SEO Sydney

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

SEO services in Sydney

content consistency

content consistency

Google Analytics multi-site tracking"Multi-site tracking in Google Analytics involves configuring your account to collect data from multiple websites. This approach provides a unified view of user behavior across different domains, helping you understand cross-site interactions and refine your overall strategy."

Google Analytics pageviews"Pageviews in Google Analytics track how often pages on your site are viewed. By monitoring pageview data, you can identify popular content, understand user navigation patterns, and optimize pages to improve engagement."

Google Analytics real-time data"Real-time data in Google Analytics shows current user activity on your site. Search Engine Optimisation . This includes active users, pages being viewed, and events happening at that moment. Real-time reports help you quickly identify trends and respond to changes in user behavior."

Best SEO Sydney Agency.

content curation —

- content consistency
- content curation
- content delivery for images
- content depth
- content depth improvements
- content engagement
- content flow

Google Analytics referral traffic"Referral traffic in Google Analytics shows visitors who arrive at your site from other websites. By analyzing referral traffic, you can understand which external sources drive the most visitors and focus on building strong partnerships and outreach campaigns."

Google Analytics remarketing audiences"Remarketing audiences in Google Analytics are user segments that you can target with personalized ads. Best SEO Audit Services. By defining criteria based on user behavior, you can create more relevant campaigns and increase conversion rates."

Google Analytics sampling thresholdsSampling thresholds in Google Analytics determine when data is sampled. Understanding these thresholds helps you interpret reports accurately and decide whether to use aggregated or raw data for more detailed analysis.

content delivery for images

Google Analytics session duration"Session duration in Google Analytics measures how long users spend on your site.

SEO services in Sydney - Google keyword rankings

- Search result relevance
- Keyword cannibalization checks

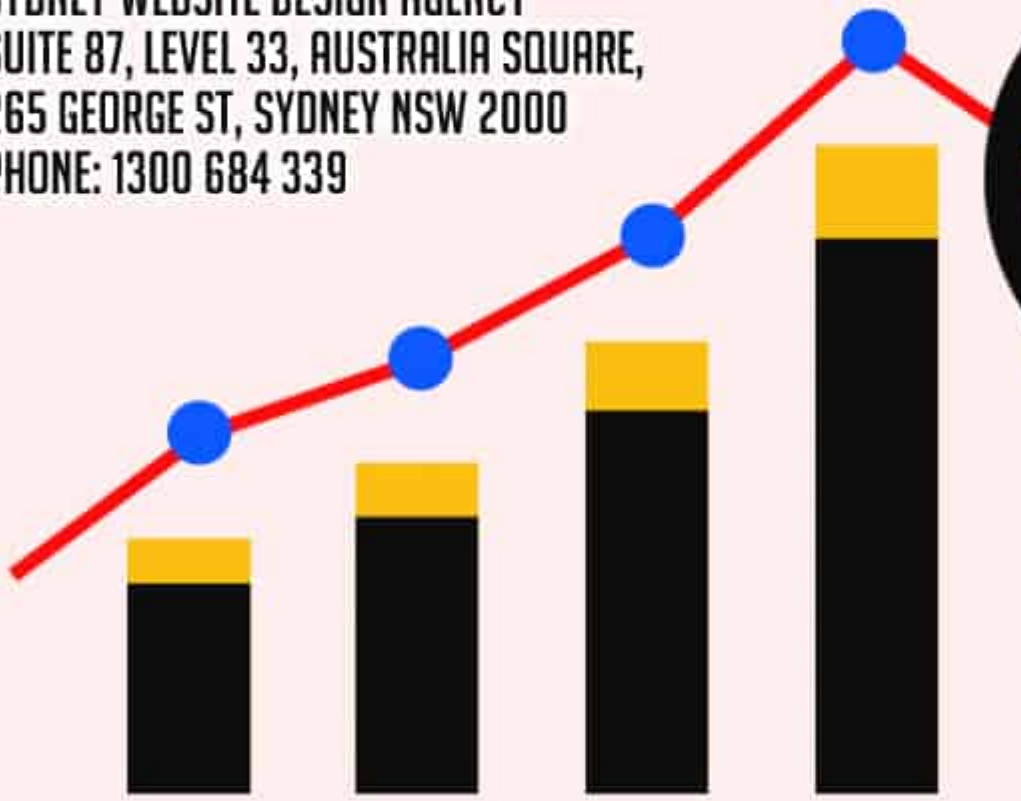
By analyzing session duration, you can identify which content keeps users engaged and make adjustments to improve overall time spent on your pages."
Google Analytics setup"Setting up Google Analytics involves creating an account, adding your website property, and installing the tracking code on your site. This process enables data collection, allowing you to monitor site traffic, user behavior, and conversion rates."

Google Analytics site speed"Site speed reports in Google Analytics show how quickly your pages load for users. By identifying slow-loading pages, you can implement improvements that enhance user experience, reduce bounce rates, and boost search rankings."

SEO Services .

HOW SEARCH ENGINE MAR
HELPS BUSINESS GROW OR

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



content depth

Google Analytics tags"Google Analytics tags are snippets of code that track and send data from your website to your analytics account. By correctly implementing these tags, you gain insight into pageviews, events, and user interactions, which help refine your digital strategy."

Google Analytics time on page"Time on page in Google Analytics measures how long users spend on individual pages. By analyzing time on page, you can identify engaging content, optimize underperforming pages, and improve overall user satisfaction."

Google Analytics tracking code"The Google Analytics tracking code is a JavaScript snippet added to your websites HTML. It collects data on user interactions, such as pageviews and events, and sends that data to your Google Analytics account for analysis."

SEO services in Sydney - Search result relevance

- Search ranking positions
- Googles featured videos
- Google search snippets

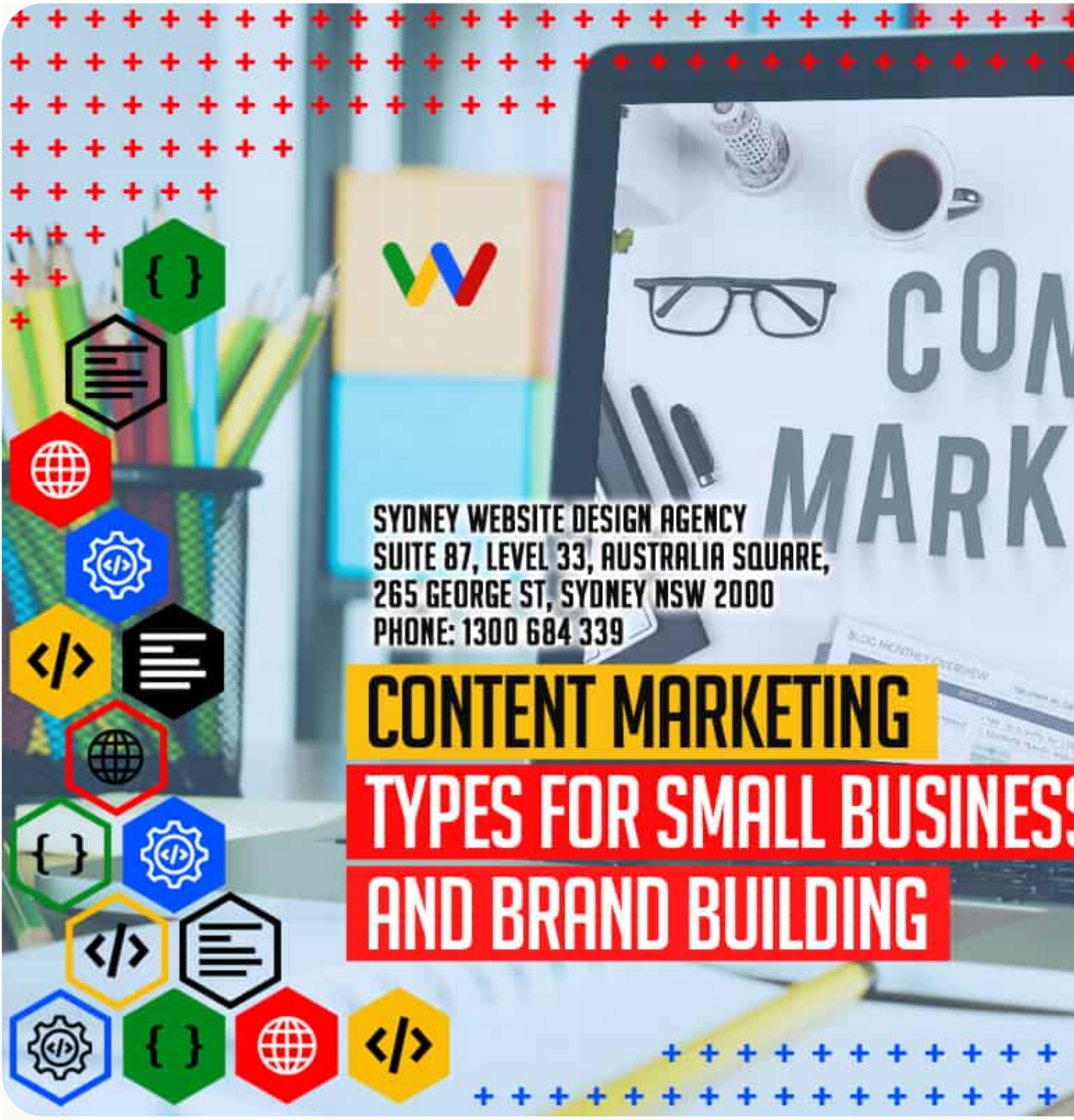
content depth improvements

Google Analytics user explorer"The user explorer report in Google Analytics provides a detailed view of individual user behavior. By analyzing this data, you can identify trends, personalize user experiences, and improve overall engagement and retention."

Google Analytics user segmentation"User segmentation in Google Analytics lets you divide your audience into specific groups based on behavior, demographics, or acquisition source. Analyzing these segments helps you tailor marketing efforts and improve overall site performance."

Google Analytics UTM parameters"UTM parameters are custom URL tags that track campaign performance in Google Analytics. By adding these parameters to your marketing links, you can identify which campaigns, sources, and mediums drive the most traffic and conversions."


KEY ADVANTAGE
LOCAL SEO S
28



content engagement

Google Business Profile accessibilityEnsuring that your Google Business Profile is easily accessible to all users helps improve your reputation and search performance. Accessibility features like detailed descriptions and accurate hours make it simple for everyone to find and engage with your business.

Google Business Profile analytics"Analytics for your Google Business Profile show how users find and interact with your listing.

SEO services in Sydney - Google keyword rankings

1. Google keyword rankings
2. Mobile search optimization
3. Google search console

By reviewing these insights, you can identify areas for improvement and implement changes to increase engagement and visibility."
Google Business Profile appointment links"Adding appointment links to your Google Business Profile allows customers to book services directly from your listing. By making it easy to schedule appointments, you improve convenience for your audience and increase conversions."

content flow

Google Business Profile best practices"Following best practices for your Google Business Profile, such as using high-quality images, updating your information regularly, and engaging with customers, helps improve your local search visibility and build a positive reputation."

Google Business Profile branding"Your Google Business Profile can be a reflection of your brand identity. By using consistent logos, professional images, and a cohesive business description, you strengthen your brand image and stand out in local search results."

Google Business Profile business description"A compelling business description on your Google Business Profile communicates what makes your company unique. By including relevant keywords and highlighting your strengths, you increase the chances of appearing in search results and attracting the right audience."

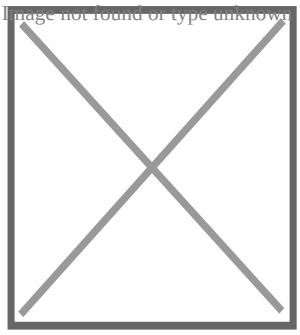
About MediaWiki

Not to be confused with Wikimedia.

