

Introduction to L^AT_EX

Professional Document Preparation System

Department of Mathematics and Computer Science, RMUTT

Lecture Outline

Preliminary

WYSIWYG vs WYSIWYM

$\text{T}_{\text{E}}\text{X}$ vs $\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$

Workflow

Showcases

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Windows

macOS

Linux/Unix

Testing

$\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$ Document Structure

Structure Fundamentals

Typesetting

Adding Comments

Document Preparation System

WYSIWYG

What-You-See-Is-What-You-Get

BA132_Hywater_Report - Word

File Home Insert Design Layout References Mailings Review View Design Layout Tell me

☒ Header Row ☒ First Column
☐ Total Row ☐ Last Column
☒ Banded Rows ☐ Banded Columns

Table Style Options

Table Styles

Shading

Border Styles

Borders

Border Painter

Who are these retailers? The NRF posts an annual list of the top one hundred retailers by retail sales. The top ten are listed in the table below.

Rank	Retailer	U.S. Headquarters	2014 Retail Sales
1	Walmart Stores	Bentonville, Arkansas	\$343,624,000
2	The Kroger Co.	Cincinnati, Ohio	\$103,033,000
3	Costco	Issaquah, Washington	\$79,694,000
4	The Home Depot	Atlanta, Georgia	\$74,203,000
5	Walgreen	Deerfield, Illinois	\$72,671,000
6	Target	Minneapolis, Minnesota	\$72,618,000
7	CVS Caremark	Woonsocket, Rhode Island	\$67,974,000
8	Lowe's Companies	Mooresville, North Carolina	\$54,805,000
9	Amazon.com	Seattle, Washington	\$49,353,000
10	Safeway	Pleasanton, California	\$36,330,000

The Retail Industry

The retail industry covers an enormous range of consumer needs. The retail industry is designed to create contact efficiency—allowing shoppers to buy what they want efficiently with a smaller number of

Page 1 of 2 564 words 90%

Document Preparation System

WYSIWYM

What-You-See-Is-What-You-Mean

The screenshot shows a LaTeX document preparation system interface. The top bar has a dark background with a green 'Source' button and a grey 'Rich Text' button. To the right of these buttons are icons for zooming in/out, a green 'Recompile' button, and icons for document and download. The main area is split into two panes. The left pane shows the source code in a light blue font on a white background, with line numbers 1 through 26 on the left margin. The right pane shows a preview of the document in a light grey frame, with a dark vertical bar between the two panes containing navigation arrows. The source code is as follows:

```
1 \documentclass[a4paper, 12pt]{article}
2 \usepackage[utf8]{inputenc}
3 \author{Dennis and Cosima}
4 \title{Your first document}
5 \date{\today}
6
7 \begin{document}
8 \maketitle
9
10 \section{This is a section}
11 Some intelligent text here.
12
13 \subsection{And a subsection}
14 More intelligent text here. As you can see, \LaTeX \space
    automatically enumerates your sections and
    subsections.\footnote{Isn't it cool?}
15
16
17
18
19
20
21
22
23
24
25
26
```

The preview on the right shows the rendered document. It has a white background with a light grey border. The title 'Your first document' is centered at the top. Below it, the author 'Dennis and Cosima' and the date 'February 20, 2020' are centered. The section '1 This is a section' is followed by the text 'Some intelligent text here.' The subsection '1.1 And a subsection' is followed by the text 'More intelligent text here. As you can see, \LaTeX automatically enumerates your sections and subsections.' A footnote at the bottom left reads 'Isn't it cool?'. The page number '1' is centered at the bottom.

What L^AT_EX ?

- ▶ LaTeX (LAH-tekh or LAY-tekh, often stylized as L^AT_EX) is a software system for document preparation.
- ▶ When writing, the writer uses **plain text**.
- ▶ The writer uses **markup** tagging conventions to define the general structure of a document to stylish text throughout a document (such as bold and italics), and to add citations and cross-references.

`\textbf{Bold Face}` → **Bold Face**

`\textit{Italic}` → *Italic*

`x_{n} = x_{n-1}^{\wedge\{2\}}` → $x_n = x_{n-1}^2$

Why \LaTeX ?

