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Markdown

Markdown is a lightweight markup language for creating formatted text using a plain-text editor. John Gruber and Aaron Swartz created Markdown in 2004 as a markup language that is appealing to human readers in its source code form.^[9] Markdown is widely used in blogging, instant messaging, online forums, collaborative software, documentation pages, and readme files.

The initial description of Markdown^[10] contained ambiguities and raised unanswered questions. To correct these problems, later implementations introduced subtle differences from the original version as well as syntax extensions.

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Markdown	
	
Internet media type	text/markdown ^[1]
Uniform Type Identifier (UTI)	net.daringfireball.markdown
Developed by	<u>John Gruber</u> and <u>Aaron Swartz</u>
Initial release	March 19, 2004 ^{[2][3]}
Latest release	1.0.1 (December 17, 2004 ^[4])
Type of format	<u>Markup language</u>
Extended to	<u>pandoc</u> , <u>MultiMarkdown</u> , <u>Markdown Extra</u> , <u>CommonMark</u> , ^[5] <u>RMarkdown</u> ^[6]
Open format?	Yes ^[7]
Website	<u>daringfireball.net/projects/markdown</u> / (<u>https://daringfireball.net/projects/markdown/</u>)

History

In 2002 Aaron Swartz created atx, "the true structured text format". Swartz and John Gruber then worked together to create the Markdown language in 2004,^{[2][3]} with the goal of enabling people "to write using an easy-to-read and easy-to-write plain text format, optionally convert it to structurally valid XHTML (or HTML)".^[4]

Its key design goal is *readability* – that the language be readable as-is, without looking like it has been marked up with tags or formatting instructions,^[9] unlike text formatted with a markup language, such as Rich Text Format (RTF) or HTML, which have obvious tags and formatting instructions. To this end, its main inspiration is the existing conventions for marking up plain text in email, though it also draws from earlier markup languages, notably setext, Textile, and reStructuredText.^[9]

Gruber wrote a [Perl](#) script, `Markdown.pl`, which converts marked-up text input to valid, well-formed XHTML or HTML and replaces angle brackets `<` `>` and ampersands `&` with their corresponding character entity references. It can take the role of a standalone script, a plugin for [Blosxom](#) or a [Movable Type](#), or of a text filter for [BBEdit](#).^[4]

Standardization

Markdown has been characterised by an informal specification^[11] and a reference implementation for conversion to HTML. Over time, many Markdown implementations have appeared. People developed these mostly driven by the need for additional features on top of the base syntax—such as tables, footnotes, definition lists (technically HTML description lists), and Markdown inside HTML blocks. The behavior of some of these diverges from the reference implementation. At the same time, a number of ambiguities in the informal specification have attracted attention.^[12] These issues spurred the creation of tools such as [Babelmark](#)^{[13][14]} to compare the output of various implementations,^[15] and an effort by some developers of Markdown parsers for standardisation. However, Gruber has argued that complete standardization would be a mistake: "Different sites (and people) have different needs. No one syntax would make all happy."^[16]

In March 2016 two relevant informational Internet [RFCs](#) were published:

- RFC 7763 introduced [MIME](#) type `text/markdown` with the original variant.
- RFC 7764 discussed and registered the variants [MultiMarkdown](#), [GitHub Flavored Markdown](#) (GFM), [Pandoc](#), [CommonMark](#), and [Markdown Extra](#) among others.^[17]

CommonMark

From 2012, a group of people, including [Jeff Atwood](#) and [John MacFarlane](#), launched what Atwood characterised as a standardisation effort.^[20] A community website now aims to "document various tools and resources available to document authors and developers, as well as implementors of the various Markdown implementations".^[21] In September 2014, Gruber objected to the usage of "Markdown" in the name of this effort and it was rebranded as a new dialect named [CommonMark](#).^{[22][23]} [CommonMark.org](#) published several versions of a specification, reference implementation, test suite, and "[plans] to announce a finalized 1.0 spec and test suite in 2019."^[24] No 1.0 spec has since been released as major issues still remain unsolved.^[25] Nonetheless, the following sites and projects have adopted CommonMark: [Discourse](#), [GitHub](#), [GitLab](#), [Reddit](#), [Qt](#), [Stack Exchange](#) ([Stack Overflow](#)), and [Swift](#).

Variants

Sites like [GitHub](#), [Bitbucket](#), [Reddit](#), [Diaspora](#), [Stack Exchange](#), [OpenStreetMap](#), and [SourceForge](#) use variants of Markdown to facilitate discussion between users.^{[26][27][28][29]}

CommonMark

	
Filename extensions	<code>.md</code> , <code>.markdown</code> ^[1]
Internet media type	<code>text/markdown</code> ; <code>variant=CommonMark</code> ^[5]
Uniform Type Identifier (UTI)	<i>uncertain</i> ^[18]
UTI conformation	<code>public.plain-text</code>
Developed by	John MacFarlane , open source
Initial release	October 25, 2014
Latest release	0.30 (June 19, 2021 ^[19])
Type of format	Markup language
Extended from	Markdown
Extended to	GitHub Flavored Markdown
Open format?	yes
Website	spec.commonmark.org (https://spec.commonmark.org/)

Depending on implementation, basic inline HTML tags may be supported.^[30] Italic text may be implemented by underscores and/or **single-asterisks**.^[31]

GitHub Flavored Markdown

GitHub had been using its own variant of Markdown since as early as 2009,^[32] adding support for additional formatting such as tables and nesting block content inside list elements, as well as GitHub-specific features such as auto-linking references to commits, issues, usernames, etc. In 2017, GitHub released a formal specification of their GitHub Flavored Markdown (GFM) that is based on CommonMark.^[26] It is a strict superset of CommonMark, following its specification exactly except for *tables*, *strikethrough*, *autolinks* and *task lists*, which GFM adds as extensions.^[33] GitHub also changed the parser used on their sites accordingly, which required that some documents be changed. For instance, GFM now requires that the hash symbol that creates a heading be separated from the heading text by a space character.


