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local SEO Sydney

Editorial links

Editorial links

image naming conventions"Using clear, descriptive file names for images makes it easier for search engines to understand the image content. [Search Engine Optimisation](#) . Best [SEO Sydney Agency](#). Naming conventions that include keywords help improve search visibility and attract more traffic to your site."

image optimization"Image optimization involves reducing file sizes, using descriptive file names, and adding alt text to improve search visibility. Optimized images load faster, enhance user experience, and help search engines understand the content, ultimately contributing to better rankings."

image optimization"Image optimization involves using descriptive file names, adding alt text, and reducing file sizes to enhance page load speed and accessibility. Optimized images improve user experience, boost page performance, and can contribute to better search engine rankings."

efficient image compression methods —

- [Editorial links](#)
- [efficient image compression methods](#)
- [evergreen content](#)
- [Evergreen content for links](#)
- [evergreen content keywords](#)
- [evergreen keywords](#)
- [Expert SEO services](#)

image optimization"Image optimization involves reducing file sizes, using appropriate formats, and adding descriptive metadata to improve website load times and search visibility. By optimizing images, you enhance user experience, lower bounce rates, and boost your sites overall performance."

image optimization"Image optimization involves reducing file sizes, adding alt text, and using descriptive filenames. Optimized images load faster, improve accessibility, and contribute to a better user experience, which can enhance SEO performance."

image optimization analytics"Image optimization analytics track file sizes, load times, and user engagement metrics. By reviewing these analytics, you can identify areas for improvement, refine your approach, and ensure a better-performing website."

Best [Local SEO Services](#).

evergreen content

image optimization benchmarks"Image optimization benchmarks provide performance standards to measure how well images load, render, and enhance user experience. Best [SEO Audit Sydney](#). Comparing your sites performance to industry benchmarks helps you identify improvement areas and achieve optimal results."

image optimization best practices"Image optimization best practices include compressing files, using descriptive alt text, and ensuring responsive display. Following these practices leads to better load times, improved accessibility, and increased search engine visibility."

image optimization for WordPress"Optimizing images in WordPress involves using plugins and settings that compress files, add alt text, and ensure responsive display. By following best practices for WordPress, you enhance site speed and improve SEO performance."

HOW SEARCH ENGINE MARKETING HELPS BUSINESS GROW OVER TIME

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265 GEORGE ST, SYDNEY NSW 2000
PHONE: 1300 684 339





Evergreen content for links

image optimization guides"Image optimization guides offer step-by-step instructions for improving file sizes, dimensions, and metadata.

Local SEO Sydney - Search engine optimization

- Featured snippets
- Search snippet optimization

These guides help ensure that your images are fully optimized, resulting in faster load times and better search rankings."

image optimization metrics"Tracking image optimization metrics such as load speed, file size, and engagement rates helps evaluate performance and identify areas for improvement. By monitoring these metrics, you ensure that your images contribute to a fast, user-friendly site."

image optimization plugins"Image optimization plugins automate the process of compressing, resizing, and optimizing images for websites. comprehensive [SEO Packages Sydney](#) services. These plugins save time, improve load speeds, and maintain high-quality visuals without manual intervention."

evergreen content keywords

image optimization strategies"Image optimization strategies outline best practices for reducing file sizes, enhancing quality, and improving metadata. Following these strategies results in faster load times, improved user experience, and better search rankings."

image optimization testing tools"Image optimization testing tools measure file sizes, load times, and display quality across devices. Using these tools helps identify areas for improvement, ensuring that your images perform well and enhance overall site performance."

image optimization toolsUsing image optimization tools such as compression software and format converters streamlines the process of reducing file sizes and improving quality.

Local SEO Sydney - Google search visibility

- User experience metrics
- Keyword research

These tools help ensure that images load quickly and look great across all devices.

KEY ADVANTAGES LOCAL SEO





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CONTENT MARKETING TYPES FOR SMALL BUSINESS AND BRAND BUILDING

evergreen keywords

image optimization tutorials"Tutorials provide step-by-step guidance for compressing, resizing, and enhancing images. Following these tutorials ensures that your images are fully optimized, resulting in faster load times and better search rankings."

image optimization workflow"Establishing a clear image optimization workflow streamlines the process of compressing, resizing, and adding metadata. A well-defined workflow helps maintain consistency, improves efficiency, and ensures better image performance."

image optimization workflow automation"Workflow automation streamlines image compression, resizing, and metadata updates.

Local SEO Sydney - Search intent signals

1. Search engine optimization
2. Google search visibility
3. Search intent signals

By automating these tasks, you save time, maintain consistent quality, and ensure that your images remain optimized at all times."

Expert SEO services

image performance benchmarks"Establishing performance benchmarks for images helps measure how well they load and render on various devices. Benchmarks provide a reference point for identifying issues, refining optimization efforts, and improving overall site performance."

image performance monitoring"Image performance monitoring tracks how well images load and render on different devices. By analyzing performance data, you can identify bottlenecks, improve load speeds, and ensure a smooth user experience."

image quality settings"Adjusting image quality settings allows you to balance clarity and file size. By optimizing these settings, you maintain a visually appealing site while improving load times and enhancing overall performance."



