

Introductie L^AT_EX

Essential to the spirit of T_EX is that *it formats the document whilst you just take care of the content*, making for increased productivity. The cross-referencing just mentioned is just part of this. Many more labour-saving mechanisms are provided for through *style files*. These are generic descriptions of classes of documents, teaching T_EX just how each class likes to be formatted. This is taught in terms of font preferences, default page sizes, placement of title, author, date, etc. For instance, a paper style file could teach T_EX that when typesetting a theorem it should embolden the part that states the theorem. For instance, a theorem should embolden the part that states the theorem in slanted Roman typeface (as in many journals). The typist simply provides an indication that a theorem is being stated, and then types the text of the theorem *without* bothering to choose any fonts or do any formatting—all that is done by the style file. Style files exist for all manner of document—letters, articles, papers, books, proceedings, review articles, and so on.

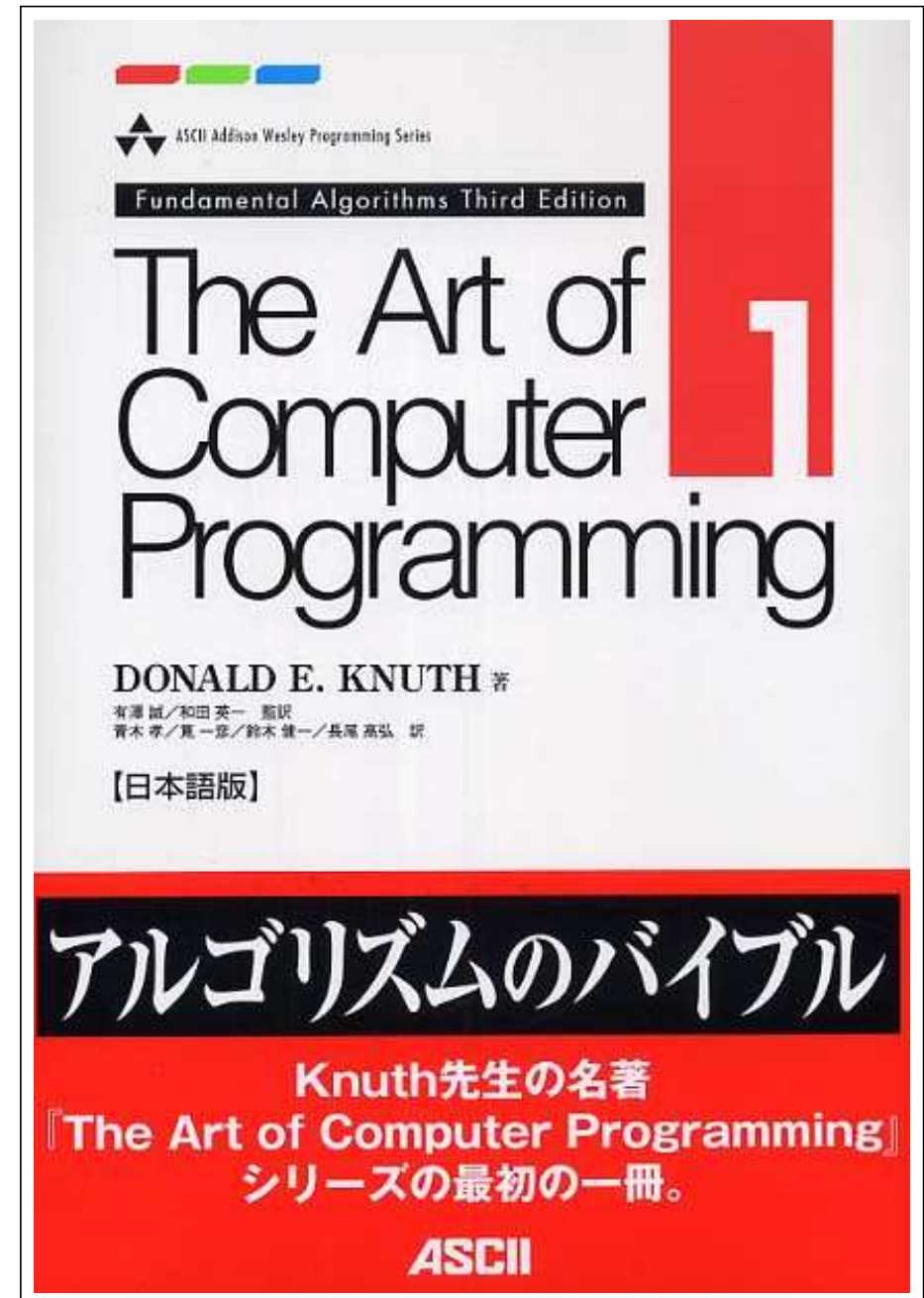
H.J. Hoogeboom, 15.9'10

T_EX door **Donald Knuth**, 1977.

“ T_EX [is] a new typesetting system intended for the creation of beautiful books—and especially for books that contain a lot of mathematics. ”

L_AT_EX door **Leslie Lamport**, 1980.

“ L_AT_EX is a high-quality typesetting system, with features designed for the production of technical and scientific documentation. L_AT_EX is the de facto standard for the communication and publication of scientific documents. ”



CHAPTER 1

Getting Acquainted

Wat is L^AT_EX?

- generic markup zoals HTML
- structuur!
- niet de vorm (*style-file class*)

Waarom L^AT_EX?

- *formules*
- diverse platforms, ascii invoer
- gratis software
- *standaard!*
- verwijzingen
- programmeerbaar

Waarom niet?

- WYSIWYG : slides (☺)
- unicode



markup

```
<HTML>
<HEAD><style type="text/css">
  H1 { color: #0000ff; }
  </style>
</HEAD>

<BODY>
<H1>Kennismaking</H1>
<UL>
<LI> generic markup zoals HTML
<LI> niet de vorm (style-file <EM>class</EM>)
</UL>

<H2>waarom</H2>

Da&szlig; Haus.

<H1>Nog meer LaTeX</H1>
In Hoofdstuk&nbsp;1 hebben we
geleerd hoe we een LaTeX-document
naar de printer kunnen sturen.

</BODY>
</HTML>
```



Hello World

```
/usr/share/texmf/tex/  
    latex/base/sample2e.tex  
latex sample2e  
xdvi sample2e &  
  
'compileren'
```

Xdvi: sample2e (3 pages)

Quit
Open
Reread
Help
Full size
25%
17%
13%
First
Page-10
Page-5
Prev
Next
Page+5
Page+10
Last
View PS
Back

An Example Document

Leslie Lamport
January 21, 1994

This is an example input file. Comparing it with the output it generates can show you how to produce a simple document of your own.

1 Ordinary Text

The ends of words and sentences are marked by spaces. It doesn't matter how many spaces you type; one is as good as 100. The end of a line counts as a space.

One or more blank lines denote the end of a paragraph.

Since any number of consecutive spaces are treated like a single one, the formatting of the input file makes no difference to L^AT_EX, but it makes a difference to you. When you use L^AT_EX, making your input file as easy to read as possible will be a great help as you write your document and when you change it. This sample file shows how you can add comments to your own input file.

Because printing is different from typewriting, there are a number of things that you have to do differently when preparing an input file than if you were just typing the document directly. Quotation marks like "this" have to be handled specially, as do quotes within quotes: " 'this' is what I just wrote, not 'that' ".

Dashes come in three sizes: an intra-word dash, a medium dash for number ranges like 1-2, and a punctuation dash—like this.

A sentence-ending space should be larger than the space between words within a sentence. You sometimes have to type special commands in conjunction with punctuation characters to get this right, as in the following sentence. Gnats, gnus, etc. all begin with G. You should check the spaces after periods when reading your output to make sure you haven't forgotten any special cases. Generating an ellipsis ... with the right spacing around the periods requires a special command.

L^AT_EX interprets some common characters as commands, so you must type special commands to generate them. These characters include the following: \$ & % # { and }.

