

# Workshop en Ingeniería en Sistemas y Tecnologías de la Información

Uqbar Project



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# Contents

<b>1</b>	<b>Introducción a las Prácticas</b>	<b>5</b>
1.1	Complejidades	5
1.2	Citation	6
1.3	Lists	6
1.3.1	Numbered List	6
1.3.2	Bullet Points	6
1.3.3	Descriptions and Definitions	6
<b>2</b>	<b>In-text Elements</b>	<b>7</b>
2.1	Theorems	7
2.1.1	Several equations	7
2.1.2	Single Line	7
2.2	Definitions	7
2.3	Notations	7
2.4	Remarks	8
2.5	Corollaries	8
2.6	Propositions	8
2.6.1	Several equations	8
2.6.2	Single Line	8
2.7	Examples	8
2.7.1	Equation and Text	8
2.7.2	Paragraph of Text	9
2.8	Exercises	9
2.9	Problems	9
2.10	Vocabulary	9

<b>3</b>	<b>Presenting Information</b> .....	<b>11</b>
<b>3.1</b>	<b>Table</b>	<b>11</b>
<b>3.2</b>	<b>Figure</b>	<b>11</b>
	<b>Bibliography</b> .....	<b>13</b>
	<b>Books</b>	<b>13</b>
	<b>Articles</b>	<b>13</b>
	<b>Index</b> .....	<b>15</b>

# 1 — Introducción a las Prácticas

## 1.1 Complejidades

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## 1.2 Citation

This statement requires citation [Smi12]; this one is more specific [Smi13, page 122].

## 1.3 Lists

Lists are useful to present information in a concise and/or ordered way<sup>1</sup>.

### 1.3.1 Numbered List

1. The first item
2. The second item
3. The third item

### 1.3.2 Bullet Points

- The first item
- The second item
- The third item

### 1.3.3 Descriptions and Definitions

**Name** Description

**Word** Definition

**Comment** Elaboration

---

<sup>1</sup>Footnote example...



## Theorems

Several equations  
Single Line

## Definitions

## Notations

## Remarks

## Corollaries

## Propositions

Several equations  
Single Line

## Examples

Equation and Text  
Paragraph of Text

## Exercises

## Problems

## Vocabulary

# 2 — In-text Elements

## 2.1 Theorems

This is an example of theorems.

### 2.1.1 Several equations

**Theorem 2.1** In  $E = \mathbb{R}^n$  all norms are equivalent. It has the properties:

$$||\mathbf{x}| - |\mathbf{y}|| \leq ||\mathbf{x} - \mathbf{y}|| \quad (2.1)$$

$$||\sum_{i=1}^n \mathbf{x}_i|| \leq \sum_{i=1}^n ||\mathbf{x}_i|| \quad \text{where } n \text{ is a finite integer} \quad (2.2)$$

### 2.1.2 Single Line

**Theorem 2.2** A set  $\mathcal{D}(G)$  is dense in  $L^2(G)$ ,  $|\cdot|_0$ .

## 2.2 Definitions

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

**Definition 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:

$$||\mathbf{x}|| = 0 \Rightarrow \mathbf{x} = \mathbf{0} \quad (2.3)$$

$$||\lambda \mathbf{x}|| = |\lambda| \cdot ||\mathbf{x}|| \quad (2.4)$$

$$||\mathbf{x} + \mathbf{y}|| \leq ||\mathbf{x}|| + ||\mathbf{y}|| \quad (2.5)$$

## 2.3 Notations

**Notation 2.1.** Given an open subset  $G$  of  $\mathbb{R}^n$ , the set of functions  $\varphi$  are:

1. Bounded support  $G$ ;
  2. Infinitely differentiable;
- a vector space is denoted by  $\mathcal{D}(G)$ .

## 2.4 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  $\mathbb{K} = \mathbb{C}$ .

## 2.5 Corollaries

This is an example of a corollary.

