

- **News**
- **SEO Sydney**
- **Local SEO Sydney**
- **SEO services Sydney**
- **search engine optimisation consultants**

- **More**

local SEO services SydneySEO agencies in SydneySEO service in SydneySEO services in SydneySEO parramattaSEO consultant SydneySydney SEO consultantSydney SEO consultingkeyword research servicesSEO specialists SydneySEO expert Sydneysearch engine optimisation Sydneylocal SEO SydneySEO experts SydneySEO packages australiaSEO services expertwhat SEO marketingSEO meaningSEO service SydneySEO agencies SydneySEO agency australiaLocal SEOSEO australiaSEO expertdigital agency Sydney Sydney SEO consultantlocal SEO specialistsSEO strategySEO in marketing content marketing SydneySEO packagesSEO parramattaSEO Sydney expert SEO Sydney expertsSEO specialistSEO for websiteSEO googleSydney SEO expertsSEO package australiaSEO consultants Sydneyexpert SEO servicesSEO marketingSEO checkSEO packages SydneySEO keywordsSEO websitelocal SEO australiaSEO consultantSEO package SydneySEO services in SydneySEO companies in australialocal SEO agencyecommerce SEO servicesSEO specialists Sydneybest SEO company in Sydneycontent agency Sydneybest SEO agency SydneySEO agency in SydneySEO company SydneySEO agencies SydneySEO company in SydneySEO company SydneySEO expertsSEO agency Sydneybest SEO SydneySEO agency in SydneySEO services expertSEO agencies in Sydneylisting business on googlebest SEO company SydneySEO service SydneySEO services Sydneysearch engine optimisation Sydneylocal SEO servicesSEO services providerSydney SEO companySEO company in SydneySEO agency SydneySEO with wordpressSEO consultant SydneySEO expert SydneySydney SEO servicesSEO services company SydneySydney SEO consultingSEO services companySEO servicesSydney SEO expertSEO experts SydneySEO agency australiagoogle listing for businesssearch engine optimisation strategySEO agency

- **About Us**

- **Contact Us**



SEO agency in Sydney

optimized image dimensions

optimized image dimensions

content clarity"Content clarity involves making your text straightforward and easy to understand. Clear, concise content improves user satisfaction, reduces bounce rates, and helps search engines determine the pages relevance to a particular search query."

content cluster keywords"Content cluster keywords are thematically grouped terms that support a pillar topic. Creating clusters improves site structure, boosts internal linking, and strengthens your authority on a given subject."

content clusters"Content clusters organize related pages around a central topic, improving site structure and user navigation. Best [SEO Sydney Agency](#). [Search Engine Optimisation](#) . By creating pillar content and supporting articles, businesses can boost search rankings and establish themselves as authorities on specific subjects."

optimized image file naming conventions

- [optimized image dimensions](#)
- [optimized image file naming conventions](#)
- [optimized image file storage](#)
- [optimized image formats for web](#)
- [optimized image hosting providers](#)
- [optimized image naming strategies](#)
- [optimized image placement](#)

content competitiveness"Assessing content competitiveness involves comparing your material to top-ranking pages in search results.

SEO agency in Sydney - Mobile search optimization

1. Googles mobile-first indexing
2. Search performance reports

By understanding what makes competing content successful, you can refine your approach and create more compelling, higher-ranking material."

content consistency"Ensuring content consistency across your website strengthens brand identity and user trust. Consistent tone, style, and formatting improve readability and engagement, making it easier for users to connect with your material."

content curation"Content curation involves gathering and organizing high-quality material from various sources. By presenting curated content alongside your own insights, you add value for your audience and strengthen your sites authority."

Best Local SEO Services.

optimized image file storage

content delivery for imagesUsing a content delivery network (CDN) for images ensures faster load times by serving files from the closest server to the user. Best SEO Audit Sydney. Improved delivery speeds enhance user experience and help maintain strong search rankings.

content depth"Content depth refers to how thoroughly a topic is covered in your material.

SEO agency in Sydney - Mobile search optimization

- Mobile search optimization
- Search engine crawling
- Keyword phrase variations

By providing detailed, well-researched information, you demonstrate expertise, satisfy user queries, and increase your chances of ranking higher for relevant keywords."

content depth improvements"Content depth improvements involve adding more detailed, comprehensive information to a page. In-depth content often ranks higher because it better satisfies user intent, increases time on page, and demonstrates expertise on the topic."

HOW SEARCH ENGINE MARKETING HELPS BUSINESS GROW OVER TIME

SYDNEY WEBSITE DESIGN AGENCY
SUITE 87, LEVEL 33, AUSTRALIA SQUARE,
265 GEORGE ST, SYDNEY NSW 2000
PHONE: 1300 684 339





optimized image formats for web

content engagement"Increasing content engagement means creating material that resonates with your audience, encouraging them to read, share, and interact. Engaged users spend more time on your site, improving key metrics that influence search rankings."

content flow"Optimizing content flow means ensuring a logical progression of ideas and information. A smooth flow keeps readers engaged, reduces bounce rates, and helps search engines understand your contents structure and relevance."

content formatting"Content formatting involves organizing text into headings, subheadings, lists, and tables. comprehensive [SEO Services](#) services. Proper formatting makes content easier to read and scan, which improves user engagement and helps search engines understand the structure of the information."

optimized image hosting providers

content formatting"Optimizing content formatting includes using bullet points, numbered lists, and shorter paragraphs. These elements make content easier to scan and read, improving user engagement and increasing the likelihood of higher search rankings."

content formatting improvements"Content formatting improvements make text easier to read and scan. Using headings, bullet points, and shorter paragraphs increases user engagement, reduces bounce rates, and helps search engines better understand the pages structure."

content freshness"Content freshness is a factor search engines consider when ranking pages. By regularly updating and adding new content, businesses can demonstrate relevance, maintain strong rankings, and continue attracting organic traffic over time."

KEY ADVANTAGES LOCAL SEO





optimized image naming strategies

content freshness"Keeping content fresh means regularly updating articles with new information, current statistics, and recent examples. Fresh content signals to search engines that your site is active and relevant, which can improve rankings and maintain user interest."

content freshness indicators"Content freshness indicators, such as recent updates or newly added sections, signal to search engines that the page is current. Fresh content often ranks higher and attracts more visitors by meeting the latest user intent."

content freshness signals"Content freshness signals, such as recent updates or new sections, indicate to search engines that your material is current. Maintaining fresh content improves visibility, attracts repeat visitors, and helps sustain strong rankings."

optimized image placement

content gap keywords"Content gap keywords highlight topics or terms that are underrepresented in your existing content. By targeting these keywords, you fill gaps in your content strategy and attract more traffic."

content gaps"Identifying and filling content gaps ensures that your site covers all relevant topics and keywords. By addressing these gaps, you improve your sites authority, attract more traffic, and better satisfy user intent."

content hierarchy"Content hierarchy refers to the logical organization of headings, subheadings, and paragraphs within a page. A clear hierarchy improves readability, helps users find information quickly, and allows search engines to better understand the structure of the content."



SYDNEY WEBSITE DESIGN AGENCY
SUITE 87, LEVEL 33, AUSTRALIA SQ
265 GEORGE ST. SYDNEY NSW 2000
PHONE: 1300 684 339

**SEO SERVICES EXPERT'S MAIN
IS TO GROW YOUR BUSINESS C
WITH CONTINUES STRA**

About Search engine optimization



This article needs to be **updated**. Please help update this article to reflect recent events or newly available information. (December 2024)



This article is written like a **personal reflection, personal essay, or argumentative essay** that states a Wikipedia editor's personal feelings or presents an original argument about a topic. Please **help improve it** by rewriting it in an **encyclopedic style**. *(January 2025)* (*[Learn how and when to remove this message](#)*)



This article has multiple issues. Please help **improve it** or discuss these issues on the **talk page**. (*[Learn how and when to remove these messages](#)*)

(*[Learn how and when to remove this message](#)*)

"SEO" redirects here. For other uses, see **Seo (disambiguation)**.

- **v**
- **t**
- **e**

Part of a series on

Internet marketing

- Search engine optimization
- Local search engine optimisation
- Social media marketing
- Email marketing
- Referral marketing
- Content marketing
- Native advertising

Search engine marketing

- Pay-per-click
- Cost per impression
- Search analytics
- Web analytics

Display advertising

- Ad blocking
- Contextual advertising
- Behavioral targeting

Affiliate marketing

- Cost per action
- Revenue sharing

Mobile advertising

Search engine optimization (SEO) is the process of improving the quality and quantity of **website traffic** to a **website** or a **web page** from **search engines**.^{[1][2]} SEO targets unpaid search traffic (usually referred to as "**organic**" results) rather than direct traffic, referral traffic, social media traffic, or **paid traffic**.

Unpaid search engine traffic may originate from a variety of kinds of searches, including **image search**, **video search**, **academic search**,^[3] news search, and industry-specific **vertical search** engines.

As an **Internet marketing** strategy, SEO considers how search engines work, the computer-programmed **algorithms** that dictate search engine results, what people search for, the actual search queries or **keywords** typed into search engines, and which search engines are preferred by a target audience. SEO is performed because a website will receive more visitors from a search engine when websites rank higher within a **search engine results page** (SERP), with the aim of either converting the visitors or building brand awareness.^[4]

History

[\[edit\]](#)

Webmasters and content providers began optimizing websites for search engines in the mid-1990s, as the first search engines were cataloging the early **Web**. Initially, webmasters submitted the address of a page, or **URL** to the various search engines, which would send a **web crawler** to *crawl* that page, extract links to other pages from it, and return information found on the page to be **indexed**.^[5]

According to a 2004 article by former industry analyst and current **Google** employee **Danny Sullivan**, the phrase "search engine optimization" probably came into use in 1997. Sullivan credits SEO practitioner Bruce Clay as one of the first people to popularize the term.^[6]

Early versions of search **algorithms** relied on webmaster-provided information such as the keyword **meta tag** or index files in engines like **ALIWEB**. Meta tags provide a guide to each page's content. Using metadata to index pages was found to be less than reliable, however, because the webmaster's choice of keywords in the meta tag could potentially be an inaccurate representation of the site's actual content. Flawed data in meta tags, such as those that were inaccurate or incomplete, created the potential for pages to be mischaracterized in irrelevant searches.^[7]^[*dubious* – *discuss*] Web content providers also manipulated attributes within the **HTML** source of a page in an attempt to rank well in search engines.^[8] By 1997, search engine

designers recognized that webmasters were making efforts to rank in search engines and that some webmasters were **manipulating their rankings** in search results by stuffing pages with excessive or irrelevant keywords. Early search engines, such as **Altavista** and **Infoseek**, adjusted their algorithms to prevent webmasters from manipulating rankings.[9]

By heavily relying on factors such as **keyword density**, which were exclusively within a webmaster's control, early search engines suffered from abuse and ranking manipulation. To provide better results to their users, search engines had to adapt to ensure their **results pages** showed the most relevant search results, rather than unrelated pages stuffed with numerous keywords by unscrupulous webmasters. This meant moving away from heavy reliance on term density to a more holistic process for scoring semantic signals.[10]

Search engines responded by developing more complex **ranking algorithms**, taking into account additional factors that were more difficult for webmasters to manipulate.[*citation needed*]

Some search engines have also reached out to the SEO industry and are frequent sponsors and guests at SEO conferences, webchats, and seminars. Major search engines provide information and guidelines to help with website optimization.[11][12] Google has a **Sitemaps** program to help webmasters learn if Google is having any problems indexing their website and also provides data on Google traffic to the website.[13] **Bing Webmaster Tools** provides a way for webmasters to submit a sitemap and web feeds, allows users to determine the "crawl rate", and track the web pages index status.

In 2015, it was reported that **Google** was developing and promoting mobile search as a key feature within future products. In response, many brands began to take a different approach to their Internet marketing strategies.[14]

Relationship with Google

[**edit**]

In 1998, two graduate students at **Stanford University**, **Larry Page** and **Sergey Brin**, developed "Backrub", a search engine that relied on a mathematical algorithm to rate the prominence of web pages. The number calculated by the algorithm, **PageRank**, is a function of the quantity and strength of **inbound links**. [15] PageRank estimates the likelihood that a given page will be reached by a web user who randomly surfs the web and follows links from one page to another. In effect, this means that some links are stronger than others, as a higher PageRank page is more likely to be reached by the random web surfer.

Page and Brin founded Google in 1998.[16] Google attracted a loyal following among the growing number of **Internet** users, who liked its simple design.[17] Off-page factors (such as PageRank and hyperlink analysis) were considered as well as on-page factors (such as keyword frequency, **meta tags**, headings, links and site structure) to enable Google to avoid the kind of manipulation seen in search engines that only considered on-page factors for their rankings. Although PageRank was more difficult to **game**, webmasters had already developed

link-building tools and schemes to influence the [Inktomi](#) search engine, and these methods proved similarly applicable to gaming PageRank. Many sites focus on exchanging, buying, and selling links, often on a massive scale. Some of these schemes involved the creation of thousands of sites for the sole purpose of [link spamming](#).[\[18\]](#)

By 2004, search engines had incorporated a wide range of undisclosed factors in their ranking algorithms to reduce the impact of link manipulation.[\[19\]](#) The leading search engines, Google, [Bing](#), and [Yahoo](#), do not disclose the algorithms they use to rank pages. Some SEO practitioners have studied different approaches to search engine optimization and have shared their personal opinions.[\[20\]](#) Patents related to search engines can provide information to better understand search engines.[\[21\]](#) In 2005, Google began personalizing search results for each user. Depending on their history of previous searches, Google crafted results for logged in users.[\[22\]](#)

In 2007, Google announced a campaign against paid links that transfer PageRank.[\[23\]](#) On June 15, 2009, Google disclosed that they had taken measures to mitigate the effects of PageRank sculpting by use of the [nofollow](#) attribute on links. [Matt Cutts](#), a well-known software engineer at Google, announced that Google Bot would no longer treat any no follow links, in the same way, to prevent SEO service providers from using nofollow for PageRank sculpting.[\[24\]](#) As a result of this change, the usage of nofollow led to evaporation of PageRank. In order to avoid the above, SEO engineers developed alternative techniques that replace nofollowed tags with obfuscated [JavaScript](#) and thus permit PageRank sculpting. Additionally, several solutions have been suggested that include the usage of [iframes](#), [Flash](#), and JavaScript.[\[25\]](#)

In December 2009, Google announced it would be using the web search history of all its users in order to populate search results.[\[26\]](#) On June 8, 2010 a new web indexing system called [Google Caffeine](#) was announced. Designed to allow users to find news results, forum posts, and other content much sooner after publishing than before, Google Caffeine was a change to the way Google updated its index in order to make things show up quicker on Google than before. According to Carrie Grimes, the software engineer who announced Caffeine for Google, "Caffeine provides 50 percent fresher results for web searches than our last index..."[\[27\]](#) [Google Instant](#), real-time-search, was introduced in late 2010 in an attempt to make search results more timely and relevant. Historically site administrators have spent months or even years optimizing a website to increase search rankings. With the growth in popularity of social media sites and blogs, the leading engines made changes to their algorithms to allow fresh content to rank quickly within the search results.[\[28\]](#)

In February 2011, Google announced the [Panda](#) update, which penalizes websites containing content duplicated from other websites and sources. Historically websites have copied content from one another and benefited in search engine rankings by engaging in this practice. However, Google implemented a new system that punishes sites whose content is not unique.[\[29\]](#) The 2012 [Google Penguin](#) attempted to penalize websites that used manipulative techniques to improve their rankings on the search engine.[\[30\]](#) Although Google Penguin has been presented as an algorithm aimed at fighting web spam, it really focuses on spammy links[\[31\]](#) by gauging the quality of the sites the links are coming from. The 2013 [Google](#)

Hummingbird update featured an algorithm change designed to improve Google's natural language processing and semantic understanding of web pages. Hummingbird's language processing system falls under the newly recognized term of "conversational search", where the system pays more attention to each word in the query in order to better match the pages to the meaning of the query rather than a few words.[32] With regards to the changes made to search engine optimization, for content publishers and writers, Hummingbird is intended to resolve issues by getting rid of irrelevant content and spam, allowing Google to produce high-quality content and rely on them to be 'trusted' authors.

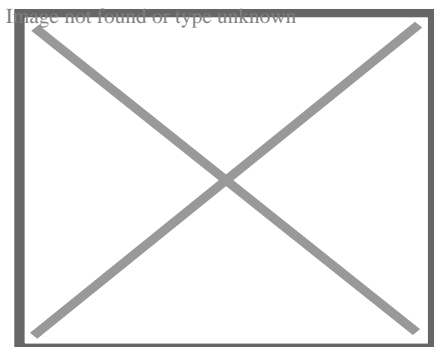
In October 2019, Google announced they would start applying **BERT** models for English language search queries in the US. Bidirectional Encoder Representations from Transformers (BERT) was another attempt by Google to improve their natural language processing, but this time in order to better understand the search queries of their users.[33] In terms of search engine optimization, BERT intended to connect users more easily to relevant content and increase the quality of traffic coming to websites that are ranking in the **Search Engine Results Page**.

Methods

[edit]

Getting indexed

[edit]



A simple illustration of the **Pagerank** algorithm. Percentage shows the perceived importance.

The leading search engines, such as Google, Bing, and Yahoo!, use **crawlers** to find pages for their algorithmic search results. Pages that are linked from other search engine-indexed pages do not need to be submitted because they are found automatically. The **Yahoo! Directory** and **DMOZ**, two major directories which closed in 2014 and 2017 respectively, both required manual submission and human editorial review.[34] Google offers **Google Search Console**, for which an XML **Sitemap** feed can be created and submitted for free to ensure that all pages are found, especially pages that are not discoverable by automatically following links[35] in addition to their URL submission console.[36] Yahoo! formerly operated a paid submission service that

guaranteed to crawl for a [cost per click](#);^[37] however, this practice was discontinued in 2009.

[Search engine](#) crawlers may look at a number of different factors when [crawling](#) a site. Not every page is indexed by search engines. The distance of pages from the root directory of a site may also be a factor in whether or not pages get crawled.^[38]

Mobile devices are used for the majority of Google searches.^[39] In November 2016, Google announced a major change to the way they are crawling websites and started to make their index mobile-first, which means the mobile version of a given website becomes the starting point for what Google includes in their index.^[40] In May 2019, Google updated the rendering engine of their crawler to be the latest version of Chromium (74 at the time of the announcement). Google indicated that they would regularly update the [Chromium](#) rendering engine to the latest version.^[41] In December 2019, Google began updating the User-Agent string of their crawler to reflect the latest Chrome version used by their rendering service. The delay was to allow webmasters time to update their code that responded to particular bot User-Agent strings. Google ran evaluations and felt confident the impact would be minor.^[42]

Preventing crawling

[\[edit\]](#)

Main article: [Robots exclusion standard](#)

To avoid undesirable content in the search indexes, webmasters can instruct spiders not to crawl certain files or directories through the standard [robots.txt](#) file in the root directory of the domain. Additionally, a page can be explicitly excluded from a search engine's database by using a [meta tag](#) specific to robots (usually `<meta name="robots" content="noindex">`). When a search engine visits a site, the robots.txt located in the [root directory](#) is the first file crawled. The robots.txt file is then parsed and will instruct the robot as to which pages are not to be crawled. As a search engine crawler may keep a cached copy of this file, it may on occasion crawl pages a webmaster does not wish to crawl. Pages typically prevented from being crawled include login-specific pages such as shopping carts and user-specific content such as search results from internal searches. In March 2007, Google warned webmasters that they should prevent indexing of internal search results because those pages are considered search spam.^[43]

In 2020, Google [sunsetting](#) the standard (and open-sourced their code) and now treats it as a hint rather than a directive. To adequately ensure that pages are not indexed, a page-level robot's meta tag should be included.^[44]

Increasing prominence

[\[edit\]](#)

A variety of methods can increase the prominence of a webpage within the search results.

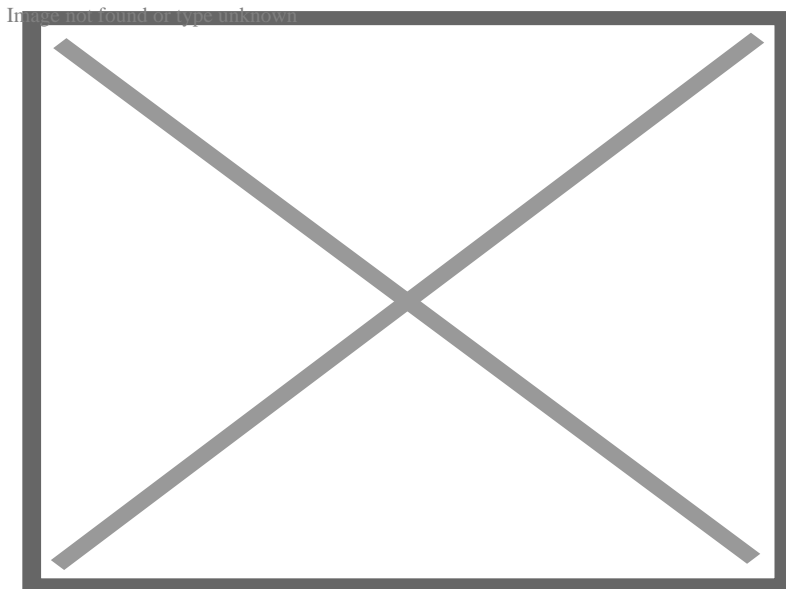
[Cross linking](#) between pages of the same website to provide more links to important pages may

improve its visibility. Page design makes users trust a site and want to stay once they find it. When people bounce off a site, it counts against the site and affects its credibility.[45]

Writing content that includes frequently searched keyword phrases so as to be relevant to a wide variety of search queries will tend to increase traffic. Updating content so as to keep search engines crawling back frequently can give additional weight to a site. Adding relevant keywords to a web page's metadata, including the **title tag and meta description**, will tend to improve the relevancy of a site's search listings, thus increasing traffic. **URL canonicalization** of web pages accessible via multiple URLs, using the **canonical link element**[46] or via **301 redirects** can help make sure links to different versions of the URL all count towards the page's link popularity score. These are known as incoming links, which point to the URL and can count towards the page link's popularity score, impacting the credibility of a website.[45]

White hat versus black hat techniques

[[edit](#)]



Common white-hat methods of search engine optimization

SEO techniques can be classified into two broad categories: techniques that search engine companies recommend as part of good design ("white hat"), and those techniques of which search engines do not approve ("black hat"). Search engines attempt to minimize the effect of the latter, among them **spamdexing**. Industry commentators have classified these methods and the practitioners who employ them as either **white hat** SEO or **black hat** SEO.[47] White hats tend to produce results that last a long time, whereas black hats anticipate that their sites may eventually be banned either temporarily or permanently once the search engines discover what they are doing.[48]

An SEO technique is considered a white hat if it conforms to the search engines' guidelines and involves no deception. As the search engine guidelines[11][12][49] are not written as a series of

rules or commandments, this is an important distinction to note. White hat SEO is not just about following guidelines but is about ensuring that the content a search engine indexes and subsequently ranks is the same content a user will see. White hat advice is generally summed up as creating content for users, not for search engines, and then making that content easily accessible to the online "spider" algorithms, rather than attempting to trick the algorithm from its intended purpose. White hat SEO is in many ways similar to web development that promotes accessibility,[50] although the two are not identical.

Black hat SEO attempts to improve rankings in ways that are disapproved of by the search engines or involve deception. One black hat technique uses hidden text, either as text colored similar to the background, in an invisible **div**, or positioned off-screen. Another method gives a different page depending on whether the page is being requested by a human visitor or a search engine, a technique known as **cloaking**. Another category sometimes used is **grey hat SEO**. This is in between the black hat and white hat approaches, where the methods employed avoid the site being penalized but do not act in producing the best content for users. Grey hat SEO is entirely focused on improving search engine rankings.

Search engines may penalize sites they discover using black or grey hat methods, either by reducing their rankings or eliminating their listings from their databases altogether. Such penalties can be applied either automatically by the search engines' algorithms or by a manual site review. One example was the February 2006 Google removal of both **BMW** Germany and **Ricoh** Germany for the use of deceptive practices.[51] Both companies subsequently apologized, fixed the offending pages, and were restored to Google's search engine results page.[52]

Companies that employ black hat techniques or other spammy tactics can get their client websites banned from the search results. In 2005, the *Wall Street Journal* reported on a company, **Traffic Power**, which allegedly used high-risk techniques and failed to disclose those risks to its clients.[53] *Wired* magazine reported that the same company sued blogger and SEO Aaron Wall for writing about the ban.[54] Google's **Matt Cutts** later confirmed that Google had banned Traffic Power and some of its clients.[55]

As marketing strategy

[edit]

SEO is not an appropriate strategy for every website, and other Internet marketing strategies can be more effective, such as paid advertising through pay-per-click (**PPC**) campaigns, depending on the site operator's goals.[*editorializing*] **Search engine marketing (SEM)** is the practice of designing, running, and optimizing search engine ad campaigns. Its difference from SEO is most simply depicted as the difference between paid and unpaid priority ranking in search results. SEM focuses on prominence more so than relevance; website developers should regard SEM with the utmost importance with consideration to visibility as most navigate to the primary listings of their search.[56] A successful Internet marketing campaign may also depend upon building high-quality web pages to engage and persuade internet users, setting up

analytics programs to enable site owners to measure results, and improving a site's **conversion rate**.^{[57][58]} In November 2015, Google released a full 160-page version of its Search Quality Rating Guidelines to the public,^[59] which revealed a shift in their focus towards "usefulness" and **mobile local search**. In recent years the mobile market has exploded, overtaking the use of desktops, as shown in by **StatCounter** in October 2016, where they analyzed 2.5 million websites and found that 51.3% of the pages were loaded by a mobile device.^[60] Google has been one of the companies that are utilizing the popularity of mobile usage by encouraging websites to use their **Google Search Console**, the Mobile-Friendly Test, which allows companies to measure up their website to the search engine results and determine how user-friendly their websites are. The closer the keywords are together their ranking will improve based on key terms.^[45]

SEO may generate an adequate **return on investment**. However, search engines are not paid for organic search traffic, their algorithms change, and there are no guarantees of continued referrals. Due to this lack of guarantee and uncertainty, a business that relies heavily on search engine traffic can suffer major losses if the search engines stop sending visitors.^[61] Search engines can change their algorithms, impacting a website's search engine ranking, possibly resulting in a serious loss of traffic. According to Google's CEO, **Eric Schmidt**, in 2010, Google made over 500 algorithm changes – almost 1.5 per day.^[62] It is considered a wise business practice for website operators to liberate themselves from dependence on search engine traffic.^[63] In addition to accessibility in terms of web crawlers (addressed above), user **web accessibility** has become increasingly important for SEO.

International markets and SEO

[**edit**]

Optimization techniques are highly tuned to the dominant search engines in the target market. The search engines' market shares vary from market to market, as does competition. In 2003, **Danny Sullivan** stated that **Google** represented about 75% of all searches.^[64] In markets outside the United States, Google's share is often larger, and data showed Google was the dominant search engine worldwide as of 2007.^[65] As of 2006, Google had an 85–90% market share in Germany.^[66] While there were hundreds of SEO firms in the US at that time, there were only about five in Germany.^[66] As of March 2024, Google still had a significant market share of 89.85% in Germany.^[67] As of June 2008, the market share of Google in the UK was close to 90% according to **Hitwise**.^[68]^[*obsolete source*] As of March 2024, Google's market share in the UK was 93.61%.^[69]

Successful search engine optimization (SEO) for international markets requires more than just translating web pages. It may also involve registering a domain name with a **country-code top-level domain** (ccTLD) or a relevant **top-level domain** (TLD) for the target market, choosing web hosting with a local IP address or server, and using a **Content Delivery Network** (CDN) to improve website speed and performance globally. It is also important to understand the local culture so that the content feels relevant to the audience. This includes conducting keyword

research for each market, using hreflang tags to target the right languages, and building local backlinks. However, the core SEO principles—such as creating high-quality content, improving user experience, and building links—remain the same, regardless of language or region.^[66]

Regional search engines have a strong presence in specific markets:

- China: **Baidu** leads the market, controlling about 70 to 80% market share.^[70]
- South Korea: Since the end of 2021, **Naver**, a domestic web portal, has gained prominence in the country.^{[71][72]}
- Russia: **Yandex** is the leading search engine in Russia. As of December 2023, it accounted for at least 63.8% of the market share.^[73]

The Evolution of International SEO

^[edit]

By the early 2000s, businesses recognized that the web and search engines could help them reach global audiences. As a result, the need for multilingual SEO emerged.^[74] In the early years of international SEO development, simple translation was seen as sufficient. However, over time, it became clear that localization and transcreation—adapting content to local language, culture, and emotional resonance—were far more effective than basic translation.^[75]

Legal precedents

^[edit]

On October 17, 2002, SearchKing filed suit in the **United States District Court**, Western District of Oklahoma, against the search engine Google. SearchKing's claim was that Google's tactics to prevent spamdexing constituted a **tortious interference** with contractual relations. On May 27, 2003, the court granted Google's motion to dismiss the complaint because SearchKing "failed to state a claim upon which relief may be granted."^{[76][77]}

In March 2006, KinderStart filed a lawsuit against Google over search engine rankings. KinderStart's website was removed from Google's index prior to the lawsuit, and the amount of traffic to the site dropped by 70%. On March 16, 2007, the **United States District Court for the Northern District of California** (**San Jose** Division) dismissed KinderStart's complaint without leave to amend and partially granted Google's motion for **Rule 11** sanctions against KinderStart's attorney, requiring him to pay part of Google's legal expenses.^{[78][79]}

See also

^[edit]

- **Competitor backlinking**

- List of search engines
- Search engine marketing
- Search neutrality, the opposite of search manipulation
- User intent
- Website promotion
- Search engine results page
- Search engine scraping

References

[edit]

1. ^ "SEO – search engine optimization". Webopedia. December 19, 2001. *Archived* from the original on May 9, 2019. Retrieved May 9, 2019.
2. ^ Giomelakis, Dimitrios; Veglis, Andreas (April 2, 2016). "Investigating Search Engine Optimization Factors in Media Websites: The case of Greece". *Digital Journalism*. **4** (3): 379–400. doi:10.1080/21670811.2015.1046992. ISSN 2167-0811. S2CID 166902013. *Archived* from the original on October 30, 2022. Retrieved October 30, 2022.
3. ^ Beel, Jöran; Gipp, Bela; Wilde, Erik (2010). "Academic Search Engine Optimization (ASEO): Optimizing Scholarly Literature for Google Scholar and Co" (PDF). *Journal of Scholarly Publishing*. pp. 176–190. Archived from the original (PDF) on November 18, 2017. Retrieved April 18, 2010.
4. ^ Ortiz-Cordova, A. and Jansen, B. J. (2012) *Classifying Web Search Queries in Order to Identify High Revenue Generating Customers*. Archived March 4, 2016, at the Wayback Machine. *Journal of the American Society for Information Sciences and Technology*. 63(7), 1426 – 1441.
5. ^ Brian Pinkerton. "Finding What People Want: Experiences with the WebCrawler" (PDF). *The Second International WWW Conference Chicago, USA, October 17–20, 1994*. Archived (PDF) from the original on May 8, 2007. Retrieved May 7, 2007.
6. ^ Danny Sullivan (June 14, 2004). "Who Invented the Term "Search Engine Optimization"?". *Search Engine Watch*. Archived from the original on April 23, 2010. Retrieved May 14, 2007. See Google groups thread Archived June 17, 2013, at the Wayback Machine.
7. ^ "The Challenge is Open", *Brain vs Computer*, WORLD SCIENTIFIC, November 17, 2020, pp. 189–211, doi:10.1142/9789811225017_0009, ISBN 978-981-12-2500-0, S2CID 243130517
8. ^ Pringle, G.; Allison, L.; Dowe, D. (April 1998). "What is a tall poppy among web pages?". Monash University. Archived from the original on April 27, 2007. Retrieved May 8, 2007.
9. ^ Laurie J. Flynn (November 11, 1996). "Desperately Seeking Surfers". *New York Times*. Archived from the original on October 30, 2007. Retrieved May 9, 2007.
10. ^ Jason Demers (January 20, 2016). "Is Keyword Density Still Important for SEO". *Forbes*. Archived from the original on August 16, 2016. Retrieved August 15, 2016.
11. ^ a b "Google's Guidelines on Site Design". Archived from the original on January 9, 2009. Retrieved April 18, 2007.

