Institut Supérieur des Études Technologiques de Bizerte (ISETB)
Association de Développement Technologique (ADT)
Département de Génie Électrique (DÉPT.-GE)

Atelier de formation : Rédiger avec LaTeX

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Avant–propos

"One of the hardest things about LaTeX is deciding how to pronounce it. This is also one of the few things I'm not going to tell you about LaTeX, since pronounciation is best determined by usage, not fiat. TeX is usually pronounced *teck*, making *lah–teck*, and *lay–tech* the logical choices; but language is not always logical, so *lay–tecks* is also possible."

Leslie Lamport – LaTeX: A document Preparation System

Pourquoi LaTeX ?

The Andy's Laws [a]

a. http://www.osnews.com/story/10766

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Pourquoi LaTeX ?

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① Likelihood of a crash is directly proportional to the importance of a document

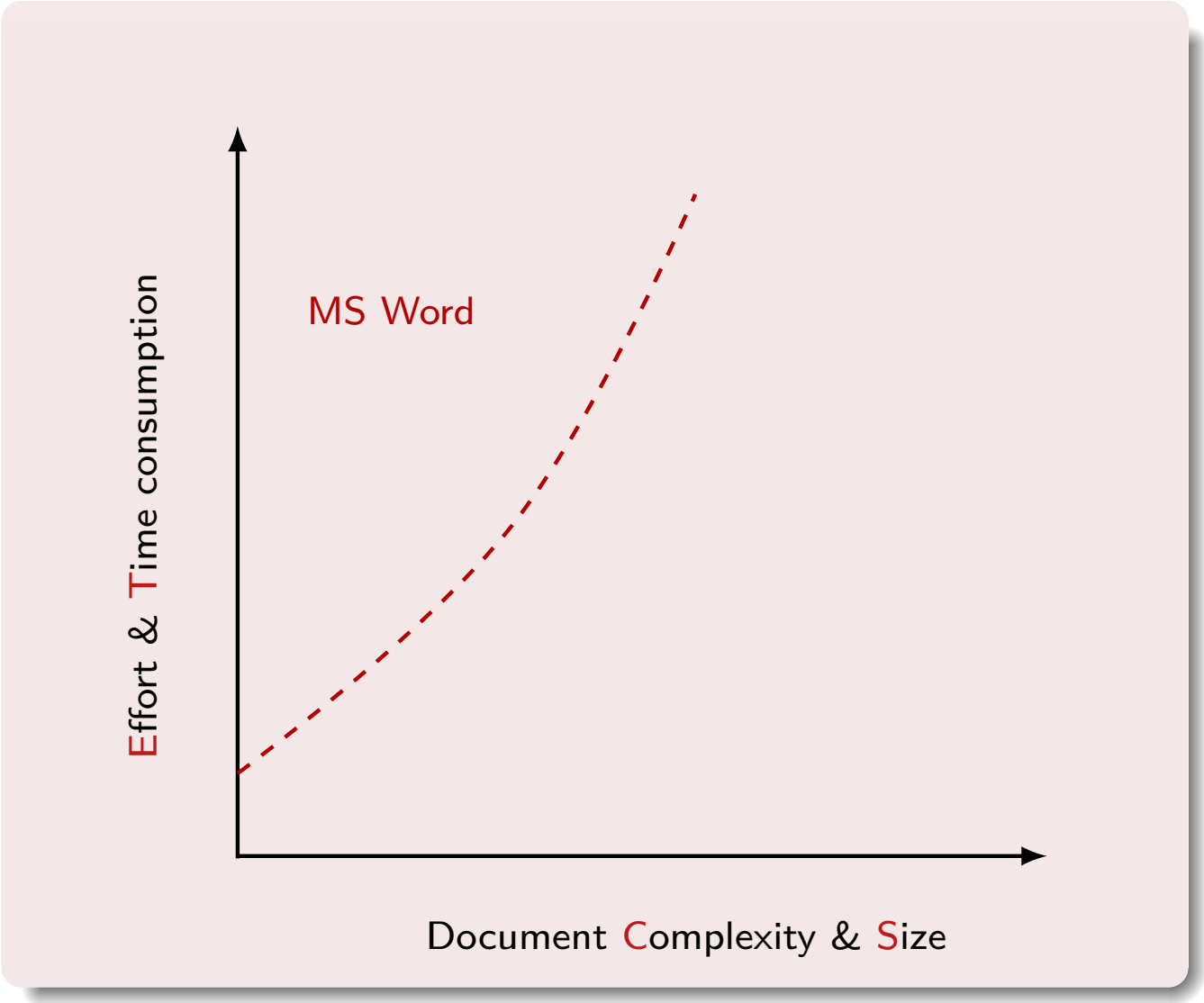
② Likelihood of a crash is inversely proportional to the time left before its deadline

③ Likelihood of a crash is directly proportional to the duration since you last saved

④ Likelihood of you throwing your computer out of the window is directly proportional to the number of times **Clippy** pops up.

