

Markdown

Markdown is a lightweight markup language with plain-text-formatting syntax, created in 2004 by John Gruber with Aaron Swartz. Markdown is often used to format readme files, for writing messages in online discussion forums, and to create rich text using a plain text editor.

Since the initial description of Markdown contained ambiguities and unanswered questions, the implementations that appeared over the years have subtle differences and many come with syntax extensions.

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History

John Gruber created the Markdown language in 2004 in collaboration with Aaron Swartz on the syntax,^{[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 be used as a standalone script, as a plugin for Blosxom or Movable Type, or as a text filter for BBEdit.^[4]

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

Markdown has since been re-implemented by others e.g. in a Perl module available on CPAN (Text::Markdown), and in a variety of other programming languages.^[10] It is distributed under a BSD-style license and is included with, or available as a plugin for, several content-management systems.^{[7][11][12]}

Sites like GitHub, Bitbucket, Reddit, Diaspora, Stack Exchange, OpenStreetMap, and SourceForge use variants of Markdown to facilitate discussion between users.^{[13][14][15][16]}

Standardization

Markdown has been characterised by an informal specification^[17] 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.^[18] These issues spurred the creation of tools such as Babelmark^{[19][20]} to compare the output of various implementations,^[21] and an effort by some developers of Markdown parsers for standardisation. However, Gruber has argued that complete standardization would be mistaken: "Different sites (and people) have different needs. No one syntax would make all happy."^[22]

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.^[23]


CommonMark

From 2012, a group of people, including Jeff Atwood and John MacFarlane, launched what Atwood characterized as a standardization effort.^[26] 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".^[27] 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.^{[28][29]} CommonMark.org published several versions of a specification, reference implementation, and test suite, and "[plans] to announce a finalized 1.0 spec and test suite in 2019."^[30]

GitHub Flavored Markdown (GFM)

In 2017, GitHub released a formal specification of their GitHub Flavored Markdown (GFM) that is based on CommonMark.^[31] It is a strict superset of CommonMark, following its specification exactly except for *tables*, *strikethrough*, *autolinks* and *task lists*, which GFM adds as extensions.^[32] GitHub also changed the parser used on their sites accordingly, which required that some documents be

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> ^[24]
UTI conformation	<code>public.plain-text</code>
Developed by	John MacFarlane, open source
Initial release	October 25, 2014
Latest release	0.29 (April 6, 2019 ^[25])
Type of format	Markup language
Extended from	Markdown
Extended to	GitHub Flavored Markdown
Open format?	yes
Website	spec

changed. For instance, GFM now requires that the hash symbol that creates a heading be separated from the heading text by a space character.

.commonmark
.org ([http://spec.c
ommonmark.or
g/](http://spec.commonmark.org/))

Markdown Extra

Markdown Extra is a lightweight markup language based on Markdown implemented in PHP (originally), Python and Ruby.^[33] It adds features not available with plain Markdown syntax. Markdown Extra is supported in some content management systems such as, for example, Drupal^[34] and TYPO3.^[35]

In MediaWiki, it is implemented in the currently unmaintained MarkdownExtraParser parser function extension

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^[36]
- definition lists
- footnotes
- abbreviations

Example

Text using Markdown syntax	Corresponding HTML produced by a Markdown processor	Text viewed in a browser
<div><div>Heading</div><div>=====</div><div>Sub-heading</div><div>-----</div><div>Paragraphs are separated by a blank line.</div><div>Two spaces at the end of a line produces a line break.</div><div>Text attributes _italic_, **bold**, `monospace`.</div><div>Horizontal rule: ---</div><div>Strikethrough: ~~strikethrough~~</div><div>Bullet list:</div><div><ul style="list-style-type: none">* apples* oranges* pears</div><div>Numbered list:</div><div><ol style="list-style-type: none">1. lather2. rinse3. repeat</div><div>An [example] (http://example.com).</div><div>![Image] (Icon-pictures.png "icon")</div><div>> Markdown uses email-style characters for blockquoting.</div><div>Inline <abbr title="Hypertext Markup Language">HTML</abbr> is supported.</div></div> <div><div><h1>Heading</h1></div><div><h2>Sub-heading</h2></div><div><p>Paragraphs are separated by a blank line.</p></div><div><p>Two spaces at the end of a line
produces a line break.</p></div><div><p>Text attributes italic, bold, <code>monospace</code>.</p></div><div><p>Horizontal rule:</p></div><div><hr /></div><div><p>Strikethrough:</p>strikethrough</div><div><p>Bullet list:</p></div><div>applesorangespears</div><div><p>Numbered list:</p></div><div>latherrinserepeat</div><div><p>An example.</p></div><div><p></p></div><div><blockquote><p>Markdown uses email-style characters for blockquoting.</p></blockquote></div><div><p>Inline <abbr title="Hypertext Markup Language">HTML</abbr> is supported.</p></div></div> <div><div>Heading</div><div>Sub-heading</div><div>Paragraphs are separated by a blank line.</div><div>Two spaces at the end of a line produces a line break.</div><div>Text attributes <i>italic</i>, bold, monospace.</div><div>Horizontal rule:</div><div>Strikethrough: strikethrough</div><div>Bullet list:<ul style="list-style-type: none">▪ apples▪ oranges▪ pears</div><div>Numbered list:<ol style="list-style-type: none">1. lather2. rinse3. repeat</div><div>An <u>example</u> (http://example.com).</div><div></div><div>Markdown uses email-style characters for blockquoting.</div><div>Inline <u>HTML</u> is supported.</div></div>		

Implementations

Implementations of Markdown are available for over a dozen programming languages; in addition, many platforms and frameworks support Markdown.^[37] For example, Markdown plugins exist for every major blogging platform.^[38]

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.

- Doxygen – a sourcecode documentation generator which supports Markdown with extra features.^[39]
- RStudio – an IDE for R. It provides a C++ wrapper function for a markdown variant called sundown.^[40]
- GitHub Flavored Markdown (GFM) ignores underscores in words, and adds syntax highlighting, task lists,^[41] and tables.^[42]
- Discount – a C implementation.^{[43][44]}
- MarkAPL – a converter written in Dyalog APL. It supports fenced blocks, smart typography, link references, and special attributes, and can generate a table of contents.^[45]
- PHP Markdown – a library package that includes the PHP Markdown parser and its sibling PHP Markdown Extra with additional features.^[46]
- Markdig – a .NET library that follows the CommonMark specifications, and includes a collection of extensions and the ability for the user to create their own.

See also

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

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External links

- Official website (<https://daringfireball.net/projects/markdown/>) for original John Gruber markup

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