In printing, text is usually emphasized with an *italic* type style.

A long segment of text can also be emphasized in this way. Text within such a segment can be given additional emphasis.

1

First page of dvi file

```
% MINI.TEX -- november 1998
% Voorbeeld LaTeX invoer file.
\documentclass[12pt]{article}
\begin{document}    % zie \end{...}
```

Een of meer spaties.
Lege regels tussen paragrafen.

Aanhalingstekens: ‘‘quoted text’’.
Enkel: ‘single-quoted text’.
%

Streepjes: verbindin-den,
opsommen (1--3) en --- gedachten.

Benadrukken: dit is \emph{cursief},
dit is \textbf{vette tekst}.
Extra wit na punt. Bij
b.v. \ Afkortingen niet.

Tien gereserveerde symbolen (dollar,
accolades \dots). Zeven zijn te
schrijven met een backslash:
\\$ \& \# \% _ \{ en \}.

```
\end{document}    % einde
```

```
% MINI.TEX -- november 1998
% Voorbeeld LaTeX invoer file.
\documentclass[12pt]{article}
\begin{document} % zie \end{...}
```

Een of meer spaties.
 Lege regels tussen paragrafen.

Aanhalingstekens: ‘‘quoted text’’.
 Enkel: ‘single-quoted text’.

%
 Streepjes: verbindin-den,
 opsommen (1--3) en --- gedachten.

Benadrukken: dit is `\emph{cursief}`,
 dit is `\textbf{vette tekst}`.
 Extra wit na punt. Bij
 b.v. \ Afkortingen niet.

Tien gereserveerde symbolen (dollar,
 accolades `\dots`). Zeven zijn te
 schrijven met een backslash:
`\$ \& \# \% _ \{ en \}`.

```
\end{document} % einde
```

‘article’

Een of meer spaties. Lege regels
 tussen paragrafen.

Aanhalingstekens: “quoted text”.
 Enkel: ‘single-quoted text’. Streepjes:
 verbindin-den, opsommen (1–3) en —
 gedachten.

Benadrukken: dit is *cursief*, dit is
vette tekst. Extra wit na punt. Bij
 b.v. Afkortingen niet.

Tien gereserveerde symbolen (dollar,
 accolades, ...). Zeven zijn te schrijven
 met een backslash: \$ & # % _ { en }.

'slides'

```
% MINI.TEX -- november 1998
% Voorbeeld LaTeX invoer file.
\documentclass[12pt]{slides}
\begin{document} % zie \end{...}
```

```
\begin{slide}
```

Een of meer spaties.
Lege regels tussen paragrafen.

Aanhalingstekens: ‘‘quoted text’’.
Enkel: ‘single-quoted text’.

%
Streepjes: verbindin-den,
opsommen (1--3) en --- gedachten.

Benadrukken: dit is `\emph{cursief}`,
dit is `\textbf{vette tekst}`.
Extra wit na punt. Bij
b.v. \ Afkortingen niet.

Tien gereserveerde symbolen (dollar,
accolades `\dots`). Zeven zijn te
schrijven met een backslash:

```
\$ \& \# \% \_ \{ en \}.
```

```
\end{slide}
```

```
\end{document} % einde
```

Een of meer spaties. Lege regels
tussen paragrafen.

Aanhalingstekens: “quoted text”.
Enkel: ‘single-quoted text’. Streepjes:
verbindin-den, opsommen (1–3) en —
gedachten.

Benadrukken: dit is *cursief*, dit is
vette tekst. Extra wit na punt. Bij
b.v. Afkortingen niet.

Tien gereserveerde symbolen (dollar,
accolades, ...). Zeven zijn te schri-
jven met een backslash: \$ & # % _ {
en }.

'slides'

```
% MINI.TEX -- november 1998
% Voorbeeld LaTeX invoer file.
\documentclass[12pt]{slides}
\begin{document} % zie \end{...}
```

```
\begin{slide}
```

Een of meer spaties.
Lege regels tussen paragrafen.

Aanhalingstekens: ‘‘quoted text’’.
Enkel: ‘single-quoted text’.

%
Streepjes: verbindin-den,
opsommen (1--3) en --- gedachten.

Benadrukken: dit is `\emph{cursief}`,
dit is `\textbf{vette tekst}`.
Extra wit na punt. Bij
b.v. \ Afkortingen niet.

Tien gereserveerde symbolen (dollar,
accolades `\dots`). Zeven zijn te
schrij\ven met een backslash:

```
\$ \& \# \% \_ \{ en \}.
```

```
\end{slide}
```

```
\end{document} % einde
```

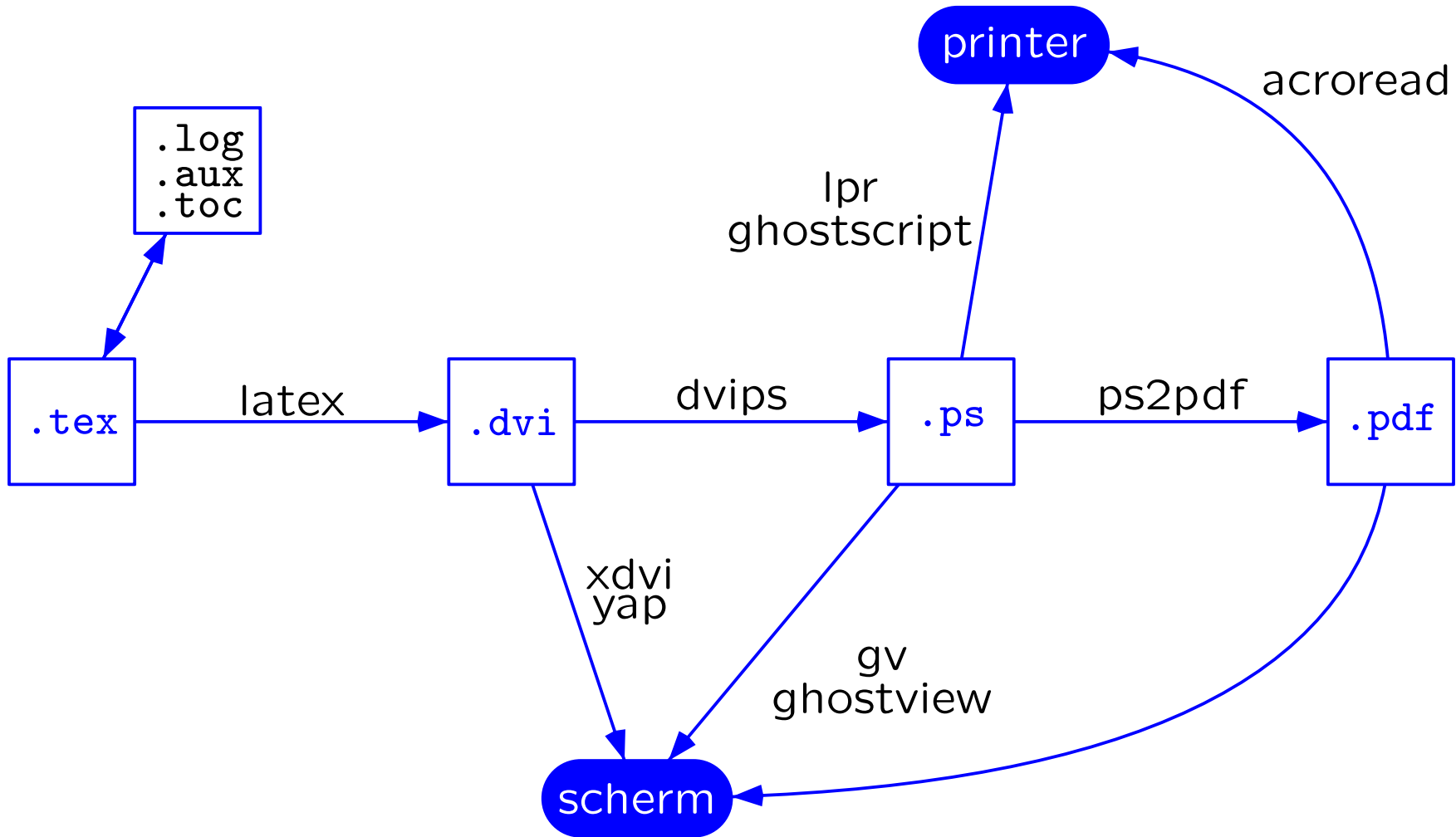
Een of meer spaties. Lege regels
tussen paragrafen.