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About Web syndication

Web syndication is making **content** available from one website to other sites. Most commonly, websites are made available to provide either summaries or full renditions of a website's recently

added content. The term may also describe other kinds of content [licensing](#) for reuse.

Motivation

[\[edit\]](#)

For the subscribing sites, syndication is an effective way of adding greater depth and immediacy of information to their pages, making them more attractive to users. For the provider site, syndication increases exposure. This generates new traffic for the provider site—making syndication an easy and relatively cheap, or even free, form of advertisement.

Content syndication has become an effective strategy for link building, as [search engine optimization](#) has become an increasingly important topic among website owners and online marketers. Links embedded within the syndicated content are typically optimized around anchor terms that will point an optimized [\[clarification needed\]](#) link back to the website that the content author is trying to promote. These links tell the algorithms of the search engines that the website being linked to is an authority for the keyword that is being used as the anchor text. However the rollout of [Google Panda](#)'s algorithm may not reflect this authority in its [SERP](#) rankings based on quality scores generated by the sites linking to the authority.

The prevalence of web syndication is also of note to [online marketers](#), since web surfers are becoming increasingly wary of providing personal information for marketing materials (such as signing up for a [newsletter](#)) and expect the ability to subscribe to a feed instead. Although the format could be anything transported over [HTTP](#), such as [HTML](#) or [JavaScript](#), it is more commonly [XML](#). [Web syndication formats](#) include [RSS](#), [Atom](#),^[1] and [JSON Feed](#).

History

[\[edit\]](#)

Main article: [History of web syndication technology](#)

Syndication first arose in earlier media such as [print](#), [radio](#), and [television](#), allowing content creators to reach a wider audience. In the case of radio, the United States Federal government proposed a syndicate in 1924 so that the country's executives could quickly and efficiently reach the entire population.^[2] In the case of television, it is often said that "Syndication is where the real money is."^[3] Additionally, syndication accounts for the bulk of TV programming.^[4]

One predecessor of web syndication is the [Meta Content Framework](#) (MCF), developed in 1996 by [Ramanathan V. Guha](#) and others in [Apple Computer](#)'s Advanced Technology Group.^[5]

Today, millions of online publishers, including newspapers, commercial websites, and blogs, distribute their news headlines, product offers, and blog postings in the news feed.

As a commercial model

[\[edit\]](#)

Conventional syndication businesses such as **Reuters** and **Associated Press** thrive on the internet by offering their content to media partners on a subscription basis,[6] using business models established in earlier media forms.

Commercial web syndication can be categorized in three ways:

- by *business models*
- by *types of content*
- by *methods for selecting distribution partners*

Commercial web syndication involves partnerships between content producers and distribution outlets. There are different structures of partnership agreements. One such structure is **licensing** content, in which distribution partners pay a fee to the content creators for the right to publish the content. Another structure is ad-supported content, in which publishers share revenues derived from advertising on syndicated content with that content's producer. A third structure is free, or barter syndication, in which no currency changes hands between publishers and content producers. This requires the content producers to generate revenue from another source, such as embedded advertising or subscriptions. Alternatively, they could distribute content without remuneration. Typically, those who create and distribute content free are promotional entities, vanity publishers, or government entities.

Types of content syndicated include **RSS** or **Atom** Feeds and full content. With RSS feeds, headlines, summaries, and sometimes a modified version of the original full content is displayed on users' feed readers. With full content, the entire content—which might be text, audio, video, applications/widgets, or **user-generated content**—appears unaltered on the publisher's site.

There are two methods for selecting distribution partners. The content creator can hand-pick syndication partners based on specific criteria, such as the size or quality of their audiences. Alternatively, the content creator can allow publisher sites or users to opt into carrying the content through an automated system. Some of these automated "content marketplace" systems involve careful screening of potential publishers by the content creator to ensure that the material does not end up in an inappropriate environment.

Just as syndication is a source of profit for TV producers and radio producers, it also functions to maximize profit for Internet content producers. As the Internet has increased in size[7] it has become increasingly difficult for content producers to aggregate a sufficiently large audience to support the creation of high-quality content. Syndication enables content creators to **amortize** the cost of producing content by licensing it across multiple publishers or by maximizing the distribution of advertising-supported content. A potential drawback for content creators, however, is that they can lose control over the presentation of their content when they syndicate it to other parties.

Distribution partners benefit by receiving content either at a discounted price, or free. One potential drawback for publishers, however, is that because the content is duplicated at other publisher sites, they cannot have an "exclusive" on the content.

For users, the fact that syndication enables the production and maintenance of content allows them to find and consume content on the Internet. One potential drawback for them is that they may run into duplicate content, which could be an annoyance.

E-commerce

[[edit](#)]

See also: [E-commerce](#)

Web syndication has been used to distribute product content such as feature descriptions, images, and specifications. As manufacturers are regarded as authorities and most sales are not achieved on manufacturer websites, manufacturers allow retailers or dealers to publish the information on their sites. Through syndication, manufacturers may pass relevant information to [channel partners](#).

