Replace this file with `prentcsmacro.sty` for your meeting,
or with `entcsmacro.sty` for your meeting. Both can be
found at the ENTCS Macro Home Page.

An Example Paper

My Name [1,2]

My Department
My University
My City, My Country

My Co-author [3]

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 show the basics of using the ENTCS style macro files. Ample examples of how files should look may be found among the published volumes of the series at the ENTCS Home Page `http://www.elsevier.nl/locate/entcs`.

Key words: Please list keywords from your paper here, separated by commas.

1 Introduction

This short note provides a guide to using the ENTCS macro package for preparing papers for publication in your conference *Proceedings*. The *Proceedings* may be printed and hard copies distributed to participants at the meeting; this is an option to Conference Organizers may choose to exercise. The *Proceedings* also will be par of a volume in the series *Electronic Notes in Theoretical Computer Science* (ENTCS), which is published under the auspices of Elsevier Science B. V., the publishers of *Theoretical Computer Science*. It's home page is `http://www.elsevier.nl/locate/entcs`

The ENTCS macro package consists of two files:

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

[1] Thanks to everyone who should be thanked
[2] Email: `myuserid@mydept.myinst.myedu`
[3] Email: `couserid@codept.coinst.coedu`

`entcsmacro.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 – the reason for using them is to attain a uniform format for all papers in the *Proceedings* of which your paper is a part.

Additional macro files can be added using `\usepackage{...}`. The file `entcsmacro.sty` *must* be included in the list, as is done at the start of the source file for this paper.

The ENTCS package requires a relatively up-to-date LaTeX system in order to be successfully used. This is reflected in two other packages that are called by entcs.cls, which must be available on your machine. These are:

- The `hyperref` package. This package allows the use of hyperlinks in files prepared using LaTeX2e, one of the main features of Adobe's Acrobat© Reader software. Be sure that you have at least version 6.69d of this package.
- The `ifpdf` package. This is used by hyperref to differentiate between the use of pdfLaTeX and LaTeX2e, followed by dvips and then ps2pdf.

The file `instraut.dvi` contains information about the use of LaTeXto prepare files for online publication by Elsevier. This file refers to the older version of LaTeX that is no longer suppported, and that is inadequate for preparing `.pdf` files for online publication. Reading this file should answer most of the basic questions about LaTeX that might arise.

2 Frontmatter

The biggest difference between a "usual" LaTeX style such as `article.sty` and the ENTCS package is that the ENTCS macro package requires the title, author's name or names, abstract, keywords and "thanks" all to be included within the `frontmatter` environment. At the beginning of the source file for this paper, you'll notice this. Also, you'll notice that the usual `\maketitle` is absent; it no longer is needed. The ENTCS style package automatically generates the title, author's name and address, and related material at the beginning of the paper. Note also that hyperref has been disabled in this part of the entcs.cls file, so references to footnotes aren't linked to the appropriate footenotes or addresses. This is an old problem with LaTeX, involving the fact that the references within the frontmatter aren't passed cleanly to the linking software.

For those who have used the ENTCS package before, the one new thing to note is the inclusion of *Keywords*; these are now required by Elsevier – they're also required by ACM's *Computing Reviews* which reviews ENTCS publications.

The ENTCS macro package provides two alternatives to listing authors names and addresses. These are described in detail in the file `instraut.dvi`.

Basically, listing each author and his or her address in turn, is the simplest method. But, if there are several authors and two or more share the same address (but not all authors are at this address), then the method of listing authors first, and then the addresses, and of referencing addresses to authors should be used.

Also, notice that acknowledgment of support (the contents of `\thanks`) should be done by a separate listing of `\thanks[NSF]{To the NSF}` with the optional argument – `[NSF]` – being used for `\thanksref` which is attached to those authors acknowledging such 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`.

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

Also, notice that the command `\lastname{My Lastname}` has been included *before* the `frontmatter` begins. 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.

Finally, please be sure to include an abstract for your paper.

3 Sectioning and Environments

Since ENTCS is published through the auspices of Elsevier Science B. V., their style files have been used to create the ENTCS macro package. Here's a proof that this package is not much different than most of the ones one encounters:

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

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

Proof. This is clear from the similarity of the output to the output from Elsevier's style files. □

If one wants to start a proof with a descriptive word, such as "sketch", then one can use the `\begin{proof*}...\end{proof*}` environment, as in

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

The main differences between the file `entcs.cls` and the `elsartr.cls` file used by Elsevier are the more precise format we use – Elsevier's generic files are meant for preliminary editing, and more precise formatting is imposed using a macro file designed for the specific Elsevier journal in which the paper will eventually appear. The `entcs.cls` and `entcsmacro.sty` files format papers uniformly so that they all are easily recognizable as being from the series *Electronic Notes in Theoretical Computer Science*.

