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BlaTeX

Static Site Compilation for Advanced Markup Language Documents

Background

- Static sites (compare to dynamic sites)
- LaTeX (compare to Markdown)
- Haskell (compare to Java)
- PDFs (compare to HTML)

```
\documentclass[12pt]{article}

\title{\LaTeX: The better way}
\begin{document}
\maketitle

\section{Introduction}
\LaTeX is a robust typesetting language in which one can prepare
publication-quality documents with ease. It allows you to shift your focus
from the formatting of your document to the content. Results are
consistent, compatible across a multitude of operating systems, and best
of all, the programs are open source. Below are two examples of equations
as generated by \LaTeX.

%This is comment text, it won't be visible in the final document, but is
useful for annotation.

\section{Equations}
\subsection{pH equation}
\begin{equation}
pH = pK'_a + log \frac{[R^-]}{[RH]}
\end{equation}
\subsection{Enzyme kinetics equation}

\begin{equation}
\frac{1}{v} = \left(\frac{K_m}{V_{max}}\right) \left(
1+\frac{[I]}{K_i} \right) \left(\frac{1}{[S]}\right) +
\frac{1}{V_{max}}
\end{equation}
```

LaTeX: The better way

1 Introduction

LaTeXis a robust typesetting language in which one can prepare publication-quality documents with ease. It allows you to shift your focus from the formatting of your document to the content. Results are consistent, compatible across a multitude of operating systems, and best of all, the programs are open source. Below are two examples of equations as generated by LaTeX.

2 Equations

2.1 pH equation

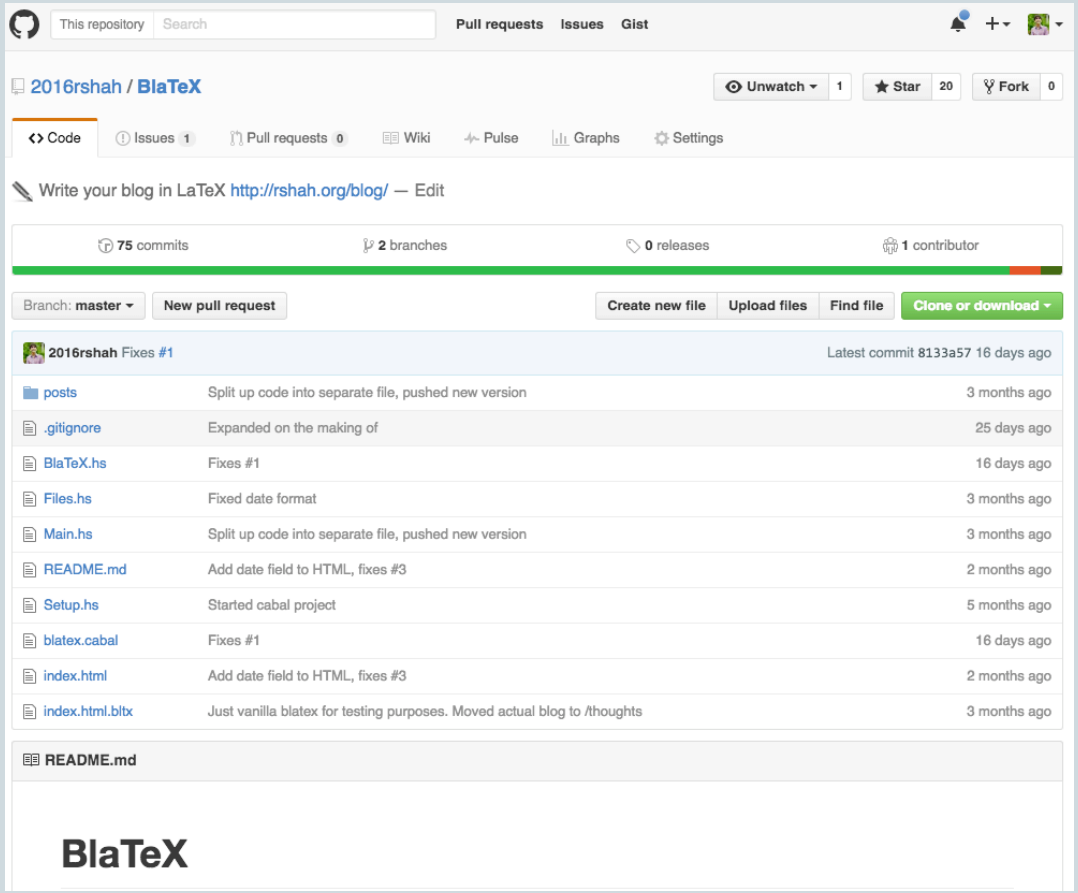
$$pH = pK'_a + log\frac{[R^-]}{[RH]} \quad (1)$$