- ▶ \LaTeX is widely used in academia for the communication and publication of scientific documents in many fields, including mathematics, computer science, engineering, physics, chemistry, economics, linguistics, quantitative psychology, philosophy, and political science.
- ▶ It also has a prominent role in the preparation and publication of books and articles that contain complex multilingual materials.
- ▶ \LaTeX uses the \TeX typesetting program for formatting its output, and is itself written in the \TeX macro language.

T_EX vs L^AT_EX

T_EX



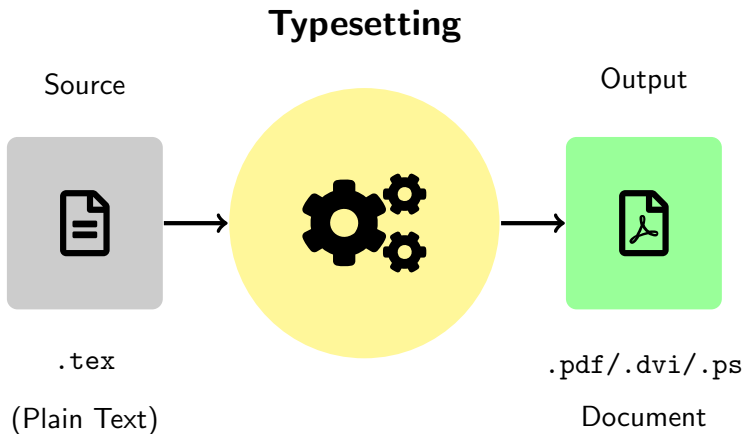
Original Author	Donald Knuth
Initial Release	1978
Stable Release	Feb 2021
Purpose	Formatting
User	Document Designers
Summary	A typesetting system giving algorithms and commands to specify documents to look pretty.

L^AT_EX

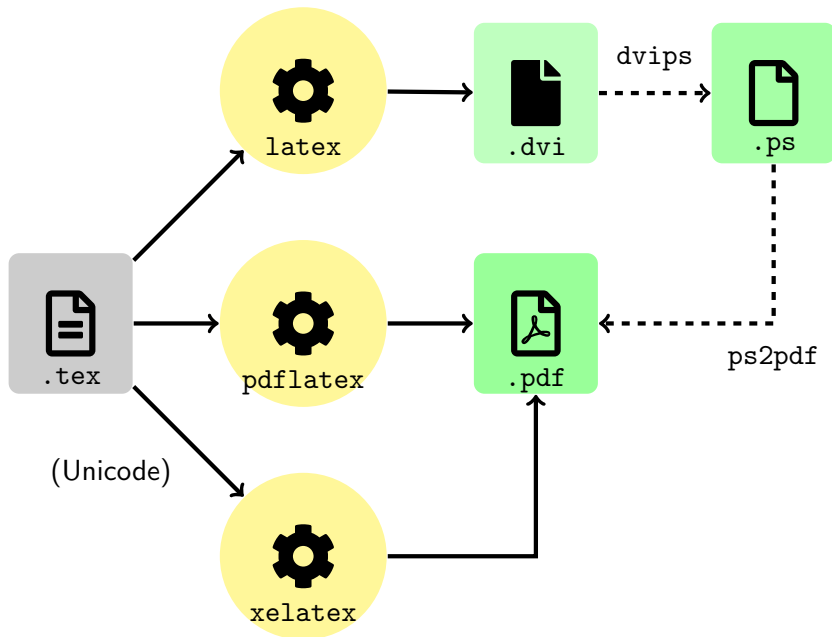


Original Author	Leslie Lamport
Initial Release	1984
Stable Release	Nov 2022
Purpose	Contents
User	Document Writers
Summary	A set of macros built on top of T _E X giving a beautiful document and well structured, easier to read and write, for humans, source inputs.