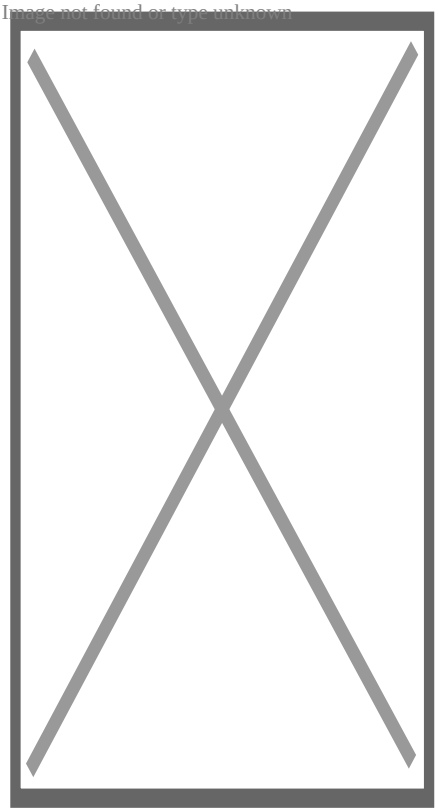
This article **relies excessively on references to primary sources**. Please improve this article by adding secondary or tertiary sources.
Find sources: "MediaWiki" – news · newspapers · books · scholar · JSTOR *(January 2025) (Learn how and when to remove this message)*

- 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] / 21 December 2024; 2 months ago
Repository	
Written in	PHP[2]
Operating system	Windows, macOS, Linux, FreeBSD, OpenBSD, Solaris
Size	79.05 MiB (compressed)
Available in	459[3] languages
Type	Wiki software
License	GPLv2+[4]
Website	mediawiki.org

Image not found or type unknown Edit this on Wikidata

Image not found or type unknown 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 s
(the "behind the sc
used to add format

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

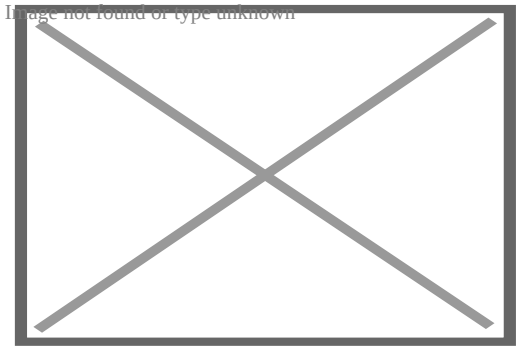
"I've had nothing yet," Alice replied in an offended tone: "so I can't take more."

"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.

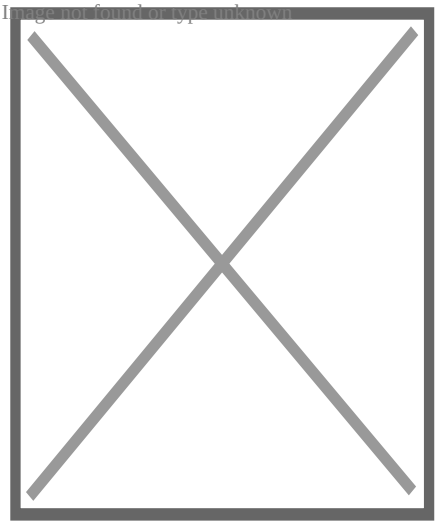
Interwiki links

[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]

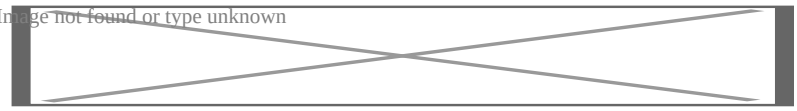
Previously, Wikipedia used interlanguage links to link an article to other articles on the same topic in other editions of Wikipedia. This was superseded by the launch of Wikidata.[40]

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]

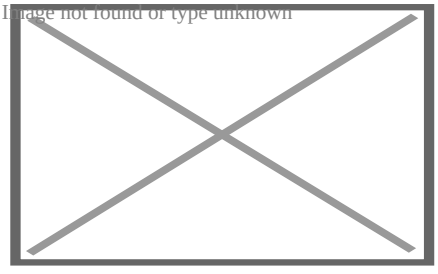
Subpages

[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").

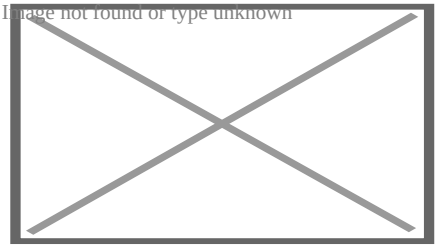
Customization

[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.

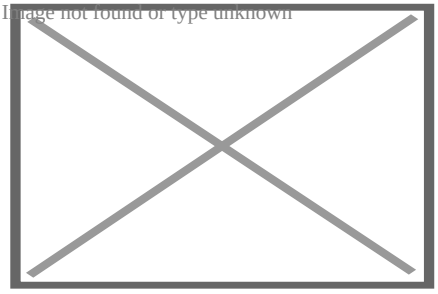
Five main extension points were created to allow developers to add features and functionalities to MediaWiki. Hooks are run every time a certain event happens; for instance, the ArticleSaveComplete hook occurs after a save article request has been processed.[59] This can be used, for example, by an extension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

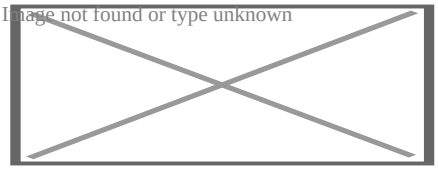
Combating linkspam

[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.

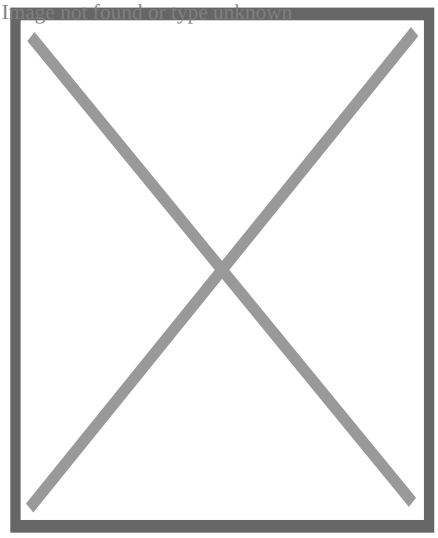
The software supports a wide variety of uploaded media files, and allows image galleries and thumbnails to be generated with relative ease. There is also support for Exif metadata. MediaWiki operates the Wikimedia Commons, one of the largest free content media archives.

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]

Image not found or type unknown



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 100×.[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

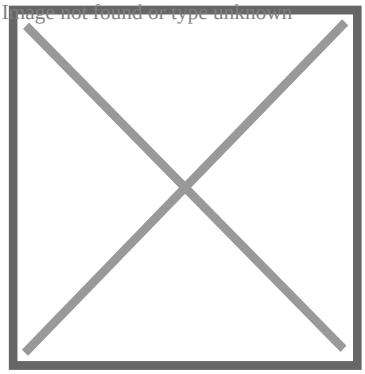
[edit]

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

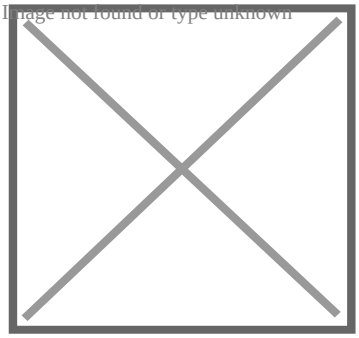
When Wikipedia was launched in January 2001, it ran on an existing wiki software system, UseModWiki. UseModWiki is written in the Perl programming language, and stores all wiki pages in text (.txt) files. This software soon proved to be limiting, in both functionality and performance. In mid-2001, Magnus 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]

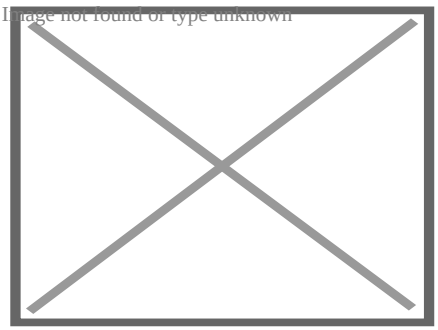
Later, Brooke Vibber, the chief technical officer of the Wikimedia Foundation,[135] took up the role of release manager.[136][101]

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]

- Image not found or type unknown Free and open-source software portal

- List of content management systems
- List of wiki software
- BlueSpice
- Semantic MediaWiki
- XOWA – for viewing Wikipedia and other wikis offline
- PHP – a programming language that powers MediaWiki

References

[edit]

1. ^ *"Announcing MediaWiki 1.43.0". December 21, 2024.*
2. ^ *Reed, Sam (December 19, 2019). "Announcing MediaWiki 1.34.0". mediawiki-announce (Mailing list). Archived from the original on December 19, 2019. Retrieved December 19, 2019.*
3. ^ *"Names.php • mediawiki". github.com. April 8, 2021. Archived from the original on July 15, 2021. Retrieved May 19, 2021.*
4. ^ *"Copyright". mediawiki.org. Archived from the original on September 19, 2015. Retrieved September 7, 2015.*
5. ^ Magnus Manske's announcement of "PHP Wikipedia", wikipedia-l, August 24, 2001
6. ^ *Barrett, Daniel J. (October 2008). MediaWiki. O'Reilly Media. ISBN 978-0-596-51979-7 . Retrieved April 23, 2010.*
7. ^ ***a b** "What is MediaWiki?". MediaWiki. January 9, 2021. Archived from the original on July 22, 2018. Retrieved March 27, 2021.*
8. ^ *"Wikipedia:Statistics – Wikipedia, the free encyclopedia". Wikipedia. Archived from the original on August 28, 2021. Retrieved May 30, 2010.*

9. ^ **a b** "Message group statistics: MediaWiki core". translatewiki.net. August 20, 2023. Archived from the original on August 20, 2023. Retrieved August 20, 2023. "488 languages (not including languages that are supported but have no translations)"
10. ^ "Category:MediaWiki configuration settings". MediaWiki. September 11, 2016. Archived from the original on November 10, 2014. Retrieved September 11, 2016.
11. ^ "Extension Matrix". MediaWiki. Archived from the original on September 11, 2016. Retrieved September 6, 2017.
12. ^ Lerner, Reuven M. (February 23, 2006), Installing and Customizing MediaWiki, Linux Journal, archived from the original on April 6, 2010, retrieved April 23, 2010
13. ^ Petrazickis, Leons (2009), Deploying PHP applications on IBM DB2 in the cloud: MediaWiki as a case study, Proceedings of the 2009 Conference of the Center for Advanced Studies on Collaborative Research, pp. 304–305, doi: 10.1145/1723028.1723069, S2CID 27463043
14. ^ "Manual:$wgEnableUploads". MediaWiki. Archived from the original on June 25, 2010. Retrieved May 30, 2010.
15. ^ "Manual:$wgLogo". MediaWiki. December 12, 2009. Archived from the original on June 25, 2010. Retrieved May 30, 2010.
16. ^ "Manual:LocalSettings.php". MediaWiki. March 29, 2007. Archived from the original on June 25, 2010. Retrieved May 30, 2010.
17. ^ "Extension:AbuseFilter". MediaWiki. Archived from the original on June 25, 2010. Retrieved May 30, 2010.
18. ^ Cacycle. "wikEd". Archived from the original on November 23, 2007.
19. ^ "Manual:Installation guide". MediaWiki. Archived from the original on June 25, 2010. Retrieved May 30, 2010.
20. ^ "Manual:Extending wiki markup". MediaWiki. Archived from the original on May 1, 2011 . Retrieved May 30, 2010.
21. ^ "HTML to Wiki Converter – tables". WMF Labs. March 29, 2008. Archived from the original on July 13, 2014. Retrieved June 12, 2014.
22. ^ "Markup spec". MediaWiki. Archived from the original on December 19, 2007. Retrieved May 30, 2010.
23. ^ "Extricating Meaning from Wikimedia Article Archives" (PDF). Archived (PDF) from the original on March 10, 2011. Retrieved January 2, 2011.
24. ^ Jakes, David (August 15, 2006), Wild about Wikis, Tech & Learning, archived from the original on May 2, 2010, retrieved April 23, 2010
25. ^ Foley, Brian & Chang, Tae (2008), Wiki as a professional development tool (PDF), Technology and Teacher Education, archived (PDF) from the original on April 30, 2011, retrieved April 23, 2010
26. ^ "API". MediaWiki. May 17, 2010. Archived from the original on May 27, 2010. Retrieved May 30, 2010.
27. ^ "Pywikibot – MediaWiki". mediawiki.org. Archived from the original on March 9, 2018. Retrieved March 16, 2018.
28. ^ Ã ƒâ€žÃ…â€™esky. "Wikipedia:AutoWikiBrowser – Wikipedia, the free encyclopedia". En.wikipedia.org. Archived from the original on April 20, 2010. Retrieved May 30, 2010.

