POLITECNICO
MILANO 1863

SCUOLA DI INGEGNERIA INDUSTRIALE
E DELL'INFORMAZIONE

`elegant-polimi-thesis` manual

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Nomenclature

POLIMI Politecnico di Milano

CDL Corso di Laurea

CCS Consigli di Corsi di Studio

CFU Crediti Formativi Universitari

1 | Chapter one

In this section there will be useful information about how to style chapters, sections and so on. Be sure to read the Typst guide for LaTeX users [1].

1.1 Sections and subsection

In LaTeX, the canonical sections division is as follows:

```
\chapter{}
\section{}
\subsection{}
\subsubsection{}
```

in Typst, there are just headings [2] (similar to Markdown) – so the LaTeX system maps to:

```
= Chapter           // Heading level 1
== Section          // Heading level 2
=== Subsection      // Heading level 3
==== Subsubsection  // Heading level 4
```

If you need to turn off the numbering you will call the `heading` function:

```
#heading("Heading title", level: n, numbering: none)
```

1.2 Equations

In LaTeX, there are many environments (`equation, equation*, aligned`) – in Typst there is just the equation environment called with dollars [3]:

- Inline math, same as LaTeX:

  `$a^2 + b^2 = c^2$` $a^2 + b^2 = c^2$

- Block math, by adding whitespaces before and after the content:

  `$ a^2 + b^2 = c^2 $` $a^2 + b^2 = c^2$

Now a more complex equation:

$$\begin{cases} \Delta \cdot \boldsymbol{D} & = \rho, \\ \Delta \times \boldsymbol{E} + \dfrac{\partial \boldsymbol{B}}{\partial t} & = 0, \\ \Delta \cdot \boldsymbol{B} & = 0, \\ \Delta \times \boldsymbol{H} - \dfrac{\partial \boldsymbol{D}}{\partial t} & = \boldsymbol{J}. \end{cases}$$

By default, the equations are **not** numbered – however if you need to:

$$\begin{cases} \Delta \cdot \boldsymbol{D} = \rho, \\ \Delta \times \boldsymbol{E} + \dfrac{\partial \boldsymbol{B}}{\partial t} = 0, \\ \Delta \cdot \boldsymbol{B} = 0, \\ \Delta \times \boldsymbol{H} - \dfrac{\partial \boldsymbol{D}}{\partial t} = \boldsymbol{J}. \end{cases} \tag{1}$$

And to reference it just type Equation 1.

1.3 Figures, Tables and Algorithms

1.3.1 Figures

Via the `figure` environment [4], as you would do in LaTeX:

Figure 1.1: Caption in the List of Figures.

However, since **Typst** does not *natively* support subfigures (see related issue), the packages smartaref [5] and hallon [6] have been integrated:

(a) Left Polimi logo.

(b) Right Polimi logo.

Figure 1.2: A figure composed of two sub figures, similar to `\subfloat{}`.

You can reference either the main Figure 1.2; or a single subfigure: Figure 1.2a, or Figure 1.2b.

1.3.2 Tables

	Column 1	Column 2	Column 3
row 1	1	2	3
row 2	α	β	γ
row 3	alpha	beta	gamma

Table 1.1: Caption of the Table to appear in the List of Tables.

As you can see, it could be useful to implement a default style for every table [7].

1.3.3 Algorithms

For algorithms, there are a lot of packages on Typst universe [8]. The following are my recommendations.

- `lovelace` [9]

Algorithm 1.1: My cool algorithm

```
Initial instructions
for for − condition do
    Some instructions
    if if − condition then
    Some other instructions
    end if
end for
while while − condition do
    Some further instructions
end while
Final instructions
```

See Algorithm 1.1.

- `algo` [10]

Name of Algorithm
Initial instructions
for ***for*** $-$ *condition* **do**
    Some instructions
    if ***if*** $-$ *condition* **then**
        Some other instructions
    end if
end for
while ***while*** $-$ *condition* **do**
    Some further instructions
end while
Final instructions

1.4 Theorems, propositions and lists

Theorem 1.1. *Write here your theorem.*

Proposition 1.1. *Write here your proposition.*

Proof. If useful you can report here the proof. □

Powered by [11].

Normal list:
- First item
- Second item

Numbered list:
1. First item
2. Second item

1.5 Plagiarism

You have to be sure to respect the rules on Copyright and avoid an involuntary plagiarism. It is allowed to take other persons' ideas only if the author and his original work are clearly mentioned. As stated in the Code of Ethics and Conduct, Politecnico di Milano promotes the integrity of research, condemns manipulation and the infringement of intellectual property, and gives opportunity to all those who carry out research activities to have an adequate training on ethical conduct and integrity while doing research. To be sure to respect the copyright rules, read the guides on Copyright legislation and citation styles available at:

https://www.biblio.polimi.it/en/tools/courses-and-tutorials

You can also attend the courses which are periodically organized on “Bibliographic citations and bibliography management”.

1.6 Bibliography and citations

Your thesis must contain a suitable Bibliography which lists all the sources consulted on developing the work. The list of references is placed at the end of the manuscript after the chapter containing the conclusions. We suggest to use the BibTeX package [12] and save the bibliographic references in the file `Thesis_bibliography.bib`. This is indeed a database containing all the information about the references.

To cite in your manuscript, use the `cite` [13] command as follows:

Here is how you cite bibliography entries: [14] or chained [15], [16].

As it would have been in LaTeX, the bibliography [17] is automatically generated.

Bibliography

[1] "Typst LaTeX migration guide." [Online]. Available: https://typst.app/docs/guides/guide-for-latex-users/

[2] "Typst Headings Documentation." [Online]. Available: https://typst.app/docs/reference/model/heading/

[3] "Typst Equation Documentation." [Online]. Available: https://typst.app/docs/reference/math/equation/

[4] "Typst Figure Documentation." [Online]. Available: https://typst.app/docs/reference/model/figure/

[5] "Smartref Documentation." [Online]. Available: https://typst.app/universe/package/smartaref

[6] "Hallon Documentation." [Online]. Available: https://typst.app/universe/package/hallon

[7] "Typst Table Guide." [Online]. Available: https://typst.app/docs/guides/table-guide/

[8] "Typst Universe." [Online]. Available: https://typst.app/universe

[9] "Lovelace Documentation." [Online]. Available: https://typst.app/universe/package/lovelace

[10] "Algo Documentation." [Online]. Available: https://typst.app/universe/package/algo

[11] "Great theorems." [Online]. Available: https://typst.app/universe/package/great-theorems

[12] B. cheat sheet, "BiBTeX Documentation." [Online]. Available: https://tug.ctan.org/info/biblatex-cheatsheet/biblatex-cheatsheet.pdf

[13] "Typst Cite Documentation." [Online]. Available: https://typst.app/docs/reference/model/cite/

[14] D. E. Knuth, "Computer Programming As an Art," *Commun. ACM*, pp. 667–673, 1974.

[15] D. E. Knuth, "Two notes on notation," *Amer. Math. Monthly*, vol. 99, pp. 403–422, 1992.

[16] L. Lamport, *LaTeX: A Document Preparation System*. Pearson Education India, 1994.

[17] "Typst Bibliography Documentation." [Online]. Available: https://typst.app/docs/reference/model/bibliography/