Workflow Fundamentals



L^AT_EX Typesettings



A L^AT_EX Example: Source

```
1 \documentclass{article}
2
3 \title{My first LaTeX document}
4 \author{John Doe}
5 \date{1 October 2022}
6
7 \begin{document}
8 \maketitle
9
10 LaTeX was created in the early 1980s
11 by Leslie Lamport, when he was working at SRI.
12 He needed to write TeX macros for his own use,
13 and thought that with a little extra effort
14 he could make a general package usable by others.
15
16 Peter Gordon, an editor at Addison-Wesley, convinced
17 him to write a LaTeX user's manual for publication
18 (Lamport was initially skeptical that anyone would pay money for it);
19 it came out in 1986 and sold hundreds of thousands of copies.
20 Meanwhile, Lamport released versions of his LaTeX macros
21 in 1984 and 1985.
22
23 \end{document}
```

A L^AT_EX Example: Output

My first L^AT_EX document

John Doe

1 October 2022

L^AT_EX was created in the early 1980s by Leslie Lamport, when he was working at SRI. He needed to write TeX macros for his own use, and thought that with a little extra effort he could make a general package usable by others. Peter Gordon, an editor at Addison-Wesley, convinced him to write a L^AT_EX user's manual for publication (Lamport was initially skeptical that anyone would pay money for it); it came out in 1986 and sold hundreds of thousands of copies. Meanwhile, Lamport released versions of his L^AT_EX macros in 1984 and 1985.

On 21 August 1989, at a TeX Users Group (TUG) meeting at Stanford, Lamport agreed to turn over maintenance and development of L^AT_EX to Frank Mittelbach. Mittelbach, along with Chris Rowley and Rainer Schöpf, formed the L^AT_EX3 team; in 1994, they released L^AT_EX2_ε, the current standard version. L^AT_EX3 itself has since been cancelled with version features intended for that version being back-ported to L^AT_EX 2_ε since 2018.

Showcases

A duplicating of a 16th century French Bible



Le premier liure de Moyse,

Diët Geneſe.



ARGUMENT.

Ce premier liure comprend l'origine & causes de toutes choses, principalement la creation de l'homme, qu'il a esté du commencement, ſa cheute & releuement : comment d'un tous ont esté procréés, & pour leurs enorma peccés Dieu les a confumés, par le deluge, reformé build, dont la ſemence a rempli toute la terre. Puis il deſcrit les vies, ſaicts, religion, & lignées des ſaints Patriarches, qui ont veſcu deuant la Loy : Les benediſtions, promeſſes, & alliances du Seigneur ſaictes avec iceux : Comment de le la terre de Chanaan ſont deſcendus en Egypte. Aucuns ont appelé ce liure, le liure des luſtes. Tousſeſci ceci a obtenu entre nos predeceſſeurs & nous, qu'il eſt appelé Geneſe, qui eſt un mot Grec, ſignifiant generation & origine : d'autant qu'en icelui eſt deſcrite l'origine & procreation de toutes choses : & nommément des Peres anciens, qui ont esté tant deuant qu'après le deluge, & en eſgard à IESVS CHRIST deſcendu d'iceux ſelon la chair.

CHAPITRE I.

1 Creation du ciel & de la terre, II. 10. & de tout ce qui y eſt compris. 3.14 De la lumiere aſſez, 26 & de l'homme, 28. 29 Quelque ſeul eſt aſſeſſé. 2.2. 28 Dieu benoit toutes ſes creatures, 9. 10 Il a accompli ſon ſeuſ.



Dieu crea
le com
mence
ment
le
ciel & la
terre.

Or la
terre
eſtoit ſans
forme,
& les tenebres
eſtoient ſur les

les eaux, qui eſtoient ſous leſtendue,
d'auec celles, qui eſtoient ſur leſtendue.
Et fut ainſi fait.

8 Et Dieu appella leſtendue, Ciel. Lors
fut fait le ſoir & le matin du ſecond
iour.

9 ¶ Puis Dieu dit, ⁴ Que les eaux, qui
font ſous le ciel, ſoyent aſſemblees en
vn lieu, & que le ſec apparoiſſe. Et fut
ainſi fait.

10 Et Dieu appelle le ſec, Terre, & laſſem
blee des eaux, mers. Et Dieu vid que
celà eſtoit bon.

11 Et Dieu dit, Que la terre produiſe
verduſe, herbe produiſant ſemence, &

1 Ce premier cha
pitre eſt fort diſſi
cile : & pour cette
raiſon, il eſtoit de
ſeſſe de la lire &
interpret deuant
l'age de treize
ans.

