

# An Example Paper<sup>★</sup>

My Name<sup>a,1</sup> My Co-author<sup>b,2</sup>

<sup>a</sup> *My Department*  
*My University*  
*My City, My Country*

<sup>b</sup> *My Co-author's Department*  
*My Co-author's University*  
*My Co-author's City, My Co-author's Country*

---

## Abstract

This is a short example to demonstrate the L<sup>A</sup>T<sub>E</sub>X style files used to prepare submissions for MFPS 2024, and for preparing the final version of papers accepted for the conference. These Proceedings will appear in the *Electronic Notes in Theoretical Informatics and Computer Science* (ENTICS), a new series that is published under the auspices of Epsciences.org, the French national organization that supports open access overlay publications in a broad range of scientific disciplines.

*Keywords:* Please list keywords from your paper here, separated by commas.

---

## 1 Introduction

This short example serves as a template for using the L<sup>A</sup>T<sub>E</sub>X macro package for use in preparing submissions for MFPS 2024. Authors of papers accepted for presentation at MFPS 2024 will be asked to provide updated versions for the *Preliminary Proceedings* of MFPS 2024, which will be distributed to the participants at the meeting.

The *Proceedings* of MFPS 2024 will be published after the meeting. They will appear later this year, as a volume in the forthcoming series *Electronic Notes in Theoretical Informatics and Computer Science*. ENTICS is an open access, online series published using the support and facilities of Epsciences.org <https://epsciences.org>. You may be familiar with Epsciences.org, which also hosts *Logical Methods in Computer Science*. ENTICS is the first series devoted to online publication of conference proceedings to be hosted by Epsciences.org. The webpages for ENTICS will be on the Epsciences platform, with information about the series, details about each volume, together with links to the papers in each volume. ENTICS is an overlay series, with papers published in the series located on one of the repositories, the [CORR archive](#) hosted at Cornell University, the [HAL archive](#) hosted in the French repository, or the [Zenado](#) archive, hosted at [CERN](#). Detailed instructions, together with the updated style files for preparing the final version of papers accepted for MFPS 2024, will be provided later.

---

<sup>★</sup> General thanks to everyone who should be thanked.

<sup>1</sup> Email: [myuserid@mydept.myinst.myedu](mailto:myuserid@mydept.myinst.myedu)

<sup>2</sup> Email: [couserid@codept.coinst.coedu](mailto:couserid@codept.coinst.coedu)

The ENTICS L<sup>A</sup>T<sub>E</sub>X macros are derived from the macros used by its predecessor, *Electronic Notes in Theoretical Computer Science*, which was the first solely online series devoted to conference proceedings. That series ceased publication at the end of 2020.

This package consists of three files:

`entics.bst`, a style file for formatting bibliographic entries,

`entics.cls`, the basic style file, and

`enticsmacro.sty`, a macro file containing the definitions of some of the theorem-like environments and a few other tidbits.

The formatting these style files impose should *not* be altered – they are used to establish and maintain a uniform format for the papers accepted for presentation at MFPS 2024. In particular, the font choices should not be changed – ENTICS uses the standard CMR Type 1 fonts for the text body of papers appearing in the series, and while other fonts may be used to specialized purposes, such as fonts to support special math symbols, changing the text font is not allowed. In particular, the **Times Roman** fonts should *not* be used for the text body, and the `txfonts` should be avoided because they break some of the macros used in this package.

Additional macro files can be added using `\usepackage{...}`. The file `enticsmacro.sty` *must* be included in the list, as is done at the start of the source file for this document. Nonstandard macros can be used, *as long as they do not interfere with entics.cls or enticsmacro.sty*. It's a good idea to list `enticsmacro.sty` as the last `\usepackage{...}` called in preliminary portion of your document, since L<sup>A</sup>T<sub>E</sub>X will report errors if there are conflicts with other packages you want to use.

The ENTICS package requires L<sup>A</sup>T<sub>E</sub>X2e, which is needed to produce pdf files as the final output. Since ENTICS is published online, we also utilize the `hyperref` package, which supports active hyperlinks in pdf documents. While the use of pdfL<sup>A</sup>T<sub>E</sub>X is preferred for producing a pdf file as the final output, authors who need to include Postscript graphics in their papers may wish to utilize the older combination of L<sup>A</sup>T<sub>E</sub>X2e and dvips. In order to support this, `entics.cls` includes the `ifpdf` package to differentiate between pdfL<sup>A</sup>T<sub>E</sub>X on one hand, or L<sup>A</sup>T<sub>E</sub>X2e followed by dvips and then ps2pdf, to produce the final output file.

