

The Xwriter¹ L^AT_EX 2_ε Environments for Manuscript Preparation

Martin Debaisieux⁴

Abstract

The XWRITER¹ package is a simple way to structure a consistent layout. It defines a common framework which supports different implemented typographic styles. This package also includes a large number of mathematical environments.

Contents

1	Patch notes	2
2	Environments	2
2.1	Theorem-type environments	2
2.2	Proof-type environments	3
3	Package options	3
3.1	Framed	3
3.2	\mathcal{AMS} -style	4
3.3	Classic	4
3.4	Empire	4
3.5	NeoEmpire	4
3.6	Notes	4
3.7	Examples	5
4	Contact	12

1 Patch notes

This is the version 1.0.0 of XWRITER¹. This first version incorporates the basic structure and five drafting themes. In addition, it introduces the creation of numerous mathematical environments which completes the XMATH² package as of version 3.0.0. This document was last compiled on June 27, 2021.

2 Environments

Two different categories of environments are defined in this package. Whenever the user wants to extend the collection of environments already in XWRITER¹, it is advised to choose one among the two to keep the spirit of this package: environments that automatically adapt to the theme used. Each predefined environment supports English – by default – and French and is automatically translated.

2.1 Theorem-type environments

The first category of environments has been designed to define classic environments. Typically, these are environments such as results, remarks, exercises.

Each of the predefined environments is available in a numbered or unnumbered version. The numbering is based on the current section. The environments are coded as `<id>` for the numbered or `<id>*` for the unnumbered and where `<name>` can vary within the values in Table 1.

algorithm	conjecture	notabene	questions
assumption	definition	note	recall
assumptions	example	notes	recalls
axiom	examples	problem	remark
axioms	exercise	property	remarks
corollary	exercises	properties	theorem
claim	hypothesis	proposition	
claims	hypotheses	summary	
conclusion	lemma	question	

Table 1: Proof-type environments.

XWRITER¹ allows you to create new theorem-type environments spontaneously with the command `\createnumtheorem[<frame>]{<id>}{<name>}`

for a numbered one and `\createtheorem[<frame>]{<id>}{<name>}` for an unnumbered environment. For instance, to create and use the numbered `env` environment, simply `\createnumtheorem{env}{Env}` and then you can use the usual `\begin{env}...\end{env}`. Both commands support the framing option which allows – when the package’s `framed` option is activated and `<frame>` is set to `framable` – to frame the environment. By default, it is set to `notframable`. The full list of framable environments can be found in Table 3.

2.2 Proof-type environments

The second category is a lighter environment, typically represented by proof and resolutions.

Unlike the previous ones, these are neither numberable nor framable. The environments are coded as `<id>` where `<id>` can vary within the values in Table 2.

<code>proof</code>	<code>resolution</code>	<code>solution</code>
--------------------	-------------------------	-----------------------

Table 2: Proof-type environments.

It is also possible to create new proof-type environments spontaneously with the command `\createproof{<id>}{<name>}`. For instance, to create and use the `env` environment, simply `\createproof{env}{Env}` and then you can use the usual `\begin{env}...\end{env}`.

3 Package options

This package has several options for adjusting the style of the document. Except for the `framed` option – which is a complement to the implemented styles – each of the options is two by two incompatible.

3.1 Framed

The `framed` option is used to complement the style options described below. Typically called when `\usepackage[framed,<style>]{xwriter}`, it allows the framing of framable environments to appear. This option is incompatible with `notes` because it is already a framed style.

The framable environments defined by `XWRITER`¹ are those shown in Table 3.

axiom	definition	properties
axioms	lemma	proposition
corollary	property	theorem

Table 3: Framable environments.

Subsection 3.7 presents an example of this option.

3.2 \mathcal{AMS} -style

The `XWRITER`¹ package is an extension of the `\mathcal{AMS}thm`⁵ package and follows its style. It is the default theme when no options are loaded. You do not need to specify a style option – except possibly for `framed` – to use it when you import the package. Subsection 3.7 presents an example of this theme.

3.3 Classic

The `classic` option puts the names of theorem-type environments in bold and the names of proof-type environments in italics. It renders the body in normal text. Subsection 3.7 presents an example of this theme.

3.4 Empire

The `empire` option puts the names of theorem-type environments in bold and small capital and the names of proof-type environments in small capital. It renders the body in normal text. Subsection 3.7 presents an example of this theme.

