LaTeX Editors

In general, there are two ways to interact with LaTeX: online using an editor like Overleaf, or locally using an editor of your choice with a LaTeX building plugin.

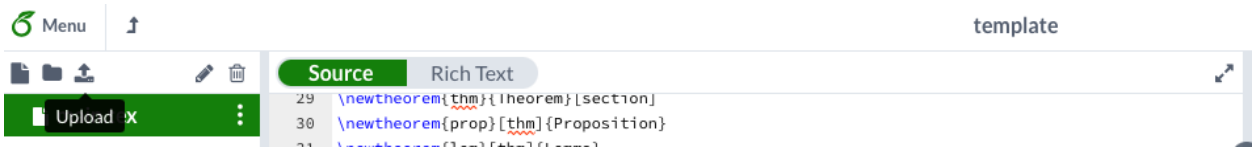
If you've never used LaTeX ever before, we recommend starting with Overleaf.

Overleaf

Overleaf is an online LaTeX editor that removes most of the complexity with file building. You can create an account using your Princeton email address and keep all of your assignment solutions there.

We provide a simple homework assignment template here. We recommend creating one project in Overleaf with this template, then just duplicating this project for each homework assignment rather than re-downloading the template each time.

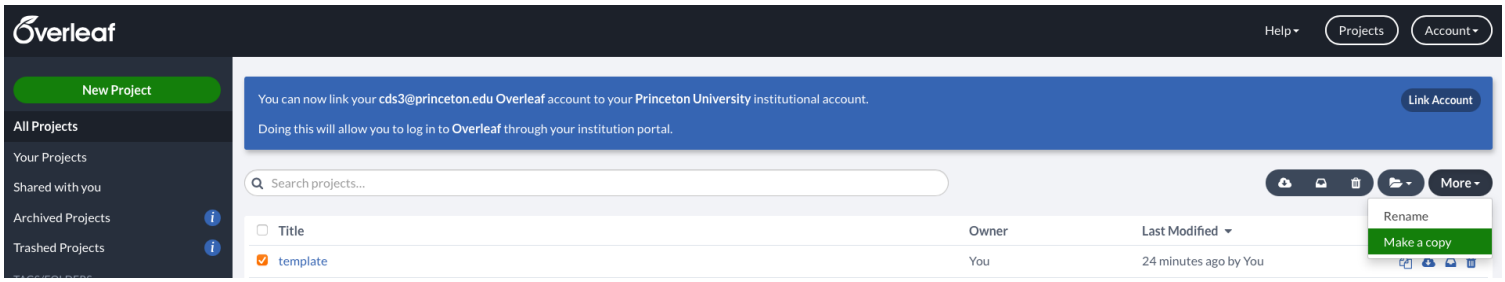
To create a template project, start by downloading the template file from Canvas or course Github page (template.tex). Next, go to Overleaf and create a new blank project. You can name it whatever you like, but something like "ece364-template" sounds reasonable. Next, in the top left corner of the window, click on the "Upload" button and upload the files within the template folder to Overleaf.



With all the files uploaded, click on the "Recompile" button at the top of the PDF viewer and make sure that it compiles.

When you finish your assignment, you can download the .pdf version of your solutions using the download button at the top of the PDF viewer:

To make a copy of this project for a future assignment, go to the Overleaf dashboard, select the small box to the left of the template project, click on the “More” button at the top right-hand side of the screen, and click on “Make a copy”.



Working with LaTeX locally

If you have some experience with LaTeX and prefer to work with it locally, you can check out the following solutions:

(1) Atom + latex - Installation Guide
(2) SublimeText + LaTeXTools - Installation Guide

In general, the above uses an editor and adds a package that handles compiling LaTeX locally on your computer. Some packages let you compile each time you save; however, most options are left up to you.

This option requires more maintenance than working with Overleaf, but allow you to work with LaTeX offline.

When working on the assignments, you can simply download the template .tex document and open it up in the editor you chose above.

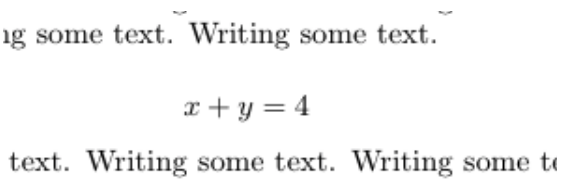
LaTeX Basics

Most of LaTeX is similar to simple Word. When you’re writing text or descriptions, you can simply type out the words unchanged*. **Where LaTeX becomes really useful is with mathematical equations**. **To start an expression, you wrap your text in `$` characters.** For example:

$x + y = 4$ → $x + y = 4$

Starting/ending with a single $ character will display the expression inline. If you want to start an equation that is centered and takes up an entire line, then you can start an equation with two `$$`.

$$
x + y = 4 →
$$



LaTeX also provides tons of special characters that are usually annoying to find and insert in other programs like Word or Google Docs. For example, if you want to type out a sum, you can use `\sum`. If you want to subscript, you can use the `_` character, followed by the character you'd like in the subscript. **If you want multiple characters subscripted, you can group them in a pair of curly braces**. For example, you can write the following:

$$
\sum_{x_i \in X} x_i →
$$

You can do the same thing with superscript using the `^` character instead of `_`.

Tutorials and Cheatsheets

This is a very brief introduction to LaTeX - In most cases, if you want to write something in LaTeX, you can simply Google "how to do {X} in latex" and the first few links should provide the syntax you're looking for.

You can take a look through the following tutorials and cheatsheet as well to learn more:

- Learn LaTeX in 30 minutes
- LaTeX Cheatsheet
- LaTeX Tutorial
- Getting Grips with LaTeX