12. ^ [a b "Bing Webmaster Guidelines"](#). bing.com. Archived from the original on September 9, 2014. Retrieved September 11, 2014.
13. ^ ["Sitemaps"](#). Archived from the original on June 22, 2023. Retrieved July 4, 2012.
14. ^ [""By the Data: For Consumers, Mobile is the Internet" Google for Entrepreneurs Startup Grind September 20, 2015"](#). Archived from the original on January 6, 2016. Retrieved January 8, 2016.
15. ^ Brin, Sergey & Page, Larry (1998). ["The Anatomy of a Large-Scale Hypertextual Web Search Engine"](#). Proceedings of the seventh international conference on World Wide Web. pp. 107–117. Archived from the original on October 10, 2006. Retrieved May 8, 2007.
16. ^ ["Co-founders of Google - Google's co-founders may not have the name recognition of say, Bill Gates, but give them time: Google hasn't been around nearly as long as Microsoft"](#). Entrepreneur. October 15, 2008. Archived from the original on May 31, 2014. Retrieved May 30, 2014.
17. ^ Thompson, Bill (December 19, 2003). ["Is Google good for you?"](#). BBC News. Archived from the original on January 25, 2009. Retrieved May 16, 2007.
18. ^ Zoltan Gyongyi & Hector Garcia-Molina (2005). ["Link Spam Alliances"](#) (PDF). Proceedings of the 31st VLDB Conference, Trondheim, Norway. Archived (PDF) from the original on June 12, 2007. Retrieved May 9, 2007.
19. ^ Hansell, Saul (June 3, 2007). ["Google Keeps Tweaking Its Search Engine"](#). New York Times. Archived from the original on November 10, 2017. Retrieved June 6, 2007.
20. ^ Sullivan, Danny (September 29, 2005). ["Rundown On Search Ranking Factors"](#). Search Engine Watch. Archived from the original on May 28, 2007. Retrieved May 8, 2007.
21. ^ Christine Churchill (November 23, 2005). ["Understanding Search Engine Patents"](#). Search Engine Watch. Archived from the original on February 7, 2007. Retrieved May 8, 2007.
22. ^ ["Google Personalized Search Leaves Google Labs"](#). searchenginewatch.com. Search Engine Watch. Archived from the original on January 25, 2009. Retrieved September 5, 2009.
23. ^ ["8 Things We Learned About Google PageRank"](#). www.searchenginejournal.com. October 25, 2007. Archived from the original on August 19, 2009. Retrieved August 17, 2009.
24. ^ ["PageRank sculpting"](#). Matt Cutts. Archived from the original on January 6, 2010. Retrieved January 12, 2010.
25. ^ ["Google Loses "Backwards Compatibility" On Paid Link Blocking & PageRank Sculpting"](#). searchengineland.com. June 3, 2009. Archived from the original on August 14, 2009. Retrieved August 17, 2009.
26. ^ ["Personalized Search for everyone"](#). Archived from the original on December 8, 2009. Retrieved December 14, 2009.
27. ^ ["Our new search index: Caffeine"](#). Google: Official Blog. Archived from the original on June 18, 2010. Retrieved May 10, 2014.
28. ^ ["Relevance Meets Real-Time Web"](#). Google Blog. Archived from the original on April 7, 2019. Retrieved January 4, 2010.
29. ^ ["Google Search Quality Updates"](#). Google Blog. Archived from the original on April 23, 2022. Retrieved March 21, 2012.

30. ^ ["What You Need to Know About Google's Penguin Update"](#). *Inc.com*. June 20, 2012. *Archived* from the original on December 20, 2012. Retrieved December 6, 2012.
31. ^ ["Google Penguin looks mostly at your link source, says Google"](#). Search Engine Land. October 10, 2016. *Archived* from the original on April 21, 2017. Retrieved April 20, 2017.
32. ^ ["FAQ: All About The New Google "Hummingbird" Algorithm"](#). *www.searchengineland.com*. September 26, 2013. *Archived* from the original on December 23, 2018. Retrieved March 17, 2018.
33. ^ ["Understanding searches better than ever before"](#). Google. October 25, 2019. *Archived* from the original on January 27, 2021. Retrieved May 12, 2020.
34. ^ ["Submitting To Directories: Yahoo & The Open Directory"](#). *Search Engine Watch*. March 12, 2007. *Archived* from the original on May 19, 2007. Retrieved May 15, 2007.
35. ^ ["What is a Sitemap file and why should I have one?"](#). *Archived* from the original on July 1, 2007. Retrieved March 19, 2007.
36. ^ ["Search Console - Crawl URL"](#). *Archived* from the original on August 14, 2022. Retrieved December 18, 2015.
37. ^ Sullivan, Danny (March 12, 2007). ["Submitting To Search Crawlers: Google, Yahoo, Ask & Microsoft's Live Search"](#). *Search Engine Watch*. *Archived* from the original on May 10, 2007. Retrieved May 15, 2007.
38. ^ Cho, J.; Garcia-Molina, H.; Page, L. (1998). ["Efficient crawling through URL ordering"](#). Seventh International World-Wide Web Conference. Brisbane, Australia: Stanford InfoLab Publication Server. *Archived* from the original on July 14, 2019. Retrieved May 9, 2007.
39. ^ ["Mobile-first Index"](#). *Archived* from the original on February 22, 2019. Retrieved March 19, 2018.
40. ^ Phan, Doantam (November 4, 2016). ["Mobile-first Indexing"](#). Official Google Webmaster Central Blog. *Archived* from the original on February 22, 2019. Retrieved January 16, 2019.
41. ^ ["The new evergreen Googlebot"](#). Official Google Webmaster Central Blog. *Archived* from the original on November 6, 2020. Retrieved March 2, 2020.
42. ^ ["Updating the user agent of Googlebot"](#). Official Google Webmaster Central Blog. *Archived* from the original on March 2, 2020. Retrieved March 2, 2020.
43. ^ ["Newspapers Amok! New York Times Spamming Google? LA Times Hijacking Cars.com?"](#). *Search Engine Land*. May 8, 2007. *Archived* from the original on December 26, 2008. Retrieved May 9, 2007.
44. ^ Jill Kocher Brown (February 24, 2020). ["Google Downgrades Nofollow Directive. Now What?"](#). Practical Ecommerce. *Archived* from the original on January 25, 2021. Retrieved February 11, 2021.
45. ^ **a b c** Morey, Sean (2008). *The Digital Writer*. Fountainhead Press. pp. 171–187.
46. ^ ["Bing – Partnering to help solve duplicate content issues – Webmaster Blog – Bing Community"](#). *www.bing.com*. February 12, 2009. *Archived* from the original on June 7, 2014. Retrieved October 30, 2009.
47. ^ Andrew Goodman. ["Search Engine Showdown: Black hats vs. White hats at SES"](#). *SearchEngineWatch*. *Archived* from the original on February 22, 2007. Retrieved May 9, 2007.

48. ^ *Jill Whalen* (November 16, 2004). *"Black Hat/White Hat Search Engine Optimization"*. searchengineguide.com. Archived from *the original* on November 17, 2004. Retrieved May 9, 2007.
49. ^ *"What's an SEO? Does Google recommend working with companies that offer to make my site Google-friendly?"*. Archived from the original on April 16, 2006. Retrieved April 18, 2007.
50. ^ *Andy Hagans* (November 8, 2005). *"High Accessibility Is Effective Search Engine Optimization"*. *A List Apart*. Archived from the original on May 4, 2007. Retrieved May 9, 2007.
51. ^ *Matt Cutts* (February 4, 2006). *"Ramping up on international webspam"*. mattcutts.com/blog. Archived from the original on June 29, 2012. Retrieved May 9, 2007.
52. ^ *Matt Cutts* (February 7, 2006). *"Recent reinclusions"*. mattcutts.com/blog. Archived from the original on May 22, 2007. Retrieved May 9, 2007.
53. ^ *David Kesmodel* (September 22, 2005). *"Sites Get Dropped by Search Engines After Trying to 'Optimize' Rankings"*. *Wall Street Journal*. Archived from the original on August 4, 2020. Retrieved July 30, 2008.
54. ^ *Adam L. Penenberg* (September 8, 2005). *"Legal Showdown in Search Fracas"*. *Wired Magazine*. Archived from the original on March 4, 2016. Retrieved August 11, 2016.
55. ^ *Matt Cutts* (February 2, 2006). *"Confirming a penalty"*. mattcutts.com/blog. Archived from the original on June 26, 2012. Retrieved May 9, 2007.
56. ^ *Tapan, Panda* (2013). *"Search Engine Marketing: Does the Knowledge Discovery Process Help Online Retailers?"*. *IUP Journal of Knowledge Management*. **11** (3): 56–66. *ProQuest 1430517207*.
57. ^ *Melissa Burdon* (March 13, 2007). *"The Battle Between Search Engine Optimization and Conversion: Who Wins?"*. *Grok.com*. Archived from *the original* on March 15, 2008. Retrieved April 10, 2017.
58. ^ *"SEO Tips and Marketing Strategies"*. Archived from the original on October 30, 2022. Retrieved October 30, 2022.
59. ^ *"Search Quality Evaluator Guidelines" How Search Works November 12, 2015* (PDF). Archived (PDF) from the original on March 29, 2019. Retrieved January 11, 2016.
60. ^ *Titcomb, James* (November 2016). *"Mobile web usage overtakes desktop for first time"*. *The Telegraph*. Archived from the original on January 10, 2022. Retrieved March 17, 2018.
61. ^ *Andy Greenberg* (April 30, 2007). *"Condemned To Google Hell"*. *Forbes*. Archived from *the original* on May 2, 2007. Retrieved May 9, 2007.
62. ^ *Matt McGee* (September 21, 2011). *"Schmidt's testimony reveals how Google tests algorithm changes"*. Archived from the original on January 17, 2012. Retrieved January 4, 2012.
63. ^ *Jakob Nielsen* (January 9, 2006). *"Search Engines as Leeches on the Web"*. useit.com. Archived from the original on August 25, 2012. Retrieved May 14, 2007.
64. ^ *Graham, Jefferson* (August 26, 2003). *"The search engine that could"*. *USA Today*. Archived from the original on May 17, 2007. Retrieved May 15, 2007.
65. ^ *Greg Jarboe* (February 22, 2007). *"Stats Show Google Dominates the International Search Landscape"*. *Search Engine Watch*. Archived from the original on May 23, 2011.

Retrieved May 15, 2007.

66. ^ **a b c** Mike Grehan (April 3, 2006). *"Search Engine Optimizing for Europe"*. Click. *Archived* from the original on November 6, 2010. Retrieved May 14, 2007.
67. ^ *"Germany search engine market share 2024"*. Statista. Retrieved January 6, 2025.
68. ^ Jack Schofield (June 10, 2008). *"Google UK closes in on 90% market share"*. *Guardian*. London. *Archived* from the original on December 17, 2013. Retrieved June 10, 2008.
69. ^ *"UK search engines market share 2024"*. Statista. Retrieved January 6, 2025.
70. ^ *"China search engines market share 2024"*. Statista. Retrieved January 6, 2025.
71. ^ cycles, This text provides general information Statista assumes no liability for the information given being complete or correct Due to varying update; Text, Statistics Can Display More up-to-Date Data Than Referenced in the. *"Topic: Search engines in South Korea"*. Statista. Retrieved January 6, 2025.
72. ^ *"South Korea: main service used to search for information 2024"*. Statista. Retrieved January 6, 2025.
73. ^ *"Most popular search engines in Russia 2023"*. Statista. Retrieved January 6, 2025.
74. ^ Arora, Sanjog; Hemrajani, Naveen (September 2023). *"A REVIEW ON: MULTILINGUAL SEARCH TECHNIQUE"*. *International Journal of Applied Engineering & Technology*. **5** (3): 760–770 – via ResearchGate.
75. ^ *"SEO Starter Guide: The Basics | Google Search Central | Documentation"*. Google for Developers. Retrieved January 13, 2025.
76. ^ *"Search King, Inc. v. Google Technology, Inc., CIV-02-1457-M"* (PDF). docstoc.com. May 27, 2003. *Archived* from the original on May 27, 2008. Retrieved May 23, 2008.
77. ^ Stefanie Olsen (May 30, 2003). *"Judge dismisses suit against Google"*. *CNET*. *Archived* from the original on December 1, 2010. Retrieved May 10, 2007.
78. ^ *"Technology & Marketing Law Blog: KinderStart v. Google Dismissed—With Sanctions Against KinderStart's Counsel"*. *blog.ericgoldman.org*. March 20, 2007. *Archived* from the original on May 11, 2008. Retrieved June 23, 2008.
79. ^ *"Technology & Marketing Law Blog: Google Sued Over Rankings—KinderStart.com v. Google"*. *blog.ericgoldman.org*. *Archived* from the original on June 22, 2008. Retrieved June 23, 2008.

External links

[[edit](#)]

Listen to this article (22 minutes)

Spoken Wikipedia icon

Image not found or type unknown

This audio file was created from a revision of this article dated 20 May 2008, and does not reflect subsequent edits.

([Audio help](#) · [More spoken articles](#))

- [Webmaster Guidelines](#) from Google

- Google Search Quality Evaluators Guidelines (PDF)
- Webmaster resources from Yahoo!
- Webmaster Guidelines from Microsoft Bing
- The Dirty Little Secrets of Search in The New York Times (February 12, 2011)

- **v**
- **t**
- **e**

Search engine optimization

Exclusion standards

- Robots exclusion standard
- Meta element
- nofollow

Marketing topics

- Online advertising
- Email marketing
- Display advertising
- Web analytics

Search marketing

- Search engine marketing
- Social media optimization
- Online identity management
- Paid inclusion
- Pay per click
- Google bomb

Search engine spam

- Spamdexing
- Web scraping
- Scraper site
- Link farm
- Link building

Linking

- Backlink
- Link building
- Link exchange
- Organic linking

People


- o Danny Sullivan
- o Matt Cutts
- o Barry Schwartz

Other

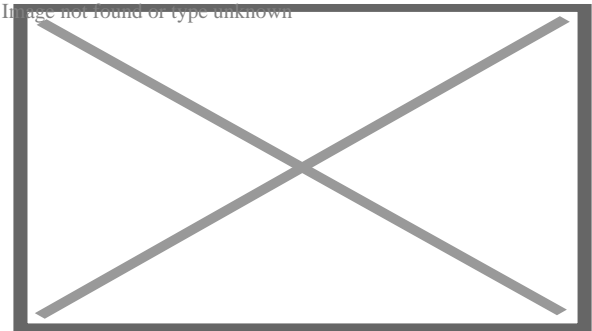
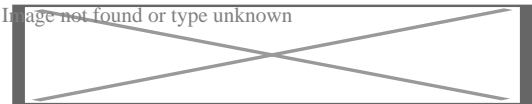
- o Geotargeting
- o Human search engine
- o Stop words
- o Content farm

Authority control databases: National  [Germany](#) [Poland](#)
[Edit this at Wikidata](#)

About Google Maps

 This article's **"criticism" or "controversy" section** may compromise the article's **neutrality**. Please help rewrite or integrate negative information to other sections through discussion on the [talk page](#). *(June 2024)*

Google Maps



Screenshot of Google Maps in a web browser

Type of site	Web mapping
Available in	74 languages

List of languages

Afrikaans, Azerbaijani, Indonesian, Malay, Bosnian, Catalan, Czech, Danish, German (Germany), Estonian, English (United States), Spanish (Spain), Spanish (Latin America), Basque, Filipino, French (France), Galician, Croatian, Zulu, Icelandic, Italian, Swahili, Latvian, Lithuanian, Hungarian, Dutch, Norwegian, Uzbek, Polish, Portuguese (Brazil), Portuguese (Portugal), Romanian, Albanian, Slovak, Slovenian, Finnish, Swedish, Vietnamese, Turkish, Greek, Bulgarian, Kyrgyz, Kazakh, Macedonian, Mongolian, Russian, Serbian, Ukrainian, Georgian, Armenian, Hebrew, Urdu, Arabic, Persian, Amharic, Nepali, Hindi, Marathi, Bengali, Punjabi, Gujarati, Tamil, Telugu, Kannada, Malayalam, Sinhala, Thai, Lao, Burmese, Khmer, Korean, Japanese, Simplified Chinese, Traditional Chinese

Owner	Google
URL	google.com/maps <small>Image not found or type unknown</small> Edit this at Wikidata
Commercial	Yes
Registration	Optional, included with a Google Account
Launched	February 8, 2005; 20 years ago
Current status	Active
Written in	C++ (back-end), JavaScript , XML , Ajax (UI)

Google Maps is a [web mapping](#) platform and consumer application offered by [Google](#). It offers [satellite imagery](#), [aerial photography](#), street maps, 360° [interactive panoramic](#) views of streets ([Street View](#)), real-time traffic conditions, and [route planning](#) for traveling by foot, car, bike, air (in [beta](#)) and [public transportation](#). As of 2020, Google Maps was being used by over one billion people every month around the world.^[1]

Google Maps began as a [C++](#) desktop program developed by brothers [Lars](#) and [Jens Rasmussen](#) in Australia at Where 2 Technologies. In October 2004, the company was acquired by Google, which converted it into a web application. After additional acquisitions of a geospatial data visualization company and a real-time traffic analyzer, Google Maps was launched in February 2005.^[2] The service's [front end](#) utilizes [JavaScript](#), [XML](#), and [Ajax](#). Google Maps offers an [API](#) that allows maps to be embedded on third-party websites,^[3] and offers a locator for businesses and other organizations in numerous countries around the world. [Google Map Maker](#) allowed users to collaboratively expand and update the service's mapping worldwide but was discontinued from March 2017. However, crowdsourced contributions to Google Maps were not discontinued as the company announced those features would be transferred to the Google Local Guides program,^[4] although users that are not Local Guides can still contribute.

Google Maps' satellite view is a "top-down" or [bird's-eye view](#); most of the high-resolution imagery of cities is aerial photography taken from aircraft flying at 800 to 1,500 feet (240 to 460 m), while most other imagery is from satellites.^[5] Much of the available satellite imagery is no more than three years old and is updated on a regular basis, according to a 2011 report.^[6] Google Maps previously used a [variant](#) of the [Mercator projection](#), and therefore could not accurately show areas around the poles.^[7] In August 2018, the desktop version of Google

Maps was updated to show a 3D globe. It is still possible to switch back to the 2D map in the settings.

Google Maps for mobile devices was first released in 2006; the latest versions feature **GPS turn-by-turn navigation** along with dedicated **parking** assistance features. By 2013, it was found to be the world's most popular **smartphone** app, with over 54% of global smartphone owners using it.^[8] In 2017, the app was reported to have two billion users on Android, along with several other Google services including **YouTube**, **Chrome**, **Gmail**, **Search**, and **Google Play**.

History

[\[edit\]](#)

Acquisitions

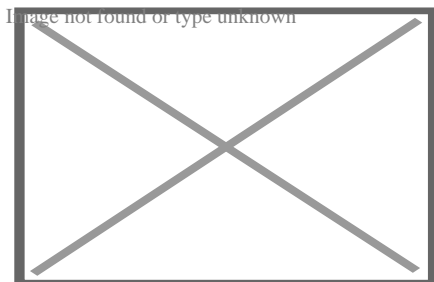
[\[edit\]](#)

Google Maps first started as a **C++** program designed by two Danish brothers, **Lars** and **Jens Eilstrup Rasmussen**, and Noel Gordon and Stephen Ma, at the Sydney-based company Where 2 Technologies, which was founded in early 2003. The program was initially designed to be separately downloaded by users, but the company later pitched the idea for a purely Web-based product to Google management, changing the method of distribution.^[9] In October 2004, the company was acquired by Google Inc.^[10] where it transformed into the web application Google Maps. The Rasmussen brothers, Gordon and Ma joined Google at that time.

In the same month, Google acquired **Keyhole**, a geospatial data visualization company (with investment from the **CIA**), whose marquee application suite, Earth Viewer, emerged as the **Google Earth** application in 2005 while other aspects of its core technology were integrated into Google Maps.^[11] In September 2004, Google acquired ZipDash, a company that provided real-time traffic analysis.^[12]

2005–2010

[\[edit\]](#)

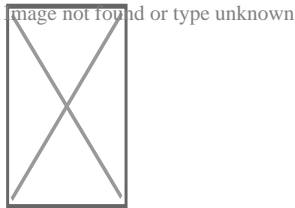


Google Maps Beta in 2005

The launch of Google Maps was first announced on the Google Blog on February 8, 2005.^[13]

In September 2005, in the aftermath of **Hurricane Katrina**, Google Maps quickly updated its satellite imagery of **New Orleans** to allow users to view the extent of the flooding in various parts of that city.[14][15]

As of 2007, Google Maps was equipped with a miniature view with a draggable rectangle that denotes the area shown in the main viewport, and "Info windows" for previewing details about locations on maps.[16] As of 2024, this feature had been removed (likely several years prior).



Original Google Maps icon

On November 28, 2007, Google Maps for Mobile 2.0 was released.[17][18][19] It featured a **beta version** of a "My Location" feature, which uses the GPS / **Assisted GPS** location of the mobile device, if available, supplemented by determining the nearest **wireless networks** and **cell sites**. [18][19] The software looks up the location of the cell site using a database of known wireless networks and sites.[20][21] By **triangulating** the different signal strengths from cell transmitters and then using their location property (retrieved from the database), My Location determines the user's current location.[22]

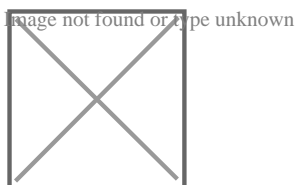
On September 23, 2008, coinciding with the announcement of the **first commercial Android device**, Google announced that a Google Maps app had been released for its Android operating system.[23][24]

In October 2009, Google replaced **Tele Atlas** as their primary supplier of geospatial data in the US version of Maps and used their own data.[25]

2011–2015

[edit]

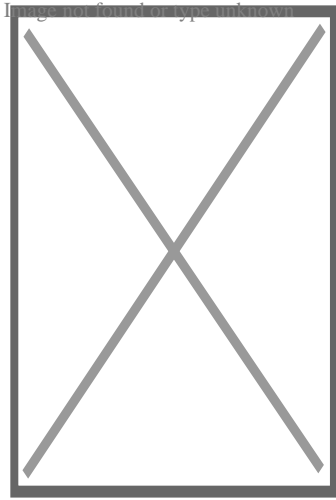
On April 19, 2011, Map Maker was added to the American version of Google Maps, allowing any viewer to edit and add changes to Google Maps. This provides Google with local map updates almost in real-time instead of waiting for digital map data companies to release more infrequent updates.



Icon used from 2015 to 2020

On January 31, 2012, Google, due to offering its Maps for free, was found guilty of abusing the dominant position of its Google Maps application and ordered by a court to pay a fine and damages to Bottin Cartographer, a French mapping company.[26] This ruling was overturned on appeal.[27]

In June 2012, Google started mapping the UK's rivers and canals in partnership with the [Canal and River Trust](#). The company has stated that "it would update the program during the year to allow users to plan trips which include locks, bridges and towpaths along the 2,000 miles of river paths in the UK." [28]



A monument in the shape of a [Google Maps pin](#) in the center of the city of [Szczecin](#), Poland

In December 2012, the Google Maps application was separately made available in the App Store, after Apple removed it from its default installation of the mobile operating system version [iOS 6](#) in September 2012.[29]

On January 29, 2013, Google Maps was updated to include a map of [North Korea](#).[30] As of May 3, 2013, Google Maps recognizes [Palestine](#) as a country, instead of redirecting to the [Palestinian territories](#).[31]

In August 2013, Google Maps removed the Wikipedia Layer, which provided links to Wikipedia content about locations shown in Google Maps using [Wikipedia geocodes](#).[32]

On April 12, 2014, Google Maps was updated to reflect the [annexation of Ukrainian Crimea by Russia](#). Crimea is shown as the [Republic of Crimea](#) in Russia and as the [Autonomous Republic of Crimea](#) in Ukraine. All other versions show a dotted disputed border.[33]

In April 2015, on a map near the Pakistani city of Rawalpindi, the imagery of the Android logo urinating on the Apple logo was added via Map Maker and appeared on Google Maps. The [vandalism](#) was soon removed and Google publicly apologized.[34] However, as a result, Google disabled user moderation on Map Maker, and on May 12, disabled editing worldwide until it could devise a new policy for approving edits and avoiding vandalism.[35]

On April 29, 2015, users of the classic Google Maps were forwarded to the new Google Maps with the option to be removed from the interface.[36]

On July 14, 2015, the Chinese name for **Scarborough Shoal** was removed after a petition from the **Philippines** was posted on **Change.org**. [37]

2016–2018

[edit]

On June 27, 2016, Google rolled out new satellite imagery worldwide sourced from **Landsat 8**, comprising over 700 trillion pixels of new data. [38] In September 2016, Google Maps acquired mapping analytics startup Urban Engines. [39]

In 2016, the Government of South Korea offered Google conditional access to the country's geographic database – access that already allows indigenous Korean mapping providers high-detail maps. Google declined the offer, as it was unwilling to accept restrictions on reducing the quality around locations the South Korean Government felt were sensitive (see **restrictions on geographic data in South Korea**). [40]

On October 16, 2017, Google Maps was updated with accessible imagery of several planets and moons such as **Titan**, **Mercury**, and **Venus**, as well as direct access to imagery of the **Moon** and **Mars**. [41][42]

In May 2018, Google announced major changes to the API structure starting June 11, 2018. This change consolidated the 18 different endpoints into three services and merged the basic and premium plans into one pay-as-you-go plan. [43] This meant a 1400% price raise for users on the basic plan, with only six weeks of notice. This caused a harsh reaction within the developers community. [44] In June, Google postponed the change date to July 16, 2018.

In August 2018, Google Maps designed its overall view (when zoomed out completely) into a **3D** globe dropping the **Mercator projection** that projected the planet onto a flat surface. [45]

2019–present

[edit]

Google Maps icon 2020

Image not found or type unknown
2020 icon redesign

In January 2019, Google Maps added speed trap and **speed camera** alerts as reported by other users.^{[46][47]}

On October 17, 2019, Google Maps was updated to include incident reporting, resembling a functionality in **Waze** which was acquired by Google in 2013.^[48]

In December 2019, Incognito mode was added, allowing users to enter destinations without saving entries to their Google accounts.^[49]

In February 2020, Maps received a 15th anniversary redesign.^[50] It notably added a brand-new app icon, which now resembles the original icon in 2005.

On September 23, 2020, Google announced a COVID-19 Layer update for Google maps, which is designed to offer a seven-day average data of the total COVID-19-positive cases per 100,000 people in the area selected on the map. It also features a label indicating the rise and fall in the number of cases.^[51]

In January 2021, Google announced that it would be launching a new feature displaying COVID-19 vaccination sites.^[52]

In January 2021, Google announced updates to the route planner that would accommodate drivers of electric vehicles. Routing would take into account the type of vehicle, vehicle status including current charge, and the locations of charging stations.^[53]

In June 2022, Google Maps added a layer displaying air quality for certain countries.^[54]

In September 2022, Google removed the COVID-19 Layer from Google Maps due to lack of usage of the feature.^[55]

Functionality

^[edit]

Directions and transit

^[edit]

Google Maps provides a **route planner**,^[56] allowing users to find available directions through driving, public transportation, walking, or biking.^[57] Google has partnered globally with over 800 public transportation providers to adopt **GTFS** (General Transit Feed Specification), making the data available to third parties.^{[58][59]} The app can indicate users' transit route, thanks to an October 2019 update. The incognito mode, eyes-free walking navigation features were released earlier.^[60] A July 2020 update provided bike share routes.^[61]

In February 2024, Google Maps started rolling out glanceable directions for its Android and iOS apps. The feature allows users to track their journey from their device's **lock screen**.^{[62][63]}

Traffic conditions

[[edit](#)]

Screenshot of Google Maps with traffic option enabled

Image not found or type unknown

Screenshot of Google Maps with traffic option enabled

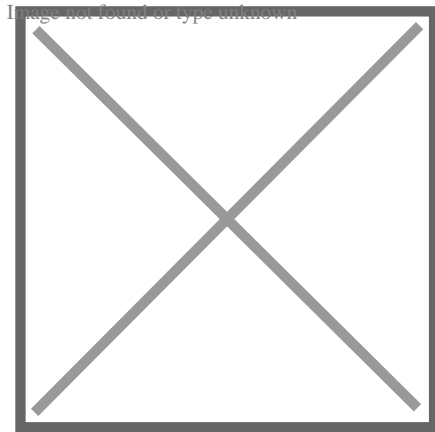
In 2007, Google began offering traffic data as a colored overlay on top of roads and motorways to represent the speed of vehicles on particular roads. [Crowdsourcing](#) is used to obtain the GPS-determined locations of a large number of cellphone users, from which live traffic maps are produced.^{[64][65][66]}

Google has stated that the speed and location information it collects to calculate traffic conditions is anonymous.^[67] Options available in each phone's settings allow users not to share information about their location with Google Maps.^[68] Google stated, "Once you disable or opt out of My Location, Maps will not continue to send radio information back to Google servers to determine your handset's approximate location".^[69]^{*failed verification*}

Street View

[[edit](#)]

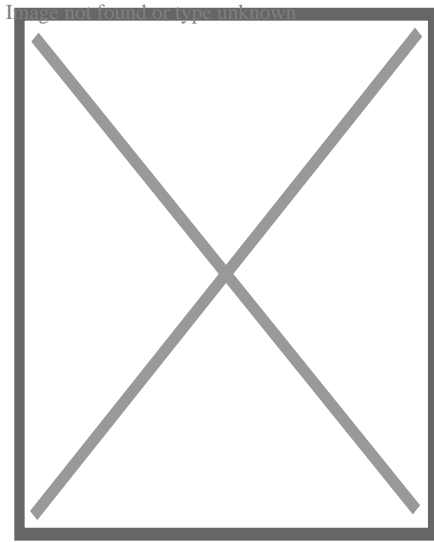
Main article: [Google Street View](#)



A Google Maps car at [Googleplex](#), [Mountain View](#)

On May 25, 2007, Google released [Google Street View](#), a feature of Google Maps providing [360°](#) panoramic street-level views of various locations. On the date of release, the feature only included five cities in the U.S. It has since expanded to thousands of locations around the world. In July 2009, Google began mapping college campuses and surrounding paths and [trails](#).