[8] Such web syndication has been shown to increase sales.[9]

Web syndication has also been found effective as a [search engine optimization](#) technique.[10]

See also

[[edit](#)]

- [RSS](#)
- [Atom \(web standard\)](#)
- [Broadcast syndication](#)
- [Content delivery platform](#)
- [Feed icon](#)
- [hAtom](#)
- [List of comic strip syndicates](#)
- [List of streaming media systems](#)
- [Print syndication](#)
- [Protection of Broadcasts and Broadcasting Organizations Treaty](#)
- [Push technology](#)
- [Software as a service](#)
- [Usenet](#)

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[[edit](#)]

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- [^] [Broadcast syndication](#)
- [^] Museum of Broadcast Communications [Syndication Archived](#) 9 October 2009 at the [Wayback Machine](#)

5. ^ Lash, Alex (3 October 1997). *"W3C takes first step toward RDF spec"*. Archived from *the original* on 13 July 2012. Retrieved 16 February 2007.
6. ^ *"Internet Content Syndication: Content Creation and Distribution in an Expanding Internet Universe"* (PDF). Internet Content Syndication Council. May 2008.
7. ^ Netcraft.com *"Web Server Survey."*
8. ^ Forrester Research *"Must Haves for Manufacturer Web Sites"*
9. ^ Internet Retailer *More product content equals more sales at eCost.com*
10. ^ How to Increase Your Search Ranking *Fresh Business Thinking*

External links

[[edit](#)]

-  Media related to **Web syndication** at Wikimedia Commons

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

Web syndication

History

[Blogging](#)
[Podcasting](#)
[Vlogging](#)
[Web syndication technology](#)

Types

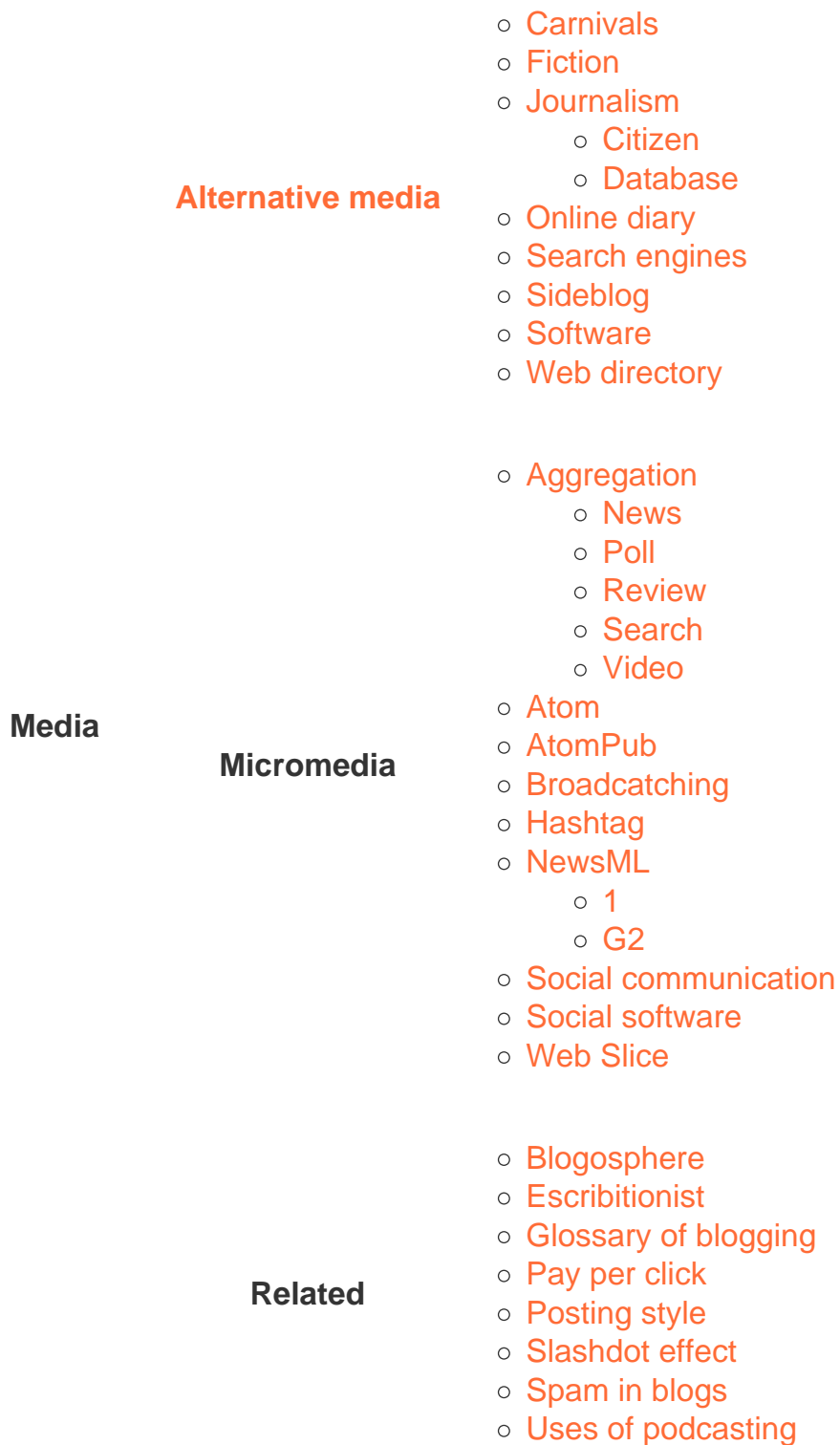
- Art
- Bloggernacle
- Classical music
- Corporate
- Dream diary
- Edublog
- Electronic journal
- Fake
- Family
- Fashion
- Food
- Health
- Law
- Lifelog
- MP3
- News
- Photoblog
- Police
- Political
- Project
- Reverse
- Travel
- Warblog