2.2 Enzyme kinetics equation

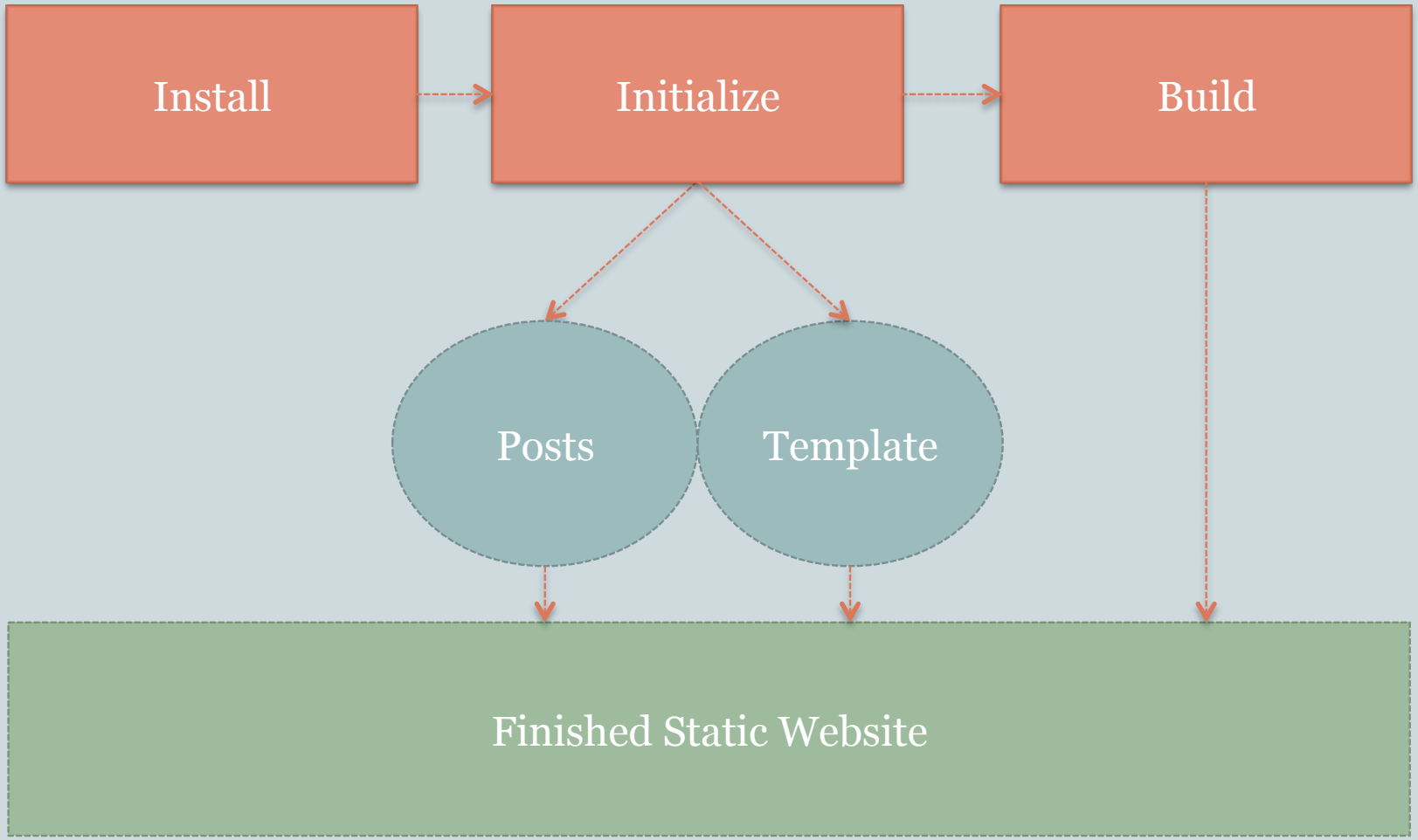
$$\frac{1}{v} = \left(\frac{K_m}{V_{max}}\right)\left(1 + \frac{[I]}{K_i}\right)\left(\frac{1}{[S]}\right) + \frac{1}{V_{max}} \quad (2)$$

