# Creating a document in Latex

Shaden Abdulwahab

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**Abstract**

This introductory tutorial does not assume any prior experience of LATEX but, hopefully, by the time you are finished, you will not only have written your first LATEX document but also acquired sufficient knowledge and confidence to take the next steps toward LATEX proficiency. Overleaf is a great on-line LaTeX editing tool that allows you to create LaTeX documents directly in your web browser. This article explains how to create a new project in Overleaf, either starting from scratch, uploading your own files or using one of the many templates available

# Chapter 1

# Introduction

LATEX is a tool for typesetting professional-looking documents. However, LaTeX's mode of operation is quite different to many other document-production applications you may have used, such as Microsoft Word or LibreOffice Writer: those "WYSIWYG" tools provide users with an interactive page into which they type and edit their text and apply various forms of styling.

LaTeX works very differently: instead, your document is a plain text file interspersed with LaTeX commands used to express the desired (typeset) results. To produce a visible, typeset document, your LaTeX file is processed by a piece of software called a TeX engine which uses the commands embedded in your text file to guide and control the typesetting process, converting the LaTeX commands and document text into a professionally typeset PDF file. This means you only need to focus on the content of your document and the computer, via LaTeX commands and the TeX engine, will take care of the visual appearance (formatting)

## 1.1 Why learn LATEX?

Arius arguments can be proposed for, or against, learning to use LATEX instead of other document-authoring applications; but, ultimately, it is a personal choice based on preferences, affinities, and documentation requirements.

Arguments in favour of LATEX include:

- support for typesetting extremely complex mathematics, tables and technical content for the physical sciences
- facilities for footnotes, cross-referencing and management of bibliographies
- ease of producing complicated, or tedious, document elements such as indexes, glossaries, table of contents, lists of figures.

- being highly customizable for bespoke document production due to its intrinsic programmability and extensibility through thousands of free addon packages.

## 1.2 What is a package in LaTeX and how to use it?

A package is a collection of predefined commands and settings that extend the functionality of the LaTeX document preparation system. Packages are designed to provide additional features, formatting options, and document customization capabilities beyond the basic LaTeX commands. They allow you to access various tools and resources for specialized tasks, such as adding graphics, formatting tables, creating bibliographies, and more.

## 1.3 Creating Tables in LATEX

The tabular environment is the default LATEX method to create tables. You must specify a parameter to this environment, in this case c c c which advises LATEX that there will be three columns and the text inside each one must be centred. You can also use r to right-align the text and l to left-align it. The alignment symbol & is used to demarcate individual table cells within a table row. To end a table row use the new line command . Our table is contained within a center environment to make it centred within the text width of the page. The tabular environment supports horizontal and vertical lines (rules) as part of the table:

1. to add horizontal rules, above and below rows, use the hline command.
2. to add vertical rules, between columns, use the vertical line parameter.

## 1.4 Conclusion

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