions 121 +78%	Avg. Position 2.1 +1.0
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See ways to improve

Visible only to you | Feedback



WESTMONT COMPUTER SCIENCE