29. ^ Bartolo, Laura M.; Lowe, Cathy S.; Songar, Poonam; Tandy, Robert J. (May 20, 2009), Facilitating Wiki/Repository Communication with Metadata, Georgia Institute of Technology, archived from the original on January 9, 2011, retrieved April 23, 2010
30. ^ "API:Client code". MediaWiki. May 24, 2010. Archived from the original on June 26, 2010. Retrieved May 30, 2010.
31. ^ "Tags – Wikipedia, the free encyclopedia". En.wikipedia.org. Archived from the original on March 4, 2010. Retrieved May 30, 2010.
32. ^ "Manual:Tags". MediaWiki. August 31, 2009. Archived from the original on June 25, 2010. Retrieved May 30, 2010.
33. ^ "Wikipedia:Huggle – Wikipedia, the free encyclopedia". En.wikipedia.org. Archived from the original on March 31, 2011. Retrieved May 30, 2010.
34. ^ "IRC/Channels". Meta-Wiki. Archived from the original on March 23, 2010. Retrieved May 30, 2010.
35. ^ Daniel Nasaw (July 25, 2012). "Meet the 'bots' that edit Wikipedia". BBC News. Archived from the original on July 28, 2012. Retrieved July 30, 2012.
36. ^ "Manual:Watchlist". MediaWiki. November 24, 2009. Archived from the original on May 1, 2011. Retrieved May 30, 2010.
37. ^ Kevin Yager (March 16, 2006), "Wiki ware could harness the Internet for science", Nature, **440** (7082): 278, Bibcode:2006Natur.440..278Y, doi:10.1038/440278a, PMID 16541049
38. ^ "Manual:Interwiki". MediaWiki. Archived from the original on December 3, 2010. Retrieved May 30, 2010.
39. ^ "Interlanguage links". MediaWiki. Archived from the original on March 12, 2021. Retrieved March 17, 2021.
40. ^ Pintscher, Lydia (September 23, 2013). "Wikidata is Here!". Commons:Village pump. Archived from the original on December 6, 2021. Retrieved March 17, 2021.
41. ^ "Help:Navigation". MediaWiki. May 21, 2010. Archived from the original on May 27, 2010. Retrieved May 30, 2010.
42. ^ Carl Challborn & Teresa Reimann (December 2004), Wiki products: a comparison (PDF), Athabasca University, archived (PDF) from the original on December 23, 2010, retrieved April 23, 2010
43. ^ Newman, Aaron; Steinberg, Adam; Thomas, Jeremy (2008). Enterprise 2. 0 Implementation. McGraw-Hill Professional. p. 185. ISBN 978-0-07-159160-7.
44. ^ Malcolm, Jeremy (2008). Multi-Stakeholder Governance and the Internet Governance Forum. Terminus Press. pp. 188, 280. ISBN 978-0-9805084-0-6.
45. ^ Ebersbach, Anja; Glaser, Markus; Heigl, Richard; Dueck, Gunter (2006). Wiki. Springer. pp. 55, 80–82, 109, 120–121, 156. ISBN 978-3-540-25995-4.
46. ^ "Help:Categories". MediaWiki. Archived from the original on June 25, 2010. Retrieved May 30, 2010.
47. ^ Jakob Voss (April 27, 2006). "Collaborative thesaurus tagging the Wikipedia way". arXiv:cs.IR/0604036.
48. ^ Lupin. "Wikipedia:Tools/Navigation popups". Archived from the original on July 18, 2006.

49. ^ "Extension:Gadgets". MediaWiki. March 30, 2010. Archived from the original on June 25, 2010. Retrieved May 30, 2010.
50. ^ Anderson, Mark; Carr, Leslie; Millard, David E. (July 4, 2017). There and Here: Patterns of Content Transclusion in Wikipedia. 28th ACM Conference on Hypertext and Social Media. Prague, Czech Republic: ACM. pp. 115–124. doi: 10.1145/3078714.3078726. ISBN 978-1-4503-4708-2.
51. ^ Ã ƒâ€žÃ…â€™esky (May 16, 2010). "Template:Welcome – Wikipedia, the free encyclopedia". En.wikipedia.org. Archived from the original on May 6, 2011. Retrieved May 30, 2010.
52. ^ T Kriplean; I Beschastnikh; et al. (2008), "Articulations of wikiwork: Uncovering valued work in wikipedia through barnstars", Proceedings of the 2008 ACM conference on Computer supported cooperative work, Proceedings of the ACM, pp. 47–56, doi: 10.1145/1460563.1460573, ISBN 9781605580074, S2CID 7164949
53. ^ Ã ƒâ€žÃ…â€™esky. "Wikipedia:Barnstars – Wikipedia, the free encyclopedia". En.wikipedia.org. Archived from the original on June 24, 2009. Retrieved May 30, 2010.
54. ^ Ã ƒâ€žÃ…â€™esky. "Template:Test – Wikipedia, the free encyclopedia". En.wikipedia.org. Archived from the original on November 11, 2009. Retrieved May 30, 2010.
55. ^ "Template:Test5 – Wikipedia, the free encyclopedia". En.wikipedia.org. June 19, 2008. Archived from the original on April 24, 2009. Retrieved May 30, 2010.
56. ^ "Manual:User rights management". MediaWiki. Archived from the original on June 25, 2010. Retrieved May 30, 2010.
57. ^ H Zielke; W Boemke; M Kastrup; C Melzer (November 21, 2007), Operating Procedures in Clinical Practice (PDF), Royal College of Anaesthetists, archived (PDF) from the original on May 15, 2011, retrieved April 25, 2010
58. ^ "Security issues with authorization extensions". MediaWiki. Archived from the original on June 26, 2010. Retrieved May 30, 2010.
59. ^ "Manual:Hooks/ArticleSaveComplete". MediaWiki. May 26, 2010. Archived from the original on November 10, 2014. Retrieved May 30, 2010.
60. ^ "Extension:Recent Activity Notify". MediaWiki. Archived from the original on September 27, 2014. Retrieved May 30, 2010.
61. ^ "Manual:Tag extensions". MediaWiki. May 21, 2010. Archived from the original on October 12, 2014. Retrieved May 30, 2010.
62. ^ "Manual:Parser functions". MediaWiki. March 22, 2010. Archived from the original on October 18, 2014. Retrieved May 30, 2010.
63. ^ "Manual:Special pages". MediaWiki. Archived from the original on November 10, 2014. Retrieved May 30, 2010.
64. ^ "Manual:Skins". MediaWiki. May 14, 2010. Archived from the original on November 25, 2014. Retrieved May 30, 2010.
65. ^ "Manual:Integration with S3". MediaWiki. March 22, 2010. Archived from the original on November 27, 2014. Retrieved May 30, 2010.
66. ^ "Extension:ParserFunctions". MediaWiki. December 25, 2009. Archived from the original on June 25, 2010. Retrieved May 30, 2010.

67. ^ *"Wikipedia:Miscellany for deletion/Template:Qif – Wikipedia, the free encyclopedia"*. *En.wikipedia.org. Archived from the original on February 25, 2015. Retrieved May 30, 2010.*
68. ^ ***a b*** *M Schindler; D Vrandecic (2009), Introducing new features to Wikipedia, Proceedings of WebSci, archived from the original on June 24, 2018, retrieved June 24, 2018*
69. ^ *"Category:String manipulation templates – Wikipedia, the free encyclopedia"*. *En.wikipedia.org. May 15, 2010. Archived from the original on May 6, 2011. Retrieved May 30, 2010.*
70. ^ *"Bug 6455 – Enable StringFunctions on WMF wikis"*. *bugzilla.wikimedia.org. Archived from the original on January 22, 2012. Retrieved October 9, 2010.*
71. ^ *"Extension:StringFunctions"*. *MediaWiki. Archived from the original on June 25, 2010. Retrieved May 30, 2010.*
72. ^ *"r51497 – Code Review"*. *MediaWiki. Archived from the original on November 27, 2014 . Retrieved May 30, 2010.*
73. ^ *"Lua performance"*. *Archived from the original on August 24, 2018. Retrieved December 27, 2018.*
74. ^ *"Extension:Cite"*. *MediaWiki. May 3, 2010. Archived from the original on October 20, 2014. Retrieved May 30, 2010.*
75. ^ *"Category:Math extensions"*. *MediaWiki. December 26, 2009. Archived from the original on May 1, 2011. Retrieved May 30, 2010.*
76. ^ ***a b*** *Marieke Guy (January 2007), Wikido: Exploiting the Potential of Wikis, Ariadne, archived from the original on April 7, 2010, retrieved April 23, 2010*
77. ^ *"Extension:CategorySuggest"*. *MediaWiki. Archived from the original on September 26, 2014. Retrieved May 30, 2010.*
78. ^ *"Category:Flash Video extensions"*. *MediaWiki. Archived from the original on September 15, 2014. Retrieved May 30, 2010.*
79. ^ *"Category:YouTube extensions"*. *MediaWiki. September 16, 2008. Archived from the original on May 1, 2011. Retrieved May 30, 2010.*
80. ^ *"Category:RSS extensions"*. *MediaWiki. Archived from the original on December 3, 2010. Retrieved May 30, 2010.*
81. ^ *M Dale; A Stern; M Deckert; W Sack (2009), System demonstration: Metavid.org: a social website and open archive of congressional video, Proceedings of the 10th Annual International Conference on Digital Government Research: Social Networks: Making Connections between Citizens, Data and Government, pp. 309–310, ISBN 978-1-60558-535-2*
82. ^ *"Wiki spam"*. *Meta-Wiki. Archived from the original on November 7, 2014. Retrieved May 30, 2010.*
83. ^ *Goldman, Eric, Wikipedia's Labor Squeeze and its Consequences, vol. 8, Journal on Telecommunications and High Technology Law*
84. ^ *"Extension:ConfirmEdit"*. *MediaWiki. May 5, 2010. Archived from the original on October 20, 2014. Retrieved May 30, 2010.*