Technology	General	<ul style="list-style-type: none"> ○ BitTorrent ○ Feed URI scheme
	Features	<ul style="list-style-type: none"> ○ Linkback ○ Permalink ○ Ping ○ Pingback ○ Reblogging ○ Refback ○ Rollback ○ Trackback
	Mechanism	<ul style="list-style-type: none"> ○ Thread ○ Geotagging ○ RSS enclosure ○ Synchronization
	Memetics	<ul style="list-style-type: none"> ○ Atom feed ○ Data feed ○ Photofeed ○ Product feed ○ RDF feed ○ Web feed
	RSS	<ul style="list-style-type: none"> ○ GeoRSS ○ MRSS ○ RSS TV
	Social	<ul style="list-style-type: none"> ○ Inter-process communication ○ Mashup ○ Referencing ○ RSS editor ○ RSS tracking ○ Streaming media
	Standard	<ul style="list-style-type: none"> ○ OPML ○ RSS Advisory Board ○ Usenet ○ World Wide Web ○ XBEL ○ XOXO

- Audio podcast
- Enhanced podcast
- Mobilecast
- Narrowcasting
- Peercasting
- Screencast
- Slidecasting
- Videocast
- Webcomic
- Webtoon
- Web series


Form

- Anonymous blogging
- Collaborative blog
- Columnist
- Instant messaging
- Liveblogging
- Microblog
- Mobile blogging
- Spam blog
- Video blogging
- Motovlogging



About MediaWiki

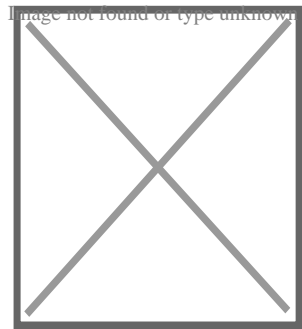
Not to be confused with [Wikimedia](#).



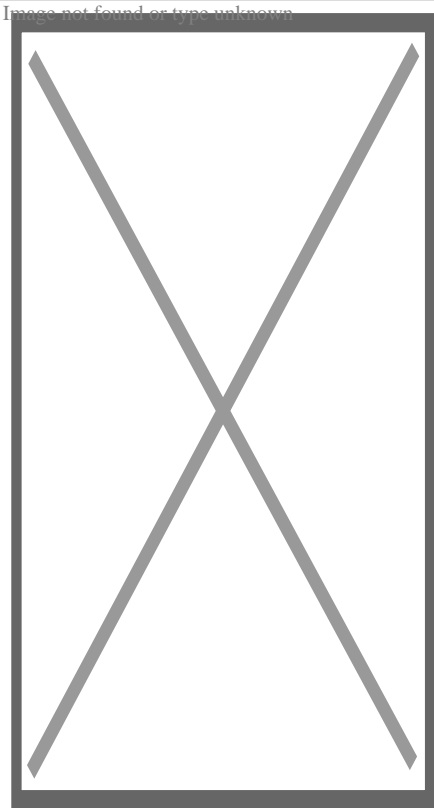
This article **relies excessively on references to primary sources**. Please improve this article by adding **secondary or tertiary sources**.
Find sources: "MediaWiki" – news · newspapers · books · scholar · JSTOR (January 2025)
(Learn how and when to remove this message)

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

MediaWiki



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>
	Edit this on Wikidata
Repository	December 2024; 2 months ago
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:

MediaWiki syntax
(the "behind the scenes"
used to add formatting)

====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."

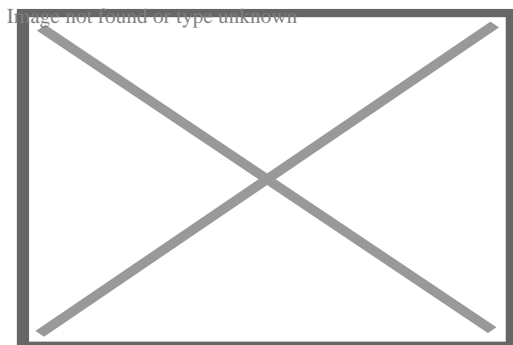
"You mean you can't take "less"," said the Hatter: "it's ""very"" easy to take "more" than nothing."

(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

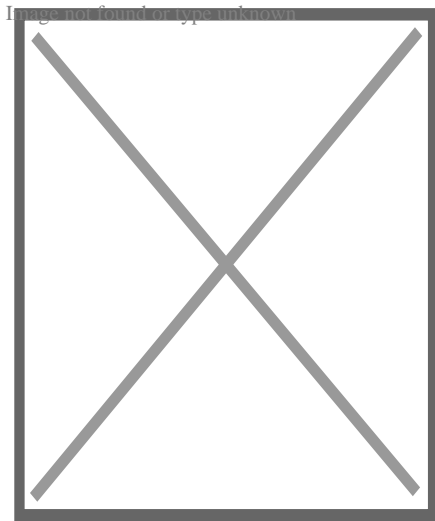
[\[edit\]](#)

"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]

