Note Corso Intensivo Latex

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Chapter 1

Lezione 1

1.0.1 Quotes

You can write accents just with the keyboad, no need for commands: cliché
cliché
While to do quotes, don't do: "miao" or "miao", this gets displayed incorrently.
Instead, either use the package *csquotes* and you can use «miao»??
Or using latex low level code: "miao " or "miao ". But one drawback of this
is the following: "miao "oh oh where the space after the right quote get's
absorbed. We will look into this lates.

1.0.2 Emphasis

The canon way to do it is *miao*. The current consensus is to avoid the *boldface*.
You can also use textit, to be sure to use italics *miao*. An other alternative \
it, but the latter is cursed, pls don't.
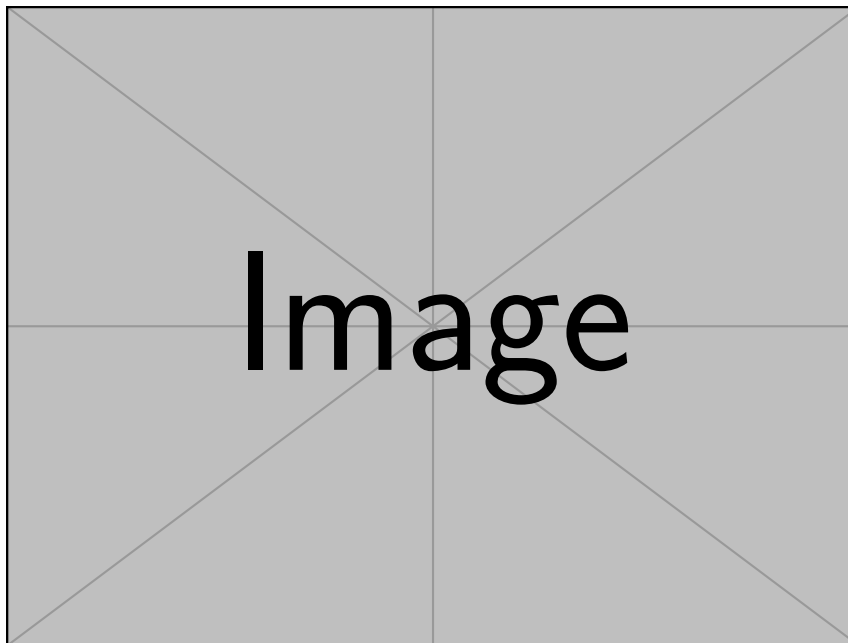
1.0.3 Notes on Overleaf and Debugging

Overleaf compiles even with error, you shouldn't keep compiling if there is
an error, because sooner or later they will pile up to something that doesn't
compile.
Debugging, generally errors are trivial, but the message is not really helpful
(maybe)

1.0.4 Graphics

Note: it's sufficient to do includegraphics, figure has nothing to do with
graphics whatsoever.

An example of some innocent text without graphics whatsoever

When you are trying to fix an image, if you have don't want to fix floats, don't use them, just don't use figure.

See that you want to be center so you use \begin{center} environment. Then you cannot use \caption because this is for either *figure* or *table* environments. Note the standard for \labeltab:meaningful description..

