A very short
Introduction to LaTeX

Florence Débarre

UBC – Delta Tea

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Outline

1. General philosophy
2. The source document
   - Preamble
   - Structure
   - Paragraphes
   - Images
   - Tables
   - Equations
   - Languages
   - Customization
3. Bibliography
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   - Managing your database
   - Bibliography in your manuscript
4. Help?

1 General philosophy

2 The source document

3 Bibliography

4 Help?

LaTeX, quésaco ?

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Separation of form and substance.

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Edit

With a text editor
Examples

TeXnicCenter

TeXShop

Kile

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Compile

MiKTeX

MacTeX

included!

Downsides

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- Not so easy to change the formatting
- Hard without outline
- (Collaborations)

Advantages

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- Google is your friend

Compatibility

Word

As can be seen on equation (1):

$$\Psi = \int_{-\infty}^{\infty} \exp(\sqrt{\alpha} x^2) dx \qquad (1)$$

LaTeX

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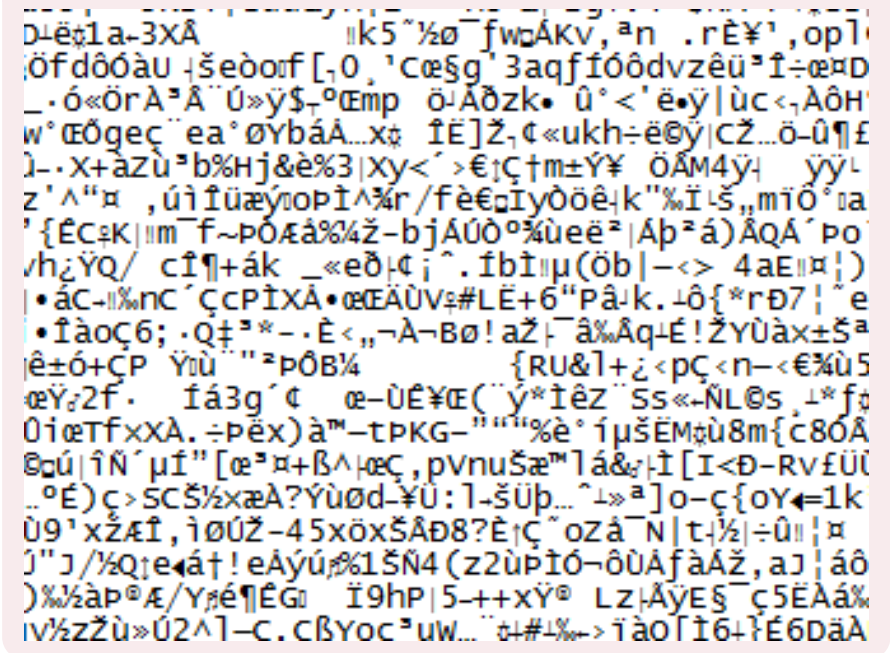
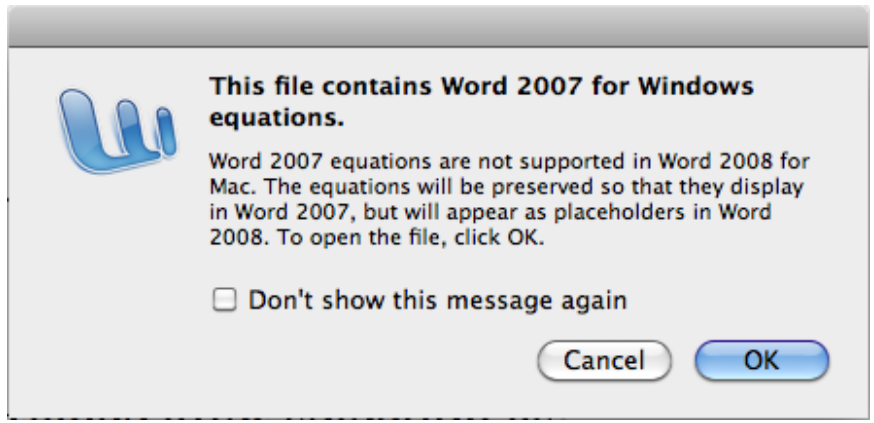


LaTeX

```
\documentclass[twocolumn]{article}
\usepackage{amsmath}

\begin{document}

As can be seen on equation~\eqref{eq:myeq}:

\begin{equation}
\Psi = \int_{-\infty}^{\infty} %
\exp \left( \sqrt{\alpha} \, x^2\right) d x
\label{eq:myeq}

\end{equation}
\end{document}
```

