

HUMBOLDT-UNIVERSITÄT ZU BERLIN



# L<sup>A</sup>T<sub>E</sub>X for Linguists

## L<sup>A</sup>T<sub>E</sub>X 3: Graphics, tables & floats

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LOT 2019, Amsterdam

January 14, 2019

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- 1 Graphics
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# Including a graphic

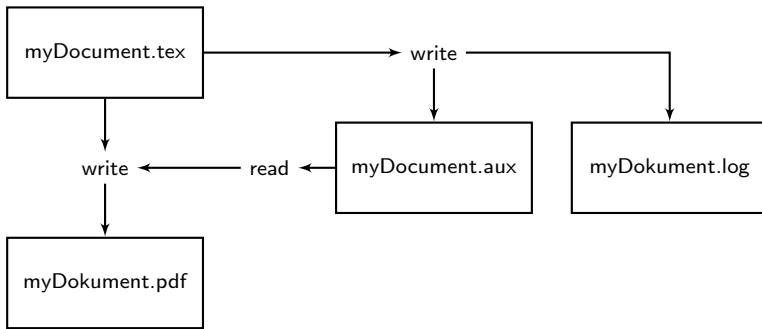
- Load the **package** graphicx: `\usepackage{graphicx}`
- To include the graphic, use the following command (**file ending**, i.e. .pdf, doesn't need to be added) :

```
\includegraphics[size of graphic]{path/name of graphic}
```

# Including a graphic

- Load the **package** `graphicx`: `\usepackage{graphicx}`
- To include the graphic, use the following command (**file ending**, i.e. `.pdf`, doesn't need to be added) :

```
\includegraphics[size of graphic]{path/name of graphic}
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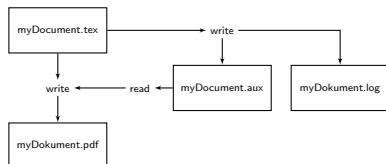


```
\includegraphics{LaTeX-flowchart-1.pdf}
```

# Rescaling the graphic

Rescaling **relative** to the **original size** with the option `scale` (`scale=0.5` = 50 % of the original size)

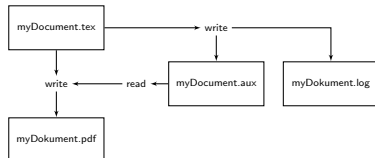
```
\includegraphics[scale=0.5]{LaTeX-flowchart-1.pdf}
```



# Rescaling the graphic

## Rescaling with **absolute** specification

```
\includegraphics[width=5cm]{LaTeX-flowchart-1.pdf}
\includegraphics[height=5cm]{LaTeX-flowchart-1.pdf}
```



## Rescaling **relative** to the **document size**

```
\includegraphics[width=\linewidth]{LaTeX-flowchart-1.pdf}
\includegraphics[width=.2\linewidth]{LaTeX-flowchart-1.pdf}
\includegraphics[width=.2\textwidth]{LaTeX-flowchart-1.pdf}
```



# Formats and paths

- The following **formats** can be used with Xe<sup>L</sup>A<sub>T</sub>E<sub>X</sub> and PDF<sup>L</sup>A<sub>T</sub>E<sub>X</sub>:
  - .pdf (vector graphics)
  - .png (raster graphics)
  - .jpg (raster graphics)
  - .eps (vector graphics) (in Xe<sup>L</sup>A<sub>T</sub>E<sub>X</sub> or with `epstopdf` package in PDF<sup>L</sup>A<sub>T</sub>E<sub>X</sub>)



# Formats and paths

- The following **formats** can be used with Xe<sup>L</sup>A<sub>T</sub>E<sub>X</sub> and PDF<sup>L</sup>A<sub>T</sub>E<sub>X</sub>:
  - .pdf (vector graphics)
  - .png (raster graphics)
  - .jpg (raster graphics)
  - .eps (vector graphics) (in Xe<sup>L</sup>A<sub>T</sub>E<sub>X</sub> or with `epstopdf` package in PDF<sup>L</sup>A<sub>T</sub>E<sub>X</sub>)
- You must specify the place where you have saved the graphic **starting from the location of your .tex-file**.
  - ① Graphic and .tex-file are in the same folder:  
`\includegraphics{LaTeX-flowchart-1}`
  - ② Graphic is in a folder `graphics`. This folder is in the same folder as your .tex-file:  
`\includegraphics{graphics/LaTeX-flowchart-1}`
  - ③ .tex-file is in a folder. This folder and your graphic are in the same folder:  
`\includegraphics{../LaTeX-flowchart-1}`

# Exercise

Go to

<https://github.com/langsci/latex4linguists/blob/master/2-1.md>  
and follow the instructions of the first **three blocks** in your `.tex` file.

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# Tables

- **environment** for tables: `tabular`
- optional argument for **position** of table
- obligatory argument for **layout** inside a column
- separation of table cells: `&`
- End of a row: `\\`

# Tables

- **environment** for tables: `tabular`
- optional argument for **position** of table
- obligatory argument for **layout** inside a column
- separation of table cells: `&`
- End of a row: `\\`

## Example:

```
sample text
\begin{tabular}[t]{l|c|r}
0001 & 002 & 03 \\
\hline
0A & 000B & 00C \\
\hline
00i & 0ii & 000iii \\
\end{tabular}
```

sample text	0001	002	03
	0A	000B	00C
	00i	0ii	000iii

- possible values for the **obligatory argument**: l (left), c (centered), r (right), p{length} (fixed width), optionally | (pipe, for vertical lines between columns)
- each column must have an alignment specification (i.e. l, c, r, or p)

```
\begin{tabular}[t]{lcr|p{1.5cm}}
00001 & 002 & 03 & 0004 \\
\hline
0A & 000B & 00C & 0000D\\
\hline
00i & 0000ii & 000iii & iv\\
\end{tabular}
```

00001	002	03	0004
0A	000B	00C	0000D
00i	0000ii	000iii	iv

Two more helpful commands for tables:

- With `\multicolumn{number of cols}{alignment}{text}` text can occupy more than one column.
- With `\cline{cell number - cell number}` you can have horizontal lines specifying its begin (cell number) and end (cell number).

```
\begin{tabular}[t]{llr}
\multicolumn{2}{c}{Item} & \\
\cline{1-2}
article & unit & price \\
\hline
proofreading & per words & 0.02 \\
layout & per page & 0.80 \\
printing & per page & 0.99 \\
typesetting & per article & 40.33 \\
\end{tabular}
```

Item		
article	unit	price
proofreading	per words	0.02
layout	per page	0.80
printing	per page	0.99
typesetting	per article	40.33

The package `tabularx` provides

- an extra **argument** to **specify the width** of the table, and
- a new column specifier `x`; the `x`-columns will be **stretched** until the table is as wide as specified.

The package `booktabs` provides `\toprule`, `\bottomrule`, `\midrule`, and `\cmidrule{x-y}` which are versions of `\hline` and `\cline{x-y}` with better spacing.

The package `multirow` gives you the possibility to merge cells vertically.

```
\begin{tabularx}{.4\textwidth}{XXX}
\toprule
0001&002&03\\
\midrule
0A&\multirow{2}{*}{Bii}&000C\\
\cmidrule{1-1}\cmidrule{3-3}
00i& &000iii\\
\bottomrule
\end{tabularx}
```

0001	002	03
0A	Bii	000C
00i		000iii



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# Floating environments

With floating environments, L<sup>A</sup>T<sub>E</sub>X puts figures or tables in the best position to avoid gaps in the layout.

It is not necessary that this text has any meaning.

```
\begin{table}[htb]
```

```
\centering
```

```
\begin{tabular}[t]{l|l}
```

```
Eins & Zwei \\\
```

```
\hline
```

```
Drei & Vier \\\
```

```
\end{tabular}
```

```
\caption{Caption of my table}
```

```
\label{fig:TableFloat}
```

```
\end{table}
```

It is not necessary that this text has any meaning.

Eins	Zwei
Drei	Vier

Table 1: Caption of my table

- floating environment for **tables**: `table`
- floating environment for **figures**: `figure`
- In these environments, the command `\caption{ }` can be used.
- Optionally, preferences for the position can be given: `h` (here), `t` (top), `b` (bottom), `p` (extra page for floats).
- In the environment, you can specify the position of the figure/table (e.g. `\centering`).

```
\begin{figure}[htb]
\centering

\includegraphics{LaTeX-flowchart-1.pdf}
\caption{My first float}
\label{fig:FigFloat}
\end{figure}
```

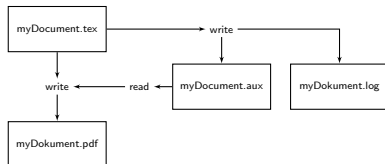


Fig. 1: My first float

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# List of figures and list of tables

With the following commands, a list of figures or a list of tables is automatically generated:

- `\listoffigures`
- `\listoftables`

Put these commands where your list of figures or tables should appear.

L<sup>A</sup>T<sub>E</sub>X collects the information from your captions for the lists.

# Exercise

Go to

<https://github.com/langsci/latex4linguists/blob/master/2-1.md>  
and follow the instructions of **all blocks** in your .tex file.

# Internet sources I

- Link: Language Science Press  
[www.langsci-press.org](http://www.langsci-press.org)  
[Access: 02/01/2019]
- Twitter: T<sub>E</sub>X tips  
<https://twitter.com/textip>  
[Access: 10/04/2017]

# Literature I

- Freitag, Constantin & Antonio Machicao y Priemer. 2015. LaTeX-Einführung für Linguisten. Manuscript. <https://www.linguistik.hu-berlin.de/de/staff/amp/latex-einfuehrung>.
- Knuth, Donald E. 1986. *The TeX book*. Boston: Addison-Wesley.
- Kopka, Helmut. 1994. *LaTeX: Einführung*, vol. 1. Bonn: Addison-Wesley.
- Nordhoff, Sebastian & Stefan Müller. 2018. Language Science Press: Complete set of guidelines. online.  
<http://langsci.github.io/guidelines/latexguidelines/LangSci-guidelines.pdf>.