3.5 NeoEmpire

The `neoempire` option puts the names of theorem-type environments in bold and the names of proof-type environments in small capital. It renders the body in normal text. It is a compromise between `classic` and `empire` style. Subsection 3.7 presents an example of this theme.

3.6 Notes

The `notes` option – inspired by `NotesTeX`³ – puts the names of theorem-type and proof-type environments in bold and in the `sffamily` font. It renders the body in normal text. It draws a vertical line to the left of each

theorem-type environment and highlights the framable ones with a coloured background. This option also changes the rendering of **section**, **subsection**, **subsubsection**, **paragraph**, and **subparagraph** commands for bold text and in the `sffamily` font. Subsection [3.7](#) presents an example of this theme.

3.7 Examples

The following pages illustrate the same article in each of the different themes. The additional option **framed** is only shown on the default style, but can be used with any of the other themes except **notes**.

SIC MUNDUS CREATUS EST

framed and \mathcal{AMS} -style (default) options

June 21, 1986

1 Curabitur dictum gravida mauris

1.1 Cras nibh

Definition 1.1. *Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetur adipiscing elit.*

Remark 1.2. *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.*

1.2 Mauris ut leo

Theorem 1.3. *Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo.*

Proof. 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.

Corollary 1.4. *Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna.*

2 Morbi vel justo vitae lacus tincidunt ultrices

Exercise 2.1. *Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam.*

Resolution. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum.

SIC MUNDUS CREATUS EST

\mathcal{AMS} -style (default) option

June 21, 1986

1 Curabitur dictum gravida mauris

1.1 Cras nibh

Definition 1.1. *Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetur adipiscing elit.*

Remark 1.2. *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.*

1.2 Mauris ut leo

Theorem 1.3. *Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo.*

Proof. 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.

Corollary 1.4. *Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna.*

2 Morbi vel justo vitae lacus tincidunt ultrices

Exercise 2.1. *Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam.*

Resolution. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum.

SIC MUNDUS CREATUS EST

classic option

June 21, 1986

1 Curabitur dictum gravida mauris

1.1 Cras nibh

Definition 1.1. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Remark 1.2. 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.

1.2 Mauris ut leo

Theorem 1.3. Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo.

Proof. 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.

Corollary 1.4. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna.

2 Morbi vel justo vitae lacus tincidunt ultrices

Exercise 2.1. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam.

Resolution. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum.

SIC MUNDUS CREATUS EST

empire option

June 21, 1986

1 Curabitur dictum gravida mauris

1.1 Cras nibh

DEFINITION 1.1. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetur adipiscing elit.

REMARK 1.2. 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.

1.2 Mauris ut leo

THEOREM 1.3. Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo.

PROOF. 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.

COROLLARY 1.4. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna.

2 Morbi vel justo vitae lacus tincidunt ultrices

EXERCISE 2.1. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam.

RESOLUTION. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum.

SIC MUNDUS CREATUS EST

neoempire option

June 21, 1986

1 Curabitur dictum gravida mauris

1.1 Cras nibh

Definition 1.1. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Remark 1.2. 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.

1.2 Mauris ut leo

Theorem 1.3. Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo.

PROOF. 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.

Corollary 1.4. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna.

2 Morbi vel justo vitae lacus tincidunt ultrices

Exercise 2.1. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam.

RESOLUTION. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum.

Sic Mundus Creatus Est

notes option

June 21, 1986

1 Curabitur dictum gravida mauris

1.1 Cras nibh

Definition 1.1. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Remark 1.2. 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.

1.2 Mauris ut leo

Theorem 1.3. Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo.

Proof. 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.

Corollary 1.4. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna.

2 Morbi vel justo vitae lacus tincidunt ultrices

Exercise 2.1. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam.

Resolution. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum.

4 Contact

If you have a suggestion or if you encounter a problem with XWRITER¹, send me a pull request on <https://github.com/MartinDbx/xwriter>.

References

- [1] Martin Debaisieux. Github repository. <https://github.com/MartinDbx/xwriter>.
- [2] Martin Debaisieux. Github repository. <https://github.com/MartinDbx/xmath>.
- [3] Aditya Dhumuntarao. Ctan. <https://ctan.org/pkg/notestex>.
- [4] Debaisieux Martin. <https://github.com/MartinDbx>.
- [5] The American Mathematical Society. Ctan. <https://ctan.org/pkg/amsthm>.