## 2 Frontmatter

The biggest difference between a L<sup>A</sup>T<sub>E</sub>X style file such as `article.sty` and the file `entics.cls` is that `entics.cls` requires the title, author's name or names, abstract, keywords and “thanks” all to be included within the `frontmatter` environment. You'll notice this at the beginning of the source file for this template. Also, you'll also notice that the usual `\maketitle` is absent; it no longer is needed. The ENTICS style package automatically generates the title, author's name and address, and related material at the beginning of the paper.

One important point to note is that L<sup>A</sup>T<sub>E</sub>X is unable to generate addresses or footnotes from within the `\author{...}` field in the `frontmatter` environment, so the macro requires the use of `\thanksref{xx}` within the `\author{...}` field, followed by a corresponding `\thanks[xx]{...}` as a separate entry outside the `\author{...}` field. Thus, `\thanksref{xx}` places a superscript <sup>xx</sup> next to the author's last name, which provides an active link to the footnote created by `\thanks[xx]{...}`. Note that both the `\thanksref{...}` and the `\thanks[xx]{...}` must appear within the `frontmatter` environment.

The ENTICS macro package provides two alternatives for listing authors' addresses. The simplest method is to list each author and his or her address in turn, as is done in this example. But, if there are several authors and two or more share the same address (but not all authors are at this address), then the preferred method is to list all authors first, each with a separate `\author{...}`, and then to list the addresses. Then each author can be linked to the appropriate address(es) by using a `\thanksref{xx}` to indicate that author has an affiliation to the address listed as `\address[xx]{...}`. This is illustrated in this example, where the first author has a link to the co-author's `\address{...}` to indicate there is an affiliation at that address as well. This mechanism is handy when there are several authors and some of them share the same affiliation.

Also, notice that acknowledgment of support (as the contents of a `\thanks{...}`) can be done by a separate listing of, e.g., `\thanks[NSF]{To the NSF}` with the optional argument – `[NSF]` – used for a

`\thanksref{NSF}` that is attached to those authors acknowledging that support.

It is important that the `\thanks` not be included within the scope of `\author{}` or of `\title{}`, but it must be within the scope of the environment `frontmatter`.

The `frontmatter` section also contains an abstract environment, as well as one for key words. These will be required for the final version of an accepted paper.

More details about added terms such as `\collab` can be found in `inst.dvi`, if they are needed.

Also, notice that the command `\lastname{Please list Your Lastname Here}` that appears *before* the `\begin{document}`. This command should contain the last names of the authors of the paper. If there are no more than three authors, then they should be listed with the word “and” between the last two; if more than three authors collaborated on the paper, then the first author only should be listed, together with `\emph{et al}`. This command creates the headline for each page after page 1.

### 3 Sectioning and Environments

The ENTICS package supports the standard sectioning commands, `\section`, `\subsection`, `\paragraph` and `\subparagraph`. The numbering scheme used is one under which Theorem 1.2.3 is the third numbered item in second subsection of the first section of the paper. In order to facilitate cross-references, all of the named environments given below are numbered, and all use the same number scheme. For example, there are:

**Definition 3.1** A file is *derived* from another if it is obtained with some modifications from the original file.

**Theorem 3.2** The file `entics.cls` is derived from `entcs.cls`.

**Proof.** This is clear from the similarity of the output to the output from the ENTCS style files. □

Starting a proof with a descriptive word, such as “sketch”, is supported by using the `\begin{proof*}... \end{proof*}` environment, as in

**Proof (Sketch)** This can be derived from simple observations. □

Note that unnumbered sectioning also is supported, as in `\section*{...}`, etc. But these sections will not support cross references within the document, so they should be used only for material that doesn't need to be cross-referenced.

Again, the purpose of `entics.cls` and `enticsmacro.sty` is to impose a uniform format on the output file, so please don't include spurious spacing – such as `\vskip{...}` or such – within the document. It's also inappropriate to end a line with `\\`, which starts the following line at the left margin. Doing this creates a very haphazard, ugly format with ragged right justification. The goal is to have an easily recognizable format associated with the series *Electronic Notes in Theoretical Informatics and Computer Science*.

The file `enticsmacro.sty` contains additional information that is needed to typeset a paper. It also has the definitions of the *AMS* `euler` and `blackboard bold` fonts builtin. If you want to use symbols for the natural numbers, the reals, etc., then we prefer that you use the blackboard bold fonts, and not plain bold fonts. This is accomplished by using the `\mathbb` font, as in  $\mathbb{N}$  or  $\mathbb{R}$ .