Les limites de WYSIWYG [a]

a. https://www.johndcook.com/blog/2008/04/03/microsoft-word-and-latex/



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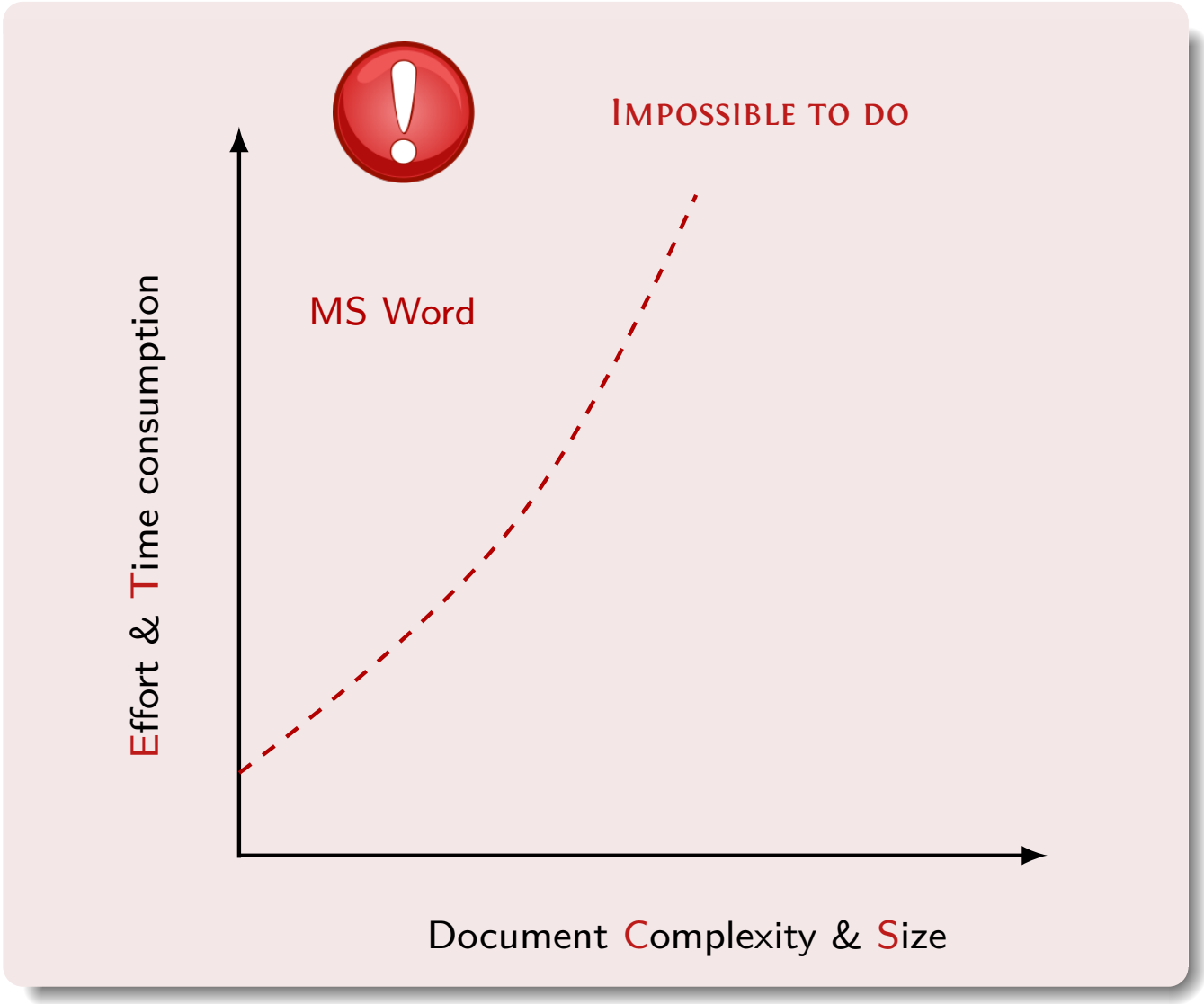