Street View garnered much controversy after its release because of **privacy concerns** about the uncensored nature of the panoramic photographs, although the views are only taken on public streets.^{[70][71]} Since then, Google has blurred faces and license plates through automated **facial recognition**.^{[72][73][74]}



Google Maps Street View Trekker backpack being implemented on the sidewalk of the Hudson River Greenway in New York City

In late 2014, Google launched Google Underwater Street View, including 2,300 kilometres (1,400 mi) of the Australian **Great Barrier Reef** in 3D. The images are taken by special cameras which turn 360 degrees and take shots every 3 seconds.^[75]

In 2017, in both Google Maps and Google Earth, Street View navigation of the **International Space Station** interior spaces became available.

3D imagery

^{[[edit](#)]}

Main article: **Google Earth § 3D imagery**

Google Maps has incorporated^[*when?*] 3D models of hundreds of cities in over 40 countries from Google Earth into its satellite view. The models were developed using aerial **photogrammetry** techniques.^{[76][77]}

Immersive View

^{[[edit](#)]}

At the **I/O 2022** event, Google announced Immersive View, a feature of Google Maps which would involve composite 3D images generated from **Street View** and aerial images of locations using AI, complete with synchronous information. It was to be initially in five cities worldwide,

with plans to add it to other cities later on.[78] The feature was previewed in September 2022 with 250 photorealistic aerial 3D images of landmarks,[79] and was full launched in February 2023.[80] An expansion of Immersive View to routes was announced at Google I/O 2023,[81] and was launched in October 2023 for 15 cities globally.[82]

The feature uses **predictive modelling** and **neural radiance fields** to scan Street View and aerial images to generate composite 3D imagery of locations, including both exteriors and interiors, and routes, including driving, walking or cycling, as well as generate synchronous information and forecasts up to a month ahead from historical and environmental data about both such as weather, traffic and busyness.

Immersive View has been available in the following locations:[citation needed]

Locations with Immersive View	
Country	Locations
 Argentina	Buenos Aires
 Australia	Melbourne, Sydney
 Austria	Vienna
 Belgium	Brussels
 Brazil	Brasília, Rio de Janeiro, São Paulo
 Canada	Calgary, Edmonton, Montreal, Ottawa, Toronto, Vancouver
 Chile	Santiago
 Czech Republic	Prague
 France	Nice, Paris
 Germany	Berlin, Cologne, Frankfurt, Munich
 Greece	Athens
 Hong Kong	Hong Kong
 Hungary	Budapest
 Italy	Florence, Milan, Rome, Venice
 Japan	Kyoto, Nagoya, Osaka, Tokyo
 Mexico	Guadalajara, Mexico City
 Netherlands	Amsterdam
 Norway	Oslo
 Poland	Warsaw
 Portugal	Lisbon, Porto
 Romania	Bucharest
 Singapore	Singapore
 South Africa	Cape Town, Johannesburg
 Spain	Barcelona, Madrid

 Sweden Stockholm

 Switzerland Zurich

 Taiwan Taichung, Taipei

 United Kingdom Edinburgh, London

 United States Atlanta, Boston, Chicago, Detroit, Houston, Las Vegas, Los Angeles, Miami, New York City, Philadelphia, San Diego, San Francisco, Seattle

 Vatican City Vatican City

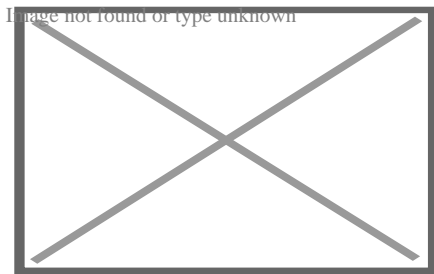
Landmark Icons

[[edit](#)]

Google added icons of city attractions, in a similar style to [Apple Maps](#), on October 3, 2019. In the first stage, such icons were added to 9 cities.^[83]

45° imagery

[[edit](#)]



An example of the [Leaning Tower of Pisa](#) in the 45° view

In December 2009, Google introduced a new view consisting of 45° angle aerial imagery, offering a "[bird's-eye view](#)" of cities. The first cities available were [San Jose](#) and San Diego. This feature was initially available only to developers via the Google Maps API.^[84] In February 2010, it was introduced as an experimental feature in Google Maps Labs.^[85] In July 2010, 45° imagery was made available in Google Maps in select cities in South Africa, the United States, Germany and Italy.^[86]

Weather

[[edit](#)]

In February 2024, Google Maps incorporated a small weather icon on the top left corner of the Android and iOS mobile apps, giving access to weather and [air quality index](#) details.^[87]

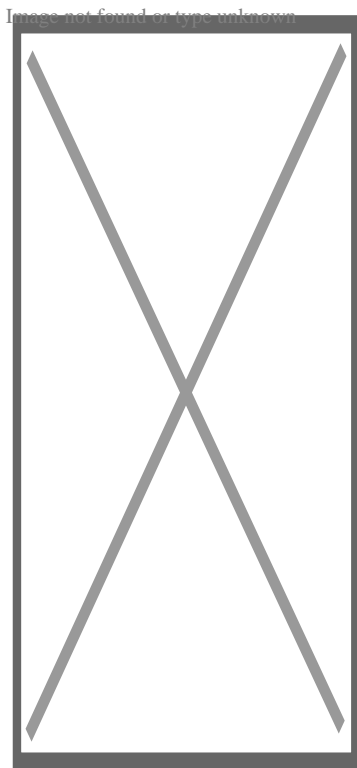
Lens in Maps

[[edit](#)]

Previously called Search with Live View, Lens In Maps identifies shops, restaurants, transit stations and other street features with a phone's camera and places relevant information and a category pin on top, like closing/opening times, current busyness, pricing and reviews using AI and **augmented reality**. The feature, if available on the device, can be accessed through tapping the Lens icon in the search bar. It was expanded to 50 new cities in October 2023 in its biggest expansion yet, after initially being released in late 2022 in Los Angeles, San Francisco, New York, London, and Paris.^{[88][89]} Lens in Maps shares features with Live View, which also displays information relating to street features while guiding a user to a selected destination with virtual arrows, signs and guidance.^[90]

Business listings

[[edit](#)]



A business listing in Google Maps showing opening times, reviews and photos. This screenshot is from the Android mobile app.

Google collates business listings from multiple on-line and off-line sources. To reduce duplication in the index, Google's algorithm combines listings automatically based on address, phone number, or geocode,^[91] but sometimes information for separate businesses will be inadvertently merged with each other, resulting in listings inaccurately incorporating elements

from multiple businesses.[92] Google allows business owners to create and verify their own business data through *Google Business Profile (GBP)*, formerly *Google My Business (GMB)*. [93] Owners are encouraged to provide Google with business information including address, phone number, business category, and photos.[94] Google has staff in India who check and correct listings remotely as well as support businesses with issues.[95] Google also has teams on the ground in most countries that validate physical addresses in person.[96] In May 2024, Google announced it would discontinue the chat feature in Google Business Profile. Starting July 15, 2024, new chat conversations would be disabled, and by July 31, 2024, all chat functionalities would end.[97]

Google Maps can be manipulated by businesses that are not physically located in the area in which they record a listing. There are cases of people abusing Google Maps to overtake their competition by placing unverified listings on online directory sites, knowing the information will roll across to Google (duplicate sites). The people who update these listings do not use a registered business name. They place keywords and location details on their Google Maps business title, which can overtake credible business listings. In Australia in particular, genuine companies and businesses are noticing a trend of fake business listings in a variety of industries.[98]

Genuine business owners can also optimize their business listings to gain greater visibility in Google Maps, through a type of search engine marketing called **local search engine optimization**. [99]

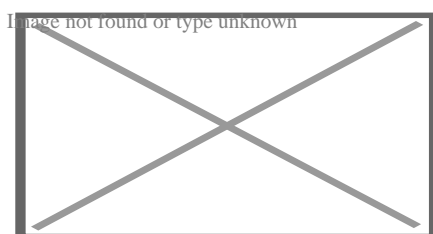
Indoor maps

[edit]

In March 2011, indoor maps were added to Google Maps, giving users the ability to navigate themselves within buildings such as **airports**, **museums**, shopping malls, **big-box stores**, universities, **transit stations**, and other public spaces (including underground facilities). Google encourages owners of public facilities to submit floor plans of their buildings in order to add them to the service.[100] Map users can view different floors of a building or **subway station** by clicking on a level selector that is displayed near any structures which are mapped on multiple levels.

My Maps

[edit]



Google My Maps

My Maps is a feature in Google Maps launched in April 2007 that enables users to create custom maps for personal use or sharing. Users can add points, lines, shapes, notes and images on top of Google Maps using a **WYSIWYG** editor.[101] An Android app for My Maps, initially released in March 2013 under the name Google Maps Engine Lite, was available until its removal from the **Play Store** in October 2021.[102][103][104]

Google Local Guides

[edit]

Google Local Guides is a volunteer program launched by Google Maps[105] to enable users to contribute to Google Maps when registered. It sometimes provides them additional perks and benefits for their collaboration. Users can achieve Level 1 to 10, and be awarded with badges. The program is partially a successor to **Google Map Maker** as features from the former program became integrated into the website and app.[106]

The program consists of adding reviews, photos, basic information, and videos; and correcting information such as **wheelchair accessibility**. [107][108] Adding reviews, photos, videos, new places, new roads or providing useful information gives points to the users. [109] The level of users is upgraded when they get a certain amount of points. [110][111] Starting with Level 4, a star is shown near the avatar of the user. [111]

Timelapse

[edit]

Earth Timelapse, released in April 2021, is a program in which users can see how the earth has been changed in the last 37 years. They combined the 15 million satellite images (roughly ten quadrillion **pixels**) to create the 35 global cloud-free Images for this program.[112]

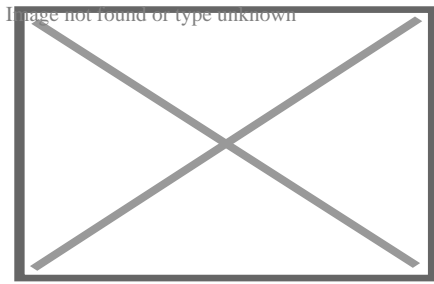
Timeline

[edit]

If a user shares their location with Google, Timeline summarises this location for each day on a **Timeline map**. [113] Timeline estimates the mode of travel used to move between places and will also show photos taken at that location. In June 2024, Google started progressively removing access to the timeline on web browsers, with the information instead being stored on a local device. [114][115]

Implementation

[[edit](#)]



A split-view screenshot of Google Maps. In the bottom half *Street Maps* is shown, while in the top half *Street View* is shown. A user can zoom in and out of either of them independently of the zoom level of each.

As the user drags the map, the grid squares are downloaded from the server and inserted into the page. When a user searches for a business, the results are downloaded in the background for insertion into the side panel and map; the page is not reloaded. A hidden [iframe](#) with form submission is used because it preserves browser history. Like many other Google web applications, Google Maps uses [JavaScript](#) extensively.^[116] The site also uses protocol buffers for data transfer rather than [JSON](#), for performance reasons.

The version of [Google Street View](#) for classic Google Maps required [Adobe Flash](#).^[117] In October 2011, Google announced MapsGL, a [WebGL](#) version of Maps with better renderings and smoother transitions.^[118] Indoor maps use JPG, .PNG, .PDF, .BMP, or .GIF, for [floor plans](#).^[119]

Users who are logged into a [Google Account](#) can save locations so that they are overlaid on the map with various colored "pins" whenever they browse the application. These "Saved places" can be organized into default groups or user named groups and shared with other users. "Starred places" is one default group example. It previously automatically created a record within the now-discontinued product [Google Bookmarks](#).

Map data and imagery

[[edit](#)]

See also: [List of satellite map images with missing or unclear data](#)

The Google Maps terms and conditions^[120] state that usage of material from Google Maps is regulated by Google Terms of Service^[121] and some additional restrictions. Google has either purchased local map data from established companies, or has entered into lease agreements to use copyrighted map data.^[122] The owner of the copyright is listed at the bottom of zoomed maps. For example, street maps in Japan are leased from [Zenrin](#). Street maps in China are leased from [AutoNavi](#).^[123] Russian street maps are leased from Geocentre Consulting and

Tele Atlas. Data for North Korea is sourced from the companion project Google Map Maker.

Street map overlays, in some areas, may not match up precisely with the corresponding satellite images. The street data may be entirely erroneous, or simply out of date: "The biggest challenge is the currency of data, the authenticity of data," said Google Earth representative Brian McClendon. As a result, in March 2008 Google added a feature to edit the locations of houses and businesses.[124][125]

Restrictions have been placed on Google Maps through the apparent censoring of locations deemed potential security threats. In some cases the area of redaction is for specific buildings, but in other cases, such as Washington, D.C.,[126] the restriction is to use outdated imagery.

Google Maps API

[edit]

Google Maps API, now called Google Maps Platform, hosts about 17 different APIs, which are themed under the following categories: Maps, Places and Routes.[127]

After the success of reverse-engineered mashups such as chicagocrime.org and housingmaps.com, Google launched the Google Maps API in June 2005[128] to allow developers to integrate Google Maps into their websites. It was a free service that did not require an API key until June 2018 (changes went into effect on July 16), when it was announced that an API key linked to a Google Cloud account with billing enabled would be required to access the API.[129] The API currently does not contain ads, but Google states in their terms of use that they reserve the right to display ads in the future.[130]

By using the Google Maps API, it is possible to embed Google Maps into an external website, onto which site-specific data can be overlaid.[131] Although initially only a JavaScript API, the Maps API was expanded to include an API for Adobe Flash applications (but this has been deprecated), a service for retrieving static map images, and web services for performing geocoding, generating driving directions, and obtaining elevation profiles. Over 1,000,000[132] web sites use the Google Maps API, making it the most heavily used web application development API.[133] In September 2011, Google announced it would deprecate the Google Maps API for Flash.[134]

The Google Maps API was free for commercial use, provided that the site on which it is being used is publicly accessible and did not charge for access, and was not generating more than 25,000 map accesses a day.[135][136] Sites that did not meet these requirements could purchase the Google Maps API for Business.[137]

As of June 21, 2018, Google increased the prices of the Maps API and requires a billing profile.[138]

Google Maps in China

[edit]

Due to [restrictions on geographic data in China](#), Google Maps must partner with a Chinese digital map provider in order to legally show Chinese map data. Since 2006, this partner has been [AutoNavi](#).^[123]

Within China, the State Council mandates that all maps of China use the [GCJ-02](#) coordinate system, which is offset from the [WGS-84](#) system used in most of the world. [google.cn/maps](#) (formerly Google Ditu) uses the GCJ-02 system for both its street maps^[139] and satellite imagery.^[140] [google.com/maps](#) also uses GCJ-02 data for the street map, but uses WGS-84 coordinates for satellite imagery,^[141] causing the so-called [China GPS shift problem](#).

Frontier alignments also present some differences between [google.cn/maps](#) and [google.com/maps](#). On the latter, sections of the Chinese border with India and Pakistan are shown with dotted lines, indicating areas or frontiers in dispute. However, [google.cn](#) shows the Chinese frontier strictly according to Chinese claims with no dotted lines indicating the border with India and Pakistan. For example, the [South Tibet](#) region claimed by China but administered by India as a large part of [Arunachal Pradesh](#) is shown inside the Chinese frontier by [google.cn](#), with Indian highways ending abruptly at the Chinese claim line. Google [cn](#) also shows Taiwan and the [South China Sea Islands](#) as part of China. Google Ditu's street map coverage of Taiwan no longer omits major state organs, such as the Presidential Palace, the [five Yuans](#), and the Supreme Court.^[142]^{[\[additional citation\(s\) needed\]](#)}

Feature-wise, [google.cn/maps](#) does not feature My Maps. On the other hand, while [google.cn](#) displays virtually all text in Chinese, [google.com/maps](#) displays most text (user-selectable real text as well as those on map) in English.^{[\[citation needed\]](#)} This behavior of displaying English text is not consistent but intermittent – sometimes it is in English, sometimes it is in Chinese. The criteria for choosing which language is displayed are not known publicly.^{[\[citation needed\]](#)}

Criticism and controversies

[edit]

Incorrect location naming

[edit]

There are cases where Google Maps had added out-of-date neighborhood monikers. Thus, in Los Angeles, the name "Brooklyn Heights" was revived from its 1870s usage^[143] and "Silver Lake Heights" from its 1920s usage,^[144] or mistakenly renamed areas (in Detroit, the neighborhood "Fiskhorn" became "Fishkorn").^[145] Because many companies utilize Google Maps data, these previously obscure or incorrect names then gain traction; the names are often used by [realtors](#), hotels, [food delivery](#) sites, [dating sites](#), and [news organizations](#).

Google has said it created its maps from third-party data, public sources, satellites, and users, but many names used have not been connected to any official record.^{[143][145]} According to a former Google Maps employee (who was not authorized to speak publicly), users can submit changes to Google Maps, but some submissions are ruled upon by people with little local knowledge of a place, such as contractors in India. Critics maintain that names like "BoCoCa" (for the area in Brooklyn between Boerum Hill, Cobble Hill and Carroll Gardens), are "just plain puzzling" or simply made up.^[145] Some names used by Google have been traced to non-professionally made maps with typographical errors that survived on Google Maps.^[145]

Potential misuse

^[edit]

See also: [Google Street View privacy concerns](#) and [List of satellite map images with missing or unclear data](#)

In 2005 the [Australian Nuclear Science and Technology Organisation](#) (ANSTO) complained about the potential for terrorists to use the satellite images in planning attacks, with specific reference to the [Lucas Heights nuclear reactor](#); however, the Australian Federal government did not support the organization's concern. At the time of the ANSTO complaint, Google had colored over some areas for security (mostly in the U.S.), such as the rooftop of the [White House](#) and several other Washington, D.C. buildings.^{[146][147][148]}

In October 2010, Nicaraguan military commander [Edén Pastora stationed Nicaraguan troops](#) on the [Isla Calero](#) (in the delta of the [San Juan River](#)), justifying his action on the border delineation given by Google Maps. Google has since updated its data which it found to be incorrect.^[149]

On January 27, 2014, documents leaked by [Edward Snowden](#) revealed that the [NSA](#) and the [GCHQ](#) intercepted Google Maps queries made on smartphones, and used them to locate the users making these queries. One leaked document, dating to 2008, stated that "[i]t effectively means that anyone using Google Maps on a smartphone is working in support of a GCHQ system."^[150]

In May 2015, searches on Google Maps for offensive racial epithets for African Americans such as "[nigger](#)", "nigger king", and "nigger house" pointed the user to the [White House](#); Google apologized for the incident.^{[151][152]}

In December 2015, 3 Japanese [netizens](#) were charged with vandalism after they were found to have added an unrelated law firm's name as well as indecent names to locations such as "[Nuclear test site](#)" to the [Atomic Bomb Dome](#) and "Izumo [Satya](#)" to the [Izumo Taisha](#).^{[153][154]}

In February 2020, the artist Simon Weckert^[155] used 99 cell phones to fake a Google Maps traffic jam.^[156]

In September 2024, several schools in Taiwan and Hong Kong were altered to incorrect labels, such as "[psychiatric hospitals](#)" or "[prisons](#)". Initially, it was believed to be the result of hacker attacks. However, police later revealed that local students had carried out the prank. Google quickly corrected the mislabeled entries. Education officials in Taiwan and Hong Kong expressed concern over the incident.^{[157][158][159]}

Misdirection incidents

[\[edit\]](#)

Australia

[\[edit\]](#)

In August 2023, a woman driving from [Alice Springs](#) to the Harts Range Racecourse was stranded in the Central Australian desert for a night after following directions provided by Google Maps.^{[160][161]} She later discovered that Google Maps was providing directions for the actual [Harts Range](#) instead of the rodeo. Google said it was looking into the naming of the two locations and consulting with "local and authoritative sources" to solve the issue.^[160]

In February 2024, two German tourists were stranded for a week after Google Maps directed them to follow a dirt track through [Oyala Thumotang National Park](#) and their vehicle became trapped in mud.^{[162][163]} [Queensland Parks and Wildlife Service](#) ranger Roger James said, "People should not trust Google Maps when they're travelling in remote regions of [Queensland](#), and they need to follow the signs, use official maps or other navigational devices."^[162]

North America

[\[edit\]](#)

In June 2019, Google Maps provided nearly 100 [Colorado](#) drivers an alternative route that led to a dirt road after a crash occurred on [Peña Boulevard](#). The road had been turned to mud by rain, resulting in nearly 100 vehicles being trapped.^{[164][161]} Google said in a statement, "While we always work to provide the best directions, issues can arise due to unforeseen circumstances such as weather. We encourage all drivers to follow local laws, stay attentive, and use their best judgment while driving."^[164]

In September 2023, Google was sued by a [North Carolina](#) resident who alleged that Google Maps had directed her husband over the Snow Creek Bridge in [Hickory](#) the year prior, resulting in him drowning. According to the lawsuit, multiple people had notified Google about the state of the bridge, which collapsed in 2013, but Google had not updated the route information and continued to direct users over the bridge.^{[165][166][161]} At the time of the man's death, the barriers placed to block access to the bridge had been vandalized.^{[167][168]}

In November 2023, a hiker was rescued by helicopter on the backside of **Mount Fromme** in **Vancouver**. **North Shore Rescue** stated on its Facebook page that the hiker had followed a non-existent hiking trail on Google Maps. This was also the second hiker in two months to require rescuing after following the same trail. The fake trail has since been removed from the app.[169][170]

Also in November 2023, Google apologized after users were directed through desert roads after parts of **Interstate 15** were closed due to a **dust storm**.^[171] Drivers became stranded after following the suggested detour route, which was a "bumpy dirt trail".^[172] Following the incident, Google stated that Google Maps would "no longer route drivers traveling between **Las Vegas** and **Barstow** down through those roads."^[171]

Russia

[edit]

In 2020, a teenage motorist was found frozen to death while his passenger was still alive but suffered from severe **frostbite** after using Google Maps, which had led them to a shorter but abandoned section of the **R504 Kolyma Highway**, where their **Toyota Chaser** became disabled.[173]

India

[edit]

In 2024, three men from **Uttar Pradesh** died after their car fell from an under-construction bridge. They were using Google Maps for driving which misdirected them and the car fell into the **Ramganga** river.[174][175]

Renaming of the Gulf of Mexico

[edit]

In February 2025, as a response to Donald Trump's **Executive Order 14172**, the **Gulf of Mexico** was renamed to "Gulf of America" for US users and "Gulf of Mexico (Gulf of America)" elsewhere, except for Mexico itself where it remained the Gulf of Mexico. The decision received criticism, with Mexican president **Claudia Sheinbaum** asking Google to reconsider its decision.[176] Google subsequently blocked and deleted negative reviews of the gulf after the name change occurred.[177][178]

Discontinued features

[edit]

Google Latitude

[[edit](#)]

Main article: [Google Latitude](#)

Google Latitude was a feature that let users share their physical locations with other people. This service was based on Google Maps, specifically on mobile devices. There was an iGoogle widget for desktops and laptops as well.^[179] Some concerns were expressed about the privacy issues raised by the use of the service.^[180] On August 9, 2013, this service was discontinued,^[181] and on March 22, 2017, Google incorporated the features from Latitude into the Google Maps app.^[182]

Google Map Maker

[[edit](#)]

Main article: [Google Map Maker](#)

In areas where Google Map Maker was available, for example, much of Asia, Africa, Latin America and Europe as well as the United States and Canada, anyone who logged into their Google account could directly improve the map by fixing incorrect driving directions, adding biking trails, or adding a missing building or road. General map errors in Australia, Austria, Belgium, Denmark, France, Liechtenstein, Netherlands, New Zealand, Norway, South Africa, Switzerland, and the United States could be reported using the Report a Problem link in Google Maps and would be updated by Google.^[183] For areas where Google used [Tele Atlas](#) data, map errors could be reported using Tele Atlas map insight.^[184]

If imagery was missing, outdated, misaligned, or generally incorrect, one could notify Google through their contact request form.^[185]

In November 2016, Google announced the discontinuation of Google Map Maker as of March 2017.^[186]

Mobile app

[[edit](#)]

Screenshot

Image not found or type unknown



Screenshot of Google Maps on **Android 14**

Android

25.10.04 (Build 732665141) / 7 March 2025; 10 days ago[187][188]

Wear OS

25.09.00 (Build 730474011) / 25 February 2025; 20 days ago[187][189]

iOS

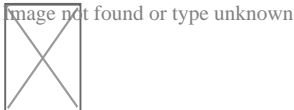
25.10.02 / 7 March 2025; 10 days ago[190]

**Android Go,[a]
discontinued**

161.1 / 13 October 2023; 17 months ago[191][192]

Android (Beta) 11.143.0303 / 20 August 2024; 6 months ago[193]

Google Maps



Original author(s) Google

Initial release 2006; 19 years ago

Stable release(s) [±]

Preview release(s) [±]

Operating system

- **Android**
- **iOS**
- **KaiOS Wear OS WatchOS Web Fitbit OS**

Formerly: **Java ME**, **Symbian**, **Windows Mobile**

Google Maps is available as a **mobile app** for the **Android** and **iOS** mobile operating systems. The first mobile version of Google Maps (then known as Google Local for Mobile) was launched in beta in November 2005 for mobile platforms supporting **J2ME**.^{[194][195][196]} It was released as Google Maps for Mobile in 2006.^[197] In 2007 it came preloaded on the **first iPhone** in a deal with Apple.^[198] A version specifically for **Windows Mobile** was released in February 2007^[199] and the **Symbian** app was released in November 2007.^[200]

Version 2.0 of Google Maps Mobile was announced at the end of 2007, with a stand out *My Location* feature to find the user's location using the cell towers, without needing **GPS**.^{[201][202][203]} In September 2008, Google Maps was released for and preloaded on Google's own new platform Android.^{[204][205]}

Up until **iOS 6**, the built-in maps application on the **iOS** operating system was powered by Google Maps. However, with the announcement of iOS 6 in June 2012, **Apple** announced that

they had created their own [Apple Maps](#) mapping service,^[206] which officially replaced Google Maps when iOS 6 was released on September 19, 2012.^[207] However, at launch, Apple Maps received significant criticism from users due to inaccuracies, errors and [bugs](#).^{[208][209]} One day later, [The Guardian](#) reported that Google was preparing its own Google Maps app,^[210] which was released on December 12, 2012.^{[211][212]} Within two days, the application had been downloaded over ten million times.^[213]

Features

[\[edit\]](#)

The Google Maps apps for iOS and Android have many of the same features, including [turn-by-turn navigation](#), [street view](#), and public transit information.^{[214][215]} Turn-by-turn navigation was originally announced by Google as a separate beta testing app exclusive to Android 2.0 devices in October 2009.^{[216][217]} The original standalone iOS version did not support the [iPad](#),^[215] but tablet support was added with version 2.0 in July 2013.^[218] An update in June 2012 for Android devices added support for offline access to downloaded maps of certain regions,^{[219][220]} a feature that was eventually released for iOS devices, and made more robust on Android, in May 2014.^{[221][222]}

At the end of 2015 Google Maps announced its new offline functionality,^[223] but with various limitations – downloaded area cannot exceed 120,000 square kilometers^{[224][225]} and require a considerable amount of storage space.^[226] In January 2017, Google added a feature exclusively to Android that will, in some U.S. cities, indicate the level of difficulty in finding available parking spots,^[227] and on both Android and iOS, the app can, as of an April 2017 update, remember where users parked.^{[228][229]} In August 2017, Google Maps for Android was updated with new functionality to actively help the user in finding parking lots and garages close to a destination.^[230] In December 2017, Google added a new two-wheeler mode to its Android app, designed for users in India, allowing for more accessibility in traffic conditions.^{[231][232]} In 2019 the Android version introduced the new feature called live view that allows to view directions directly on the road thanks to [augmented reality](#).^[233] Google Maps won the 2020 Webby Award for Best User Interface in the category Apps, Mobile & Voice.^[234] In March 2021, Google added a feature in which users can draw missing roads.^[235] In June 2022, Google implemented support for toll calculation. Both iOS and Android apps report how much the user has to pay in tolls when a route that includes toll roads is input. The feature is available for roads in the US, India, Japan and Indonesia with further expansion planned. As per reports the total number of toll roads covered in this phase is around 2000.^[236]

Reception

[\[edit\]](#)

[USA Today](#) welcomed the application back to iOS, saying: "The reemergence in the middle of the night of a Google Maps app for the iPhone is like the return of an old friend. Only your

friend, who'd gone missing for three months, comes back looking better than ever." [237] Jason Parker of *CNET*, calling it "the king of maps", said, "With its iOS Maps app, Google sets the standard for what mobile navigation should be and more." [238] Bree Fowler of the *Associated Press* compared Google's and Apple's map applications, saying: "The one clear advantage that Apple has is style. Like Apple devices, the maps are clean and clear and have a fun, pretty element to them, especially in 3-D. But when it comes down to depth and information, Google still reigns superior and will no doubt be welcomed back by its fans." [239] *Gizmodo* gave it a ranking of 4.5 stars, stating: "Maps Done Right". [240] According to *The New York Times*, Google "admits that it's [iOS app is] even better than Google Maps for Android phones, which has accommodated its evolving feature set mainly by piling on menus". [241]

Google Maps' **location tracking** is regarded by some as a threat to users' privacy, with Dylan Tweney of *VentureBeat* writing in August 2014 that "Google is probably logging your location, step by step, via Google Maps", and linked users to Google's location history map, which "lets you see the path you've traced for any given day that your smartphone has been running Google Maps". Tweney then provided instructions on how to disable location history. [242] The history tracking was also noticed, and recommended disabled, by editors at *CNET* [243] and *TechCrunch*. [244] Additionally, *Quartz* reported in April 2014 that a "sneaky new privacy change" would have an effect on the majority of iOS users. The privacy change, an update to the *Gmail* iOS app that "now supports sign-in across Google iOS apps, including Maps, *Drive*, YouTube and *Chrome*", meant that Google would be able to identify users' actions across its different apps. [245]

The Android version of the app surpassed five billion installations in March 2019. [246] By November 2021, the Android app had surpassed 10 billion installations. [247]

Go version

[[edit](#)]

Google Maps Go, a version of the app designed for **lower-end devices**, was released in beta in January 2018. [248] By September 2018, the app had over 10 million installations. [249]

Artistic and literary uses

[[edit](#)]

The German "geo-novel" *Senghor on the Rocks* (2008) presents its story as a series of spreads showing a Google Maps location on the left and the story's text on the right. Annika Richterich explains that the "satellite pictures in *Senghor on the Rocks* illustrate the main character's travel through the West-African state of *Senegal*". [250]

Artists have used Google Street View in a range of ways. *Emilio Vavarella's The Google Trilogy* includes glitchy images and unintended portraits of the drivers of the Street View cars. [251] The

Japanese band [group inou](#) used Google Street View backgrounds to make a music video for their song EYE.^[252] The Canadian band [Arcade Fire](#) made a customized music video that used Street View to show the viewer their own childhood home.^[253]^[254]

See also

[[edit](#)]

- icon

Image not found or too big to know
- [Internet portal](#)
- [Azure Maps](#)
 - [Apple Maps](#)
 - [Bing Maps](#)
 - [Comparison of web map services](#)
 - [GeoGuessr](#)
 - [Google Earth](#)
 - [Google Maps Road Trip](#), live-streaming documentary
 - [Here WeGo](#)
 - [MapQuest](#)
 - [OpenStreetMap](#)
 - [Terravision \(computer program\)](#)
 - [Wikiloc](#), a mashup that shows trails and waypoints on Google Maps
 - [Wikimapia](#), a mashup combining Google Maps and a [wiki](#) aimed at "describing the whole planet earth"
 - [Yandex Maps](#), popular in Russia and [CIS](#)

Notes

[[edit](#)]

- ↑ Lite version for Android

References

[[edit](#)]

- ↑ *"Google Maps Metrics and Infographics"*. Google Maps for iPhone. *Archived* from the original on March 21, 2022. Retrieved April 1, 2021.
- ↑ *"Our history in depth"*. Google Company. Archived from *the original* on April 6, 2016. Retrieved June 13, 2016.
- ↑ *"Google Maps API"*. Google Developers. *Archived* from the original on April 20, 2012.
- ↑ Perez, Sarah (November 8, 2016). *"Google to shut down Map Maker, its crowdsourced map editing tool"*. TechCrunch. *Archived* from the original on August 11, 2017. Retrieved June 23, 2017.

