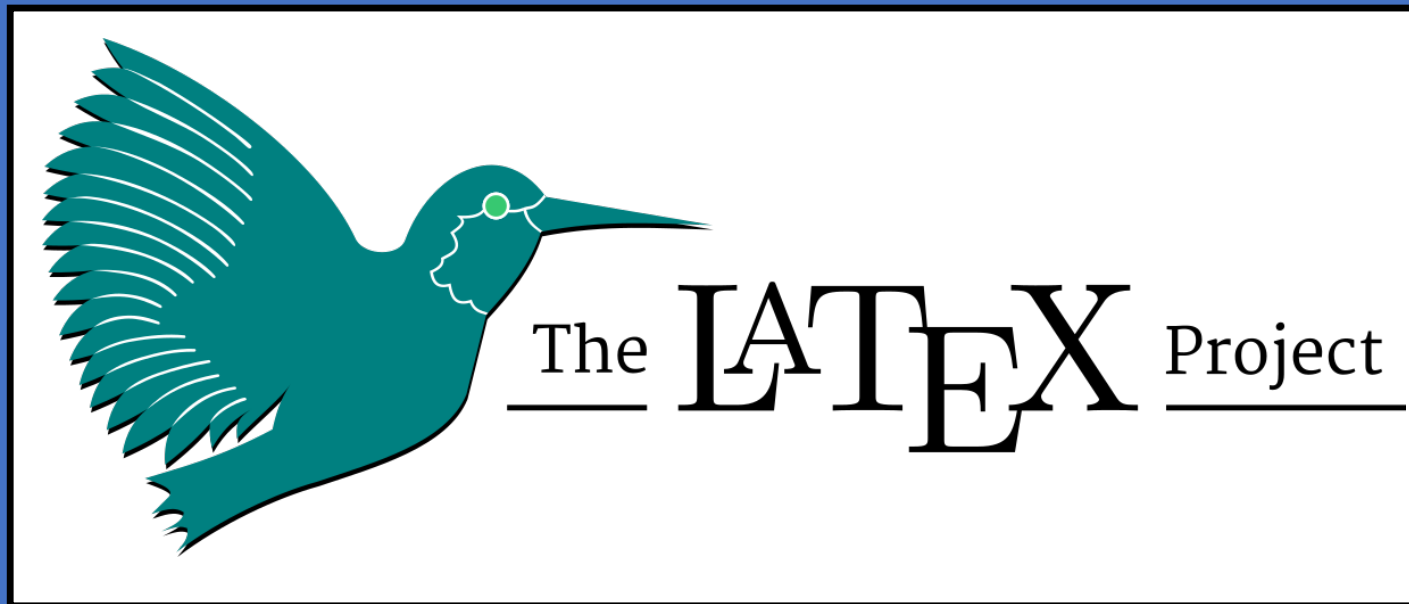


Introduction to LaTeX

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What is LaTeX (Lah-Tech or Lay-Tech)?

- TeX is a program developed in 1977 by Donald Knuth.
- LaTeX uses TeX formatter as its typesetting engine.
- Use of commands to tell it what to do -> WYSIWYM opposed to WYSIWYG approach
- Maintain by the LaTeX project: <https://www.latex-project.org>
- There are several LaTeX editors, some directly online.