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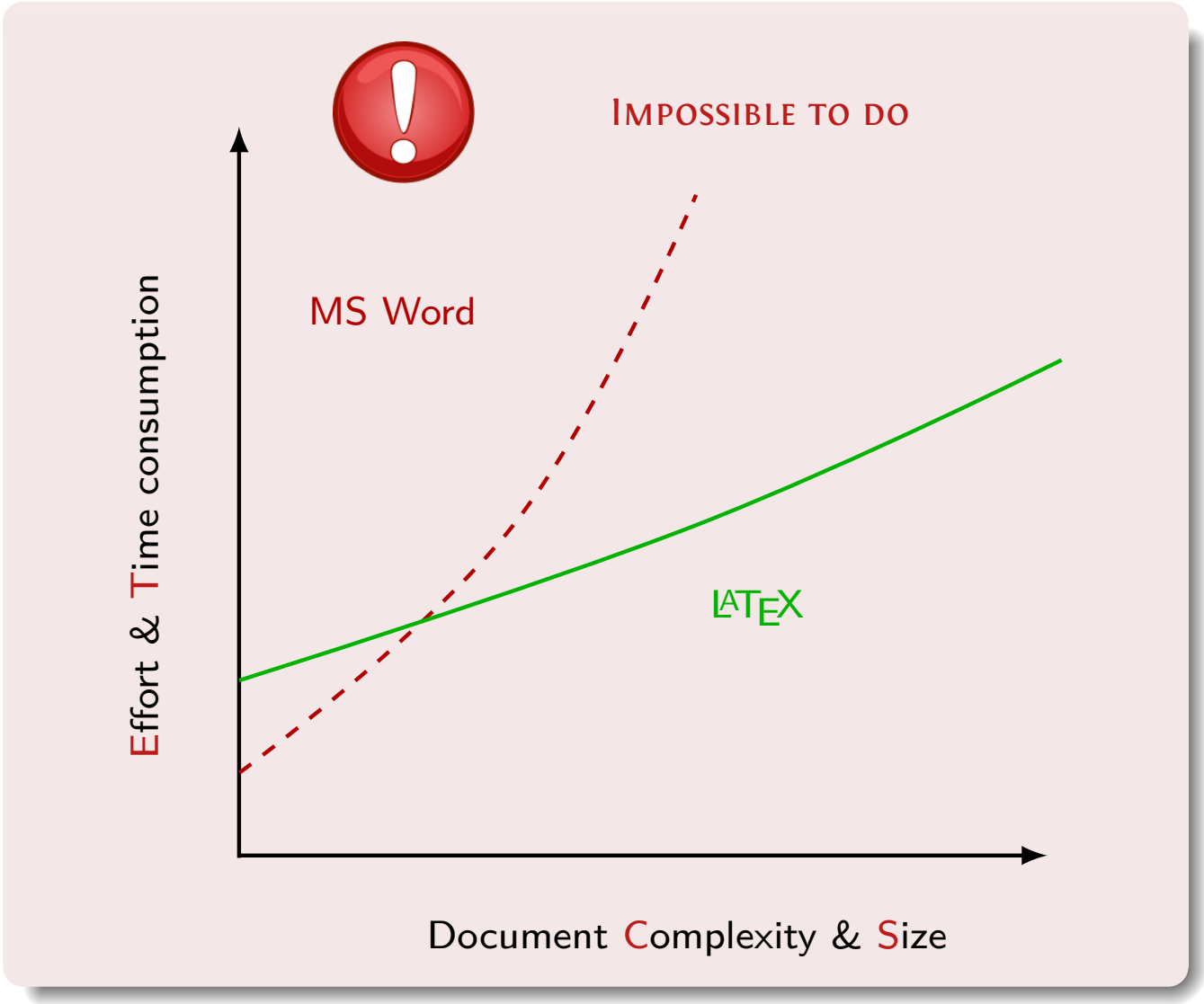

Installation & configuration

MikTEX : distribution LATEX ▸ Lien

TEXstudio : éditeur LATEX ▸ Lien

JabRef : gestionnaire de la bibliographie ▸ Lien

Le document source : un document type

```
\documentclass[cOption_1,cOption_2,...]{classe}

\usepackage[pOption_11,pOption_12,...]{package_1}
\usepackage[pOption_21,pOption_22,...]{package_2}
...
\usepackage[pOption_n1,pOption_n2,...]{package_n}

\begin{document}
  ...
le texte
  ...
\end{document}
```

Décomposition d'un fichier LaTeX

- spécification de la `classe` du document
- préambule :
  - utilisation de packages particuliers
  - initialisations et déclarations diverses
- corps du document

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Localisation de \ sur un clavier.

