Researcher's Toolkit

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Researcher's Toolkit: LaTeX

- Introduction to LaTeX
- LaTeX concepts on Overleaf
- Hands-on document creation

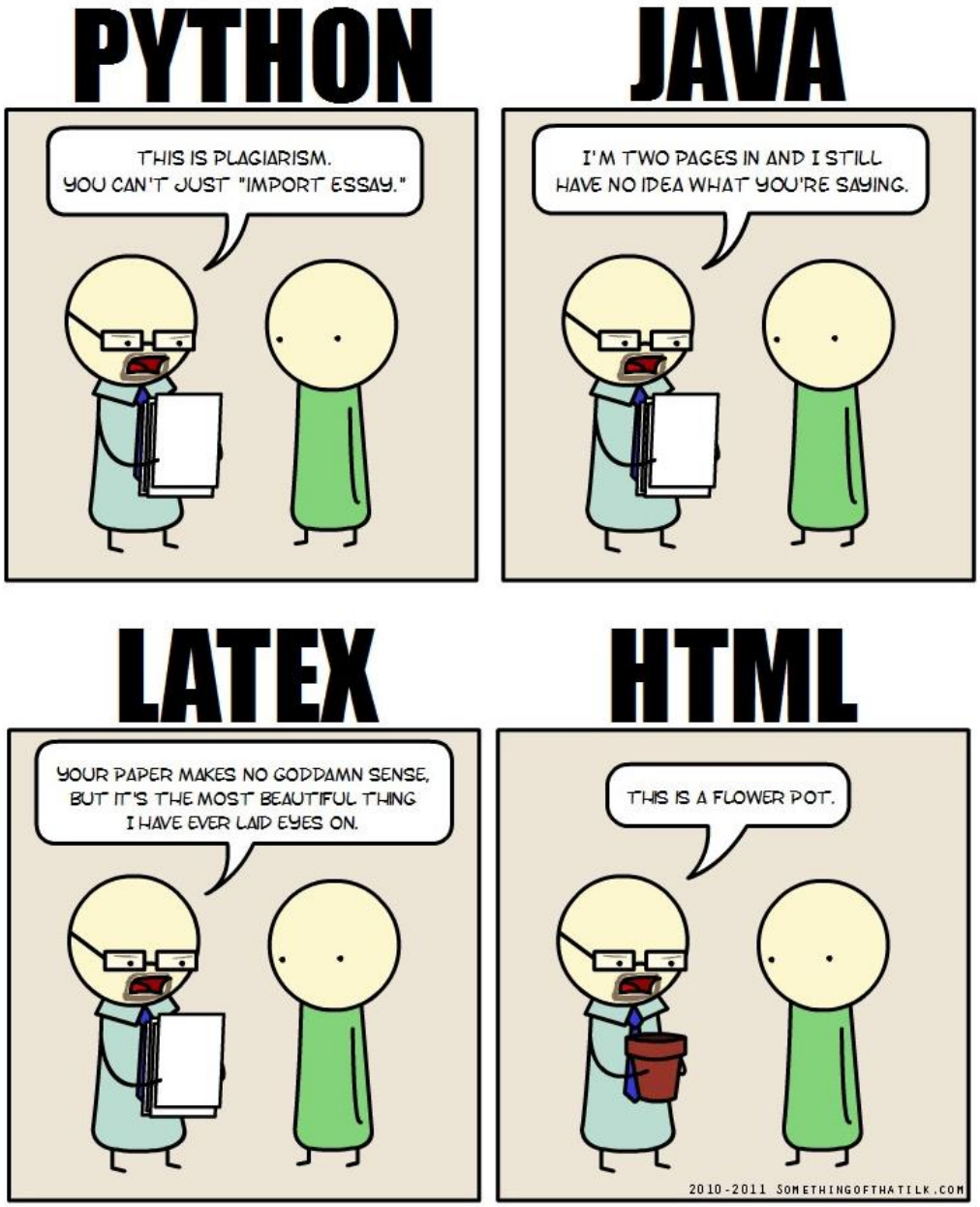
Introduction to LaTeX

- LaTeX is not a word processor
- It's a macro package that encodes the structure of a document with automated typesetting – presets of fonts and symbols and a syntactical set of rules to arrange them
  - Powerful mathematical typesetting for displaying and arranging equations

