The Xwriter[1] LaTeX 2ε Environments for Manuscript Preparation

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Abstract

The XWRITER[1] 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

This is the version 1.0.1 of XWRITER[1]. This first version incorporates the basic structure and five drafting themes. In addition, it introduces the creation of numerous mathematical environments which completes the XMATH[2] package as of version 3.0.0. This document was last compiled on July 17, 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 XWRITER[1], 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.

XWRITER[1] 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.

<div align="center">

proof   resolution   solution

Table 2: Proof-type environments.
</div>

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, consectetuer 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

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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, consectetuer adipiscing elit.

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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

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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.

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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

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1.2 Mauris ut leo

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

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Sic Mundus Creatus Est

`notes` option

June 21, 1986

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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 XWRITER[1], 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.

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[5] The American Mathematical Society. Ctan. https://ctan.org/pkg/amsthm.