

On your mark...down...

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What is markup?

yaml is to data, as markdown is to text

- Provide context/meta-data to text
- Where a programming language has explicit syntax:
 - `cd ~/cd`
- Markup is meant to surround other information, not process it
 - Canonical example is ... HTML

Hyper Text Markup Language

Html, xml, html4, html5, alphabet soup

- The web is delivered in html
 - The web includes a lot of text... strings...
 - Hello World
 - Strings are given context/meaning by tags that surround them
 - `Hello World` renders to bold
 - `Hello World` renders to italics
 - `Hello World` turns Hello World into a link, that when clicked on opens Pitt's home page
- You can play with html here: https://www.w3schools.com/html/tryit.asp?filename=tryhtml_basic

What marks up, must markdown

Easier markup

- **Markdown**
 - Built to render plain text files that were readable into html
 - Why this is **genius**
 - Web browsers are ubiquitous, so html is a great way to communicate with many people
 - Markdown is not nearly as fiddly as html (opening and closing tags, etc); readable and extensible
 - Why it is still a **work in progress**
 - It did not include some basic structures
 - tables
 - math
 - These have now been added, but everything is not quite as clean as it could be

Markdown syntax

Markdown	HTML	Notes
# Heading	<code><h1>Heading</h1></code>	Known as an atx heading, leave a space
Heading =====	<code><h1>Heading</h1></code>	setex heading
## subheading	<code><h2>subheading</h2></code>	Leave a space, Continues on to ### ... etc.
`code here`	<code><code>code here</code></code>	Monospaced font used, this is for inline code
Code Here	<code><code>code here</code></code>	blocks of code, this is what you will see often, indented lines of 4 of more spaces will also do this
[link](https://www.pitt.edu)	<code>link</code>	link, can also link to anchors within document and files on local computer/server

Markdown continued

Markdown	HTML	Notes
<ul style="list-style-type: none">- apples- orange	<pre> apples orange </pre>	Unordered list (bulleted), need blank line above it
<ol style="list-style-type: none">1. A something1. Then another	<pre> A something Then another </pre>	Ordered list, do not have to number yourself, need blank line
<p>__bold__ or **bold**</p>	<pre>bold</pre>	Bold
<p><i>_italics_</i> or <i>*italics*</i></p>	<pre>italics</pre>	Italics
<p>>block >quote</p>	<pre><blockquote><p>block quote</p> </blockquote></pre>	block quote
<p>Begin</p>	<pre><p>Begin</p></pre>	Blank lines signal new paragraphs

mathjax/latex extension

- Mathjax
 - Javascript library for math rendering in the browser
- LaTeX
 - TeX is a typesetting language that is brilliant for math
 - LaTeX is a set of macros (little programs) that extend TeX
 - We use xeLaTeX or pdfLaTeX to parse TeX files, with the LaTeX macros into pdfs
- Mathjax speaks (most popular) LaTeX, so you can communicate math in the browser

LaTeX/TeX

- `\[\epsilon > \beta\]`

$$\epsilon > \beta$$

- Includes equations, inline math, arrays, etc.
- See here: https://www.overleaf.com/learn/latex/Learn_LaTeX_in_30_minutes
- Mathjax has some limitations (but is awesome)
 - See: <https://docs.mathjax.org/en/latest/input/tex/index.html>

See example:

readMe.md

- Linting for markdown
 - Markdown is so simple, not too many people lint it
 - I use mdl
 - Which is a bit of a pain to install (it is written in ruby)
 - Information here: <https://github.com/markdownlint/markdownlint>
- Works with ALE in vim

Rendering

- Markdown is highly readable on it own
 - But it is meant to be parsed into `html`
 - This looks very good, and it very portable
 - Can parse with original markdown parser (written in perl), but like, no one does that.
 - Better is `pandoc`
 - Mathjax integration
 - Can create pdf easily and other formats, not just html
 - See <https://pandoc.org/MANUAL.html>

Flavoring

- Most people do not write in pure markdown
 - Pandoc markdown is useful: <https://pandoc.org/MANUAL.html#pandocs-markdown>
 - Github-flavored markdown is also popular (many readMe.md pages are ... well you see)
 - See here: <https://docs.github.com/en/github/writing-on-github>
 - There is also multimarkdown, commonmark (I told you it got a little messy)
 - Anyway, this sounds worse than it is.
 - Pandoc markdown will get you far

Pandoc installation

- See <https://pandoc.org/installing.html>
- Not all batteries are included
 - If you want to create pdfs with markdown, then you need a LaTeX install; there are many.
 - Citations and bibliographies can also be made with pandoc and markdown files, but you need the pandoc-citeproc tools

The return of the yaml

- In pandoc
 - You can include meta data as a **yaml** block
 - title: “This is my title: It is great”
 - author: mpc