All of the usual features of LaTeX are available with these style files – it is only the formatting that has been rigorously defined. Thus, one has available the 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.

The file `entcsmacro.sty` contains additional information that is needed to typeset a paper. It also has the definitions of the $\mathcal{AMS}$ `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 `entcsmacro.sty`. With the exception of the environment Algorithm, 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 *Step 1: Write the paper*
Step 2: Format it with the ENTCS macro package
Step 3: Ship the whole thing to the Guest Editors

4 References and Cross-references

All the cross-referencing facilities of LaTeX are supported, so one can use `\ref{}` and `\cite{}` for cross-references within the paper and for references to bibliographic items. As is done in this note, the **References** section 6 can be composed with `\begin{thebibliography}...\end{thebibliography}`. Alternatively, BibTeX can be used to compile the bibliography. Whichever one is used, the references are to be numbered consecutively, rather than by author-defined acronyms. Of course you can use your own acronyms for easy reference to each of the items in the bibliography, as has been done with the listing for this short note.

However, note that the references should *not* be started with a new `\section` command.

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 Adobe's Acrobat© Reader. The format for including a link is simple: simply insert `\href{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.

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© viewer, which can be configured to load automatically within a browser. Viewing a properly formatted `.pdf` file with Acrobat© 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 LaTeX source file. These fonts are scalable, meaning that they carry information that allows the devise viewing the final output to scale the fonts to suit the viewer being used – from an onscreen viewer such as Adobe's Acrobat© 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. It 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.

Assuming you have Type 1 fonts available, then there are there methods for producing `.pdf` files.

Using `dvips` and `ps2pdf`

We list this option first since it appears to be the most reliable and the easiest to use, especially if you include embedded PostScript graphics (`.eps` files) in your source file. Simply run LATEX2e on your source file, then apply `dvips` to produce a PostScript file, and finally apply `ps2pdf` to obtain a `.pdf` file.

The `DVIPDFM` utility

Another easy method for producing acceptable `.pdf` files is via the utility `dvipdfm`. This utility is included in distributions of MikTEX, which runs on Windows machines, but it probably needs to be added to your teTEX distribution, if you are running LATEX on a UNIX machine. The utility and precise information about installing it on your system can be found at the web page `http://gaspra.kettering.edu/dvipdfm/`. In essence, this utility converts a `.dvi` file into a `.pdf` file. So, one can first prepare the `.dvi` file using LATEX, and then apply the utility `dvipdfm` to produce the needed `.pdf` file.[4] This utility makes inclusion of graphics particularly simple – those that are included in the LATEX source file are simply converted to the `.pdf` format. As we note below, things are not so simple with the second alternative, which is to use pdfLATEX.

pdfLATEX

An alternative to the first possibilities to produce `.pdf` files is to process the source file with pdfLATEX. This format is available from the standard CTAN sites `http://www.ctan.org`. It appears that pdfLATEX and `hyperref` have some problems when used together. It is necessary to use pdfLATEX version 14d or later in order to minimize these issues. If your system has an earlier version (most teTEX distributions have version 13d), then you can update your system by retrieving the latest version of pdfLATEX from `ftp://ftp.cstug.cz/pub/tex/local/cstug/thanh/pdftex/`. Even if the recent versions are used, pdfLATEX has the same dealing with references embedded with the `frontmatter` section described above for LATEX.

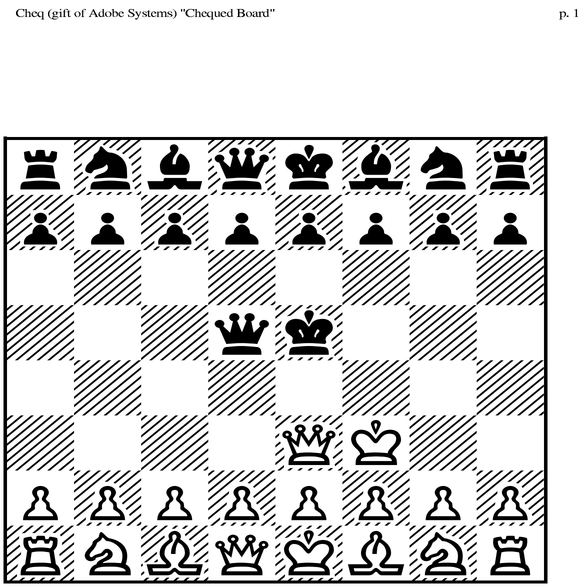
But there is one aspect of pdfLATEX that creates problems. Many authors include EPS[5] files within their papers. While this is fairly straightforward with LATEX, there are a couple of points to note when attempting this with pdfLATEX.