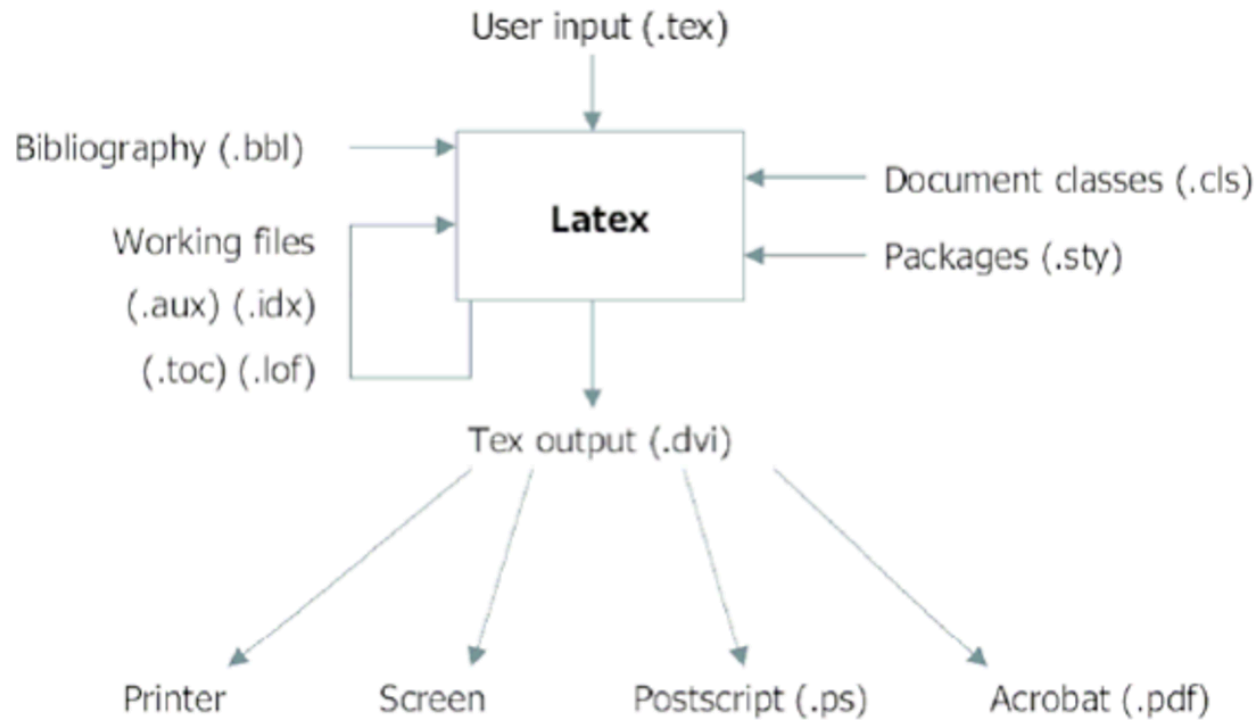


Why do we use LaTeX over word processors?

