

# **L<sup>A</sup>T<sub>E</sub>X for Economics and Business Administration (Part II)**

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Thomas de Graaff

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# Introduction

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# Previously

- Pros and cons of  $\text{\LaTeX}$
- Why bother with learning  $\text{\LaTeX}$ 
  - for consistent/structured lay-out
  - better automation of workflow
- Compiling, referencing, formula's, text control

## This session we look at

- Packages (controlling the preamble)
- Tables (inserting plain tables)
- Automatizing tables (complex tables)
- Better looking references
- Making slides

Note: we will only touch upon these subjects

Note2: All materials can be downloaded from

<http://thomasdegraaff.nl/LaTeX-Workshop/notes/02-more-notes.html>

# **Packages, packages, and packages**

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# The use of packages

- Typically, packages are used to change appearance
- To ensure no errors, usually opt for the full installation or have access to internet
- There are lots of them, see [CTAN](#)
- Often used packages
  - amsmath, graphicx, subfig, marvosym, microtype, booktabs, lipsum, pdfscape, fullpage, natbib
- format:

```
1 \usepackage[colorlinks=true,citecolor=magenta,  
2 urlcolor=magenta]{hyperref}
```

# The use of classes

- Typically one uses the `article` class
- However, there is as well a `book`, `mininal`, `report`, `beamer` class etcetera
- Specific user written classes are `Koma-Script` and `elsarticle` classes
- Classes come with options such as

```
1 \documentclass[12pt, a4paper]{article}
```

# General structure

```
1 \documentclass[twocolumn, a4paper]{article}
2 % Preamble: how should it look like
3 \usepackage{multicol, lipsum}
4 \usepackage[english, german]{babel}
5 \begin{document}
6     % Body: the real contents
7     \lipsum
8 \end{document}
```



## Exercise: fluff it up!

With a cool paper:

1. Use the `scrartcl` class with options: `11pt`, `abstracton`, `notitlepage`
2. Now add option `parskip` (and perhaps `twocolumn`)
3. One by one add the following packages and see what happens:
  - 3.1 `package fullpage`
  - 3.2 `package fourier`
  - 3.3 `package setspace` with command thereafter `doublespace`

# natbib & biblatex

Default format is BibTeX—customizable (however limited).

Default is good (except: use natbib!)

If you want to customize quite a lot: biblatex package!

```
1 \usepackage[style= authoryear-icomp,  
2         backend=bibtex,  
3         natbib=true,  
4         firstinits=true,  
5         backref=true,  
6         maxnames=2,  
7         maxbibnames=10]  
8         {biblatex}  
9 \bibliography{mybib.bib}  
10  
11 \printbibliography
```

## Exercise: cite or perish

Create a reference list by:

1. citing some people, note:

```
1 \citet{refid} % in text citation
2 \citep[][]{refid} % between parentheses
3
```

2. Indicate where the bibliography should be

# Figures

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# Figures

Figures/graphs and tables in a floating environment

```
1 \begin{figure}[htbp!]{  
2     \center  
3     \includegraphics[] {ligatures_latex}  
4     \caption{A figures about ligatures}  
5     \label{fig:ligatures}  
6 \end{figure}
```

Figures can be .pdf, .jpg, .png and a whole lot of other types  
(but not bitmaps!)

## Exercise: insert cool picture

1. Insert the file `Powerphluff.jpg` and use the command

```
1 width = 0.8\textwidth
```

to control the size

2. Give the figure an appropriate caption (something perhaps with source)

# Tables

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# Tables

```
1 \begin{table}[t!]  
2     \caption{This is the caption}  
3     \begin{tabular}{lcr}  
4         \hline  
5         first & row & data \\  
6         second & row & data \\  
7         \hline  
8     \end{tabular}  
9     \label{tab:example}  
10 \end{table}
```



Internal references are a breeze

```
1 \label{}           % Label something
2 \ref{}             % Refer to that
3 \footnote{}        % Add footnote
4 \thanks{}           % For in title
5
```

## dcolum and booktabs package

```
1 \usepackage{booktabs, dcolum} % in preamble
2 \newcolumntype{d}{D{.}{.}{2}} % in preamble
3 \begin{table}[t!]
4     \caption{This is the caption}
5     \begin{tabular}{l d d}
6         \toprule
7         Student & Grade 1 & Grade 2 \\
8         \midrule
9         Mike & 7.8 & 9 \\
10        Andrea & 6 & 8.2 \\
11        \bottomrule
12    \end{tabular}
13    \label{tab:example2}
14 \end{table}
```

## Exercise: Create a lame table

Create the following table

**Table 1:** Average grades

First name	Surname	Grade
Sherlock	Holmes	7.9
John H.	Watson	8.1

# Some R code

```
library(texreg)

control <- c(4.17, 5.58, 5.18, 6.11, 4.50, 4.61, 5.17, 4.53, 5.33, 5.14)
treated <- c(4.81, 4.17, 4.41, 3.59, 5.87, 3.83, 6.03, 4.89, 4.32, 4.69)
group <- gl(2, 10, 20, labels = c("Control", "Treated"))
weight <- c(control, treated)
m1 <- lm(weight ~ group - 1)
m2 <- lm(weight ~ group)

texreg(list(m1, m2), dcolumn = TRUE, booktabs = TRUE, file = "Table.tex",
use.packages = FALSE, label = "tab:3", caption = "Two linear models.",
float.pos = "hb!")
```

which saves a file "Table.tex" to the same directory

## Exercise: Be as lazy as possible!

Now

```
1 \input{Table.tex}
```

produces your table

- Do it!

# Slides

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Slides are typically made with the beamer class

You can change the beamer style by:

```
1 \usetheme{Hannover}  
2 \usecolortheme{dove}  
3  
4 % to remove those navigation symbols  
5 \beamertemplatenavigationsymbolempty  
6
```

(<https://www.hartwork.org/beamer-theme-matrix/> gives all possible combinations



## Exercise: Create slides or powerphluff!

**Create a couple of slides containing at least**

- Titlepage
- Introduction
- Conclusion

# Conclusion

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## In conclusion

- $\text{\LaTeX}$  is a very powerful structured language especially suitable for
  - large complex documents;
  - documents with many formula's.
- Big advantage: you really need to think
- Not for every one; steep learning curve, but
- large community (google it)
- Markup language (especially, Markdown) becomes more and more wide-spread:  $\text{\LaTeX}$  is a good start