LaTeX

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What is (La)TeX?

- TeX is a typesetting system
  (and since 1982 a Turing-complete programming language)
  developed by Donald Knuth in 1978.

- LaTeX is a document preparation system written by Leslie Lamport in 1984.

- LaTeX uses TeX to typeset a document and is itself written in TeX's macro language.

Why LaTeX?

- It's free.

- Plain text format:
  - platform independence
  - easy git, svn, … version control

- Typographical quality (see next slides)

- Separation of content and presentation

- Mathematical formulas are first class citizens

$$\sqrt{2} = 1 + \cfrac{1}{2 + \cfrac{1}{2 + \cfrac{1}{2 + \cfrac{1}{2 + \ddots}}}}$$

$$\pi = \lim_{k \to \infty} 2^k \underbrace{\sqrt{2 - \sqrt{2 + \sqrt{2 + \sqrt{2 + \sqrt{2 + \cdots + \sqrt{2}}}}}}}_{k \text{ square roots}}$$

Ligatures

final
final

grafiet efficiënt fles souffleur fjord

grafiet efficiënt fles souffleur fjord

Source: http://www.zinktypografie.nl/latex.php?lang=en

top: MS Word
bottom: LaTeX

Kerning

Table Temperature

Table Temperature

Avenue AVALON

Avenue AVALON

top: MS Word
bottom: LaTeX

The first paragraph of Herman Melville's *Moby Dick* typeset using three different programs.
The text is set using Garamond Premier Pro 12/14 in a 5 cm wide column, fully justified.
Created by Roel Zinkstok of Zink Typography (www.zinktypografie.nl), January 2010

Spacing and Hyphenation

Microsoft Word 2008

Call me Ishmael. Some years ago – never mind how long precisely – having little or no money in my purse, and nothing particular to interest me on shore, I thought I would sail about a little and see the watery part of the world. It is a way I have of driving off the spleen, and regulating the circulation. Whenever I find myself growing grim about the

- methodically knocking people's hats off – then, I account it high time to get to sea as soon as I can. This is my substitute for pistol and ball. With a
- philosophical flourish Cato
- throws himself upon his

Adobe InDesign CS4

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- ing grim about the mouth;

people's hats off – then, I account it high time to get to sea as soon as I can. This is my substitute for pistol and ball. With a philosophical flourish Cato throws himself upon his sword; I quietly take to the ship. There
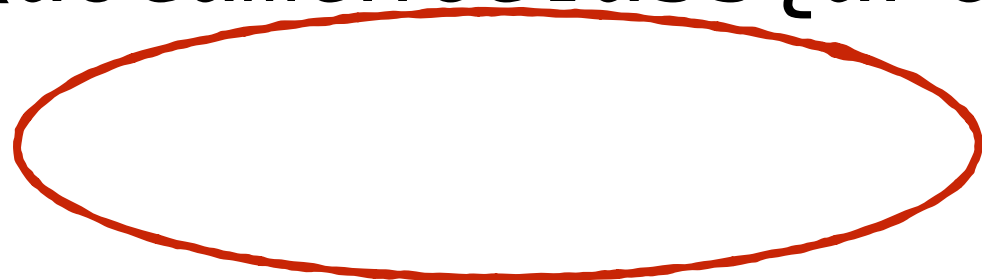
pdf-LaTeX 3.1415926

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First Steps

```
\documentclass{article}



\begin{document}

Hello World
\end{document}
```

Preamble: for optional packages, macro definitions

Body: main content

Converting a .tex document into a PDF

1. `pdflatex paper.tex`   Convert document to pdf, generate .aux and .log files.

paper.aux: Auxiliary file, stores information about section titles, cross-references. It is read at the beginning of the latex process, if it exists, and written to during the process.

paper.log: Log file, contains information about the process, errors, warnings, citations, references, … It is written to during the latex process.

Converting a .tex document into a PDF

1. `pdflatex paper.tex`   Convert document to pdf generate .aux and .log files.

2. `bibtex paper.aux`   Process bibliography.

3. `pdflatex paper.tex`   Include bibliography.

4. `pdflatex paper.tex`   Include cross-references.

Questions?