The names of theorem-like environments are provided in `enticsmacro.sty`. With the exception of the Algorithm environment, the names of all of these are full name, rather than a shortened version. The environments provided and their names are

- `\begin{theorem} ... \end{theorem}` for Theorems,
- `\begin{lemma} ... \end{lemma}` for Lemmas,
- `\begin{corollary} ... \end{corollary}` for Corollaries,
- `\begin{proposition} ... \end{proposition}` for Propositions,
- `\begin{criterion} ... \end{criterion}` for Criteria,
- `\begin{alg} ... \end{alg}` for Algorithms,

- `\begin{definition} ... \end{definition}` for Definitions,
- `\begin{conjecture} ... \end{conjecture}` for Conjectures,
- `\begin{example} ... \end{example}` for Examples,
- `\begin{problem} ... \end{problem}` for Problems,
- `\begin{remark} ... \end{remark}` for Remarks,
- `\begin{note} ... \end{note}` for Notes,
- `\begin{claim} ... \end{claim}` for Claims,
- `\begin{summary} ... \end{summary}` for Summary,
- `\begin{case} ... \end{case}` for Cases, and
- `\begin{ack} ... \end{ack}` for Acknowledgements.

For example,

**Algorithm 1** *The algorithm for preparing a submission.*

*Step 1: Write the paper*

*Step 2: Format it with the ENTICS macro package*

*Step 3: Submit the paper to MFPS 2024.*

In addition, the `itemize`, `enumerate` and `description` environments also are supported, as usual.

## 4 Tables, Figures and Graphics

Tables and figures are supported, and can be cross-referenced using `\labels`. For example, here is Table 1:

Table 1  
This is My Table

X	Y	Z
A	B	C

Figures have a similar environment. We use Figure 1 below to illustrate the figure environment with a graphic image; note we have included `\usepackage{graphicx}` at the beginning of this file. The `graphicx` package supports `.png`, `.jpg`, and `.pdf` images, which can be inserted in the document as follows:

Chess (gift of Adobe Systems) "Clipped Board" p. 1

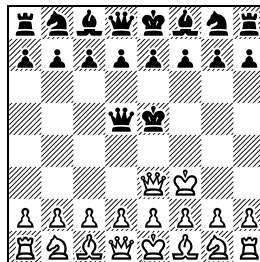


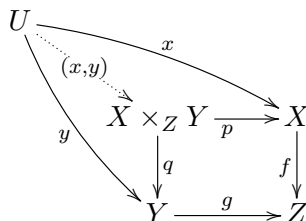
Fig. 1. A Chess Board

Notice we have used the `scale=.xin` option to scale graphics so that the image is completely within the space for the text body, and doesn't "bleed over" into the margins. We also have used it to assure the image fits close to the desired place in the document. Also, note the use of `\begin{center} ... \end{center}`

in both tables and figures. This centers the body of the table or figure. Without it, the body will be left-justified.

Both `tables` and `figures` have a `\caption{...}`, followed by a `\label{...}` for cross-referencing (if the `\label{...}` is not after to the `\caption{...}`, then the reference numbering will be wrong – try moving `\label{...}` before `\caption{...}` in either the table or figure above to see). Traditionally, tables have the caption at the top, while figures have them at the bottom, but either way works.

In addition to inserting graphics into a document, `entics.sty` also supports diagram drawing packages, such as `XY-pic`, `tikzit` and Paul Taylor's `diagrams` package. For example, here's a diagram from the `XY-pic Users Guide` – note the inclusion of `\usepackage[all]{xy}` at the beginning of this file:



#### 4.1 Particulars about .pdf files

We now require that .pdf files be provided for publication online. A .pdf file is viewable by Adobe's Acrobat<sup>®</sup> viewer, which can be configured to load automatically within a browser. Viewing a properly formatted .pdf file with Acrobat<sup>®</sup> allows the cross-references and links to URLs to be active. In fact, Elsevier utilizes .pdf files in order to take better advantage of the web's capabilities.

But one point we want to emphasize is that you should be sure to use Type 1 fonts when you typeset your  $\text{\LaTeX}$  source file. These fonts are scalable, meaning that they carry information that allows the device viewing the final output to scale the fonts to suit the viewer being used – from an onscreen viewer such as Adobe's Acrobat<sup>®</sup> Reader, to printing the file on a printer. You can tell if you have used the right fonts by viewing the final output on your machine. If the fonts look grainy, then you have not used Type 1 fonts. They can be located at the CTAN archive <http://www.ctan.org> – they are public domain fonts, and don't cost anything to add them to your system.

#### pdf $\text{\LaTeX}$

Since the required output for files published in ENTICS is a .pdf file, the easiest way to produce the output is by using pdf $\text{\LaTeX}$  to process the source file. pdf $\text{\LaTeX}$  is now included in  $\text{\LaTeX}$  distributions available from the standard CTAN sites <http://www.ctan.org>.

