# LATEX for the Humanities A short introduction

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February 28, 2024

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- 2 Basic text formatting
- 3 Lists
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- Conclusion

#### Table of Contents

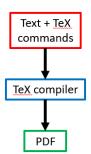
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- T<sub>F</sub>X (Donald Knuth, 1978)
- Name < Greek τέχνη techne ('art', 'craft')</li>



Figure: Donald Knuth

- TFX (Donald Knuth, 1978)
- Name < Greek τέχνη techne ('art', 'craft')</li>
- A compiler turns your text and commands into a PDF.



- TEX (Donald Knuth, 1978)
- Name < Greek τέχνη techne ('art', 'craft')
- A compiler turns your text and commands into a PDF.
- Original TEX is rather complicated.

```
\newcount\serialnumber
\def\firstnumber{\serialnumber=0 }
\def\nextnumber{\advance \serialnumber by 1
\number\serialnumber)\nobreak\hskip.2em }
```

- TFX (Donald Knuth, 1978)
- Name < Greek τέχνη techne ('art', 'craft')
- A compiler turns your text and commands into a PDF.
- Original TEX is rather complicated.
- LATEX (Leslie Lamport, 1984)
- Macro package for TEX



Figure: Leslie Lamport

LATEX core philosophy

#### **ATEX**

• is free and open-source software

#### LATEX core philosophy

#### MEX

- is free and open-source software
- provides professional levels of typesetting control

#### LATEX core philosophy

#### **MTFX**

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#### LATEX core philosophy

#### **MTFX**

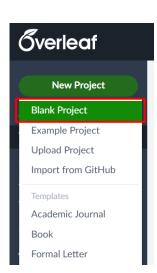
- is free and open-source software
- provides professional levels of typesetting control
- produces the same output on any platform
- separates content from layout ('just start typing')

Still, there is quite a learning curve.

That is what this tutorial is for.

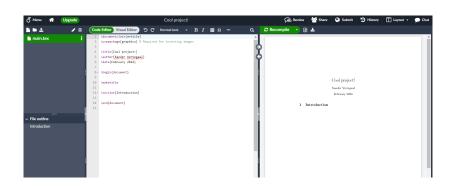
### Creating a new document

- Visit Overleaf
- Click on "Create a new project"
- Select "Blank Project"
- Come up with a catchy title
- Hit 'Create'!





#### Overleaf



Simple commands (also called **switches**):

\maketitle \LaTeX \centering

Simple commands (also called **switches**):

```
\maketitle
\LaTeX
\centering
```

backslash + command name

Commands with **mandatory** arguments:

```
\section{Introduction} \author{Albert Einstein}
```

#### Commands with **mandatory** arguments:

```
\section{Introduction}
\author{Albert Einstein}
```

backslash + command name + mandatory argument

Commands with **optional** arguments:

\documentclass[12pt]{article}

#### Commands with **optional** arguments:

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

backslash + command name + optional argument + mandatory argument

**Environments:** 

```
\begin{center}
...
\end{center}
```

#### **Environments:**

#### Commands – exercise

#### Exercise

- Type a few lines in the document body, and compile the document.
- Add a co-author to the author command with help of the \and switch.
- Add another section to your document. Give it an interesting sounding name.
- Add an abstract to your document with the abstract environment.

#### Document structure

There are two required commands in a LATEX document:

- the \documentclass{...} command;
  - article: generic short(er) documents
  - beamer: for PPT-like presentations
  - book: full books
  - letter: letters
  - report: long articles with chapters
- ② a \begin{document}...\end{document} environment with some text.

#### Note

Document classes enable different layouts and commands. The letter class, for example, has a \signature{...} and a \closing{...} command.

#### Document structure

The document environment encapsulates the **document body**.

Everything before that is called the **preamble**.

This is where you do all of your initial configuration.

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| Effect  | Command        | Switch                                       |
|---|----------------|--|
| Upright shape Italic shape Slanted shape SMALL CAPS SHAPE | <pre>   </pre> | \upshape<br>\itshape<br>\slshape<br>\scshape |
| Medium series <b>Bold series</b>                          | <pre> </pre>   | <pre>\mdseries \bfseries</pre>               |
| Roman family Typewriter family Sans serif family          | <pre>  </pre>  | <pre>\rmfamily \ttfamily \sffamily</pre>     |

Table: Type styles with a sample text.

#### Usage:

This is upright. This is italic. This is upright again.

• With a regular command:

This is upright. \textit{This is italic.} This is upright again.

#### Usage:

This is upright. *This is italic*. This is upright again.

With a switch:

This is upright. \itshape This is italic. \upshape This is upright again.