To include a PostScript image in a `.pdf` file produced with pdfLATEX, you first have to convert the image to a `.pdf` file, and then it can be included using the same command sequence as above. The conversion can be

[4] *Beware*! The utility `dvipdf` does *not* produce acceptable `.pdf` files, and should not be used. Only `dvipdfm` should be used to produce `.pdf` files.

[5] EPS stands for *embedded PostScript*, which affords a mechanism for including pre-prepared PostScript files within a LATEX document.

accomplished most easily using Ghostscript; you can simply view the file in Ghostview and then print the image to a `.pdf` file using the `pdfwriter` option within Ghostview. The result for a standard chess board that is part of the Ghostview distribution is the following image:



Here as well is a copy of a color image. While pdfLaTeX can handle image files in other formats, LaTeX can only handle `.eps` images reliably.

It also should be noted that we have included two separate source files for this example file – one for LaTeX and one for pdfLaTeX – because we want to illustrate how to insert graphics images into the file. If your paper does not include such images, then the same source file can be formatted by either LaTeX orf by pdfLaTeX.

Using ENTCS Macros with Mac OS X

Of course, if your file doesn't require `.eps` or other PostScript files, then you can create the required `.pdf` file using any of the standard TeX implementations for the Macintosh. If you need to include PostScript files, and if you are using TeXShop, then you can specify to use dvips and ghostview in processing your file, and then you can apply `ps2pdf` to create the needed `.pdf` file. Alternatibely, the Mac OS X operating system is based on UNIX, so it supports the use of teTeX as described above.

5 Summary

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

Problem 5.1 *Finish your paper and get it to your Program Chairman on time!*

When you have finished preparing your paper, send a copy of the *source file*, together with any macro files that are needed to your Program Chairman. If the files are extensive, you can place copies in the `pub/incoming` sub-directory of the ftp directory on the machine indicated by your Program Chairman using anonymous ftp. If you do this, please send me email to alert me that the file(s) are here.

Assigning Volume / Issue Numbers

One additional point worth mentioning is that ENTCS is moving to ScienceDirect, Elsevier's main platform for publishing electronic series, Because ScienceDirect must publish entire volumes at the same time, we have changed the procedure for preparing final versions so that volume numbers will not be assigned until the final versions are ready. Guest Editors will now have to receive the final version of all papers in their *Proceedings* before a volume and issue number will be assigned for the *Proceedings*. Even with the move to ScienceDirect, the reference scheme already used for publications in ENTCS – `http://www.elsevier/nl/locate/entcs/ NNnn.html` remains the valid way to cite papers published in ENTCS, where `NN` denotes the number of the volume, and `nn` denotes the issue number. Publications consisting of an entire volume should use `1` as the issue number.

Copyright Transfer Forms

One result of the move to ScienceDirect is that the corresponding author of each paper published in ENTCS must submit a signed Copyright Transfer

Form to Elsevier in order for their paper to be published. A copy of this form will be sent to each author by the Guest Editors of each volume. Details about this agreement specifying the rights of the authors and the rights of Elsevier are available at Elsevier's Author Gateway.

Publication of Final Versions

Because ScienceDirect cannot easily accommodate changes to published material, the Proceedings in its entirety must be ready before it can be published. This is one reason why the volume and issue number is not assigned until the final versions of all papers have been sent to the Guest Editors for final processing.

6 Bibliographical references

ENTCS employs the `plain` style of bibliographic references in which references are listed in alphabetical order, according the the first author's last name, and are sequentially numbered. Please utilize this style. We have a BibTeX style file, for those who wish to use it. It is the file `entcs.bst` which is included in this package. The basic rules we have employed 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.
- References to URLs on the net should be "active" and the URL itself should be in typewriter font.
- Articles should include page numbers.

The criteria are illustrated in the following.

References

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