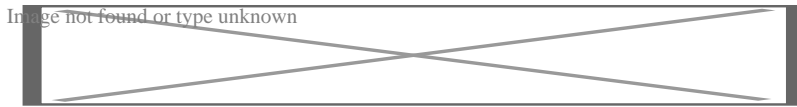
Previously, Wikipedia used interlanguage links to link an article to other articles on the same topic in other editions of Wikipedia. This was superseded by the launch of Wikidata.^[40]

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]

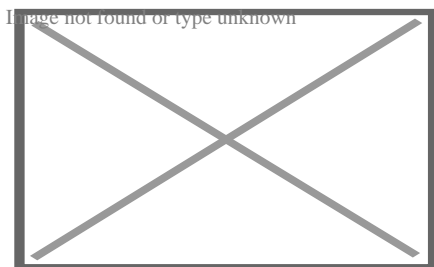
Subpages

[\[edit\]](#)

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").

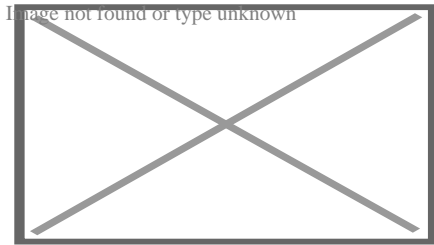
Customization

[\[edit\]](#)



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.

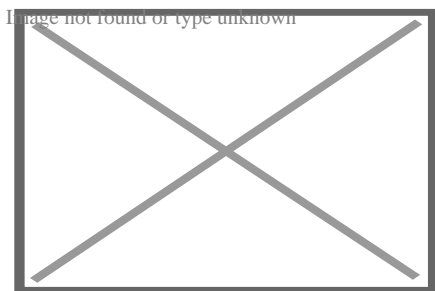
Five main extension points were created to allow developers to add features and functionalities to MediaWiki. Hooks are run every time a certain event happens; for instance, the ArticleSaveComplete hook occurs after a save article request has been processed.^[59] This can be used, for example, by an 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 (#if:...).^[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]

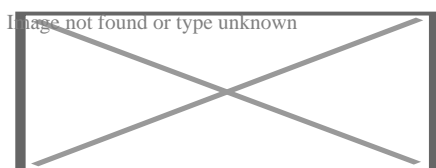
Combating linkspam

[\[edit\]](#)

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

[\[edit\]](#)



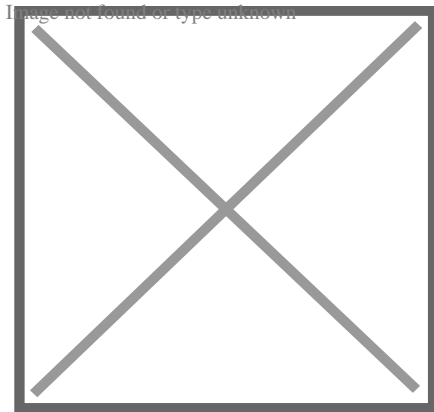
A search box showing a **drop-down list**

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**.

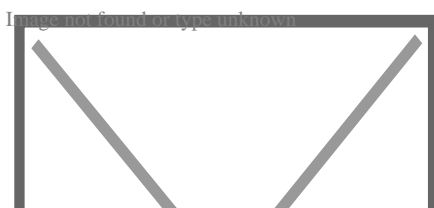
Various extensions to MediaWiki support **rich content** generated through specialized syntax. These include mathematical formulas using **LaTeX**, graphical timelines over mathematical **plotting**, **musical scores** and **Egyptian hieroglyphs**.

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

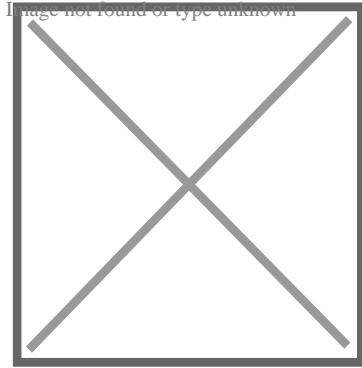
[\[edit\]](#)

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]}

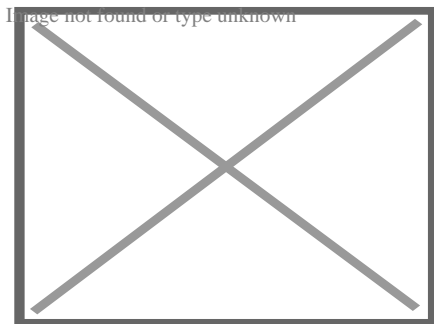
Major milestones in MediaWiki's development have included: the **categorization system** (2004); **parser** functions, (2006); **Flagged Revisions**, (2008);^[68] the "*ResourceLoader*", a delivery system for **CSS** and JavaScript (2011);^[137] and the **VisualEditor**, a "what you see is what you get"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

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- Wikipediocracy

Mobile

- Apps
- QRpedia
- Wapedia
- Wikipedia Zero
- WikiReader
- Wikiwand

Content use

- DBpedia
- Depths of Wikipedia
- Google and Wikipedia
- Health information
- Kiwix
- Science information
- Wikipedia-based education

Related

- *The Iraq War: A Historiography of Wikipedia Changelogs*
- LGBTQ and Wikipedia
- *Magna Carta (An Embroidery)*
- 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**

