UNIVERSITY NAME
NAME OF THE DEPARTMENT

JOHN SMITH

TITLE OF THE THESIS

Master Thesis

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Prof. JOHN SMITH

Co-supervisors
Dr. JOHN SMITH

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Contents

Introduction

Such template has been modified starting from the Legrand Orange Template by Mathias Legrand as original author and with the modifications by Vel (the latter version can be downloaded here). It is suited for Master's and PhD thesis.
In this section we are going to describe the principal modifications introduced in this template. More deeply, the layout of the page has been revisited in an asymmetric page with two horizontal rules, introducing the Chapter name and (numbered) Section name respectively at the left and right top page. The author name and the current number page (in bold) can be found respectively at the bottom left and right of the page.
A particular and cool modification regards the chapter layout and the boxed images background. Examples of such modifications can be found later in the pdf.
Furthermore, table and algorithms colour layout have been introduced in order to adapt with the colour used in this template.
Additionally, an important change has been applied for the TOC layout in order to fit better for a Master's and PhD Thesis.
As done in the Legrand Orange template, a good part of the modifications has been extensively commented in the latex code in order to have the possibility to change the template according to different style rules. We maintain the same definition, example, corollary and exercise boxes as the original Legrand Orange Template.

0.1 Example of a section

Here we can list the possible ways to cite a book or an article.

Example of a paragraph - Citations

The usual way to cite a book [1] or with a little bit of colour [1].

Example of lists

A good thing is to use the list:

- one
- two

Otherwise it can be used:

- one
- two

But maybe the classic way is more comfortable:

1. one
2. two

1 Boxes - Legrand Orange

1.1 Theorems

This is an example of theorems.

1.1.1 Several equations

This is a theorem consisting of several equations.

Theorem 1.1.1 (Name of the theorem)**.** *In $E = \mathbb{R}^n$ all norms are equivalent. It has the properties:*

$$\big|\,||\mathbf{x}|| - ||\mathbf{y}||\,\big| \leq ||\mathbf{x}-\mathbf{y}|| \tag{1.1}$$

$$||\sum_{i=1}^{n}\mathbf{x}_i|| \leq \sum_{i=1}^{n}||\mathbf{x}_i|| \quad \textit{where } n \textit{ is a finite integer} \tag{1.2}$$

1.1.2 Single Line

This is a theorem consisting of just one line.

Theorem 1.1.2. *A set $\mathscr{D}(G)$ in dense in $L^2(G)$, $|\cdot|_0$.*

1.2 Definitions

This is an example of a definition. A definition could be mathematical or it could define a concept.

Definition 1.2.1 (Definition name)**.** *Given a vector space E, a norm on E is an application,*

denoted $||\cdot||$, *E in* $\mathbb{R}^+ = [0, +\infty[$ *such that:*

$$||\mathbf{x}|| = 0 \;\Rightarrow\; \mathbf{x} = \mathbf{0} \tag{1.3}$$

$$||\lambda \mathbf{x}|| = |\lambda| \cdot ||\mathbf{x}|| \tag{1.4}$$

$$||\mathbf{x} + \mathbf{y}|| \leq ||\mathbf{x}|| + ||\mathbf{y}|| \tag{1.5}$$

1.3 Notations

Notation 1.1. *Given an open subset G of* $\mathbb{R}^n$*, the set of functions* φ *are:*

1. *Bounded support G;*
2. *Infinitely differentiable;*

a vector space is denoted by $\mathscr{D}(G)$.

1.4 Remarks

This is an example of a remark.

R The concepts presented here are now in conventional employment in mathematics. Vector spaces are taken over the field $\mathbb{K} = \mathbb{R}$, however, established properties are easily extended to $\mathbb{K} = \mathbb{C}$.

1.5 Corollaries

This is an example of a corollary.

Corollary 1.5.1 (Corollary name)**.** *The concepts presented here are now in conventional employment in mathematics. Vector spaces are taken over the field* $\mathbb{K} = \mathbb{R}$*, however, established properties are easily extended to* $\mathbb{K} = \mathbb{C}$.

1.6 Propositions

This is an example of propositions.

1.6.1 Several equations

Proposition 1.6.1 (Proposition name)**.** *It has the properties:*

$$\big|\,||\mathbf{x}|| - ||\mathbf{y}||\,\big| \leq ||\mathbf{x} - \mathbf{y}|| \tag{1.6}$$

$$||\sum_{i=1}^{n} \mathbf{x}_i|| \leq \sum_{i=1}^{n} ||\mathbf{x}_i|| \quad \textit{where n is a finite integer} \tag{1.7}$$

1.6.2 Single Line

Proposition 1.6.2. *Let $f,g \in L^2(G)$; if $\forall \varphi \in \mathscr{D}(G)$, $(f,\varphi)_0 = (g,\varphi)_0$ then $f = g$.*

1.7 Examples

This is an example of examples.