2 Fit de rien, &
ſans aucune ma
tiere.
1 Job 18.4. Pſalm.
33.6. & 138.1.
115.5. Ecclieſtaſt.
11.1. All. 14.11.
& 17.14

3 Tout premier
ement, & auiſ qu'il
y eut aucune crea
ture, Iſaie 1.10.

4 Hebreu 1.3.
c. Le ciel & la
terre, les eaux, les
abyſſes, le pre
mier ſeuſ pour une
meſme chole : aſſe
pour une matiere
coſtée & ſans for
me, q Dieu forma
& agença apres
par ſa Parole.

d Or, ſe mou
voit. Celi, ſouſ
moit & conſtruit
en ſon eſt ceſte
matiere conſuſe.
Car il eſt impos
ſible, q aucune chole
apres auoir eſté

pourquoy les He
breux comencent
le iour naturel le
ſoir apres le ſoleil
couche.

8 Ce mot d'He
breu, compris tout
ce qui ſe voit par
deſſus nous, ſit en
la region celeſte,
qu'on appelle,

4 Pſalm. 137.
h Il eſt ſci par
deſſus matiere
d'auoir : aſſeſſer,
celles q ſont ſous
leſtendue, comme
la mer, les flauſes,
& autres qui ſont
ſur la terre & cel
les, qui ſont ſous
leſtendue, comme
ſont les eaux plie
nes deus q auz
en ſur par deſſus
nous. Dieu a mis
entre ces deux ſeu
ces deux ſeuſ gr
de eſtendue, qu'on
appelle le ciel : de
la nous appellons
les coſtes du ciel.
1 Ceci appartient au
ſecond iour, auquel
Dieu ſepara, de ſi
apparaît la terre du

Showcases

A lecture note

14

Quaderno 1 Tema di riferimento

ma con assi costantemente orientati secondo le tre direzioni geografiche standard: Nord, Est e centro della Terra (Down).

1.7 Assi vento (Wind Axes, W)

La terza assi vento \mathcal{T}_W è una terza tritettoria levogira con origine nel baricentro del velivolo (punto $G = C$) ed avente l'asse vento longitudinale x_W diretto secondo la direzione della velocità $V = V_G$ del velivolo, con verso positivo nel senso del moto (figura 1.13). L'asse vento z_W è definito dall'intersezione del piano verticale π_V contenente V e G con il piano π_x normale alla traiettoria in G , con verso positivo verso il basso. L'asse trasversale y_W è tale da completare la terza $[G, x_W, y_W, z_W]$.

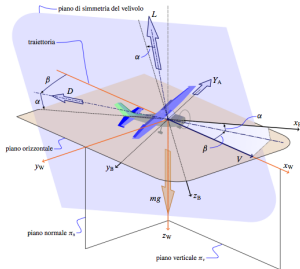


Figura 1.13 Tema di assi vento $\mathcal{T}_W = [G, x_W, y_W, z_W]$ (o assi traiettoria). In questa particolare circostanza la traiettoria del baricentro è orizzontale e l'orientamento del velivolo non è simmetrico rispetto al piano verticale $x_W z_W$.

A. De Marco, D. P. Gori - Laurea Magistrale in Ingegneria Aerospaziale, Università degli Studi di Napoli "Pietro II"

1.7 Assi vento

15

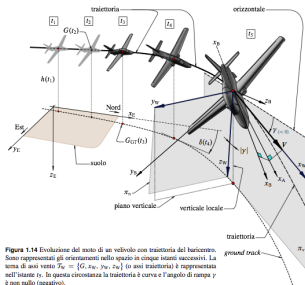


Figura 1.14 Evoluzione del moto di un velivolo con traiettoria del baricentro. Sono rappresentati gli orientamenti nello spazio in cinque istanti successivi. La terza di assi vento $\mathcal{T}_W = [G, x_W, y_W, z_W]$ (o assi traiettoria) è rappresentata nell'istante t_5 . In questa circostanza la traiettoria è curva e l'angolo di rampa γ è non nullo (negativo).