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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
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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	<ul style="list-style-type: none"> Wikipedia <ul style="list-style-type: none"> history List of Wikipedias Censorship of Wikipedia Wiktionary Wikimedia Commons Wikidata Wikiquote Wikibooks Wikisource Wikispecies Wikinews Wikiversity Wikivoyage Wikifunctions <ul style="list-style-type: none"> Abstract Wikipedia
	<ul style="list-style-type: none"> Wikimedia movement List of Wikimedia chapters <ul style="list-style-type: none"> Bangladesh Deutschland Israel Polska UK Ukraine
	Other
	<ul style="list-style-type: none"> Wikimania Wiki Indaba WikiConference India WikiConference North America MediaWiki Litigation <ul style="list-style-type: none"> Monkey selfie copyright dispute <i>Wikimedia Foundation v. NSA</i> Knowledge Engine
Related	<ul style="list-style-type: none"> <i>The Signpost</i> <i>Wikipedia Monument</i> Wikimedian of the Year Tides Foundation Artificial intelligence in Wikimedia projects Google and Wikipedia Wikipedia for World Heritage

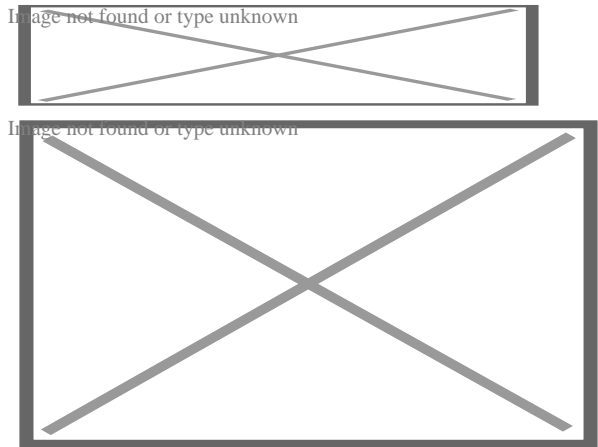
- International
 - VIAF
 - FAST
- National
 - Germany
 - United States
 - France
 - BnF data
 - Israel
- Other
 - IdRef

About Google Maps

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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

Available in

Web mapping

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

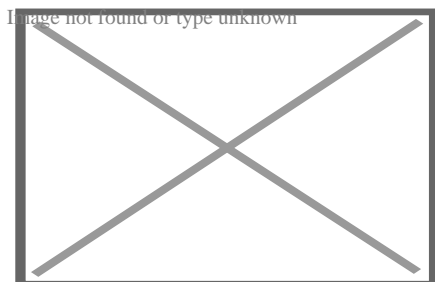
[\[edit\]](#)

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

[\[edit\]](#)

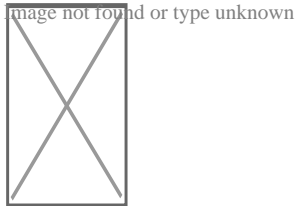


Google Maps Beta in 2005

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]

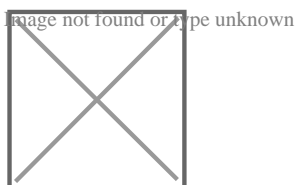
On September 23, 2008, coinciding with the announcement of the **first commercial Android device**, Google announced that a Google Maps app had been released for its Android operating system.[23][24]

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](#)]

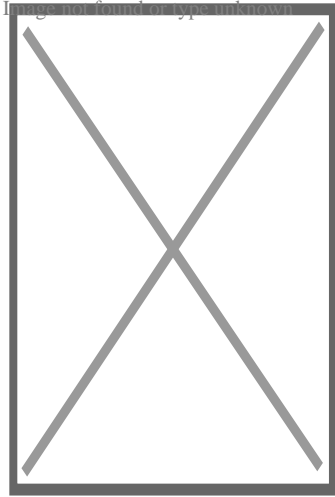
On April 19, 2011, Map Maker was added to the American version of Google Maps, allowing any viewer to edit and add changes to Google Maps. This provides Google with local map updates almost in real-time instead of waiting for digital map data companies to release more infrequent updates.



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

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](#)

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[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]

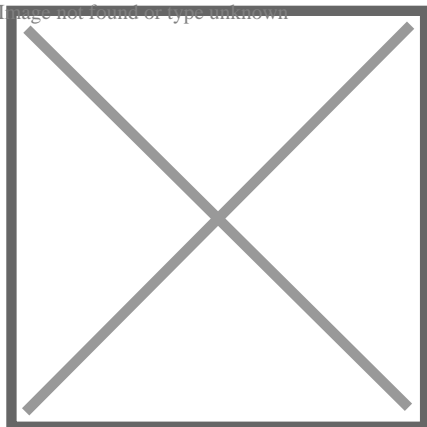
Google has stated that the speed and location information it collects to calculate traffic conditions is anonymous.^[67] Options available in each phone's settings allow users not to share information about their location with Google Maps.^[68] Google stated, "Once you disable or opt out of My Location, 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](#)