Aanhalingstekens: “quoted text”.
Enkel: ‘single-quoted text’. Streepjes:
verbindin-den, opsommen (1–3) en —
gedachten.

Benadrukken: dit is *cursief*, dit is
vette tekst. Extra wit na punt. Bij
b.v. Afkortingen niet.

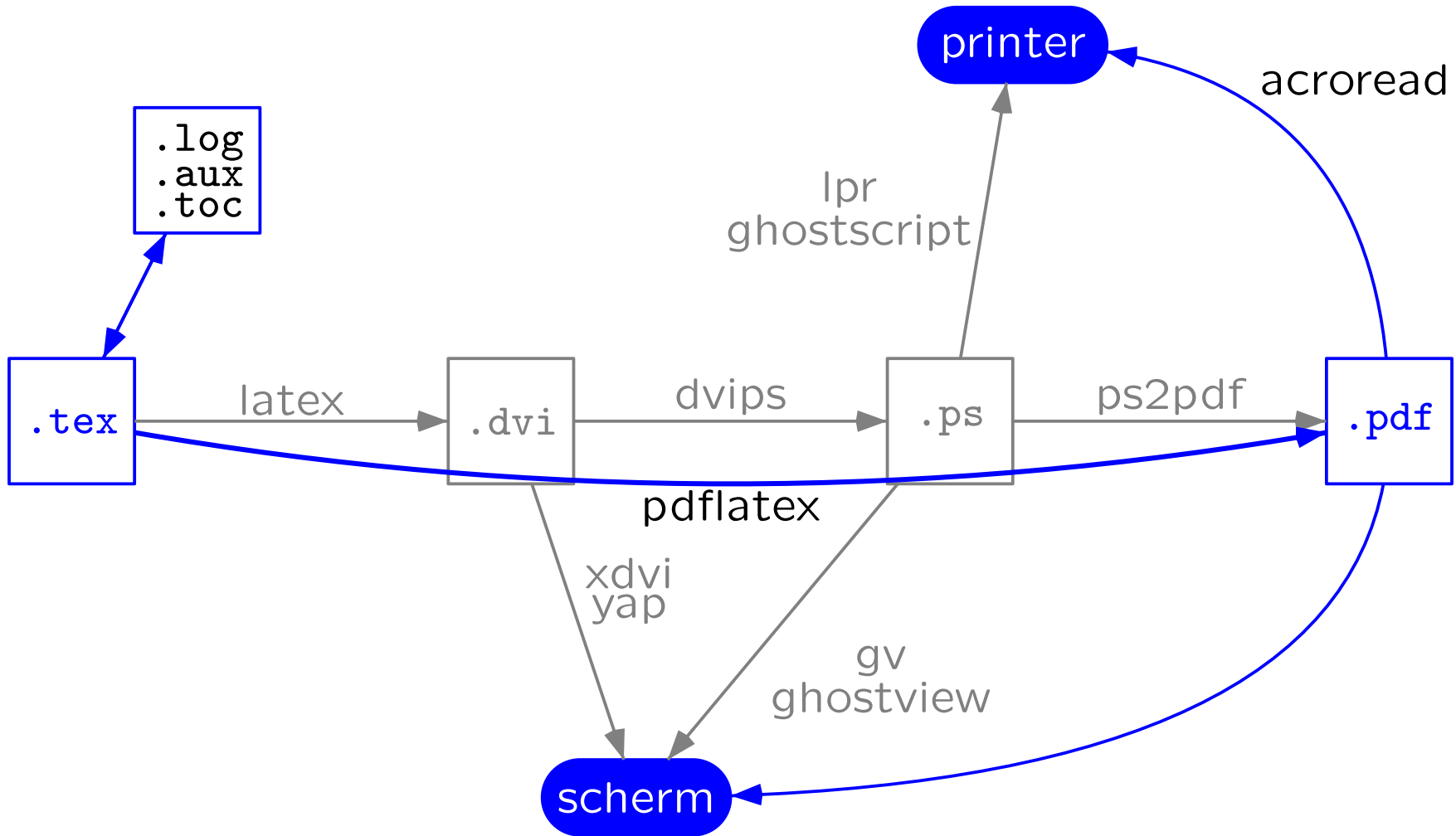
Tien gereserveerde symbolen (dollar,
accolades, ...). Zeven zijn te schrij-
ven met een backslash: \$ & # % _ {
en }.

van L^AT_EX naar beeld



- `.tex` ascii tekst
- `.dvi` 'device independent'
- `.aux` tex administratie
- `.log` verwerkingsverslag
- `.ps` postscript

van L^AT_EX naar beeld



- `.tex` ascii tekst
- `.dvi` 'device independent'
- `.aux` tex administratie
- `.log` verwerkingsverslag
- `.ps` postscript

structuur

```
\documentclass[12pt,a4paper]{article}
\usepackage{lakitu}

\begin{document}

\section{Kennismaking} \label{kennis}

\subsection{waarom}

\subsection{hoe}

\section{Nog meer \LaTeX}
In Hoofdstuk~\ref{kennis} hebben we
geleerd hoe we een \LaTeX-document
naar de printer kunnen sturen.

\end{document}
```

1 Kennismaking

1.1 waarom

1.2 hoe

2 Nog meer L^AT_EX

In Hoofdstuk 1 hebben we geleerd hoe we een L^AT_EX-document naar de printer kunnen sturen.

gereserveerde symbolen

%	commentaar tm. einde regel
\	commando 'macro' naam
{ }	groeperen
~	'tie' onbreekbare spatie
\$	wiskundige formules
_	wiskunde: subscript
^	wiskunde: superscript
&	tabellen: kolomscheiding
#	macro-definitie: argumenten

lettertypen

Indien `\textit{gewenst}` `{\huge k}`an uw `\textbf{te\texttiny kst}`
een `\textsc{Gevarieerd}` `\texttt{aanzien}` krijgen.

Indien *gewenst* kan uw **tekst** een **GEVARIEERD aanzien** krijgen.

shape	<i>italic</i>	<code>\textit{ ... }</code>
	<i>slanted</i>	<code>\textsl{ ... }</code>
	SMALL CAPS	<code>\textsc{ ... }</code>
series	bold face	<code>\textbf{ ... }</code>
family	roman	<code>\textrm{ ... }</code>
	sans serif	<code>\textsf{ ... }</code>
	typewriter	<code>\texttt{ ... }</code>
size	tekst	<code>{\texttiny ... }</code>
	tekst	<code>{\textsmall ... }</code>
	tekst	<code>{\textnormalsize ... }</code>
	tekst	<code>{\textlarge ... }</code>
	tekst	<code>{\textLarge ... }</code>
	tekst	<code>{\texthuge ... }</code>

accenten

ò	\'{o}	ó	\'{o}	ô	^{o}
ö	\"{o}	õ	~{o}	ō	={o}
ô	\.{o}	ō	\u{o}	ö	\v{o}
õ	\H{o}	ôo	\t{oo}	ø	\c{o}
ø	\d{o}	o	\b{o}		

symbolen

œ	\oe	ã	\aa	†	\l
Œ	\OE	Å	\AA	‡	\L
æ	\ae	ø	\o	ß	\ss
Æ	\AE	Ø	\O		
†	\dag	§	\S	©	\copyright
‡	\ddag	¶	\P		\euro
ı	\i	Ј	\j	£	\pounds