**Corollary 2.1 — 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  $\mathbb{K} = \mathbb{C}$ .

## 2.6 Propositions

This is an example of propositions.

### 2.6.1 Several equations

**Proposition 2.1 — Proposition name.** It has the properties:

$$||\mathbf{x}|| - ||\mathbf{y}|| \leq ||\mathbf{x} - \mathbf{y}|| \quad (2.6)$$

$$||\sum_{i=1}^n \mathbf{x}_i|| \leq \sum_{i=1}^n ||\mathbf{x}_i|| \quad \text{where } n \text{ is a finite integer} \quad (2.7)$$

### 2.6.2 Single Line

**Proposition 2.2** Let  $f, g \in L^2(G)$ ; if  $\forall \varphi \in \mathcal{D}(G)$ ,  $(f, \varphi)_0 = (g, \varphi)_0$  then  $f = g$ .

## 2.7 Examples

This is an example of examples.

### 2.7.1 Equation and Text

■ **Example 2.1** Let  $G = \{x \in \mathbb{R}^2 : |x| < 3\}$  and denoted by:  $x^0 = (1, 1)$ ; consider the function:

$$f(x) = \begin{cases} e^{|x|} & \text{si } |x - x^0| \leq 1/2 \\ 0 & \text{si } |x - x^0| > 1/2 \end{cases} \quad (2.8)$$

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



### 2.7.2 Paragraph of Text

■ **Example 2.2 — Example name.** 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.

■

## 2.8 Exercises

This is an example of an exercise.

**Exercise 2.1** This is a good place to ask a question to test learning progress or further cement ideas into students' minds.

■

## 2.9 Problems

**Problem 2.1** What is the average airspeed velocity of an unladen swallow?

## 2.10 Vocabulary

Define a word to improve a students' vocabulary.