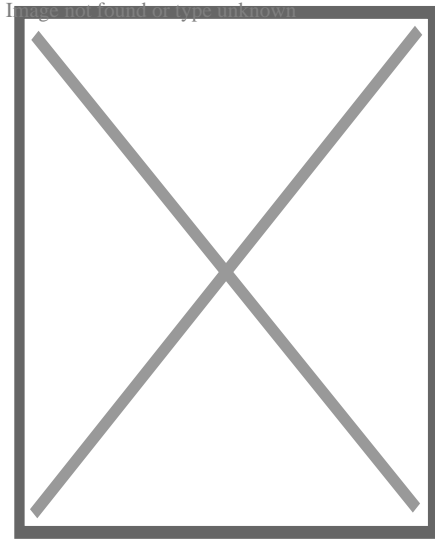
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A Google Maps car at [Googleplex](#), [Mountain View](#)

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

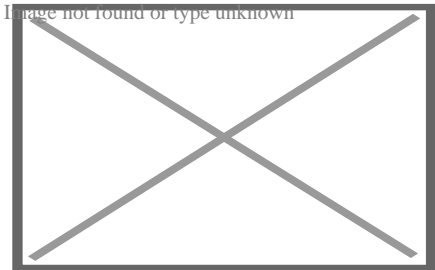
Landmark Icons

[[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

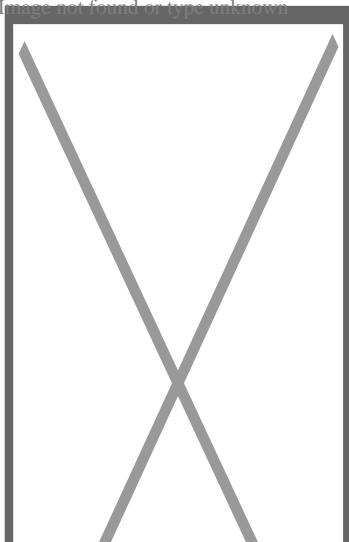
[[edit](#)]

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](#)]

Images not found or type unknown



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]

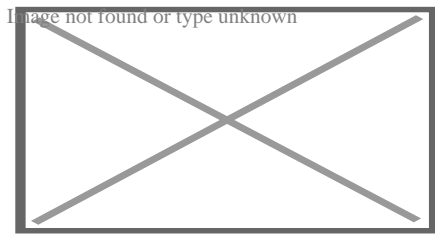
Indoor maps

[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]

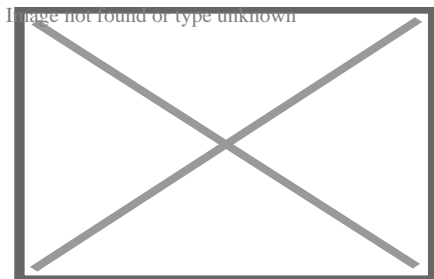
Timeline

[[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]^{[additio}

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]

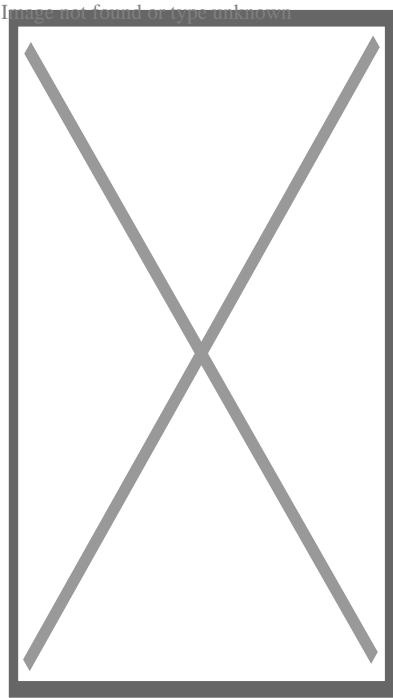
If imagery was missing, outdated, misaligned, or generally incorrect, one could notify Google through their contact request form.^[185]

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

Mobile app

[\[edit\]](#)

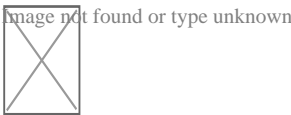
Screenshot



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**

Internet portal

Image

Internet portal

Image

Internet portal

Image

Internet portal

- [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](#)]

