

Markdown

Péter Jeszenszky

September 24, 2021

Markup Languages

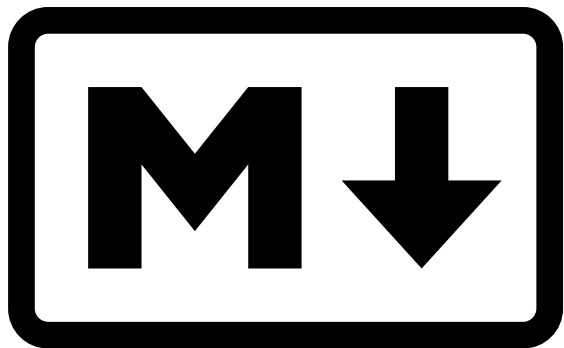
- Markup languages are computer languages for annotating text.
- They allow the association of metadata with parts of text in a clearly distinguishable way.
- Examples:
 - AsciiDoc <https://asciidoc.org/>
 - Markdown <https://daringfireball.net/projects/markdown/>
 - TeX, LaTeX <https://www.latex-project.org/>
 - troff (man pages) <https://www.gnu.org/software/groff/>
 - Wikitext <https://en.wikipedia.org/wiki/Help:Wikitext>
 - XML <https://www.w3.org/XML/>

What is Markdown?

- Markdown is a lightweight markup language with plain text formatting syntax.
- See: <https://en.wikipedia.org/wiki/Markdown>

Symbol

Dustin Curtis. *The Markdown Mark*. <https://dcurt.is/the-markdown-mark>
<https://github.com/dcurtis/markdown-mark>



Characteristics

- An easy-to-read and easy-to-write plain text format.
- Can be converted to various output formats (e.g., HTML).
- Specifically targeted at non-technical users.
- The syntax is mostly inspired by the format of plain text email.

Usage (1)

- Markdown is widely used on the web for entering text.
- The main application areas include:
 - Collaboration platforms and tools
 - Blogging platforms and content management systems
 - Online community platforms
 - Technical and scientific publishing

Usage (2)

Collaboration platforms and tools:

- GitHub <https://github.com/>
 - See: *Writing on GitHub*
<https://docs.github.com/en/github/writing-on-github>
- Trello <https://trello.com/>
 - See: *How To Format Your Text in Trello*
<https://help.trello.com/article/821-using-markdown-in-trello>

Usage (3)

Blogging platforms and content management systems:

- Moodle <https://moodle.org/>
 - See: <https://docs.moodle.org/en/Markdown>
- WordPress <https://wordpress.com/>
 - See: <https://wordpress.com/support/wordpress-editor/blocks/markdown-block/>

Usage (4)

Online community platforms:

- reddit <https://www.reddit.com/>
 - See: <https://www.reddit.com/wiki/markdown>
- Stack Overflow <https://stackoverflow.com/>
 - See: *How do I format my posts using Markdown or HTML?*
<https://stackoverflow.com/help/formatting>

Usage (5)

Technical and scientific publishing:

- bookdown <https://bookdown.org/>
- Daniel Stenberg. *Everything curl*. <https://curl.se/book.html>
<https://github.com/bagder/everything-curl>
- GitBook <https://www.gitbook.com/>
 - See: <https://docs.gitbook.com/content-editing/markdown>
- Microsoft Docs <https://docs.microsoft.com/>
 - See: Docs Markdown reference
<https://docs.microsoft.com/hu-hu/contribute/markdown-reference>

History (1)

- Originally, Markdown was developed in 2004 by John Gruber with contributions from Aaron Swartz.
- It was a created in the form of:
 - a plain text format for writing structured documents, and
 - a Perl script to convert Markdown to HTML (`Markdown.pl`).
- Website: <https://daringfireball.net/projects/markdown/>

History (2)

- About the motivation behind the creation of Markdown:
 - John Gruber. *Dive Into Markdown*. 19 March 2004.
https://daringfireball.net/2004/03/dive_into_markdown
- The original Markdown syntax:
<https://daringfireball.net/projects/markdown/syntax>
 - The syntax is not specified unambiguously.

File Properties

- File extension: `.md`
- Media type: `text/markdown`
 - Optional parameter: `variant`
 - See: Sean Leonard. *The text/markdown Media Type*. RFC 7763. March 2016. <https://www.rfc-editor.org/rfc/rfc7763>

Syntactic Ambiguities (1)

- For a comprehensive list of syntactic ambiguities, see:
 - *CommonMark Spec – Why is a spec needed?*
<https://spec.commonmark.org/0.30/#why-is-a-spec-needed->
- A possible option to resolve these ambiguities is to consult the source code of Gruber's implementation (i.e., `Markdown.pl`).
 - Unfortunately, it was quite buggy.

Syntactic Ambiguities (2)

Babelmark 2 <https://johnmacfarlane.net/babelmark2/>

- A tool for comparing the output of various implementations of the original Markdown syntax.