#### Usage:

This is upright. This is italic. This is upright again.

With a scoped switch:

This is upright. {\itshape This is italic.} This is upright again.

#### Usage:

This is upright. This is italic. This is upright again.

With an environment:

```
This is upright
\begin{itshape}
This is italic.
\end{itshape}
This is upright again.
```

# Typestyle – Exercise

#### Exercise

Create the following text in your document:

- This is bold and sans-serif. (Use regular commands)
- This is upright and typewriter. (Use switches)
- THIS IS SMALL CAPS. (Use an environment)

# Text size (3.2)

| Effect       | Command                                     | Switch        |
|--------------|---|---------------|
| Huge         |   | \Huge         |
| huge         |   | \huge         |
| LARGE        |   | \LARGE        |
| Large        |   | \Large        |
| large        | $\lceil \lceil \rceil \rceil$               | \large        |
| Normal       | $\n$  | \normalsize   |
| Small        | $\sl = 11111111111111111111111111111111111$ | \small        |
| Footnotesize |   | \footnotesize |
| Scriptsize   |   | \scriptsize   |
| Tiny         |   | \tiny         |

Table: Text sizes with a sample text.

# Quotation marks (3.3)

LATEX does not automatically use opening and closing quotation marks.

- For opening quotes, use `. (backtick, accent grave)
- For closing quotes, use '. (apostrophe, accent aigu)
- Ouble them for double quotes: `` and ''.

```
`Hello' \rightarrow 'Hello' 

``Hello'' \rightarrow "Hello"
```

# Whitespace (3.5)

#### Note the following:

- LATEX ignores multiple spaces.
- LATEX ignores line breaks.
- LATEX ignores tabs.

To create a new paragraph, use a blank line. For more vertical whitespace, use \medskip, \bigskip, or \vspace (see Section 3.5).

For horizontal whitespace, use \quad, \qquad, or \hspace (see Section 3.5).

### Basic text formatting – Exercise

#### Exercise

### Recreate the following text:

In the quiet town of Willowbrook, the villagers gathered on the market square to hear the royal messenger's proclamation: "Hear ye, hear ye, citizens! The king has decreed that all citizens must wear a hat on Mondays!"

Rodney, the village smith, started to look exceedingly worried and whispered to his wife: "I don't own a hat.". **Eleanor**, careful not to raise attention, replied: "Well, go buy one then!"

"But it's Sunday!" Rodney said.

### Packages (intermezzo)

**Packages** are extensions to LATEX that provide additional functionality.

Import them in your **preamble** with the \usepackage{...} command.

That's it! You can now use the package's **commands** and **environments** in your document.

### Packages (intermezzo)

All packages are listed on CTAN, the **Comprehensive TeX Archive Network**(https://ctan.org).



#### The Comprehensive T<sub>F</sub>X Archive Network

The Comprehensive T<sub>E</sub>X Archive Network (CTAN) is the central place for all kinds of material around T<sub>E</sub>X. CTAN has currently 6557 packages. 2999 contributors have contributed to it. Most of the packages are free and can be downloaded and used immediately.

### Packages (intermezzo)

Almost every package has a **documentation** file. You can find it on CTAN or by typing texdoc <packagename> in your terminal.

#### User Manual for glossaries.sty v4.53

Nicola L.C. Talbot dickimaw-books.com/contact 2023-09-29

This document is also available as HTML (glossaries-user.html).

Abstract

The glossaries package provides a means to define terms or acronyms or symbols that can be referenced within your document. Sorted lists with collated locations can be generated either using TigX or using a supplementary indexing application. Sample documents are provided with the glossaries package. These are listed in St.

Additional features not provided here may be available through the extension package glossaries-extra which, if required, needs to be installed separately. Now features will be added to glossaries value, since var. Nersions of the glosses peadage, site v.2.1 will mostly be just bug fires or minor maintenance. The most significant update to the glossaries package sites when views to also, which would be integrated on feature v.2.08 and the phasing out the use of the row deprecated textures package.

Additional field with the produces to according to the product of the pr

LATEX provides three built-in fonts:

• A main (serif) font: Computer Modern

• A sans-serif font: Computer Modern Sans

• A typewriter font: Computer Modern Typewriter

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- A main (serif) font: Computer Modern
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If you need more fonts, you need to import the fontspec package.

LATEX provides three built-in fonts:

• A main (serif) font: Computer Modern

• A sans-serif font: Computer Modern Sans

• A typewriter font: Computer Modern Typewriter

If you need more fonts, you need to import the fontspec package.

This requires the X = A T = X compiler.