Introduction to LaTeX

Why LaTeX

- Makes beautiful and stand-out documents



Introduction to LaTeX

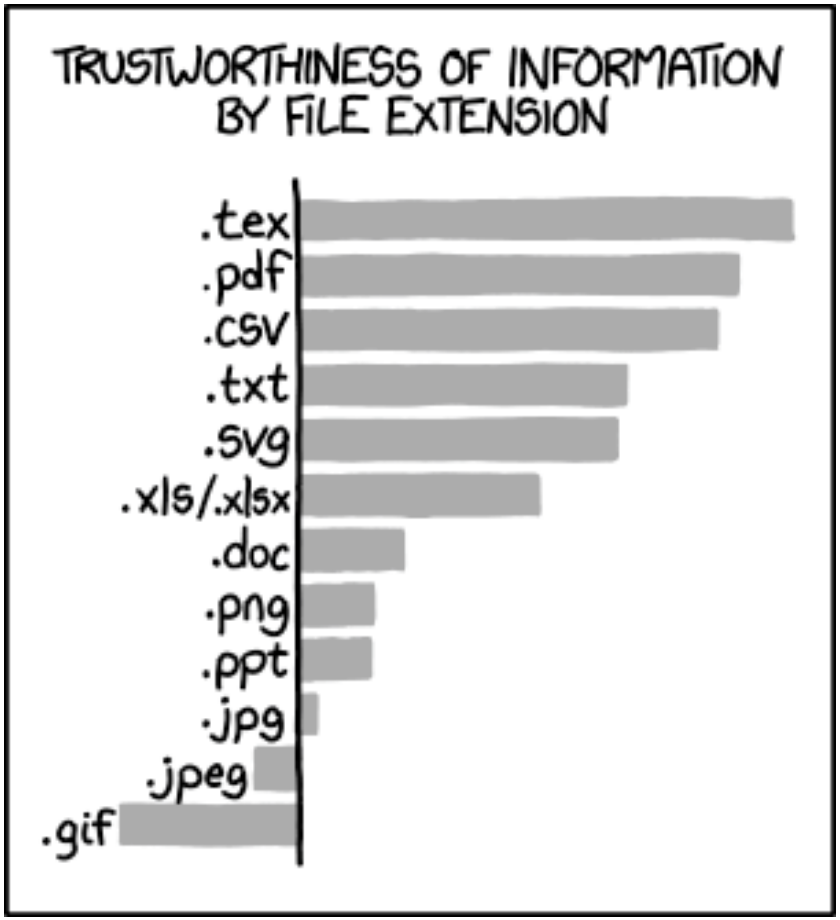
Why LaTeX

- Consistent formatting & structuring
- Expendable to many type of document formats

Introduction to LaTeX

Why LaTeX

- Perfect for scientific writing
- Well, it is also free



https://xkcd.com/1301/

Introduction to LaTeX

- Document development is all plain text, similar to writing a code.
- Commands generate the format and layout

APS (\textit{American Physical Society}) template is chosen to show different commands

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Introduction to LaTeX

- Windows, Mac and Linux are all fine to use LaTeX
- Start using with MikTeX, TeX Live (Windows), MacTeX (Mac), TeX Live (Linux)
- Editors: so many to chose from

  https://en.wikipedia.org/wiki/Comparison_of_TeX_editors

Introduction to LaTeX

- A simple document has 4 main parts
  - Header
  - Cover information
  - Main body
    - Text
    - Equations
    - Figures
  - Bibliography

Introduction to LaTeX

```
\documentclass{article}

\title{Turing Test, Does It Work?}
\author{Susan Calvin}

\begin{document}
\maketitle

\tableofcontents

\section{Introduction}
Robots are awesome, you should buy one.

\section{Why Turing Test Fails}
This section is here to explain why tests fail to
identify robots.\cite{turing1948intelligent}

\subsection{My Robot Dreams about Mechanical Sheep}
I also dream about mechanical sheep, does that
mean my robot is a human or I am a robot

\section{Conclusion}
I don't know if any of you is a robot or human at
this point.

\bibliography{biblio}
\bibliographystyle{apsrev4-1} %first cite basis.

\end{document}
```

Header

Cover info

Document body

Bibliography

Introduction to LaTeX

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Turing Test, Does It Work?

Susan Calvin

January 26, 2017

Contents

1 Introduction

Robots are awesome, you should buy one.

2 Why Turing Test Fails

This section is here to explain why tests fail to identify robots.[Turing(1948)]

2.1 My Robot Dreams about Mechanical Sheep

I also dream about mechanical sheep, does that mean my robot is a human or I am a robot

3 Conclusion

I don't know if any of you is a robot or human at this point.

References

[Turing(1948)] A. M. Turing, The Turing Test: Verbal Behavior as the Hallmark of Intelligence **105** (1948).