Si noti che, secondo la definizione data sopra, l'asse vento trasversale y_W è sempre orizzontale. Essso è la normale al piano $[G, x_W, z_W]$ che è, per definizione, costantemente verticale come si osserva dalle figure 1.13, 1.14 e 1.15.

Nella figura 1.13, è rappresentato il caso particolare in cui la traiettoria del baricentro è orizzontale. Si osserva che, anche per un orientamento del velivolo non simmetrico rispetto al piano verticale $x_W z_W$, in questa circostanza gli assi vento presentano un asse z_W verticale (allineato con la forza peso mg).

Nella figura 1.14, è rappresentata un'evoluzione in cui la traiettoria del baricentro si incurva e allo stesso tempo l'orientamento del velivolo è non simmetrico rispetto al piano verticale π_x . L'asse vento x_W , per definizione tangente alla traiettoria, è non orizzontale e l'asse z_W è non verticale. Naturalmente — come da definizione — anche in questo caso, in cui il piano π_x non è verticale, l'asse vento y_W è orizzontale.

Tale particolarità evidenzia un'importante differenza tra la definizione data in questa sede e la definizione di assi vento che si ritrova in diversi libri di testo americani e anglosassoni. Secondo questi ultimi [13, 9, 50] l'asse longitudinale coincide con x_W ; il terzo

Dinamica e simulazione di voli - Quaderni delle lezioni

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Showcases

A text book

GENERALIZED MODEL OF THE IDEAL GAS

When generalizing the model of an ideal gas, the first step is to determine whether a parametric⁸ or an explicit notation⁹ is desirable. Later in the exercise, explicit notations are used exclusively, suggesting the use of an explicit answer. Since the unit axis \mathbf{v}_x in velocity space can be chosen arbitrarily in three dimensions, we can for instance state for the velocity distribution along the x -axis¹⁰

$$g(v_x) \propto e^{-m^2/2kT}.$$

The above expression is a velocity distribution of molecules, with each value of the length of vector \mathbf{v}_x . The expression defines a proportion of the number of molecules corresponding to that condition. To calculate this proportion, we can take an piece of the velocity distribution of width dv_x to consequently multiply it thereto. The small size of the infinitesimal causes $g(v)dv$ to not change in value across such a small part of the x -axis. As such, the expression can be visualized as a bar of height $g(v_x)$ and width dv_x . When integrating across multiple dimensions, the area which is between the limits v_x and $v_x + dv_x$, v_y and $v_y + dv_y$, and v_z and $v_z + dv_z$, then encloses the region in velocity space of v and $v + dv$. Multiplication of each bar so to say 'tilers' the right volume in velocity space¹¹. Translating this to an expression, we can derive the proportionality in velocity space to be

$$g(v)dv \propto g(v_x)g(v_y)g(v_z)dv_x dv_y dv_z.$$

Filling in the relation given in the exercise description, we find

$$g(v)dv \propto e^{-m^2(v_x^2+v_y^2+v_z^2)/2kT} dv_x dv_y dv_z.$$

By virtue of the pythagorean theorem, we may use relation $v^2 = v_x^2 + v_y^2 + v_z^2$ to rewrite common terms, for a final relation of

$$g(v)dv \propto e^{-m^2v^2/2kT} dv. \quad (1)$$

⁸ A notation of the form $g(v) = g(v_x), g(v_y), g(v_z)$.
⁹ This is a single expression for $g(v) = \dots$ which can be integrated as is.

¹⁰ Since the x - and y -axes can be interchanged arbitrarily. Furthermore, the same goes for the velocity distribution along the z -axis.



Figure 1: The velocity distribution and the corresponding bar of width dv .

¹¹ This is the process of multiple integration.

¹² The volume of a sphere is $V = \frac{4}{3}\pi r^3$, which is already an integrand.



Figure 2: Each of the spheres has a volume V corresponding to respectively $r = v + dv$ (green) and $r = v$ (purple). The element dV is the region in space enclosed by these two spheres.

¹³ The binomial expansion here is $(v + dv)^3 = v^3 + 3v^2dv + 3v(dv)^2 + (dv)^3$.