5. ^ ["Blurry or outdated imagery"](#). Google Earth Help. [Archived](#) from the original on October 24, 2013. Retrieved January 12, 2014.
6. ^ Anderson, Frank (October 18, 2011). ["How Often is Google Maps and Google Earth Updated?"](#). TechnicaMix. [Archived](#) from the original on December 3, 2013. Retrieved November 24, 2013.
7. ^ ["Map Types – Google Maps JavaScript API v3 — Google Developers"](#). Google Inc. July 27, 2012. [Archived](#) from the original on January 15, 2013. Retrieved January 3, 2013.
8. ^ ["Google+ Smartphone App Popularity"](#). Business Insider. [Archived](#) from the original on September 6, 2013. Retrieved September 6, 2013.
9. ^ ["Google mapper: Take browsers to the limit"](#). CNET. [Archived](#) from the original on October 26, 2012. Retrieved January 3, 2013.
10. ^ Kiss, Jemima (June 17, 2009). ["Secrets of a nimble giant"](#). London: Guardian. [Archived](#) from the original on February 19, 2014. Retrieved October 30, 2010.
11. ^ [Orlowski, Andrew](#) (October 28, 2004). ["Google buys CIA-backed mapping startup"](#). [The Register](#). [Archived](#) from the original on February 11, 2017. Retrieved April 27, 2017.
12. ^ [Bazeley, Michael](#) (March 30, 2005). ["Google acquires traffic info start-up Zipdash"](#). [SiliconBeat](#). [Archived](#) from the original on January 2, 2008. Retrieved January 8, 2008.
13. ^ [Taylor, Bret](#) (February 8, 2005). ["Mapping your way"](#). Official Google Blog. [Archived](#) from the original on May 25, 2010. Retrieved January 12, 2010.
14. ^ ["Google accused of airbrushing Katrina history"](#). NBC News. The Associated Press. March 30, 2007. [Archived](#) from the original on November 3, 2020. Retrieved April 17, 2020.
15. ^ [Claburn, Thomas](#) (April 2, 2007). ["Google Restores Katrina's Scars To Google Earth"](#). [Information Week](#). [Archived](#) from the original on August 19, 2009.
16. ^ ["Google Maps User Guide"](#). Google Maps. [Archived](#) from the original on November 5, 2007. Retrieved November 21, 2021.
17. ^ ["Google Announces Launch of Google Maps for Mobile With "My Location" Technology"](#). News from Google. November 28, 2007. [Archived](#) from the original on April 26, 2017. Retrieved April 25, 2017.
18. ^ [a b](#) [Marshall, Matt](#) (November 28, 2007). ["Google releases useful "my location" feature for cellphones"](#). [VentureBeat](#). [Archived](#) from the original on April 25, 2017. Retrieved April 25, 2017.
19. ^ [a b](#) [Schonfeld, Erick](#) (November 28, 2007). ["Google Mobile Maps PinPoints Your Location Without GPS"](#). [TechCrunch](#). AOL. [Archived](#) from the original on April 26, 2017. Retrieved April 25, 2017.
20. ^ [Ray, Bill](#) (November 29, 2007). ["Google Maps Mobile knows where you are"](#). [The Register](#). Situation Publishing. [Archived](#) from the original on October 25, 2020. Retrieved April 25, 2017.
21. ^ [Mills, Elinor](#) (November 28, 2007). ["Google Maps for Mobile adds 'My Location' feature"](#). [CNET](#). [CBS Interactive](#). [Archived](#) from the original on October 29, 2020. Retrieved April 25, 2017.
22. ^ [Overbo, Mike](#) (November 28, 2007). ["Google Maps: My Location"](#). iMore. [Archived](#) from the original on April 26, 2017. Retrieved April 25, 2017.

23. ^ Vanlerberghe, Mac (September 23, 2008). *"Google on Android"*. Google Mobile Blog. *Archived* from the original on December 7, 2017. Retrieved April 30, 2017.
24. ^ Tseng, Erick (September 23, 2008). *"The first Android-powered phone"*. Official Google Blog. *Archived* from the original on December 7, 2017. Retrieved April 30, 2017.
25. ^ *"Google Replaces Tele Atlas Data in US with Google StreetView Data"*. blumenthals.com. October 12, 2009. *Archived* from the original on October 15, 2009.
26. ^ *"France Convicts Google for Its Free(dom)"*. NBC San Diego. February 3, 2012. *Archived* from the original on October 18, 2014. Retrieved October 13, 2014.
27. ^ *"France: Google wins court decision vs Evermaps"*. November 29, 2015. *Archived* from the original on October 22, 2020. Retrieved November 21, 2018.
28. ^ *"Google begins mapping UK rivers"*. The Daily Telegraph. June 19, 2012. *Archived* from the original on June 19, 2012. Retrieved June 20, 2012.*cite web: CS1 maint: bot: original URL status unknown (link)*
29. ^ *"Google Maps for iOS Hits Apple App Store"*. PCMag. *Archived* from the original on December 16, 2012. Retrieved December 12, 2012.
30. ^ Sieczkowski, Cavan (January 29, 2013). *"Google Maps North Korea: Prison Camps, Nuclear Complexes Pinpointed In New Images (PHOTOS)"*. The Huffington Post. *Archived* from the original on February 9, 2013. Retrieved May 20, 2013.
31. ^ *"Google changes Palestinian location from 'Territories' to 'Palestine'"*. Fox News. Associated Press. May 3, 2013. *Archived* from the original on May 21, 2013. Retrieved May 20, 2013.
32. ^ *Google Maps Drops Wikipedia Layer Archived* October 6, 2013, at the *Wayback Machine*. Search Engine Roundtable. (September 10, 2013)
33. ^ *"Google Maps Displays Crimean Border Differently In Russia, U.S."* NPR.org. April 12, 2014. *Archived* from the original on November 26, 2014. Retrieved December 4, 2014.
34. ^ Hern, Alex (April 24, 2015). *"Google Maps hides an image of the Android robot urinating on Apple"*. The Guardian. *Archived* from the original on May 17, 2015. Retrieved May 22, 2015.
35. ^ Kanakarajan, Pavithra (May 22, 2015). *"Map Maker will be temporarily unavailable for editing starting May 12, 2015"*. Google Product Forums. *Archived* from the original on December 3, 2018. Retrieved May 10, 2015.
36. ^ *"Google Is Getting Rid of Classic Maps for Good (Ugh.)"*. April 29, 2015. *Archived* from the original on May 15, 2015. Retrieved May 14, 2015.
37. ^ *"Google Maps alters disputed South China Sea shoal name"*. BBC News. July 14, 2015. *Archived* from the original on July 14, 2015. Retrieved July 14, 2015.
38. ^ Meyer, Robinson (June 27, 2016). *"Google's Satellite Map Gets a 700-Trillion-Pixel Makeover"*. The Atlantic. *Archived* from the original on June 27, 2016. Retrieved June 27, 2016.
39. ^ Heater, Brian (September 16, 2016). *"Google Maps picks up mapping analytics and visualization startup Urban Engines"*. TechCrunch. *Archived* from the original on September 17, 2016. Retrieved September 16, 2016.
40. ^ Badalge, Keshia; Fairchild, Cullen (February 26, 2018). *"One thing North Korea has that the South doesn't: Google Maps"*. Asia Times. *Archived* from the original on January 25, 2024. Retrieved March 4, 2021.

41. ^ Marquardt, Stafford (October 16, 2017). *"Space out with planets in Google Maps"*. Blog.Google. Archived from the original on October 16, 2017. Retrieved October 17, 2017.
42. ^ Lardinois, Frederic (October 16, 2017). *"Google Maps now lets you explore your local planets and moons"*. TechCrunch. Archived from the original on October 16, 2017. Retrieved October 17, 2017.
43. ^ Protalinski, Emil (May 2, 2018). *"Google Maps Platform arrives with pay-as-you-go billing, free support, and Cloud requirement starting June 11"*. VentureBeat. Archived from the original on December 4, 2018. Retrieved April 3, 2019.
44. ^ Singh, Ishveena (May 3, 2018). *"Developers up in arms over Google Maps API 'insane' price hike"*. Geoawesomeness. Archived from the original on August 8, 2020. Retrieved August 7, 2020.
45. ^ *"Google Maps now depicts the Earth as a globe"*. The Verge. Archived from the original on November 11, 2020. Retrieved August 6, 2018.
46. ^ *"Speed trap warnings begin rolling out to some Google Maps users"*. Android Central. January 16, 2019. Archived from the original on October 22, 2020. Retrieved January 16, 2019.
47. ^ *"Google Maps shows you how fast you're driving. Here's how"*. CNET. June 9, 2019. Archived from the original on November 23, 2020. Retrieved June 10, 2019.
48. ^ *"New ways to report driving incidents on Google Maps"*. Google. October 17, 2019. Archived from the original on October 22, 2020. Retrieved April 20, 2020.
49. ^ *"Updates to Incognito mode and your Timeline in Maps"*. Google. December 9, 2019. Archived from the original on January 24, 2021. Retrieved April 20, 2020.
50. ^ *"Google Maps is turning 15! Celebrate with a new look and features"*. Google. February 6, 2020. Archived from the original on January 10, 2021. Retrieved April 20, 2020.
51. ^ *"Navigate safely with new COVID data in Google Maps"*. Google. September 23, 2020. Archived from the original on December 3, 2020. Retrieved September 23, 2020.
52. ^ Valinsky, Jordan (January 25, 2021). *"Google Maps will soon display Covid-19 vaccination sites"*. CNN. Archived from the original on January 25, 2021. Retrieved January 25, 2021.
53. ^ Bogdan, Popa (January 28, 2021). *"Google Releases Big Google Maps Update for a Next-Generation Driving Experience"*. autoevolution. Archived from the original on January 28, 2021. Retrieved January 28, 2021.
54. ^ *"How to use Google Maps to see air quality?"*. MARCA. June 13, 2022. Archived from the original on June 16, 2022. Retrieved June 16, 2022.
55. ^ Schoon, Ben (October 26, 2022). *"Google Maps has removed its COVID-19 layer"*. 9to5Google. Archived from the original on April 10, 2023. Retrieved April 10, 2023.
56. ^ Luckerson, Victor (February 9, 2015). *"10 Google Maps Tricks You Need to Know"*. Time. Archived from the original on February 9, 2015. Retrieved December 7, 2017.
57. ^ *"Get directions and show routes"*. Google Maps Help. Google Inc. Archived from the original on July 2, 2016. Retrieved December 7, 2017.
58. ^ Brown, Jessica (September 26, 2017). *"Google Maps must improve if it wants cyclists to use it"*. The Guardian. Archived from the original on December 21, 2020. Retrieved July 12, 2018.

59. ^ ["The Case for Unshackling Transit Data"](#). CityLab. Archived from [the original](#) on January 20, 2021. Retrieved July 12, 2018.
60. ^ ["Google Maps may soon get a dark mode and ability to star transit lines"](#). xda-developers. October 10, 2019. Archived from the original on October 20, 2020. Retrieved October 11, 2019.
61. ^ ["Google Maps rolls out end-to-end directions for bikeshare users"](#). TechCrunch. July 20, 2020. Archived from the original on January 26, 2021. Retrieved July 24, 2020.
62. ^ Li, Abner (February 27, 2024). ["Google Maps adds 'Glanceable directions while navigating' setting"](#). 9to5Google. Archived from the original on March 3, 2024. Retrieved May 2, 2024.
63. ^ Weatherbed, Jess (February 28, 2024). ["Google Maps is finally rolling out glanceable directions"](#). The Verge. Archived from the original on May 2, 2024. Retrieved May 2, 2024.
64. ^ Wang, David (February 28, 2007). ["Stuck in traffic?"](#). Archived from the original on February 12, 2017. Retrieved February 13, 2014.
65. ^ ["Real time traffic information with Google Maps"](#). CrackBerry. March 22, 2007. Archived from the original on July 5, 2014. Retrieved June 23, 2014.
66. ^ Matthews, Susan E. (July 3, 2013). ["How Google Tracks Traffic"](#). The Connectivist. Archived from [the original](#) on February 22, 2014.
67. ^ Barth, Dave (August 25, 2009). ["The Bright Side of Sitting in Traffic: Crowdsourcing Road Congestion Data"](#). Official Google Blog. Archived from the original on February 4, 2018. Retrieved April 3, 2019.
68. ^ Matthews, Susan E. (July 3, 2013). ["How Google Tracks Traffic"](#). The Connectivist. Archived from [the original](#) on February 22, 2014. Retrieved February 13, 2014.
69. ^ ["Help Google Maps find my location"](#). Google Inc. Archived from the original on October 24, 2020. Retrieved December 8, 2016.
70. ^ ["The Google 'ick' factor"](#). July 15, 2007. Archived from [the original](#) on August 17, 2009. Retrieved July 9, 2009.
71. ^ Poulsen, Kevin (July 15, 2007). ["Want Off Street View?"](#). Wired. Archived from the original on June 18, 2007.
72. ^ Petronzio i, Matt (August 22, 2012). ["11 Fascinating Facts About Google Maps"](#). Mashable. Archived from the original on April 10, 2015. Retrieved April 3, 2015. "Google employs automatic face and license plate blurring technology to protect people's privacy in Street View, and users can even request additional blurring. Aerial imagery provides much less detail and resolution."
73. ^ ["Google begins blurring faces in Street View"](#). May 13, 2008. Archived from the original on June 26, 2011. Retrieved June 11, 2020.
74. ^ ["How Google Street View Became An Art Form"](#). Fast Company. May 25, 2017. Archived from the original on November 25, 2020. Retrieved July 12, 2018.
75. ^ ["Google Launches Underwater Street View"](#). November 16, 2014. Archived from the original on November 29, 2014.
76. ^ ["Explore the world with tour guide and 3D imagery in Google Earth 7"](#). Google LatLong Blog. Archived from the original on January 28, 2016. Retrieved July 24, 2016.
77. ^ ["Google Earth adds new 3D imagery in 21 cities to its 11,000 guided tours of our planet"](#). November 2012. Archived from the original on February 21, 2019. Retrieved July 24, 2016

- .
78. ^ ["Immersive view coming soon to Maps — plus more updates"](#). May 11, 2022. [Archived from the original on May 13, 2022](#). Retrieved May 13, 2022.
 79. ^ ["4 new updates that make Maps look and feel more like the real world"](#). Google. September 28, 2022. [Archived from the original on December 27, 2023](#). Retrieved December 27, 2023.
 80. ^ ["New ways Maps is getting more immersive and sustainable"](#). Google. February 8, 2023. [Archived from the original on December 27, 2023](#). Retrieved December 27, 2023.
 81. ^ ["New ways AI is making Maps more immersive"](#). Google. May 10, 2023. [Archived from the original on December 27, 2023](#). Retrieved December 27, 2023.
 82. ^ ["New Maps updates: Immersive View for routes and other AI features"](#). Google. October 26, 2023. [Archived from the original on December 18, 2023](#). Retrieved December 27, 2023.
 83. ^ ["Google Maps Adds Apple-Style Landmark Icons"](#).[\[permanent dead link \]](#)
 84. ^ Wilson, Randy (December 8, 2009). ["Google LatLong: Changing your perspective"](#). Google-latlong.blogspot.com. [Archived from the original on October 17, 2010](#). Retrieved September 18, 2010.
 85. ^ Schroeder, Stan (February 12, 2010). ["Google Maps Get Labs With 9 Cool New Features"](#). Mashable. [Archived from the original on February 16, 2017](#). Retrieved April 3, 2019.
 86. ^ Axon, Samuel (July 11, 2010). ["Google Maps Adds 45° Aerial Imagery For All Users"](#). Mashable. [Archived from the original on December 17, 2017](#). Retrieved April 3, 2019.
 87. ^ ["How to check weather & air quality details on Google Maps"](#). The Indian Express. February 7, 2024. [Archived from the original on February 8, 2024](#). Retrieved February 9, 2024.
 88. ^ Li, Abner (November 17, 2022). ["Google Maps getting Live View AR search in these cities as Lens adds 'near me' food lookup"](#). 9to5Google. [Archived from the original on March 30, 2023](#). Retrieved January 14, 2024.
 89. ^ ["New Maps updates: Lens in Maps and other AI features"](#). Google. October 26, 2023. [Archived from the original on January 14, 2024](#). Retrieved January 14, 2024.
 90. ^ ["Use Live View on Google Maps - Android - Google Maps Help"](#). support.google.com. [Archived from the original on January 14, 2024](#). Retrieved January 14, 2024.
 91. ^ ["The Google Local map results have "merged" our listing with another in the same building – Maps Help"](#). April 22, 2009. [Archived from the original on January 2, 2021](#). Retrieved January 13, 2010.
 92. ^ ["Google Maps Merging Mania Due to Algo-Change"](#). April 29, 2009. [Archived from the original on May 3, 2009](#).
 93. ^ Madrigal, Matt (November 4, 2021). ["Connect with local holiday shoppers"](#). Google Ads & Commerce Blog. Google. [Archived from the original on January 3, 2018](#). Retrieved November 4, 2021.
 94. ^ ["How to Put Your Business on Google Maps"](#). Spark SEO. June 8, 2020. [Archived from the original on October 22, 2020](#). Retrieved June 23, 2020.
 95. ^ Steele, Adam (April 12, 2020). ["How To Contact Google My Business Support Online & By Phone"](#). Loganix. [Archived from the original on October 20, 2020](#). Retrieved June 23,

2020.

96. ^ Helft, Miguel (November 17, 2009). "Online Maps: Everyman Offers New Directions". *New York Times*. Archived from the original on March 12, 2017. Retrieved April 27, 2017.
97. ^ "Changes to Google Business Profile chat - Google Business Profile Help". support.google.com. Archived from the original on May 29, 2024. Retrieved May 29, 2024.
98. ^ Revell, Timothy (April 7, 2017). "Thousands of fake companies added to Google Maps every month". *New Scientist*. Archived from the original on April 16, 2017. Retrieved April 15, 2017.
99. ^ Widewail. "Improve Local SEO With Google Reviews | Widewail". www.widewail.com. Archived from the original on October 30, 2023. Retrieved October 24, 2023.
100. ^ "Inside Google's Fascinating Stash of 10,000 Indoor Maps". WIRED. Archived from the original on November 12, 2020. Retrieved July 12, 2018.
101. ^ Marshall, Matt (April 5, 2007). "Google releases My Maps". *VentureBeat*. Archived from the original on April 4, 2019. Retrieved April 4, 2019.
102. ^ Lardinois, Frederic (March 27, 2013). "Google Launches Maps Engine Lite, Makes It Easy To Create Advanced Custom Maps". *TechCrunch*. Archived from the original on April 4, 2019. Retrieved April 4, 2019.
103. ^ Pratap, Ketan (September 17, 2014). "Google Rebrands Maps Engine to 'My Maps', Adds Improved Search and More". *NDTV Gadgets 360*. Archived from the original on April 4, 2019. Retrieved April 4, 2019.
104. ^ "Deprecation of My Maps for Android - My Maps Help". support.google.com. Archived from the original on August 3, 2022. Retrieved August 3, 2022.
105. ^ "Local Guides". Google. Archived from the original on April 8, 2023. Retrieved August 3, 2023.
106. ^ "Google Map Maker has closed". Google Map Maker help. Archived from the original on June 19, 2016. Retrieved August 3, 2018.
107. ^ "Google Testing Video Reviews in Maps". *NDTV Gadgets360.com*. Archived from the original on October 24, 2020. Retrieved June 20, 2018.
108. ^ "Google calls on Local Guides to add wheelchair info to Maps". *SlashGear*. September 7, 2017. Archived from the original on October 26, 2020. Retrieved July 12, 2018.
109. ^ Southern, Matt G. (May 13, 2022). "Google Local Guides Program: How To Earn Points & Badges". *Search Engine Journal*. Archived from the original on January 21, 2023. Retrieved January 21, 2023.
110. ^ "Local Guides". maps.google.com. Archived from the original on February 7, 2019. Retrieved January 21, 2023.
111. ^ a b "Points, levels, and badging - Local Guides Help". support.google.com. Archived from the original on January 21, 2023. Retrieved January 21, 2023.
112. ^ "Google Earth's new time travel feature is a gigantic bummer". *Trusted Reviews*. April 15, 2021. Archived from the original on April 16, 2021. Retrieved April 16, 2021.
113. ^ Antonelli, William (November 26, 2021). "How to check your Google Maps timeline and see every place you've traveled". *Business Insider*. Archived from the original on July 3, 2023. Retrieved June 20, 2024.
114. ^ "Update Google Maps to use Timeline on your device - Computer - Google Maps Help". support.google.com. Archived from the original on June 15, 2024. Retrieved June 15,

2024.

115. ^ "Google Maps gets rid of another feature on Web". Yahoo Tech. June 5, 2024. *Archived from the original on June 15, 2024*. Retrieved June 15, 2024.
116. ^ Gautham, A. S. "Google Revises Their Map, Adds Offline Version and 3D Imaging". TechGau.org. *Archived from the original on June 13, 2012*. Retrieved June 9, 2012.
117. ^ Arthur, Charles (March 20, 2009). "Where the streets all have Google's name". *The Guardian*. *Archived from the original on March 5, 2017*. Retrieved April 27, 2017.
118. ^ McClendon, Brian (October 13, 2011). "Step inside the map with Google MapsGL". Official Google Blog. *Archived from the original on April 10, 2012*. Retrieved April 25, 2012.
119. ^ "Use indoor maps to view floor plans – Computer". Google Maps Help. *Archived from the original on February 27, 2017*.
120. ^ "Google Maps/Google Earth Additional Terms of Service". Google Maps. *Archived from the original on February 8, 2010*. Retrieved January 13, 2010.
121. ^ "Google Terms of Service". Google. *Archived from the original on January 25, 2012*. Retrieved January 13, 2010.
122. ^ "Legal Notices for Google Maps/Google Earth and Google Maps/Google Earth APIs". Google. *Archived from the original on January 19, 2021*. Retrieved October 3, 2019.
123. ^ **a b** Lee, Mark (July 5, 2012). "Apple Shares Google China Map Partner in Win for Autonavi". *Bloomberg News*. *Archived from the original on October 18, 2014*.
124. ^ "Improve information in Google Maps for the world to see". Google Maps. *Archived from the original on December 12, 2007*.
125. ^ Balakrishnan, Ramesh (March 18, 2008). "Google LatLong: It's your world. Map it". Google-latlong.blogspot.com. *Archived from the original on December 30, 2009*. Retrieved January 13, 2010.
126. ^ Johnson, Jenna (July 22, 2007). "Google's View of D.C. Melds New and Sharp, Old and Fuzzy". *The Washington Post*. *Archived from the original on February 13, 2011*. Retrieved May 3, 2010.
127. ^ "Google Maps Platform Documentation". Google for Developers. *Archived from the original on January 28, 2021*. Retrieved June 23, 2020.
128. ^ Taylor, Bret (June 29, 2005). "The world is your JavaScript-enabled oyster". Official Google Blog. *Archived from the original on September 30, 2009*.
129. ^ "User Guide | Google Maps Platform". Google Cloud. *Archived from the original on November 12, 2020*. Retrieved July 10, 2018.
130. ^ "Google Maps API – Terms of use". Google. *Archived from the original on December 24, 2013*.
131. ^ Rose, Ian (February 12, 2014). "PHP and MySQL: Working with Google Maps". Syntaxxx. *Archived from the original on October 18, 2014*. Retrieved October 13, 2014.
132. ^ Hoetmer, Ken (May 15, 2013). "A fresh new look for the Maps API, for all one million sites". Google Maps Platform. *Archived from the original on November 28, 2013*.
133. ^ "APIs Dashboard". ProgrammableWeb. *Archived from the original on April 30, 2016*. Retrieved May 4, 2016.
134. ^ Eustace, Alan (September 2, 2011). "A fall spring-clean". Official Google Blog. *Archived from the original on September 7, 2011*. Retrieved September 2, 2011.

135. ^ "Google Maps API FAQ". Google for Developers. Archived from the original on January 16, 2014.
136. ^ "Google Maps API FAQ Usage Limits". Google for Developers. Archived from the original on January 16, 2014.
137. ^ "Google Maps for Business". Google. Archived from the original on December 24, 2013.
138. ^ "Introducing Google Maps Platform". Google. May 2, 2018. Archived from the original on September 14, 2022. Retrieved September 14, 2022.
139. ^ Monument to the People's Heroes. "Google China street map uses GCJ-02 coordinates". Archived from the original on May 25, 2017. Retrieved April 8, 2015.
140. ^ Monument to the People's Heroes. "Google China satellite imagery uses GCJ-02 coordinates". Archived from the original on May 25, 2017. Retrieved April 8, 2015.
141. ^ Monument to the People's Heroes. "Google.com satellite imagery uses WGS-84 coordinates". Archived from the original on November 18, 2015. Retrieved April 8, 2015.
142. ^ "Where We've Been & Where We're Headed Next". Archived from the original on September 28, 2017. Retrieved January 2, 2018.
143. ^ **a b** Martin, Brittany (September 12, 2018). "Why Is Google Maps Using a 19th Century Name for an L.A. Neighborhood?". Los Angeles. Archived from the original on January 26, 2023. Retrieved January 26, 2023.
144. ^ "Google Maps' Phantom Neighborhoods Are Confusing Southern Californians. Help Us Keep Track Of Them". September 12, 2018. Archived from the original on January 26, 2023. Retrieved January 26, 2023.
145. ^ **a b c d** Nicas, Jack (August 2, 2018). "As Google Maps Renames Neighborhoods, Residents Fume". The New York Times. Archived from the original on January 31, 2023. Retrieved January 24, 2023.
146. ^ "Blurred Out: 51 Things You Aren't Allowed to See on Google Maps". Archived from the original on July 21, 2009.
147. ^ "Google Maps: The White House — Elliott C. Back". Elliottback.com. Archived from the original on December 1, 2008. Retrieved August 27, 2010.
148. ^ Barlow, Karen (August 8, 2005). "Google Earth prompts security fears". ABC News Online. Archived from the original on June 16, 2009. Retrieved November 4, 2013.
149. ^ Sutter, John D. (November 5, 2010). "Google Maps border becomes part of international dispute". CNN. Archived from the original on May 8, 2012. Retrieved April 25, 2012.
150. ^ Ball, James (January 28, 2014). "Angry Birds and 'leaky' phone apps targeted by NSA and GCHQ for user data". The Guardian. Archived from the original on March 2, 2014. Retrieved March 3, 2014.
151. ^ Gibbs, Samuel. Google says sorry over racist Google Maps White House search results Archived April 14, 2022, at the Wayback Machine. The Guardian. Retrieved on 15 April 2022
152. ^ Fung, Brian (December 6, 2021). "If you search Google Maps for the N-word, it gives you the White House". Washington Post. ISSN 0190-8286. Archived from the original on April 23, 2022. Retrieved September 22, 2023.
153. ^
"ÃfÃ£Ãøâ,-Ã¡Ã,Â°ÃfÃ£Ã†â€™Ã,Ã¼ÃfÃ£Ãøâ,-Ã¡Ã,Ã°ÃfÃ£Ã†â€™Ã,Ã«ÃfÃ£Ã†â€™Ã...Ã¾ÃfÃfÃ¡Ã,Ã¥Ã,Ã-

ÃfÂ¥Ãçâ,¬Â¹Ãçâ€žÃçÃfÂ¥Ã,Â¹Ã,Â¬ÃfÂ¥Ã,Â®Ã,Â³ÃfÂ¥Ã,Â®Ã,Â¹ÃfÂ§Ãçâ,¬â€œœÃçâ,¬Ëœ"
. *Asahi Shimbun*. March 2, 2024. Archived from *the original* on December 1, 2015.
Retrieved March 2, 2024.