There is one aspect of pdf $\text{\LaTeX}$  that can create a problem. It's sometimes useful to produce a graphic image using PostScript, but pdf $\text{\LaTeX}$  cannot process such files. The way to include them is to create the desired graphic image as a .eps file<sup>3</sup>, and then to use the utility `epstopdf` to convert the output to a .pdf file. This approach generates high quality graphics output. The resulting .pdf file then can be included by using the `graphicx` package, for example. The chess board example above was produced in this way. Here as well is a color image using pdf $\text{\LaTeX}$  and .pdf input file:

<sup>3</sup> eps stands for *embedded PostScript*.



## 5 References and Cross-references

All the cross-referencing facilities of L<sup>A</sup>T<sub>E</sub>X are supported, so one can use `\ref{}` and `\cite{}` for cross-references within the paper and for references to bibliographic items. While the **References** can be composed with `\begin{thebibliography}...\end{thebibliography}`, it is better to use BibT<sub>E</sub>X to compile the bibliography from a `.bib` file. Further details about the formatting requirements are given in Section 7 below.

The package `hyperref` is automatically loaded by `entcs.cls`, and this makes all the cross-references within the document “active” when the pdf file of the paper is viewed with a pdf viewer supporting hyperlinks, such as Adobe’s Acrobat<sup>®</sup> Reader. The format for including a link is simple: simply insert `\url{URL}{text}` where `URL` is the URL to which you want the link to point, and `text` is the text you want to be highlighted, which when clicked upon will bring up the desired web page. You also can use `\url{link}` where `link` is the URL that is being pointed to.

## 6 Summary

The ENTICS macro package is relatively easy to use and provides a uniform layout for all the papers that appear in ENTICS.

**Problem 6.1** *Finish your paper and submit it to EasyChair on time!*

## 7 Bibliographical references

ENTICS employs the `entcs.bst` style file for bibliographic references. In this format, references are listed in alphabetical order, according to the first author’s last name, and are sequentially numbered. In addition, the first item in each reference is the first author’s last name, followed by their initials or first name, and then the other authors names are listed, etc. It’s easiest to use BibT<sub>E</sub>X to generate the bibliography from a `.bib` file to implement these and the other requirements. There is a file `example.bib` containing a number of citations, with illustrations for how to enter articles ([1,4,3]), books ([5,2,7] and PhD theses ([6]), as well as many others.

The rules for references are the following:

- Authors’ names should be listed in alphabetical order, with the first author’s last name being the first listing, followed by the author’s initials or first name, and with the other authors names listed as *first name, last name*.
- Titles of articles in journals should be in *emphasized* type.

- Titles of books, monographs, etc. should be in quotations.
- Journal names should be in plain roman type.
- Journal volume numbers should be in boldface type, with the year of publication immediately following in roman type, and enclosed in parentheses.
- A DOI (digital object identifier) should be provided for each references that has one. Links to URLs for those that don't have a DOI should be "active" and the URL itself should be in typewriter font. The DOI / URL should be the last item in the reference.
- Article listings should include page numbers.

The criteria are illustrated in the following.

## References

- [1] Civin, P. and B. Yood, *Involutions on Banach algebras*, Pac. J. Math **9**, pages 219–226 (1959).  
<https://doi.org/10.2140/pjm.1959.9.415>
- [2] Clifford, A. H. and G. B. Preston, *The Algebraic Theory of Semigroups*, volume 7 of *Math. Surveys*, AMS (1961).  
<https://www.ams.org/books/surv/007.1/surv007.1-endmatter.pdf>
- [3] Easdown, D. and W. D. Munn, *Trace functions on inverse semigroup algebras*, Bulletin of the Australian Mathematical Society **52**, pages 359–372 (1995).  
<https://doi.org/10.1017/S0004972700014854>
- [4] Freyd, P., P. O'Hearn, J. Power, R. Tennent and M. Takeyama, *Bireflectivity*, Electronic Notes in Theoretical Computer Science **1** (1995).  
<https://doi.org/10.1017/S0004972700014854>
- [5] Roscoe, A. W., *The Theory and Practice of Concurrency*, Series in Computer Science, Prentice Hall (1987), ISBN 0136744095.
- [6] Shehadah, A. A., *Embedding theorems for semigroups with involution*, Ph.D. thesis, Purdue University, Indiana (1992).  
PhD thesis.  
<https://docs.lib.purdue.edu/dissertations/AAI8300958/>
- [7] Weyl, H., *The Classical Groups*, Princeton University Press (1946), ISBN 9780691057569.

## A An appendix

Any appendices should be included after the references, as is done here. The appendix starts with the command `\appendix`, after which sections can be included; these are lettered, rather than numbered.

## Another appendix

One can also use `\section*{...}` to create an appendix without a letter attached.