85. ^ *"Extension:SpamBlacklist". MediaWiki. March 24, 2010. Archived from the original on October 20, 2014. Retrieved May 30, 2010.*
86. ^ *"Extension:Nuke". MediaWiki. May 19, 2010. Archived from the original on October 20, 2014. Retrieved May 30, 2010.*
87. ^ Lucene-search MediaWiki extension Archived June 2, 2012, at the Wayback Machine, mediawiki.org
88. ^ SphinxSearch MediaWiki extension Archived October 22, 2014, at the Wayback Machine, mediawiki.org
89. ^ *Masanori Arita & Kazuhiro Suwa (September 17, 2008), "Search extension transforms Wiki into a relational system: A case for flavonoid metabolite database", BioData Min, **1** (1), BioData Mining: 7, doi:10.1186/1756-0381-1-7, PMC 2556319, PMID 18822113*
90. ^ *Finn Arup Nielsen (October 15, 2009). "Lost in localization: a solution with neuroinformatics 2.0?". NeuroImage. **48** (1): 11–3. doi: 10.1016/J.NEUROIMAGE.2009.05.073. ISSN 1053-8119. PMID 19497377. Wikidata Q21011200.*
91. ^ *Eric Ras; Jörg Rech; Sebastian Weber (August 1, 2008), Collaborative Authoring of Learning Elements for Adaptive Learning Spaces (PDF), Fifth International Conference on Adaptive Hypermedia and Adaptive Web-Based Systems, archived (PDF) from the original on May 3, 2011, retrieved April 23, 2010*
92. ^ *Hartung, Michael; et al. "A Platform for Collaborative Management of Semantic Grid Metadata". Intelligent distributed computing, systems and applications. p. 123.*
93. ^ *"Extension:VisualEditor". MediaWiki. Archived from the original on February 21, 2021. Retrieved March 15, 2021.*
94. ^ *"Category:WYSIWYG extensions". MediaWiki. April 10, 2008. Archived from the original on May 1, 2011. Retrieved May 30, 2010.*
95. ^ *"Manual:Installation requirements". MediaWiki. Archived from the original on March 8, 2021. Retrieved March 14, 2021.*
96. ^ *"Manual:Page table". MediaWiki. May 15, 2010. Archived from the original on November 25, 2014. Retrieved May 30, 2010.*
97. ^ *"Manual:Revision table". MediaWiki. Archived from the original on November 24, 2014. Retrieved May 30, 2010.*
98. ^ *Ortega, Felipe; González-Barahona, Jesus M.; Robles, Gregorio (2007), The Top-Ten Wikipedias: A Quantitative Analysis Using WikiXRay, CiteSeerX 10.1.1.107.1424*
99. ^ *Curino, Carlo A.; Tanca, Letizia; Zaniolo, Carlo (2008), Information Systems Integration and Evolution: Ontologies at Rescue (PDF), Workshop on Semantic, archived (PDF) from the original on December 22, 2009, retrieved April 23, 2010*
100. ^ *T Dumitras; P Narasimhan (2009), No downtime for data conversions: Rethinking hot upgrades (PDF), archived from the original (PDF) on June 16, 2010, retrieved April 29, 2010*
101. ^ ***a b** "Wikipedia and MediaWiki". Presentation MediaWiki development (video). April 28, 2006. Archived from the original on April 14, 2011. Retrieved September 23, 2009.*
102. ^ ***a b** Bergsma, Mark, Wikimedia Architecture (PDF), archived (PDF) from the original on March 5, 2016, retrieved October 21, 2015*

103. ^ "Manual:What is". MediaWiki. Archived from the original on July 22, 2018. Retrieved May 30, 2010.
104. ^ "Extension:StructuredDiscussions". MediaWiki. Archived from the original on December 27, 2018. Retrieved December 27, 2018.
105. ^ "Extension:Wikilog". MediaWiki. November 27, 2009. Archived from the original on September 22, 2014. Retrieved May 30, 2010.
106. ^ "Help:Signatures". MediaWiki. Archived from the original on November 15, 2008. Retrieved May 30, 2010.
107. ^ N Augar; R Raitman; W Zhou (2004), Teaching and learning online with wikis, Beyond the comfort zone, pp. 95–104, CiteSeerX 10.1.1.133.1456
108. ^ Cubric, Marija (2007), Analysis of the use of Wiki-based collaborations in enhancing student learning, University of Hertfordshire, p. 11, archived from the original on May 15, 2011, retrieved April 24, 2010
109. ^ Albertsen, Johannes & Bouvin, Niels Olof (2008), User defined structural searches in mediawiki, Proceedings of the nineteenth ACM conference on Hypertext and hypermedia, ISBN 978-1-59593-985-2
110. ^ "Extension:Semantic MediaWiki – WikiApiary". Archived from the original on October 26, 2018. Retrieved October 12, 2019.
111. ^ T DumitraÃƒâ€¦Â¸; P Narasimhan (2009), Toward upgrades-as-a-service in distributed systems, Proceedings of the 10th ACM/IFIP/USENIX International Conference on Middleware, pp. 1–2
112. ^ "Security for developers". MediaWiki. Archived from the original on November 25, 2014 . Retrieved May 30, 2010.
113. ^ Perrin, Chad (April 30, 2008), Five security tips from MediaWiki's lead developer, Tech Republic[permanent dead link]
114. ^ "News". MediaWiki. Archived from the original on October 6, 2014. Retrieved May 30, 2010.
115. ^ "Manual:Security". MediaWiki. March 22, 2010. Archived from the original on November 10, 2014. Retrieved May 30, 2010.
116. ^ Books about MediaWiki Archived December 27, 2018, at the Wayback Machine, mediawiki.org
117. ^ MediaWiki Administrator's Handbook. Wikibooks. Archived from the original on October 20, 2014. Retrieved October 20, 2014.
118. ^ MediaWiki User Guide, Wikibooks, archived from the original on October 20, 2014, retrieved October 20, 2014
119. ^ "MediaWiki.org Project:Copyrights". Archived from the original on August 23, 2023. Retrieved August 23, 2023.
120. ^ "Project:PD help". MediaWiki. Archived from the original on October 29, 2020. Retrieved May 30, 2010.
121. ^ Rafe Needleman (November 19, 2008), Wikipedia gears up for flood of video and photo files, C-Net, archived from the original on August 6, 2009, retrieved April 23, 2010
122. ^ "Events". Mediawiki.org. Archived from the original on December 27, 2018. Retrieved December 27, 2018.

123. ^ *"Development policy". MediaWiki. July 19, 2013. Archived from the original on May 10, 2017. Retrieved August 4, 2013.*
124. ^ *"Summer of Code". MediaWiki. March 26, 2013. Archived from the original on May 10, 2017. Retrieved August 4, 2013.*
125. ^ *"Wikimedia". Open Hub. Archived from the original on September 14, 2017. Retrieved November 15, 2012.* Approximate counts (not deduplicated) as of November 4, 2012: 139 for core, 155 for extensions supported by WMF, 190 and 42 for extensions only hosted on WMF's Git and SVN repositories respectively.
126. ^ ***a b*** *"Version lifecycle". MediaWiki. September 5, 2018. Archived from the original on June 17, 2020. Retrieved October 21, 2018.*
127. ^ *Bartlett, Manning (November 14, 2001). "Magnus's new script..." Wikimedia Lists. Wikimedia Foundation. Archived from the original on October 2, 2019. Retrieved October 2, 2019.*
128. ^ *Manske, Magnus (November 14, 2001). "Magnus's new script..." Wikimedia Lists. Wikimedia Foundation. Archived from the original on October 2, 2019. Retrieved October 2, 2019.*
129. ^ *Mayer, Daniel (July 19, 2003). "Phase IV, Wikibooks.org/.com and WikimediaFoundation.org/.com (was Wikis and uniformity)". Wikipedia-L mailing list. Archived from the original on July 12, 2017. Retrieved January 18, 2015.*
130. ^ *"Differences between Wikipedia, Wikimedia, MediaWiki, and wiki". MediaWiki. Archived from the original on July 1, 2009. Retrieved May 30, 2010.*
131. ^ *"International logo contest". Meta-Wiki. Archived from the original on May 9, 2020. Retrieved April 9, 2020.*
132. ^ *"International logo contest/results". Meta-wiki. Wikimedia Foundation. January 10, 2007. Archived from the original on November 4, 2015. Retrieved March 14, 2007.*
133. ^ *"Historical/Logo history". Meta-wiki. Wikimedia Foundation. January 17, 2007. Archived from the original on November 4, 2015. Retrieved March 14, 2007.*
134. ^ *Erik Möller (July 26, 2003). "File talk:EloquenceSunflowerNew-Small.png – Meta". Meta-wiki. Wikimedia Foundation. Archived from the original on January 30, 2016. Retrieved February 3, 2013.*
135. ^ *David Weinberger (2007). Everything Is Miscellaneous: The Power of the New Digital Disorder. Times Books. p. 99. ISBN 978-0-8050-8043-8.*
136. ^ *"MediaWiki history". MediaWiki website. Archived from the original on October 27, 2020. Retrieved August 4, 2013.*
137. ^ *"MediaWiki ResourceLoader". Mediawiki.org. Archived from the original on March 8, 2013. Retrieved July 6, 2013.*
138. ^ *"VisualEditor – MediaWiki". MediaWiki. Archived from the original on September 27, 2013. Retrieved September 15, 2013.*
139. ^ *Sarabadani, Amir (March 31, 2021). "Logo of MediaWiki has changed". Wikimedia Foundation. Archived from the original on April 2, 2021. Retrieved April 2, 2021.*
140. ^ MediaWiki testimonials Archived January 11, 2012, at the Wayback Machine, mediawiki.org

141. ^ *"The story of Intelpedia: A model corporate wiki". Socialmedia.biz. Archived from the original on September 16, 2013. Retrieved August 16, 2013.*
142. ^ *A. Maron; M. Maron (2007). "A stealth transformation: introducing wikis to the UN". Knowledge Management for Development Journal. Archived from the original on May 4, 2011. Retrieved October 9, 2010.*
143. ^ *"LibrePlanet Homepage". Archived from the original on March 18, 2011. Retrieved December 10, 2018.*
144. ^ *Bryant, Todd (2006), Social Software in Academia (PDF), Educause Quarterly, archived from the original (PDF) on December 22, 2009, retrieved April 23, 2010*
145. ^ *Liang, M.; Chu, S.; Siu, F.; Zhou, A. (December 3–4, 2009), Comparing User Experiences in Using Twiki & Mediawiki to Facilitate Collaborative Learning (PDF), Proceedings of the 2009 International Conference on Knowledge Management, archived from the original (PDF) on May 14, 2011*
146. ^ *Schulz, Judith (2009), Company-Wiki as a knowledge transfer instrument for reducing the shortage of skilled workers (PDF), Institute of Technology and Education, archived (PDF) from the original on March 4, 2016, retrieved April 25, 2010*
147. ^ *Chu, S.; Kennedy, D.; Mak, M. (December 3–4, 2009), MediaWiki and Google Docs as online collaboration tools for group project co-construction (PDF), Proceedings of the 2009 International Conference on Knowledge Management, archived from the original (PDF) on May 14, 2011, retrieved April 23, 2010*
148. ^ ***a b*** *Grecco, Claudio Henrique dos Santos; Augusto, Silas Cordeiro; Souza, Jaqueline Tavares Viana de; Carvalho, Paulo Victor Rodrigues; Davila, Adriana Loureiro (July 25, 2021). "A Method for the evaluation of knowledge management systems". Brazilian Journal of Radiation Sciences. **9** (2B). doi:10.15392/bjrs.v9i2B.1250. ISSN 2319-0612. S2CID 237733021. Archived from the original on November 12, 2021. Retrieved November 12, 2021.*

External links

[edit]

MediaWiki at Wikipedia's sister projects

- Image not found or type unknown Definitions from Wiktionary
- Image not found or type unknown Media from Commons
- Image not found or type unknown Quotations from Wikiquote
- Image not found or type unknown Textbooks from Wikibooks
- Image not found or type unknown Resources from Wikiversity
- Image not found or type unknown Data from Wikidata
- Image not found or type unknown Discussions from Meta-Wiki
- Image not found or type unknown Documentation from MediaWiki

- MediaWiki homepage Image not found or type unknown Edit this at Wikidata

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

Wikipedia

Overview (outline)

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

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

Community (Wikipedians)

Events

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

Wiki Loves

- Earth
- Folklore
- Monuments
- Pride
- Science

People (list)

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

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

History

Controversies

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

Coverage

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

Honors

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

References and analysis

- Academic studies
- Bibliography
- Cultural
- Films
- Listen to Wikipedia
- 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

- Image not found or type unknown **List**
- Image not found or type unknown **Category**

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

Wiki software

.NET	FlexWiki SharePoint
Java	Confluence Jive Traction TeamPage XWiki
JavaScript	TiddlyWiki Wiki.js
Perl	Foswiki ikiwiki TWiki UseModWiki WikiBase
PHP	BlueSpice BookStack DokuWiki MediaWiki PhpWiki Phriction PmWiki PukiWiki Tiki

- **Python**
  - Allura
  - Bloodhound
  - Kallithea
  - Kuma
  - MoinMoin
  - Trac
  - Zim
- **Ruby**
  - Gollum
  - Redmine
- **Other languages**
  - CLiki
    - Common Lisp
  - Federated Wiki
    - CoffeeScript
    - Haskell

- Image not found or type unknown **Comparison**
- Image not found or type unknown **List**
- Image not found or type unknown **Category**

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

Wikimedia Foundation

Projects

- Wikipedia community (Wikipedians)

People

Current

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

Past

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

Projects

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

Other

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

Related

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

Authority control databases Image not found or type unknown Edit this at Wikidata

International

- VIAF
- FAST

National

- Germany
- United States
- France
- BnF data
- Israel

Other

- IdRef

About Semantic Web

Image not found or type unknown

A tag cloud (a typical Web 3.0 phenomenon in itself) presenting Web 3.0 themes

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

Semantics

- **Linguistic**
- **Logical**

Subfields

- Computational
- Lexical (lexis, lexicology)
- Statistical
- Structural

Topics

- Analysis
- Compositionality
- Context
- - Prototype theory
  - Force dynamics
- Semantic feature
- Semantic gap
- Theory of descriptions

Analysis

- Latent
- Computational
- Machine-learning

Applications

- Semantic file system
- Semantic desktop
- Semantic matching
- Semantic parsing
- Semantic similarity
- Semantic query
- - Semantic Web
  - Semantic wiki

Semantics of programming languages

Types

- Action
- Algebraic
- Axiomatic
- Categorical
- Concurrency
- Denotational
- Game
- Operational
- Predicate transformational

Theory

- Abstract interpretation
- Abstract semantic graph

- Language
- Linguistics

The **Semantic Web**, sometimes known as **Web 3.0** (not to be confused with Web3), is an extension of the World Wide Web through standards[1] set by the World Wide Web Consortium (W3C). The goal of the Semantic Web is to make Internet data machine-readable.