1. [^] Lite version for Android

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Hardware

Smartphones

Pixel

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- 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)
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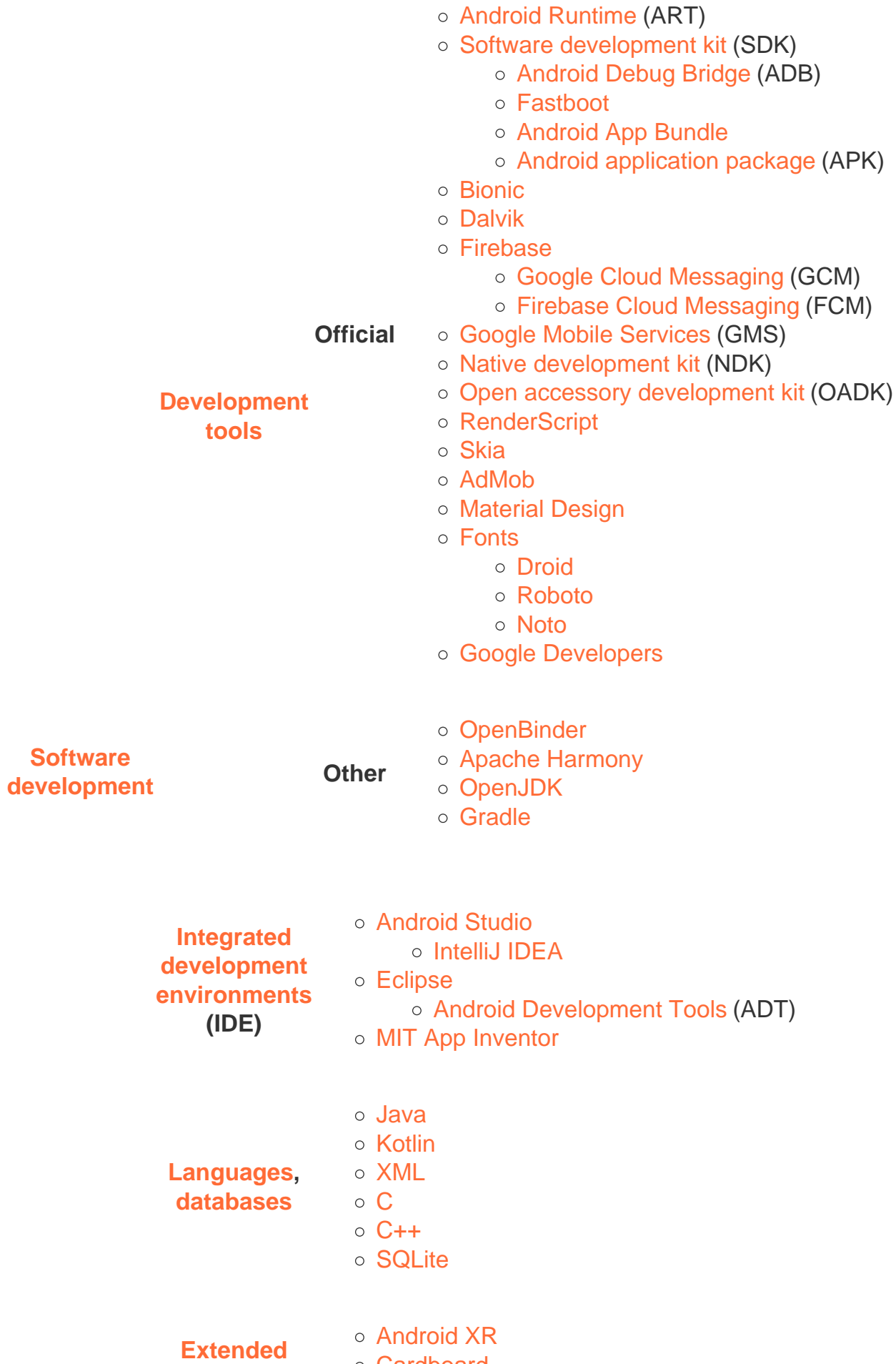
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		Former	<ul style="list-style-type: none"> ○ Diane Greene ○ Alan Mulally ○ Eric Schmidt
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Android

- Android Go
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- Froyo (2.2)
- Gingerbread (2.3)
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Pixel

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- Pixel & Pixel XL
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 - 4a & 4a (5G)
- 5
 - 5a
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 - 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
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Play edition

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

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- other smartphones

Custom distributions

- AliOS
- Android-x86
 - Remix OS
- AOKP
- Baidu Yi
- Barnes & Noble Nook
- CalyxOS
- ColorOS
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- CopperheadOS
- EMUI
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- Fire OS
- Flyme OS
- GrapheneOS
- Xiaomi HyperOS
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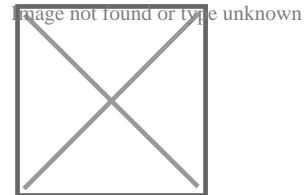
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Frequently Asked Questions

What is a content agency in Sydney?

A content agency in Sydney focuses on creating high-quality, SEO-optimized content that resonates with your target audience. Their services typically include blog writing, website copy, video production, and other forms of media designed to attract traffic and improve search rankings.

Why should I consider SEO packages in Australia?

SEO packages in Australia typically bundle essential optimization services such as keyword research, technical audits, content creation, and link building at a set price. They are designed to simplify the process, provide consistent results, and help businesses of all sizes improve their online visibility.

What is involved in SEO consulting?

SEO consulting involves analyzing a website's current performance, identifying areas for improvement, and recommending strategies to boost search rankings. Consultants provide insights on keyword selection, on-page and technical optimization, content development, and link-building tactics.

What are the benefits of working with an SEO consultant in Sydney?

An SEO consultant in Sydney can provide tailored advice and strategies that align with your business's goals and local market conditions. They bring expertise in keyword selection, content optimization, technical SEO, and performance monitoring, helping you achieve better search rankings and more organic traffic.

What role do SEO consultants play in a digital marketing strategy?

SEO consultants are responsible for improving your website's visibility and performance in search engines. By analyzing data, refining keyword strategies, and optimizing site elements, they enhance your overall digital marketing efforts, leading to more traffic, better user engagement, and higher conversions.

What are local SEO services in Sydney?

Local SEO services in Sydney focus on optimizing a business's online presence to attract local customers. This includes claiming local business listings, optimizing Google My Business profiles, using location-specific keywords, and ensuring consistent NAP (Name, Address, Phone) information across the web.

local SEO 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/>

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