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Further Reading into LaTeX

- The definitive user guide:
  - https://www.latex-project.org/help/documentation/usrguide.pdf

- The LaTeX wiki book:
  - https://en.wikibooks.org/wiki/LaTeX

LaTeX Concepts on Overleaf

- Let's start Overleaf on our browsers

Hands-on Document Creation

These packages could be helpful ☺

http://andreas-zeller.blogspot.de/2017/01/twelve-latex-packages-to-get-your-paper.html?m=1

2017-01-13

Twelve LaTeX packages to get your paper accepted

(with Abhik Roychoydhury and Aditya Kanade)

Why do some people get all their papers accepted, and others do not? You may already know that in many disciplines, using the LaTeX typesetting system correlates with having your paper accepted (in contrast to, say, Word). What you may not know is that there is a number of LaTeX packages whose usage may be crucial for success. Here we go:

1. **The *pagefit* package.** This immensely useful package makes your paper exactly fit within a given page limit, applying a genetic search algorithm to reduce baseline distances, white space, font sizes, or bibliographic references until it exactly fits. Just write `\usepackage[pages=12,includingbibliography]{pagefit}` and enjoy.
2. **The *autocite* package.** Cites all relevant work that needs to be cited. The "`citepc`" option additionally cites the entire program committee, whether their work is relevant or not.
3. **The *translate* package.** Auto-translates your paper into a given target language (default is English). Just type `\begin{translate}Endlich kann ich in meiner Muttersprache schreiben!\end{translate}` to obtain "Finally, I can write in my mother language!" (Hint: You can also translate *English into English* to fix typos and other mistakes.)
4. **The *significance* package.** Alters your experiment settings until results become statistically significant, repurposing LaTeX's built-in formatting algorithm for advanced p-hacking. Use as `\usepackage[p=0.05]{significance}`.
5. **The *boast* package.** This extends the *nlp* package to automatically alter your writing style according to a set of parameters. For instance,
   - `\set\relevance=\Large` % Set relevance (values range from `\tiny` to `\Huge`)
   - `\set\novelty=0.5` % Sets novelty claimed, from 0.0 to 1.0.
   - `\set\formality=0.75` % Increase or decrease formal content (formulas, theorems, greek letters, etc.). For the humanities, use lower values.

   Hint: If you get a LaTeX "overclaim" warning, reduce these values; you can also use the `[maximize]` option to have LaTeX find a maximum without overclaim. Also, be sure to reduce `\relevance` for sections that discuss related work.
6. **The *accept* package.** This package does what it says: All our published papers have a line that says `\usepackage{accept}`. If you do not have the *accept* package, at least try to comment out the `\usepackage{reject}` line found in so many journal submission templates.
7. **The *coauthors* package.** Automatically searches for co-authors who have done well-respected work related to the paper and includes them as co-authors to boost chances of acceptance. The option `[silent=true]` (default) does so without their knowledge. Use `[related=false]` to include any tall figure (say, Paul Erdős) as co-author.
8. **The *prostrate* package.** Puts an acknowledgement section at the end profusely thanking the reviewers, even if the reviews were not even close to being relevant, helpful, insightful, or constructive. After all, you should always thank the reviewers for accepting your paper that you yourself would not have accepted! Automatically expands to fit the page limit; see the *pagefit* package, above.
9. **The *autosubmit package.*** Run your paper through LaTeX and have it automatically submitted to the most suitable venue. Use `[field=physics]` to narrow down the field or `[conference=ICSE]` to explicitly specify the venue. Be careful: These options also accept *wildcards* – `[field=humanities,journal=*]` will auto-submit your paper to *all* humanity journals at once. (See also the *autoreject* package.)
10. **The *award* package.** Makes your paper win an award, as in `\usepackage[bestpaper]{award}`. Options include "`impact`", "`beststudentpaper`", and more; be aware that "`bestpaper`" and "`impact`" are mutually exclusive. Donald Knuth and Leslie Lamport have extended this package with a "`turing`" award option, but never publicly released their extension; Philip Roth is said to have asked for a "`nobel`" option.
11. **The *trump* package.** Makes your paper great again, but shortens it to 140 characters, dismissing all scientific evidence. So overrated!
12. **The *tenure* package.** Keep on writing to obtain this package. If you can also get a *relocation* package, a *healthcare* package, and a *retirement* package, you'll be all set!

Note that these packages are normally customized towards your institution (using institution-specific relevance and boast settings, for instance). Therefore, you will not find these packages as part of your standard LaTeX distribution; use your institutional download site instead. Keep on LaTeXing!