Editor Instructions

This document will help you get up and running with magazine creation. If you're thinking, "What is LaTeX?", I have a short intro section at the end of this document!

Overview

1. Write your article
2. Decide if your article needs any subsection headers to break up the text
3. Identify if your article has any of the following:
    - A disclaimer/preamble before the main content
    - Subsection headers
    - A Q&A
    - An author name
    - References
    - Any background images
    - Any special characters, superscripts, or subscripts
4. Read through the instructions below to identify the environment tags you'll need.
5. Add the tags to your document. For example, you may need to surround the author name with \begin{author-name} and \end{author-name}.
6. If using background images, create an 8.5" x 11" image (.PNG at at least 300 DPI or a .PDF)
7. Copy the Blank-article.Rmd, save it as an .Rmd file with a new title, and insert your content
8. Through RStudio, knit the article to a PDF and tweak the output until you're satisfied

Preamble

Some articles require some explanatory text or a disclaimer before the main content. Use the preamble environment for this.

```
\begin{preamble}

Insert disclaimer text here, an intro, etc...

\end{preamble}
```

Section headers

Use the \section{} argument for article titles

```
\section{Article title}
```

If you have a dark background image, you may want to change the text color. Use the following code for the title:

```
\section{\color{white} Alice in Wonderland}
```

For subsections, use \subsection{} (equivalent to Heading 2 in Word) and \subsubsection{} (i.e. Heading 3)

Heading 2

Heading 3

Q&A

Type \Q and then the question. Type \A before the answer. Questions and answers will then have specialized drop-caps to make them stand out nicely.

```
\Q What happened to Alice?
\A She saw a stressed rabbit.
```

Background images

This template uses full-bleed background images. They must be 8.5 in x 11 in, and they can be either .PDF or .PNG files (if .PNG, try to have at least 300 DPI).

I've created a new command called \InsertBackgroundPicture{}, which uses \AddToShipoutPictureBG* from the *eso-pic* package. This allows you to place a full-size background picture on a specific page. The command accepts one argument, which is the filepath for the image. I'm using two dots at the beginning of the name (../) to specify that LaTeX needs to move up one folder level (relative to this *.Rmd* file) and then into the *Images/* folder.

```
\InsertBackgroundPicture{../Images/Alice-article-background-A.png}
```

Superscripts/subscripts

Use the caret (^) symbol on both sides of the character that will become the superscript. Use the tilde (~) symbol on both sides of the character that will become the subscript.

```
H~2~O
```

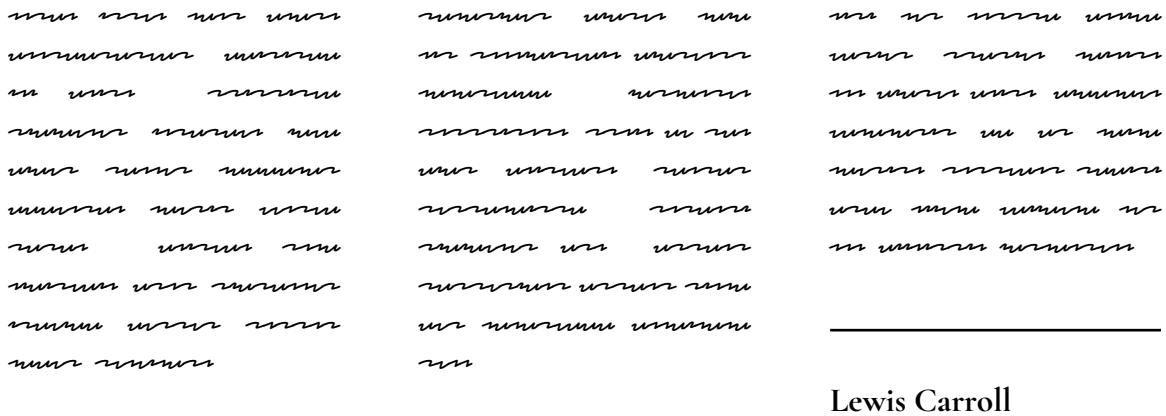
```
R^2^
```

Author names

To insert an author's name, type in the following code near the end of the article.

```
\begin{author-name}
Lewis Carroll
\end{author-name}
```

The line will automatically stretch to fill the current text container. In the following example, I placed the author environment before \end{multicols} to have it only take up one column.



Lewis Carroll

References

Use the references environment tag.

```
\begin{references}
Paste in references here...
\end{references}
```

What is LaTeX?

LaTeX (pronounced lay-tech) is a free program used to create beautifully typeset documents like books, theses, and newsletters. It is very different than Microsoft Word. Instead of selecting text and clicking on a button to make it bold or *italicized*, you write code like \textit{} for italics. It seems like more work than necessary, but there are several advantages of using LaTeX.