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Alt Gr

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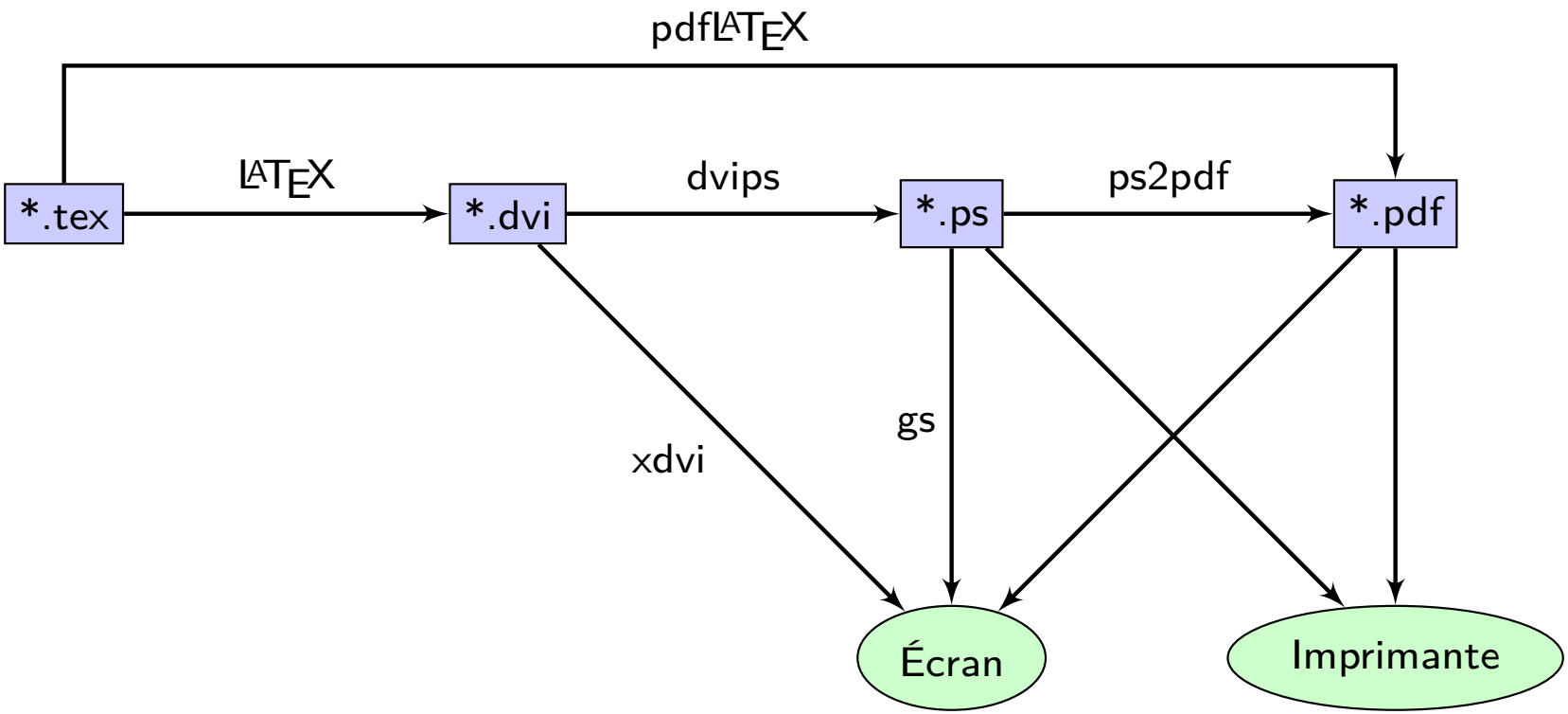
Localisation de \ sur un clavier.