¹⁴ That is, to see $(dv)^2 \approx 0$ and $(dv)^3 \approx 0$.

B

The region in velocity space previously mentioned can now be calculated, by visualizing the volume as a shell of a sphere. The volume of this shell can be evaluated by evaluating the well-known formula for the volume of a sphere, between lower limit v and upper limit $v + dv$. Evaluating the upper and lower limit, we find that one term cancels. First, we subtract the upper limit from the lower limit of our known formula¹²,

$$V = \frac{4}{3}\pi [(v + dv)^3 - v^3].$$

Using the binomial theorem¹³, the expression for volume after cancellation of terms is given by

$$V = \frac{4}{3}\pi [3v^2dv + 3v(dv)^2 + (dv)^3].$$

Since in real case scenario the infinitesimal approaches zero, within the limit of $\lim_{dv \rightarrow 0}$, we may pose that powers of these infinitesimals equal zero in this limit¹⁴, for our expression of volume to become

$$V = 4\pi v^2 dv. \quad (2)$$

When considering the fraction of molecules travelling in any direction in space, the expression $g(v)$ previously calculated can be interpreted as a weighting factor for each infinitesimal unit of volume dV . Interpreting this shell, it contains a set of vectors about v and $v + dv$, but the amount of molecules N corresponding with that speed varies with how large a given v is. The size of N for a particular v is then described by our expression $g(v)$. When we want to know what amount of molecules corresponds to a particular element dV in v -space, we must evaluate

$$dN = g(v) \cdot dV.$$

To combine our previously calculated result from equation 1, we must first cancel the infinitesimals on both sides of the proportionality sign. Observing that volume V from equation 7 is already an integrand, we may denote the desired expression to be

$$dN \propto 4\pi v^2 e^{-m^2/2kT} dv,$$

where dN is the non-normalized fraction $f(v)dv$. The desired expression for $f(v)dv$ is the same as the expression above, with an equals sign rather than a proportionality sign. To obtain this result, simply add in a constant on the right hand side of the relation,

$$f(v)dv = 4\pi C v^2 e^{-m^2/2kT} dv.$$

Showcases

A presentation

Motivation und Ziele Versuchsaufbau Empfindungen messen Experimente Quellen

Motivation Untersuchungsziele

The diagram features a background image of a hand interacting with a control knob. Overlaid on this are several conceptual elements:

- Vertical Axis:** A vertical line with a blue dot. The word "Gefallen" (Liking) is positioned to the left of the upper part, and "Erleiden" (Experiencing) is to the right of the lower part.
- Horizontal Axis:** A horizontal line with arrows at both ends. "Komfort" (Comfort) is on the left, and "Diskomfort" (Discomfort) is on the right.
- Maslow's Hierarchy of Needs (Left):** A vertical stack of five boxes: "Selbstverwirklichung", "Individualbedürfnisse", "Soziale Bedürfnisse", "Sicherheitsbedürfnisse", and "Physiologische Bedürfnisse".
- Central Labels:** "Maslow (1978)" and "Bubb (2003)" are placed near the bottom of the needs hierarchy.
- Bedienhaptik (Right):** A vertical stack of five boxes: "Anthropometrie", "Klima", "Lärm", "Schwingungen", and "Licht". Below these is a box labeled "Geruch".
- Text Box (Top Right):** A box containing the text "Sportwagen, modische Schuhe".

stockete / 123RF Stock Foto / Bildnummer 12079051 / Nutzung gemäß den Lizenzbedingungen und Röntgenbild (nachbearbeitet) mit freundlicher Genehmigung von Prof. Dr. M. Walther, Schön Klinik München Harlaching

Manuel Kühner Haptische Unterscheidbarkeit mechanischer Parameter LIE, 27.05.2014 3 / 17