To enable the encoding of semantics with the data, technologies such as Resource Description Framework (RDF)[2] and Web Ontology Language (OWL)[3] are used. These technologies are used to formally represent metadata. For example, ontology can describe concepts, relationships between entities, and categories of things. These embedded semantics offer significant advantages such as reasoning over data and operating with heterogeneous data sources.[4] These standards promote common data formats and exchange protocols on the Web, fundamentally the RDF. According to the W3C, "The Semantic Web provides a common framework that allows data to be shared and reused across application, enterprise, and community boundaries."[5] The Semantic Web is therefore regarded as an integrator across different content and information applications and systems.

History

[edit]

The term was coined by Tim Berners-Lee for a web of data (or **data web**)[6] that can be processed by machines[7]—that is, one in which much of the meaning is machine-readable. While its critics have questioned its feasibility, proponents argue that applications in library and information science, industry, biology and human sciences research have already proven the validity of the original concept.[8]

Berners-Lee originally expressed his vision of the Semantic Web in 1999 as follows:

> I have a dream for the Web [in which computers] become capable of analyzing all the data on the Web – the content, links, and transactions between people and computers. A "Semantic Web", which makes this possible, has yet to emerge, but when it does, the day-to-day mechanisms of trade, bureaucracy and our daily lives will be handled by machines talking to machines. The "intelligent agents" people have touted for ages will finally materialize.[9]

The 2001 *Scientific American* article by Berners-Lee, Hendler, and Lassila described an expected evolution of the existing Web to a Semantic Web.[10] In 2006, Berners-Lee and colleagues stated that: "This simple idea…remains largely unrealized".[11] In 2013, more than four million Web domains (out of roughly 250 million total) contained Semantic Web markup.[12]

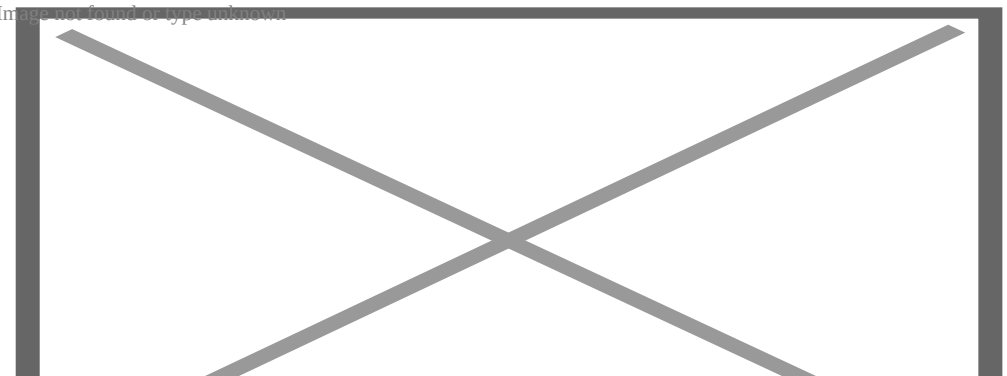
Example

[edit]

In the following example, the text "Paul Schuster was born in Dresden" on a website will be annotated, connecting a person with their place of birth. The following HTML fragment shows how a small graph is being described, in RDFa-syntax using a schema.org vocabulary and a Wikidata ID:

```
<div vocab="https://schema.org/" typeof="Person">
  <span property="name">Paul Schuster</span> was born in
  <span property="birthPlace" typeof="Place" href="https://www.wikidata.org/entity/Q1731">
    <span property="name">Dresden</span>.
  </span>
</div>
```

Image not found or type unknown



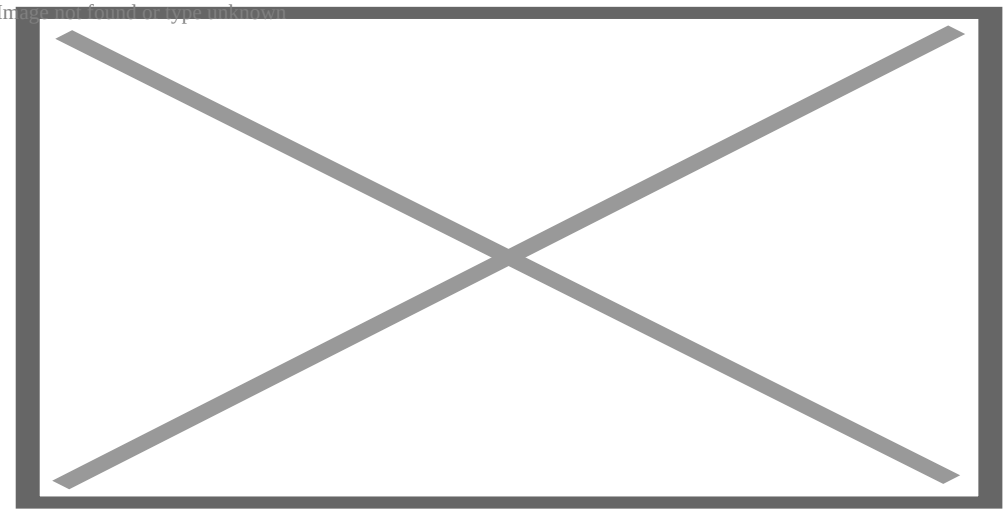
Graph resulting from the RDFa example

The example defines the following five triples (shown in Turtle syntax). Each triple represents one edge in the resulting graph: the first element of the triple (the *subject*) is the name of the node where the edge starts, the second element (the *predicate*) the type of the edge, and the last and third element (the *object*) either the name of the node where the edge ends or a literal value (e.g. a text, a number, etc.).

```
_:a <https://www.w3.org/1999/02/22-rdf-syntax-ns#type> <https://schema.org/Person> .
_:a <https://schema.org/name> "Paul Schuster" .
_:a <https://schema.org/birthPlace> <https://www.wikidata.org/entity/Q1731> .
<https://www.wikidata.org/entity/Q1731> <https://schema.org/itemtype> <https://schema.org/Place>
<https://www.wikidata.org/entity/Q1731> <https://schema.org/name> "Dresden" .
```

The triples result in the graph shown in the given figure.

Image not found or type unknown



Graph resulting from the RDFa example, enriched with further data from the Web

One of the advantages of using Uniform Resource Identifiers (URIs) is that they can be dereferenced using the HTTP protocol. According to the so-called Linked Open Data principles, such a dereferenced URI should result in a document that offers further data about the given URI. In this example, all URIs, both for edges and nodes (e.g. http://schema.org/Person, http://schema.org/birthPlace, http://www.wikidata.org/entity/Q1731) can be dereferenced and will result in further RDF graphs, describing the URI, e.g. that Dresden is a city in Germany, or that a person, in the sense of that URI, can be fictional.

The second graph shows the previous example, but now enriched with a few of the triples from the documents that result from dereferencing https://schema.org/Person (green edge) and https://www.wikidata.org/entity/Q1731 (blue edges).

Additionally to the edges given in the involved documents explicitly, edges can be automatically inferred: the triple

```
_:a <https://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://schema.org/Person> .
```

from the original RDFa fragment and the triple

```
<https://schema.org/Person> <http://www.w3.org/2002/07/owl#equivalentClass> <http://xmlns.com/f
```

from the document at https://schema.org/Person (green edge in the figure) allow to infer the following triple, given OWL semantics (red dashed line in the second Figure):

```
_:a <https://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://xmlns.com/foaf/0.1/Person> .
```

Background

[edit]
Further information: Semantic network § History

The concept of the semantic network model was formed in the early 1960s by researchers such as the cognitive scientist Allan M. Collins, linguist Ross Quillian and psychologist Elizabeth F. Loftus as a form to represent semantically structured knowledge. When applied in the context of the modern internet, it extends the network of hyperlinked human-readable web pages by inserting machine-readable metadata about pages and how they are related to each other. This enables automated agents to access the Web more intelligently and perform more tasks on behalf of users. The term "Semantic Web" was coined by Tim Berners-Lee,[7] the inventor of the World Wide Web and director of the World Wide Web Consortium ("W3C"), which oversees the development of proposed Semantic Web standards. He defines the Semantic Web as "a web of data that can be processed directly and indirectly by machines".

Many of the technologies proposed by the W3C already existed before they were positioned under the W3C umbrella. These are used in various contexts, particularly those dealing with information that encompasses a limited and defined domain, and where sharing data is a common necessity, such as scientific research or data exchange among businesses. In addition, other technologies with similar goals have emerged, such as microformats.

Limitations of HTML

[edit]

Many files on a typical computer can be loosely divided into either human-readable documents, or machine-readable data. Examples of human-readable document files are mail messages, reports, and brochures. Examples of machine-readable data files are calendars, address books, playlists, and spreadsheets, which are presented to a user using an application program that lets the files be viewed, searched, and combined.

Currently, the World Wide Web is based mainly on documents written in Hypertext Markup Language (HTML), a markup convention that is used for coding a body of text interspersed with multimedia objects such as images and interactive forms. Metadata tags provide a method by which computers can categorize the content of web pages. In the examples below, the field names "keywords", "description" and "author" are assigned values such as "computing", and "cheap widgets for sale" and "John Doe".

<meta name="keywords" content="computing, computer studies, computer" />
<meta name="description" content="Cheap widgets for sale" />
<meta name="author" content="John Doe" />

Because of this metadata tagging and categorization, other computer systems that want to access and share this data can easily identify the relevant values.

With HTML and a tool to render it (perhaps web browser software, perhaps another user agent), one can create and present a page that lists items for sale. The HTML of this catalog page can make simple, document-level assertions such as "this document's title is 'Widget Superstore'", but there is no capability within the HTML itself to assert unambiguously that, for example, item number X586172 is an Acme Gizmo with a retail price of €199, or that it is a consumer product. Rather, HTML can only say that the span of text "X586172" is something that should be positioned near "Acme Gizmo" and "€199", etc. There is no way to say "this is a catalog" or even to establish that "Acme Gizmo" is a kind of title or that "€199" is a price. There is also no way to express that these pieces of information are bound together in describing a discrete item, distinct from other items perhaps listed on the page.

Semantic HTML refers to the traditional HTML practice of markup following intention, rather than specifying layout details directly. For example, the use of denoting "emphasis" rather than <i>, which specifies italics. Layout details are left up to the browser, in combination with Cascading Style Sheets. But this practice falls short of specifying the semantics of objects such as items for sale or prices.

Microformats extend HTML syntax to create machine-readable semantic markup about objects including people, organizations, events and products.[13] Similar initiatives include RDFa, Microdata and Schema.org.

Semantic Web solutions

[edit]

The Semantic Web takes the solution further. It involves publishing in languages specifically designed for data: Resource Description Framework (RDF), Web Ontology Language (OWL), and Extensible Markup Language (XML). HTML describes documents and the links between them. RDF, OWL, and XML, by contrast, can describe arbitrary things such as people, meetings, or airplane parts.