154. ^

"ÃfÂ£Ãçâ,¬Â¡Ã,Â°ÃfÂ£Ã†â€™Ã,Â¼ÃfÂ£Ãçâ,¬Â¡Ã,Â°ÃfÂ£Ã†â€™Ã,Â«ÃfÂ£Ã†â€™Ã...Â¾Ãf
ÃfÂ¥Ã,Â•Ã,Â•ÃfÂ£Ãçâ,¬Â¡Ãçâ,¬â„çÃfÂ¥Ãçâ,¬Â¹Ã,Â•ÃfÂ¹Ãçâ,¬Â°Ãçâ,¬Â¹ÃfÂ£Ã,Â•Ã,Â«ÃfÂ¹Ã
ÃfÂ¥Ã,Â•Ã,Â§ÃfÂ¥Ã,Â-
Ã,Â¹ÃfÂ§Ãçâ,¬Â•Ã...Ã,ÃfÂ£Ãçâ,¬Â¡Ãçâ,¬Â°ÃfÂ¥Ã,Â°Ã,Â°ÃfÂ¹Ãçâ,¬Â°Ã,Â,ÃfÂ©Ã,Â¡Ã...Â¾Ã
. *FNN Prime Online*. December 1, 2015. Archived from *the original* on December 4, 2015.
Retrieved March 2, 2024.

155. ^ "Google Maps Hacks". Simon Weckert. Archived from the original on August 6, 2024.
Retrieved July 31, 2024.

156. ^ "An Artist Used 99 Phones to Fake a Google Maps Traffic Jam". *Wired*. ISSN 1059-1028
. Archived from the original on January 17, 2021. Retrieved February 4, 2020.

157. ^ Liu, Oscar (September 19, 2024). "Hong Kong officials concerned over pranksters
renaming schools on Google Maps". *South China Morning Post*. Archived from the original
on November 22, 2024. Retrieved November 18, 2024.

158. ^ Thomson, Jono (September 23, 2024). "Google says spoofed Taiwan school names
being fixed". *Taiwan News*. Archived from the original on November 29, 2024. Retrieved
November 18, 2024.

159. ^ ÃfÂ¬Ã,Â•Ã,Â¬ÃfÂ¥Ã,Â•Ãâ€œ ÃfÂ¹Ãçâ,¬â€œœÃ,Â°ÃfÂ¬Ã,Â•Ã...Â¾ÃfÂ§Ã,Â¡Ã,Â?
"GoogleÃfÂ¥Ã...â€œœÃ,Â°ÃfÂ¥Ã...â€œœÃçâ,¬â€œœÃfÂ¹Ãçâ,¬Â•Ã,Â¹ÃfÂ¹Ã,Â Ã,Â¡ÃfÂ¥Ã,Â•Ã,Â•,
ÃfÂ¬Ã,Â•Ã,Â¹ÃfÂ¹Ã...Ã,Ã,Ã¥ÃfÂ¥Ãçâ,¬Â¡Ã,Â°ÃfÂ¹Ãâ€œÃ,Â¬ÃfÂ¥Ã,Â-
Ã,Ã,ÃfÂ§Ãçâ,¬Â•Ã...Ã,ÃfÂ¹Ã†â€™Ã,Â¡ÃfÂ¹Ã,Â•Ã...Â¾ÃfÂ¥Ã,ÂÃ,Ã,ÃfÂ¹Ã,Â Ã,Â¡;
ÃfÂ¬Ã,Â•Ã,Â¬ÃfÂ¥Ã,Â•Ãâ€œ ÃfÂ¹Ãçâ,¬â€œœÃ,Â°ÃfÂ¬Ã,Â•Ã...Â¾ÃfÂ§Ã,Â¡Ã,Â¡
(Chinese). Archived from the original on December 31, 2024. Retrieved November 18,
2024.

160. ^ **a b** Allison, Charmayne; Robinson, Lee; Goetze, Eliza (August 15, 2023). "A student
nurse was left stranded in the desert with just an esky of beers after Google Maps led her
astray". *ABC News Australia*. Archived from the original on September 22, 2023.
Retrieved September 22, 2023.

161. ^ **a b c** "Google sued after man drove off collapsed bridge following map directions". *Al
Jazeera*. September 21, 2023. Archived from the original on January 25, 2024. Retrieved
September 22, 2023.

162. ^ **a b** Meacham, Savannah (February 21, 2024). "'I wouldn't want to live this again':
Tourists lost for a week after Google Maps mishap". *The Sydney Morning Herald*.
Australian Associated Press. Archived from the original on February 27, 2024. Retrieved
February 29, 2024.

163. ^ Lagan, Bernard (February 29, 2024). "Google Maps stranded us with crocodiles and
snakes in the outback". *The Times*. ISSN 0140-0460. Archived from the original on
February 23, 2024. Retrieved February 29, 2024.

164. ^ **a b** Lou, Michelle (June 26, 2019). "Nearly 100 drivers followed a Google Maps detour –
and ended up stuck in an empty field". *CNN*. Archived from the original on December 13,
2023. Retrieved February 29, 2024.

165. ^ Brodtkin, Jon (September 21, 2023). "Google sued over fatal Google Maps error after man drove off broken bridge". *Ars Technica*. Archived from the original on September 22, 2023. Retrieved September 22, 2023.
166. ^ Lynch, Jamiel (September 21, 2023). "Family sues Google alleging its Maps app led father to drive off collapsed bridge to his death, attorneys say". CNN. Archived from the original on January 25, 2024. Retrieved September 22, 2023.
167. ^ Ritter, Moira (September 20, 2023). "Dad of 2 died after driving off collapsed bridge, family says. Now, Google being sued". *The Charlotte Observer*. Archived from the original on January 18, 2024. Retrieved January 25, 2024.
168. ^ Matza, Max (September 21, 2023). "Google accused of directing motorist to drive off collapsed bridge". *BBC News*. Archived from the original on January 20, 2024. Retrieved January 25, 2024.
169. ^ Roy, Adam (November 8, 2023). "A Hiker Is Lucky to Be Alive After Following a Fake Trail on Google Maps". *Backpacker*. Archived from the original on November 10, 2023. Retrieved November 12, 2023.
170. ^ Holpuch, Amanda (November 12, 2023). "Hikers Rescued After Following Nonexistent Trail on Google Maps". *The New York Times*. Archived from the original on January 10, 2024. Retrieved February 29, 2024.
171. ^ **a b** Wilson, Madeline (November 29, 2023). "Google Maps Is Sorry for Sending L.A.-Bound Drivers on Nightmare Desert Detour". *Los Angeles*. Archived from the original on December 15, 2023. Retrieved November 29, 2023.
172. ^ Wu, Daniel (November 28, 2023). "Google apologizes after map led drivers down dirt path into the desert". *The Washington Post*. Archived from the original on November 29, 2023. Retrieved November 29, 2023.
173. ^ Stewart, Will (December 11, 2020). "Man frozen to death after Google Maps wrong turn". *news.com.au*. Archived from the original on July 8, 2021. Retrieved March 2, 2024.
174. ^ "Google Maps leads three men to death as car plunges from incomplete bridge into river in Bareilly, UP". *The Economic Times*. November 25, 2024. ISSN 0013-0389. Archived from the original on November 25, 2024. Retrieved November 25, 2024.
175. ^ "UP News: Google Map Route Leads To Death Of 3, Car Falls Into Ramganga River in Bareilly". *English Jagran*. November 24, 2024. Archived from the original on November 24, 2024. Retrieved November 25, 2024.
176. ^ Hauari, Gabe (January 31, 2025). "Mexico's president asks Google not to rename Gulf of Mexico". *USA TODAY*. Retrieved February 13, 2025.
177. ^ McMahon, Liv (February 13, 2025). "Google Maps blocks Gulf of America reviews after rename criticism". *BBC News*. Archived from the original on February 15, 2025. Retrieved February 21, 2025.
178. ^ Dellinger, A. J. (February 13, 2025). "Google Maps Won't Let You Leave Negative Reviews on the Gulf of America". *Gizmodo*. Archived from the original on February 15, 2025. Retrieved February 21, 2025.
179. ^ "See where your friends are with Google Latitude". February 4, 2009. Archived from the original on December 30, 2009.
180. ^ "Privacy fears over Google tracker". *BBC News*. February 5, 2009. Archived from the original on February 17, 2009. Retrieved February 16, 2009.

181. ^ Rodriguez, Salvador (July 11, 2013). *"Google Latitude joins long list of products axed by the Web giant"*. *Los Angeles Times*. Archived from the original on October 16, 2021. Retrieved March 7, 2024.
182. ^ *"Google Maps will let you share your location with friends and family for a specific period of time"*. techcrunch.com. March 22, 2017. Archived from the original on March 22, 2017. Retrieved March 22, 2017.
183. ^ *"Fix an error on Google Maps"*. Google Inc. Archived from the original on October 22, 2020. Retrieved August 11, 2011.
184. ^ *"Tele Atlas Map Insight map feedback"*. Tele Atlas. Archived from the original on January 12, 2021. Retrieved August 11, 2011.
185. ^ *"Google contact request form"*. Archived from the original on July 4, 2014. Retrieved October 4, 2014.
186. ^ *"Google Map Maker graduates to Google Maps"*. Google Map Maker forum. November 8, 2016. Archived from the original on December 3, 2018. Retrieved April 16, 2017.
187. ^ *a b* *"Google Maps"*. Google Play. Retrieved March 10, 2025.
188. ^ *"Google Maps 25.10.04.732665141"*. APKMirror. March 7, 2025. Retrieved March 10, 2025.
189. ^ *"Google Maps (Wear OS) 25.09.00.730474011.W"*. APKMirror. February 21, 2025. Retrieved March 10, 2025.
190. ^ *"Google Maps"*. App Store. Retrieved March 10, 2025.
191. ^ *"Google Maps Go"*. Google Play. Retrieved March 10, 2025.
192. ^ *"Google Maps Go 161.1"*. APKMirror. October 13, 2023. Retrieved March 10, 2025.
193. ^ *"Google Maps 11.143.0303 beta"*. APKMirror. August 20, 2024. Retrieved August 24, 2024.
194. ^ Team, PhoneArena (November 10, 2005). *"Google local for Mobile announced"*. PhoneArena. Archived from the original on October 5, 2023. Retrieved October 4, 2023.
195. ^ Gohring, Nancy (November 7, 2005). *"Google launches downloadable mobile application"*. Computerworld. Archived from the original on October 5, 2023. Retrieved October 4, 2023.
196. ^ *"Google Local for Mobile"*. All About Symbian. February 16, 2006. Archived from the original on June 19, 2023. Retrieved October 4, 2023.
197. ^ *"Google Maps"*. October 16, 2006. Archived from the original on October 16, 2006. Retrieved October 4, 2023.
198. ^ Welch, Chris (September 29, 2012). *"Steve Jobs added Google Maps to the original iPhone just weeks before unveiling"*. The Verge. Archived from the original on October 30, 2023. Retrieved October 24, 2023.
199. ^ *"Google Maps for now available on Windows Mobile devices"*. Engadget. July 19, 2019. Archived from the original on October 30, 2023. Retrieved October 24, 2023.
200. ^ *"New native S60 Google Maps for Mobile with GPS support"*. All About Symbian. October 12, 2007. Archived from the original on October 30, 2023. Retrieved October 24, 2023.
201. ^ *"Google Announces Launch of Google Maps for Mobile With 'My Location' Technology"*. News from Google. November 28, 2007. Archived from the original on April 26, 2017. Retrieved April 25, 2017.

202. ^ Marshall, Matt (November 28, 2007). "Google releases useful "my location" feature for cellphones". *VentureBeat*. Archived from the original on April 25, 2017. Retrieved April 25, 2017.
203. ^ Schonfeld, Erick (November 28, 2007). "Google Mobile Maps PinPoints Your Location Without GPS". *TechCrunch*. AOL. Archived from the original on April 26, 2017. Retrieved April 25, 2017.
204. ^ Vanlerberghe, Mac (September 23, 2008). "Google on Android". Google Mobile Blog. Archived from the original on December 7, 2017. Retrieved April 30, 2017.
205. ^ Tseng, Erick (September 23, 2008). "The first Android-powered phone". Official Google Blog. Archived from the original on December 7, 2017. Retrieved April 30, 2017.
206. ^ Gates, Sara (June 11, 2012). "Apple Maps App Officially Debuts, Google Maps Dropped (PHOTOS)". *HuffPost*. AOL. Archived from the original on August 7, 2020. Retrieved April 30, 2017.
207. ^ Chen, Brian X.; Wingfield, Nick (September 19, 2012). "Apple's iPhone Update Leaves Out Google's Maps". *The New York Times*. Archived from the original on December 11, 2020. Retrieved April 30, 2017.
208. ^ "New Apple maps app under fire from users". *BBC*. September 20, 2012. Archived from the original on December 4, 2016. Retrieved April 30, 2017.
209. ^ Patel, Nilay (September 20, 2012). "Wrong turn: Apple's buggy iOS 6 maps lead to widespread complaints". *The Verge*. Vox Media. Archived from the original on December 10, 2016. Retrieved April 30, 2017.
210. ^ Arthur, Charles (September 20, 2012). "Apple's self-inflicted maps issue is a headache – but don't expect an apology". *The Guardian*. Archived from the original on November 11, 2020. Retrieved April 30, 2017.
211. ^ Olanoff, Drew (December 12, 2012). "Google Launches Native Maps For iOS, And Here's The Deep Dive On Navigation, Info Sheets And More". *TechCrunch*. AOL. Archived from the original on November 12, 2020. Retrieved April 30, 2017.
212. ^ Bohn, Dieter (December 12, 2012). "Google Maps for iPhone is here: how data and design beat Apple". *The Verge*. Vox Media. Archived from the original on November 11, 2020. Retrieved April 30, 2017.
213. ^ Keizer, Gregg (December 18, 2012). "Google Maps snares 10M downloads on iOS App Store". *Computerworld*. International Data Group. Archived from the original on October 22, 2020. Retrieved April 30, 2017.
214. ^ Musil, Steven (December 12, 2012). "Google Maps returns to iOS as an app after Apple's removal". *CNET*. CBS Interactive. Archived from the original on November 12, 2020. Retrieved April 30, 2017.
215. ^ **a b** Rodriguez, Salvador (December 13, 2012). "Google Maps returns to iPhone; iPad app coming soon". *Los Angeles Times*. Archived from the original on June 29, 2017. Retrieved April 30, 2017.
216. ^ Arrington, Michael (October 28, 2009). "Google Redefines GPS Navigation Landscape: Google Maps Navigation For Android 2.0". *TechCrunch*. AOL. Archived from the original on October 22, 2020. Retrieved April 30, 2017.
217. ^ Schroeder, Stan (October 28, 2009). "Google Maps Navigation Becomes Reality on Android". *Mashable*. Archived from the original on November 9, 2020. Retrieved April 30,

2017.

218. ^ Fingas, Jon (July 16, 2013). "Google Maps 2.0 for iOS starts rolling out with iPad support, indoor maps (update: offline maps too)". Engadget. AOL. Archived from the original on October 23, 2020. Retrieved April 30, 2017.
219. ^ Ingraham, Nathan (June 27, 2012). "Google Maps for Android now supports saving maps for offline use". The Verge. Vox Media. Archived from the original on November 11, 2020. Retrieved April 30, 2017.
220. ^ Lawler, Richard (June 27, 2012). "Google Maps offline for Android is available today in version 6.9, also Compass Mode for Street View". Engadget. AOL. Archived from the original on November 12, 2020. Retrieved April 30, 2017.
221. ^ Kastrenakes, Jacob (May 6, 2014). "Google Maps for iOS and Android add offline support, lane guidance, and Uber integration". The Verge. Vox Media. Archived from the original on November 11, 2020. Retrieved April 30, 2017.
222. ^ Siegal, Jacob (May 6, 2014). "Google Maps just got a huge update – here are the 5 best new features". BGR. Penske Media Corporation. Archived from the original on November 8, 2020. Retrieved April 30, 2017.
223. ^ Pierson, David (November 11, 2015). "Google Maps Now Available Offline". Government Technology. Los Angeles Times. Archived from the original on October 30, 2020. Retrieved November 19, 2016.
224. ^ "Download areas and navigate offline – iPhone & iPad". Google Maps Help. Archived from the original on December 19, 2020. Retrieved November 19, 2016.
225. ^ Bolton, Doug (January 25, 2016). "How to use Google Maps on your smartphone when you don't have a connection". The Independent. Archived from the original on October 22, 2020. Retrieved June 29, 2018.
226. ^ McCourt, David (May 30, 2019). "How to use Google Maps offline". AndroidPIT. Archived from the original on October 23, 2020. Retrieved November 19, 2016.
227. ^ Welch, Chris (January 26, 2017). "Google Maps now tells you how hard it is to park in some cities". The Verge. Vox Media. Archived from the original on November 12, 2020. Retrieved December 7, 2017.
228. ^ Haselton, Todd (April 26, 2017). "How to use a new Google Maps feature to help you find your parked car". CNBC. NBCUniversal News Group. Archived from the original on November 11, 2020. Retrieved December 7, 2017.
229. ^ Sawers, Paul (April 26, 2017). "Google Maps now makes it easier to remember where you parked your car". VentureBeat. Archived from the original on November 11, 2020. Retrieved December 7, 2017.
230. ^ Gartenberg, Chaim (August 29, 2017). "Google Maps will now help you find parking". The Verge. Vox Media. Archived from the original on November 11, 2020. Retrieved December 7, 2017.
231. ^ Ghoshal, Abhimanyu (December 5, 2017). "Google Maps' new two-wheeler mode shows faster routes for beating traffic on your bike". The Next Web. Archived from the original on December 7, 2020. Retrieved December 7, 2017.
232. ^ Jonnalagadda, Harish (December 5, 2017). "Google Maps gets a dedicated two-wheeler mode in India". Android Central. Mobile Nations. Archived from the original on December 7, 2017. Retrieved December 7, 2017.

233. ^ "Google Maps AR directions released". CNBC. February 21, 2020. Retrieved February 21, 2020.[[dead link](#)]
234. ^ Kastrenakes, Jacob (May 20, 2020). "Here are all the winners of the 2020 Webby Awards". The Verge. Archived from the original on May 21, 2020. Retrieved May 22, 2020.
235. ^ "Google Maps update will let you draw in missing roads". Trusted Reviews. March 11, 2021. Archived from the original on March 31, 2021. Retrieved March 30, 2021.
236. ^ Mehta, Ivan (June 14, 2022). "Google Maps will now show you info about toll pricing on your route". TechCrunch. Archived from the original on June 14, 2022. Retrieved June 14, 2022.
237. ^ "Baig: Google Maps app – welcome return of an old friend". USA Today. Gannett Company. December 13, 2012. Archived from the original on November 25, 2020. Retrieved April 30, 2017.
238. ^ Parker, Jason (November 6, 2014). "Google Maps for iOS review". CNET. CBS Interactive. Archived from the original on October 22, 2020. Retrieved April 30, 2017.
239. ^ Fowler, Bree (December 16, 2012). "App review: Google Maps on iOS is back with a bang". FirstPost. Archived from the original on October 9, 2019. Retrieved April 30, 2017.
240. ^ Diaz, Jesus (December 13, 2012). "Google Maps for iOS Review: Maps Done Right". Gizmodo. Univision Communications. Archived from the original on October 24, 2020. Retrieved April 30, 2017.
241. ^ Pogue, David (December 12, 2012). "Maps App for iPhone Steers Right". The New York Times. Archived from the original on November 12, 2020. Retrieved April 30, 2017.
242. ^ Tweney, Dylan (August 17, 2014). "Yes, Google Maps is tracking you. Here's how to stop it". VentureBeat. Archived from the original on October 2, 2017. Retrieved April 30, 2017.
243. ^ Elliott, Matt (April 20, 2017). "Is Google is tracking you? Find out here". CNET. CBS Interactive. Archived from the original on April 29, 2017. Retrieved April 30, 2017.
244. ^ Kumparak, Greg (December 18, 2013). "Google's Location History Browser Is A Minute-By-Minute Map Of Your Life". TechCrunch. AOL. Archived from the original on May 11, 2017. Retrieved April 30, 2017.
245. ^ Mirani, Leo (April 3, 2014). "Google's sneaky new privacy change affects 85% of iPhone users—but most of them won't have noticed". Quartz. Atlantic Media. Archived from the original on August 10, 2017. Retrieved April 30, 2017.
246. ^ El Khoury, Rita (March 9, 2019). "Google Maps hits 5 billion downloads on the Play Store, does it after YouTube but before the Google app". Android Police. Archived from the original on October 8, 2019. Retrieved October 26, 2019.
247. ^ "Google Maps navigates its way to 10 billion installs". Android Police. November 4, 2021. Archived from the original on January 25, 2022. Retrieved January 25, 2022.
248. ^ El Khoury, Rita (January 17, 2018). "[Update: APK Download] Google Maps Go shows up on the Play Store for Go phones, but you can give it a try anyway". Android Police. Archived from the original on June 3, 2018. Retrieved October 26, 2019.
249. ^ Hager, Ryne (September 26, 2018). "[Update: Maps Go too] Google Go hits 10 million installs on Play Store - an indicator of Android Go's success?". Android Police. Archived from the original on September 26, 2019. Retrieved October 26, 2019.

250. ^ Richterich, Annika (November 2011). "Cartographies of Digital Fiction: Amateurs Mapping a New Literary Realism". The Cartographic Journal. **48** (4): 237–249. Bibcode: 2011CartJ..48..237R. doi:10.1179/1743277411Y.0000000021. ISSN 0008-7041. S2CID 131524536. Archived from the original on October 20, 2022. Retrieved October 16, 2022.

251. ^ "THE GOOGLE TRILOGY - E M I L I O V A V A R E L L A". April 18, 2013. Archived from the original on October 16, 2022. Retrieved October 16, 2022.

252. ^ group_inou (April 14, 2016). "EYE (music video)". YouTube. Archived from the original on October 16, 2022. Retrieved October 16, 2022.

253. ^ Arcade Fire; Milk, Chris (2011). "The Wilderness Downtown". The Wilderness Downtown . Archived from the original on October 16, 2022. Retrieved October 16, 2022.

254. ^ Arcade Fire (2011). "Video documentation of Wilderness Within video". YouTube. Archived from the original on October 16, 2022. Retrieved October 16, 2022.

External links

[edit]

- Official website
 - Official Google Maps blog
 - About Google Maps
 - Google Local Guides
 - Google Maps Platform

- v
- t
- e

Google Maps

- Waze
- Arts & Culture

link = Google Maps

Related products

Discontinued

- Latitude
- Maps Navigation
- Map Maker
- Mapathon

Image not found or type unknown

Views and mapping sites

- [Earth](#)
- [Street View](#)

Street View

Coverage

- [Africa](#)
- [Antarctica](#)
- [Asia](#)
 - [Israel](#)
- [Europe](#)
- [North America](#)
 - [Canada](#)
 - [United States](#)
- [Oceania](#)
- [South America](#)
 - [Argentina](#)
 - [Chile](#)
 - [Colombia](#)

- [Privacy concerns](#)
- [Competing products](#)

Other

- [Historypin](#)
- [Google Maps pin](#)
- [Google Maps Road Trip](#)
- [Argleton](#)

Links to related articles

- [v](#)
- [t](#)
- [e](#)

[Google](#)

a subsidiary of [Alphabet](#)

Company

Divisions

- AI
- *Area 120*
- ATAP
- *Brain*
- China
- Cloud Platform
- Energy
- Google.org
 - Crisis Response
- *Health*
- Registry

Active

- Security Operations
- DeepMind
- Fitbit
- ITA Software
- Jigsaw
- Looker
- Mandiant
- Owlchemy Labs

Subsidiaries

- Actifio
- Adscape
- Akwan Information Technologies
- Anvato
- Apigee
- BandPage
- Bitium
- BufferBox
- Crashlytics
- Dodgeball
- DoubleClick
- Dropcam
- Endoxon
- Flutter
- Global IP Solutions
- Green Throttle Games
- GreenBorder
- Gridcentric
- ImageAmerica
- Imperium
- Invite Media

Development

- Accelerated Linear Algebra
- AMP
- *Actions on Google*
- ALTS
- American Fuzzy Lop
- *Android Cloud to Device Messaging*
- Android Debug Bridge
- Android NDK
- Android Runtime
- Android SDK
- Android Studio
- Angular
- *AngularJS*
- Apache Beam
- APIs
- App Engine
- App Inventor
- *App Maker*
- App Runtime for Chrome
- *AppJet*
- Apps Script
- AppSheet
- ARCore
- *Base*
- Bazel
- BeyondCorp
- Bigtable
- BigQuery
- Bionic
- Blockly
- *Borg*
- *Caja*
- Cameyo
- Chart API
- Charts
- *Chrome Frame*
- Chromium
 - Blink
- Closure Tools
- *Cloud Connect*
- Cloud Dataflow
- Cloud Datastore
- *Cloud Messaging*
- *Cloud Shell*

A–C

Software

- *Aardvark*
- *Account*
 - *Dashboard*
 - *Takeout*
- *Ad Manager*
- *AdMob*
- *Ads*
- *AdSense*
- *Affiliate Network*
- A** ○ *Alerts*
- *Allo*
- *Analytics*
- *Android Auto*
- *Android Beam*
- *Answers*
- *Apture*
- *Arts & Culture*
- *Assistant*
- *Attribution*
- *Authenticator*
- *BebaPay*
- *BeatThatQuote.com*
- *Blog Search*
- *Blogger*
- *Body*
- *Bookmarks*
- B** ○ *Books*
 - *Ngram Viewer*
- *Browser Sync*
- *Building Maker*
- *Bump*
- *BumpTop*
- *Buzz*
- *Calendar*
- *Cast*
- *Catalogs*
- *Chat*
- *Checkout*
- *Chrome*
- *Chrome Apps*
- *Chrome Experiments*

Hardware

Smartphones

Pixel

- Pixel (2016)
- Pixel 2 (2017)
- Pixel 3 (2018)
- Pixel 3a (2019)
- Pixel 4 (2019)
- Pixel 4a (2020)
- Pixel 5 (2020)
- Pixel 5a (2021)
- Pixel 6 (2021)
- Pixel 6a (2022)
- Pixel 7 (2022)
- Pixel 7a (2023)
- Pixel Fold (2023)
- Pixel 8 (2023)
- Pixel 8a (2024)
- Pixel 9 (2024)
- Pixel 9 Pro Fold (2024)

Smartwatches

- Pixel Watch (2022)
- Pixel Watch 2 (2023)
- Pixel Watch 3 (2024)

Tablets

- Pixel C (2015)
- Pixel Slate (2018)
- Pixel Tablet (2023)

Laptops

- Chromebook Pixel (2013–2015)
- Pixelbook (2017)
- Pixelbook Go (2019)

Other

- Pixel Buds (2017–present)

Smartphones

- Nexus One (2010)
- Nexus S (2010)
- Galaxy Nexus (2011)
- Nexus 4 (2012)
- Nexus 5 (2013)
- Nexus 6 (2014)
- Nexus 5X (2017)

- **v**
- **t**
- **e**

Litigation

Advertising	<ul style="list-style-type: none"> ○ <i>Feldman v. Google, Inc.</i> (2007) ○ <i>Rescuecom Corp. v. Google Inc.</i> (2009) ○ <i>Goddard v. Google, Inc.</i> (2009) ○ <i>Rosetta Stone Ltd. v. Google, Inc.</i> (2012) ○ <i>Google, Inc. v. American Blind & Wallpaper Factory, Inc.</i> (2017) ○ Jedi Blue
Antitrust	<ul style="list-style-type: none"> ○ European Union (2010–present) ○ <i>United States v. Adobe Systems, Inc., Apple Inc., Google Inc., Intel Corporation, Intuit, Inc., and Pixar</i> (2011) ○ <i>Umar Javeed, Sukarma Thapar, Aaqib Javeed vs. Google LLC and Ors.</i> (2019) ○ <i>United States v. Google LLC</i> (2020) ○ <i>United States v. Google LLC</i> (2023)
Intellectual property	<ul style="list-style-type: none"> ○ <i>Perfect 10, Inc. v. Amazon.com, Inc.</i> (2007) ○ <i>Viacom International Inc. v. YouTube, Inc.</i> (2010) ○ <i>Lenz v. Universal Music Corp.</i> (2015) ○ <i>Authors Guild, Inc. v. Google, Inc.</i> (2015) ○ <i>Field v. Google, Inc.</i> (2016) ○ <i>Google LLC v. Oracle America, Inc.</i> (2021) ○ Smartphone patent wars
Privacy	<ul style="list-style-type: none"> ○ <i>Rocky Mountain Bank v. Google, Inc.</i> (2009) ○ <i>Hibnick v. Google, Inc.</i> (2010) ○ <i>United States v. Google Inc.</i> (2012) ○ Judgement of the German Federal Court of Justice on Google's autocomplete function (2013) ○ <i>Joffe v. Google, Inc.</i> (2013) ○ <i>Mosley v SARL Google</i> (2013) ○ <i>Google Spain v AEPD and Mario Costeja González</i> (2014) ○ <i>Frank v. Gaos</i> (2019)
Other	<ul style="list-style-type: none"> ○ <i>Garcia v. Google, Inc.</i> (2015) ○ <i>Google LLC v Defteros</i> (2020) ○ <i>Epic Games v. Google</i> (2021) ○ <i>Gonzalez v. Google LLC</i> (2022)

Related

- Beauty YouTuber
- BookTube
- BreadTube
- "Don't be evil"
- Gayglers
- *Google* as a verb
- Google bombing
 - 2004 U.S. presidential election
- Google effect
- Googlefight
- Google hacking
- Googleshare
- Google tax
- Googlewhack
- Googlization
- Illegal flower tribute
- Objectives and key results
- Rooting
- Search engine manipulation effect
- Side project time
- Sitelink
- Site reliability engineering
- StudyTube
- VTuber
- YouTube Poop
- YouTuber
 - list

Concepts



Android

- Booting process
- Custom distributions
- Features
- Recovery mode
- Software development

Street View coverage

- Africa
- Antarctica
- Asia
 - Israel
- Europe
- North America
 - Canada
 - United States

Italics denote discontinued products.

-  **Category**
-  **Outline**

- **v**
- **t**
- **e**

Alphabet Inc.

