## **Latex Template**

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## Format of chapters

Find an interesting quote, ...

(Timothy K. Paine)

This entry, which is located on the right side of the page, is called *Sentence* and is obtained with the command \dictum[author]{text}.

#### 1.1 Titles

The package titlesec has been used to finish formatting section headings. The command that allows us to do so is:

\titleformat{command}[shape]%
 {format}%
 {label}%
 {sep}% horizontal separation between label and body of the title
 {before}[after]% precedent / next code in the title body

#### 1.1.1 Chapter Titles

The chapters begin with the number and the name in gray letter, which is obtained with the command:

```
\dots \addtokomafont{chapter}{\color{gray}\textcap} % gives size to the title of the document
```

The font is Helvetica and of different size, the number (\numcap) of 3 cm and the text (\textcap) of 1.5 cm, format that is obtained with the initial definition:

The package titlesec has been used to finish formatting section headings. Specifically for the chapters is defined:

#### 1.1.2 Section Titles

Section headings have the white text on a color background, the color is obtained with the command:

```
\addtokomafont{section}{\color{white}}
```

and the color of black background is achieved with the mentioned package titlesec and the use of a background image generated by the package

```
\titleformat{\section}[block]%
    {\usekomafont{sectioning}\usekomafont{section}%
    \tikz[overlay] \fill[color=black,rounded corners=.2ex] (0,-1ex) rectangle (\textwidth-2cm,1em);}%
    {\thesection}%
    {lem}%
    {}
```

#### 1.1.3 Subsection Title

The subsection titles have the white text on a color background, the color of the text, as in the case of the sections, is obtained with the command:

```
\addtokomafont{subsection}{\color{white}}
```

and the black background color is achieved with the package titlesec and the use of a background image generated by the package \tikz:

```
\titleformat{\subsection}[block]%
    {\usekomafont{sectioning}\usekomafont{subsection}%
     \titz[overlay] \fill[color=black!60] (0,-lex) rectangle (\textwidth-2cm,lem);}%
    {\text{lem}%
     {\text{lem}}%
     {\
```

#### 1.2 Page Style

The pages use the style scrheadings defined by KOMA and customized so that:

- ▶ The heading consists of the chapter name on the left page and section on the right page, with a small black sans serif underlined with a gray line that goes beyond the width of the text.
- ► The foot consists of the centered page number and in a gray box that stands above a gray line that goes from side to side of the text.

This is achieved by using the scrpage2 package of the KOMA set, where it is defined:

```
\setlength{\headheight}{25pt}
\pagestyle{scrheadings} % page style
\setheadwidth{textwithmarginpar} % lengthens the header
\setheadsepline(.4pt) %line under the header
\addtokomafont{headsepline}{\color{lightgray}}% gives gray line under header
%lefft page footer:
\lefoot{\color{black!40}{\hrulefill}}
\cefoot{\parbox[c][.5in][c]{lcm}{\fcolorbox{black!40}{\white}{\thepage}}}
\refoot{\}
\lofoot{\color{black!40}{\hrulefill}}
\cofoot{\color{black!40}{\hrulefill}}
\cofoot{\color{black!40}{\---}} {\thepage} {\color{black!40}{\---}}}%
\{\parbox[c][.5in][c]{lcm}{\fcolorbox{black!40}{\white}{\thepage}}}\
\rofoot[]{\}
```

Chapter start pages, in style plain, are defined in the preceding commands as the option of the corresponding command, for example: \cfoot[style scrplain ]{style scrheadings}

## **Improvements**

Different packages have been used to achieve improvements in different aspects of the body of the text. For example, for the lists the package enumerate, for the tables the package colortbl or the package bclogo for the calls, whose details will be seen in the next sections.

