

# Introduction to LaTeX

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# What is LaTeX?

- A method of creating documents using plain text. It is stylized using markup tags, a bit like HTML.
- Not a word processor: you don't change the style manually, like in Word.
- As you type, you mark the document structure with tags eg title.
- Everything is compiled into a final document at the end.

# Why use LaTeX?

- Stylistic uniformity.
- Sophisticated structuring abilities.
- Reference tracking.
- Use different set templates, eg to make articles, books, reports, letters, presentations, etc.
- Very good for printing mathematical equations etc, figures, tables...

# First Steps

- In order to use LaTeX, you need to install a LaTeX editor. It is free and open source.
- Once you have downloaded it, open TexStudio and you are ready to go.

# Document structure

- Like in R, there are commands and comments in LaTeX. Commands start with a backslash and comments start with percentage sign.
- Here is an example of how you would begin making a LaTeX document:

# Including Code

```
\documentclass[a4paper,12pt]article
\beginarticle
A sentence of text.
\endarticle
```

- 'documentclass': at the beginning of every Latex document, you need to specify which Latex template you are going to use.
- 'begin' and 'end': commands that enclose the text and commands that make up the doc.
- Anything before 'begin' (known as the preamble) or after 'end' is not printed.

# Creating a document

- You can customize your LaTeX doc by using packages:

- ▶ These are put in the preamble.
- ▶ The command is:

```
\usepackagename
```

- You can create a title by filling in the title in the preamble, like this:

```
\title My Title Here
```

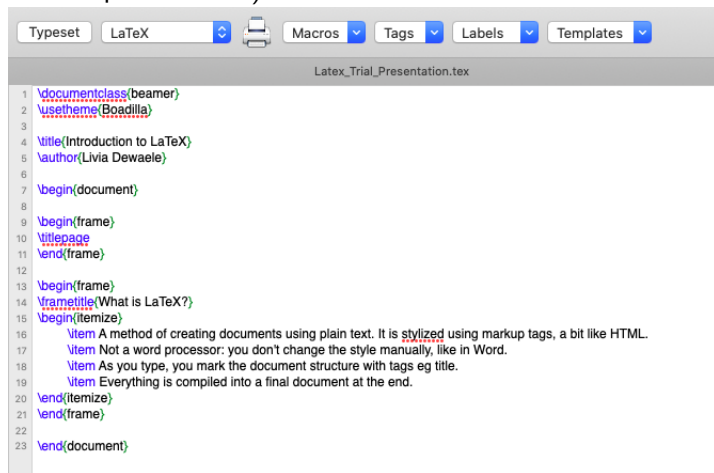
- To print the title in the document, use the maketitle command within the document (after 'begin'):

```
\maketitle
```

- To create an output, press the 'Typeset' button in the corner (like 'knit' in R).

# How does it look?

Here is an example of what some 'complete' LaTeX document (in this case for this presentation) would look like:



The screenshot shows a LaTeX editor interface. At the top, there is a toolbar with buttons for 'Typeset', 'LaTeX', 'Macros', 'Tags', 'Labels', and 'Templates'. Below the toolbar, the filename 'Latex\_Trial\_Presentation.tex' is displayed. The main area contains the LaTeX source code for a Beamer presentation, with line numbers 1 through 23 on the left. The code defines the document class, theme, title, author, and content structure using Beamer commands.

```
1 \documentclass{beamer}
2 \usetheme{Boadilla}
3
4 \title{Introduction to LaTeX}
5 \author{Livia Dewaele}
6
7 \begin{document}
8
9 \begin{frame}
10 \titlepage
11 \end{frame}
12
13 \begin{frame}
14 \frametitle{What is LaTeX?}
15 \begin{itemize}
16 \item A method of creating documents using plain text. It is stylized using markup tags, a bit like HTML.
17 \item Not a word processor: you don't change the style manually, like in Word.
18 \item As you type, you mark the document structure with tags eg title.
19 \item Everything is compiled into a final document at the end.
20 \end{itemize}
21 \end{frame}
22
23 \end{document}
```



# More Information about LaTeX

I created a full document taking you through the main functions of LaTeX  
- please see this if you are interested in learning more!

Otherwise there are some other great resources. Here are two useful links:

LATEX for Beginners Workbook Edition 5.

<http://www.docs.is.ed.ac.uk/skills/documents/3722/3722-2014.pdf>

Wikibooks Introduction to LaTeX.

<https://en.wikibooks.org/wiki/LaTeX/Introduction>