1.7.1 Equation and Text

Example 1.1. *Let $G = \{x \in \mathbb{R}^2 : |x| < 3\}$ and denoted by: $x^0 = (1,1)$; consider the function:*

$$f(x) = \begin{cases} e^{|x|} & si\ |x-x^0| \leq 1/2 \\ 0 & si\ |x-x^0| > 1/2 \end{cases} \tag{1.8}$$

The function f has bounded support, we can take $A = \{x \in \mathbb{R}^2 : |x-x^0| \leq 1/2+\varepsilon\}$ for all $\varepsilon \in]0;5/2-\sqrt{2}[$. ∎

2 Chapter Example

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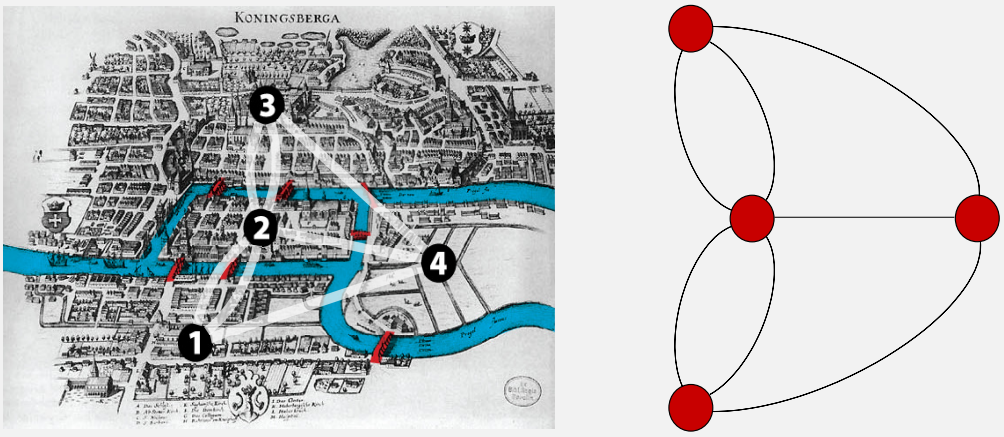

Figure 2.1. *Lorem ipsum dolor sit amet, consectetuer adipiscing elit.*

2.1 Basic definitions and notations

A *graph* is defined as follows:

Definition 2.1.1 (Graph).
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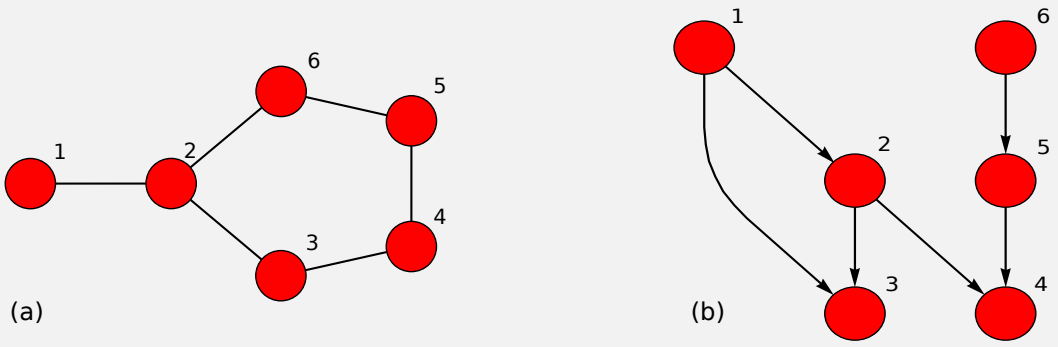

Figure 2.2. *Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris.*

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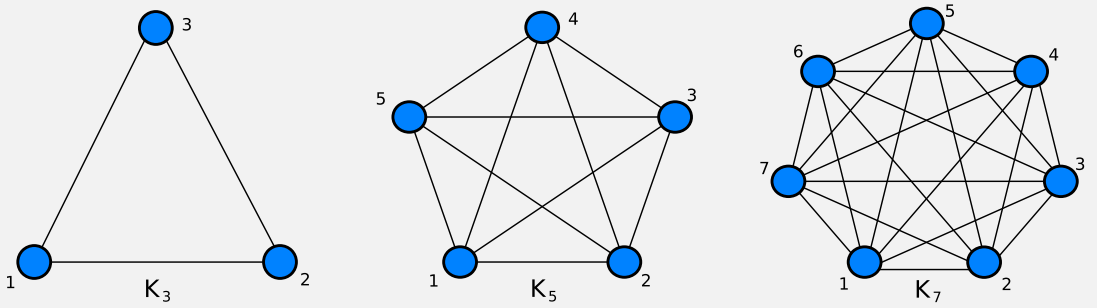

Figure 2.3. *Lorem ipsum dolor sit amet, consectetuer adipiscing elit.*

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Algorithm 1 (Name): Example of Algorithm

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Column 1	Column 2	Column 3	Column 4
First row	1×2	1	13
Second row	2×2	4	16
Third row	3×2	7	19
Fourth row	4×2	10	22

Table 2.1. *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.*

consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas [1].

Bibliography

[1] J. Smith *Name of the book.* Editor, pages, year.

Acknowledgements

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