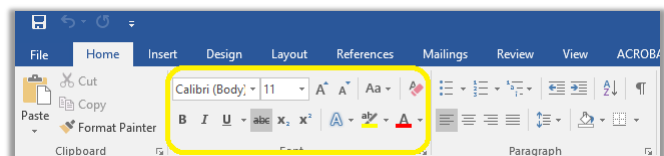**KU LEUVEN**

Introduction to LaTeX

Text formatting

Contents

- Emphasizing text
- Fonts etc.
- Punctuation
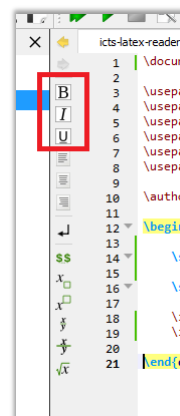- Symbols etc.
- Verbatim

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Highlighting text concepts

- Highlight important concepts in your text:
  - Italics
  - Bold
  - Underlined
  - Emphasis

Emphasizing text

- Use the Menu bar from your editor
- Use command:
  - Italic: \textit
  - Bold: \textbf
  - Underlining: \underline
- Emphasis
  - Emphasized: \emph
    \emph command behaves like *\textit*, but is context dependent.
- *File:demo_emphasize_text.tex*

Highlighting text

- Package: soul (+ color)

```
\hl{this is highlighted text}. More text. Can I change the
color?
```

- *File: demo_highlight_text_soul.tex*

This is some text
this is highlighted text. More text. Can I change the color?

- Package: ulem
- Allows for various types of underlining
- *File: demo_ulem.tex*

Diesel, solar power to the top
Diesel, solar power to the top
Diesel, solar power to the top
Diesel, solar power to the top

Hands-on

- `\emph{text}`: emphasized text
- `\underline{text}`: underlined text
- Change the font style:
  - `\textbf{text}`: bold:
  - `\textit{text}`: italic:
- *File: demo_fontstyle.tex*

document font family
emphasis
roman font family
sans serif font family
`typewriter font family`
upright shape
italic shape
slanted shape
SMALL CAPITALS
bold

Font size

- The default text size is controlled by the document class. The standard font size is 10pt.
- Can be adjusted by passing additional arguments
  - `\Huge`
  - `\huge`
  - `\LARGE`
  - `\large`
  - `\normalsize`
  - `\small`
  - `\footnotesize`
  - `\scriptsize`
  - `\tiny`
- These commands change the font size relatively to the size in the document class. The commands are working like switches for font formatting
- *File: demo_fontsize.tex*

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Font size

	10pt	11pt	12pt
\tiny	5	6	6
\scriptsize	7	8	8
\footnotesize	8	9	10
\small	9	10	11
\normalsize	10	11	12
\large	12	12	14
\Large	14	14	18
\LARGE	18	18	20
\huge	20	20	25
\Huge	25	25	25

https://tex.stackexchange.com/questions/24599/what-point-pt-font-size-are-large-etc

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Font size

```
\begin{document}
This is in normal text, while these words are in
    {\small small text}.

Or, if you wanted to put a larger region in a
    different size, you'd use
something like:

    \begin{small}
    this will all be in small text
    this too.
    etc..
    \end{small}

    \begin{Huge}
    this will all be in Huge text
    this too.
    etc..
    \end{Huge}

    \begin{huge}
    this will all be in huge text
    this too.
    etc..
    \end{huge}
\end{document}
```

This is in normal text, while these words are in small text.
Or, if you wanted to put a larger region in a different size, you'd use something like:
this will all be in small text this too. etc..

this will all be in Huge text this too. etc..
this will all be in huge text this too. etc..

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Fonts

- Several *variations* of a font can be used in a document
    - Family
        - Serif (roman) (default)
        - Sans serif
        - Typewriter (monospaced)
    - Series
        - Medium
        - Boldface
    - Shape
        - Upright
        - *Italic*
        - Slanted
        - Caps & small caps
- *File: demo_font_variations*

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Fonts

- Font formatting can be obtained in different ways
1. **Commands**: A command marks exactly the text that is in between the curly brackets. A new paragraph cannot be started within a command.
2. **Environments**: An environment marks the text inside the environment.
   ```
   \begin{bfseries}
   ...
   \end{bfseries}
   ```
- **Switches**: Switches are the commands \itshape, \bfseries, \slshape, \scshape, which are simply written somewhere in the text and don't take an argument. The following text appears in the respective font formatting (probably until the end of the environment, unless other font formatting commands/environments/switches are used. The scope of a switch can be restricted by { }
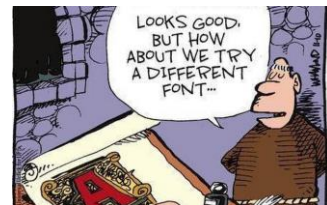
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Fonts

- Types of fonts in LATEX are classified into four categories: *family*, *series*, *shape* and *size*.