. . . and because this should never happen



1 General philosophy

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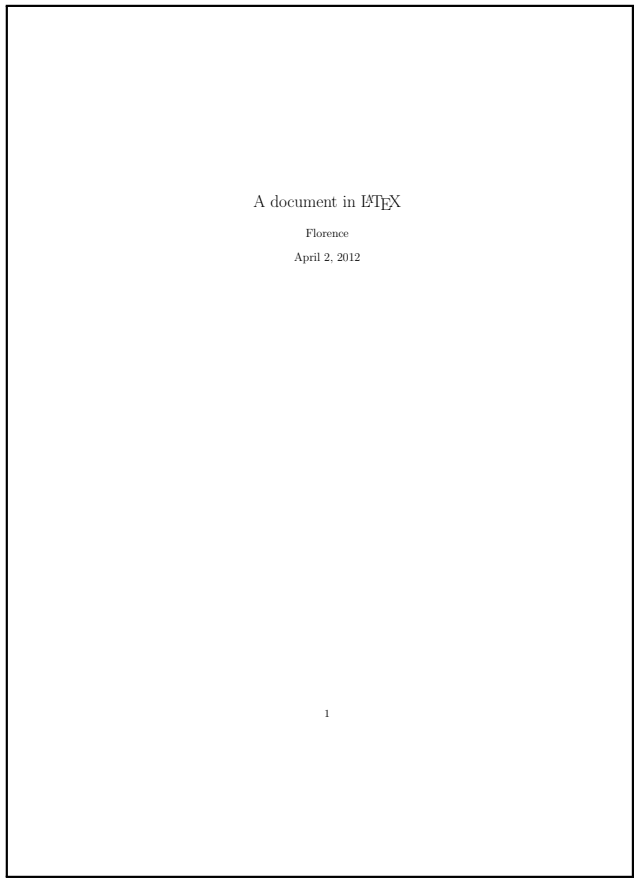
Preamble

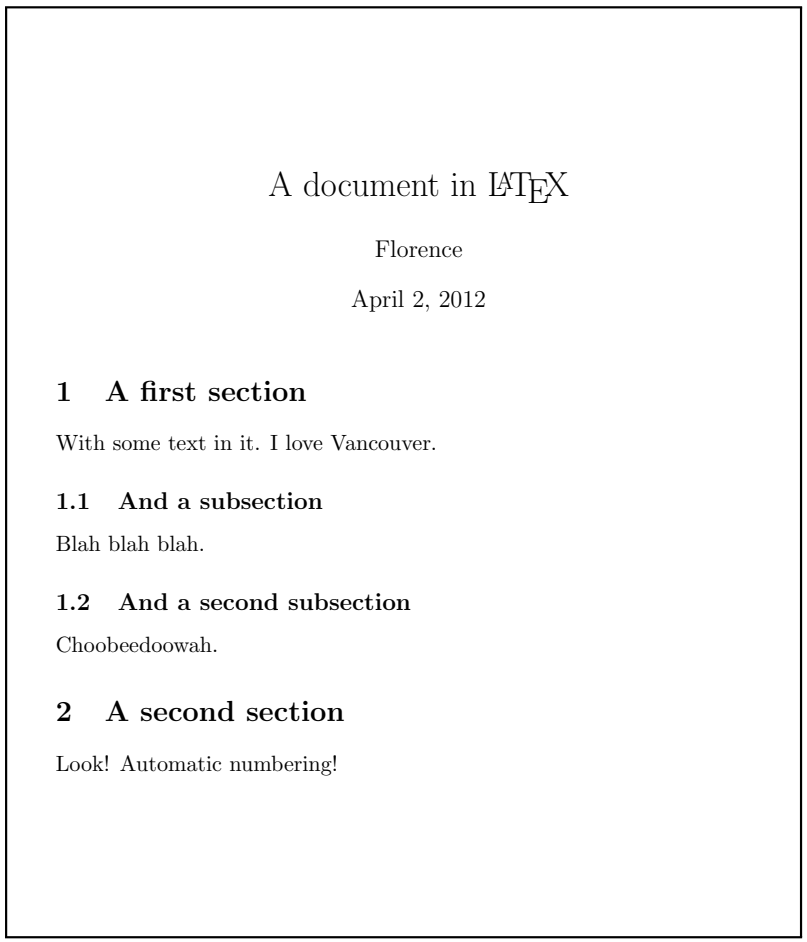
It contains the file's description, its type, packages to be loaded, options, etc.

```
\documentclass[11pt]{article}

\usepackage{amsmath}

\author{Florence}
\title{A document in \LaTeX}

\begin{document}
\maketitle
% This is a comment
\end{document}
```



Structuring your document

```
\documentclass[11pt]{article}

\author{Florence}
\title{A document in \LaTeX}

\begin{document}
\maketitle

\section{A first section}
With some text in it. I love Vancouver.
\subsection{And a subsection}
Blah blah blah.

\subsection{And a second subsection}
Choobeedoowah.

\section{A second section}
Look! Automatic numbering!

\end{document}
```



A document in LaTeX

Florence

April 2, 2012

1 A first section

With some text in it. I love Vancouver.

