A SET OF TEX AND LATEX MACROS FOR FORMATTING CNS*95 PAPERS

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Abstract

A set of macros for formatting papers to the CNS*95 specification using TEX and LATEX is presented. Each user-level macro is described, using this paper, typeset with the macro set, as a running example. The macros are available anonymously as `ftp.bbb.caltech.edu:/pub/cns95/cns95.tex`, which also contains the source code to this paper. The macro set is being placed in the public domain so that it may be used freely by authors who wish to submit their paper for inclusion in the CNS*95 proceedings.

Introduction

The primary contribution of this paper is the description of a set of TEX[1] and LATEX[2] macros which meet the specifications for papers submitted for inclusion in the CNS*95 proceedings.[3] The macro package is quickly introduced in the Methods section, followed by a description of the user-level macros, each with usage and a brief example taken from the typesetting of this paper.

The authors' intention is to provide this macro set for public use. There are no restrictions placed on distributing this macro set, however, common courtesy would dictate that only the original set be distributed, and that any modifications and improvements be sent to the authors for inclusion in subsequent versions. Any bug reports, similarly, should go to the authors, and not to the organizers of CNS*95.

The software is provided free of charge, with the hope that it will be useful, but without any warranty, including the implied warranty of merchantability or fitness for a particular purpose. All responsibility for any results, whether positive or negative, rests with the reader.

TEX and LATEX

The same macro set should work with both TEX and LATEX, however, as the code was written with the TEX user in mind, the LATEX user will have to slightly adapt his or her normal usage. The macro package is simple enough that there should be no major difficulty in doing so. Throughout this paper, the instances where there are specific differences in the two usages are pointed out. Where no difference is noted, the reader may safely assume that the described feature works identically in TEX and LATEX. This paper was typeset using TEX; to correctly typeset under LATEX, the addition of two lines at the start of the document, and the change of a third at the end was all that was necessary.

Methods

The macro set has been designed to be easy to use, and yet provide an attractive layout for the CNS*95 proceedings. Where possible, the macros have been written to produce a source file which mirrors the structure of the printed page. Standard TEX fonts were used throughout, so that the macro set `cns95.tex` should be stand-alone.

A few words about the major parameters. In TEX, the magnification is fixed at 0 (LATEXdoes not allow the user access to magnification). Paragraph indenting is set to 0 pt, the inter-paragraph spacing to `\medskipamount`. The TEX `\hsize` and `\vsize` parameters (LATEX `\textwidth` and `\textheight`) are set to 4.75 and 7.25 inches, respectively. In TEX, the `\hoffset` parameter is set at 0.875 inches to center the page, and `\voffset` set at 0.5 inches to start the text 1.5 inches below the top of the page; in LATEX, the same is effected by `\topmargin` at 0.5 inches, `\headheight` at 0 inches, and `\headsep` at 0 inches. Page numbering is turned off.

Starting the paper

To get started, a copy of the macro set should be placed the reader's current working directory (or in macro library subdirectory, as appropriate), and a new file created to write the paper. If the reader is using TeX, the first line in this new file, after any opening comments, should be

```
\input cns95
```

which will load the macros. If the reader is using LaTeX, the first few lines should be

```
\documentclass{article}[10pt]
\input cns95
\begin{document}
```

which will load LaTeX's article macros and the CNS*95 macro set, and then start the document.

Following this, under both systems, the reader should define the title, author list, an optional list of email addresses, the institution list, and then start the body of the paper. The corresponding macros are described below.

Defining the title

To define the title, the `\title` macro is used, followed by any number of lines of title, in capital letters. The title for this paper was typeset using the TeX code

```
\title
A SET OF \TeX\ AND \LaTeX\ MACROS
FOR FORMATTING \CNS95 PAPERS
```

Line breaks in the title definition will be reproduced in the typeset document.

Defining the author list

Next, the author list is defined using a similar mechanism. Continuing the current example, this paper's author list was typeset via

```
\authors
John S. Pezaris\authortag{*}
Richard A. Andersen\authortag{*,\dagger}
```

As with the title definition, line breaks are reproduced in the typeset document. The `\authortag` macro at the end of each line is used to denote association with particular institutions, as we will see shortly. If all authors belong to the same institution, the `\authortag` calls should be omitted.