	<ul style="list-style-type: none"> ○ Access <ul style="list-style-type: none"> ○ Google Fiber ○ Calico ○ CapitalG ○ Google <ul style="list-style-type: none"> ○ DeepMind <ul style="list-style-type: none"> ○ AlphaFold ○ AlphaGo <ul style="list-style-type: none"> ○ vs. Fan Hui ○ vs. Ke Jie ○ vs. Lee Sedol <ul style="list-style-type: none"> ○ film ○ Future of Go Summit ○ AlphaGo Zero ○ AlphaStar ○ AlphaZero ○ Master ○ MuZero ○ WaveNet
Current	
Subsidiaries	<ul style="list-style-type: none"> ○ DoubleClick ○ Firebase ○ Fitbit ○ Tenor ○ Waze ○ YouTube ○ GV ○ Isomorphic Labs ○ Verily <ul style="list-style-type: none"> ○ Baseline Study ○ X Development ○ Waymo ○ Wing
Former	<ul style="list-style-type: none"> ○ Boston Dynamics ○ Chronicle Security ○ Jigsaw ○ Loon ○ Makani ○ Meka Robotics ○ Nest Labs ○ Sidewalk Labs <ul style="list-style-type: none"> ○ Toronto ○ Vicarious

Executives

Current

- Sundar Pichai (CEO)
- Ruth Porat (president and CIO)
- Anat Ashkenazi (CFO)

Former

- Larry Page (CEO)
- Sergey Brin (President)
- David Drummond (CLO)

People

Current

Board of directors

- Frances Arnold
- Sergey Brin
- R. Martin Chavez
- John Doerr
- John L. Hennessy
- Ann Mather
- Larry Page
- Sundar Pichai
- Ram Shriram
- Roger W. Ferguson Jr.

Former

- Diane Greene
- Alan Mulally
- Eric Schmidt

Others

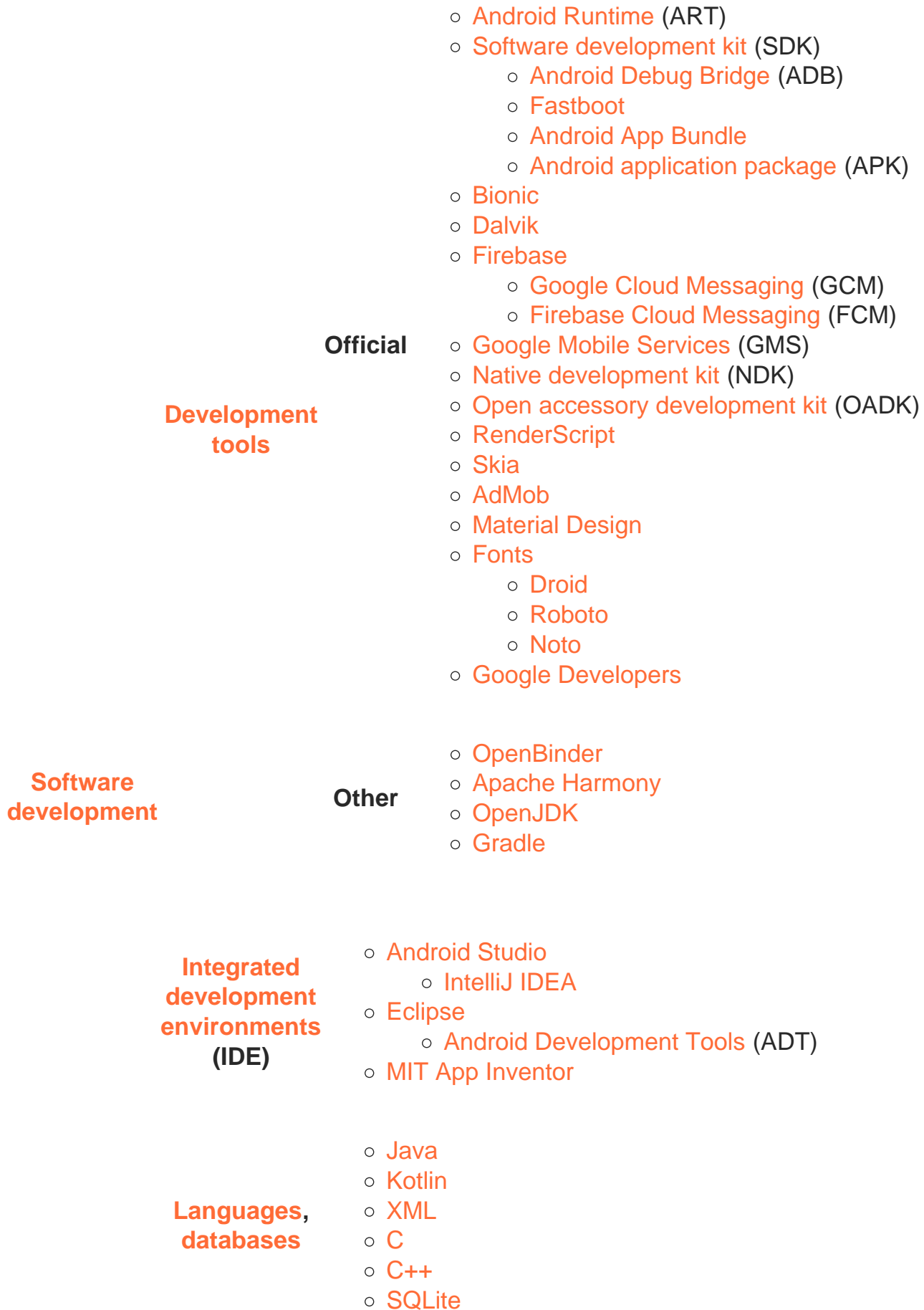
- Andrew Conrad
- Tony Fadell
- Arthur D. Levinson
- David Krane
- Astro Teller

-  Category
-  Companies portal
-  icon
-  Internet portal

- **v**
- **t**
- **e**

Android

- Android Go
 - Comparison of products



Releases

- Cupcake (1.5)
- Donut (1.6)
- Eclair (2.0–2.1)
- Froyo (2.2)
- Gingerbread (2.3)
- Honeycomb (3.x)
- Ice Cream Sandwich (4.0)
- Jelly Bean (4.1–4.3)
- KitKat (4.4)
- Lollipop (5.x)
- Marshmallow (6.0)
- Nougat (7.x)
- Oreo (8.x)
- Pie (9)
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Derivatives

- Android Automotive
- Android Things
- TV
 - devices
- Android XR
- Wear OS

Devices

Pixel

- C
- Pixel & Pixel XL
- 2 & 2 XL
- 3 & 3 XL
 - 3a & 3a XL
- 4 & 4 XL
 - 4a & 4a (5G)
- 5
 - 5a
- 6 & 6 Pro
 - 6a
- 7 & 7 Pro
 - 7a
- Fold
- Tablet
- 8 & 8 Pro
 - 8a
- 9, 9 Pro & 9 Pro XL
 - 9 Pro Fold

Nexus

- One
- S
- Galaxy Nexus
- 4
- 10
- Q
- 5
 - 5X
- 6
 - 6P
- 7
 - 2012
 - 2013
- 9
- Player

Play edition

- HTC One (M7)
- HTC One (M8)
- LG G Pad 8.3
- Moto G
- Samsung Galaxy S4
- Sony Xperia Z Ultra

- Android One
- other smartphones

Custom distributions

- AliOS
- Android-x86
 - Remix OS
- AOKP
- Baidu Yi
- Barnes & Noble Nook
- CalyxOS
- ColorOS
 - realme UI
- CopperheadOS
- EMUI
 - Magic UI
- Fire OS
- Flyme OS
- GrapheneOS
- Xiaomi HyperOS
 - MIUI
 - MIUI for Poco
- LeWa OS
- LineageOS
 - /e/
 - CrDroid
 - CyanogenMod
 - DivestOS
 - iodéOS
 - Kali NetHunter
- LiteOS
- Meta Horizon OS
- MicroG
- Nokia X software platform
- OmniROM
- OPhone
- OxygenOS
- PixelExperience
- Pixel UI
- Replicant
- Resurrection Remix OS
- SlimRoms
- TCL UI
- Ubuntu for Android
- XobotOS
- ZUI

Booting and recovery	<ul style="list-style-type: none"> ○ Booting process ○ Recovery mode <ul style="list-style-type: none"> ○ TWRP ○ ClockworkMod ○ Fastboot
APIs	<ul style="list-style-type: none"> ○ Google Maps ○ Google Play Services <ul style="list-style-type: none"> ○ SafetyNet ○ Google Search
Alternative UIs	<ul style="list-style-type: none"> ○ Asus ZenFone ○ Cherry OS ○ ColorOS ○ EMUI ○ Funtouch OS ○ Flyme OS ○ HiOS ○ Hive UI (XOLO Hive) ○ HTC Sense ○ LG UX <ul style="list-style-type: none"> ○ Optimus UI ○ Motoblur ○ One UI ○ Origin OS <ul style="list-style-type: none"> ○ Experience ○ TouchWiz ○ OxygenOS ○ Pixel UI ○ XOS ○ Xperia UI
Rooting	<ul style="list-style-type: none"> ○ SuperSU ○ Magisk ○ Kingo Root
Lists	<ul style="list-style-type: none"> ○ Custom distributions ○ Features ○ Free and open-source applications ○ Google apps ○ Launchers

Related topics

- Index of articles
- Androidland
- Chromecast
- Google
- Java vs. Android API
- Lawn statues
- BlueStacks
- Legal issues
 - *Google v. Oracle*
 - smartphone patent wars

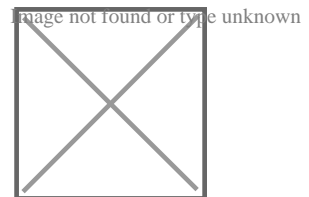
-  Category:Android development
-  Category:Mobile telecommunications
-  Software portal
-  Telecommunication portal

- **v**
- **t**
- **e**

OpenStreetMap

Organisations

- Geochicas?
- Humanitarian OpenStreetMap Team
- Mapbox
- MapTiler
- Mapzen
- Missing Maps
- OpenStreetMap Foundation
- Ramani Huria
- Wikimedia Italia



Software	Editing	<ul style="list-style-type: none"> ○ iD ○ JOSM ○ KartaView ○ Mapillary ○ OpenDroneMap ○ Potlatch ○ StreetComplete
	Visualisation	<ul style="list-style-type: none"> ○ Leaflet ○ Mapnik ○ Marble ○ OpenLayers ○ OpenRailwayMap ○ OpenSeaMap
	Navigation	<ul style="list-style-type: none"> ○ GNOME Maps ○ GraphHopper ○ Karta GPS ○ Komoot ○ Locus Map ○ Maps.me ○ Navit ○ Neshan ○ Open Source Routing Machine ○ Organic Maps ○ OsmAnd ○ Wheelmap.org
Derivations		<ul style="list-style-type: none"> ○ FOSM ○ OpenGeofiction ○ OpenHistoricalMap ○ Overture Maps
People		<ul style="list-style-type: none"> ○ Steve Coast ○ Allan Mustard

International

- [VIAF](#)
- [FAST](#)

National

- [Germany](#)
- [United States](#)
- [France](#)
- [BnF data](#)
- [Israel](#)

Other

- [IdRef](#)

About MediaWiki

Not to be confused with [Wikimedia](#).

This article **relies excessively on references to primary sources**. Please improve this article by adding **secondary or tertiary sources**.

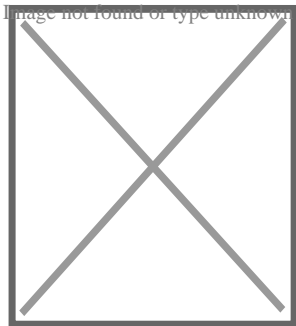
Find sources: "MediaWiki" – news · newspapers · books · scholar · JSTOR (January 2025) ([Learn how and when to remove this message](#))

- gerrit.wikimedia.org/g/mediawiki/core/ [Edit this at Wikidata](#)

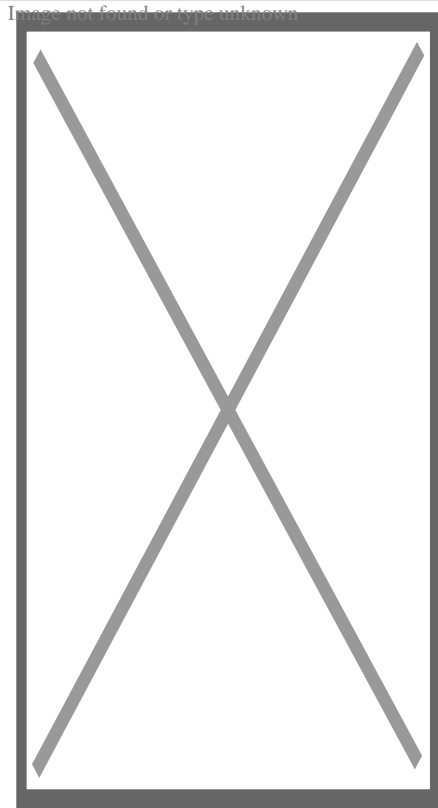
MediaWiki



Image not found or type unknown



Screenshot



The **Main Page** of the **English Wikipedia** running an alpha version of MediaWiki 1.40

Original author(s)	○ Magnus Manske
	○ Lee Daniel Crocker
Developer(s)	Wikimedia Foundation
Initial release	January 25, 2002; 23 years ago
Stable release	1.43.0 ^[1] <small>Image not found or type unknown</small> December 2024; 2 months ago Edit this on Wikidata
Repository	
Written in	PHP ^[2]
Operating system	Windows, macOS, Linux, FreeBSD, OpenBSD, Solaris

Size	79.05 MiB (compressed)
Available in	459[3] languages
Type	Wiki software
License	GPLv2+[4]
Website	mediawiki.org <small>Image not found or type: unknown</small> Edit this at Wikidata

MediaWiki is [free and open-source wiki software](#) originally developed by [Magnus Manske](#) for use on [Wikipedia](#) on [January 25, 2002](#), and further improved by [Lee Daniel Crocker](#),^{[5][6]} after which development has been coordinated by the [Wikimedia Foundation](#). It powers several wiki hosting websites across the Internet, as well as most websites hosted by the Wikimedia Foundation including Wikipedia, [Wiktionary](#), [Wikimedia Commons](#), [Wikiquote](#), Meta-Wiki and [Wikidata](#), which define a large part of the set requirements for the software.^[7] Besides its usage on Wikimedia sites, MediaWiki has been used as a [knowledge management](#) and [content management system](#) on websites such as [Fandom](#), [wikiHow](#) and major internal installations like [Intellipedia](#) and [Diplopedia](#).

MediaWiki is written in the [PHP programming language](#) and stores all text content into a [database](#). The software is optimized to efficiently handle large projects, which can have terabytes of content and hundreds of thousands of [views](#) per second.^{[7][8]} Because Wikipedia is one of the world's largest and most visited websites, achieving scalability through multiple layers of [caching](#) and [database replication](#) has been a major concern for developers. Another major aspect of MediaWiki is its internationalization; its interface is available in more than 400 languages.^[9] The software has hundreds of configuration settings^[10] and more than 1,000 [extensions](#) available for enabling various features to be added or changed.^[11]

Key features

[\[edit\]](#)

MediaWiki provides a rich core feature set and a mechanism to attach [extensions](#) to provide additional functionality.

Internationalization and localisation

[\[edit\]](#)

Niklas Laxström explains the features that allowed [translatewiki.net](#) to provide MediaWiki with more than 400 locales.

Due to the strong emphasis on multilingualism in the Wikimedia projects, [internationalization and localization](#) has received significant attention by developers. The user interface has been fully or partially translated into more than 400 languages on [translatewiki.net](#),^[9] and can be

further customized by site administrators (the entire interface is editable through the wiki).

Several extensions, most notably those collected in the MediaWiki Language Extension Bundle, are designed to further enhance the multilingualism and internationalization of MediaWiki.

Installation and configuration

[\[edit\]](#)

Installation of MediaWiki requires that the user have **administrative privileges** on a server running both PHP and a compatible type of SQL **database**. Some users find that setting up a **virtual host** is helpful if the majority of one's site runs under a framework (such as **Zope** or **Ruby on Rails**) that is largely incompatible with MediaWiki.^[12] **Cloud hosting** can eliminate the need to deploy a new server.^[13]

An installation PHP script is accessed via a **web browser** to initialize the wiki's settings. It prompts the user for a minimal set of required parameters, leaving further changes, such as enabling uploads,^[14] adding a site logo,^[15] and installing extensions, to be made by modifying configuration settings contained in a file called LocalSettings.php.^[16] Some aspects of MediaWiki can be configured through special pages or by editing certain pages; for instance, abuse filters can be configured through a special page,^[17] and certain gadgets can be added by creating **JavaScript** pages in the MediaWiki namespace.^[18] The MediaWiki community publishes a comprehensive installation guide.^[19]

Markup

[\[edit\]](#)

One of the earliest differences between MediaWiki (and its predecessor, **UseModWiki**) and other wiki engines was the use of "**free links**" instead of **CamelCase**. When MediaWiki was created, it was typical for wikis to require text like "WorldWideWeb" to create a link to a page about the **World Wide Web**; links in MediaWiki, on the other hand, are created by surrounding words with double square brackets, and any spaces between them are left intact, e.g. [[World Wide Web]]. This change was logical for the purpose of creating an encyclopedia, where accuracy in titles is important.

MediaWiki uses an extensible^[20] **lightweight wiki markup** designed to be easier to use and learn than **HTML**. Tools exist for converting content such as **tables** between MediaWiki markup and HTML.^[21] Efforts have been made to create a MediaWiki markup spec, but a consensus seems to have been reached that Wikicode requires **context-sensitive grammar** rules.^{[22][23]} The following side-by-side comparison illustrates the differences between wiki markup and HTML:

====A dialogue====

"Take some more [[tea]]," the March Hare said to Alice, very earnestly.

"I've had nothing yet," Alice replied in an offended tone: "so I can't take more."

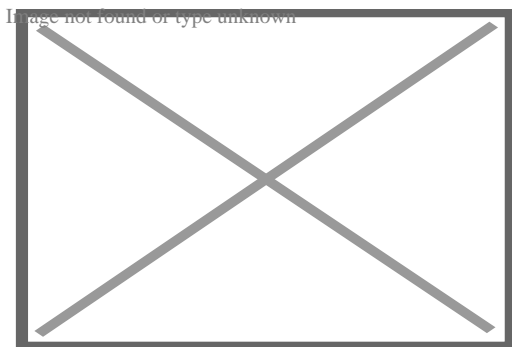
"You mean you can't take "less"," said the Hatter: "it's ""very"" easy to take "more" than nothing."

(Quotation above from *Alice's Adventures in Wonderland* by Lewis Carroll)

Editing interface

[edit]

See also: VisualEditor



Editing interface of MediaWiki 1.44.0-wmf.4 with syntax highlighting, showing the edit toolbar of 2017 wikitext editor and some examples of wiki syntax

MediaWiki's default page-editing tools have been described as somewhat challenging to learn. [24] A survey of students assigned to use a MediaWiki-based wiki found that when they were asked an open question about main problems with the wiki, 24% cited technical problems with formatting, e.g. "Couldn't figure out how to get an image in. Can't figure out how to show a link

with words; it inserts a number."^[25]

To make editing long pages easier, MediaWiki allows the editing of a subsection of a page (as identified by its header). A registered user can also indicate whether or not an edit is minor. Correcting spelling, grammar or punctuation are examples of minor edits, whereas adding paragraphs of new text is an example of a non-minor edit.

Sometimes while one user is editing, a second user saves an edit to the same part of the page. Then, when the first user attempts to save the page, an **edit conflict** occurs. The second user is then given an opportunity to merge their content into the page as it now exists following the first user's page save.

MediaWiki's user interface has been localized in many different languages. A language for the wiki content itself can also be set, to be sent in the "Content-Language" HTTP header and "lang" **HTML attribute**.

VisualEditor has its own integrated wikitext editing interface known as 2017 wikitext editor, the older editing interface is known as 2010 wikitext editor.

Application programming interface

^[edit]

MediaWiki has an extensible **web API** (**application programming interface**) that provides direct, high-level access to the data contained in the MediaWiki databases. Client programs can use the API to log in, get data, and post changes. The API supports thin web-based JavaScript clients and end-user applications (such as vandal-fighting tools). The API can be accessed by the **backend** of another web site.^[26] An extensive **Python bot** library, **Pywikibot**,^[27] and a popular semi-automated tool called **AutoWikiBrowser**, also interface with the API.^[28] The API is accessed via URLs such as

<https://en.wikipedia.org/w/api.php?action=query&list=recentchanges>. In this case, the query would be asking Wikipedia for information relating to the last 10 edits to the site. One of the perceived advantages of the API is its language independence; it listens for **HTTP** connections from clients and can send a response in a variety of formats, such as **XML**, serialized PHP, or **JSON**.^[29] **Client code** has been developed to provide layers of **abstraction** to the API.^[30]

Tracking edits

^[edit]

Among the features of MediaWiki to assist in tracking edits is a Recent Changes feature that provides a list of recent edits to the wiki. This list contains basic information about those edits such as the editing user, the edit summary, the page edited, as well as any tags (e.g. "possible **vandalism**")^[31] added by customizable abuse filters and other extensions to aid in combating

unhelpful edits.^[32] On more active wikis, so many edits occur that it is hard to track Recent Changes manually. Anti-vandal software, including user-assisted tools,^[33] is sometimes employed on such wikis to process Recent Changes items. Server load can be reduced by sending a continuous feed of Recent Changes to an [IRC channel](#) that these tools can monitor, eliminating their need to send requests for a refreshed Recent Changes feed to the API.^{[34][35]}

Another important tool is watchlisting. Each logged-in user has a watchlist to which the user can add whatever pages he or she wishes. When an edit is made to one of those pages, a summary of that edit appears on the watchlist the next time it is refreshed.^[36] As with the recent changes page, recent edits that appear on the watchlist contain clickable links for easy review of the article history and specific changes made.

There is also the capability to review all edits made by any particular user. In this way, if an edit is identified as problematic, it is possible to check the user's other edits for issues.

MediaWiki allows one to link to specific versions of articles. This has been useful to the scientific community, in that expert peer reviewers could analyse articles, improve them and provide links to the trusted version of that article.^[37]

Navigation

[\[edit\]](#)

Wikilinks

[\[edit\]](#)

Navigation through the wiki is largely through internal wikilinks. MediaWiki's wikilinks implement page existence detection, in which a link is colored blue if the target page exists on the local wiki and red if it does not. If a user clicks on a red link, they are prompted to create an article with that title. Page existence detection makes it practical for users to create "wikified" articles—that is, articles containing links to other pertinent subjects—without those other articles being yet in existence.

Interwiki links

[\[edit\]](#)

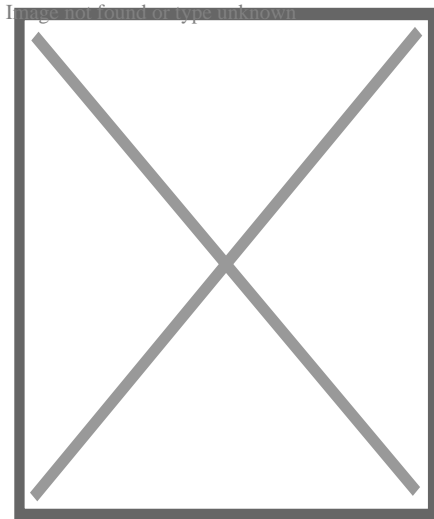
"Inter-wiki link" redirects here. For help with interwiki linking on Wikipedia, see [Help:Interwiki linking](#).

Interwiki links function much the same way as namespaces. A set of interwiki prefixes can be configured to cause, for instance, a page title of [wikiquote:Jimbo Wales](#) to direct the user to the Jimbo Wales article on [Wikiquote](#).^[38] Unlike internal wikilinks, interwiki links lack page

existence detection functionality, and accordingly there is no way to tell whether a blue interwiki link is broken or not.

Interlanguage links

[\[edit\]](#)



An example of interlanguage links

Interlanguage links are the small navigation links that show up in the sidebar in most MediaWiki skins that connect an article with related articles in other languages within the same Wiki family. This can provide language-specific communities connected by a larger context, with all wikis on the same server or each on its own server.[\[39\]](#)

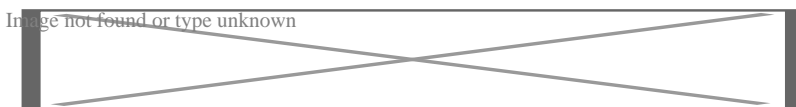
Previously, Wikipedia used interlanguage links to link an article to other articles on the same topic in other editions of Wikipedia. This was superseded by the launch of Wikidata.[\[40\]](#)

Content organization

[\[edit\]](#)

Page tabs and associated pages

[\[edit\]](#)



MediaWiki page tabs, using the "Vector 2010" skin. The red coloration of the "discussion" tab indicates that the article does not yet have a talk page. As with any other red wikilink, clicking on it prompts the user to create the page.

Page tabs are displayed at the top of pages. These tabs allow users to perform actions or view pages that are related to the current page. The available default actions include viewing, editing, and discussing the current page. The specific tabs displayed depend on whether the user is logged into the wiki and whether the user has sysop privileges on the wiki. For instance, the ability to move a page or add it to one's watchlist is usually restricted to logged-in users. The site administrator can add or remove tabs by using JavaScript or installing extensions.^[41]

Each page has an associated history page from which the user can access every version of the page that has ever existed and generate **diffs** between two versions of his choice. Users' contributions are displayed not only here, but also via a "user contributions" option on a sidebar. In a 2004 article, Carl Challborn and Teresa Reimann noted that "While this feature may be a slight deviation from the collaborative, 'ego-less' spirit of wiki purists, it can be very useful for educators who need to assess the contribution and participation of individual student users."^[42]

Namespaces

^[edit]

"Talk page" redirects here. For talk pages on Wikipedia, see **Help:Talk pages**.

MediaWiki provides many features beyond **hyperlinks** for structuring content. One of the earliest such features is **namespaces**. One of Wikipedia's earliest problems had been the separation of encyclopedic content from pages pertaining to maintenance and communal discussion, as well as personal pages about encyclopedia editors. Namespaces are prefixes before a page title (such as "User:" or "Talk:") that serve as descriptors for the page's purpose and allow multiple pages with different functions to exist under the same title. For instance, a page titled "[[The Terminator]]", in the default namespace, could describe **the 1984 movie** starring **Arnold Schwarzenegger**, while a page titled "[[User:The Terminator]]" could be a profile describing a user who chooses this name as a pseudonym. More commonly, each namespace has an associated "Talk:" namespace, which can be used to discuss its contents, such as "User talk:" or "Template talk:". The purpose of having discussion pages is to allow content to be separated from discussion surrounding the content.^{[43][44]}

Namespaces can be viewed as **folders** that separate different basic types of information or functionality. Custom namespaces can be added by the site administrators. There are 16 namespaces by default for content, with 2 "pseudo-namespaces" used for dynamically generated "Special:" pages and links to media files. Each namespace on MediaWiki is numbered: content page namespaces have even numbers and their associated talk page namespaces have odd numbers.^[45]

Category tags

^[edit]

Users can create new categories and add pages and files to those categories by appending one or more category tags to the content text. Adding these tags creates links at the bottom of the page that take the reader to the list of all pages in that category, making it easy to browse related articles.[46] The use of categorization to organize content has been described as a combination of:

- Collaborative tagging systems like [del.icio.us](#) and
- Hierarchical classifications like the [Dewey Decimal Classification](#).[47]

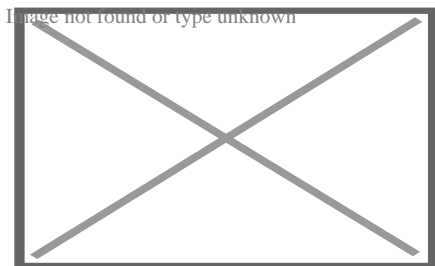
Subpages

[\[edit\]](#)

In addition to namespaces, content can be ordered using *subpages*. This simple feature provides automatic **breadcrumbs** of the pattern `[[Page title/Subpage title]]` from the page after the slash (in this case, "Subpage title") to the page before the slash (in this case, "Page title").

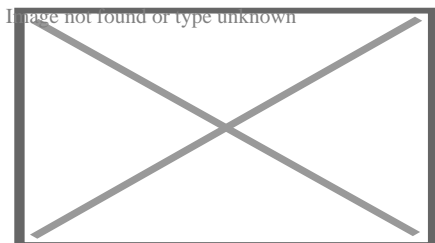
Customization

[\[edit\]](#)



Users can configure custom **JavaScript** that is executed on every pageview. This has led to JavaScript tools that users can "install", the "navigation popups" tool shown here displays a small preview of an article when hovering over a link title.

If the feature is enabled, users can customize their stylesheets and configure **client-side JavaScript** to be executed with every pageview. On Wikipedia, this has led to a large number of additional tools and helpers developed through the wiki and shared among users. For instance, *navigation popups* is a custom JavaScript tool that shows previews of articles when the user hovers over links and also provides shortcuts for common maintenance tasks.[48]



A **screenshot** of a wiki using MediaWiki with a customized skin

The entire MediaWiki user interface can be edited through the wiki itself by users with the necessary permissions (typically called "administrators"). This is done through a special namespace with the prefix "MediaWiki:", where each page title identifies a particular user interface message. Using an extension,^[49] it is also possible for a user to create personal scripts, and to choose whether certain sitewide scripts should apply to them by toggling the appropriate options in the user preferences page.

Templates

[edit]

The "MediaWiki:" namespace was originally also used for creating custom text blocks that could then be dynamically loaded into other pages using a special syntax. This content was later moved into its own namespace, "Template:".

Templates are text blocks that can be dynamically loaded inside another page whenever that page is requested. The template is a special link in double **curly brackets** (for example "Disputed"), which calls the template (in this case located at **Template:Disputed**) to load in place of the template call.

Templates are **structured documents** containing **attribute–value pairs**. They are defined with **parameters**, to which are assigned **values** when **transcluded** on an article page. The name of the parameter is **delimited** from the value by an **equals sign**. A class of templates known as **infoboxes** is used on Wikipedia to collect and present a subset of information about its subject, usually on the top (mobile view) or top right-hand corner (desktop view) of the document.

Pages in other namespaces can also be transcluded as templates. In particular, a page in the main namespace can be transcluded by prefixing its title with a colon; for example, :MediaWiki transcludes the article "MediaWiki" from the main namespace. Also, it is possible to mark the portions of a page that should be transcluded in several ways, the most basic of which are:^[50]

- `<noinclude>...</noinclude>`, which marks content that is not to be transcluded;
- `<includeonly>...</includeonly>`, which marks content that is not rendered unless it is transcluded;
- `<onlyinclude>...</onlyinclude>`, which marks content that is to be the *only* content transcluded.

A related method, called template *substitution* (called by adding subst: at the beginning of a template link) inserts the contents of the template into the target page (like a **copy and paste** operation), instead of loading the template contents dynamically whenever the page is loaded. This can lead to inconsistency when using templates, but may be useful in certain cases, and in most cases requires fewer **server** resources (the actual amount of savings can vary depending on wiki configuration and the complexity of the template).