Alt Gr & 8

Compilation [a]

a. http://www.texample.net/tikz/examples/tex-workflow/



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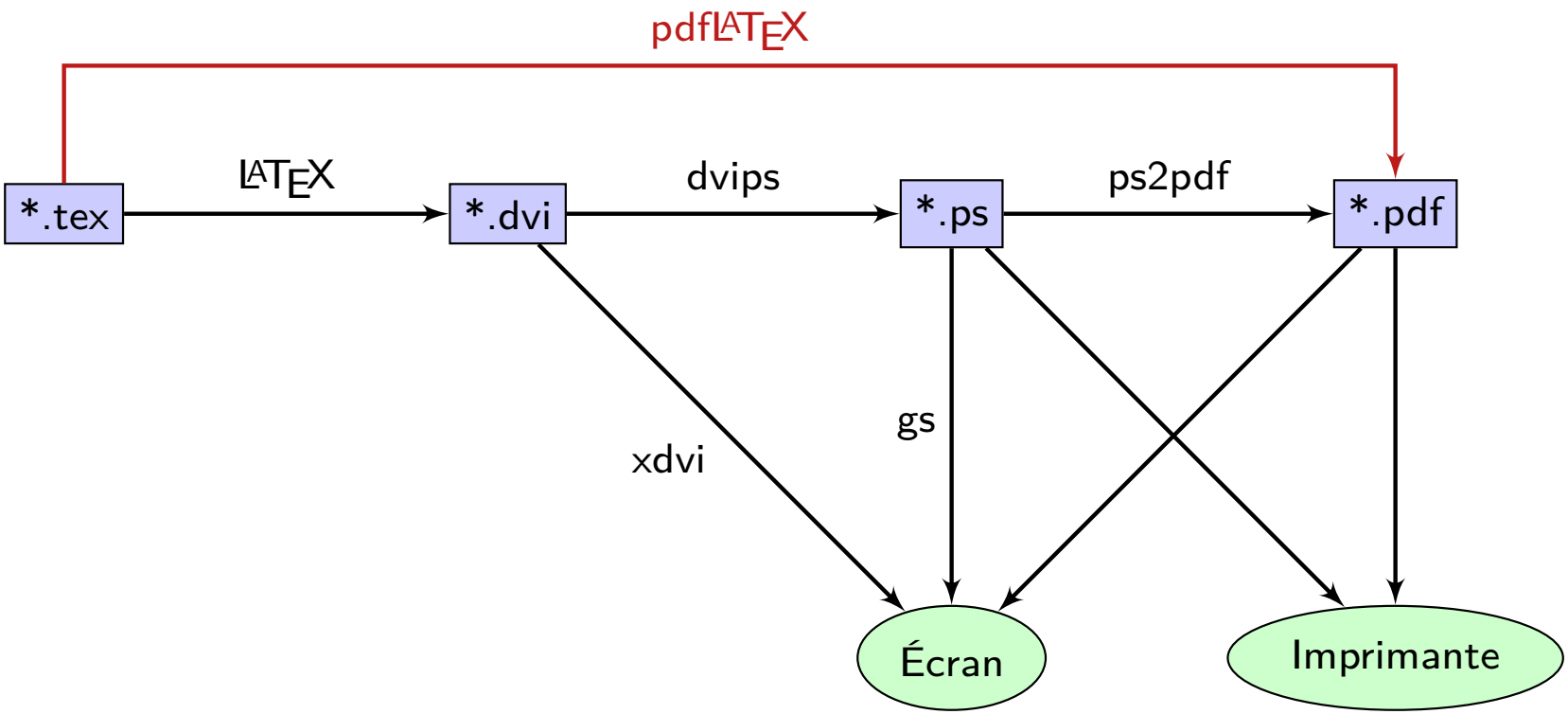

Exemple (1/4)

```
\documentclass[a4paper, 11pt]{book}
\usepackage[utf8]{inputenc}

\begin{document}

Voici ma premi\`ere phrase!

\end{document}
```

Exemple (2/4)

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\documentclass[a4paper, 11pt]{book}
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```
\documentclass[a4paper, 11pt]{book}
\usepackage[utf8]{inputenc}
\usepackage[T1]{fontenc}
\usepackage[frenchb]{babel}

\begin{document}

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\end{document}
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Exemple (3/4)

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\documentclass[a4paper, 11pt]{book}
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\end{document}
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\documentclass[a4paper, 11pt]{book}
\usepackage[utf8]{inputenc}
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\begin{document}

\chapter{Mon premier chapitre}
\section{Ma premi\`ere section}
\subsection{Ma premi\`ere sous-section}
\subsection{Ma deuxi\`eme sous-section}

Voici ma premi\`ere phrase!