		Command	Environment
Family	Serif (roman) (default) Sans serif Typewriter (monospaced)	\textrm{} \textsf{} \texttt{}	\rmfamily \sffamily \ttfamily
Series	Medium series (default) Boldface	\textmd{} \textbf{}	\mdseries \bfseries
		Command	Environment
Shape	Upright shape (default) *Italic shape* Slanted shape Caps & small caps shape	\textup{} \textit{} \textsl{} \textsc{}	\upshape \itshape \slshape \scshape
Size	Tiny Script …	\tiny \scriptsize	

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Fonts

- The default font for LaTeX is Computer Modern
- You can't just use any font you have installed on your computer, you need special LaTeX fonts.
- The easy way to use other fonts is to use an existing package,
  - `\usepackage{avant}`
  - the whole document will be in that font
- Check http://www.tug.dk/FontCatalogue/
- *File: demo_changefont.tex*

Fonts

- Change the font for part of the text (not advisable)
- To select a font, use:
  - `\fontfamily{<familyname>}\selectfont`
  - restrict the scope of font changing commands by enclosing the text in braces:
  - `{\fontfamily{<familyname>}\selectfont ...}`
  - It is important to know the font familyname!
- *File: demo_font_partly_changed.tex*
- https://tex.stackexchange.com/questions/25249/how-do-i-use-a-particular-font-for-a-small-section-of-text-in-my-document

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Fonts

- https://www.overleaf.com/learn/latex/Font_sizes,_families,_and_styles
- https://www.overleaf.com/learn/latex/Font_typefaces
- https://en.wikibooks.org/wiki/LaTeX/Fonts
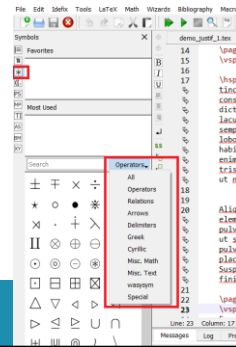
Accents and symbols

- There are 5 common accents:
  ÒÓÔÕÖ

- Some symbols have a special meaning within LaTeX,
  put a **** in front of $ % { _ # & } \

- Check also the *Comprehensive LaTeX Symbol List*

```
\`O
\'O
\^O
\~O
\"O


\$
\%
\{
\_
\#
\&
\}
\textbackslash
```

Symbol?

- Looking for a symbol?
- Have a look at *The Comprehensive LaTeX Symbol List*
  http://tug.ctan.org/info/symbols/comprehensive/symbols-a4.pdf
- This document lists >14000 symbols and the corresponding LaTeX commands that produce them.
- Detexify: http://detexify.kirelabs.org/classify.html
- Check your LaTeX editor (i.e. TeXstudio)

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International language support: problems

- LaTeX has its roots in USA
- Input of é, è, ë, …?
- Typing 'macro-accents':
  - it can become cumbersome if you type a lot of accented characters.
  - the spell checker will not work on such words,
- https://www.overleaf.com/learn/latex/International_language_support
- http://tex.stackexchange.com/questions/44694/fontenc-vs-inputenc
- https://en.wikibooks.org/wiki/LaTeX/Internationalization

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International language support

- Input letters of national alphabets directly from the keyboard.
- Use `inputenc` package to set up input encoding.
  - `\usepackage[encoding]{inputenc}`
  - recommended input encoding is `utf8`
- for proper document generation, choose a font which has to support specific characters for a given language by using fontenc package:
  - `\usepackage[encoding]{fontenc}`
  - recommended input encoding is `T1`
- *File: demo_inputenc.tex*

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babel

- translates some elements within the document,
- activates the appropriate hyphenation rules for the language you choose.
- Activate the package by adding the next command to the preamble:
  - `\usepackage[language]{babel}`
  - `\usepackage[dutch]{babel}`
- *File: demo_babel.tex*
- https://en.wikibooks.org/wiki/LaTeX/Internationalization

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Hands-on

- Type some text and use the commonly used accents in some of the words
- *demo_accentsymbol.tex*
  demo_accents.tex