Strä\ss e --- Strä{\ss}e --- da\ss Haus -- da\ss\ Haus

spaties: Straße — Straße — daßHaus – daß Haus

zijn uw variabelen geïnitieerd

lijstjes

```
\begin{itemize}
\item Opsommingen zijn mogelijk
\item Beschikbaar in meerdere soorten:
  \begin{enumerate}
\item met stippen
\item genummerd
  \begin{enumerate}
\item eerst met cijfers,
\item dan met letters
  \end{enumerate}
  \end{enumerate}
\end{itemize}
\item Ze kunnen genest worden
\end{itemize}
```

- Opsommingen zijn mogelijk
- Beschikbaar in meerdere soorten:
 1. met stippen
 2. genummerd
 - (a) eerst met cijfers,
 - (b) dan met letters
- Ze kunnen genest worden

tabellen: tabular

```
\begin{tabular}{rll}  
\textbf{datum} & \textbf{spreker} & \textbf{onderwerp} \\30 oktober & Hendrik Jan & intro \LaTeX \\20 november & Martine & Media & technology  
\end{tabular}
```

datum	spreker	onderwerp
30 oktober	Hendrik Jan	intro \LaTeX
20 november	Martine	Media & technology

```
\begin{tabular}{||r||ll||}  
\hline\hline  
\multicolumn{3}{|c|}{\textbf{studievaardigheden~1}} \\ \hline  
\textit{datum} & \textit{spreker} & \textit{onderwerp} \\ \hline  
30 oktober & Hendrik Jan & intro \LaTeX \\20 november & Martine & Media & technology  
\hline\hline  
\end{tabular}
```

studievaardigheden 1		
<i>datum</i>	<i>spreker</i>	<i>onderwerp</i>
30 oktober	Hendrik Jan	intro \LaTeX
20 november	Martine	Media & technology

macro's

```
\newcommand{\mijzelf}{H.J. Hoogeboom}
```

Deze transparanten werden ingetikt door `\mijzelf`.

Deze transparanten werden ingetikt door `H.J. Hoogeboom`.

```
\newcommand{\stitle}[1]
{\begin{center}%
  \fbox{\hspace*{1cm}\textbf{\large #1}\hspace*{1cm}}%
  \end{center}}
```

```
\stitle{macro's}
```

environment

`\begin{environment} ... \end{environment}`

- document
- itemize
- enumerate
- tabular
- array
- verbatim
- center
- small

literatuurlijst

De ontwerper van `\LaTeX` schreef `\cite{lamport}`. Een aangename bundel van `\LaTeX`-macro pakketten is `\cite{companion}`. Dun, maar bruikbaar als introductie is `\cite{learning}`.

```
\begin{thebibliography}{99}
```

```
\bibitem{lamport}
```

Leslie Lamport:

```
\emph{\LaTeX: A document preparation system.  
User's guide and reference manual},  
2nd edition, Addison-Wesley, 1994.
```

```
\end{thebibliography}
```

De ontwerper van `\LaTeX` schreef [4]. Een aangename bundel van `\LaTeX`-macro pakketten is [2]. Dun, maar bruikbaar als introductie is [1].

Bibliography

- [1] David F. Griffiths, Desmond J. Higham: *learning \LaTeX*, SIAM, Philadelphia, 1997
- [2] Michel Goossens, Frank Mittelbach, Alexander Samarin *The \LaTeX Companion*, Addison-Wesley, 1994.
- [3] Donald E. Knuth: *The T_EXbook*, Addison-Wesley, 1986
- [4] ← Leslie Lamport: *\LaTeX: A document preparation system. User's guide and reference manual*, 2nd edition, Addison-Wesley, 1994.

BibTeX

```
@article{small,  
author = {Freely, I.P.},  
title = {A small paper},  
journal = {The journal of small papers},  
year = 1997,  
volume = {-1},  
note = {to appear},  
}
```

```
@article{big,  
author = {Jass, Hugh},  
title = {A big paper},  
journal = {The journal of big papers},  
year = 7991,  
volume = {MCMXCVII},  
}
```

referentie database & database format

latex → bibtex → latex → latex

kennismaking wiskunde

\$. . . \$

sub- en superscripten $x^2 y_1 A_{m,n}^2 2^{n_1}$

griekse symbolen $\alpha\beta \dots \omega \Gamma \dots \Omega$

sierletters $A B \dots Z$

verzamelingen $\emptyset \cup \cap \in \subseteq \mathbb{N}$

logica $\neg \wedge \vee \forall \exists \Rightarrow \Leftrightarrow$

enzovoorts $\times \sqcup \oplus \equiv \parallel \clubsuit \infty \bowtie$

wiskunde: griekse symbolen

α	<code>\alpha</code>	β	<code>\beta</code>	γ	<code>\gamma</code>		
δ	<code>\delta</code>	ϵ	<code>\epsilon</code>	ζ	<code>\zeta</code>	ε	<code>\varepsilon</code>
η	<code>\eta</code>	θ	<code>\theta</code>	ι	<code>\iota</code>	ϑ	<code>\vartheta</code>
κ	<code>\kappa</code>	λ	<code>\lambda</code>	μ	<code>\mu</code>	ϖ	<code>\varpi</code>
ν	<code>\nu</code>	ξ	<code>\xi</code>	π	<code>\pi</code>	ϱ	<code>\varrho</code>
ρ	<code>\rho</code>	σ	<code>\sigma</code>	τ	<code>\tau</code>	ς	<code>\varsigma</code>
σ	<code>\sigma</code>	υ	<code>\upsilon</code>	ϕ	<code>\phi</code>	φ	<code>\varphi</code>
χ	<code>\chi</code>	ψ	<code>\psi</code>	ω	<code>\omega</code>		
Γ	<code>\Gamma</code>	Δ	<code>\Delta</code>	Θ	<code>\Theta</code>	Λ	<code>\Lambda</code>
Ξ	<code>\Xi</code>	Π	<code>\Pi</code>	Σ	<code>\Sigma</code>	Υ	<code>\Upsilon</code>
Φ	<code>\Phi</code>	Ψ	<code>\Psi</code>	Ω	<code>\Omega</code>		

wiskunde: voorbeelden

$$\text{\$}a_1\text{\$ } \text{\$}b_{\gamma^{13}}\text{\$ } \text{\$}A_{\{n_i\}}\text{\$} \quad a_1 \quad b_{\gamma^{13}} \quad A_{n_i}$$

$$\text{\$\frac{1+n^2}{1-n^2}\text{\$}} \quad \frac{1+n^2}{1-n^2}$$

$$\text{\$\sqrt[4]{\alpha^2+1}\text{\$}} \quad \sqrt[4]{\alpha^2 + 1}$$

$$\text{\$ } x \text{\ not\in } A \text{\ \cup } B \text{\$ } \quad x \notin A \cup B$$

$$\text{\$\sum_{i=1}^n f_i\text{\$}} \quad \sum_{i=1}^n f_i$$

$$\text{\$\int_0^{2\pi} \sin x \, dx\text{\$}} \quad \int_0^{2\pi} \sin x \, dx$$

$$\text{\$\int_0^{2\pi} \sin x \, :d x\text{\$}} \quad \int_0^{2\pi} \sin x \, dx$$

\[formules \]

Wanneer de N frequenties

f_i , $i = 1, \dots, N$

berekend zijn, bepalen we de totale frequentie

$\sum_{i=1}^N f_i$. Cruciaal in onze analyse

is natuurlijk de ongelijkheid

$\sum_{i=1}^N f_i \leq 1$

Wanneer de N frequenties f_i , $i = 1, \dots, N$ berekend zijn, bepalen we de totale frequentie $\sum_{i=1}^N f_i$. Cruciaal in onze analyse is natuurlijk de ongelijkheid

$$\sum_{i=1}^N f_i \leq 1$$

$$\bigcap_{i \geq 1} U_i \quad \prod_{i \geq 1} X_i \quad \bigvee_{n=1}^4 \varphi_n \quad \int_a^b f(x) dx$$

$$\bigcap_{i \geq 1} U_i \quad \prod_{i \geq 1} X_i \quad \bigvee_{n=1}^4 \varphi_n \quad \int_a^b f(x) dx$$

matrix : array

```

 $\left(
\begin{array}{lr}
\alpha & \beta \\
a_{21} & \zeta - 2 \\
\delta - 1 & a_{32}
\end{array}
\right)$ 

