

`\next`

but the definition supplied by Durst (not reproduced here) will produce 0010 if called within text that is considered (i.e. typeset) for page 9 but actually appears on page 10.

This will not happen if the `\noexpands` are taken from `\Pageno`, and `\noexpand\Pageno` used in place of `\noexpand\number\pageno` in Durst's `\makehref` macro.

The bag of tricks—Victor Eijkhout (p.260) Here, two macros `\storecat` and `\restorecat` are defined, to be used as in `file1`. (In the article, `\storecat` is mistakenly also called `\savecat`.)

```
% file1.tex
\storecat @
  % macros
  % @ is a letter
\restorecat @
```

The purpose is to allow `@` to be a letter within `file1`, but then to restore it *to what it was before*, when `file1` is finished.

But now suppose we input `file2` below, using the definitions supplied by Eijkhout.

```
\storecat @
% file2.tex
  \input file1
  % macros
\restorecat @
```

When `file2` is finished, `@` will have `\catcode 11`, regardless of what it was before `file2` was input. This is not what is wanted.

Babel, a multilingual etc.—Johannes Brahms (p.291-301) This article is inconsistent in its use of `%` to eliminate the space tokens that T_EX would otherwise place after `{` and `}` characters at the end of a line.

The use of `\expandafter` in Fig. 1, and its second use in Fig. 4, add nothing and are redundant.

These defects are relatively slight, for they do not prevent the macros from working as advertised.

Letter from Victor Eijkhout (p.303) Here, he quotes a user as writing

```
\def\caption#1{\hbox{\hbox{ ... }\vtop{#1}}
```

This line has 4 left braces but only 3 right braces.

Conclusion Errors lie in the dark side of programming. Usually, nobody likes making them, finding

them, reporting them, or being told about them. We all wish that they did not exist. I hope that this letter has not made me any enemies, and has encouraged authors to submit more articles with fewer errors.

◇ Jonathan Fine
203 Coldhams Lane
Cambridge
CB1 3HY
England
J.Fine@pmms.cam.ac.uk

One error less

Victor Eijkhout

Jonathan Fine correctly points out that the macros `\storecat` and `\restorecat` cannot be used nested. This problem cannot be remedied by using grouping, because these macros may enclose arbitrary pieces of code, and you may not want a group around them.

Here is a solution: the call `\storecat%` defines the control sequence `\restorecat%` to restore the category code and restore the previous definition of itself.

```
\def\storecat#1{%
  \count255 =\escapechar
  \escapechar=-1\relax
  \csarg\ifx{restorecat\string#1}\relax
    \toks0{\relax}\else
      \edef\act{\toks0{%
        \CSname{restorecat\string#1}}}\act
      \toks0\xp\xp\xp{\the\toks0}%
    \fi
  \csarg\edef{restorecat\string#1}%
    {\catcode'\string#1=\the\catcode
  \expandafter'\string#1%
  \def\CSname{restorecat\string#1}%
    {\the\toks0}}%
  \catcode\expandafter'\string#1=12\relax
  \escapechar=\count255 }
```

where the auxiliary macros

```
\let\xp\expandafter
\def\csarg#1#2{%
  \expandafter#1\csname#2\endcsname}
\def\CSname#1{%
  \xp\noexpand\csname#1\endcsname}
```

are used. The definition of `\restorecat` stays the same.

Here is some test input:

```
\storecat\%
\catcode'\%=3
  \storecat\%
  \catcode'\%=4
    \storecat\%
    \catcode'\%=5
    \restorecat\%
  \showthe\catcode'\%
  \restorecat%
\showthe\catcode'\%
\restorecat\%
\showthe\catcode'\%
```

As a whimsical aside, the double assignment to `\toks0` can also be done in one statement:

```
\toks0\xp\xp\xp\xp\xp\xp\xp
  \xp\xp\xp\xp\xp\xp\xp\xp
  {\xp\xp\xp\csname\xp\string\xp
  \restorecat\string#1\endcsname}
```

using 15 consecutive `\expandafters`.

◇ Victor Eijkhout
 Department of Computer Science
 University of Tennessee
 104 Ayres Hall
 Knoxville, Tennessee 37996, USA
 eijkhout@cs.utk.edu

ZzTEX: A Macro Package for Books

Paul C. Anagnostopoulos

Introduction

ZzTEX is a macro package for producing books, journals, and technical documentation. The primary advantage of ZzTEX is its design flexibility, which makes it well-suited to typesetting books according to the specifications of a professional book designer. During the past three years, I and my associates have used the package to produce approximately 25 books, ranging from the 100-page journal, *System Dynamics Review*, published by John Wiley & Sons, to the 1400-page book, *VMS Internals and Data Structures, Version 5.2*, published by Digital Press. In this article I hope to give you a taste of some of ZzTEX's more interesting technical aspects. Future articles will delve deeper into the details of the macros themselves.

I was initiated into the composition and typesetting business when I agreed to compose my own book for Digital Press. I had written the book using L^AT_EX, and continued to use it for the composition. As a software engineer, I found it impossible not to fall in love with book production: finally, an endeavor that produces a concrete work of art as its end product, rather than some ethereal software. However, I needed more design and page-makeup flexibility than L^AT_EX had to offer, so I undertook to write my own macro package, which I subsequently named ZzTEX, after a rock group from Texas. Design flexibility is of paramount importance when producing books according to typographers' designs; neither they nor the publishers like to hear "I'm sorry, that element is too difficult to typeset."

The first book produced with ZzTEX was a real struggle. It took about two weeks to create the design file and produce sample pages. With time, I refined the package and added many new features. Each enhancement was a direct result of a design requirement in a book I had produced, so I believe ZzTEX is a practical, realistic macro package. Furthermore, my knowledge of the publishing business grew with each book. Now when I receive a design specification I can produce sample pages in less than a day. The package includes approximately 7,200 lines of T_EX code and various utilities written in AWK.

The ZzTEX macro package and manual are available from the author for a nominal fee. The macro package may be freely distributed, but the manual is copyrighted and must be ordered from the author. ZzTEX uses significant amounts of