#### 2.1 Lists

With the package enumitem we can define new styles of lists with the command:

```
\label{thm:continuous} $$\operatorname{listname}_{\text{tipus=enumerate,itemize,description}_{\text{number of levels of nesting}} $$\operatorname{listname}_{\text{out}} = \operatorname{listname}_{\text{out}} $$\operatorname{listname,1}_{\text{out}} = \operatorname{out}_{\text{out}} $$
```

In this document we have predetermined a series of lists that we think can be useful.

#### 2.1.1 Numbered Lists

#### 2.1.1.1 Steps

It is a compact list numbered in the scheme (1. - 1.1 - 1.1.1) indented to the left 0.5 cm to indicate steps. The code to get it is:

```
\newlist{steps}{enumerate}{4}
\setlist[steps]{topsep=0pt,partopsep=0pt,itemsep=0pt,parsep=0pt,labelindent=0.5cm,leftmargin=*}
\setlist[steps,1]{label*=\arabic*.}
\setlist[steps,2]{label*=\arabic*.}
\setlist[steps,3]{label*=\arabic*.}
\setlist[steps,3]{label*=\arabic*.}
```

and the result this:

- 1. first
- 2. second
- 3. third
- 4. fourth
- 5. fifth
- 6. sixth
- 7. seventh

#### 2.1.1.2 With numbers from the pifont package

This list uses predefined numbers in the package pifont and which are quite interesting. However it can not be defined with the \newlist command and the code must be indicated each time it is used in the body of the text.

The code to generate it is this:

```
\begin{enumerate}[nolistsep,label=\ding{\value{enumi}},start=202]
```

where 202 is the character code of the package pifont. See the result:

#### Starting with character 172 ①

- ① first
- 2 second
- 3 third
- 4 fourth

- 5 fifth
- 6 sixth
- 7 seventh
- 8 eigth
- 9 ninth
- 10 tenth

#### Starting with character 182 0

- first
- 2 second
- third
- fourth
- **6** fifth
- **6** sixth
- seventh
- eigth
- 9 ninth
- tenth

#### Starting with character 202 0

- first
- 2 second
- 6 third
- **4** fourth
- **6** fifth
- **6** sixth
- seventh
- eigth
- 9 ninth
- tenth

#### 2.1.2 Bulleted lists

#### 2.1.2.1 Objectives

It is a compact list with vignettes corresponding to a small black triangle (it is necessary to call the package  $\space{2mm}$  of a single level of depth indented to the left 0.5 cm to indicate objectives. The code to get it is:

```
\newlist{objectives}{itemize}{1}
\setlist[objectives]{topsep=0pt,partopsep=0pt,itemsep=0pt,parsep=0pt,labelindent=0.5cm,leftmargin=*}
\setlist[objectives,1]{label=\tiny$\blacktriangleright$}
```

#### and the result this:

- ▶ first objective
- ▶ second objective
- ▶ third objective
- ▶ fourth objective

#### 2.1.2.2 Attention

It is a compact list with bullets corresponding to an arrow (the character 224 of the package verb + pifont +) of a single depth level indented to the left 0.5 cm to indicate entries to be taken into account. The code to get it is:

```
\newlist{atencio}{itemize}{1}
\setlist[atencio]{topsep=0pt,partopsep=0pt,itemsep=0pt,parsep=0pt,labelindent=0.5cm,leftmargin=*}
\setlist[atencio,1]{label=\ding{224}}
```

#### and the result this:

- first point
- second point
- **■** third point
- **■** fourth point

#### 2.1.2.3 Points

It is a compact list with vignettes corresponding to various types of points (the characters 110, 108, 72 and 117 of the package pifont), of 4 levels of depth, indented to the left 0.5 cm to indicate nested entries to keep in mind. The code to get it is:

```
\newlist{points}{itemize}{4}
\setList[points]{topsep=0pt,partopsep=0pt,itemsep=0pt,parsep=0pt,labeLindent=0.5cm,leftmargin=*}
\setList[points,1]{labeL=\tiny\ding{110}}
\setList[points,2]{labeL=\tiny\ding{108}}
\setList[points,3]{labeL=\tiny\ding{72}}
\setList[points,4]{labeL=\tiny\ding{117}}
```