```

```

 $f(x) =$ 
 $\left\{
\begin{array}{ll}
x & \text{if } x < 1 \\
x^2 & \text{if } x \geq 1
\end{array}
\right.$ 

```

operatie en relatie

$+$	<code>+</code>	$-$	<code>-</code>	$*$	<code>*</code>
\pm	<code>\pm</code>	\cap	<code>\cap</code>	\diamond	<code>\diamond</code>
\mp	<code>\mp</code>	\cup	<code>\cup</code>	\triangleup	<code>\bigtriangleup</code>
\times	<code>\times</code>	\oplus	<code>\oplus</code>	\triangledown	<code>\bigtriangledown</code>
\div	<code>\div</code>	\sqcap	<code>\sqcap</code>	\triangleleft	<code>\triangleleft</code>
$*$	<code>\ast</code>	\sqcup	<code>\sqcup</code>	\triangleright	<code>\triangleright</code>
\star	<code>\star</code>	\vee	<code>\vee</code>	\wedge	<code>\wedge</code>
\dagger	<code>\dagger</code>	\setminus	<code>\setminus</code>	\amalg	<code>\amalg</code>
\ddagger	<code>\ddagger</code>	\cdot	<code>\cdot</code>	\wr	<code>\wr</code>
\oplus	<code>\oplus</code>	\ominus	<code>\ominus</code>	\otimes	<code>\otimes</code>
\oslash	<code>\oslash</code>	\odot	<code>\odot</code>	\circ	<code>\circ</code>
\bigcirc	<code>\bigcirc</code>	\bullet	<code>\bullet</code>		
\equiv	<code>=</code>	$<$	<code><</code>	$>$	<code>></code>
\leq	<code>\leq</code>	\geq	<code>\geq</code>	\equiv	<code>\equiv</code>
\prec	<code>\prec</code>	\succ	<code>\succ</code>	\sim	<code>\sim</code>
\preceq	<code>\preceq</code>	\succeq	<code>\succeq</code>	\simeq	<code>\simeq</code>
\ll	<code>\ll</code>	\gg	<code>\gg</code>	\asymp	<code>\asymp</code>
\subset	<code>\subset</code>	\supset	<code>\supset</code>	\approx	<code>\approx</code>
\subseteq	<code>\subseteq</code>	\supseteq	<code>\supseteq</code>	\cong	<code>\cong</code>
\neq	<code>\neq</code>	\smile	<code>\smile</code>	\frown	<code>\frown</code>
\sqsubseteq	<code>\sqsubseteq</code>	\sqsupseteq	<code>\sqsupseteq</code>	\doteq	<code>\doteq</code>
\in	<code>\in</code>	\ni	<code>\ni</code>	\propto	<code>\propto</code>
\vdash	<code>\vdash</code>	\dashv	<code>\dashv</code>	\models	<code>\models</code>
\perp	<code>\perp</code>	\mid	<code>\mid</code>	\parallel	<code>\parallel</code>
\bowtie	<code>\bowtie</code>				

teken en pijl

\aleph	<code>\aleph</code>	$'$	<code>\prime</code>	\forall	<code>\forall</code>
\hbar	<code>\hbar</code>	\emptyset	<code>\emptyset</code>	\exists	<code>\exists</code>
\imath	<code>\imath</code>	∇	<code>\nabla</code>	\neg	<code>\neg</code>
\jmath	<code>\jmath</code>	\surd	<code>\surd</code>	\flat	<code>\flat</code>
ℓ	<code>\ell</code>	\top	<code>\top</code>	\natural	<code>\natural</code>
\wp	<code>\wp</code>	\perp	<code>\perp</code>	\sharp	<code>\sharp</code>
\Re	<code>\Re</code>	\parallel	<code>\parallel</code>	\backslash	<code>\backslash</code>
\Im	<code>\Im</code>	\angle	<code>\angle</code>	∂	<code>\partial</code>
∞	<code>\infty</code>	\triangle	<code>\triangle</code>	\spadesuit	<code>\spadesuit</code>
\clubsuit	<code>\clubsuit</code>	\diamond	<code>\diamondsuit</code>	\heartsuit	<code>\heartsuit</code>

\uparrow	<code>\uparrow</code>	\Uparrow	<code>\Uparrow</code>
\downarrow	<code>\downarrow</code>	\Downarrow	<code>\Downarrow</code>
\updownarrow	<code>\updownarrow</code>	\Updownarrow	<code>\Updownarrow</code>
\leftarrow	<code>\leftarrow</code>	\longleftarrow	<code>\longleftarrow</code>
\Lleftarrow	<code>\Lleftarrow</code>	\Longleftarrow	<code>\Longleftarrow</code>
\rightarrow	<code>\rightarrow</code>	\longrightarrow	<code>\longrightarrow</code>
\Rrightarrow	<code>\Rrightarrow</code>	\Longrightarrow	<code>\Longrightarrow</code>
\leftrightarrow	<code>\leftrightarrow</code>	\longleftrightarrow	<code>\longleftrightarrow</code>
\Leftrightarrow	<code>\Leftrightarrow</code>	\Longleftrightarrow	<code>\Longleftrightarrow</code>
\mapsto	<code>\mapsto</code>	\longmapsto	<code>\longmapsto</code>
\hookrightarrow	<code>\hookrightarrow</code>	\hookrightarrow	<code>\hookrightarrow</code>
\leftarrow	<code>\leftarrow</code>	\rightarrow	<code>\rightarrow</code>
\leftharpoonup	<code>\leftharpoonup</code>	\rightarrow	<code>\rightarrow</code>
\leftharpoondown	<code>\leftharpoondown</code>	\rightarrow	<code>\rightarrow</code>
\rightrightarrows	<code>\rightrightarrows</code>		
\nearrow	<code>\nearrow</code>	\searrow	<code>\searrow</code>
\swarrow	<code>\swarrow</code>	\nwarrow	<code>\nwarrow</code>

oef!

The Comprehensive \LaTeX Symbol List

“This document lists 5913 symbols and the corresponding \LaTeX commands that produce them”

<http://www.ctan.org/tex-archive/info/symbols/comprehensive/>

illustraties

Meestal mbv. 'encapsulated' postscript

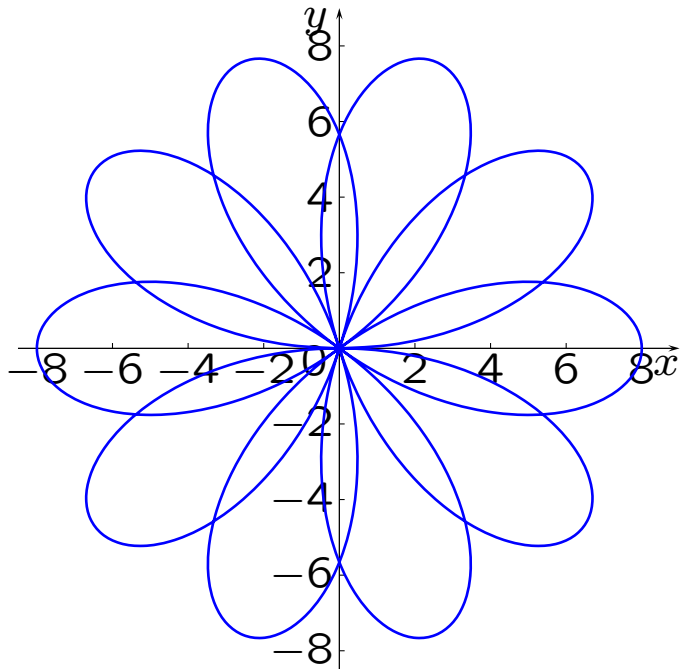
- \LaTeX macro pakketten
- inlezen plaatjes `.eps`
- postscript 'wrapper' `jpeg2ps`

```
\usepackage[dvips]{graphics}
```

```
\includegraphics{tex-lion.eps}
```