\usepackage{fontspec}

### Option 1: Override one of the default font families:

- \setmainfont{Times New Roman}
- \setsansfont{Comic Sans MS}
- \setmonofont{Roboto Mono}

Then use the familiar font commands (Section 3.1):

- \textrm{...} or \rmfamily
- \textsf{...} or \sffamily
- \texttt{...} or \ttfamily

Option 2: Create a new font family:

\newfontfamily{\comic}{Comic Sans MS}

Then use it with your own command:

{\comic This is hilarious!}
This is hilarious!

#### Fonts are available:

- as a package (URL in the handout)
- preloaded into Overleaf (URL in the handout)
- installed on your own system (not available on Overleaf)
- uploaded font files to Overleaf

### Changing fonts – Exercise

#### Exercise

- Override your default sans-serif font and set it to Arial.
- Create a new font family called bettertimes with the font Times New Roman.
- Find the 'Gothic Textura Quadrata' font on the TUG Font Catalogue and use it in your document.
- Bonus: try to find this jolly font among the fonts listed in the Overleaf font overview.

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LATEX has three commonly used list styles:

1. Unordered lists (itemize):

- Apples
- Coffee
- Salami

```
\begin{itemize}
  \item Apples
  \item Coffee
  \item Salami
\end{itemize}
```

LATEX has three commonly used list styles:

- 1. Unordered lists (itemize):
- Apples
- Coffee
- Salami
  - Serrano
  - € Chorizo

```
\begin{itemize}
  \item Apples
  \item Coffee
  \item Salami
   \begin{itemize}
    \item Serrano
    \item[€] Chorizo
   \end{itemize}
\end{itemize}
```

LATEX has three commonly used list styles:

- 2. Ordered lists (enumerate):
- Apples
- 2 Coffee
- Salami

```
\begin{enumerate}
  \item Apples
  \item Coffee
  \item Salami
```

\end{enumerate}

LATEX has three commonly used list styles:

- 2. Ordered lists (enumerate):
- Apples
- Coffee
- Salami
  - Serrano

  - Chorizo

```
\begin{enumerate}
 \item Apples
  \item Coffee
  \item Salami
   \begin{enumerate}
     \item Serrano
     \item Chorizo
    \end{enumerate}
\end{enumerate}
```

LATEX has three commonly used list styles:

### 3. Description lists (description):

Apples are delicious and it is said that they keep people with PhDs away.

Coffee is a stimulant without which most academics would not survive.

Salami is a type of sausage without which many Italians would not survive.

```
\begin{description}
  \item[Apples] are ...
  \item[Coffee] is a ...
  \item[Salami] is a ...
\end{description}
```

### Lists – Exercise

#### Exercise

Try to recreate the following list.

My favourite fruits:

- Bananas
- Mangoes
  - ? Are they in season?
  - ! I don't know.
- Apples, esp. the following varieties:

Jonagolds are nice and sweet.

Granny Smiths are very sour!

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# Tables (10)

| Country     | Capital   | Inhabitants |
|-------------|-----------|-------------|
| Netherlands | Amsterdam | 17.02 M     |
| Germany     | Berlin    | 82.67 M     |

Table: A table about two countries.

## Tables (10)

```
\begin{table}[htbp]
    \centering
    \begin{tabular}{|r|c||}
       \hline
                   & Capital & Inhabitants \\
       Country
       \hline
       Netherlands & Amsterdam & 17.02 M
                                             //
                   & Berlin & 82.67 M
                                             //
       Germany
       \hline
    \end{tabular}
    \caption{A table about two countries.}
    \label{tblcountries}
\end{table}
```

### Tables – Exercise

#### Exercise

Recreate the following (right-aligned) table:

| Name         | Inaugurated |
|--------------|-------------|
| Barack Obama | 2009        |
| Donald Trump | 2017        |
| Joe Biden    | 2021        |

Table: US Presidents

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# References (9)

Use \label{...} to label a section, figure, table or footnote.

\subsection{Analysis}\label{ssec:analysis}

## References (9)

Use \ref{...} to refer to the number, or \pageref{...} to refer to the page.

As we saw in Subsection \ref{ssec:analysis} on page \pageref{ssec:analysis}, the analysis is quite complex.

As we saw in Subsection 4 on page 17, the analysis is quite complex.

When you add or remove subsections, these counters are automatically updated.

Add the hyperref package to make your links clickable.

### References – Exercise

#### Exercise

- Add a label to the Introduction section in your document.
- Add a label to the table you created in the previous exercise. (Add it after the caption.)
- Refer to both your Introduction and your table in a new paragraph.
- Make sure that your references are clickable in the PDF.