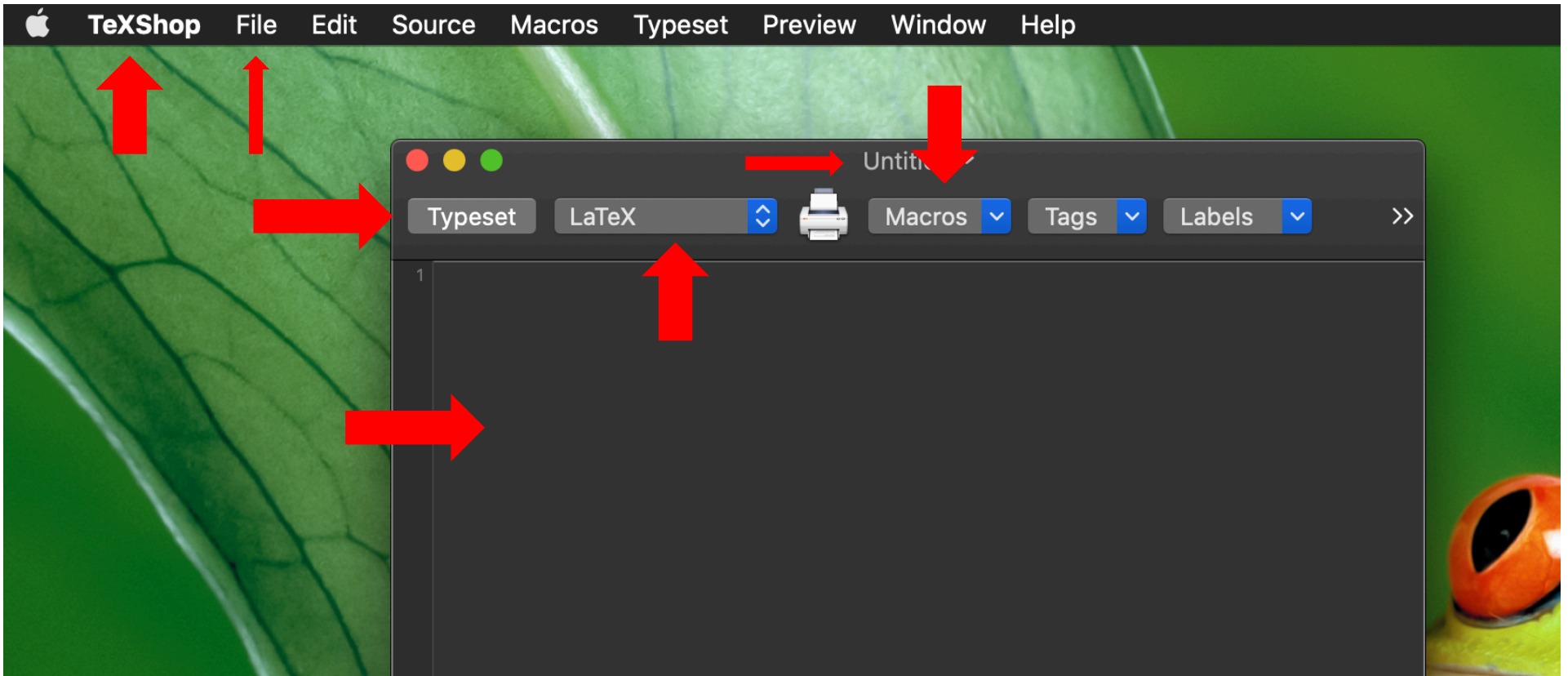
- Predefined professional layout -> authors can concentrate on the text.
- Maintains a logical structure in the document – Improves the reading experience.
- Highest typographical quality.
- Very suited to scientific writing.
- Very stable across machines and setups.
- You often only need a few command lines for high-quality results -> very little editing to do.
- Many add-on packages available (<https://ctan.org>) and possibility to create your own.



How does LaTeX works?



Overview



How is a LaTeX document organized?

- First part is called the preamble.
- The preamble defines the type of document, its layout and the packages necessary.
- The body is where the core of the text is.



Structure

The Preamble

```
\documentclass[optional argument]{compulsory argument}
```

```
\title{}
```

```
\author{}
```

```
\date{}
```

```
\usepackage{}
```

...