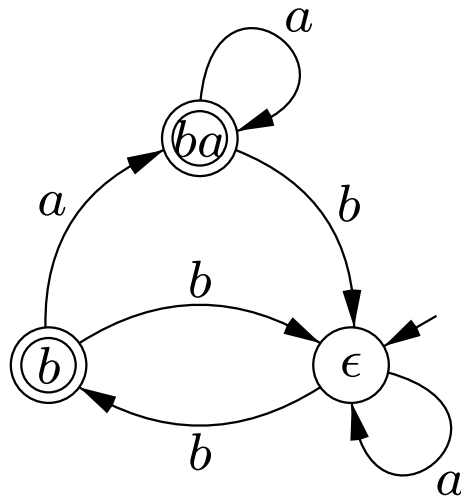
illustraties



```
\usepackage{ pst-plot}
```

```
\psset{unit=0.5}  
\begin{ pspicture}(-8.5,-8.5)(9,9)  
\psaxes [Dx=2,%  
         dx=2,%  
         Dy=2,%  
         dy=2,%  
         labelsep=.75mm,%  
         arrowlength=1.75,%  
         ticksize=2pt,%  
         linewidth=0.17mm]{->}(0,0)(-8.5,-8.5)(9,9)  
\rput [Br] (9,-.7){$x$}  
\rput [tr] (-.3,9){$y$}  
\rput [Br] (-.3,-.7){$0$}  
%  
\psset{linewidth=.35mm,plotstyle=curve,polarplot=true}  
\psplot{0}{720}{8 2.5 x mul sin mul}  
\end{ pspicture}
```

gastex



```
\usepackage{gastex}
```

```
\begin{picture}(60,50)(0,10)
```

```
\gasset{AHLlength=5.0,AHlength=5,AHangle=14.44}
```

```
\gasset{Nw=10,Nh=10,Nmr=5}
```

```
\gasset{linewidth=0.3}
```

```
\node(b)(10,10){$b$}
```

```
\node(e)(50,10){$\epsilon$}
```

```
\node(ba)(30,40){$ba$}
```

```
%
```

```
\drawedge[curvedepth=8](b,ba){$a$}
```

```
\drawedge[curvedepth=8](ba,e){$b$}
```

```
\drawedge[curvedepth=8](e,b){$b$}
```

```
\drawedge[curvedepth=8](b,e){$b$}
```

```
\drawloop[loopangle=50](ba){$a$}
```

```
\drawloop[loopangle=-50](e){$a$}
```

```
\imark[iangle=30](e)
```

```
\rmark[rdist=1.4](b)
```

```
\rmark[rdist=1.4](ba)
```

```
\end{picture}
```

www.lsv.ens-cachan.fr/~gastin/gastex/gastex.html

[5]

! Missing \$ inserted.

<inserted text>

\$

1.184 ...}\verb.\$\frac{1+n^2}{1-n^2}\$.\$\end{small}

&

? h

I've inserted something that you may have forgotten.

(See the <inserted text> above.)

With luck, this will get me unwedged. But if you really didn't forget anything, try typing '2' now; then my insertion and my current dilemma will both disappear.

? h

Sorry, I already gave what help I could...

Maybe you should try asking a human?

An error might have occurred before I noticed any problems.

'If all else fails, read the instructions.'

? ?

Type <return> to proceed, S to scroll future error messages,

R to run without stopping, Q to run quietly,

I to insert something, E to edit your file,

1 or ... or 9 to ignore the next 1 to 9 tokens of input,

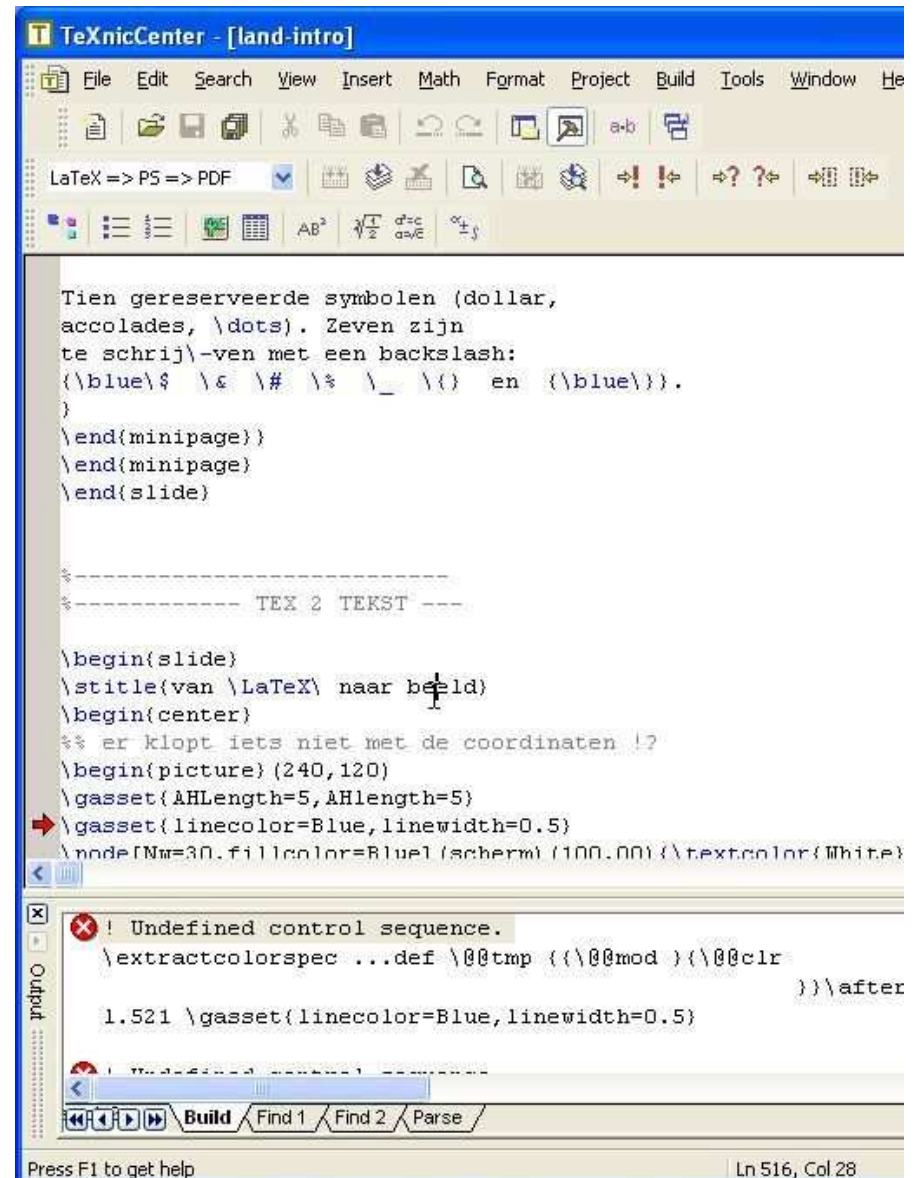
H for help, X to quit.

? q

OK, entering \batchmode

thuis . . . windows

- MikTeX
<http://www.miktex.org/>
- ghostview, ghostscript
<http://www.cs.wisc.edu/~ghost/>
- Shell voor Windows
(TeXnicCenter, TeXShell,
WinEdt, WinShell, . . .)