Templates have found many different uses. Templates enable users to create complex table layouts that are used consistently across multiple pages, and where only the content of the tables gets inserted using template parameters. Templates are frequently used to identify problems with a Wikipedia article by putting a template in the article. This template then outputs a graphical box stating that the article content is disputed or in need of some other attention, and also categorize it so that articles of this nature can be located. Templates are also used on user pages to send users standard messages welcoming them to the site, [51] giving them awards for outstanding contributions, [52][53] warning them when their behavior is considered inappropriate, [54] notifying them when they are blocked from editing, [55] and so on.

Groups and restriction of access

[edit]

MediaWiki offers flexibility in creating and defining user groups. For instance, it would be possible to create an arbitrary "ninja" group that can block users and delete pages, and whose edits are hidden by default in the recent changes log. It is also possible to set up a group of "autoconfirmed" users that one becomes a member of after making a certain number of edits and waiting a certain number of days. [56] Some groups that are enabled by default are bureaucrats and sysops. Bureaucrats have the power to change other users' rights. Sysops have power over page protection and **deletion** and the blocking of users from editing. MediaWiki's available controls on editing rights have been deemed sufficient for publishing and maintaining important documents such as a manual of **standard operating procedures** in a hospital. [57]

MediaWiki comes with a basic set of features related to restricting access, but its original and ongoing design is driven by functions that largely relate to content, not content segregation. As a result, with minimal exceptions (related to specific tools and their related "Special" pages), page access control has never been a high priority in core development and developers have stated that users requiring secure user access and authorization controls should not rely on MediaWiki, since it was never designed for these kinds of situations. For instance, it is extremely difficult to create a wiki where only certain users can read and access some pages. [58] Here, wiki engines like **Foswiki**, **MoinMoin** and **Confluence** provide more flexibility by supporting advanced security mechanisms like **access control lists**.

Extensibility

[edit]

The MediaWiki codebase contains various **hooks** using **callback functions** to add additional PHP code in an **extensible** way. This allows developers to write extensions without necessarily needing to modify the core or having to submit their code for review. Installing an extension typically consists of adding a line to the configuration file, though in some cases additional changes such as database updates or core patches are required.

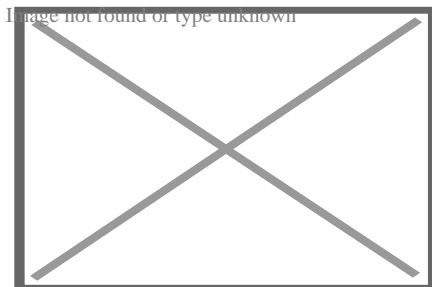
Five main extension points were created to allow developers to add features and functionalities to MediaWiki. Hooks are run every time a certain event happens; for instance, the ArticleSaveComplete hook occurs after a save article request has been processed.[59] This can be used, for example, by an extension that notifies selected users whenever a page edit occurs on the wiki from new or anonymous users.[60] New tags can be created to process data with opening and closing tags (<newtag>...</newtag>).[61] Parser functions can be used to create a new command (...).[62] New special pages can be created to perform a specific function. These pages are dynamically generated. For example, a special page might show all pages that have one or more links to an external site or it might create a form providing user submitted feedback.[63] Skins allow users to customize the look and feel of MediaWiki.[64] A minor extension point allows the use of Amazon S3 to host image files.[65]

Extensions

[edit]

Text manipulation

[edit]



Tim Starling in 2008

Among the most popular extensions is a parser function extension, ParserFunctions, which allows different content to be rendered based on the result of conditional statements.[66] These conditional statements can perform functions such as evaluating whether a parameter is empty, comparing strings, evaluating mathematical expressions, and returning one of two values depending on whether a page exists. It was designed as a replacement for a notoriously inefficient template called Qif.[67] Schindler recounts the history of the ParserFunctions extension as follows:[68]

In 2006 some Wikipedians discovered that through an intricate and complicated interplay of templating features and CSS they could create conditional wiki text, i.e. text that was displayed if a template parameter had a specific value. This included repeated calls of templates within templates, which bogged down the performance of the whole system. The developers faced the choice of either disallowing the spreading of an obviously desired feature by detecting such usage and explicitly disallowing it within the software or offering an efficient alternative. The latter was

done by Tim Starling, who announced the introduction of parser functions, wiki text that calls functions implemented in the underlying software. At first, only conditional text and the computation of simple mathematical expressions were implemented, but this already increased the possibilities for wiki editors enormously. With time further parser functions were introduced, finally leading to a framework that allowed the simple writing of extension functions to add arbitrary functionalities, like e.g. geo-coding services or widgets. This time the developers were clearly reacting to the demand of the community, being forced either to fight the solution of the issue that the community had (i.e. conditional text), or offer an improved technical implementation to replace the previous practice and achieve an overall better performance.

Another parser functions extension, StringFunctions, was developed to allow evaluation of string length, string position, and so on. Wikimedia communities, having created awkward workarounds to accomplish the same functionality,[69] clamored for it to be enabled on their projects.[70] Much of its functionality was eventually integrated into the ParserFunctions extension,[71] albeit disabled by default and accompanied by a warning from Tim Starling that enabling string functions would allow users "to implement their own parsers in the ugliest, most inefficient programming language known to man: MediaWiki wikitext with ParserFunctions." [72]

Since 2012 an extension, Scribunto, has existed that allows for the creation of "modules"—wiki pages written in the scripting language **Lua**—which can then be run within templates and standard wiki pages. Scribunto has been installed on Wikipedia and other Wikimedia sites since 2013 and is used heavily on those sites. Scribunto code runs significantly faster than corresponding wikitext code using ParserFunctions.[73]

For footnotes and academic-related display

[edit]

Another very popular extension is a citation extension that enables footnotes to be added to pages using inline references.[74] This extension has, however, been criticized for being difficult to use and requiring the user to memorize complex syntax. A gadget called **RefToolbar** attempts to make it easier to create citations using common templates. MediaWiki has some extensions that are well-suited for academia, such as mathematics extensions[75] and an extension that allows molecules to be rendered in **3D**. [76]

Integration

[edit]

A generic Widgets extension exists that allows MediaWiki to integrate with virtually anything. Other examples of extensions that could improve a wiki are category suggestion extensions[77] and extensions for inclusion of **Flash Videos**,[78] YouTube videos,[79] and **RSS feeds**. [80]

Metavid, a site that archives video footage of the **U.S. Senate** and **House** floor proceedings, was created using code extending MediaWiki into the domain of collaborative video authoring.[81]

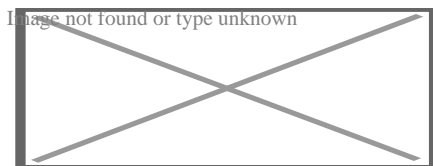
Combating linkspam

[edit]

There are many **spambots** that search the web for MediaWiki installations and add **linkspam** to them, despite the fact that MediaWiki uses the **nofollow** attribute to discourage such attempts at **search engine optimization**.^[82] Part of the problem is that third party republishers, such as **mirrors**, may not independently implement the nofollow tag on their websites, so marketers can still get **PageRank** benefit by inserting links into pages when those entries appear on third party websites.^[83] **Anti-spam** extensions have been developed to combat the problem by introducing **CAPTCHAs**,^[84] **blacklisting** certain URLs,^[85] and allowing bulk deletion of pages recently added by a particular user.^[86]

Searches and queries

[edit]



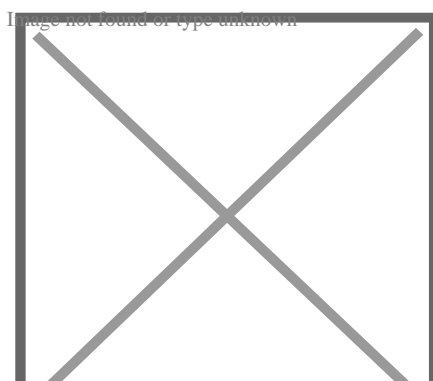
A search box showing a **drop-down list**

MediaWiki comes pre-installed with a standard text-based search. Extensions exist to let MediaWiki use more sophisticated third-party search engines, including **Elasticsearch** (which since 2014 has been in use on Wikipedia), **Lucene**^[87] and **Sphinx**.^[88]

Various MediaWiki extensions have also been created to allow for more complex, **faceted search**, on both data entered within the wiki and on **metadata** such as pages' revision history.^{[89][90]} **Semantic MediaWiki** is one such extension.^{[91][92]}

Rich content

[edit]



Images can be arranged in galleries, a feature that is used extensively for Wikimedia's media archive, [Wikimedia Commons](#).

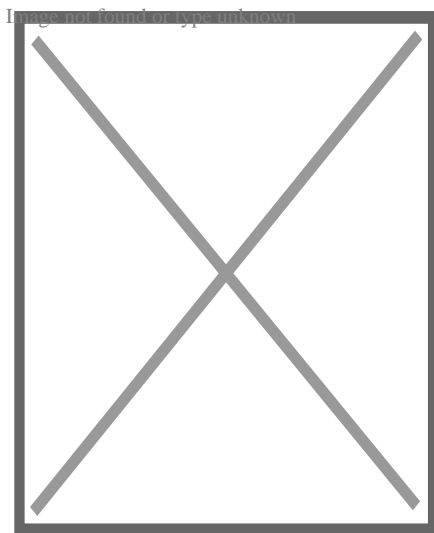
Various extensions to MediaWiki support [rich content](#) generated through specialized syntax. These include mathematical formulas using [LaTeX](#), graphical timelines over mathematical plotting, [musical scores](#) and [Egyptian hieroglyphs](#).

The software supports a wide variety of uploaded media files, and allows image galleries and thumbnails to be generated with relative ease. There is also support for [Exif metadata](#). MediaWiki operates the [Wikimedia Commons](#), one of the largest [free content](#) media archives.

For WYSIWYG editing, [VisualEditor](#) is available to use in MediaWiki which simplifying editing process for editors and has been bundled since MediaWiki 1.35.^[93] Other extensions exist for handling WYSIWYG editing to different degrees.^[94]

Database

[\[edit\]](#)



A schematic of the MediaWiki database structure

MediaWiki can use either the [MySQL/MariaDB](#), [PostgreSQL](#) or [SQLite relational database management system](#). Support for [Oracle Database](#) and [Microsoft SQL Server](#) has been dropped since MediaWiki 1.34.^[95] A MediaWiki database contains several dozen [tables](#), including a page table that contains page titles, page ids, and other metadata;^[96] and a revision table to which is added a new row every time an edit is made, containing the page id, a brief textual summary of the change performed, the user name of the article editor (or its IP address the case of an unregistered user) and a timestamp.^{[97][98]}

In a 4½ year period prior to 2008, the MediaWiki database had 170 [schema](#) versions.^[99] Possibly the largest schema change was done in 2005 with MediaWiki 1.5, when the storage of metadata was separated from that of content, to improve performance flexibility. When this

upgrade was applied to Wikipedia, the site was locked for editing, and the schema was converted to the new version in about 22 hours. Some software enhancement proposals, such as a proposal to allow sections of articles to be watched via watchlist, have been rejected because the necessary schema changes would have required excessive Wikipedia downtime. [100]

Performance and storage

[edit]

Because it is used to run one of the highest-traffic sites on the Web, Wikipedia, MediaWiki's performance and **scalability** have been highly optimized.[101] MediaWiki supports **Squid**, **load-balanced** database replication, client-side caching, **memcached** or table-based caching for frequently accessed processing of query results, a simple static file cache, feature-reduced operation, revision compression, and a job queue for database operations. MediaWiki developers have attempted to optimize the software by avoiding expensive algorithms, database queries, etc., caching every result that is expensive and has temporal locality of reference, and focusing on the hot spots in the code through **profiling**. [102]

MediaWiki code is designed to allow for data to be written to a read-write database and read from read-only databases, although the read-write database can be used for some read operations if the read-only databases are not yet up to date. **Metadata**, such as article revision history, article relations (links, categories etc.), user accounts and settings can be stored in core databases and cached; the actual revision text, being more rarely used, can be stored as append-only **blobs** in external storage. The software is suitable for the operation of large-scale **wiki farms** such as **Wikimedia**, which had about 800 wikis as of August 2011. However, MediaWiki comes with no built-in GUI to manage such installations.

Empirical evidence shows most revisions in MediaWiki databases tend to differ only slightly from previous revisions. Therefore, subsequent revisions of an article can be concatenated and then compressed, achieving very high **data compression ratios** of up to 100x. [102]

For more information on the architecture, such as how it stores wikitext and assembles a page, see **External links**.

Limitations

[edit]

The parser serves as the *de facto* standard for the MediaWiki syntax, as no formal syntax has been defined. Due to this lack of a formal definition, it has been difficult to create **WYSIWYG** editors for MediaWiki, although several WYSIWYG extensions do exist, including the popular **VisualEditor**.

MediaWiki is not designed to be a suitable replacement for dedicated [online forum](#) or blogging software,[\[103\]](#) although extensions do exist to allow for both of these.[\[104\]](#)[\[105\]](#)

It is common for new MediaWiki users to make certain mistakes, such as forgetting to sign posts with four tildes (~~~~),[\[106\]](#) or manually entering a plaintext signature,[\[107\]](#) due to unfamiliarity with the idiosyncratic particulars involved in communication on MediaWiki discussion pages. On the other hand, the format of these discussion pages has been cited as a strength by one educator, who stated that it provides more fine-grain capabilities for discussion than traditional threaded discussion forums. For example, instead of 'replying' to an entire message, the participant in a discussion can create a hyperlink to a new wiki page on any word from the original page. Discussions are easier to follow since the content is available via hyperlinked wiki page, rather than a series of reply messages on a traditional threaded discussion forum. However, except in few cases, students were not using this capability, possibly because of their familiarity with the traditional linear discussion style and a lack of guidance on how to make the content more 'link-rich'.[\[108\]](#)

MediaWiki by default has little support for the creation of dynamically assembled documents, or pages that aggregate data from other pages. Some research has been done on enabling such features directly within MediaWiki.[\[109\]](#) The [Semantic MediaWiki](#) extension provides these features. It is not in use on Wikipedia, but in more than 1,600 other MediaWiki installations.[\[110\]](#) The Wikibase Repository and Wikibase Repository client are however implemented in [Wikidata](#) and [Wikipedia](#) respectively, and to some extent provides [semantic web](#) features, and linking of centrally stored data to infoboxes in various Wikipedia articles.

Upgrading MediaWiki is usually fully automated, requiring no changes to the site content or template programming. Historically troubles have been encountered when upgrading from significantly older versions.[\[111\]](#)

Security

[\[edit\]](#)

MediaWiki developers have enacted security standards, both for core code and extensions.[\[112\]](#) [SQL queries](#) and HTML output are usually done through wrapper functions that handle validation, escaping, filtering for prevention of [cross-site scripting](#) and [SQL injection](#).[\[113\]](#) Many security issues have had to be patched after a MediaWiki version release,[\[114\]](#) and accordingly MediaWiki.org states, "The most important security step you can take is to keep your software up to date" by subscribing to the announcement [mailing list](#) and installing security updates that are announced.[\[115\]](#)

Support

[\[edit\]](#)

Support for MediaWiki users consists of:

- MediaWiki.org, including the Support Desk.
- An official mailing list, Mediawiki-l.
- Several books have been written about MediaWiki administration,[116] including some free online books.[117][118]

License

[edit]

MediaWiki is free and open-source and is distributed under the terms of the [GNU General Public License](#) version 2 or any later version. Its documentation, located at its official website at www.mediawiki.org, is released under the [Creative Commons BY-SA 4.0](#) license, with a set of help pages intended to be freely copied into fresh wiki installations and/or distributed with MediaWiki software in the [public domain](#) instead to eliminate legal issues for wikis with other licenses.[119][120] MediaWiki's development has generally favored the use of [open-source media formats](#). [121]

Development

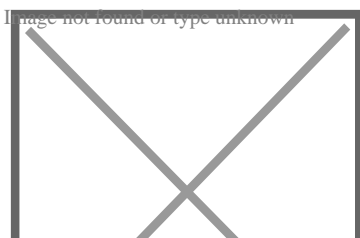
[edit]

MediaWiki has an active volunteer community for development and maintenance. MediaWiki developers are spread around the world, though with a majority in the United States and Europe. Face-to-face meetings and programming sessions for MediaWiki developers have been held once or several times a year since 2004.[122]

Anyone can submit [patches](#) to the project's [Git/Gerrit repository](#). [123] There are also paid programmers who primarily develop projects for the [Wikimedia Foundation](#). MediaWiki developers participate in the [Google Summer of Code](#) by facilitating the assignment of mentors to students wishing to work on MediaWiki core and extension projects.[124] During the year prior to November 2012, there were about two hundred developers who had committed changes to the MediaWiki core or extensions.[125] Major MediaWiki releases are generated approximately every six months by taking snapshots of the development branch, which is kept continuously in a runnable state; [126] [minor releases](#), or [point releases](#), are issued as needed to correct [bugs](#) (especially security problems). MediaWiki is developed on a [continuous integration](#) development model, in which software changes are pushed live to Wikimedia sites on regular basis.[126] MediaWiki also has a public [bug](#) tracker, phabricator.wikimedia.org, which runs [Phabricator](#). The site is also used for [feature](#) and [enhancement](#) requests.

History

[edit]



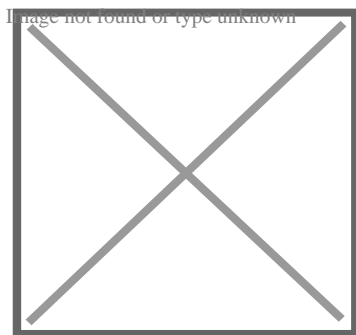
Magnus Manske in 2012

When Wikipedia was launched in January 2001, it ran on an existing **wiki software** system, **UseModWiki**. UseModWiki is written in the **Perl** programming language, and stores all wiki pages in text (**.txt**) files. This software soon proved to be limiting, in both functionality and performance. In mid-2001, **Magnus Manske**—a developer and student at the **University of Cologne**, as well as a **Wikipedia editor**—began working on new software that would replace UseModWiki, specifically designed for use by Wikipedia. This software was written in the **PHP** scripting language, and stored all of its information in a **MySQL** database. The new software was largely developed by August 24, 2001, and a test wiki for it was established shortly thereafter.

The first full implementation of this software was the new **Meta Wikipedia** on November 9, 2001. There was a desire to have it implemented immediately on the English-language Wikipedia.^[127] However, Manske was apprehensive about any potential **bugs** harming the nascent website during the period of the final exams he had to complete immediately prior to Christmas;^[128] this led to the launch on the English-language Wikipedia being delayed until January 25, 2002. The software was then, gradually, deployed on all the Wikipedia language sites of that time. This software was referred to as "the PHP script" and as "phase II", with the name "phase I", retroactively given to the use of UseModWiki.

Increasing usage soon caused load problems to arise again, and soon after, another rewrite of the software began; this time being done by **Lee Daniel Crocker**, which became known as "phase III". This new software was also written in PHP, with a MySQL backend, and kept the basic interface of the phase II software, but with the added functionality of a wider **scalability**. The "phase III" software went live on Wikipedia in July 2002.

The **Wikimedia Foundation** was announced on June 20, 2003. In July, Wikipedia contributor Daniel Mayer suggested the name "MediaWiki" for the software, as a play on "Wikimedia".^[129] The MediaWiki name was gradually phased in, beginning in August 2003. The name has frequently caused confusion due to its (intentional) similarity to the "Wikimedia" name (which itself is similar to "Wikipedia").^[130] The first version of MediaWiki, 1.1, was released in December 2003.



MediaWiki logo until April 1, 2021

The old **product logo** was created by **Erik Möller**, using a flower photograph taken by **Florence Nibart-Devouard**, and was originally submitted to the logo contest for a new **Wikipedia logo**, held from July 20 to August 27, 2003.^{[131][132]} The logo came in third place, and was chosen to represent MediaWiki rather than Wikipedia, with the second place logo being used for the Wikimedia Foundation.^[133] The double square brackets (**[[** **]]**) symbolize the **syntax** MediaWiki uses for creating **hyperlinks** to other wiki pages; while the **sunflower** represents the diversity of content on Wikipedia, its constant growth, and the wilderness.^[134]

Later, Brooke Vibber, the **chief technical officer** of the **Wikimedia Foundation**,^[135] took up the role of **release manager**.^{[136][101]}

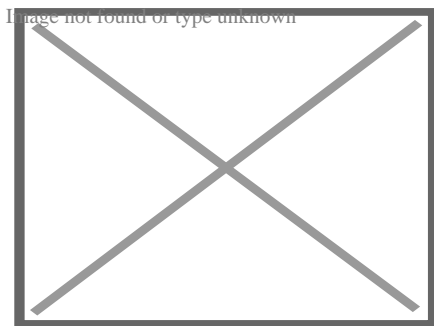
Major milestones in MediaWiki's development have included: the **categorization system** (2004); **parser** functions, (2006); **Flagged Revisions**, (2008);^[68] the "*ResourceLoader*", a delivery system for **CSS** and JavaScript (2011);^[137] and the **VisualEditor**, a "what you see is what you get" (**WYSIWYG**) editing platform (2013).^[138]

The contest of designing a new logo was initiated on June 22, 2020, as the old logo was a bitmap image and had "high details", leading to problems when rendering at high and low resolutions, respectively. After two rounds of voting, the new and current MediaWiki logo designed by **Serhio Magpie** was selected on October 24, 2020, and officially adopted on April 1, 2021.^[139]

Sites using MediaWiki

^[edit]

See also: **Category:MediaWiki websites**



Fandom also makes use of MediaWiki.

MediaWiki's most famous use has been in **Wikipedia** and, to a lesser degree, the Wikimedia Foundation's other projects. **Fandom**, a **wiki hosting service** formerly known as Wikia, runs on MediaWiki. Other public wikis that run on MediaWiki include **wikiHow** and **SNPedia**. **WikiLeaks** began as a MediaWiki-based site, but is no longer a wiki.

A number of alternative wiki encyclopedias to Wikipedia run on MediaWiki, including **Citizendium**, **Metapedia**, **Scholarpedia** and **Conservapedia**. MediaWiki is also used internally by a large number of companies, including **Novell** and **Intel**.^{[140][141]}

Notable usages of MediaWiki within governments include [Intellipedia](#), used by the [United States Intelligence Community](#), [Diplopedia](#), used by the [United States Department of State](#), and [milWiki](#), a part of [milSuite](#) used by the [United States Department of Defense](#). [United Nations agencies](#) such as the [United Nations Development Programme](#) and [INSTRAW](#) chose to implement their wikis using MediaWiki, because "this software runs Wikipedia and is therefore guaranteed to be thoroughly tested, will continue to be developed well into the future, and future technicians on these wikis will be more likely to have exposure to MediaWiki than any other wiki software."^[142]

The [Free Software Foundation](#) uses MediaWiki to implement the [LibrePlanet](#) site.^[143]

Comparison to other online collaboration software

^[edit]

Main article: [Comparison of wiki software](#)

Users of online [collaboration software](#) are familiar with MediaWiki's functions and layout due to its noted use on Wikipedia. A 2006 overview of social software in academia observed that "Compared to other wikis, MediaWiki is also fairly aesthetically pleasing, though simple, and has an easily customized side menu and [stylesheet](#)."^[144] However, in one assessment in 2006, [Confluence](#) was deemed to be a superior product due to its very usable API and ability to better support multiple wikis.^[76]


A 2009 study at the [University of Hong Kong](#) compared [TWiki](#) to MediaWiki. The authors noted that TWiki has been considered as a collaborative tool for the development of educational papers and technical projects, whereas MediaWiki's most noted use is on Wikipedia. Although both platforms allow discussion and tracking of progress, TWiki has a "Report" part that MediaWiki lacks. Students perceived MediaWiki as being easier to use and more enjoyable than TWiki. When asked whether they recommended using MediaWiki for [knowledge management](#) course group project, 15 out of 16 respondents expressed their preference for MediaWiki giving answers of great certainty, such as "of course", "for sure".^[145] TWiki and MediaWiki both have flexible plug-in architecture.^[146]

A 2009 study that compared students' experience with MediaWiki to that with [Google Docs](#) found that students gave the latter a much higher rating on user-friendly layout.^[147]

A 2021 study conducted by the [Brazilian Nuclear Engineering Institute](#) compared a MediaWiki-based [knowledge management system](#) against two others that were based on [DSpace](#) and [Open Journal Systems](#), respectively.^[148] It highlighted ease of use as an advantage of the MediaWiki-based system, noting that because the Wikimedia Foundation had been developing MediaWiki for a site aimed at the general public (Wikipedia), "its user interface was designed to be more user-friendly from start, and has received large user feedback over a long time", in contrast to DSpace's and OJS's focus on niche audiences.^[148]

See also

[[edit](#)]

-  [Free and open-source software portal](#)
- [List of content management systems](#)
- [List of wiki software](#)
- [BlueSpice](#)
- [Semantic MediaWiki](#)
- [XOWA](#) – for viewing Wikipedia and other wikis offline
- [PHP](#) – a programming language that powers MediaWiki

References

[[edit](#)]

- [^] ["Announcing MediaWiki 1.43.0"](#). December 21, 2024.
- [^] Reed, Sam (December 19, 2019). ["Announcing MediaWiki 1.34.0"](#). mediawiki-announce (Mailing list). [Archived](#) from the original on December 19, 2019. Retrieved December 19, 2019.
- [^] ["Names.php • mediawiki"](#). github.com. April 8, 2021. [Archived](#) from the original on July 15, 2021. Retrieved May 19, 2021.
- [^] ["Copyright"](#). mediawiki.org. [Archived](#) from the original on September 19, 2015. Retrieved September 7, 2015.
- [^] Magnus Manske's announcement of "PHP Wikipedia", wikipedia-l, August 24, 2001
- [^] [Barrett, Daniel J.](#) (October 2008). [MediaWiki](#). O'Reilly Media. [ISBN 978-0-596-51979-7](#). Retrieved April 23, 2010.
- [^] [a b](#) ["What is MediaWiki?"](#). MediaWiki. January 9, 2021. [Archived](#) from the original on July 22, 2018. Retrieved March 27, 2021.
- [^] ["Wikipedia:Statistics – Wikipedia, the free encyclopedia"](#). Wikipedia. [Archived](#) from the original on August 28, 2021. Retrieved May 30, 2010.
- [^] [a b](#) ["Message group statistics: MediaWiki core"](#). translatewiki.net. August 20, 2023. [Archived](#) from the original on August 20, 2023. Retrieved August 20, 2023. "488 languages (not including languages that are supported but have no translations)"
- [^] ["Category:MediaWiki configuration settings"](#). MediaWiki. September 11, 2016. [Archived](#) from the original on November 10, 2014. Retrieved September 11, 2016.
- [^] ["Extension Matrix"](#). MediaWiki. [Archived](#) from the original on September 11, 2016. Retrieved September 6, 2017.
- [^] Lerner, Reuven M. (February 23, 2006), [Installing and Customizing MediaWiki](#), Linux Journal, archived from [the original](#) on April 6, 2010, retrieved April 23, 2010
- [^] Petrazickis, Leons (2009), [Deploying PHP applications on IBM DB2 in the cloud: MediaWiki as a case study](#), Proceedings of the 2009 Conference of the Center for Advanced Studies on Collaborative Research, pp. 304–305, [doi](#):

10.1145/1723028.1723069, S2CID 27463043

14. ^ ["Manual:\\$wgEnableUploads"](#). MediaWiki. *Archived* from the original on June 25, 2010. Retrieved May 30, 2010.
15. ^ ["Manual:\\$wgLogo"](#). MediaWiki. December 12, 2009. *Archived* from the original on June 25, 2010. Retrieved May 30, 2010.
16. ^ ["Manual:LocalSettings.php"](#). MediaWiki. March 29, 2007. *Archived* from the original on June 25, 2010. Retrieved May 30, 2010.
17. ^ ["Extension:AbuseFilter"](#). MediaWiki. *Archived* from the original on June 25, 2010. Retrieved May 30, 2010.
18. ^ Cacycle. ["wikEd"](#). *Archived* from the original on November 23, 2007.
19. ^ ["Manual:Installation guide"](#). MediaWiki. *Archived* from the original on June 25, 2010. Retrieved May 30, 2010.
20. ^ ["Manual:Extending wiki markup"](#). MediaWiki. *Archived* from the original on May 1, 2011. Retrieved May 30, 2010.
21. ^ ["HTML to Wiki Converter – tables"](#). WMF Labs. March 29, 2008. *Archived* from the original on July 13, 2014. Retrieved June 12, 2014.
22. ^ ["Markup spec"](#). MediaWiki. *Archived* from the original on December 19, 2007. Retrieved May 30, 2010.
23. ^ ["Extricating Meaning from Wikimedia Article Archives"](#) (PDF). *Archived* (PDF) from the original on March 10, 2011. Retrieved January 2, 2011.
24. ^ Jakes, David (August 15, 2006), [Wild about Wikis](#), Tech & Learning, archived from [the original](#) on May 2, 2010, retrieved April 23, 2010
25. ^ Foley, Brian & Chang, Tae (2008), [Wiki as a professional development tool](#) (PDF), Technology and Teacher Education, *archived* (PDF) from the original on April 30, 2011, retrieved April 23, 2010
26. ^ ["API"](#). MediaWiki. May 17, 2010. *Archived* from the original on May 27, 2010. Retrieved May 30, 2010.
27. ^ ["Pywikibot – MediaWiki"](#). mediawiki.org. *Archived* from the original on March 9, 2018. Retrieved March 16, 2018.
28. ^ ["Wikipedia:AutoWikiBrowser – Wikipedia, the free encyclopedia"](#). En.wikipedia.org. *Archived* from the original on April 20, 2010. Retrieved May 30, 2010.
29. ^ Bartolo, Laura M.; Lowe, Cathy S.; Songar, Poonam; Tandy, Robert J. (May 20, 2009), [Facilitating Wiki/Repository Communication with Metadata](#), Georgia Institute of Technology, archived from [the original](#) on January 9, 2011, retrieved April 23, 2010
30. ^ ["API:Client code"](#). MediaWiki. May 24, 2010. *Archived* from the original on June 26, 2010. Retrieved May 30, 2010.
31. ^ ["Tags – Wikipedia, the free encyclopedia"](#). En.wikipedia.org. *Archived* from the original on March 4, 2010. Retrieved May 30, 2010.
32. ^ ["Manual:Tags"](#). MediaWiki. August 31, 2009. *Archived* from the original on June 25, 2010. Retrieved May 30, 2010.
33. ^ ["Wikipedia:Huggle – Wikipedia, the free encyclopedia"](#). En.wikipedia.org. *Archived* from the original on March 31, 2011. Retrieved May 30, 2010.
34. ^ ["IRC/Channels"](#). Meta-Wiki. *Archived* from the original on March 23, 2010. Retrieved May 30, 2010.