These technologies are combined in order to provide descriptions that supplement or replace the content of Web documents. Thus, content may manifest itself as descriptive data stored in Web-accessible databases,[14] or as markup within documents (particularly, in Extensible HTML (XHTML) interspersed with XML, or, more often, purely in XML, with layout or rendering cues stored separately). The machine-readable descriptions enable content managers to add meaning to the content, i.e., to describe the structure of the knowledge we have about that content. In this way, a machine can process knowledge itself, instead of text, using processes similar to human deductive reasoning and inference, thereby obtaining more meaningful results and helping computers to perform automated information gathering and research.

An example of a tag that would be used in a non-semantic web page:

<item>blog</item>

Encoding similar information in a semantic web page might look like this:

<item rdf:about="https://example.org/semantic-web/">Semantic Web</item>

Tim Berners-Lee calls the resulting network of Linked Data the Giant Global Graph, in contrast to the HTML-based World Wide Web. Berners-Lee posits that if the past was document sharing, the future is data sharing. His answer to the question of "how" provides three points of instruction. One, a URL should point to the data. Two, anyone accessing the URL should get data back. Three, relationships in the data should point to additional URLs with data.

Tags and identifiers

[edit]

Tags, including hierarchical categories and tags that are collaboratively added and maintained (e.g. with folksonomies) can be considered part of, of potential use to or a step towards the semantic Web vision.[15][16][17]

Unique identifiers, including hierarchical categories and collaboratively added ones, analysis tools and metadata, including tags, can be used to create forms of semantic webs – webs that are to a certain degree semantic.[18] In particular, such has been used for structuring scientific research i.a. by research topics and scientific fields by the projects OpenAlex,[19][20][21] Wikidata and Scholia which are under development and provide APIs, Web-pages, feeds and graphs for various semantic queries.

Web 3.0

[edit]

Tim Berners-Lee has described the Semantic Web as a component of Web 3.0.[22]

> People keep asking what Web 3.0 is. I think maybe when you've got an overlay of scalable vector graphics – everything rippling and folding and looking misty – on Web 2.0 and access to a semantic Web integrated across a huge space of data, you'll have access to an unbelievable data resource …
>
> —Ãƒ Â¢Ã¢â€šÂ¬Ã…Â *Tim Berners-Lee, 2006*

"Semantic Web" is sometimes used as a synonym for "Web 3.0",[23] though the definition of each term varies.

Beyond Web 3.0

[edit]

The next generation of the Web is often termed Web 4.0, but its definition is not clear. According to some sources, it is a Web that involves artificial intelligence,[24] the internet of things, pervasive computing, ubiquitous computing and the Web of Things among other

concepts.[25] According to the European Union, Web 4.0 is "the expected fourth generation of the World Wide Web. Using advanced artificial and ambient intelligence, the internet of things, trusted blockchain transactions, virtual worlds and XR capabilities, digital and real objects and environments are fully integrated and communicate with each other, enabling truly intuitive, immersive experiences, seamlessly blending the physical and digital worlds".[26]

Challenges

[edit]

Some of the challenges for the Semantic Web include vastness, vagueness, uncertainty, inconsistency, and deceit. Automated reasoning systems will have to deal with all of these issues in order to deliver on the promise of the Semantic Web.

- Vastness: The World Wide Web contains many billions of pages. The SNOMED CT medical terminology ontology alone contains 370,000 class names, and existing technology has not yet been able to eliminate all semantically duplicated terms. Any automated reasoning system will have to deal with truly huge inputs.
- Vagueness: These are imprecise concepts like "young" or "tall". This arises from the vagueness of user queries, of concepts represented by content providers, of matching query terms to provider terms and of trying to combine different knowledge bases with overlapping but subtly different concepts. Fuzzy logic is the most common technique for dealing with vagueness.
- Uncertainty: These are precise concepts with uncertain values. For example, a patient might present a set of symptoms that correspond to a number of different distinct diagnoses each with a different probability. Probabilistic reasoning techniques are generally employed to address uncertainty.
- Inconsistency: These are logical contradictions that will inevitably arise during the development of large ontologies, and when ontologies from separate sources are combined. Deductive reasoning fails catastrophically when faced with inconsistency, because "anything follows from a contradiction". Defeasible reasoning and paraconsistent reasoning are two techniques that can be employed to deal with inconsistency.
- Deceit: This is when the producer of the information is intentionally misleading the consumer of the information. Cryptography techniques are currently utilized to alleviate this threat. By providing a means to determine the information's integrity, including that which relates to the identity of the entity that produced or published the information, however credibility issues still have to be addressed in cases of potential deceit.

This list of challenges is illustrative rather than exhaustive, and it focuses on the challenges to the "unifying logic" and "proof" layers of the Semantic Web. The World Wide Web Consortium (W3C) Incubator Group for Uncertainty Reasoning for the World Wide Web[27] (URW3-XG) final report lumps these problems together under the single heading of "uncertainty".[28] Many of the techniques mentioned here will require extensions to the Web Ontology Language

(OWL) for example to annotate conditional probabilities. This is an area of active research. [29]

Standards

[edit]

Standardization for Semantic Web in the context of Web 3.0 is under the care of W3C. [30]

Components

[edit]

The term "Semantic Web" is often used more specifically to refer to the formats and technologies that enable it. [5] The collection, structuring and recovery of linked data are enabled by technologies that provide a formal description of concepts, terms, and relationships within a given knowledge domain. These technologies are specified as W3C standards and include:

- Resource Description Framework (RDF), a general method for describing information
- RDF Schema (RDFS)
- Simple Knowledge Organization System (SKOS)
- SPARQL, an RDF query language
- Notation3 (N3), designed with human readability in mind
- N-Triples, a format for storing and transmitting data
- Turtle (Terse RDF Triple Language)
- Web Ontology Language (OWL), a family of knowledge representation languages
- Rule Interchange Format (RIF), a framework of web rule language dialects supporting rule interchange on the Web
- JavaScript Object Notation for Linked Data (JSON-LD), a JSON-based method to describe data
- ActivityPub, a generic way for client and server to communicate with each other. This is used by the popular decentralized social network Mastodon.

The Semantic Web Stack illustrates the architecture of the Semantic Web. The functions and relationships of the components can be summarized as follows: [31]

- XML provides an elemental syntax for content structure within documents, yet associates no semantics with the meaning of the content contained within. XML is not at present a necessary component of Semantic Web technologies in most cases, as alternative syntaxes exist, such as Turtle. Turtle is a de facto standard, but has not been through a formal standardization process.

- XML Schema is a language for providing and restricting the structure and content of elements contained within XML documents.
- RDF is a simple language for expressing data models, which refer to objects ("web resources") and their relationships. An RDF-based model can be represented in a variety of syntaxes, e.g., RDF/XML, N3, Turtle, and RDFa. RDF is a fundamental standard of the Semantic Web.[32][33]
- RDF Schema extends RDF and is a vocabulary for describing properties and classes of RDF-based resources, with semantics for generalized-hierarchies of such properties and classes.
- OWL adds more vocabulary for describing properties and classes: among others, relations between classes (e.g. disjointness), cardinality (e.g. "exactly one"), equality, richer typing of properties, characteristics of properties (e.g. symmetry), and enumerated classes.
- SPARQL is a protocol and query language for semantic web data sources.
- RIF is the W3C Rule Interchange Format. It is an XML language for expressing Web rules that computers can execute. RIF provides multiple versions, called dialects. It includes a RIF Basic Logic Dialect (RIF-BLD) and RIF Production Rules Dialect (RIF PRD).

Current state of standardization

[edit]

Well-established standards:

- RDF - Resource Description Framework
- RDFS - Resource Description Framework Schema
- RIF - Rule Interchange Format
- SPARQL - 'SPARQL Protocol and RDF Query Language'
- Unicode
- URI - Uniform Resource Identifier
- OWL - Web Ontology Language
- XML - Extensible Markup Language

Not yet fully realized:

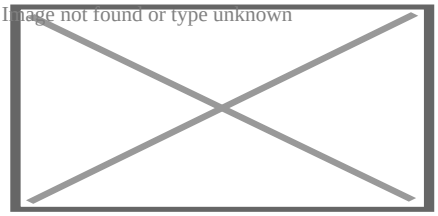
- Unifying Logic and Proof layers
- SWRL - Semantic Web Rule Language

Applications

[edit]

The intent is to enhance the usability and usefulness of the Web and its interconnected resources by creating semantic web services, such as:

- Servers that expose existing data systems using the RDF and SPARQL standards. Many converters to RDF exist from different applications.[34] Relational databases are an important source. The semantic web server attaches to the existing system without affecting its operation.
- Documents "marked up" with semantic information (an extension of the HTML <meta> tags used in today's Web pages to supply information for Web search engines using web crawlers). This could be machine-understandable information about the human-understandable content of the document (such as the creator, title, description, etc.) or it could be purely metadata representing a set of facts (such as resources and services elsewhere on the site). Note that *anything* that can be identified with a *Uniform Resource Identifier* (URI) can be described, so the semantic web can reason about animals, people, places, ideas, etc. There are four semantic annotation formats that can be used in HTML documents; Microformat, RDFa, Microdata and JSON-LD.[35] Semantic markup is often generated automatically, rather than manually.



Arguments as distinct semantic units with specified relations and version control on Kialo

- Common metadata vocabularies (ontologies) and maps between vocabularies that allow document creators to know how to mark up their documents so that agents can use the information in the supplied metadata (so that *Author* in the sense of 'the Author of the page' will not be confused with *Author* in the sense of a book that is the subject of a book review).
- Automated agents to perform tasks for users of the semantic web using this data.
- Semantic translation. An alternative or complementary approach are improvements to contextual and semantic understanding of texts – these could be aided via Semantic Web methods so that only increasingly small numbers of mistranslations need to be corrected in manual or semi-automated post-editing.
- Web-based services (often with agents of their own) to supply information specifically to agents, for example, a Trust service that an agent could ask if some online store has a history of poor service or spamming.
- Semantic Web ideas are implemented in collaborative structured argument mapping sites where their relations are organized semantically, arguments can be mirrored (linked) to multiple places, reused (copied), rated, and changed as semantic distinct

> units. Ideas for such, or a more widely adopted "World Wide Argument Web", go back to at least 2007[36] and have been implemented to some degree in Argüman[37] and Kialo. Further steps towards semantic web services may include enabling "Querying", argument search engines,[38] and "summarizing the contentious and agreed-upon points of a discussion".[39]

Such services could be useful to public search engines, or could be used for knowledge management within an organization. Business applications include:

- Facilitating the integration of information from mixed sources[40]
- Dissolving ambiguities in corporate terminology
- Improving information retrieval thereby reducing information overload and increasing the refinement and precision of the data retrieved[41][42][43][44]
- Identifying relevant information with respect to a given domain[45]
- Providing decision making support

In a corporation, there is a closed group of users and the management is able to enforce company guidelines like the adoption of specific ontologies and use of semantic annotation. Compared to the public Semantic Web there are lesser requirements on scalability and the information circulating within a company can be more trusted in general; privacy is less of an issue outside of handling of customer data.

Skeptical reactions

[edit]

Practical feasibility

[edit]

Critics question the basic feasibility of a complete or even partial fulfillment of the Semantic Web, pointing out both difficulties in setting it up and a lack of general-purpose usefulness that prevents the required effort from being invested. In a 2003 paper, Marshall and Shipman point out the cognitive overhead inherent in formalizing knowledge, compared to the authoring of traditional web hypertext:[46]

> While learning the basics of HTML is relatively straightforward, learning a knowledge representation language or tool requires the author to learn about the representation's methods of abstraction and their effect on reasoning. For example, understanding the class-instance relationship, or the superclass-subclass relationship, is more than understanding that one concept is a "type of" another concept. [...] These abstractions are taught to computer scientists generally and

> knowledge engineers specifically but do not match the similar natural language meaning of being a "type of" something. Effective use of such a formal representation requires the author to become a skilled knowledge engineer in addition to any other skills required by the domain. [...] Once one has learned a formal representation language, it is still often much more effort to express ideas in that representation than in a less formal representation [...]. Indeed, this is a form of programming based on the declaration of semantic data and requires an understanding of how reasoning algorithms will interpret the authored structures.