#### and the result this:

- flying devices
  - biplanes
  - jets
  - of transport
    - \* of a single engine
      - to reaction
      - to helix
    - \* different motors
  - helicopters
- automobiles
  - racing cars
  - private cars
  - trucks
- bicycles

#### 2.1.2.4 Arrows

It is a compact list with vignettes corresponding to various types of arrows (252, 212, 232 and 217 characters of the package pifont), with 4 levels of depth, indented to the left 0.5 cm to indicate nested entries to keep in mind. The code to get it is:

```
\newlist{arrows}{itemize}{4}
\setlist[arrows]{topsep=0pt,partopsep=0pt,itemsep=0pt,parsep=0pt,labelindent=0.5cm,leftmargin=*}
\setlist[arrows,1]{label=\tiny\ding{252}}
\setlist[arrows,2]{label=\tiny\ding{212}}
\setlist[arrows,3]{label=\tiny\ding{212}}
\setlist[arrows,4]{label=\tiny\ding{217}}
```

#### and the result this:

- » flying devices
  - → biplanes
  - → jets
  - → of transport
    - of a single engine
      - → to reaction
      - → to helix
    - different motors
  - → helicopters
- » automobiles
  - → racing cars
  - → private cars
  - → trucks
- » bicycles

#### 2.2 Verses and Citations

#### **2.2.1 Poetry**

We can write poetry using the verse environment that bleeds to the left and also to the right. To terminate the end of a verse two counter-turns are used: \\ i to separate a stanza from the following we can leave more space (with \bigskip) or less, with \medskip.

Touching head in both sides, moving forward along the water path, the cow is alone. It's blind.

From a rocket thrown with too much trace, the vailet cleared her an eye, and in the other He has been given a phone: the cow is blind.

Go over to the source as usual, but not with the stubbornness of other times nor with your companions, no: comes alone.

Their companions, by the cliffs, by the commas, due to the silence of the meadows and the riverside, they make the skeleton cling while grazing fresh grass at random dots She would fall.

Muzzle top in the crushed sink and faces back dots But returns, and lower your head to the water, and drink calm.

Drink little, not very thirsty. Then raise to the sky, huge, the embroidered forehead with a great tragic gesture; blinks
Over the dead dolls, and it returns orphan of light under the sun that burns, hesitating for unforgettable paths,
Flaking the long tail gently.

Joan Maragall Poesies, 1895

#### 2.2.2 Citacions

Citation can be done with two different environments:

#### 2.2.2.1 quote

There are people who do not like to speak, write or think in Catalan. It is the same people who do not like to talk, write or think.

Ovidi Montllor

#### 2.2.2.2 quotation

There are people who do not like to speak, write or think in Catalan. It is the same people who do not like to talk, write or think.

Ovidi Montllor

#### 2.3 Minisec

Sometimes you want a header that is easily distinguished but that is very close to the text, without too much vertical separation. The command \minisec of the Koma-Script package creates this type of heading without any structural level within the document. This minisection does not produce an entry in the Table of Contents nor has any numbering.

#### Minisec command of Koma-Script

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae

ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

#### 2.4 Tables

Although there is a typographical law that says that vertical lines do not have to be placed in the tables, a very interesting effect can be achieved if these vertical lines are not long enough to touch the upper and lower horizontal lines, a cell

#### Observe the result:

Day	Max Temperature °C	Temperature min. C	Observations
Monday	18	8	Clouds and clearings.
Tuesday	17	9	Clouds and clearings.
Wednesdays	10	4	Clear and windy.
Thursday	8	2	Tramuntana wind, force 5.
Friday	6	-2	Clear and shallow wind.
Saturday	4	-3	Clouds and clearings.
Sunday	9	2	Clear and shallow wind.