1.1 And a subsection

Blah blah blah.

1.2 And a second subsection

Choobeedoowah.

2 A second section

Look! Automatic numbering!

Paragraphs & lists

Paragraphs and line breaks

Line break: \\
Paragraph break: double line break

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Lists

```
\begin{itemize}
\item  First item
\item  Second item
\item  Third item
\end{itemize}
```

- First item
- Second item
- Third item

Paragraphs & lists

Paragraphs and line breaks

Line break: \\
Paragraph break: double line break

Lists and enumerations

```
\begin{enumerate}
\item  First item
\item  Second item
\item  Third item
\end{enumerate}
```

1. First item
2. Second item
3. Third item

Insert a figure

It is quite simple (but positioning it can be tricky)

```
\section{Adding figures}
This is what we will see on figure~\ref{fig:logo}, %
showing us a gorgious logo.
 \begin{figure}[h]
  \centering
  \includegraphics[height=0.75in]{Pics/logobrc.jpg}
  \caption{Such a nice logo!}
  \label{fig:logo}
 \end{figure}
```

1 Adding figures

This is what we will see on figure 1, showing us a gorgious logo.

Figure 1: Such a nice logo!

Tables

`table`: the environment (with caption, and label for references)
`tabular`: the actual table

```
\section{Creating tables}
This is what we will see on %
table~\ref{tab:mytab}, showing %
us a quite stupid table.

\begin{table}[h]%
\centering
 \begin{tabular}{lc|c}
  This & is & a table \\ \hline
  $1.23$ & wow & $\sqrt{\pi}$ \\
  $123$ & \multicolumn{2}{c}{Merged!}
 \end{tabular}
\label{tab:mytab}
\caption{This is a table. }
\end{table}
```

1 Creating tables

This is what we will see on table 1, showing us a quite stupid table.

This	is	a table
1.23	wow	$\sqrt{\pi}$
123	Merged!	

Table 1: This is a table.

Writing an equation

Super easy!

```
As can be seen on equation~\eqref{eq:myeq}:

\begin{equation}
\Psi = \int_{-\infty}^{\infty} %
\exp \left( \sqrt{\alpha} \, x^2\right) d x
\label{eq:myeq}

\end{equation}
```

As can be seen on equation (1):

$$\Psi = \int_{-\infty}^{\infty} \exp\left(\sqrt{\alpha}\, x^2\right) dx \qquad (1)$$

Languages

Using babel

```
\documentclass[11pt]{article}
\usepackage[francais, english]{babel}
\usepackage[latin1]{inputenc}
\begin{document}

\section{Let's play with languages}
You can have parts of your document in another language.

\selectlanguage{francais}
\noindent Par exemple maintenant, ça va s'afficher en français, %
et on peut écrire avec des accents.
\end{document}
```

1 Let's play with languages

You can have parts of your document in another language.
Par exemple maintenant, ça va s'afficher en français, et on peut écrire avec des accents.

Customization

Define new commands and new environments.

```
\documentclass[11pt]{article}
 \usepackage{color}
 \newcommand{\suppinfo}{supplementary information}
 \newcommand{\comm}[1]{%
    \textit{\scriptsize{\textcolor{blue}{\textsf{#1}}}}}

\begin{document}
 \noindent See the \suppinfo{} for more details. \comm{This is %
a comment.} And we see that...
\end{document}
```

See the supplementary information for more details. *This is a comment.* And we see that...

1 General philosophy

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- Bibliography in your manuscript

