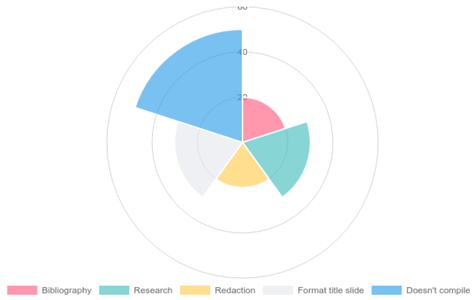
BEAUTIFUL PDFS using WEB FRAMEWORKS

The technical community tends to prefer mark-up languages (Markdown, LaTeX) to mainstream documents editor such as MS Office. this is because markup is more adapted to the quick generation of documents with consistent style. However, Markdown has structure limitations (title / sections / paragraphs) and LaTeX is only fun when it works. We present ReLaXed, a new PDF edition system relying on web technologies for fast, reliable PDF generation from languages such as Pug, HTML, or (S)CSS. Relaxed also features support for Markdown, LaTeX-style mathematical tables, equations, plots generation, diagram drawing, and possibly much more.

Motivation

We're really bad a LaTeX

The project started with the realization that, while LaTeX is a favorite tool in the techical community to make documents that look good, it actually makes it very difficult to make documents that look good. Maybe it is time for the Next Big Thing ? What about web technologies ?



Making a presentation with LaTeX. This grossly exagerated graphic shows that most of the time spent in the communication of scientific result is actually allocated to reading the LaTeX companion.

Web technologies have never looked so good.

- Beautiful CSS frameworks produce clean and modern documents.
- JS libraries for pretty much anything: plotting, code highlighting, math...
- Millions of people (and growing) know how to use these.
- Shorthand languages like Pug are finally making HTML/CSS fun.
- Web browsers can reliably print documents to PDF on any platform.

We wrote ReLaXed is an attempt at finding the most comfortable way to leverage this for desktop PDF creation.

About us

We are a highly motivated and close-knit team of one, looking for other people to join the project. Get in touch on Github !

Zulko
Creator, NOT a front-end specialist

Zulko started the project after failing to change a LaTeX title slide. Now he uses ReLaXed for all his presentations.

Peggy McPugface
Lead dev

Peggy is an imaginary ReLaXed team member who rocks at Node.js and will help the project get a proper code base.

Essie S. Hesse
Frontend specialist

Essie is a sought-after frontend expert who will develop best practices for effortless PDF document styling with Pug/SCSS

Matteo
Placeholder

Matteo was invited to the imaginary team because we needed four team members to fill this section. We take everyone !

All pictures above are from the Semantic UI docs, under the MIT licence

Methods

Software Stack

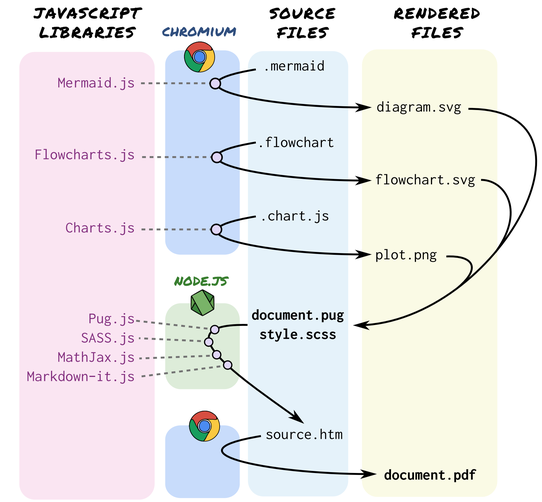
ReLaxed consists of few lines of code binding together other software. It uses `chokidar` to watch the file system. when a file is changed, several javascript libraries are used to compile SCSS, Pug, Markdown, and diagram files into an HTML page which is then printed to a PDF file by a headless instance of Chromium (via `puppeteer`), as represented graphically below.

Development environment

In addition to the software, the user can take advantage of code editors like Atom of VS-Code to enjoy project management, highlighting of the sources' Pug and SCSS code, integrated terminal and PDF viewer (with auto-refresh), etc.

Distribution

The sources is hosted on Github and the software can be installed using the popular package manager `npm`. At the writing time of this poster the global installation will unfortunately fail on some systems and a local installation in a foder of the user's choice is advised.



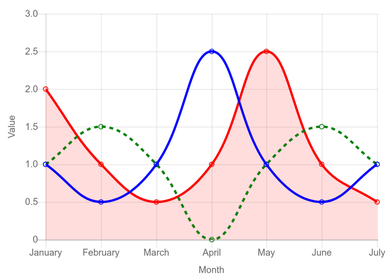
Javascript-powered file rendering with ReLaXed. Every time a file with a recognized extension is modified, it is processed by ReLaXed and fed to Google Chromium for rendering of an image file which can then be integrated in the final document via the Pug sources. The modification of any file (including the rendered image files) triggers a full build of an `.htm` file via Node.js. The `.htm` file is fed to Chromium and printed as the final PDF document

Results

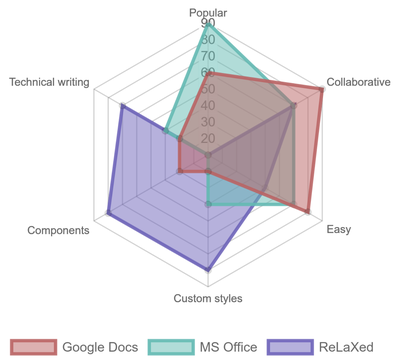
We spent a few nights putting together ReLaXed, as a proof of concept that editing PDF documents using web technologies can actually be fun. For now we can say for sure that ReLaXed is very nice for editing simple documents like letters, and really cool for making slideshows (we are using it on a daily basis). It takes more time however to make finely-crafted documents but the results are generally very satifactory. Making figures by hand is quite fast once we start to know the API of Chart.JS or Vegalite.

In this section we showcase two pointless figures and a code snippet of how to make slides with ReLaXed. The figures are *floating* in order to make them integrate with the four-column text. It's not necessarily the best choice, but again this not a real poster, more like a style exploration. Note that the code is not syntax highlighted as, unfortunately, the popular syntax highlighting `highlight.js` does not support the Pug language.

The rest of this section will be Lorem Ipsum as it is starting to be late here. If you want to learn more visit our Github :)



A Chart.JS plot. Admitedly, there is no reason for this plot to be here. As an aside, when you use ChartJS, beware that the resulting image is not vectorial and will appear pixelated at high resolution (e.g. on a poster. Make sure to set the chart's `options.devicePixelRatio` very high.



A totally subjective comparison of the three major documents editors out there.

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```
.slide
  .header I'm the title!
  p I am a paragraph
```

Sources

[Lukic, 2016] Lukic and contributors *The Semantic UI CSS framework*, https://semantic-ui.com/, 2016 .

[Downie, 2015] Downie and contributors *Chart.js, Simple, clean and engaging charts for designers and developers*, http://www.chartjs.org/, 2015 .

[Lushnikov, 2017] Lushnikov and contributors *Puppeteer, the Headless Chrome Node API*, https://github.com/GoogleChrome, 2017 .

[Zulko, 2018] Zulko and soon others *ReLaXed, Create PDF documents using web technologies* , https://github.com/RelaxedJS, 2018 .