WELCOME TO
THE INTERNET

Internet..?

- Connection.
- Browser.
- Exact URL to Website Domain.
    a. www.geetanjaligroupofcolleges.in
    b. www.google.co.in
    c. www.google.com
    d. https://geetanjaligroupofcolleges.in/mscit/
- Or
- Search Engine.

What is a Search Engine afterall ???

Search engine is an index of all the webpage exist on the internet.
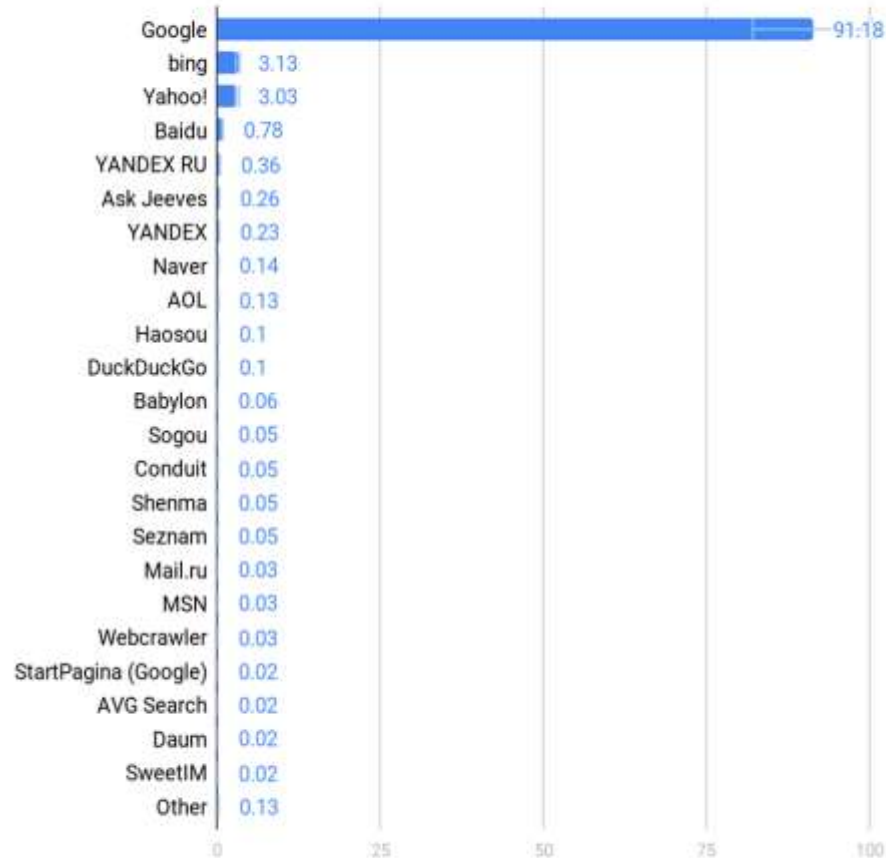
What is

SEARCH: REFLECTING CONSCIOUSNESS AND CONNECTING COMMERCE & SEARCH ENGINE BASICS

The Mission of Search Engines

- Rich Experience (Fast & Simple)
- Improve the relevance.
- Generate revenue.
- PPC or(CPC).
- Spam Free.
- Satisfy the searcher.

The Market Share of Search Engines

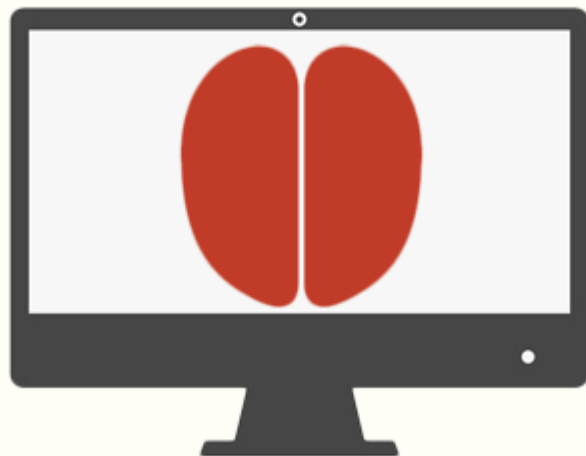| Search Engine	Market Share
Google	91.18
bing	3.13
Yahoo!	3.03
Baidu	0.78
YANDEX RU	0.36
Ask Jeeves	0.26
YANDEX	0.23
Naver	0.14
AOL	0.13
Haosou	0.1
DuckDuckGo	0.1
Babylon	0.06
Sogou	0.05
Conduit	0.05
Shenma	0.05
Seznam	0.05
Mail.ru	0.03
MSN	0.03
Webcrawler	0.03
StartPagina (Google)	0.02
AVG Search	0.02
Daum	0.02
SweetIM	0.02
Other	0.13