The screenshot shows the TeXnicCenter interface with a LaTeX source file open. The main window displays the following code:

```
Tien gereserveerde symbolen (dollar,
accolades, \dots). Zeven zijn
te schrij\ -ven met een backslash:
{\blue\$\ \& \# \% \_ \{ } en {\blue}}.
}
\end{minipage}}
\end{minipage}
\end{slide}

-----
----- TEX 2 TEKST -----

\begin{slide}
\stitle{van \LaTeX\ naar beeld}
\begin{center}
%% er klopt iets niet met de coördinaten !?
\begin{picture} (240,120)
\gasset{AHlength=5,AHlength=5}
\gasset{linecolor=Blue,linewidth=0.5}
\node[Nw=30,fillcolor=Blue! (scherm) (100.00){\textcolor{White}
```

The Output window at the bottom shows the following error message:

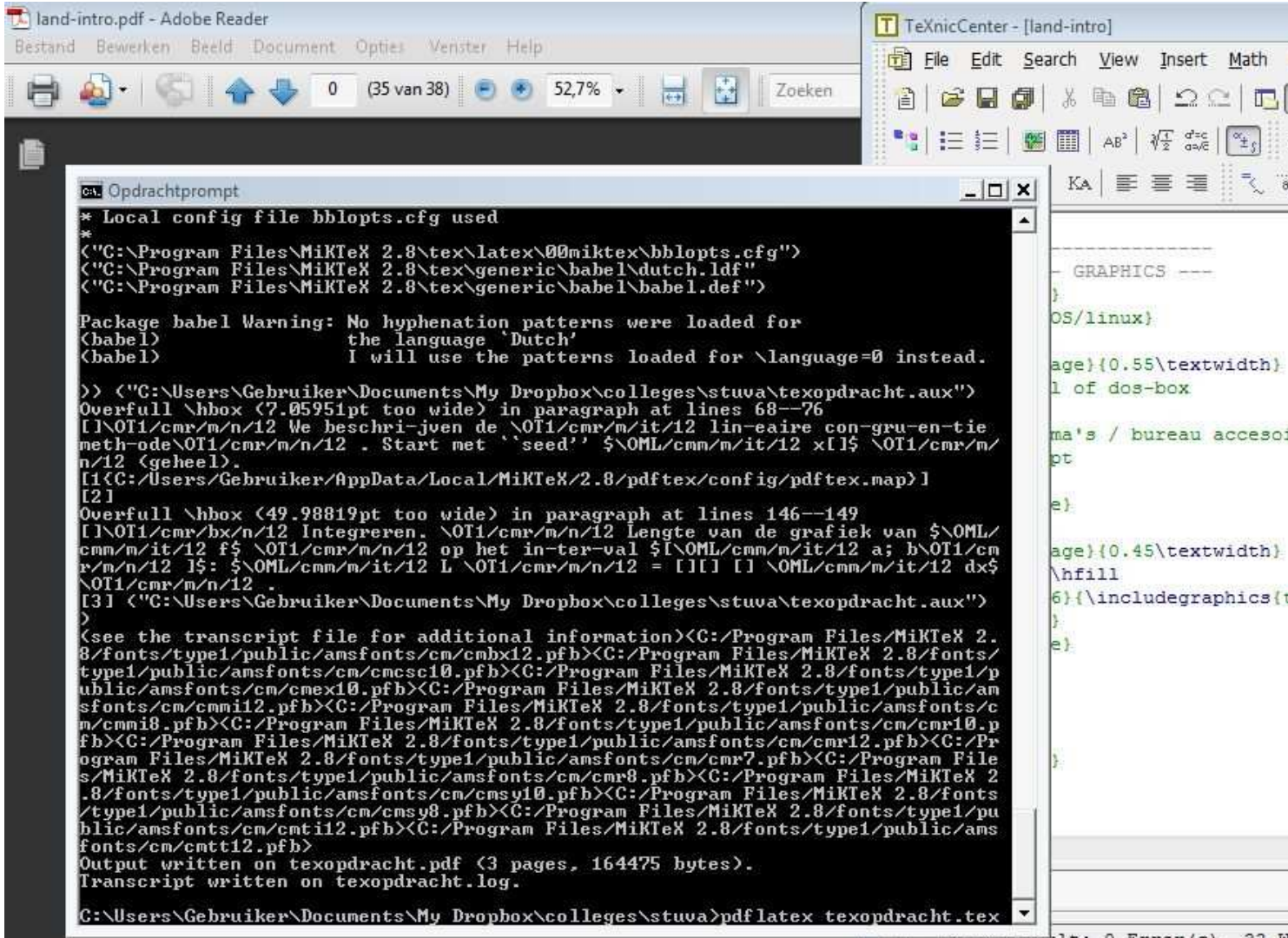
```
! Undefined control sequence.
\extractcolorspec ...def \@@tmp {(\@@mod )(\@@clr
)}\after
1.521 \gasset{linecolor=Blue,linewidth=0.5}
```

The status bar at the bottom indicates "Ln 516, Col 28".