Preformatted text

- Use the `verbatim` environment to typeset exactly as given in a monospaced font, with no command interpretation.
- To include a non-interpreted string within your text, use `\verb|the text|` command.
  You may use |, +,=, etc. to start and end the text (the same symbol must be used to start and end the text).
- *File: demo_verbatim.tex*
- The verbatim environment can be extended to use normal commands: alltt package.
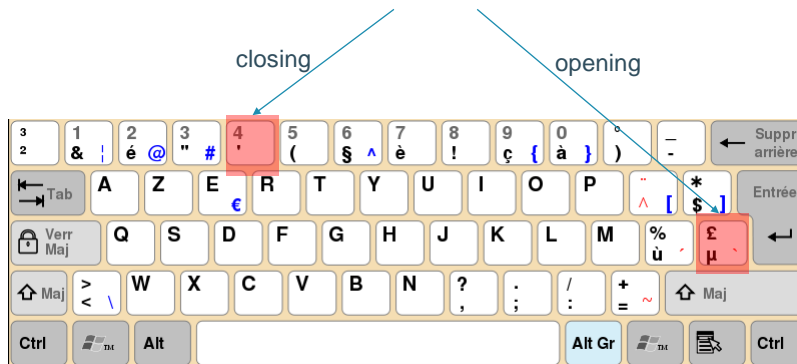
Hands-on

- Generate some text, and try to explicitly print some LaTeX commands
- Use the `\verb` command
- Use the `verbatim` environment
- *handson_verbatim.tex*

Quotation marks

- LaTeX does not automatically convert "straight" quotes into correctly-facing "curly" quotes
- do *not* use the "
    - Opening: use two ` (accent grave)
    - Closing: use two ' (vertical quote) for closing quotation marks.
    - For single quotes you use just one of each.
- *File: demo_quote_marks.tex*
- https://tex.stackexchange.com/questions/113363/smart-quote-in-texstudio
- https://www.overleaf.com/learn/latex/Typesetting_quotations

Quotation marks

- Options->Configure TexStudio -> Editor ->Replace Double Quotes

closing   opening

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Hyphens and dashes etc.

- hyphens (-), en dashes (–), em dashes (—), minus signs (-) serve different purposes
- *File: demo_hyphen_dash.tex*

For an ordinary hyphen use - I want a five-dollar bill for paying my near-field-effect tracker.
  For a range of numbers use the en dash "–" as in 2–8 (named because it is as wide as n).
  To indicate a parenthetic expression use the em dash "—" (as wide as m). Some punctuation — like parethesis and commas — play an important role.
  For the minus sign use -100 (that is, a hyphen in math mode).

- Ellipsis
  - Spacing might go wrong when typing …
  - Use \ldots

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Overfull / Underfull box

- **overfull hbox**: LaTeX always tries to produce the best line breaks possible. If it cannot find a way to break the lines in a manner that meets its high standards, it lets one line stick out on the right of the paragraph.
- This happens most often when:
  - a suitable place to hyphenate a word is not found.
  - Verbatim
- Tip: use option draft in documentclass (black square)
- Instruct LaTeX to lower its standards
  - `\sloppy` command.
    increasing the inter-word spacing, most of the time a warning ("underfull hbox") will appear
  - `\fussy` brings LaTeX back to its default behavior.
  - *File: demo_sloppyfussy.tex*

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hyphenation

- Direct the hyphenation yourself
  - `\hyphenation{FORTRAN Hy-phen-a-tion}`
  - each hyphenation point is indicated
  - in the preamble
- Inline words: `\-` indicates hyphenation points allowed in the word.
  - is especially useful for words containing special characters
  - `su\-per\-cal\-i\-frag\-i\-lis\-tic\-ex\-pi\-al\-i\-do\-cious`
- *File: demo_hyphenate.tex*

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Keeping words together

- The command `\mbox{`*`text`*`}` causes its argument to be kept together: an invisible box is drawn a just wide enough to hold the text created by its argument.
- The command `\fbox` is similar to `\mbox`, but in addition there will be a visible box drawn around the content.
- `\makebox, \framebox` are extensions of these commands

  `\makebox[width][pos]{text}`

- *File: demo_mbox.tex*
- Non-breaking space: use the character ~.
  For example to stop LaTeX from splitting P. Harwin after the P., type
  `P.~Harwin.`

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White space

- LaTeX ignores whitespace after commands. If you want to get a space after a command, you have to put {}. The {} stops LaTeX from eating up all the space after the command name.

  ```
  I read that Knuth divides the
  people working with \TeX{} into
  \TeX{}nicians and \TeX perts.\\
  Today is \today.
  ```

  I read that Knuth divides the people working with TeX into TeXnicians and TeXperts. Today is September 27, 2005.

- *File: demo_space_2.tex*

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