Beautiful typography

LaTeX automatically handles a lot of typesetting details including:

- Kerning - aesthetically pleasing spacing between letters based on their shapes
- Ligatures - new characters for letter combinations like fi and ff, which often crash into each other in Word documents (see Figure 1 for a comparison).
- Text justification without creating white rivers of blank spots
- Consistent styles for section headers, citations, figure captions and numbering, etc.
- and more!

Really, only typography nerds will notice or care about these details. But professional-quality typesetting does have an overall effect on the appearance of the document.

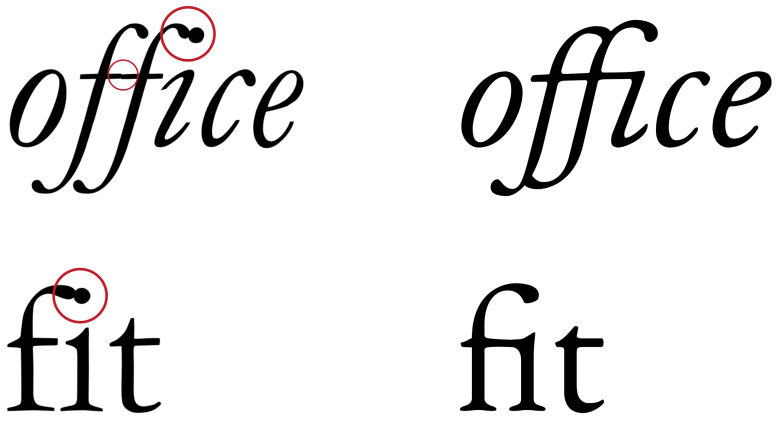


Figure 1: Ligatures are specialized characters that replace letter combinations like *fi*. Left: Word does not automatically include ligatures, so these letters clash. In this Word example, notice the collision between the curve of the *f* and the dot in *i*. The word *office* also has slightly misaligned *f*'s. Disclaimer: I used a Garamond typeface that doesn't have ligatures, which is why the letters look different than the ones on the right. Right: LaTeX has full support for ligatures. These words showcase the *ffi* and *fi* ligatures.

No manual formatting

You don't need to manually adjust the spacing, figure numbers, or page numbers. Details like this are all specified in the document preamble, and LaTeXwill handle the rest.

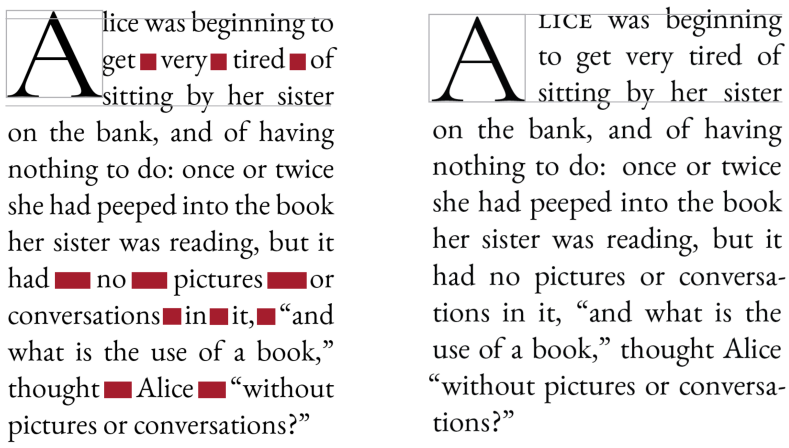


Figure 2: This figure highlights some key differences between typesetting in Word (left) and LaTeX (right). Notice how Word creates a misaligned drop-cap and awkward justification, with several gaps (highlighted in red). LaTeX produces neatly aligned text, and it even uses small caps to emphasize the first word.

Uses Plaintext

Word documents often crash when they get too large or have too many images. Since LaTeX uses plaintext files (.txt) and sources images externally, your document stays small and portable. Plaintext files can open on any operating system, and they aren't locked into a specific version or program. You can open decades-old .txt files and they still work. You can easily link your writing to version control software like Git.

Handles large, complex documents well

LaTeXmakes it easy for you to manage large documents like a thesis or book because it allows for easy cross-referencing of figures, footnotes, quotes, and citations. To add a list of figures, just type \listoffigures!

Inserting a new page or image into a lengthy document (typically a harrowing process in Word) is not difficult in LaTeX and you have a lot of control over the layout of your sections. It's easy to move things around, and LaTeX will automatically re-number all your figures and footnotes.

Mathematics

One of the best features of LaTeX is its mathematical typesetting. This includes auto-aligned equations and the ability to add specialized mathematical notation.

$$\int_a^b u\frac{d^2v}{dx^2}\,dx = u\frac{dv}{dx}\bigg|_a^b - \int_a^b \frac{du}{dx}\frac{dv}{dx}\,dx.$$