A tiny example of \LaTeX (and \TeX)

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1 Introduction

This is a small document that demonstrates a few features of \LaTeX. You can build it by typing the command `pdflatex example.tex`.

\LaTeX was developed by Leslie Lamport but is actually a program written on top of the \TeX system created by Donald Knuth. \TeX is very powerful and \LaTeX inherits its power.

\LaTeX has many useful built-in \textit{macros}. For example, we can make words \textbf{bold} or \texttt{large} using the `\textbf{}` and `\LARGE` macros. We can even create \texttt{colored} text with the help of the \texttt{xcolor} package. We can also include figures using the \texttt{graphicx} package, or draw them directly using \texttt{Tikz}. (Notice that the \texttt{hyperref} package lets us create hyperlinks.)

2 Macros

\TeX is a programming language! So we can define our own macros. For example, we can define a macro that puts its argument in double quotation marks:

\begin{verbatim}
\newcommand\quoteit[1]{{"#1"}}
This is \quoteit{a win}.
\end{verbatim}

This is “a win”.

We can even define recursive functions and use them to do computation (see \texttt{example.tex}): Why type when you can program instead? (1) Why type when you can program instead? (2) Why type when you can program instead? (3) Why type when you can program instead? (4) Why type when you can program instead? (5) Why type when you can program instead? (6) Why type when you can program instead? (7) Why type when you can program instead? (8) Why type when you can program instead? (9) Why type when you can program instead? (10) Why type when you can program instead?

![Figure 1: Deleting a leaf node](image)

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