\end{document}
```

Exemple (4/4)

```
\documentclass[a4paper, 11pt]{book}
\usepackage[utf8]{inputenc}

\begin{document}

Voici ma premi\`ere phrase!

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\end{document}
```

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\documentclass[a4paper, 11pt]{book}
\usepackage[utf8]{inputenc}
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\usepackage[frenchb]{babel}

\begin{document}

\pagenumbering{roman}
\tableofcontents

\chapter{Mon premier chapitre}
\section{Ma premi\`ere section}
\subsection{Ma premi\`ere sous-section}
\subsection{Ma deuxi\`eme sous-section}

Voici ma premi\`ere phrase!

\end{document}
```

Fichiers auxiliaires

Pour l'instant !

*.tex	Fichier source LaTeX
*.pdf	Image du document
*.log	Bavardage du LaTeX
*.aux	Fichier auxiliaire : Titre, numéros de pages, référencements, etc.
*.toc	Table des matières
*.lof	Liste des figures

*.bib	Fichier source BibTeX
*.blg	Log de BibTeX

Écrire des mathématiques

Des exemples...

$$y^{(1)} = \delta^{(1)} * y, \int y = \Gamma * y$$

```
$$y^{(1)}=\delta^{(1)}\ast y,\;\int y = \Gamma\ast y$$
```

$$e^x = \sum_{i=0}^{\infty} \frac{x^i}{i!}$$

```
$$\mathrm{e}^x=\sum_{i=0}^{\infty}\frac{x^i}{i!}$$
```

$$(x - x_1)(x - x_2) = x^2 - \sum x + \prod$$

$$\sum = x_1 + x_2$$
$$\prod = x_1 x_2$$

```
$$(x-x_1)(x-x_2)=x^2-\sum x+\prod=0$$
```

$$y + \tau\dot{y} = Ku \Longrightarrow y = {}^{K}/_{\tau} \int_0^t e^{-\frac{t-\mu}{\tau}} u(\mu) d\mu$$

```
$$y+\tau\dot{y}=...$$
```

Figures

Insertion & référencement

```
\usepackage{graphicx} % Preamble

% Insert graphics
\begin{figure}
  \centering
  \includegraphics[width=***, height=***]{<Nom_Fichier + extension>}
  \caption{Ma figure.}
  \label{fig::MyFig}
\end{figure}

% Reference
... figure~\ref{fig::MyFig} ...
```

Figures

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\end{figure}

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... figure~\ref{fig::MyFig} ...
```

Exemple

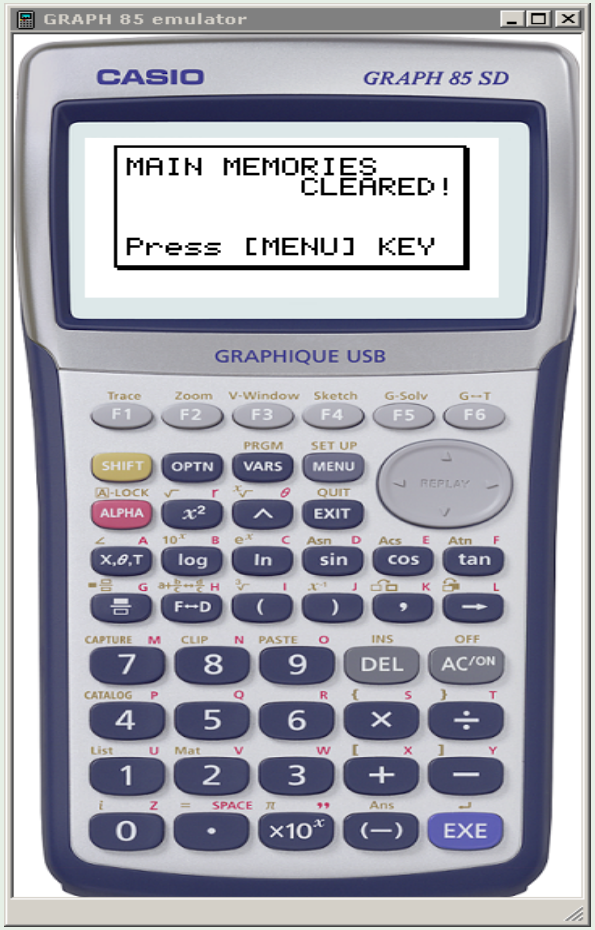

Figure – Ma figure.

Insertion & référencement

