

# Introduction to $\text{\LaTeX}$

## Including figures and creating a bibliography

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## Including figures

I assume all the figures have been created by other means, not by  $\text{\LaTeX}$ .

- This is one of the more complicated choices in producing a document
- Often very poor and frustrating results with WYSISWYG systems
- Attributes of a figure: position, size, type, position inside figure frame, caption, id, orientation

- depending on the figure appears inside the document
- depending on the order of the figures
- depending on the guidelines you give as to positioning

## The simplest figure

Assuming you have a picture in *file*

```
\begin{figure}  
\includegraphics{file}  
\end{figure}
```

Of course you can have any file description that your operating system understands, such as

- `/home/dms/Pictures/file`
- `C:\Documents\Pictures\file`

## First exercise



- Go and get some pictures, and add one of them to your document.
- I have some pictures for you to show the variety, in [folk.uio.no/dssantos/corsoLaTeX/](http://folk.uio.no/dssantos/corsoLaTeX/)

## Adding a caption to your figure, and referencing it

If you have more than one picture, you'd rather talk about it and make sure you identify it properly:

- `\caption` creates a caption inside the figure
- `\label` creates a label to identify it and refer to it

```
\begin{figure}
  \includegraphics{file}
  \caption{Here is the caption.\label{thename}}
\end{figure}
```

In order to refer to the picture, you only have to use `\ref`. For example:  
In figure `\ref{thename}`, we show...

**NB!** You have to compile the file twice in order to see the reference. The first time L<sup>A</sup>T<sub>E</sub>X only learns the need to look for `thename` and finds where it is. On the second run it can replace the reference with the right number.

## Deciding on where to appear

The less you are fussy about this, the better, since it is  $\text{\LaTeX}$  who has ultimately control, but you can suggest positioning by an ordered set of wishes:

- t top of the page
- b bottom of the page
- p end of the section (float page)
- h here

```
\begin{figure}[tb]
  \includegraphics{file}
  \caption{Here is the caption.\label{thename}}
\end{figure}
```

## Deciding on where to appear in two columns

- One should perhaps note that in the case of two columns, you can define whether your figure is also placed inside a column or spanning the full page. This means there are in fact two figure commands, `figure` and `figure*`. This last means full page in a multicolumn environment.
- Exercise: change the file `Test1.tex` with different number of columns and try to include different figures different ways.

Note that you need to use the package `multicol`:

```
\usepackage{multicol}
```

## Size and placement of your figure in the figure place

You can control the actual (relative or absolute) size of your pictures, by relating it to the `\textwidth` or the `columnwidth` of the text.

```
\begin{figure}
\includegraphics[.8*\textwidth]{file}
\end{figure}
```

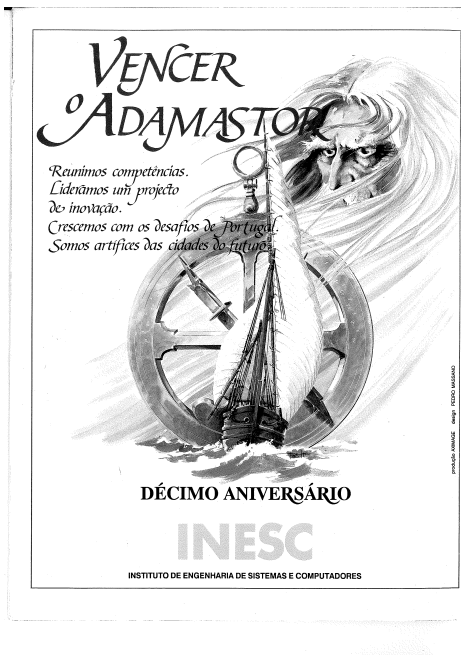
You can also (if the figure is smaller than your figure placeholder) define how it appears, using `\centering` before `\includegraphics`.

## Advanced: two images in one figure

Figure environments with two images

```
\begin{figure}
\begin{subfigure}[h]{0.4\linewidth}
\includegraphics[width=\linewidth]{example-image-a}
\caption{Image A}
\end{subfigure}
\hfill
\begin{subfigure}[h]{0.4\linewidth}
\includegraphics[width=\linewidth]{example-image-b}
\caption{Image B}
\end{subfigure}%
\caption{This is a figure with two subfigures}
\end{figure}
```

## Example: Figure 1



(a) Using literary themes in technology



(b) Doctors in art: João Semana by Roque Gameiro

Figure: Two examples of Portuguese-language related material I use



## Advanced: wrapping text

Wrapping text around figures

```
\begin{wrapfigure}[10]{r}{5.5cm}
\includegraphics{...}
\caption{A wrapped figure}\label{wrap-fig:1}
\end{wrapfigure}
```

First argument (optional): how many lines, second argument: left or right alignment of the figure, third: width.



- Go again to `folk.uio.no/dssantos/cursoLaTeX/`
- Get zipfile `expLing.zip`
- Try to change the position of the figures and their placements

## References: the hallmark of academic writing

Two sides:

- Semantics: what should be there
- Syntax: the form of indicating it

Who has not spent ages adding italics, dates in parentheses, and dots, to conform to a new bibliographic style?

L<sup>A</sup>T<sub>E</sub>X has a companion program, BibTeX, which handles beautifully these differences, and lets us just take care of the semantics.

# How does BibTeX work?

- You store the bibliographical entries in a `.bib` file, in a specific (quite readable) format, let us have `myexample.bib`
- you include the following two commands in your  $\text{\LaTeX}$ file

```
\bibliographystyle{plain}
\bibliography{myexample}
```
- you refer to the references in the text as `\ref{citation}` or `\ref [page 34]{citation}`

After you compile your  $\text{\LaTeX}$ file, you should run `bibtex file` and then compile your  $\text{\LaTeX}$ file again.

# Exercise with BibTeX

- Fetch a bib file and a tex file with references to it
- Perform the necessary steps in order to compile it
- Change the `\bibliographystyle{plain}` to `\bibliographystyle{chicago}`
- Recompile it
- Try out with different bibliography styles



A type of reference and a shortname (just for your internal use), enclosing with a set of feature values:

```
@phdthesis{Oksefjell,  
  author={Ebeling, Signe Oksefjell},  
  title={The {N}orwegian verbs bli and få and their corresponden  
  school={Faculty of Arts, University of Oslo},  
  year={2003},  
}  
  
@book{Faarlundet al,  
  title = {Norsk Referansegrammatikk},  
  publisher = {Universitetsforlag},  
  year = {1997},  
  author = {Faarlund, Jan Terje and Svein Lie and Kjell Ivar Vanne  
}
```

## Should one also use natbib?

A L<sup>A</sup>T<sub>E</sub>X package that is compatible with BibTeX and has many goodies

- In order to use it, use this command in your header

```
\usepackage{natbib}
```
- Often, this is already included in the specific packages defined by journals or conferences...
- it allows several different forms of including in text

`citet` Textual citation: Jones et al. (1990)

`citep` Parenthetical citation: (Jones et al., 1990)

`citet*` Full author list: Jones, Baker, and Williams (1990)

`citep*` Full author list: (Jones, Baker, and Williams, 1990)

`citealt` Jones et al. 1990

`citealp` Jones et al. 1990

## Advanced: Multiple bibliographies?

- Useful when you want to separate e.g primary texts from secondary texts, use corpora or other kinds of references in a separate section
- Use the package `chapterbib`, which `natbib` is compatible with

## Hands on

- Go to [folk.uio.no/dssantos/corsoLaTeX/](http://folk.uio.no/dssantos/corsoLaTeX/)
- Get zipfile `KK.zip`
- Try out the four different bib styles