BlaTeX

- Static site compiler written in Haskell for LaTeX documents



How it Works


λ
Install
Initialize
Build
Posts
Template
Finished Static Website

Install Hackage package

- `cabal install blatex`

blatex: Blog in LaTeX | Home | Search | Browse | What's new | Upload

The blatex package

[Tags:mit, program]

Markdown and HTML are the standard tools used to write your every day tech blog with. But they have pretty weak support for embedding mathematical formulas, and are not conducive to writing for an extended period of time. Plus, they aren't even Turing complete! So use BlaTeX to start blogging in LaTeX!

BlaTeX is basically a static site generator (like Jekyll) that lets you write your blog in LaTeX, specify a layout file for the homepage, and publish it to github pages.

To get started, check out https://github.com/2016rshah/BlaTeX#how-to

Properties

Versions	0.1.0.0, 0.1.0.1, 0.1.0.2, 0.1.0.3, 0.1.0.4, **0.1.0.5**, 0.1.0.6, 0.1.0.7, 0.1.0.8, 0.1.0.9
Dependencies	base (==4.7.*), blaze-html (>=0.8.1.1), dates (>=0.2.2.1), directory (==1.2.*), HaTeX (==3.16.*), process (>=1.2.0.0), split (==0.2.*), tagsoup (>=0.13.3), text (==1.1.*) [details]
License	MIT
Author	Rushi Shah
Maintainer	2016rshah@gmail.com
Stability	Unknown
Category	Web
Home page	https://github.com/2016rshah/BlaTeX
Source repository	head: git clone https://github.com/2016rshah/BlaTeX.git
Uploaded	Fri Feb 19 15:35:15 UTC 2016 by 2016rshah
Distributions	NixOS:0.1.0.9
Downloads	162 total (30 in the last 30 days)

Initialize site

λ

- `blatex init`
  - `index.html.bltx`
  - `posts/` directory
  - `posts/example-post.tex` file
  - `posts/example-post.pdf` file

Write/edit posts

λ

- Write and compile LaTeX documents as usual
  - BlaTeX looks in the `posts/` directory
- No interruption in typical workflow

Design a static website

λ

- Build your website in the `index.html.bltx` file
  - BlaTeX will use this template file to build your static site
  - Looks for the following code: `<ul id="blog-posts"></ul>`

Style the HTML elements

- No interruption of typical workflow

```
<li class="blog-post">
    <a class="post-link" href="posts/example-post.pdf">
        Example Post
    </a>
    <div class="post-date">
        1 January 2015
    </div>
</li>
```

Compile your static site


```
$ ~/github/Meta-BlaTeX (master) blatex build
Getting directory contents
Turning directory contents into posts
All posts are well formed
Turning posts into an HTML element
Reading the layout file
Inserting HTML element into layout file
Writing resulting file into index.html
Success building!
```