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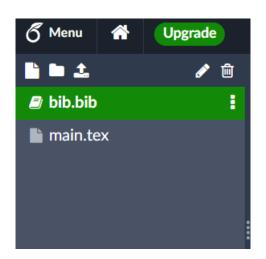
## Bibliography (11)

Setting up a bibliography in LATEX requires 5 steps.

- ① Create a .bib file.
- Add a reference to your .bib file.
- Import the biblatex package and add your .bib file to your preamble.
- 4 Add a citation to your document.
- Print your bibliography.

We will be using BIBATEX to manage our references.

**Step one:** create a .bib file.



**Step two:** add a reference to your .bib file.

```
@article{lander1966counterexample,
    title={Counterexample to {E}uler's
      conjecture on sums of like powers},
    author={Lander, Leon J. and Parkin,
      Thomas R. and others},
    journal={Bulletin of the American
      Mathematical Society},
    volume={72},
    number={6},
    pages={1079},
    vear={1966}
```

Tip 1: use Google Scholar to find BIBTEX references.

Tip 2: check the BIBLETEX package documentation for an overview

of all fields.



**Step three:** import the biblatex package and add your .bib file to your preamble.

```
\usepackage[style=apa,backend=biber]{biblatex}
\addbibresource{bib.bib}
```

**Step four:** add a citation to your document.

Structure:

\cite[ pagenumbers ]{ citationkey }

| Command                       | Result                                |
|-------------------------------|---------------------------------------|
| \cite[20]{landerexample}      | Lander, Parkin, et al., 1966, p. 20   |
| \parencite[20]{landerexample} | (Lander, Parkin, et al., 1966, p. 20) |
| \footcite[20]{landerexample}  | 1                                     |
| \textcite[20]{landerexample}  | Lander, Parkin, et al. (1966, p. 20)  |

Table: Citing commands



<sup>&</sup>lt;sup>1</sup>Lander, Parkin, et al., 1966, p. 20

Step 5: print your bibliography.

\printbibliography

Lander, L. J., Parkin, T. R., et al. (1966). Counterexample to Euler's conjecture on sums of like powers. *Bulletin of the American Mathematical Society*, 72(6), 1079.

### Bibliography - Exercise

#### Exercise

- Go to Google Scholar and find a paper you wrote or one that you particular like.
- Export a BIBTEX reference and place it in your .bib file. (It might need to be cleaned up a bit.)
- Reference it in your text. Make sure it shows up in your bibliography.
- Now switch to the authoryear citing style.
- Bonus: use \citeyear{...}, \citetitle{...} and \citeauthor{...} to refer to the year, title and author of the paper, respectively.

If you have imported the hyperref package before, note that your references are now clickable!



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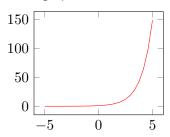
### Use cases

LATEX has become the standard in the STEM sciences.

It handles equations very well,

$$\int_{-\infty}^{\infty} e^{-x^2} \cos(2\pi f x) \, dx = \frac{1}{2} \sqrt{\pi} e^{-\pi^2 f^2} \tag{1}$$

and graphs too.



\begin{tikzpicture}
\begin{axis}
\addplot{[color=red]{exp(x)}}
\end{axis} \end{tikzpicture}

But there is a lot more you can do with LATEX.

Especially with the help of user-contributed packages.

But there is a lot more you can do with  $\protect\operatorname{MTEX}$ .



Figure: Musical notation (musixtex)

But there is a lot more you can do with LATEX.

Figure: Glossed and automatically numbered sentences (expex)

But there is a lot more you can do with LATEX.

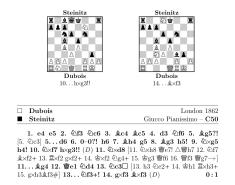


Figure: Chess notation diagrams (skak and texmate)

But there is a lot more you can do with LATEX.

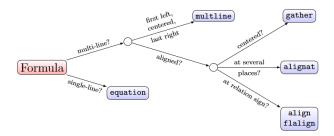


Figure: Graphs (tikz)

But there is a lot more you can do with LATEX.

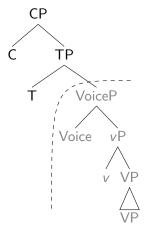


Figure: Syntax trees (forest)



But there is a lot more you can do with LATEX.

# Le premier liure de Moyse,

Dict Genese.