Market Share Perc. (May 2009 - May 2020)

Human Goals of Searching

- Obtain information relevant to an inquiry
  - What we are looking for..
- Human Psychology.
  - I,We,In the year etc.
- Navigational Query.
  - Looking for a website..
- Transactional Query.
  - Buy a product..
- Informational Query.
  - Learning something..
- Refined Query.
  - Perfect Term.

GOOGLE'S RANKBRAIN

Determining Searcher Intent:
A Challenge for Both Marketers And Search Engines.

- Common Goal of providing relevant results.
- Understands your audience.
- Target market searches.
- Search engines are tools.

How people search???

- Continues research & development.
- Using Local language.
- Using abnormal terms.
- Research work.

How Search Engines Drive Commerce on the Web?

- Research Work.
- Locate or navigation.
- Buy Products.
- Online sales.
- Google study of marketing.
  - $1 in online vs $4-$15 in offline sales. (2011)
- $155 billion worth of consumer goods were purchased online in the US in 2009.

Eye Tracking: How Users Scan Results Pages.

- Putting paid ads on top.
- Making it bolder attracts.
- Putting description to some likes to the search.
- F-shaped pattern theory. (Google's Idea)
  - First and longest on the upper-left corner of the screen.
  - Moving down vertically through the first two.
  - Across the page to the first paid page result.
  - Down another few vertical results,
    and then across again to the second paid result
- Above Concept named as Blended Search
  - Followed by every other Search Engine.

CoolExample.com
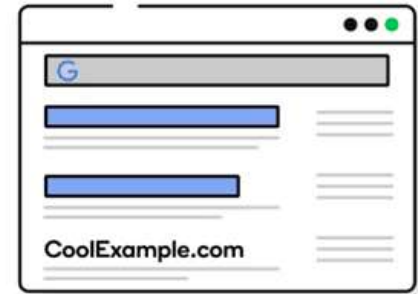
Click Tracking: How Users Click on Results, *Natural* versus *Paid*.

- SERPs :
  (Search Engine Result Position)
- SEM:
  (Search Engine Marketing)
- Organic vs Paid
- 694,000 searches conducted every second.
- The first 10 results received 89.71% of all click-through traffic.
- The next 10 results received 4.37%
- The third page 2.42%, and the fifth page 1.07%.

What are SERPs ?

In the search marketing field, the pages the engines return to fulfill a query are referred to as search engine results pages (SERPs).

Understanding Search Engine Results.(SERPs)

- Horizontal navigation (see top left)
- Search query box.
- Results information
- PPC advertising
- Vertical navigation
- Query refinement suggestions
- Natural/organic/algorithmic results
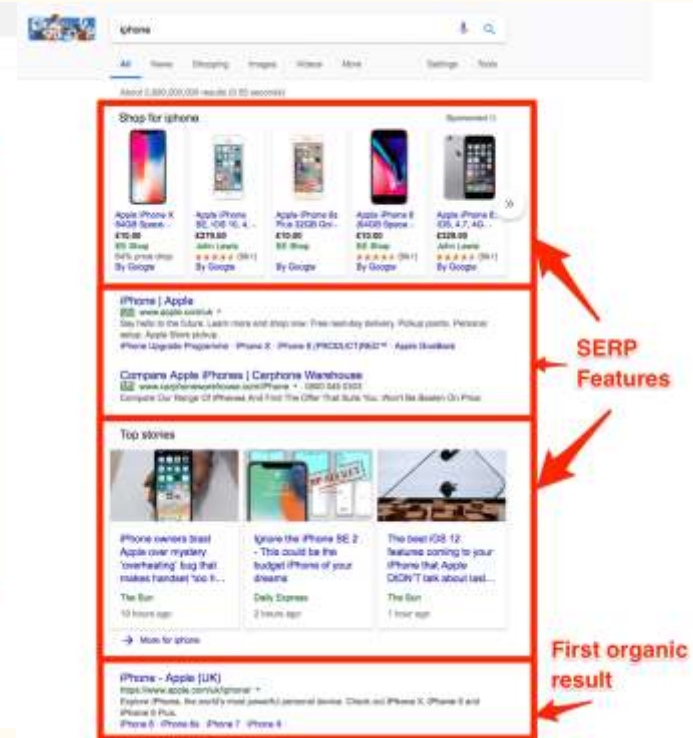
Algorithm-Based Ranking Systems:

- A search engine algorithm is a **set of rules**, or **a unique formula,** that the search engine uses to determine the significance of a web page, and each search engine has its own set of rules.
- These rules determine whether a web page is real or just spam,
- The algorithms, as they are **different for each search engine**, are also closely guarded secrets, but there are certain things that all search engine algorithms have in common.

List Of Algorithm (GOOGLE)

- **Panda**
  - Feb 24, 2011
  - De-rank sites with low-quality content
- **Penguin**
  - April 24, 2012
  - De-rank sites with spammy, manipulative link profiles
- **Pirate**
  - Aug 2012
  - De-rank sites with copyright infringement reports
- **Hummingbird**
  - August 22, 2013
  - Produce more relevant search results by better understanding the meaning behind queries.

Continues..

- **Pigeon**
  - July 24, 2014 (US)
  - Provide high quality, relevant local search results
- **Mobile Friendly Update**
  - April 21, 2015
  - Give mobile friendly pages a ranking boost in mobile SERPs, and de-rank pages that aren't optimized for mobile.
- **RankBrain**
  - October 26, 2015 (possibly earlier)
  - Deliver better search results based on relevance & machine learning
- **Possum**
  - September 1, 2016
  - Deliver better, more diverse results based on the searcher's location and the business' address
- **Fred**
  - March 8, 2017
  - Filter out low quality search results whose sole purpose is generating ad and affiliate revenue

What about others

Microsoft Bing

Space Partition Tree And Graph (SPTAG) algorithm.

The algorithm is designed to allow users to search through billions of pieces of information, known as vectors, in milliseconds. In theory, this equates to more relevant results delivered more quickly.

It's Open Source https://github.com/microsoft/SPTAG

How a search algorithm works..

Three techniques are there...

Crawling, Indexing, Ranking Crawling

It is the process of fetching all the web pages linked to a web site.
This task is performed by software, called a crawler or a spider (or Googlebot, as is the case with Google).

Crawler

To offer the best possible results, search engines must attempt to discover all the public pages on the World Wide Web and then present the ones that best match up with the user's search query. The first step in this process is crawling the Web.

Indexing

is the process of creating index for all the fetched web pages and keeping them into a giant database from where it can later be retrieved.

Processing

When a search request comes, the search engine processes it. I.e. it compares the search string in the search request with the indexed pages in the database.

Calculating Relevancy

Since it is likely that more than one page contains the search string, so the search engine starts calculating the relevancy of each of the pages in its index to the search string.

Retrieving Results

The last step in search engines' activities is retrieving the best matched results. Basically, it is nothing more than simply displaying them in the browser.

Rank

Rank is the position that your website physically falls in on the SERP when a specific search query is entered.

Relevance

the degree to which the content of the documents returned in a search matches the intention and terms of the user's query.

Importance

Importance refers to the relative importance, measured via citation (the act of one work referencing another, as often occurs in academic and business documents), of a given document that matches the user's query.

Evaluating Content on a Web Page

Search engine crawlers and indexing programs are basically software programs. These Programs are extraordinarily powerful.

URL Structure

The actual structure of your website URL can have an impact on the search engines" ability to index and understand your websites content.

Pictures

There is nothing worse than landing on a webpage and being faced with mountains of text.

Alt tags Title Tags & Meta Tags:

Besides an actual text headline on your page, every webpage you create has a title tag. Meta tags are snippets of code you can include within your webpage's HTML. The Meta description is a text snippet that describes what your specific webpage is about.