Table 2.1: Table of weekly temperatures

First column and First column				
$a_{1,1}$	$a_{1,2}$	$a_{1,3}$		
$a_{2,1}$	$a_{2,2}$	$a_{2,3}$		
$a_{3,1}$	$a_{3,2}$	$a_{3,3}$		

Table 2.2: Table of ordered items

We do this by using the colortbl package that allows you to color the tables. Then we define the color of the lines, in particular we make them gray with \arrayrulecolor, and finally shorten the height of the lines:

```
\usepackage{colortbl}
\arrayrulecolor{gray}
\let\shline\hline
\def\hline{\noalign{\vskip3pt}\shline\noalign{\vskip4pt}}
```

#### 2.5 Frames

With the help of the package bclogo you can create boxes and frames with an image or logo, a title and the body of the text.

The code used is this:

\usepackage[tikz]{bclogo}
\newcommand\novaimatge{\includegraphics[width=14pt]{write}}
\renewcommand\logowidth{14pt}

where write is the name of the image file that appears to the left as the logo of the frame.

In the body of the frame you can put the desired text, even lists such as those defined in the section ?? on page ??.

Let's see an example:

#### Objectives

- ▶ first objective
- second objective
- ► third objective
- ▶ fourth objective

# 3

## Show

There are two infinite things: the Universe and human stupidity. And I'm not sure about the Universe.

(Albert Einstein)

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

#### Objectives

- → first objective
- » second objective
- → third objective
- >> fourth objective

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

#### 3.1 Fourth section

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

- 1. first
- 2. second
- 3. third
- 4. fourth
- 5. fifth
- 6. sixth
- 7. seventh

#### 3.1.1 First subsection of the fourth section

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

There are people who do not like to speak, write or think in Catalan. It is the same people who do not like to talk, write or think.

Ovidi Montllor

#### 3.1.2 Second subsection of the fourth section

#### Minisec Command of Koma-Script

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.

Day	Max Temperature <sup>o</sup> C	Temperature min. C	Observations
hline Monday	18	8	Clouds and clearings.
Tuesday	17	9	Clouds and clearings.
Wednesdays	10	4	Clear and windy.
Thursday	8	2	Tramuntana wind, force 5.
Friday	6	-2	Clear and shallow wind.
Saturday	4	-3	Clouds and clearings.
Sunday	9	2	Clear and shallow wind.

**Table 3.1:** Table of weekly temperatures

Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Donec odio elit, dictum in, hendrerit sit amet, egestas sed, leo. Praesent feugiat sapien aliquet odio. Integer vitae justo. Aliquam vestibulum fringilla lorem. Sed neque lectus, consectetuer at, consectetuer sed, eleifend ac, lectus. Nulla facilisi. Pellentesque eget lectus. Proin eu metus. Sed porttitor. In hac habitasse platea dictumst. Suspendisse eu lectus. Ut mi mi, lacinia sit amet, placerat et, mollis vitae, dui. Sed ante tellus, tristique ut, iaculis eu, malesuada ac, dui. Mauris nibh leo, facilisis non, adipiscing quis, ultrices a, dui.

Morbi luctus, wisi viverra faucibus pretium, nibh est placerat odio, nec commodo wisi enim eget quam. Quisque libero justo, consectetuer a, feugiat vitae, porttitor eu, libero. Suspendisse sed mauris vitae elit sollicitudin malesuada. Maecenas

ultricies eros sit amet ante. Ut venenatis velit. Maecenas sed mi eget dui varius euismod. Phasellus aliquet volutpat odio. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Pellentesque sit amet pede ac sem eleifend consectetuer. Nullam elementum, urna vel imperdiet sodales, elit ipsum pharetra ligula, ac pretium ante justo a nulla. Curabitur tristique arcu eu metus. Vestibulum lectus. Proin mauris. Proin eu nunc eu urna hendrerit faucibus. Aliquam auctor, pede consequat laoreet varius, eros tellus scelerisque quam, pellentesque hendrerit ipsum dolor sed augue. Nulla nec lacus.