ì

#### ARGVMENT.

Ce premier liure comprend l'origine c'e causse de toutes étosse, principalement la creation de l'homme, qu'il a est étudion commencement, la cheute c'e relucuement : comment d'un tou out est prorecté, c'é pour leurs encormes peché Dieu les a conssimée, par le deluge, reserve huiël, dont la sémence a rempti toute la terre. Past il desferit les vias, spits, religion, c'i lignees des faints Patriarches, qui ont reseu deux nu la Loy: Les beneditions, promosses c'alliances du Seigneur suisse auce iceux: Comment de le la terre de Chanaan sont descende un Egypte. Aucuns ont appelée el liure, le liure des lusses, les comment de le la terre de Chanaan sont descende un Egypte. Aucuns ont appelée el liure, le liure des lusses, les liures des lusses, les liures des lusses, les liures des lusses, les liures des lusses les liures, les liures des lusses, les liures des lusses de la lusse les liures, les liures de la lusse les liures, les liures de la lusse lusses de la lusse de

#### CHAPITRE I

I Creation du ciel & de la terre, II, 20. & de tout ce qui y est comprirus. 3.14 De la lumiere aussi, 26 & de l'homme, 28 Auquel tout est assission en six ione. 22 Dieu benit toutes ses œuures, 31 qu'il a accomplica en six ione.



<sup>1</sup>Ieu <sup>2</sup>crea <sup>b</sup>au com mence - les eaux, qui estoyent sous l'estendue, d'auec celles, qui estoyent sur l'estendue. Et sur ainsi faict.

- B Et Dieu appela l'estendue, Ciel. Lors fut faict le soir & le matin du second jour.
- 9 ¶ Puis Dieu dît, <sup>41</sup>Que les eaux, qui font fous le ciel, foyent affemblees en

pourquoy les Hebrieux comencent le iour naturel le foir apres le foleil

couchant.

g Ce mot d'Esté
due, compréd tout
ce qui se voit par
dessus nous, tát en
la region œleste,
quèlementaire.

4 Pseau. 33.7.

h Il est ici parlé de deux manieres deaux: asçauoir, celles q sont sous lestendue, comme la mer, les fleuues, & autres qui sont fur la terre & celles, qui sont sur

But t

I Ce premier chapitre elt fort difficile: & pour cette caufe, il eltoit defendu entre les He brieux de le lire &

interpreter deuant laage de trente ans. a Fit de rien, &c fans aucune ma-

1 Iob 38.4, Pfeau. 33.6, & 89.12., 135.5, Eccleftiafti. 13.1, Act. 14-15, & 17.14

b Tout premierement, & auât qu'il y eut aucune creature, Iaan 1.10. 2 Hebr. 11.3. c Le ciel & la

c Le ciel & la terre, les eaux, les abyfines, fe pren-

マロトマ部トマミトマミト ヨーの

But there is a lot more you can do with LATEX, also for non-academic purposes.

Curricula vitae

- Curricula vitae
- 2 Letters

- Curricula vitae
- 2 Letters
- Operation PowerPoint-like presentations

- Curricula vitae
- 2 Letters
- Operation PowerPoint-like presentations
- Business cards

- Curricula vitae
- 2 Letters
- OperPoint-like presentations
- Business cards
- Newsletters

- Curricula vitae
- 2 Letters
- Operation PowerPoint-like presentations
- Business cards
- Newsletters
- Books

## When (not) to use LATEX

LATEX is not always the best tool for the job.

LATEX is great for:

LATEX is not necessarily good for:

## When (not) to use LATEX

LATEX is not always the best tool for the job.

#### LATEX is great for:

- scientific documents (articles, theses, books);
- official documents (letters, CVs, invoices);
- documents with complex typesetting requirements;

LATEX is not necessarily good for:

## When (not) to use LATEX

LATEX is not always the best tool for the job.

#### LATEX is great for:

- scientific documents (articles, theses, books);
- official documents (letters, CVs, invoices);
- documents with complex typesetting requirements;

# LATEX is not necessarily good for:

- quick, private notes;
- presentations (beamer);
- posters, flyers and other graphical documents;

## Troubleshooting

If you do not know how to do something in LATEX, you are likely not alone.

- Read **Overleaf**'s LATEX tutorial.
- Google your problem.
- Check StackExchange.
- Read the package documentation.
- Visit the Digital Humanities walk-in hours (this room, Thursdays, 14:00–15:00)
- Email us at the Research Software Lab.





## Where to go from here

LATEX is a skill that needs practice to master.

But it is a valuable tool for your academic and post-academic career.

- Rewrite an existing chapter/paper into LATEX.
- Write new non-urgent documents in LATEX.
- For new manuscripts: check with the editors first!

## Thank you!

Thank you for your attention. I hope you have learned something useful today.

Happy LATEXing!