Internal Linking

Up until this point we have only referenced inbound links, or those links coming to you website from other websites.

What search engines cannot see

- Images
- FlashFiles / Gifs
- Media Files
  - Video/Audio

Determining Searcher Intent and Delivering Relevant, Fresh Content.

- Information retrieval (IR).
  - IR models (search engines) use Fuzzy Set Theory (an offshoot of fuzzy logic created by Dr. Lotfi Zadeh in 1969)
  - Proximity searches
    - A proximity search uses the order of the search phrase to find related documents.
  - Fuzzy logic
    - One way engines use fuzzy logic is to detect and process misspellings.
  - Boolean searches.
    - AND, OR, and NOT
  - Term weighting
    - Produce superior search results.

Continues..

- Document Analysis
  - The title, the metadata, the heading tags, and the body of the text
- Semantic Connectivity.
  - Refers to words or phrases that are commonly associated with one another.
  - Measuring which keyword phrases to target.
  - Measuring which keyword phrases to include on a page about a certain topic.
  - Measuring the relationships of text on other high-ranking sites/pages.
  - Finding pages that provide —relevant‖ themed link.
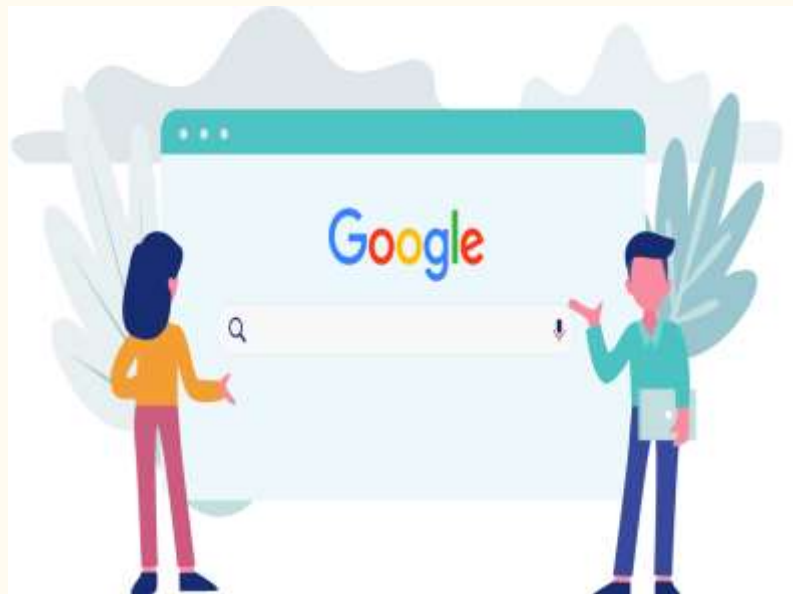
Ranking Factors
1.Page Level
2.Domain Level

Analyzing Ranking Factors

- Page Level Link Metrics
  - Reliable Links Per Page
- Domain Level Link Authority Features
  - Reliable Links Per Domain
- Page Level Keyword Usage
  - How many H1 Elements has your domain name?
- Domain Level Keyword Usage
  - How many keywords are used inside domain name?

Continues..

- Page Level Social Metrics
  - How much is sharable content?
- Domain Level Brand Metrics
  - How much Your Domain Brand is searched?
- Page Level Keyword Agnostic Features
  - How many internal links link tags (Hyphens)?
- Page Level Traffic/Query Data
  - Click-through rate (CTR) Bounce Ratio.
- Domain Level Keyword Agnostic Features
  - How many other types of alphabets used in domain?
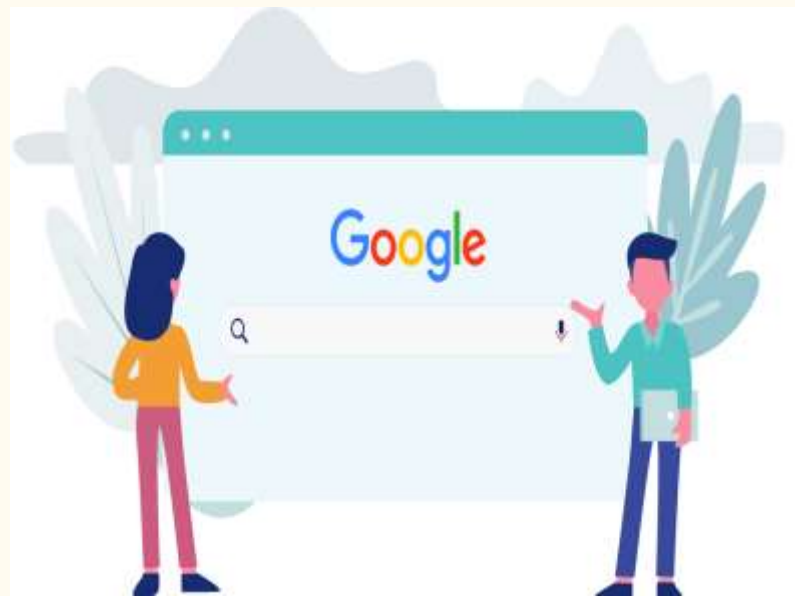
Negative Ranking Factors

