Writing in LaTeX by examples

Why?

- Free document preparation system

- Used starting from '80s
    - publication of scientific documents in many fields, including mathematics, statistics, computer science, engineering, chemistry, physics, economics, linguistics, quantitative psychology, philosophy, and political science
    - www.latex-project.org/

- Command-like usage, control the appearance
    - "Lamport TeX"comprises a collection of TeX macros and a program to process LaTeX documents
    - LaTeX provide a high-level language for document writers
    - The writer uses markup tagging conventions
    - Follows the design philosophy of separating presentation from content

```latex
\documentclass{article}
\usepackage{amsmath}
\title{\LaTeX}

\begin{document}
  \maketitle
  \LaTeX{} is a document preparation system for
  the \TeX{} typesetting program. It offers
  programmable desktop publishing features and
  extensive facilities for automating most
  aspects of typesetting and desktop publishing,
  including numbering and  cross-referencing,
  tables and figures, page layout,
  bibliographies, and much more. \LaTeX{} was
  originally written in 1984 by Leslie Lamport
  and has become the  dominant method for using
  \TeX; few people write in plain \TeX{} anymore.
  The current version is \LaTeXe.

  % This is a comment, not shown in final output.
  % The following shows typesetting  power of LaTeX:
  \begin{align}
    E_0 &= mc^2 \\
    E &= \frac{mc^2}{\sqrt{1-\frac{v^2}{c^2}}}
  \end{align}
\end{document}
```

LATEX

$\LaTeX$ is a document preparation system for the $\TeX$ typesetting program. It offers programmable desktop publishing features and extensive facilities for automating most aspects of typesetting and desktop publishing, including numbering and cross-referencing, tables and figures, page layout, bibliographies, and much more. $\LaTeX$ was originally written in 1984 by Leslie Lamport and has become the dominant method for using $\TeX$; few people write in plain $\TeX$ anymore. The current version is $\LaTeX 2_\varepsilon$.

$$E_0 = mc^2 \tag{1}$$

$$E = \frac{mc^2}{\sqrt{1-\frac{v^2}{c^2}}} \tag{2}$$

Most known tools

- **Free tools:**
  - Distributions: TeXLive, MiKTex, MacTeX, gwTeX, proTeXt
  - WYSIWYM visual document processors using LaTeX: LyX, TeXmacs, TexitEasy
  - Most used editor: TeXworks
- **On-line collaborative tools:**
  - ShareLaTeX
  - Overleaf

The most simple example

\documentclass{article}

\begin{document}

Hello world!

\end{document}

Let's test it…