Showcases

A CV/resume



Maël MINOT

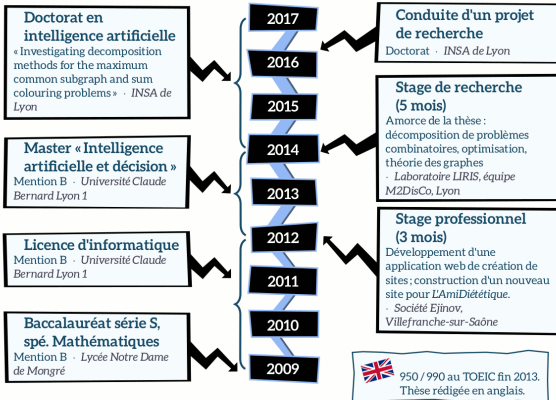
Doctorant en informatique

06 [redacted]

[redacted]@gmail.com

Né le 7 août 1991 (26 ans)

22 rue Maurice Flandin, 69003 Lyon



Projets d'études

- Simulation d'aspirateurs à réseaux de neurones avec algorithme génétique (NetLogo).
- Contribution à un logiciel pour l'enseignement de la

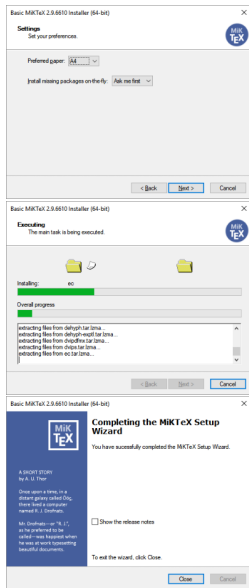
Autres réalisations

- Application de traçage de champs de vecteurs (Java).
- Outil d'archivage de SMS (AWK, JavaScript).
- Outil de gestion d'emprunts pour bibliothèques (C).

☆☆☆ C/C++, Java, Bash, LaTeX
☆☆☆ Python
☆☆☆ JavaScript
☆☆☆ PHP, SQL
☆☆☆ Prolog, NetLogo

Outils : Valgrind, Git, Doxygen,

Installation: MS Windows 10/11

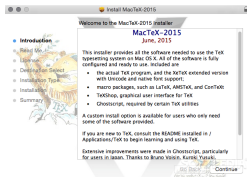


MiKTeX

<https://miktex.org/download>

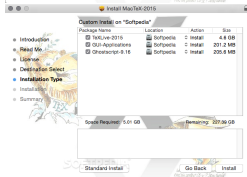
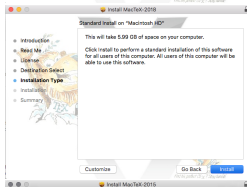
- ▶ Download the latest **Windows Basic MiKTeX Installer** (approx. 150 MB).
- ▶ Run the installer and proceed with the displayed instruction.
- ▶ For installation of missing packages on the fly, choose “**Always**”.
- ▶ The installation will take a few minutes. The progress bar shows an approximate percentage of completion.
- ▶ On completing of the setup wizard, click “*Close*” to finish the setup.

Installation: macOS



MacTeX

<https://www.tug.org/mactex/mactex-download.html>



- ▶ Download the latest **MacTeX.pkg** (approx. 5 GB) with Safari.
- ▶ After downloading, double click it to install.
- ▶ Follow the straightforward instructions.
- ▶ On the custom installation, the GUI-Applications can be excluded.

Installation: Linux/Unix

TeX Live

<https://www.tug.org/texlive/>

```

$ cd /tmp
$ wget https://mirror.ctan.org/systems/texlive/tlnet/install-tl-unx.tar.gz
$ zcat install-tl-unx.tar.gz | tar xf -
$ cd install-tl-*
$ perl ./install-tl --no-interaction
$ Finally, prepend /usr/local/texlive/YYYY/bin/PLATFORM to your PATH.

```

- ▶ `cd /tmp`
- ▶ `wget https://mirror.ctan.org/systems/texlive/tlnet/install-tl-unx.tar.gz`
- ▶ `zcat install-tl-unx.tar.gz | tar xf -`
- ▶ `cd install-tl-*`
- ▶ `perl ./install-tl --no-interaction`
- ▶ Finally, prepend `/usr/local/texlive/YYYY/bin/PLATFORM` to your PATH.

Testing

After a successful installation, the following command line can be used to test if the system is ready for typesetting.

