Technical Document Template

Version 2.3.1

Overleaf
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Contents

List of Code Listings

1   Introduction

This document is an example of a software manual created using LaTeX and Overleaf. It provides a nice clean format for producing this type of technical document.

Simply start writing your document and use the Recompile button to view the updated PDF preview. Examples of commonly used commands and features can be found in the sections below, to help you get started.

To change the logo shown on the front page, simply upload your own logo image file (via the file-tree menu) to replace the default logo.pdf file.

Once you're familiar with the editor, you can find various project settings in the Overleaf menu, accessed via the button in the very top left of the editor. To view tutorials, user guides, and further documentation, please visit our help library[1]. If you haven't used LaTeX before, our Learn LaTeX in 30 minutes[2] tutorial is an excellent place to start.

For large documents, it can be useful to split the document into multiple source files. Double-clicking on text in Overleaf's PDF preview will take you directly to the corresponding code in the editor.

2   Including code samples

Code can be printed using the minted or listings packages, or several other tools. Listing 1 shows an example of typesetting code from an external file.

Alternatively, code can be written directly in your .tex files, as in Listing 2. It's also possible to typeset syntax-highlighted code inline with a number of code listing packages. Check the documentation for the package you're using for more details. For example, section 3.3 of the Minted package documentation[3] gives some examples and guidelines, as does our help article on code highlighting with minted[4]. Forums such as TeX StackExchange[5] and LaTeX Community[6] are also a great source of tips.

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[1] https://www.overleaf.com/learn
[2] https://www.overleaf.com/learn/latex/Learn_LaTeX_in_30_minutes
[3] http://texdoc.net/pkg/minted
[4] https://www.overleaf.com/learn/latex/Code_Highlighting_with_minted
[5] https://tex.stackexchange.com/
[6] https://latex.org/forum/

```matlab
function X = BitXorMatrix(A,B)
%function to compute the sum without charge of two vectors

        %convert elements into usigned integers
        A = uint8(A);
        B = uint8(B);

        m1 = length(A);
        m2 = length(B);
        X = uint8(zeros(m1, m2));
        for n1=1:m1
                for n2=1:m2
                        X(n1, n2) = bitxor(A(n1), B(n2));
                end
        end
```

Listing 1: Example from external file

```python
print("Hello World")
```

Listing 2: Example Python code

3 Some further examples to get started

3.1 How to create Sections and Subsections

Simply use the section and subsection commands, as in this example document. With Overleaf, all the formatting and numbering is handled automatically according to the template you've chosen. If you're using Rich Text mode, you can also create new section and subsections via the buttons in the editor toolbar.

3.2 How to include Figures

First you have to upload the image file from your computer using the upload link in the file-tree menu. Then use the includegraphics command to include it in your document. Use the figure environment and the caption command to add a number and a caption to your figure. See the code for Figure 1 in this section for an example.

Note that your figure will automatically be placed in the most appropriate place for it, given the surrounding text and taking into account other figures

3

Figure 1: This frog was uploaded via the file-tree menu.

Item	Quantity
Widgets	42
Gadgets	13

Table 1: An example table.

or tables that may be close by. You can find out more about adding images to your documents in this help article on including images on Overleaf.

3.3   How to add Tables

Use the table and tabular environments for basic tables — see Table 1, for example. For more information, please see this help article on tables.

3.4   How to add Comments and Track Changes

Comments can be added to your project by highlighting some text and clicking "Add comment" in the top right of the editor pane. To view existing comments, click on the Review menu in the toolbar above. To reply to a comment, click on the Reply button in the lower right corner of the comment. You can close the Review pane by clicking its name on the toolbar when you're done reviewing for the time being.

Track changes are available on all our premium plans[7], and can be toggled on or off using the option at the top of the Review pane. Track changes allow you to keep track of every change made to the document, along with the person making the change.

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[7]https://www.overleaf.com/user/subscription/plans

3.5 How to add Lists

You can make lists with automatic numbering ...

1. Like this,

2. and like this.

... or bullet points ...

- Like this,

- and like this.

3.6 How to write Mathematics

LaTeX is great at typesetting mathematics. Let $X_1, X_2, \ldots, X_n$ be a sequence of independent and identically distributed random variables with $E[X_i] = \mu$ and $Var[X_i] = \sigma^2 < \infty$, and let

$$S_n = \frac{X_1 + X_2 + \cdots + X_n}{n} = \frac{1}{n}\sum_{i}^{n} X_i$$

denote their mean. Then as n approaches infinity, the random variables $\sqrt{n}(S_n - \mu)$ converge in distribution to a normal $\mathcal{N}(0, \sigma^2)$.

3.7 How to customize the template

You may wish to customize the template for your own style, or to meet the specific needs of your documentation. If you're already familiar with LaTeX, you can go ahead and add the packages you're familiar with to the document preamble. If you run into any problems and can't find the answers in the package documentation or in the Overleaf help library[8], the forums such as TeX StackExchange[9] and LaTeX Community[10] are a great source of answers.

Some details on how to customize a .cls file (which sets the layout and overall format of the various elements of the template) can be found at Writing your own class[11], and LaTeX2e for class and package writers[12].

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[8] https://www.overleaf.com/learn
[9] https://tex.stackexchange.com/
[10] https://latex.org/forum/
[11] https://www.overleaf.com/learn/latex/Writing_your_own_class
[12] http://texdoc.net/pkg/clsguide