Markdown Extra

Markdown Extra is a lightweight markup language based on Markdown implemented in PHP (originally), Python and Ruby.^[34] It adds features not available with plain Markdown syntax. Markdown Extra is supported in some content management systems such as, for example, Drupal^[35] and TYPO3.^[36]

Markdown Extra adds the following features to Markdown:

- Markdown markup inside HTML blocks
- Elements with id/class attribute
- "Fenced code blocks" that span multiple lines of code
- Tables^[37]
- Definition lists
- Footnotes
- Abbreviations

Examples

Text using Markdown syntax	Corresponding HTML produced by a Markdown processor	Text viewed in a browser
<p>Heading =====</p> <p>Sub-heading -----</p> <p># Alternative heading #</p> <p>Paragraphs are separated by a blank line.</p> <p>Two spaces at the end of a line produce a line break.</p>	<pre><h1>Heading</h1> <h2>Sub-heading</h2> <h1>Alternative heading</h1> <p>Paragraphs are separated by a blank line.</p> <p>Two spaces at the end of a line
produce a line break.</p></pre>	<h1>Heading</h1> <h2>Sub-heading</h2> <h2>Alternative heading</h2> <p>Paragraphs are separated by a blank line.</p> <p>Two spaces at the end of a line produce a line break.</p>
<p>Text attributes <i>italic</i>, bold, <code>monospace</code>.</p> <p>Horizontal rule: ---</p>	<pre><p>Text attributes italic, bold, <code>monospace</code>.</p> <p>Horizontal rule:</p> <hr /></pre>	<p>Text attributes <i>italic</i>, bold, monospace.</p> <p>Horizontal rule:</p> <hr/>
<p>Bullet lists nested within numbered list:</p> <ol style="list-style-type: none"> fruits <ul style="list-style-type: none"> apple banana vegetables <ul style="list-style-type: none"> carrot broccoli 	<pre><p>Bullet lists nested within numbered list:</p> fruits apple banana vegetables carrot broccoli </pre>	<p>Bullet lists nested within numbered list:</p> <ol style="list-style-type: none"> fruits <ul style="list-style-type: none"> apple banana vegetables <ul style="list-style-type: none"> carrot broccoli
<p>A <code>[link]</code> (<code>(http://example.com)</code>).</p> <p>! <code>[Image]</code> (<code>(Icon-pictures.png "icon")</code>)</p> <p>> Markdown uses email-style characters for blockquoting.</p> <p>> Multiple paragraphs need to be prepended individually.</p> <p>Most inline <code><abbr title="Hypertext Markup Language">HTML</abbr></code> is supported.</p>	<pre><p>A link.</p> <p></p> <blockquote> <p>Markdown uses email-style characters for blockquoting.</p> <p>Multiple paragraphs need to be prepended individually.</p> </blockquote> <p>Most inline <abbr title="Hypertext Markup Language">HTML</abbr> is supported.</p></pre>	<p>A link (http://example.com/).</p>  <p>Markdown uses email-style characters for blockquoting.</p> <p>Multiple paragraphs need to be prepended individually.</p> <p>Most inline <code>HTML</code> is supported.</p>

Implementations

Implementations of Markdown are available for over a dozen programming languages; in addition, many platforms and frameworks support Markdown.^[38] For example, Markdown plugins exist for every major blogging platform.^[39]

While Markdown is a minimal markup language and is read and edited with a normal text editor, there are specially designed editors that preview the files with styles, which are available for all major platforms. Many general purpose text and code editors have syntax highlighting plugins for Markdown built into them or available as optional download. Editors may feature a side-by-side preview window or render the code directly in a WYSIWYG fashion.

- JotterPad – an online WYSIWYG editor that supports Markdown and fountain^[40]
- Doxygen – a source code documentation generator which supports Markdown with extra features^[41]
- RStudio – an IDE for R. It provides a C++ wrapper function for a markdown variant called sundown^[42]
- GitHub Flavored Markdown (GFM) ignores underscores in words, and adds syntax highlighting, task lists,^[43] and tables^[26]
- RMarkdown^[44]

See also

- Comparison of document markup languages
- Comparison of documentation generators
- Lightweight markup language
- Wiki markup

References

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External links

- [Official website \(https://daringfireball.net/projects/markdown/\)](https://daringfireball.net/projects/markdown/) for original John Gruber markup
- [Markdown Guide: Tools \(https://www.markdownguide.org/tools/\)](https://www.markdownguide.org/tools/) – an independent source review of software that support Markdown

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