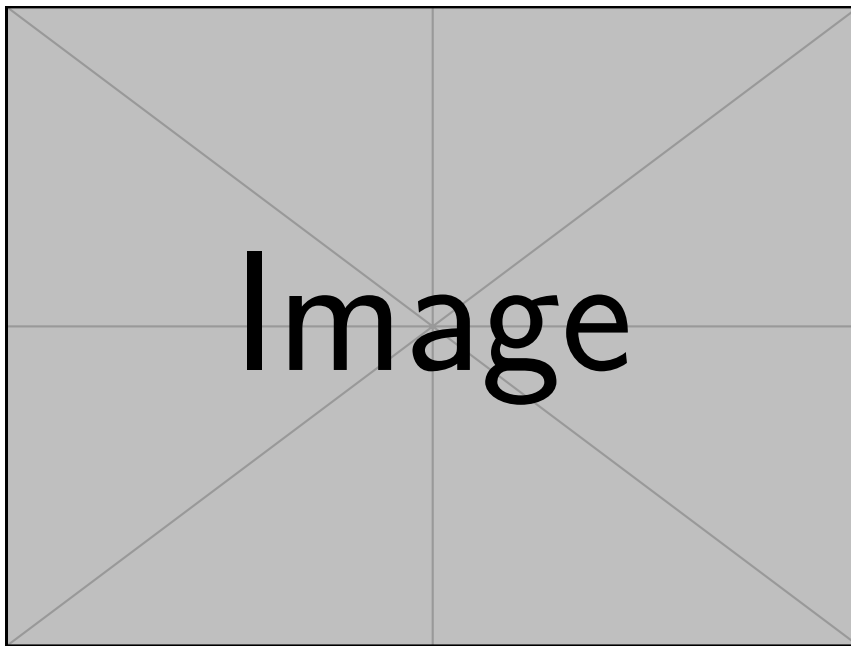So if we don't have the convenience of the floating environment, and do a caption? A package, *caption.*
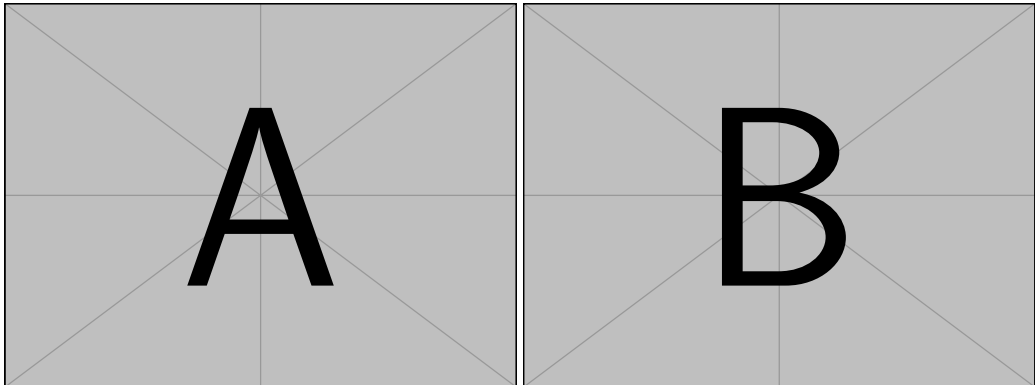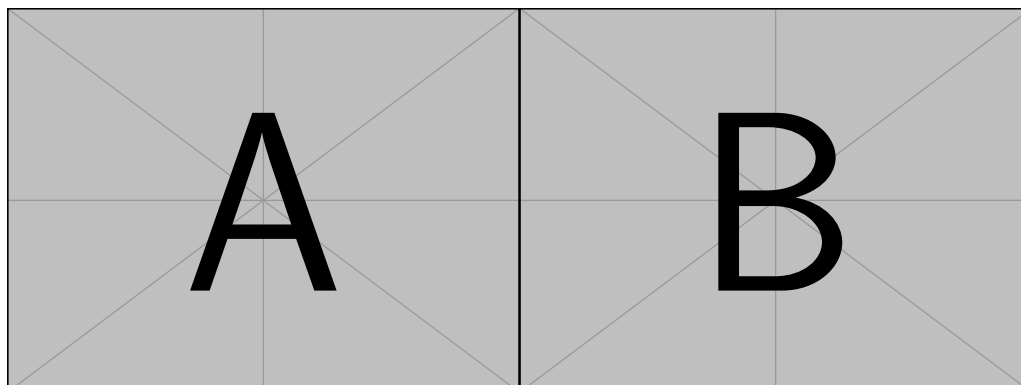
Figure 1.1: Standard graphics

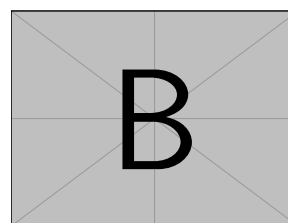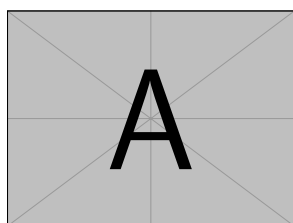Something something more images together:

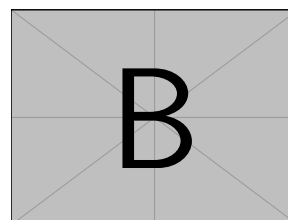

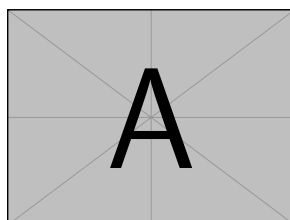Why is there white space, because we broke the line.