According to Marshall and Shipman, the tacit and changing nature of much knowledge adds to the knowledge engineering problem, and limits the Semantic Web's applicability to specific domains. A further issue that they point out are domain- or organization-specific ways to express knowledge, which must be solved through community agreement rather than only technical means.[46] As it turns out, specialized communities and organizations for intra-company projects have tended to adopt semantic web technologies greater than peripheral and less-specialized communities.[47] The practical constraints toward adoption have appeared less challenging where domain and scope is more limited than that of the general public and the World-Wide Web.[47]

Finally, Marshall and Shipman see pragmatic problems in the idea of (Knowledge Navigator-style) intelligent agents working in the largely manually curated Semantic Web:[46]

> In situations in which user needs are known and distributed information resources are well described, this approach can be highly effective; in situations that are not foreseen and that bring together an unanticipated array of information resources, the Google approach is more robust. Furthermore, the Semantic Web relies on inference chains that are more brittle; a missing element of the chain results in a failure to perform the desired action, while the human can supply missing pieces in a more Google-like approach. [...] cost-benefit tradeoffs can work in favor of specially-created Semantic Web metadata directed at weaving together sensible well-structured domain-specific information resources; close attention to user/customer needs will drive these federations if they are to be successful.

Cory Doctorow's critique ("metacrap")[48] is from the perspective of human behavior and personal preferences. For example, people may include spurious metadata into Web pages in an attempt to mislead Semantic Web engines that naively assume the metadata's veracity. This phenomenon was well known with metatags that fooled the Altavista ranking algorithm into elevating the ranking of certain Web pages: the Google indexing engine specifically looks for such attempts at manipulation. Peter Gärdenfors and Timo Honkela point out that logic-based semantic web technologies cover only a fraction of the relevant phenomena related to semantics.[49][50]

Censorship and privacy

[edit]

Enthusiasm about the semantic web could be tempered by concerns regarding censorship and privacy. For instance, text-analyzing techniques can now be easily bypassed by using other words, metaphors for instance, or by using images in place of words. An advanced implementation of the semantic web would make it much easier for governments to control the viewing and creation of online information, as this information would be much easier for an automated content-blocking machine to understand. In addition, the issue has also been raised that, with the use of FOAF files and geolocation meta-data, there would be very little anonymity associated with the authorship of articles on things such as a personal blog. Some of these concerns were addressed in the "Policy Aware Web" project [51] and is an active research and development topic.

Doubling output formats

[edit]

Another criticism of the semantic web is that it would be much more time-consuming to create and publish content because there would need to be two formats for one piece of data: one for human viewing and one for machines. However, many web applications in development are addressing this issue by creating a machine-readable format upon the publishing of data or the request of a machine for such data. The development of microformats has been one reaction to this kind of criticism. Another argument in defense of the feasibility of semantic web is the likely falling price of human intelligence tasks in digital labor markets, such as Amazon's Mechanical Turk.[*citation needed*]

Specifications such as eRDF and RDFa allow arbitrary RDF data to be embedded in HTML pages. The GRDDL (Gleaning Resource Descriptions from Dialects of Language) mechanism allows existing material (including microformats) to be automatically interpreted as RDF, so publishers only need to use a single format, such as HTML.

Research activities on corporate applications

[edit]

The first research group explicitly focusing on the Corporate Semantic Web was the ACACIA team at INRIA-Sophia-Antipolis, founded in 2002. Results of their work include the RDF(S)

based Corese[52] search engine, and the application of semantic web technology in the realm of distributed artificial intelligence for knowledge management (e.g. ontologies and multi-agent systems for corporate semantic Web) [53] and E-learning.[54]

Since 2008, the Corporate Semantic Web research group, located at the Free University of Berlin, focuses on building blocks: Corporate Semantic Search, Corporate Semantic Collaboration, and Corporate Ontology Engineering.[55]

Ontology engineering research includes the question of how to involve non-expert users in creating ontologies and semantically annotated content[56] and for extracting explicit knowledge from the interaction of users within enterprises.

Future of applications

[edit]

Tim O'Reilly, who coined the term Web 2.0, proposed a long-term vision of the Semantic Web as a web of data, where sophisticated applications are navigating and manipulating it.[57] The data web transforms the World Wide Web from a distributed file system into a distributed database.[58]

See also

[edit]

- AGRIS
- Business semantics management
- Computational semantics
- Calais (Reuters product)
- DBpedia
- Entity–attribute–value model
- EU Open Data Portal
- History of the World Wide Web
- Hyperdata
- Internet of things
- Linked data
- List of emerging technologies
- Nextbio
- Ontology alignment
- Ontology learning
- RDF and OWL

- Semantic computing
- Semantic Geospatial Web
- Semantic heterogeneity
- Semantic integration
- Semantic matching
- Semantic MediaWiki
- Semantic Sensor Web
- Semantic social network
- Semantic technology
- *Semantic Web*
- Semantically-Interlinked Online Communities
- Smart-M3
- Social Semantic Web
- Web engineering
- Web resource
- Web science

References

[edit]

1. ^ Semantic Web at W3C: https://www.w3.org/standards/semanticweb/
2. ^ *"World Wide Web Consortium (W3C), "RDF/XML Syntax Specification (Revised)", 25 Feb. 2014"*.
3. ^ *"World Wide Web Consortium (W3C), "OWL Web Ontology Language Overview", W3C Recommendation, 10 Feb. 2004"*.
4. ^ *Chung, Seung-Hwa (2018). "The MOUSE approach: Mapping Ontologies using UML for System Engineers". Computer Reviews Journal: 8–29. ISSN 2581-6640.*
5. ^ ***a b*** *"W3C Semantic Web Activity". World Wide Web Consortium (W3C). November 7, 2011. Retrieved November 26, 2011.*
6. ^ *"Q&A with Tim Berners-Lee, Special Report". Bloomberg. Retrieved 14 April 2018.*
7. ^ ***a b*** *Berners-Lee, Tim; James Hendler; Ora Lassila (May 17, 2001). "The Semantic Web". Scientific American. Retrieved July 2, 2019.*
8. ^ *Lee Feigenbaum (May 1, 2007). "The Semantic Web in Action". Scientific American. Retrieved February 24, 2010.*
9. ^ *Berners-Lee, Tim; Fischetti, Mark (1999). Weaving the Web. HarperSanFrancisco. chapter 12. ISBN 978-0-06-251587-2.*
10. ^ *Berners-Lee, Tim; Hendler, James; Lassila, Ora (May 17, 2001). "The Semantic Web" (PDF). Scientific American. Vol. 284, no. 5. pp. 34–43. JSTOR 26059207. S2CID 56818714. Archived from the original (PDF) on October 10, 2017. Retrieved March 13, 2008.*
11. ^ *Nigel Shadbolt; Wendy Hall; Tim Berners-Lee (2006). "The Semantic Web Revisited" (PDF). IEEE Intelligent Systems. Archived from the original (PDF) on March 20, 2013.*

Retrieved April 13, 2007.
12. ^ *Ramanathan V. Guha (2013). "Light at the End of the Tunnel". International Semantic Web Conference 2013 Keynote. Retrieved March 8, 2015.*
13. ^ *Allsopp, John (March 2007). Microformats: Empowering Your Markup for Web 2.0. Friends of ED. p. 368. ISBN 978-1-59059-814-6.*
14. ^ Artem Chebotko and Shiyong Lu, "Querying the Semantic Web: An Efficient Approach Using Relational Databases", LAP Lambert Academic Publishing, ISBN 978-3-8383-0264-5, 2009.
15. ^ *"Towards the Semantic Web: Collaborative Tag Suggestions" (PDF).*
16. ^ *Specia, Lucia; Motta, Enrico (2007). "Integrating Folksonomies with the Semantic Web". The Semantic Web: Research and Applications. Lecture Notes in Computer Science. Vol. 4519. Springer. pp. 624–639. doi:10.1007/978-3-540-72667-8_44. ISBN 978-3-540-72666-1.*
17. ^ *"Bridging the gap between folksonomies and the semantic web: an experience report" (PDF).*
18. ^ *Nicholson, Josh M.; Mordaunt, Milo; Lopez, Patrice; Uppala, Ashish; Rosati, Domenic; Rodrigues, Neves P.; Grabitz, Peter; Rife, Sean C. (5 November 2021). "scite: A smart citation index that displays the context of citations and classifies their intent using deep learning". Quantitative Science Studies. **2** (3): 882–898. doi:10.1162/qss_a_00146.*
19. ^ *Singh Chawla, Dalmeet (24 January 2022). "Massive open index of scholarly papers launches". Nature. doi:10.1038/d41586-022-00138-y. Retrieved 14 February 2022.*
20. ^ *"OpenAlex: The Promising Alternative to Microsoft Academic Graph". Singapore Management University (SMU). Retrieved 14 February 2022.*
21. ^ *"OpenAlex Documentation". Retrieved 18 February 2022.*
22. ^ *Shannon, Victoria (23 May 2006). "A 'more revolutionary' Web". International Herald Tribune. Retrieved 26 June 2006.*
23. ^ *"Web 3.0 Explained, Plus the History of Web 1.0 and 2.0". Investopedia. Retrieved 2022-10-21.*
24. ^ https://www.rsisinternational.org/IJRSI/Issue31/75-78.pdf
25. ^ Almeida, F. (2017). Concept and dimensions of web 4.0. International journal of computers and technology, 16(7).
26. ^ *"The Commission wants the EU to lead on 'Web 4.0' — whatever that is". 11 July 2023.*
27. ^ *"W3C Uncertainty Reasoning for the World Wide Web". www.w3.org. Retrieved 2021-05-14.*
28. ^ *"Uncertainty Reasoning for the World Wide Web". W3.org. Retrieved 20 December 2018.*
29. ^ *Lukasiewicz, Thomas; Umberto Straccia (2008). "Managing uncertainty and vagueness in description logics for the Semantic Web" (PDF). Web Semantics: Science, Services and Agents on the World Wide Web. **6** (4): 291–308. doi:10.1016/j.websem.2008.04.001.*
30. ^ *"Semantic Web Standards". W3.org. Retrieved 14 April 2018.*