```
% Insert table
\begin{table}
  \centering
  \caption{Mon tableau.}
  \label{tab::MyTab}
  \begin{tabular}{|l|c|r|}
    \hline
    A & 1 & \begin{tabular}{cc}
              a & b \\
              \hline
              c & d \\
            \end{tabular}
    \\
    B & 2 & \\
    C & 3 & \\
    D & 4 & \begin{tabular}{c}
              \hline
              x \\
              y \\
              z \\
              \hline
            \end{tabular}
    \\
    \hline
  \end{tabular}
\end{table}

% Reference
... tableau~\ref{tab::MyTab} ...
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Insertion & référencement

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              \hline
              x \\
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              \hline
            \end{tabular}
    \\
    \hline
  \end{tabular}
\end{table}

% Reference
... tableau~\ref{tab::MyTab} ...
```
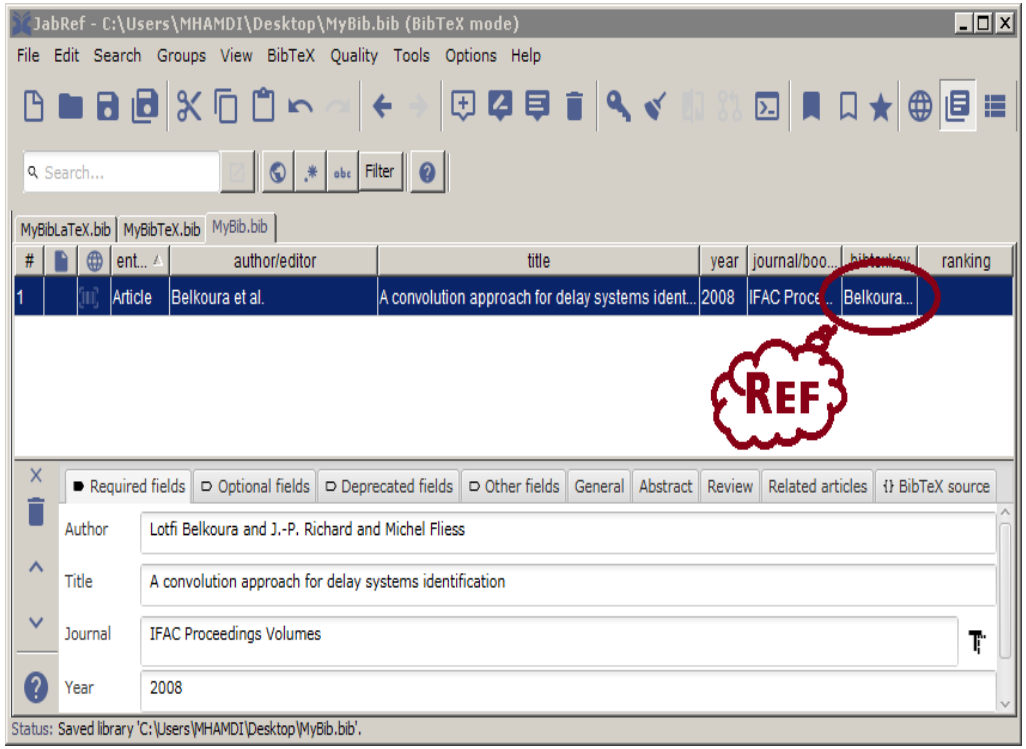

Résultat

Table – Mon tableau.

A	1	a	b
		c	d
B	2		
C	3		
			x
D	4		y
			z




```
\usepackage{natbib}% Preamble
\bibliographystyle{<Style>}

\bibliography{<Nom_Fichier>}
```

Citation

```
...\cite{Belkoura2008}...
```

Résultat

...[BRF08]...

[BRF08] L. Belkoura, J.-P. Richard et M. Fliess. "A convolution approach for delay systems identification". Dans : *IFAC Proceedings Volumes* 41.2 (Proceedings of the 17th World Congress juill. 2008), pp. 6325-6329. DOI : 10.3182/20080706-5-kr-1001.01067 (cf. p. 28).

Quelques liens utiles

- StackExchange : forum — Lien
- Matlab2Tikz : package Matlab → Tikz — Lien
- TikzEdt : éditeur Tikz — Lien
- Overleaf : éditeur LaTeX en ligne — Lien

Merci de votre attention.

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