- Malware
- Cloaking
- Pages on the site that sell links.
- Fake Extension for paying.

Other Ranking Factors

- Rate of acquisition of links
- User data
- Google sandbox

Using Advanced Search Techniques

- -keyword
  - Excludes the keyword from the search results.
- +keyword
  - Allows for forcing the inclusion of a keyword.
- "key phrase"
  - Shows search results for the exact phrase
- keyword1 Or keyword2
  - Shows results for at least one of the keywords
- Site:
  - Show only sites with domain name.

Vertical Search Engine

Vertical search is the term that people sometimes use for specialty or search engines that focus on a limited data set.

The big three search engines offer a wide variety of vertical search products.

1. Google
   a. Google Maps, Google Images, Google Product Search, Google Blog Search, Google Video,
   b. Google News, Google Custom Search Engine, Google Book Search, Google US Gov't Search, etc.
2. Yahoo!
   a. Yahoo! News, Yahoo! Local, Yahoo! Images, Yahoo! Video, Yahoo! Shopping, Yahoo! Audio Search, etc
3. Bing
   a. Bing Image, Bing Video, Bing News, Bing Maps, Bing Health, Bing Products, etc.

SEARCHING IN WEB BASICS

- Big investment in studying images and video.
- Flesh-Tone
  - To analyse facial recognition
- Ocr
  - To study text into images

- News Search
  - Date of event
  - Time of event
  - Result of cause
  - Content by who

Continues..

- Blog Search
  - Content
  - Author
  - Date of publish
- Book Search
  - Author
  - Publication
  - Version Number
- Shopping Search
  - Price/ Discount
  - Brand
- Universal Search
  - Images, Videos all together
- Meta Search
  - Searching other search engines for result.

More specialized vertical search engines

- Comparison shopping engines
  - PriceGrabber, Shopzilla, and NexTag
- Travel search engines
  - Expedia, Travelocity, Kayak, and Uptake
- Real estate search engines
  - Trulia and Zillow
- People search engines
  - Spock and Wink
- Job search engines
  - Indeed, CareerBuilder, and SimplyHired
- Music search engines
  - iTunes Music Store
- B2B search engines
  - Business.com, KnowledgeStorm, Kellysearch, and ThomasNet

Country Specific Search

- China:
  - **Baidu** News reported in April 2011 that Baidu had more than 75% market share in China
- Russia:
  - According to figures announced by **Yandex**, the company's market share in Russia Comprised about 65% of all searches in March 2011
- South Korea:
  - **Naver** (http://www.naver.com) was estimated to have about 70% market share in South Korea in February 2011
- Czech Republic:
  - The Startup MemeTechnology blog reported **Seznam** (http://seznam.cz) as having more than 45%market share in the Czech Republic in early January 2011

Continues..

Top factors that contribute to international ranking success:

- Owning the proper domain extension (e.g., **.com.au, .co.uk, .fr, .de, .nl**) for the country that Your business is targeting.
- Hosting your website in the country you are targeting (with a **country-specific IP address**)
- Registering with local search engines:
- Having other sites from the same country link to you
- Using the native language on the site (an absolute requirement for usability)
- Placing your relevant local address data on every page of the site
- Defining your preferred region in **Google Webmaster Tools**