The Body

- Starts with `\begin{document}`
- Ends with `\end{document}`

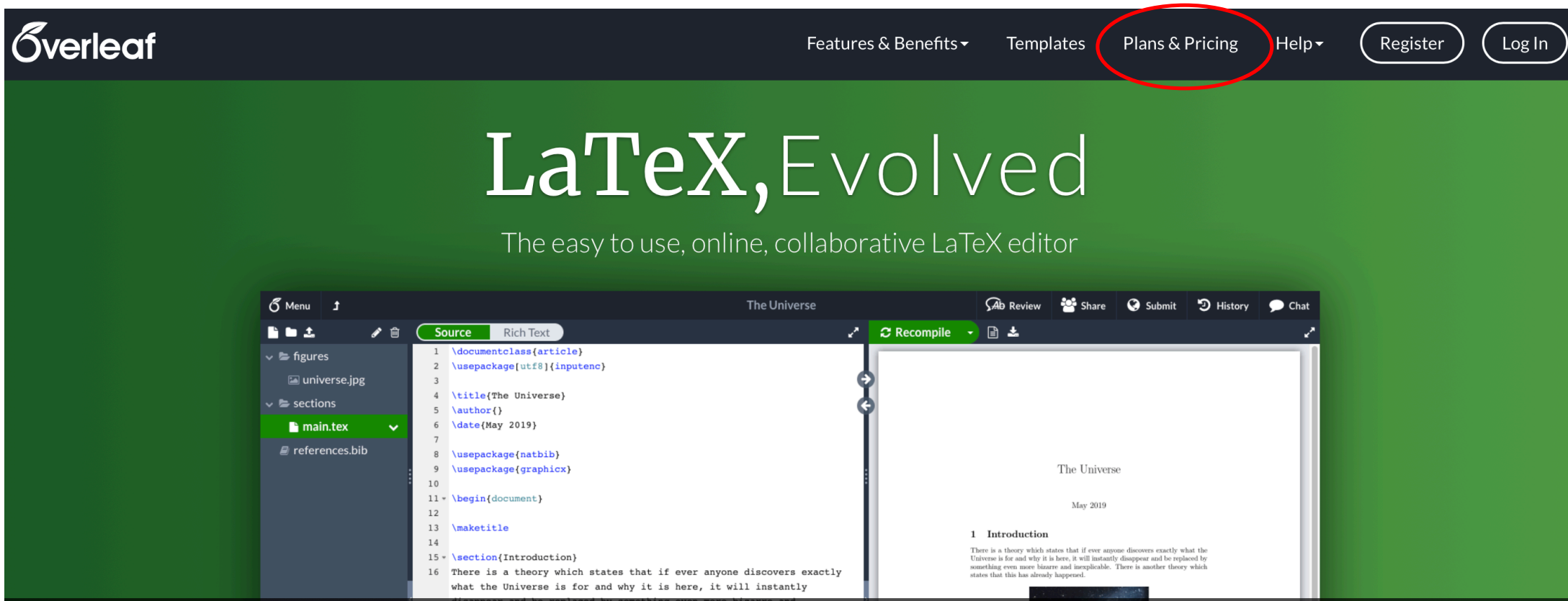


Common mistakes

- When a mistake is made it can usually be tracked in the log.
- Some classic mistakes:
 - Calling packages that you don't have.
 - Wrong typo in the command line.
 - Forgetting `end{}` and opening an environment (starting with `begin{}`).
 - Forgetting “`\`” before a command line.



Collaborative LaTeX work



The image shows the Overleaf website header and a preview of the LaTeX editor interface. The website header has a dark blue background with the Overleaf logo on the left. On the right, there are links for 'Features & Benefits', 'Templates', 'Plans & Pricing' (which is circled in red), and 'Help'. Below these are buttons for 'Register' and 'Log In'. The main content area of the website has a green background with the text 'LaTeX, Evolved' in large white font, followed by the tagline 'The easy to use, online, collaborative LaTeX editor' in a smaller white font.

The screenshot of the LaTeX editor interface shows a dark theme. On the left is a file explorer with folders 'figures' and 'sections', and files 'universe.jpg', 'main.tex' (selected), and 'references.bib'. The main editor area is split into two panes. The left pane shows the source code of 'main.tex' with line numbers 1 through 16. The code includes LaTeX commands for document class, packages, title, author, date, and sections. The right pane shows the compiled PDF output, which displays the title 'The Universe', the date 'May 2019', and the first section '1 Introduction' with a paragraph of text.



What to do now?

- Create a folder for the latex practical on your computer.
- Go on the GitHub and download the image folder as well as the 2 practical
- Create a new .tex document and explore the two TeX scripts. It is strongly encouraged to play around with the different tools to see what they do.
- Don't forget to use Google! LaTeX is a free software, if you have a problem, someone else had it before you.



Other resources

- Frank Mittelbach et al. 2004. The LaTeX Companion
- [https://www.overleaf.com/learn/latex/Learn LaTeX in 30 minutes](https://www.overleaf.com/learn/latex/Learn_LaTeX_in_30_minutes)
- <https://tobi.oetiker.ch/lshort/lshort.pdf>
- <http://en.wikibooks.org/wiki/LaTeX>
- <http://www.newthinktank.com/2019/01/latex-tutorial/>