of DOS/linux

gebruik shell of dos-box

alle programma's / bureau accessoires / opdrachtprompt



```
land-intro.pdf - Adobe Reader
Bestand Bewerken Beeld Document Opties Venster Help
0 (35 van 38) 52,7% Zoeken

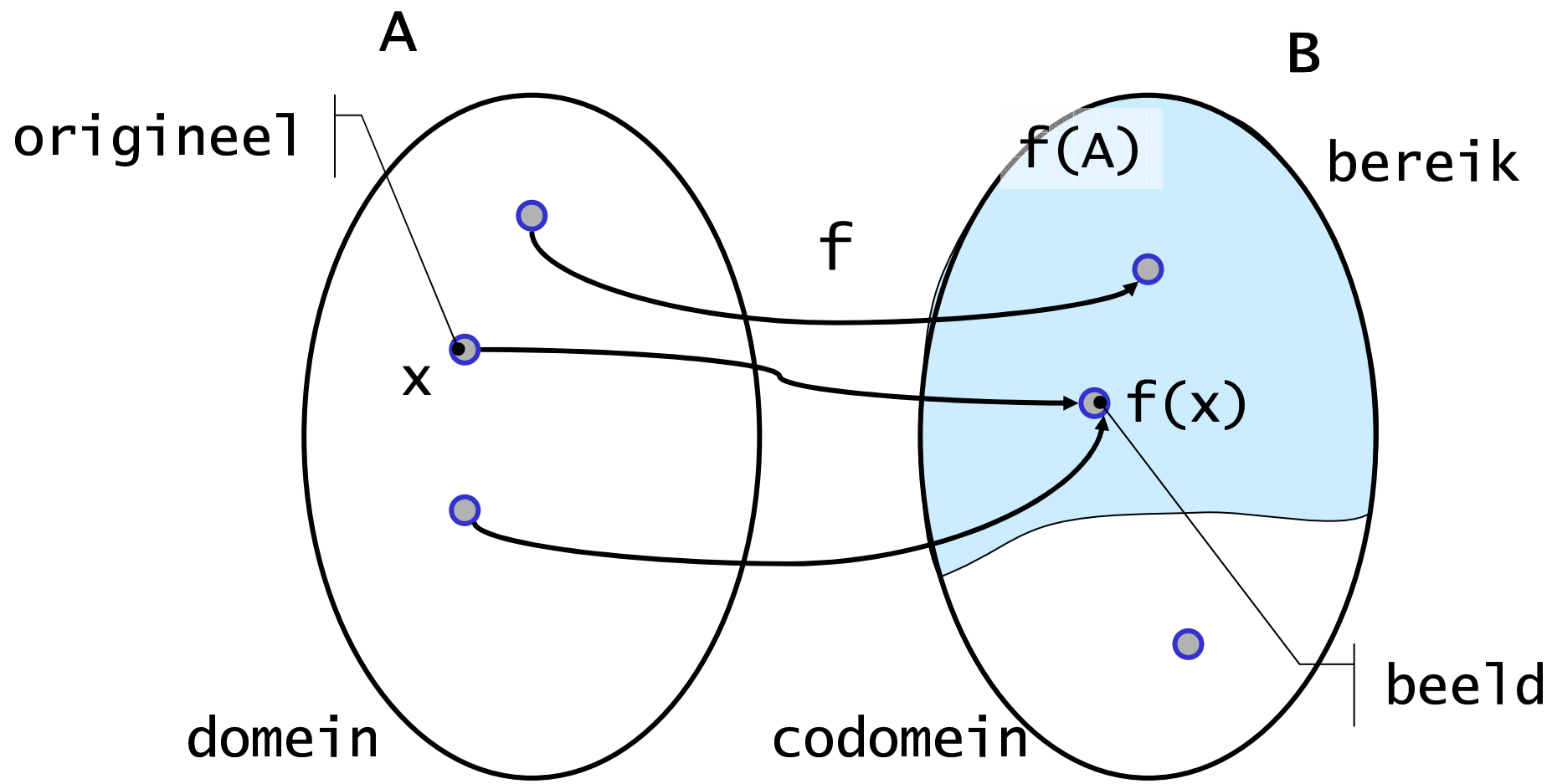
TeXnicCenter - [land-intro]
File Edit Search View Insert Math

Opdrachtprompt
* Local config file bblopts.cfg used
*
"C:\Program Files\MiKTeX 2.8\tex\latex\00miktex\bblopts.cfg"
"C:\Program Files\MiKTeX 2.8\tex\generic\babel\dutch.ldf"
"C:\Program Files\MiKTeX 2.8\tex\generic\babel\babel.def"

Package babel Warning: No hyphenation patterns were loaded for
(babel) the language 'Dutch'
(babel) I will use the patterns loaded for \language=0 instead.

)) "C:\Users\Gebruiker\Documents\My Dropbox\colleges\stuva\texopdracht.aux"
Overfull \hbox (7.05951pt too wide) in paragraph at lines 68--76
[1]\OT1/cmr/m/n/12 We beschri-jven de \OT1/cmr/m/it/12 lin-eaire con-gru-ent-tie
meth-ode\OT1/cmr/m/n/12 . Start met 'seed' $\OML/cmm/m/it/12 xll$ \OT1/cmr/m/
n/12 <geheel>.
[1<C:/Users/Gebruiker/AppData/Local/MiKTeX/2.8/pdf\text/config/pdf\text.map>]
[2]
Overfull \hbox (49.98819pt too wide) in paragraph at lines 146--149
[1]\OT1/cmr/bx/n/12 Integreeren. \OT1/cmr/m/n/12 Lengte van de grafiek van $\OML/
cmm/m/it/12 f$ \OT1/cmr/m/n/12 op het in-ter-val $\OML/cmm/m/it/12 a; b\OT1/cm
r/m/n/12 l$: $\OML/cmm/m/it/12 L \OT1/cmr/m/n/12 = [ll] [l] \OML/cmm/m/it/12 dx$
\OT1/cmr/m/n/12 .
[3] <"C:\Users\Gebruiker\Documents\My Dropbox\colleges\stuva\texopdracht.aux">
>
<see the transcript file for additional information><C:/Program Files/MiKTeX 2.
8/fonts/type1/public/amsfonts/cm/cmbx12.pfb><C:/Program Files/MiKTeX 2.8/fonts/
type1/public/amsfonts/cm/cmcscl0.pfb><C:/Program Files/MiKTeX 2.8/fonts/type1/p
ublic/amsfonts/cm/cmex10.pfb><C:/Program Files/MiKTeX 2.8/fonts/type1/public/am
sfonts/cm/cmmi12.pfb><C:/Program Files/MiKTeX 2.8/fonts/type1/public/amsfonts/c
m/cmmi8.pfb><C:/Program Files/MiKTeX 2.8/fonts/type1/public/amsfonts/cm/cmr10.p
fb><C:/Program Files/MiKTeX 2.8/fonts/type1/public/amsfonts/cm/cmr12.pfb><C:/Pr
ogram Files/MiKTeX 2.8/fonts/type1/public/amsfonts/cm/cmr7.pfb><C:/Program File
s/MiKTeX 2.8/fonts/type1/public/amsfonts/cm/cmr8.pfb><C:/Program Files/MiKTeX 2
.8/fonts/type1/public/amsfonts/cm/cmsy10.pfb><C:/Program Files/MiKTeX 2.8/fonts
/type1/public/amsfonts/cm/cmsy8.pfb><C:/Program Files/MiKTeX 2.8/fonts/type1/pu
blic/amsfonts/cm/cmti12.pfb><C:/Program Files/MiKTeX 2.8/fonts/type1/public/am
sfonts/cm/cmtt12.pfb>
Output written on texopdracht.pdf (3 pages, 164475 bytes).
Transcript written on texopdracht.log.

C:\Users\Gebruiker\Documents\My Dropbox\colleges\stuva>pdf\text texopdracht.tex
LaTeX-Result: 0 Error(s), 32 W
```

presentaties

óók de vorm, niet alleen de inhoud

ppt \rightarrow L^AT_EX

AxPoint · beamer · foiltex · ifm-
slide · pdfscreen · PPower4 - P⁴ ·
Prosper · rayslides · PythonPoint
· seminar · slidenotes · slideshow ·
TeXPower ·

L^AT_EX \rightarrow ppt

TeXPoint
TeX4PPT

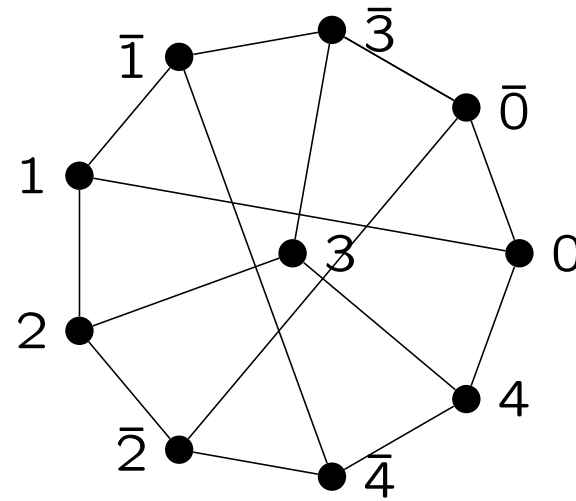
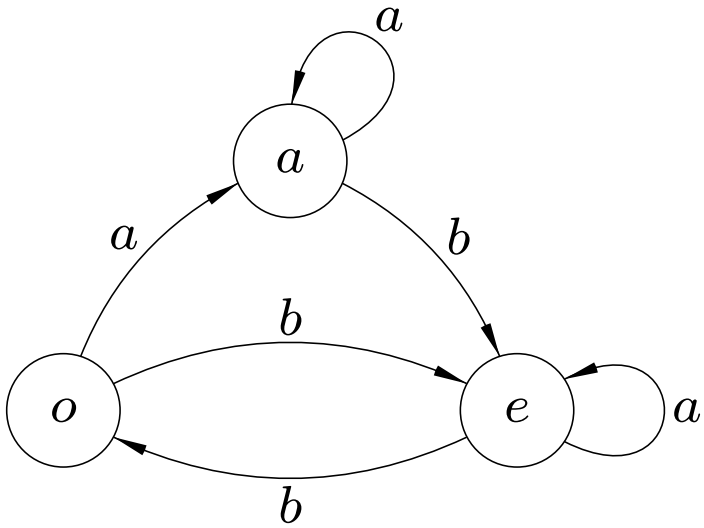
N

\alpha \rightarrow α

bitmap plaatjes vs. gezet

WYSIWYG !

$$\frac{1}{\sqrt{5}} \left\{ \left(\frac{1+\sqrt{5}}{2} \right)^n - \left(\frac{1-\sqrt{5}}{2} \right)^n \right\}.$$



♠ einde ♣