**Vocabulary 2.1 — Word.** Definition of word.



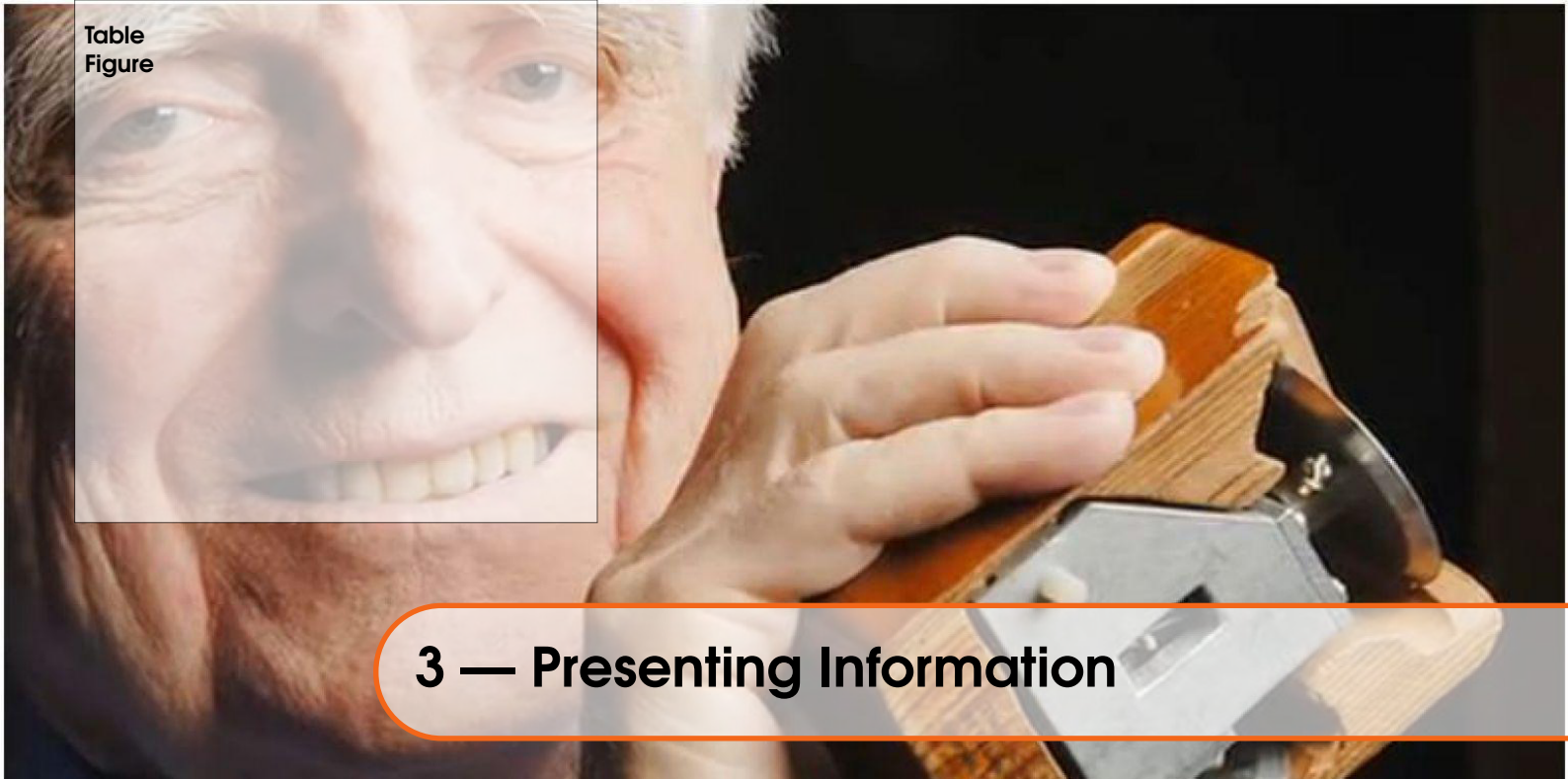


Table  
Figure

### 3 — Presenting Information

#### 3.1 Table

Treatments	Response 1	Response 2
Treatment 1	0.0003262	0.562
Treatment 2	0.0015681	0.910
Treatment 3	0.0009271	0.296

Table 3.1: Table caption

#### 3.2 Figure

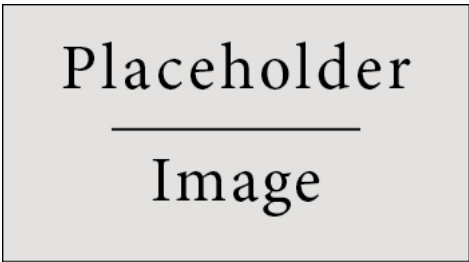


Figure 3.1: Figure caption



The background of the top section of the page is a blurred image of Java code. Visible snippets include:

```
public String getTypo()  
{  
    return type_;  
}  
public int getWidth()  
{  
    return width_;  
}  
public int getHeight()  
{  
    return height_;  
}  
public char getAnswer( int x, int y )  
{  
    char answer = ' ';  
    if( x < width_ && y < height_ && x >= 0 && y >  
    {  
        answer = data_[x][y].getAnswer();  
    }  
    return answer;  
}
```

## Bibliography

### Books

[Smi12] John Smith. *Book title*. 1st edition. Volume 3. 2. City: Publisher, Jan. 2012, pages 123–200 (cited on page 6).

### Articles

[Smi13] James Smith. “Article title”. In: 14.6 (Mar. 2013), pages 1–8 (cited on page 6).







## Index

- Citation, 6
- Complejidades, 5
- Corollaries, 8
- Definitions, 7
- Examples, 8
  - Equation and Text, 8
  - Paragraph of Text, 9
- Exercises, 9
- Figure, 11
- Lists, 6
  - Bullet Points, 6
  - Descriptions and Definitions, 6
  - Numbered List, 6
- Notations, 7
- Problems, 9
- Propositions, 8
  - Several Equations, 8
  - Single Line, 8
- Remarks, 8
- Table, 11
- Theorems, 7
  - Several Equations, 7
  - Single Line, 7
- Vocabulary, 9