Defining the optional email address list

Some authors will wish to publicize their email addresses. To do this, the `\emails` macro is used; it is similar to the `\authors` macro. The email address list for this paper was typeset with

```
\emails
pz@caltech.edu
andersen@vis.caltech.edu
```

The teletype font is automatically selected for email addresses, and, again, line breaks in the source are reflected in the typeset document. Although hopefully, each email address is uniquely associated with one author, the `\authortag` macro can be used here as well.

Defining the institution list

The institution list is defined using the `\institution` macro, once for each institution. The `\institutiontag` macro allows symbols to be placed in front of each institute name as footnote characters, (ideally) matching the symbols used with `\authortag` above. The institution list for this paper consists of two departments within Caltech, so two institutions were defined, one for each department, and each with a different tag. In the example below, the two definitions are separated by a blank line to increase readability, and the institution tags placed *before* the institution names so that the raised symbol appears to the left of the first word in the line.

```
\institution
\institutiontag{*}Computation and Neural Systems
California Institute of Technology, Pasadena, CA 91125, U.S.A.

\institution
\institutiontag{\dagger}Division of Biology
California Institute of Technology, Pasadena, CA 91125, U.S.A.
```

Again, line breaks in the source code are reflected as line breaks in the typeset document (excessively long lines, typical in addresses, will cause additional, unplanned, line breaks to be inserted).

The major sections

The five major section headings as described in the CNS*95 submission guidelines are produced via the `\abstract`, `\introduction`, `\methods`, `\results`, and `\summary` macros. An additional sixth major section heading is available through the `\references` macro. These six macros take no arguments and typeset the major section title in small caps set off by clean space. For example, the beginning of the abstract from this paper was typeset as

```
\abstract
A set of macros for formatting papers to the \CNS95
specification using \TeX\ and \LaTeX\ is presented.
```

The rest of the major section macros are used in an analogous way. If you want to create your own major section use the `\majorsection` macro which takes one argument.

Optional minor sections

For cases where each major section needs to be broken into smaller sections (such as this section, entitled "Optional minor sections"), the `\section` macro provides just the right typography. Unlike the major section macros which take no arguments, the `\section` macro takes one argument which runs through to the end of the paragraph. The argument is typeset in italics, and a small break is provided before and after. Continuing our example, the first few lines of this section were typeset with the source

```
\section Optional minor sections

For cases where each major section needs to be broken into
smaller sections (such as this section, entitled ``Optional
minor sections''), the {\tt \char92section} macro provides
just the right typography.
```

The blank line appearing after the `\section` usage is important: it is used to delimit the argument to the macro. LaTeX users should note that this redefines the native `\section` macro, and the various `\subsection`, `\subsubsection`, etc. macros will not work properly with this format, so should be avoided.

Results

The results of this effort are embodied in the production of this sample paper. This was written using plain TeX and the macro file `cns95.tex`. By making only very minor modifications, the same code will produce virtually identical results in LaTeX; the necessary changes are restricted to the two additional lines described above in *Starting the paper*, and modifying the last line to read `\end{document}` instead of `\bye`. To provide a ready example, the source code to this paper is included as a long comment at the end of the macro file.

Summary and Conclusions

A macro set for typesetting papers for inclusion in the CNS*95 proceedings has been written and made publicly available. The macro package was designed to meet the specifications given in *Guidelines for Camera-Ready Manuscript Preparation for CNS*95*.[3] The macros are available via anonymous ftp from `ftp.bbb.caltech.edu:/pub/cns95/cns95.tex`. Questions and bugs should be directed via email to the corresponding author (JSP) at `pz@caltech.edu`.

References

1. Knuth, D. E., *The TEXBook*, Addison Wesley (1993).

2. Lamport, L., *LATEX*, Addison Wesley (1994).

3. *Guidelines for Camera-Ready Manuscript Preparation for CNS*95*, available from Judy Macias, Division of Biology 216-76, Caltech, Pasadena, CA 91125.