This way the breakline becomes commented by %.

If you want the figure to be as far apart as possible:

Not the actually use case scenario to use \hfill but it works. If you want them to be equally separated between eachother and the edges, we can add two more "spring ".

This doesn't work well because reasons, but you can either use a *minipage* environment.

1.0.5   Tables

Tabula is the standard environment for producing tabulas, it's 30 years old, or even more. There is actually no inherent problem in using it but it is inconvenient for spacings, which are not nice. The consensus is that standard tabula tables are *awful*. There are now many other nice packages for doing it. I am tired, pisol. Use the package *Tabularray*! It's nice, you can also use imported csv files, instead of writing by hand, basically it's really good :D

1.0.6 Calculation

Floating point evaluation 22.70796326794896

Chapter 2

Lezione 2

2.1 Table creation

Consensus among typographer says to not use vertical or horizontal separators, but if you need you can use *vlines, hlines* in the options.

id	name
1	Bob
2	Ashley

2.1.1 Import Data

We are trying to reconstruct the example table. We need to compute the maximum of certain columns, how to? The best way to have the data on a csv file and then compute from where. A nice package to import table from this kind of files is *csvsimple*. FYI you already have the documentation of the packages on your latex distribution by typing *texdoc <name package>* in the terminal, for examples *texdoc tabularray*. **Ma che figata!**.

2.1.2 Example of Macro creation

The set of complex numbers $\mathcal{C}$

2.1.3 Hardcore Math Library

An hardcore math package, at the base of tikz is called *pgf* mathematical library.

Difference between def and renewcommand is that def checks whether the command is already present or not. Because you could break you code with this simple code: \def\relax{TO read a nice book ahah} While renewcommand is somewhat protected, and want let you do it. An other reason to use macros is for changes in notations, to not have it to change all of them by hand.

2.1.4   Maximum from file

For the maximum we need conditionals. In Tex there are various conditionals already implemented. Do not use "_" in the file name of tex files. It can break easily.

It is useful to debug stuff, one useful command is *csvautotabulr*, it did't recognize ";" as a separator. We just need to specify the separator.

Chapter 3

Lesson 3

3.1 Mathematical!

Interesting:

Proof of a potato. This puts the square here $\square$

Look closely at the Difference

$$\cos(x) \qquad \cos(x)$$

Let's define a new command:

$$\|x\| \quad \|x\| \quad \|x\|$$

Problem:

$$\|\frac{1}{2}\|$$

Solution:

$$\left\|\frac{1}{2}\right\|$$

You cannot us ctrl f to search and replace the following:

$$a \cdot b \iff \langle a, b \rangle$$

The best thing to do would be to do a macro!

$$\left\langle \frac{1}{2}, 2 \right\rangle$$

Now let's consider the following spacing problem:

$$\sum_{0 \le i,j,k,h \le N} i^2 = \pi \quad \int_{x=1}^{x \to \infty} f(x, y)\, dx$$

This can be addressed really easily:

$$\sum_{0 \le i,j,k,h \le N} i^2 = \pi \quad \int_{x=1}^{x \to \infty} f(x,y)\, dx$$

I am an ino. Use substack for multiple conditions in the sum. Now we want to put a list in a proof:

Proof. 1. The very first thing

   2. The very second thing

   3. The very third thing

$\square$

Horrible, just horrible. The problem here is that list tries to start on vertical mode. Proof also starts on vertical mode, so latex immediately tries to type set the vertical list.

Proof.

1. The very first thing

2. The very second thing

3. The very third thing

$\square$

or

Proof.

1. The very first thing

2. The very second thing

3. The very third thing

$\square$

The leavemode macro can be used whenever bad looking things are due to horizzontal vertical modes interaction.

3.1.1 Useful or Cute Material

- *CTAN* Comprehensive TEX Archive Network

- *Latex2e* unofficial reference manual

- *Tick-page* (pdf on CTAN) for decorating pages in latex

- *Tickz-ext* to get a better tikz

- *tikzpeople* they designed cute people in tikz

- *Tikzpingus* for penguins

- *tikzcd* for commutative diagrams

- *dimline* units of measurements in graphics

- *adigraph* for networks or graphics, more costumizable than tikzcd

- *bbox* for covering boxes done right

- *microtype* For microtypography, for microlocal adjustments of you document, you can enhance your document by simply importing it.

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