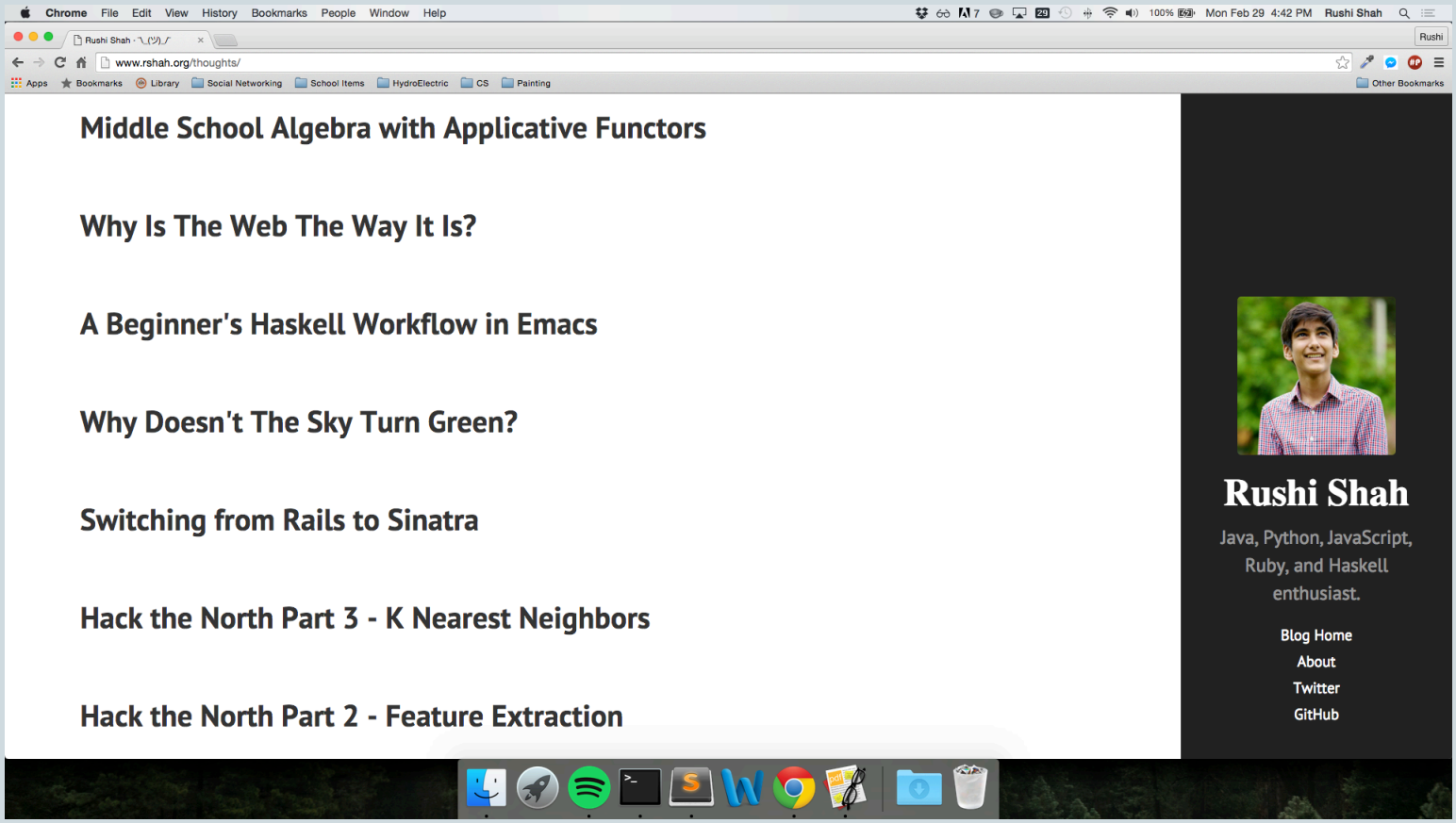
Possible Errors

- `Either`
  - Applicative Functor
  - Monad

```haskell
createPost :: String -> LaTeX -> Either String Post
createPost s tree = Post <$> pure s <*> title <*> author <*> date <*> pure tree
  where
    date = (getCommandValue "date" tree) >>= parseAbsoluteDate
    author = getCommandValue "author" tree
    title = getCommandValue "title" tree
```

Compiled Site

- Open `index.html` in browser



Public Reception of BlaTeX

- Github
- Facebook
- DC Hack and Tell
- tjSTAR Reception
- tjSTAR