Introduction to 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 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

LaTeX processes the figures for you

- 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

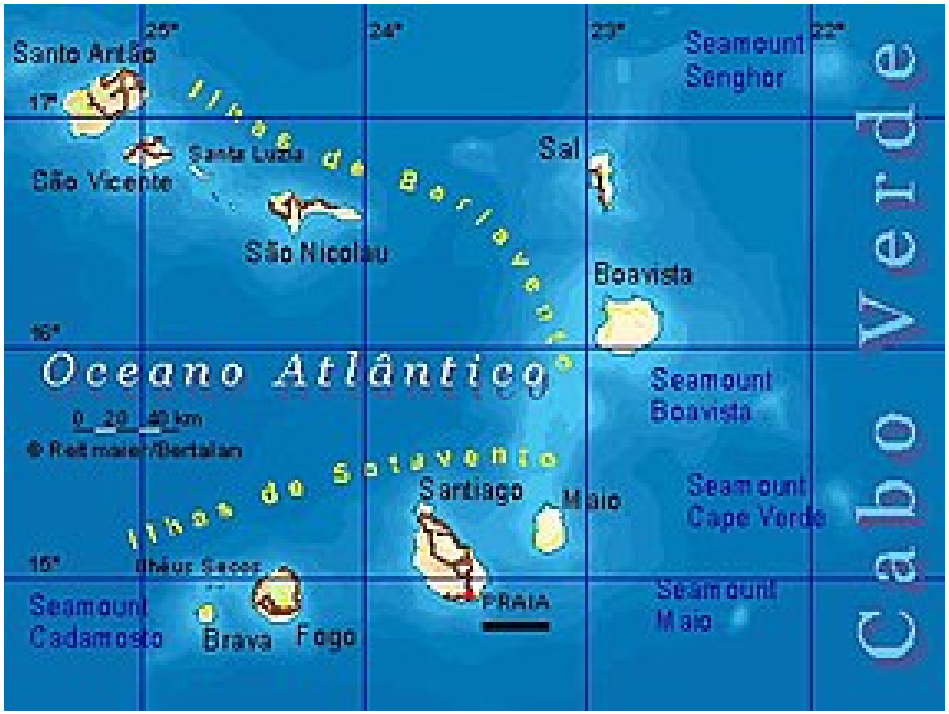
Assuming you have a picture in *file*

```
\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/cursoLaTeX/`

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 LaTeXonly 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 LaTeXwho has utlimately 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 places 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}
```

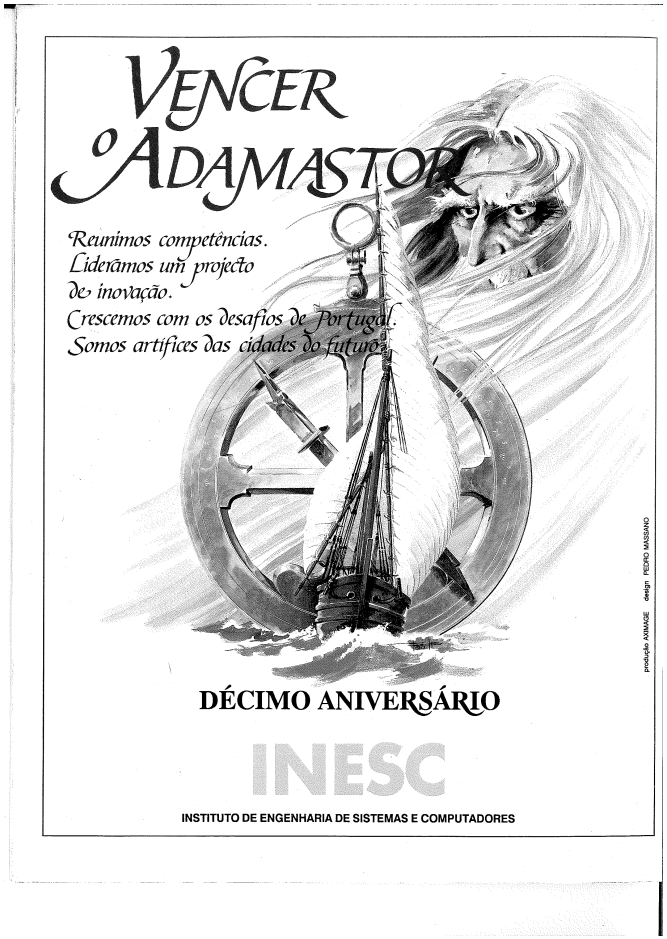
You can also (if the figure is smaller than your figure placeholder) define how it appears, using `\centering` before `\includegraphics`.

Advanced: two images in one figure

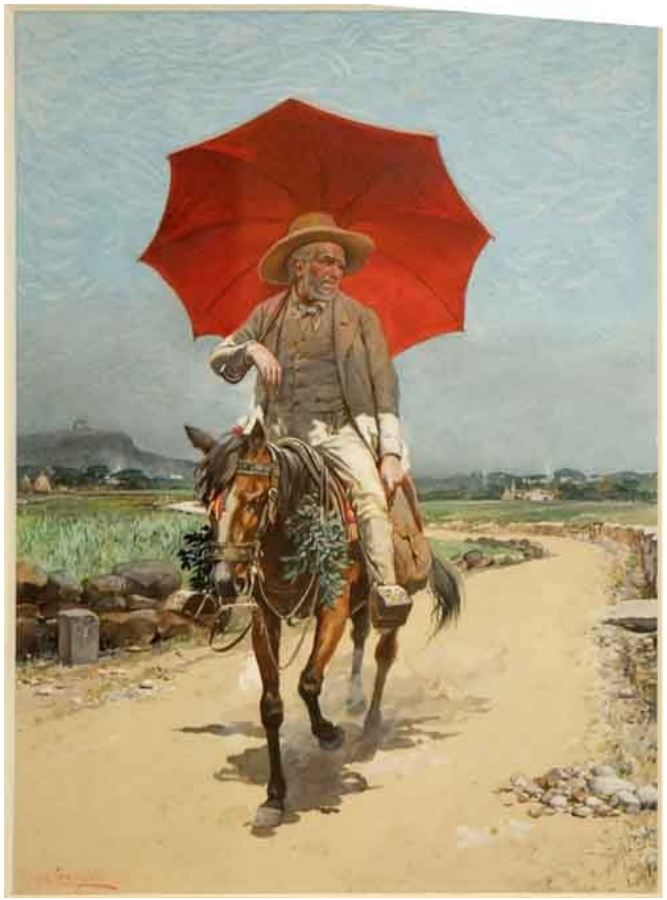
Figure environments with two images

```
\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.

Hands on

- 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?
LaTeXhas 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 LaTeXfile

```
\bibliographystyle{plain}
\bibliography{myexample}
```

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

After you compile your LaTeXfile, you should run `bibtex file` and then compile your LaTeXfile 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

BibTex syntax

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 correspo
    school={Faculty of Arts, University of Oslo},
    year={2003},
}
@book{Faarlundetal,
  title = {Norsk Referansegrammatikk},
  publisher = {Universitetsforlag},
  year = {1997},
  author = {Faarlund, Jan Terje and Svein Lie and Kjell Ivar V
}
```

Should one also use natbib?

A LaTeXpackage 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/cursoLaTeX/`
- Get zipfile `KK.zip`
- Try out the four different bib styles