35. ^ Daniel Nasaw (July 25, 2012). *"Meet the 'bots' that edit Wikipedia"*. BBC News. *Archived from the original on July 28, 2012*. Retrieved July 30, 2012.
36. ^ *"Manual:Watchlist"*. MediaWiki. November 24, 2009. *Archived from the original on May 1, 2011*. Retrieved May 30, 2010.
37. ^ Kevin Yager (March 16, 2006), "Wiki ware could harness the Internet for science", *Nature*, **440** (7082): 278, *Bibcode*:2006Natur.440..278Y, *doi*:10.1038/440278a, *PMID* 16541049
38. ^ *"Manual:Interwiki"*. MediaWiki. *Archived from the original on December 3, 2010*. Retrieved May 30, 2010.
39. ^ *"Interlanguage links"*. MediaWiki. *Archived from the original on March 12, 2021*. Retrieved March 17, 2021.
40. ^ Pintscher, Lydia (September 23, 2013). *"Wikidata is Here!"*. *Commons:Village pump*. *Archived from the original on December 6, 2021*. Retrieved March 17, 2021.
41. ^ *"Help:Navigation"*. MediaWiki. May 21, 2010. *Archived from the original on May 27, 2010*. Retrieved May 30, 2010.
42. ^ Carl Challborn & Teresa Reimann (December 2004), *Wiki products: a comparison* (PDF), Athabasca University, *archived* (PDF) from the original on December 23, 2010, retrieved April 23, 2010
43. ^ Newman, Aaron; Steinberg, Adam; Thomas, Jeremy (2008). *Enterprise 2.0 Implementation*. McGraw-Hill Professional. p. 185. *ISBN* 978-0-07-159160-7.
44. ^ Malcolm, Jeremy (2008). *Multi-Stakeholder Governance and the Internet Governance Forum*. Terminus Press. pp. 188, 280. *ISBN* 978-0-9805084-0-6.
45. ^ Ebersbach, Anja; Glaser, Markus; Heigl, Richard; Dueck, Gunter (2006). *Wiki*. Springer. pp. 55, 80–82, 109, 120–121, 156. *ISBN* 978-3-540-25995-4.
46. ^ *"Help:Categories"*. MediaWiki. *Archived from the original on June 25, 2010*. Retrieved May 30, 2010.
47. ^ Jakob Voss (April 27, 2006). "Collaborative thesaurus tagging the Wikipedia way". *arXiv:cs.IR/0604036*.
48. ^ Lupin. *"Wikipedia:Tools/Navigation popups"*. *Archived from the original on July 18, 2006*.
49. ^ *"Extension:Gadgets"*. MediaWiki. March 30, 2010. *Archived from the original on June 25, 2010*. Retrieved May 30, 2010.
50. ^ Anderson, Mark; Carr, Leslie; Millard, David E. (July 4, 2017). *There and Here: Patterns of Content Transclusion in Wikipedia*. 28th ACM Conference on Hypertext and Social Media. Prague, Czech Republic: ACM. pp. 115–124. *doi*:10.1145/3078714.3078726. *ISBN* 978-1-4503-4708-2.
51. ^ Āfâ€ŽĀ...â€™esky (May 16, 2010). *"Template:Welcome – Wikipedia, the free encyclopedia"*. En.wikipedia.org. *Archived from the original on May 6, 2011*. Retrieved May 30, 2010.
52. ^ T Kriplean; I Beschastnikh; et al. (2008), "Articulations of wikiwork: Uncovering valued work in wikipedia through barnstars", *Proceedings of the 2008 ACM conference on Computer supported cooperative work*, *Proceedings of the ACM*, pp. 47–56, *doi*: 10.1145/1460563.1460573, *ISBN* 9781605580074, *S2CID* 7164949
53. ^ Āfâ€ŽĀ...â€™esky. *"Wikipedia:Barnstars – Wikipedia, the free encyclopedia"*. En.wikipedia.org. *Archived from the original on June 24, 2009*. Retrieved May 30, 2010.

54. ^ [Ãfâ€ŽÃ…â€™esky. "Template:Test – Wikipedia, the free encyclopedia". En.wikipedia.org. Archived from the original on November 11, 2009. Retrieved May 30, 2010.](#)
55. ^ ["Template:Test5 – Wikipedia, the free encyclopedia". En.wikipedia.org. June 19, 2008. Archived from the original on April 24, 2009. Retrieved May 30, 2010.](#)
56. ^ ["Manual:User rights management". MediaWiki. Archived from the original on June 25, 2010. Retrieved May 30, 2010.](#)
57. ^ H Zielke; W Boemke; M Kastrup; C Melzer (November 21, 2007), [Operating Procedures in Clinical Practice](#) (PDF), Royal College of Anaesthetists, [archived](#) (PDF) from the original on May 15, 2011, retrieved April 25, 2010
58. ^ ["Security issues with authorization extensions". MediaWiki. Archived from the original on June 26, 2010. Retrieved May 30, 2010.](#)
59. ^ ["Manual:Hooks/ArticleSaveComplete". MediaWiki. May 26, 2010. Archived from the original on November 10, 2014. Retrieved May 30, 2010.](#)
60. ^ ["Extension:Recent Activity Notify". MediaWiki. Archived from the original on September 27, 2014. Retrieved May 30, 2010.](#)
61. ^ ["Manual:Tag extensions". MediaWiki. May 21, 2010. Archived from the original on October 12, 2014. Retrieved May 30, 2010.](#)
62. ^ ["Manual:Parser functions". MediaWiki. March 22, 2010. Archived from the original on October 18, 2014. Retrieved May 30, 2010.](#)
63. ^ ["Manual:Special pages". MediaWiki. Archived from the original on November 10, 2014. Retrieved May 30, 2010.](#)
64. ^ ["Manual:Skins". MediaWiki. May 14, 2010. Archived from the original on November 25, 2014. Retrieved May 30, 2010.](#)
65. ^ ["Manual:Integration with S3". MediaWiki. March 22, 2010. Archived from the original on November 27, 2014. Retrieved May 30, 2010.](#)
66. ^ ["Extension:ParserFunctions". MediaWiki. December 25, 2009. Archived from the original on June 25, 2010. Retrieved May 30, 2010.](#)
67. ^ ["Wikipedia:Miscellany for deletion/Template:Qif – Wikipedia, the free encyclopedia". En.wikipedia.org. Archived from the original on February 25, 2015. Retrieved May 30, 2010.](#)
68. ^ **a b** M Schindler; D Vrandecic (2009), [Introducing new features to Wikipedia](#), Proceedings of WebSci, [archived](#) from the original on June 24, 2018, retrieved June 24, 2018
69. ^ ["Category:String manipulation templates – Wikipedia, the free encyclopedia". En.wikipedia.org. May 15, 2010. Archived from the original on May 6, 2011. Retrieved May 30, 2010.](#)
70. ^ ["Bug 6455 – Enable StringFunctions on WMF wikis". bugzilla.wikimedia.org. Archived from the original on January 22, 2012. Retrieved October 9, 2010.](#)
71. ^ ["Extension:StringFunctions". MediaWiki. Archived from the original on June 25, 2010. Retrieved May 30, 2010.](#)
72. ^ ["r51497 – Code Review". MediaWiki. Archived from the original on November 27, 2014. Retrieved May 30, 2010.](#)

73. ^ ["Lua performance"](#). *Archived* from the original on August 24, 2018. Retrieved December 27, 2018.
74. ^ ["Extension:Cite"](#). MediaWiki. May 3, 2010. *Archived* from the original on October 20, 2014. Retrieved May 30, 2010.
75. ^ ["Category:Math extensions"](#). MediaWiki. December 26, 2009. *Archived* from the original on May 1, 2011. Retrieved May 30, 2010.
76. ^ **a b** Marieke Guy (January 2007), *Wikido: Exploiting the Potential of Wikis*, Ariadne, *archived* from the original on April 7, 2010, retrieved April 23, 2010
77. ^ ["Extension:CategorySuggest"](#). MediaWiki. *Archived* from the original on September 26, 2014. Retrieved May 30, 2010.
78. ^ ["Category:Flash Video extensions"](#). MediaWiki. *Archived* from the original on September 15, 2014. Retrieved May 30, 2010.
79. ^ ["Category:YouTube extensions"](#). MediaWiki. September 16, 2008. *Archived* from the original on May 1, 2011. Retrieved May 30, 2010.
80. ^ ["Category:RSS extensions"](#). MediaWiki. *Archived* from the original on December 3, 2010. Retrieved May 30, 2010.
81. ^ M Dale; A Stern; M Deckert; W Sack (2009), *System demonstration: Metavid.org: a social website and open archive of congressional video*, Proceedings of the 10th Annual International Conference on Digital Government Research: Social Networks: Making Connections between Citizens, Data and Government, pp. 309–310, *ISBN 978-1-60558-535-2*
82. ^ ["Wiki spam"](#). Meta-Wiki. *Archived* from the original on November 7, 2014. Retrieved May 30, 2010.
83. ^ Goldman, Eric, Wikipedia's Labor Squeeze and its Consequences, vol. 8, *Journal on Telecommunications and High Technology Law*
84. ^ ["Extension:ConfirmEdit"](#). MediaWiki. May 5, 2010. *Archived* from the original on October 20, 2014. Retrieved May 30, 2010.
85. ^ ["Extension:SpamBlacklist"](#). MediaWiki. March 24, 2010. *Archived* from the original on October 20, 2014. Retrieved May 30, 2010.
86. ^ ["Extension:Nuke"](#). MediaWiki. May 19, 2010. *Archived* from the original on October 20, 2014. Retrieved May 30, 2010.
87. ^ [Lucene-search MediaWiki extension](#) *Archived* June 2, 2012, at the [Wayback Machine](#), mediawiki.org
88. ^ [SphinxSearch MediaWiki extension](#) *Archived* October 22, 2014, at the [Wayback Machine](#), mediawiki.org
89. ^ Masanori Arita & Kazuhiro Suwa (September 17, 2008), "Search extension transforms Wiki into a relational system: A case for flavonoid metabolite database", *BioData Min*, **1** (1), *BioData Mining*: 7, doi:10.1186/1756-0381-1-7, *PMC 2556319*, *PMID 18822113*
90. ^ Finn Arup Nielsen (October 15, 2009). "Lost in localization: a solution with neuroinformatics 2.0?". *NeuroImage*. **48** (1): 11–3. doi:10.1016/J.NEUROIMAGE.2009.05.073. ISSN 1053-8119. *PMID 19497377*. Wikidata Q21011200.
91. ^ Eric Ras; Jörg Rech; Sebastian Weber (August 1, 2008), *Collaborative Authoring of Learning Elements for Adaptive Learning Spaces* (PDF), Fifth International Conference on

Adaptive Hypermedia and Adaptive Web-Based Systems, [archived](#) (PDF) from the original on May 3, 2011, retrieved April 23, 2010

92. ^ Hartung, Michael; et al. "A Platform for Collaborative Management of Semantic Grid Metadata". *Intelligent distributed computing, systems and applications*. p. 123.
93. ^ ["Extension:VisualEditor"](#). MediaWiki. [Archived](#) from the original on February 21, 2021. Retrieved March 15, 2021.
94. ^ ["Category:WYSIWYG extensions"](#). MediaWiki. April 10, 2008. [Archived](#) from the original on May 1, 2011. Retrieved May 30, 2010.
95. ^ ["Manual:Installation requirements"](#). MediaWiki. [Archived](#) from the original on March 8, 2021. Retrieved March 14, 2021.
96. ^ ["Manual:Page table"](#). MediaWiki. May 15, 2010. [Archived](#) from the original on November 25, 2014. Retrieved May 30, 2010.
97. ^ ["Manual:Revision table"](#). MediaWiki. [Archived](#) from the original on November 24, 2014. Retrieved May 30, 2010.
98. ^ Ortega, Felipe; González-Barahona, Jesus M.; Robles, Gregorio (2007), *The Top-Ten Wikipedias: A Quantitative Analysis Using WikiXRay*, [CiteSeerX 10.1.1.107.1424](#)
99. ^ Curino, Carlo A.; Tanca, Letizia; Zaniolo, Carlo (2008), [Information Systems Integration and Evolution: Ontologies at Rescue](#) (PDF), Workshop on Semantic, [archived](#) (PDF) from the original on December 22, 2009, retrieved April 23, 2010
100. ^ T Dumitras; P Narasimhan (2009), [No downtime for data conversions: Rethinking hot upgrades](#) (PDF), archived from [the original](#) (PDF) on June 16, 2010, retrieved April 29, 2010
101. ^ [a b](#) ["Wikipedia and MediaWiki"](#). Presentation MediaWiki development (video). April 28, 2006. [Archived](#) from the original on April 14, 2011. Retrieved September 23, 2009.
102. ^ [a b](#) Bergsma, Mark, [Wikimedia Architecture](#) (PDF), [archived](#) (PDF) from the original on March 5, 2016, retrieved October 21, 2015
103. ^ ["Manual:What is"](#). MediaWiki. [Archived](#) from the original on July 22, 2018. Retrieved May 30, 2010.
104. ^ ["Extension:StructuredDiscussions"](#). MediaWiki. [Archived](#) from the original on December 27, 2018. Retrieved December 27, 2018.
105. ^ ["Extension:Wikilog"](#). MediaWiki. November 27, 2009. [Archived](#) from the original on September 22, 2014. Retrieved May 30, 2010.
106. ^ ["Help:Signatures"](#). MediaWiki. [Archived](#) from the original on November 15, 2008. Retrieved May 30, 2010.
107. ^ N Augar; R Raitman; W Zhou (2004), *Teaching and learning online with wikis, Beyond the comfort zone*, pp. 95–104, [CiteSeerX 10.1.1.133.1456](#)
108. ^ Cubric, Marija (2007), [Analysis of the use of Wiki-based collaborations in enhancing student learning](#), University of Hertfordshire, p. 11, archived from [the original](#) on May 15, 2011, retrieved April 24, 2010
109. ^ Albertsen, Johannes & Bouvin, Niels Olof (2008), [User defined structural searches in mediawiki](#), *Proceedings of the nineteenth ACM conference on Hypertext and hypermedia*, ISBN 978-1-59593-985-2
110. ^ ["Extension:Semantic MediaWiki – WikiApiary"](#). [Archived](#) from the original on October 26, 2018. Retrieved October 12, 2019.

111. ^ T Dumitru *et al.*; P Narasimhan (2009), *Toward upgrades-as-a-service in distributed systems*, Proceedings of the 10th ACM/IFIP/USENIX International Conference on Middleware, pp. 1–2
112. ^ "Security for developers". MediaWiki. Archived from the original on November 25, 2014. Retrieved May 30, 2010.
113. ^ Perrin, Chad (April 30, 2008), *Five security tips from MediaWiki's lead developer*, Tech Republic[permanent dead link]
114. ^ "News". MediaWiki. Archived from the original on October 6, 2014. Retrieved May 30, 2010.
115. ^ "Manual:Security". MediaWiki. March 22, 2010. Archived from the original on November 10, 2014. Retrieved May 30, 2010.
116. ^ Books about MediaWiki Archived December 27, 2018, at the Wayback Machine, mediawiki.org
117. ^ MediaWiki Administrator's Handbook. Wikibooks. Archived from the original on October 20, 2014. Retrieved October 20, 2014.
118. ^ MediaWiki User Guide, Wikibooks, archived from the original on October 20, 2014, retrieved October 20, 2014
119. ^ "MediaWiki.org Project:Copyrights". Archived from the original on August 23, 2023. Retrieved August 23, 2023.
120. ^ "Project:PD help". MediaWiki. Archived from the original on October 29, 2020. Retrieved May 30, 2010.
121. ^ Rafe Needleman (November 19, 2008), *Wikipedia gears up for flood of video and photo files*, C-Net, archived from the original on August 6, 2009, retrieved April 23, 2010
122. ^ "Events". Mediawiki.org. Archived from the original on December 27, 2018. Retrieved December 27, 2018.
123. ^ "Development policy". MediaWiki. July 19, 2013. Archived from the original on May 10, 2017. Retrieved August 4, 2013.
124. ^ "Summer of Code". MediaWiki. March 26, 2013. Archived from the original on May 10, 2017. Retrieved August 4, 2013.
125. ^ "Wikimedia". Open Hub. Archived from the original on September 14, 2017. Retrieved November 15, 2012. Approximate counts (not deduplicated) as of November 4, 2012: 139 for core, 155 for extensions supported by WMF, 190 and 42 for extensions only hosted on WMF's Git and SVN repositories respectively.
126. ^ a b "Version lifecycle". MediaWiki. September 5, 2018. Archived from the original on June 17, 2020. Retrieved October 21, 2018.
127. ^ Bartlett, Manning (November 14, 2001). "Magnus's new script..." Wikimedia Lists. Wikimedia Foundation. Archived from the original on October 2, 2019. Retrieved October 2, 2019.
128. ^ Manske, Magnus (November 14, 2001). "Magnus's new script..." Wikimedia Lists. Wikimedia Foundation. Archived from the original on October 2, 2019. Retrieved October 2, 2019.
129. ^ Mayer, Daniel (July 19, 2003). "Phase IV, Wikibooks.org/.com and WikimediaFoundation.org/.com (was Wikis and uniformity)". Wikipedia-L mailing list. Archived from the original on July 12, 2017. Retrieved January 18, 2015.










130. ^ ["Differences between Wikipedia, Wikimedia, MediaWiki, and wiki"](#). MediaWiki. *Archived from the original on July 1, 2009*. Retrieved May 30, 2010.
131. ^ ["International logo contest"](#). Meta-Wiki. *Archived from the original on May 9, 2020*. Retrieved April 9, 2020.
132. ^ ["International logo contest/results"](#). Meta-wiki. *Wikimedia Foundation*. January 10, 2007. *Archived from the original on November 4, 2015*. Retrieved March 14, 2007.
133. ^ ["Historical/Logo history"](#). Meta-wiki. *Wikimedia Foundation*. January 17, 2007. *Archived from the original on November 4, 2015*. Retrieved March 14, 2007.
134. ^ Erik Möller (July 26, 2003). ["File talk:EloquenceSunflowerNew-Small.png – Meta"](#). Meta-wiki. *Wikimedia Foundation*. *Archived from the original on January 30, 2016*. Retrieved February 3, 2013.
135. ^ David Weinberger (2007). *Everything Is Miscellaneous: The Power of the New Digital Disorder*. Times Books. p. 99. ISBN 978-0-8050-8043-8.
136. ^ ["MediaWiki history"](#). MediaWiki website. *Archived from the original on October 27, 2020*. Retrieved August 4, 2013.
137. ^ ["MediaWiki ResourceLoader"](#). Mediawiki.org. *Archived from the original on March 8, 2013*. Retrieved July 6, 2013.
138. ^ ["VisualEditor – MediaWiki"](#). MediaWiki. *Archived from the original on September 27, 2013*. Retrieved September 15, 2013.
139. ^ Sarabadani, Amir (March 31, 2021). ["Logo of MediaWiki has changed"](#). Wikimedia Foundation. *Archived from the original on April 2, 2021*. Retrieved April 2, 2021.
140. ^ [MediaWiki testimonials Archived January 11, 2012, at the Wayback Machine](#), mediawiki.org
141. ^ ["The story of Intelpedia: A model corporate wiki"](#). Socialmedia.biz. *Archived from the original on September 16, 2013*. Retrieved August 16, 2013.
142. ^ A. Maron; M. Maron (2007). ["A stealth transformation: introducing wikis to the UN"](#). Knowledge Management for Development Journal. *Archived from the original on May 4, 2011*. Retrieved October 9, 2010.
143. ^ ["LibrePlanet Homepage"](#). *Archived from the original on March 18, 2011*. Retrieved December 10, 2018.
144. ^ Bryant, Todd (2006), [Social Software in Academia \(PDF\)](#), Educause Quarterly, archived from [the original \(PDF\)](#) on December 22, 2009, retrieved April 23, 2010
145. ^ Liang, M.; Chu, S.; Siu, F.; Zhou, A. (December 3–4, 2009), [Comparing User Experiences in Using Twiki & Mediawiki to Facilitate Collaborative Learning \(PDF\)](#), Proceedings of the 2009 International Conference on Knowledge Management, archived from [the original \(PDF\)](#) on May 14, 2011
146. ^ Schulz, Judith (2009), [Company-Wiki as a knowledge transfer instrument for reducing the shortage of skilled workers \(PDF\)](#), Institute of Technology and Education, *archived (PDF) from the original on March 4, 2016*, retrieved April 25, 2010
147. ^ Chu, S.; Kennedy, D.; Mak, M. (December 3–4, 2009), [MediaWiki and Google Docs as online collaboration tools for group project co-construction \(PDF\)](#), Proceedings of the 2009 International Conference on Knowledge Management, archived from [the original \(PDF\)](#) on May 14, 2011, retrieved April 23, 2010

148. [^] **a b** Grecco, Claudio Henrique dos Santos; Augusto, Silas Cordeiro; Souza, Jaqueline Tavares Viana de; Carvalho, Paulo Victor Rodrigues; Davila, Adriana Loureiro (July 25, 2021). *"A Method for the evaluation of knowledge management systems"*. *Brazilian Journal of Radiation Sciences*. **9** (2B). doi:10.15392/bjrs.v9i2B.1250. ISSN 2319-0612. S2CID 237733021. Archived from the original on November 12, 2021. Retrieved November 12, 2021.

External links

[[edit](#)]

MediaWiki at Wikipedia's [sister projects](#)

-  [Definitions](#) from Wiktionary
-  [Media](#) from Commons
-  [Quotations](#) from Wikiquote
-  [Textbooks](#) from Wikibooks
-  [Resources](#) from Wikiversity
-  [Data](#) from Wikidata
-  [Discussions](#) from Meta-Wiki
-  [Documentation](#) from MediaWiki
-  [MediaWiki homepage](#)  [Edit this at Wikidata](#)
-  [v](#)
-  [t](#)
-  [e](#)

[Wikipedia](#)

Overview (outline)

- Biases
 - gender
 - geographical
 - ideological
 - racial
- Censorship
- Conflict-of-interest editing
 - political editing incidents
- Criticism
- Deletion of articles
 - deletionism and inclusionism
 - notability
- Disputes
- "Ignore all rules"
- MediaWiki
- Plagiarism
- Predictions of the project's end
- Reliability
 - Fact-checking
 - *Citation needed*
- Vandalism

- Administrators
- AfroCrowd
- Arbitration Committee
- Art+Feminism
- Bots
 - Lsjbot
- Edit count
- List of Wikipedias
- *The Signpost*
- Wikimedian of the Year
- Wikipedia in residence
- WikiProject
- Women in Red

Events

- Edit-a-thon
- WikiConference India
- Wiki Indaba
- WikiConference North America
- Wikimania

Wiki Loves

- Earth
- Folklore
- Monuments
- Pride
- Science

Community (Wikipedians)

People (list)

- Esra'a Al Shafei
- Lee Daniel Crocker
- Florence Devouard
- Sue Gardner
- David Gerard
- James Heilman
- Maryana Iskander
- Dariusz Jemielniak
- Rebecca MacKinnon
- Katherine Maher
- Magnus Manske
- Erik Möller
- Jason Moore
- Raju Narisetti
- Steven Pruitt
- Annie Rauwerda
- Larry Sanger
- María Sefidari
- Lisa Seitz-Gruwell

- Bomis
 - Nupedia
- First edit
- Logo
- Internet Watch Foundation
- Scientology
- Hillsborough disaster Wikipedia posts
- VisualEditor
- #1Lib1Ref
- Wikimedia Foundation actions
 - on the Chinese Wikipedia
 - 2021
 - against MENA Wikimedians
 - 2022

History

Controversies

- Alan MacMasters hoax
- Carlos Bandeirense Mirandópolis hoax
- Edit wars
- Essay controversy
- Henryk Batuta hoax
- Jar'Edo Wens hoax
- Seigenthaler biography incident
- *Star Trek Into Darkness* debate
- United States congressional staff edits
- Weintraub controversy
- Zhemao hoaxes

Coverage

- American politics
 - Donald Trump
- COVID-19 pandemic
- Death
- Israeli–Palestinian conflict
- Russian invasion of Ukraine

Honors

- 274301 Wikipedia
- *Viola angustifolia*
- *Wikipedia Monument*

References and analysis	<ul style="list-style-type: none"> ○ Academic studies ○ Bibliography ○ Cultural ○ Films ○ Listen to Wikipedia ○ Wikipediocracy
Mobile	<ul style="list-style-type: none"> ○ Apps ○ QRpedia ○ Wapedia ○ Wikipedia Zero ○ WikiReader ○ Wikiwand
Content use	<ul style="list-style-type: none"> ○ DBpedia ○ Depths of Wikipedia ○ Google and Wikipedia ○ Health information ○ Kiwix ○ Science information ○ Wikipedia-based education
Related	<ul style="list-style-type: none"> ○ <i>The Iraq War: A Historiography of Wikipedia Changelogs</i> ○ LGBTQ and Wikipedia ○ <i>Magna Carta (An Embroidery)</i> ○ People imprisoned for editing Wikipedia ○ Print Wikipedia ○ Wiki rabbit hole ○ Wikimedia Foundation ○ Wikimedia movement ○ Wikipedia for World Heritage ○ Wikipedia in India ○ Wikiracing ○ List of online encyclopedias ○ List of wikis

○  **List**

○  **Category**

- **v**
- **t**
- **e**

Wiki software

.NET

- FlexWiki
- SharePoint

Java

- Confluence
- Jive
- Traction TeamPage
- XWiki

JavaScript

- TiddlyWiki
- Wiki.js

Perl

- Foswiki
- ikiwiki
- TWiki
- UseModWiki
- WikiBase

PHP

- BlueSpice
- BookStack
- DokuWiki
- MediaWiki
- PhpWiki
- Phriction
- PmWiki
- PukiWiki
- Tiki

Python

- [Allura](#)
- [Bloodhound](#)
- [Kallithea](#)
- [Kuma](#)
- [MoinMoin](#)
- [Trac](#)
- [Zim](#)

Ruby

- [Gollum](#)
- [Redmine](#)

Other languages

- [CLiki](#)
 - [Common Lisp](#)
- [Federated Wiki](#)
 - [CoffeeScript](#)
 - [Haskell](#)

-  [Comparison](#)
-  [List](#)
-  [Category](#)

- [v](#)
- [t](#)
- [e](#)

Wikimedia Foundation

Projects ○ Wikipedia community (Wikipedians)

Current

- Maryana Iskander
- Lisa Seitz-Gruwell
- Dariusz Jemielniak
- Rebecca MacKinnon
- Raju Narisetti
- Rosie Stephenson-Goodknight
- Esra'a Al Shafei
- Jimmy Wales

People

- Hampton Lintorn-Catlin
- Danese Cooper
- Bishakha Datta
- Florence Devouard
- Oscar van Dillen
- Sue Gardner
- Arnon Geshuri
- Mike Godwin
- Past**
- Aaron Halfaker
- James Heilman
- Guy Kawasaki
- Patricio Lorente
- Katherine Maher
- Erik Möller
- Larry Sanger
- María Sefidari
- Lila Tretikov
- Luis Villa

Projects

- Wikipedia
 - history
 - List of Wikipedias
 - Censorship of Wikipedia
- Wiktionary
- Wikimedia Commons
- Wikidata
- Wikiquote
- Wikibooks
- Wikisource
- Wikispecies
- Wikinews
- Wikiversity
- Wikivoyage
- Wikifunctions
 - Abstract Wikipedia

Other

- Wikimedia movement
- List of Wikimedia chapters
 - Bangladesh
 - Deutschland
 - Israel
 - Polska
 - UK
 - Ukraine
- Wikimania
- Wiki Indaba
- WikiConference India
- WikiConference North America
- MediaWiki
- Litigation
 - Monkey selfie copyright dispute
 - *Wikimedia Foundation v. NSA*
- Knowledge Engine

Related

- *The Signpost*
- *Wikipedia Monument*
- Wikimedian of the Year
- Tides Foundation
- Artificial intelligence in Wikimedia projects
- Google and Wikipedia
- Wikipedia for World Heritage

Authority control databases Image not found or type unknown [Edit this at Wikidata](#)

International

- [VIAF](#)
- [FAST](#)

National

- [Germany](#)
- [United States](#)
- [France](#)
- [BnF data](#)
- [Israel](#)

Other

- [IdRef](#)

Check our other pages :

- [search engine optimisation Sydney](#)
- [Sydney SEO company](#)
- [content agency Sydney](#)
- [SEO company in Sydney](#)
- [best SEO Sydney](#)
- [SEO package australia](#)

Frequently Asked Questions

Why is local SEO important for small businesses?

Local SEO helps small businesses attract customers from their immediate area, which is crucial for brick-and-mortar stores and service providers. By optimizing local listings, using location-based keywords, and maintaining accurate NAP information, you increase visibility, build trust, and drive more foot traffic.

How does content marketing impact SEO?

Content marketing and SEO work hand-in-hand. High-quality, relevant content attracts readers, earns backlinks, and encourages longer time spent on your site'factors that all contribute to better search engine rankings. Engaging, well-optimized content also improves user experience and helps convert visitors into customers.

How can search engine optimisation consultants help my business?

Search engine optimisation consultants analyze your website and its performance, identify issues, and recommend strategies to improve your search rankings. They provide guidance on keyword selection, on-page optimization, link building, and content strategy to increase visibility and attract more traffic.

What is a local SEO agency?

A local SEO agency specializes in improving a business's visibility within a specific geographic area. They focus on optimizing local citations, managing Google My Business profiles, and targeting location-based keywords to attract nearby customers.

How do I find the best SEO company in Sydney?

To find the best SEO company in Sydney, look for a provider with a proven track record of success, transparent reporting, and a clear understanding of your business's goals. Check reviews, case studies, and client testimonials to ensure you are choosing a reputable partner.

SEO agency in Sydney

SEO Sydney

Phone : 1300 684 339

City : Sydney

State : NSW

Zip : 2000

[Google Business Profile](#)

[Google Business Website](#)

Company Website : <https://sydney.website/seo-sydney/>

USEFUL LINKS

[SEO Website](#)

[SEO Services Sydney](#)

[Local SEO Sydney](#)

[SEO Ranking](#)

[SEO optimisation](#)

LATEST BLOGPOSTS

[SEO community](#)

[SEO Buzz](#)

[WordPress SEO](#)

[SEO Audit](#)

[Sitemap](#)

[Privacy Policy](#)

[About Us](#)

[SEO Castle Hill](#) | [SEO Fairfield](#) | [SEO Hornsby](#) | [SEO Liverpool](#) | [SEO North Sydney](#) | [SEO Norwest](#) | [SEO Parramatta](#) | [SEO Penrith](#) | [SEO Strathfield](#) | [SEO Wetherill Park](#)

Follow us