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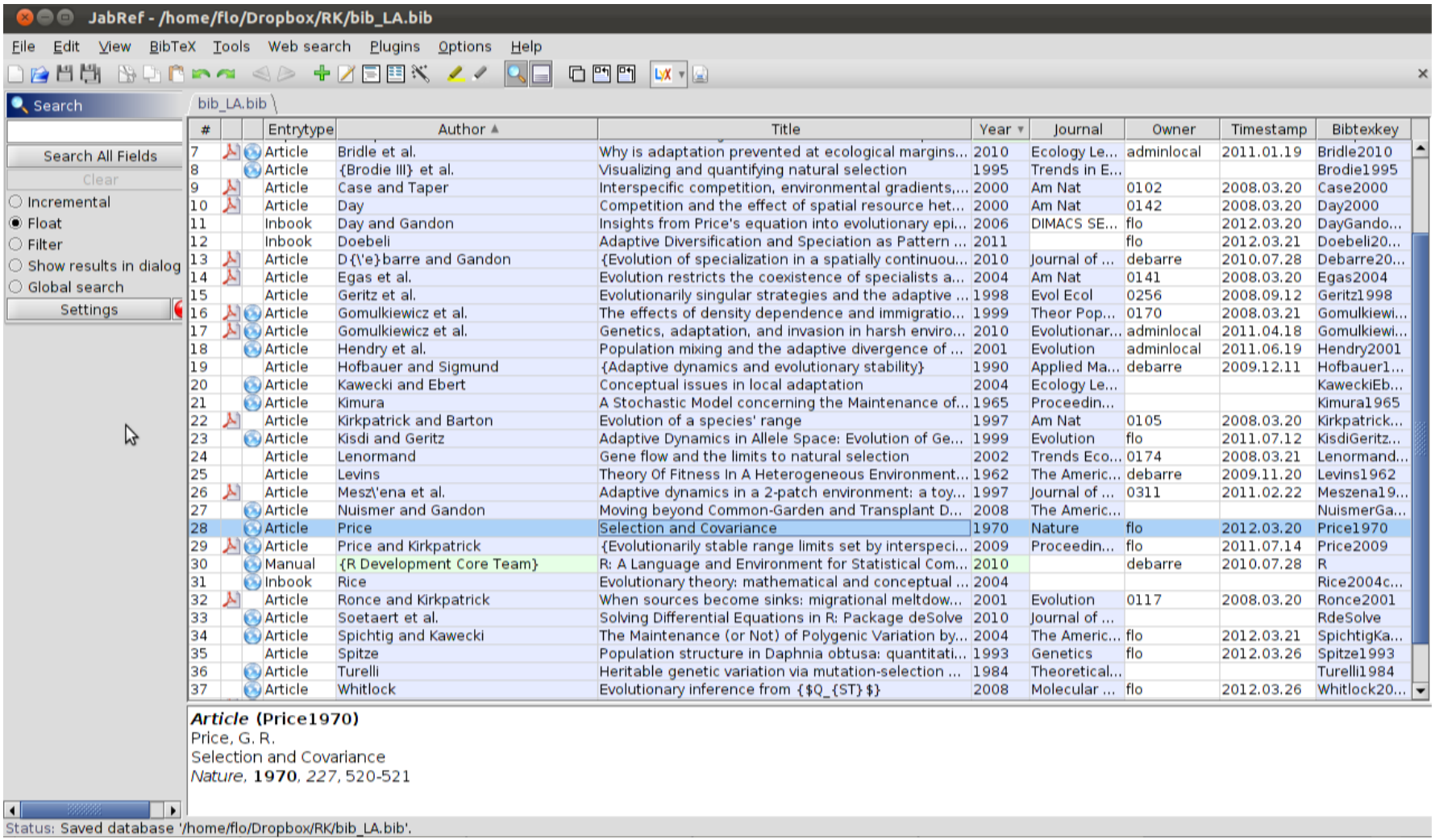
Bibliographic database

It is a BibTeX file: `.bib`
A reference in your file will look like this:

```
@article{debarre2010,
  title={{Evolution of specialization in a %
          spatially continuous environment}},
  author={D{\'e}barre, Florence and Gandon, Sylvain},
  journal={Journal of Evolutionary Biology},
  volume={23},
  number={5},
  pages={1090--1099},
  issn={1420-9101},
  year={2010},
  publisher={Wiley Online Library}
}
```

Managing your database

I use Jabref



References within the text

Use the \cite command, with the BibTeX key

```
\documentclass[11pt]{article}
\begin{document}

A finer environmental grain favours generalists \cite{debarre2010}.
\bibliography{mybib}
\bibliographystyle{plain}

\end{document}
```

A finer environmental grain favours generalists [1].

References

[1] F. Débarre and S. Gandon. Evolution of specialization in a spatially continuous environment. *Journal of Evolutionary Biology*, 23(5):1090–1099, 2010.

Styling of the references

Example with cbe

- Use the `natbib` package
- Download the `cbe.bst` style
- or: download style files on the journals' websites.

Styling of the references

Example with cbe

```
\documentclass[11pt]{article}
\usepackage{natbib}
\begin{document}
  A finer environmental grain favours generalists \citep{debarre2010}.
  As wrote \citet{Ronce2001}...
 \bibliography{mybib}
 \bibliographystyle{cbe}
\end{document}
```

A finer environmental grain favours generalists (Débarre and Gandon, 2010). As wrote Ronce and Kirkpatrick (2001)...

References

Débarre, F. and Gandon, S. 2010. Evolution of specialization in a spatially continuous environment. *Journal of Evolutionary Biology* 23:1090–1099.

Ronce, O. and Kirkpatrick, M. 2001. When sources become sinks: migrational meltdown in heterogeneous habitats. *Evolution* 55:1520–31.

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Useful links

Which can be clicked

- The Not So Short Introduction to LaTeX2e

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- The Not So Short Introduction to LaTeX2e
- LaTeX wikibook

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