

Scientific Markdown

Publications using Markdown and Pandoc

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Outline

L^AT_EX and Beamer are Great

Why L^AT_EX Sucks

The (Common) Markdown Tool Chain

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\LaTeX and Beamer are Great

Why \LaTeX Sucks

Counting Braces [2]

```
! Too many }'s.  
1.6 \date December 2004}
```

Not in Mathematics Mode [2]

```
! Missing $ inserted
```

Counting Braces, ctd. [2]

```
Runaway argument?  
{December 2004 \maketitle  
! Paragraph ended before \date was complete.  
<to be read again>  
\par  
1.8
```

Reading L^AT_EX Documents is a Mess

```
\section{Markdown}\label{markdown}

\href{http://daringfireball.net/projects/markdown/}{
  Markdown}
syntax is \emph{much} easier to read, but powerful enough
for
\((95\%\) of your document.

\begin{figure}[htbp]
\centering
\includegraphics{images/markdown.png}
\caption{Markdown Logo}
\end{figure}

\section{Pandoc}\label{pandoc}

\href{http://johnmacfarlane.net/pandoc/}{Pandoc} is a
  great
tool for converting Markdown (and lots of other documents)
to
different output formats.
```


Reading Markdown Documents is Easy and Fun

```
# Markdown
```

```
[Markdown] syntax is _much_ easier to read, but powerful  
    enough  
for $95%$ of your document.
```

```
![Markdown Logo]
```

```
# Pandoc
```

```
[Pandoc] is a great tool for converting Markdown (and lots  
    of  
other documents) to different output formats.
```

```
[Markdown]:      http://daringfireball.net/projects/  
    markdown/
```

```
[Markdown Logo]: images/markdown.png
```

```
[Pandoc]:        http://johnmacfarlane.net/pandoc/
```

The (Common) Markdown Tool Chain

Disclaimer

- ▶ no GUI
- ▶ command line
- ▶ we will still see \LaTeX , sometimes

Overview

- ▶ **Pandoc**: convert from enhanced Markdown syntax to \LaTeX
- ▶ \LaTeX and the **Beamer** package: typeset great-looking documents
- ▶ **latexmk**: run \LaTeX
- ▶ **make**: put everything together

Pandoc

If you need to convert files from one markup format into another, pandoc is your swiss-army knife. [1]

- ▶ convert Markdown documents to either plain \LaTeX or Beamer format
- ▶ uses templates
- ▶ arbitrary \TeX commands allowed in-between!

Output Format

- ▶ could also directly create PDF files
- ▶ intermediate \LaTeX makes finding problems easier

Including \LaTeX Files

Using enforced templates, title pages, content slides, footers and similar often require falling back to plain \LaTeX .

Including files [4]:

```
-H FILE, --include-in-header=FILE  
-B FILE, --include-before-body=FILE  
-A FILE, --include-after-body=FILE
```

Use \LaTeX where necessary, but fall back to Markdown for most of the document.

latexmk

- ▶ `latexmk` helps at compiling \LaTeX files
- ▶ repeatedly compiles until no further changes
 - ▶ table of contents
 - ▶ bibliography
 - ▶ ...
- ▶ helps cleaning up
- ▶ result: PDF files

make

- ▶ originally used for compiling software
- ▶ run several commands, one after the other
- ▶ `make presentation` and `make report` instead of complicated, long command lines
- ▶ could be easily replaced by Windows batch files, ...

Demo Time

Practice and Limitations

Markdown and Pandoc

- ▶ you're allowed to use T_EX everywhere

```
Have a look at figure \ref{example}.
```

```
![Some nice figure \label{example}](images/figure.png)
```

- ▶ finish Markdown files with an empty line
 - ▶ otherwise, weird things might happen when using multiple files
- ▶ use an editor with Markdown support and preview
- ▶ always use the newest Pandoc release¹

¹<http://johnmacfarlane.net/pandoc/installing.html>

Structuring Slides

- ▶ Pauses using “horizontal lines”

```
. . .
```

- ▶ Break apart lists with comments or protected whitespace

```
- item 1  
- item 2  
  
\  
<!-- -->  
  
- item 1  
- item 2
```

- ▶ Protected whitespace also helpful for images not wrapped in figures

```
![Inline image](example.png)\
```

Multi-Column Frames

- ▶ not supported by Pandoc
- ▶ really needed?
- ▶ extending pandoc with a filter²

²<http://stackoverflow.com/a/24040087/695343>

Source Code Highlighting

- ▶ use fenced code blocks to declare the language used

```
```java
public static void foo(String bar) {
 return "batz";
}
```
```

- ▶ setting up highlighting in your header include (see `listings` reference [3])

Tables

- ▶ a mess in both \LaTeX and Markdown
- ▶ **Markdown tables** are automatically put into figures
 - ▶ online editors³
 - ▶ clean up by “converting from markdown to markdown”

```
pandoc --to markdown table.md
```

- ▶ different syntax possibilities
- ▶ **\LaTeX tables** (ie. for large, complicated tables)

³eg. http://www.tablesgenerator.com/markdown_tables 

References

- ▶ Use pseudo classes for changing frame/section properties
 - ▶ `{.allowframebreaks}` to allow splitting long reference lists to multiple frames
 - ▶ `{.unnumbered}` to have an unnumbered section title
- ▶ Beamer example:

```
# References

## References {.allowframebreaks}
```


Bibliography

- ▶ ingredients:
 - ▶ bibliography file (typically BibTex, other formats supported)
 - ▶ citation style (.cs1 file)
 - ▶ references in document (`[@bibtex:reference]`)
- ▶ handled by pandoc: also works with HTML export

A presentation is a paper is a presentation.

On GitHub. Tomorrow.

All files will be uploaded to GitHub.

`https://github.com/JensErat/scientific-markdown`

(and linked on the Fachschaft's web page)



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References

References

- [1] About pandoc: *<http://johnmacfarlane.net/pandoc/>*. Accessed: 2015-02-03.
- [2] LaTeX/Errors and warnings — wikibooks, the free textbook project: 2014. *http://en.wikibooks.org/w/index.php?title=LaTeX/Errors_and_Warnings&oldid=2739496*.
- [3] Listings – typeset source code listings using LaTeX: *<http://www.ctan.org/pkg/listings>*. Accessed: 2015-02-03.
- [4] Pandoc user's guide: *<http://johnmacfarlane.net/pandoc/README.html>*. Accessed: 2015-02-03.