- ▶ In Command Prompt/Terminal, use

```
tex --version
```

or

```
latex --version
```

- ▶ The output should be something like these:

```
TeX 3.141592653 (TeX Live 2022)
```

or

```
pdfTeX 3.141592653-2.6-1.40.24 (TeX Live 2022)
```

Otherwise, there is something wrong in the installation process.

L^AT_EX Document Structure

```
1 \documentclass{article}
2
3 \begin{document}
4 First document.
5 This is a simple example,
6 with no extra parameters or
7 packages included.
8 \end{document}
```

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← Document Template

L^AT_EX Document Structure

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```

← Document Contents

Typesetting

- To typeset `filename.tex`, use the command:

```
pdflatex filename.tex
```

or

```
pdflatex -interaction=nonstopmode filename.tex
```

In case of successfully typesetting, the output `filename.pdf` will be produced.

- **Always pay attention to errors.** You will find them a lot. The system should give some useful clues to solve the errors.

Output

First document. This is a simple example, with no extra parameters or packages included.

L^AT_EX Document Structure

```
1 \documentclass{article}
2
3 \begin{document}
4 LaTeX was created in the early 1980s
5 by Leslie Lamport, when he was working at SRI.
6 He needed to write TeX macros for his own use,
7 and thought that with a little extra effort
8 he could make a general package usable by others.
9
10 Peter Gordon, an editor at Addison-Wesley, convinced
11 him to write a LaTeX user's manual for publication
12 (Lamport was initially skeptical that anyone would pay money for it);
13 it came out in 1986 and sold hundreds of thousands of copies.
14 Meanwhile, Lamport released versions of his LaTeX macros
15 in 1984 and 1985.
16 \end{document}
```

Output

LaTeX was created in the early 1980s by Leslie Lamport, when he was working at SRI. He needed to write TeX macros for his own use, and thought that with a little extra effort he could make a general package usable by others.

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L^AT_EX Document Structure

```
1 \documentclass{article}
2 \title{My first LaTeX document}
3 \author{John Doe}
4 \date{1 October 2022}
5 \begin{document}
6 \maketitle
7 LaTeX was created in the early 1980s
8 by Leslie Lamport, when he was working at SRI.
9 He needed to write TeX macros for his own use,
10 and thought that with a little extra effort
11 he could make a general package usable by others.
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19 \end{document}
```

My first LaTeX document

John Doe

1 October 2022

LaTeX was created in the early 1980s by Leslie Lamport, when he was working at SRI. He needed to write TeX macros for his own use, and thought that with a little extra effort he could make a general package usable by others. Peter Gordon, an editor at Addison-Wesley, convinced him to write a LaTeX user's manual for publication (Lamport was initially skeptical that anyone would pay money for it); it came out in 1986 and sold hundreds of thousands of copies. Meanwhile, Lamport released versions of his LaTeX macros in 1984 and 1985.

On 21 August 1989, at a TeX Users Group (TUG) meeting at Stanford, Lamport agreed to turn over maintenance and development of LaTeX to Frank Mittelbach. Mittelbach, along with Chris Rowley and Rainer Schöpf, formed the LaTeX3 team; in 1994, they released LaTeX2e, the current standard version. LaTeX3 itself has since been cancelled with version features intended for that version being back-ported to LaTeX 2e since 2018.

The Preamble Part

```
1 \documentclass{article}
2 \title{My first LaTeX document}
3 \author{John Doe}
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6 \maketitle
```

Preamble Part

Macro: make title

```
7 LaTeX was created in the early 1980s
8 by Leslie Lamport, when he was working at SRI.
9 He needed to write TeX macros for his own use,
10 and thought that with a little extra effort
11 he could make a general package usable by others.
```

```
12
13 Peter Gordon, an editor at Addison-Wesley, convinced
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19 \end{document}
```

Adding Comments

```
1 \documentclass{article}
2 \title{My first LaTeX document}
3 \author{John Doe}
4 \date{1 October 2022}
5 \begin{document}
6 \maketitle
7 LaTeX was created in the early 1980s
8 by Leslie Lamport, when he was working at SRI.
9 %He needed to write TeX macros for his own use,
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My first LaTeX document

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