31. ^ *"OWL Web Ontology Language Overview". World Wide Web Consortium (W3C). February 10, 2004. Retrieved November 26, 2011.*
32. ^ *"Resource Description Framework (RDF)". World Wide Web Consortium.*
33. ^ *Allemang, Dean; Hendler, James; Gandon, Fabien (August 3, 2020). Semantic Web for the Working Ontologist : Effective Modeling for Linked Data, RDFS, and OWL (Third ed.). [New York, NY, USA]: ACM Books; 3rd edition. ISBN 978-1450376143.*
34. ^ *"ConverterToRdf - W3C Wiki". W3.org. Retrieved 20 December 2018.*
35. ^ *Sikos, Leslie F. (2015). Mastering Structured Data on the Semantic Web: From HTML5 Microdata to Linked Open Data. Apress. p. 23. ISBN 978-1-4842-1049-9.*
36. ^ *Kiesel, Johannes; Lang, Kevin; Wachsmuth, Henning; Hornecker, Eva; Stein, Benno (14 March 2020). "Investigating Expectations for Voice-based and Conversational Argument Search on the Web". Proceedings of the 2020 Conference on Human Information Interaction and Retrieval. ACM. pp. 53–62. doi:10.1145/3343413.3377978. ISBN 9781450368926. S2CID 212676751.*
37. ^ *Vetere, Guido (30 June 2018). "L'impossibile necessità delle piattaforme sociali decentralizzate". DigitCult - Scientific Journal on Digital Cultures. **3** (1): 41–50. doi: 10.4399/97888255159096.*
38. ^ *Bikakis, Antonis; Flouris, Giorgos; Patkos, Theodore; Plexousakis, Dimitris (2023). "Sketching the vision of the Web of Debates". Frontiers in Artificial Intelligence. **6**. doi: 10.3389/frai.2023.1124045. ISSN 2624-8212. PMC 10313200. PMID 37396970.*
39. ^ *Schneider, Jodi; Groza, Tudor; Passant, Alexandre. "A Review of Argumentation for the Social Semantic Web" (PDF).* cite journal: Cite journal requires |journal= (help)
40. ^ *Zhang, Chuanrong; Zhao, Tian; Li, Weidong (2015). Geospatial Semantic Web. Springer International Publishing : Imprint: Springer. ISBN 978-3-319-17801-1.*
41. ^ Omar Alonso and Hugo Zaragoza. 2008. Exploiting semantic annotations in information retrieval: ESAIR '08. SIGIR Forum 42, 1 (June 2008), 55–58. doi: 10.1145/1394251.1394262
42. ^ Jaap Kamps, Jussi Karlgren, and Ralf Schenkel. 2011. Report on the third workshop on exploiting semantic annotations in information retrieval (ESAIR). SIGIR Forum 45, 1 (May 2011), 33–41. doi:10.1145/1988852.1988858
43. ^ Jaap Kamps, Jussi Karlgren, Peter Mika, and Vanessa Murdock. 2012. Fifth workshop on exploiting semantic annotations in information retrieval: ESAIR '12). In Proceedings of the 21st ACM international conference on information and knowledge management (CIKM '12). ACM, New York, NY, USA, 2772–2773. doi:10.1145/2396761.2398761
44. ^ Omar Alonso, Jaap Kamps, and Jussi Karlgren. 2015. Report on the Seventh Workshop on Exploiting Semantic Annotations in Information Retrieval (ESAIR '14). SIGIR Forum 49, 1 (June 2015), 27–34. doi:10.1145/2795403.2795412
45. ^ *Kuriakose, John (September 2009). "Understanding and Adopting Semantic Web Technology". Cutter IT Journal. **22** (9). CUTTER INFORMATION CORP.: 10–18.*
46. ^ ***a b c** Marshall, Catherine C.; Shipman, Frank M. (2003). Which semantic web? (PDF). Proc. ACM Conf. on Hypertext and Hypermedia. pp. 57–66. Archived from the original (PDF) on 2015-09-23. Retrieved 2015-04-17.*

47. ^ **a b** Ivan Herman (2007). State of the Semantic Web (PDF). Semantic Days 2007. Retrieved July 26, 2007.
48. ^ Doctorow, Cory. "Metacrap: Putting the torch to seven straw-men of the meta-utopia". www.well.com/. Retrieved 11 September 2023.
49. ^ Gärdenfors, Peter (2004). How to make the Semantic Web more semantic. IOS Press. pp. 17–34. cite book: |work= ignored (help)
50. ^ Honkela, Timo; Könönen, Ville; Lindh-Knuutila, Tiina; Paukkeri, Mari-Sanna (2008). "Simulating processes of concept formation and communication". Journal of Economic Methodology. **15** (3): 245–259. doi:10.1080/13501780802321350. S2CID 16994027.
51. ^ "Policy Aware Web Project". Policyawareweb.org. Retrieved 2013-06-14.
52. ^ Corby, Olivier; Dieng-Kuntz, Rose; Zucker, Catherine Faron; Gandon, Fabien (2006). "Searching the Semantic Web: Approximate Query Processing based on Ontologies". IEEE Intelligent Systems. **21**: 20–27. doi:10.1109/MIS.2006.16. S2CID 11488848.
53. ^ Gandon, Fabien (7 November 2002). Distributed Artificial Intelligence And Knowledge Management: Ontologies And Multi-Agent Systems For A Corporate Semantic Web (phdthesis). Université Nice Sophia Antipolis.
54. ^ Buffa, Michel; Dehors, Sylvain; Faron-Zucker, Catherine; Sander, Peter (2005). "Towards a Corporate Semantic Web Approach in Designing Learning Systems: Review of the Trial Solutioins Project" (PDF). International Workshop on Applications of Semantic Web Technologies for E-Learning. Amsterdam, Holland. pp. 73–76.
55. ^ "Corporate Semantic Web - Home". Corporate-semantic-web.de. Retrieved 14 April 2018.
56. ^ Hinze, Annika; Heese, Ralf; Luczak-Rösch, Markus; Paschke, Adrian (2012). "Semantic Enrichment by Non-Experts: Usability of Manual Annotation Tools" (PDF). ISWC'12 - Proceedings of the 11th international conference on The Semantic Web. Boston, USA. pp. 165–181.
57. ^ Mathieson, S. A. (6 April 2006). "Spread the word, and join it up". The Guardian. Retrieved 14 April 2018.
58. ^ Spivack, Nova (18 September 2007). "The Semantic Web, Collective Intelligence and Hyperdata". novaspivack.typepad.com/nova_spivacks_weblog [This Blog has Moved to NovaSpivack.com]. Retrieved 14 April 2018.

Further reading

[edit]

- Liyang Yu (December 14, 2014). A Developer's Guide to the Semantic Web, 2nd ed. Springer. ISBN 978-3-662-43796-4.
- Aaron Swartz's A Programmable Web: An unfinished Work donated by Morgan & Claypool Publishers after Aaron Swartz's death in January 2013.
- Grigoris Antoniou, Frank van Harmelen (March 31, 2008). A Semantic Web Primer, 2nd Edition. The MIT Press. ISBN 978-0-262-01242-3.

- *Allemang, Dean; Hendler, James; Gandon, Fabien (August 3, 2020). Semantic Web for the Working Ontologist : Effective Modeling for Linked Data, RDFS, and OWL (Third ed.). [New York, NY, USA]: ACM Books; 3rd edition. ISBN 978-1450376143.*
- *Pascal Hitzler; Markus Krötzsch; Sebastian Rudolph (August 25, 2009). Foundations of Semantic Web Technologies. CRCPress. ISBN 978-1-4200-9050-5.*
- *Thomas B. Passin (March 1, 2004). Explorer's Guide to the Semantic Web. Manning Publications. ISBN 978-1-932394-20-7.*
- *Jeffrey T. Pollock (March 23, 2009). Semantic Web For Dummies. For Dummies. ISBN 978-0-470-39679-7.*
- *Hitzler, Pascal (February 2021). "A Review of the Semantic Web Field". Communications of the ACM. **64** (2): 76–83. doi:10.1145/3397512.*
- *Unni, Deepak (March 2023). "FAIRification of health-related data using semantic web technologies in the Swiss Personalized Health Network". Scientific Data. **10** (1): 127. Bibcode:2023NatSD..10..127T. doi:10.1038/s41597-023-02028-y. PMC 10006404. PMID 36899064.*

External links

[edit]

Semantic Web at Wikipedia's sister projects

- Image not found or type unknown Media from Commons
- Image not found or type unknown Textbooks from Wikibooks
- Image not found or type unknown Data from Wikidata

Image not found or type unknown

Scholia has a *topic* profile for ***Semantic Web***.

- Official website

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

Semantic Web

Background

- Databases
- Hypertext
- Internet
- Ontologies
- Semantics
- Semantic networks
- World Wide Web

Sub-topics

- Dataspaces
- Hyperdata
- Linked data
- Rule-based systems

Applications

- Semantic analytics
- Semantic broker
- Semantic computing
- Semantic mapper
- Semantic matching
- Semantic publishing
- Semantic reasoner
- Semantic search
- Semantic service-oriented architecture
- Semantic wiki
- Solid

Related topics

- Collective intelligence
- Description logic
- Folksonomy
- Geotagging
- Information architecture
- iXBRL
- Knowledge extraction
- Knowledge management
- Knowledge representation and reasoning
- Library 2.0
- Digital library
- Digital humanities
- Metadata
- References
- Topic map
- Web 2.0
- Web engineering
- Web Science Trust

Standards

Syntax and supporting technologies

- HTTP
- IRI
  - URI
- RDF
  - triples
  - RDF/XML
  - JSON-LD
  - Turtle
  - TriG
  - Notation3
  - N-Triples
  - TriX (no W3C standard)
- RRID
- SPARQL
- XML
- Semantic HTML

Schemas, ontologies and rules

- Common Logic
- OWL
- RDFS
- Rule Interchange Format
- Semantic Web Rule Language
- ALPS
- SHACL

Semantic annotation

- eRDF
- GRDDL
- Microdata
- Microformats
- RDFa
- SAWSDL
- Facebook Platform

Common vocabularies

- DOAP
- Dublin Core
- FOAF
- Schema.org
- SIOC
- SKOS

Microformat vocabularies

- hAtom
- hCalendar
- hCard

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

Emerging technologies

Fields **Information and communications**

- Ambient intelligence
  - Internet of things
- Artificial intelligence
  - Applications of artificial intelligence
  - Machine translation
  - Machine vision
  - Mobile translation
  - Progress in artificial intelligence
  - Semantic Web
  - Speech recognition
- Atomtronics
- Carbon nanotube field-effect transistor
- Cybermethodology
- Extended reality
- Fourth-generation optical discs
  - 3D optical data storage
  - Holographic data storage
- GPGPU
- Memory
  - CBRAM
  - ECRAM
  - FRAM
  - Millipede
  - MRAM
  - NRAM
  - PRAM
  - Racetrack memory
  - RRAM
  - SONOS
  - UltraRAM
- Optical computing
- RFID
  - Chipless RFID
- Software-defined radio
- Three-dimensional integrated circuit

Topics

- Automation
- Collingridge dilemma
- Differential technological development
- Disruptive innovation
- Ephemeralization
- Ethics
  - Bioethics
  - Cyberethics
  - Neuroethics
  - Robot ethics
- Exploratory engineering
- Proactionary principle
- Technological change
  - Technological unemployment
- Technological convergence
- Technological evolution
- Technological paradigm
- Technology forecasting
  - Accelerating change
  - Future-oriented technology analysis
  - Horizon scanning
  - Moore's law
  - Technological singularity
  - Technology scouting
- Technology in science fiction
- Technology readiness level
- Technology roadmap
- Transhumanism

-  Image not found or type unknown **List**

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

Digital humanities

- Computational archaeology
- Computational philosophy
- Computational theory of mind
- Computers and writing
- Cultural analytics
- Cybertext
- Digital classics
- Digital history
- Digital library
- Digital Medievalist
- Digital ontology
- Digital physics
- Digital religion
- Digital rhetoric
- Digital scholarship
- Digital theology
- Digitization
- E-research
- Electronic literature
- Humanistic informatics
- New media
- Philosophy of computer science
- Semantic Web
- Systems theory
- Text Encoding Initiative
- Transliteracy

Authority control databases Image not found or type unknown **Edit this at Wikidata**

International	FAST
National	Germany United States France BnF data Japan Czech Republic Spain Latvia Israel

Check our other pages :

- Sydney SEO company
- SEO Sydney
- SEO expert Sydney
- keyword research services
- local SEO services Sydney

Frequently Asked Questions

How can a digital agency in Sydney help with SEO?

A digital agency in Sydney can offer a comprehensive approach, combining SEO with other marketing strategies like social media, PPC, and content marketing. By integrating these services, they help you achieve a stronger online presence and better ROI.

What does SEO mean for my business?

SEO, or search engine optimisation, means improving your website's structure, content, and overall performance to rank higher in search results. This leads to more organic traffic, increased brand visibility, and better conversion rates, ultimately supporting your business's growth.

What is SEO marketing?

SEO marketing is the process of using search engine optimization techniques to enhance your online presence. By optimizing your website, creating relevant content, and building authority, you attract organic traffic from search engines, increase brand awareness, and drive conversions.

SEO services in Sydney

SEO Sydney

Phone : 1300 684 339

City : Sydney

State : NSW

Zip : 2000

Google Business Profile

Google Business Website

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

USEFUL LINKS

SEO Website

SEO Services Sydney

Local SEO Sydney

SEO Ranking

SEO optimisation

LATEST BLOGPOSTS

SEO community

SEO Buzz

WordPress SEO

SEO Audit

Sitemap

Privacy Policy

About Us

SEO Castle Hill | SEO Fairfield | SEO Hornsby | SEO Liverpool | SEO North Sydney | SEO Norwest | SEO Parramatta | SEO Penrith | SEO Strathfield | SEO Wetherill Park

Follow us