Chapter 2: Anatomy of a LaTeX document

A LaTeX document is a set of instructions divided into two major ordered parts:

- Preamble
- Main body

To distinguish between them, the Main body part starts with the instruction `\begin{document}` and finishes with instruction `\end{document}`.

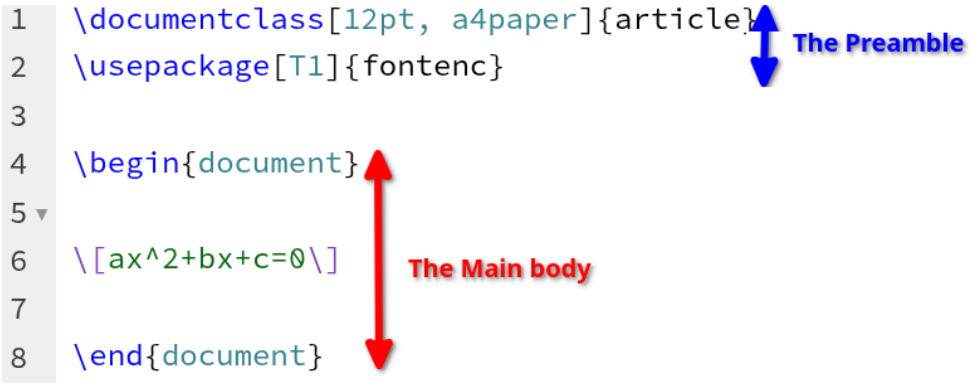

Figure 1: *Anatomy of a tex file: Preamble and Main body*

The instructions in a tex file start with a backslash `\`.

The preamble

- The first instruction in a tex file should be `\documentclass[]{}`. (line N°1 in Figure 1)
  - The instruction `\documentclass` defines the entire appearance of the document: a book is not like a report, which is not like a beamer presentation.
  - Between the two braces `{}` the argument: book, report, article, beamer,... called the class, is specified.
  - Within a class, options can be declared to adjust the appearance: 12pt text size, a4paper format,..., between the two square brackets `[]`, separated with commas.
- After the `\documentclass` instruction, can be added: optional packages via the instruction `\usepackage[]{}` (line N°2 in Figure 1), title of the document, author, date,...

A package is a collection of instructions that extend the capability of LaTeX to typeset the document. For example: fontenc, amsmath, amssymb, graphicx, tikz,...

The main body

The content of the document is written and typeset here, with instructions. The instructions (or commands) have the general form: `\command[]{}`. The mandatory argument is set between `{}` and the optional arguments are set between `[]`, like the `\usepackage` command.

At this point, the output is not yet visible, the document should be saved with the extension `.tex` to preserve the source code, then the source code has to be compiled

to obtain the desired output i.e. the document typeset as wanted. There are different compilers to do this job, actually the most used is pdfLaTeX, and most probably the future most used will be LuaLaTeX.