Standardization

CommonMark <https://commonmark.org/>

- A standard, unambiguous syntax specification for Markdown.
- Specification: *CommonMark Spec* <https://spec.commonmark.org/>
- Provides a test suite to validate implementations against the specification.

Variants

- Several variants and extensions of Markdown exist, for example:
 - GitHub Flavored Markdown (GFM)
 - See: *GitHub Flavored Markdown Spec* <https://github.github.com/gfm/>
 - Pandoc's Markdown
 - See: *Pandoc User's Guide – Pandoc's Markdown* <https://pandoc.org/MANUAL.html#pandocs-markdown>
 - ...
- See: *Markdown Variants* <https://www.iana.org/assignments/markdown-variants/markdown-variants.xhtml>

Coding Style

See: *Markdown style guide*

<https://google.github.io/styleguide/docguide/style.html>

Tutorials

- *Markdown Guide* <https://www.markdownguide.org/>
- *Markdown Tutorial* <https://commonmark.org/help/tutorial/>

Editors (1)

Free and open source software:

- Visual Studio Code (platform: Linux, macOS, Windows; license: MIT License) <https://code.visualstudio.com/>
<https://github.com/Microsoft/vscode>
 - See: <https://code.visualstudio.com/docs/languages/markdown>
 - Recommended extensions:
 - Markdown All in One <https://marketplace.visualstudio.com/items?itemName=yzhang.markdown-all-in-one>
 - Markdown+Math <https://marketplace.visualstudio.com/items?itemName=goessner.mdmath>

Editors (2)

Free and open source software (continued):

- ghostwriter (platform: Linux, Windows; written in: C++; license: GPLv3)
<http://wereturtle.github.io/ghostwriter/>
<https://github.com/wereturtle/ghostwriter>
- Mark Text (platform: Linux, macOS, Windows; written in: JavaScript; license: MIT License) <https://marktext.app/> <https://github.com/marktext/marktext>
- Remarkable (platform: Linux; written in: Python; license: MIT License)
<http://remarkableapp.github.io/> <https://github.com/jamiecmg/remarkable>
- StackEdit (platform: browser; written in: JavaScript; license: Apache License 2.0)
<https://stackedit.io/> <https://github.com/benweet/stackedit>
- Zettlr (platform: Linux, macOS, Windows; written in: JavaScript; license: GPLv3)
<https://www.zettlr.com/> <https://github.com/Zettlr/Zettlr>

Editors (3)

Non-free software:

- <oXygen/> XML Editor <https://www.oxygenxml.com/>
 - See: https://www.oxygenxml.com/xml_editor/markdown_editor.html
- IntelliJ IDEA <https://www.jetbrains.com/idea/>
 - Supported in both Ultimate and Community Editions.
 - See: <https://www.jetbrains.com/help/idea/markdown.html>

Conversion Tools

Free and open source software:

- Pandoc (platform: Linux, macOS, Windows; license: GPLv2)
<https://pandoc.org/> <https://github.com/jgm/pandoc>
 - A command-line tool written in Haskell to convert files from one markup format into another.
 - Markdown is supported both as source and target formats.

Pandoc (1)

- Installation: <https://pandoc.org/installing.html>
- Use: <https://pandoc.org/MANUAL.html>
- Generating HTML output:

```
pandoc --standalone --to html input.md \  
--output output.html --css style.css
```

or

```
pandoc -s -t html input.md -o output.html -c style.css
```


Pandoc (2)

Styling HTML output with CSS:

- The `-c/--css` command line option associates a custom CSS stylesheet with the output HTML document.
- This option can be used repeatedly.

Pandoc (3)

Examples of custom CSS stylesheets:

- *Pan Am: Simple CSS for Pandoc* (license: WTFPL)
<https://benjam.info/pan-am/> <https://github.com/bgw/pan-am>
 - CSS stylesheet: <http://benjam.info/panam/styling.css>
- *Tufte Pandoc CSS* (license: MIT License)
<https://jez.io/tufte-pandoc-css/>
<https://github.com/jez/tufte-pandoc-css>
- *Pandoc Markdown CSS Theme* (license: Blue Oak Model License)
<https://jez.io/pandoc-markdown-css-theme/>
<https://github.com/jez/pandoc-markdown-css-theme>

Pandoc (4)

IDE integration:

- Visual Studio Code:
 - `vscode-pandoc` <https://github.com/dfinke/vscode-pandoc>
<https://marketplace.visualstudio.com/items?itemName=DougFinke.vscode-pandoc>

Examples

- <https://github.com/jeszy75/pandoc-markdown-examples>

Further Reading

- Sean Leonard. *Guidance on Markdown: Design Philosophies, Stability Strategies, and Select Registrations*. RFC 7764. March 2016.
<https://www.rfc-editor.org/rfc/rfc7764>