

A small introduction to \LaTeX

Jeetaditya Chatterjee (Jeet)

UoP IT Society



What we will cover

Why Stray From The Known?

The Basic Structure of A Document

Formatting first and Once, The Preamble

Citations and reference management

Bibliography

The next steps

We are done!



Where are we?

Why Stray From The Known?

The Basic Structure of A Document

Formatting first and Once, The Preamble

Citations and reference management

Bibliography

The next steps

We are done!



What are the problems with the current form?

- ▶ Formatting is hard
- ▶ Automatic is better than manual
- ▶ Explicit is better than Implicit
- ▶ Declarative is better than Speculative



Why Stray from the Known?

- ▶ \LaTeX is designed to produce large technical documents
- ▶ You can format once at the beginning and then focus on writing
- ▶ You can break up large documents without having too worry about formatting
- ▶ \LaTeX has been around forever and you can find a package or use case for most document preparation needs
- ▶ Its the standard for academic and scientific writings, So much so the school of computing blesses its use for larger documents



How to get started with LaTeX

<https://www.overleaf.com>



Where are we?

Why Stray From The Known?

The Basic Structure of A Document

Formatting first and Once, The Preamble

Citations and reference management

Bibliography

The next steps

We are done!



A basic structure

\LaTeX enforces structure, Headings, labels and paragraphs are not just styled elements but provide meaning to the text. They will be picked up by things such as the table of contents, In things such a headers and can be directly referenced against labels are provided. for example: 1



The sections

`\section`

`\subsection`

`\subsubsection`

`\paragraph`



Where are we?

Why Stray From The Known?

The Basic Structure of A Document

Formatting first and Once, The Preamble

Citations and reference management

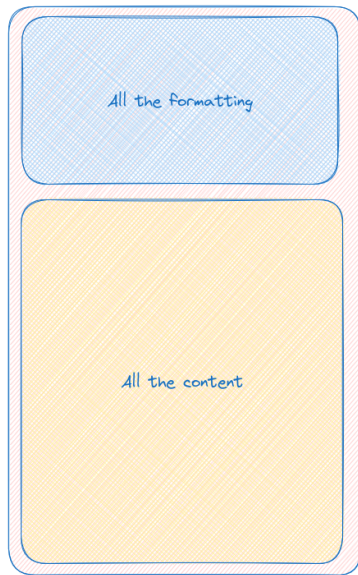
Bibliography

The next steps

We are done!



How we separate concerns



A real example

```
1  \documentclass{article}
2  \usepackage[left=2.5cm, right=2.5cm]{geometry}
3  \usepackage[style=apa, backend=biber]{biblatex}
4  \addbibresource{ccc3.bib}
5  \usepackage[linktocpage=true,
6             colorlinks=true,
7             linkcolor=black,
8             urlcolor=blue,
9             citecolor=black]{hyperref}
10
11 \title{Delegation in role based access control}
12 \author{UP2063130}
13 \date{}
```



Where are we?

Why Stray From The Known?

The Basic Structure of A Document

Formatting first and Once, The Preamble

Citations and reference management
Bibliography

The next steps

We are done!



Citation management should not be painful

How many have had to cite things formally so far? How many have had to format inline citations by hand into your document, how many times have you had to change both the bibliography and the citation itself because you missed something? This is not fun, its actively painful.



Getting citations

If you are getting citations use <https://zotero.org>. (“Zotero | Your Personal Research Assistant”, n.d.) Zotero can grab all the metadata it knows about on

- ▶ Individual papers on journals (Barka & Sandhu, 2000)
- ▶ News and magazine articles (“104-Year-Old Chicago Woman Dies Days after Making a Skydive That Could Put Her in the Record Books”, 2023)
- ▶ even just random videos and websites (“ZOMBO”, n.d.)

all with the click of a button!



Using citations





using citations is a matter of copying in a line of boiler plate and then using latex commands that actually deal with the formatting of these things.

```
% in the preamble
\usepackage[style=apa, backend=biber]{biblatex}
\addbibresource{latex.bib}
% ... in document
% for regular referencing
\autocite{CITEKEY}
% for referencing inline
\textcite{CITEKEY}
% referencing other parts of the documents
\ref{label}
% Finally for adding a bibliography
\printbibliography
```

Thats about it! 1



References I

-  104-year-old Chicago woman dies days after making a skydive that could put her in the record books. (2023, October).
-  Barka, E., & Sandhu, R. (2000). Framework for role-based delegation models. *Proceedings 16th Annual Computer Security Applications Conference (ACSAC'00)*, 168–176.
<https://doi.org/10.1109/ACSAC.2000.898870>
-  ZOMBO. (n.d.).
-  Zotero | Your personal research assistant. (n.d.).



Where are we?

Why Stray From The Known?

The Basic Structure of A Document

Formatting first and Once, The Preamble

Citations and reference management

Bibliography

The next steps

We are done!



there is more to life \LaTeX !

- ▶ LaTeX is but one example of a markup language
- ▶ there are lighter versions such as markdown
- ▶ In a lot of cases you can use tools such as pandoc to convert from simpler forms to larger ones
- ▶ LaTeX as a tool is massive and learning as you go is a must!



Where next?

- ▶ make an account on overleaf, or install latex on your computer
- ▶ check out The comprehensive tex archive network. It contains all of the packages you would want to use (Over 6000 of them!) as well as very well typeset documentation
- ▶ the T_EX stack exchange is a great place to debug issues
- ▶ sites such as latex tutorial latex beamer and Overleaf's documentation form a back bone of documentation



Where are we?

Why Stray From The Known?

The Basic Structure of A Document

Formatting first and Once, The Preamble

Citations and reference management

Bibliography

The next steps

We are done!



Any Questions?

