

## SOME LAYOUT MACROS

August Mohr

Editor's note: The author of this note is the editor of *CommUNIXations*, an elaborately laid-out newsletter for the UNIX community. His original plan was to use his layout macros to describe themselves. But the deadline arrived before the manuscript ....

So, for better or worse, here's a few macros that you might find interesting. This one has a structure that has been useful in several variations.

```
\def \by #1\ { \def \OF{} \gdef \of #1:: { \gdef
\OF { \unskip, { \it #1 / } }
{ \ragged 1000 \hbox par size
{ \unskip \bf By #1 \OF \par } } }
```

This one can be used as either

```
\by Author N. Ame\
```

or as

```
\by Arthur N. Ames \of Groupth, Inc. :: \
```

to produce a paragraph-form author-credit.

Note that the macro `\of` will redefine `\OF` when it is used. Otherwise, `\OF` remains `{}`. `\by` is closed with `\`, and `\of` is closed with `::`. (I'm not very pleased with the `::` construction; at the time I tried to do without braces à la Mike Spivak.)

The same general pattern is used in `\cont` and `\contf`, which produce the "Continued on ..." and "Continued from ..." references at the tops and bottoms of columns. Of course, to get them at the top or bottom, they have to be referenced by the `\output` routine, but that's another subject. The special thing about them, like `\by` above, is that they have optional parts. They may be used in simple or complex ways such as,

```
\cont{page 12}
```

or

```
\contf{previous page \col 3 \ti{A Simple Title}}
```

The key to making the pieces optional, such as `\col` and `\ti`, is that they are always given one argument, which may have more than one part.

Here are the macros:

```
% \contfont is a font, 9pt italic.
% \strut is a vrule of width 0 and
% height and depth to match the font.
```

```
% Article continuation macros
\def \cont#1 { \def \COL{} \def \col#1 { \gdef
\COL { \unskip, Column #1 } }
\vskip 2pt \hbox to size { \hfil
\contfont Continued on #1 \COL \hfil } }
```

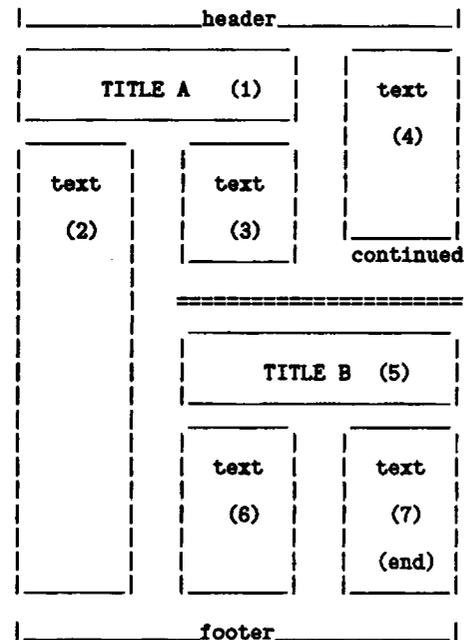
```
% Usage: \contf {Page #} <\col{column#}>
% <\ti{title}> } (<...> is optional)
```

```
\def \contf#1 { \def \TI{} \def
\COL{} \def \col#1 { \gdef
\COL { \unskip, Column #1 } }
\def \ti#1 { \gdef \TI { \hbox to size { \hfil
\contfont #1 \strut \hfil } } }
\edef \PG{#1}
\TI \hbox to size { \hfil \contfont
Continued from \PG \COL \strut \hfil } }
```

Both `\col` and `\ti` are optional, and their order is not important, but the page number should come before them. If `\ti` is used, the result is two lines, the first containing the "Title".

The really tricky part is `\xdef \PG`, which is given the entire input parameter string, and allows `\col` and `\ti`, if they are present, to do their work of redefining `\COL` and `\TI`.

These macros are most useful in output routines or inside other macros, since it would be rare in straight text to know when and where the page will break. The structure, however, is useful in many cases.



In another issue, I'd like to describe how I get  $\TeX$  to do some of the trickier kinds of 3-column layout. In a page like this, pieces 3 and 4 must balance, allowing for title (1) and the continuation line, and their sizes also depend on the length of article B.

In my solution, the output routine keeps changing the `\vsize`, and saving the pages in successive `\boxes`. When the proper number of boxes have been filled, it puts out the completely assembled page.

If there are other TUGboat readers who have tried similar constructions, I'd like to hear from

them. I'm also interested in corresponding with people who'd like to use a layout schema like this to help me get the macros to be less idiosyncratic.

\* \* \* \* \*

### TESTING THE WIDTHS OF A FONT

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Communicated by August Mohr

This macro takes the characters of a font and makes a string of 10 of them, then draws a box around the string. The box's size is determined by  $\TeX$ , from the font-metric file. The character string is generated by the typesetter. When the width is right, the box will match the characters, but when the width is off, the box will show the difference. Using 10 characters in a row multiplies the difference by 10, which makes it much easier to be very accurate about the width.

The width file is based on a "design size" of 18pt, so testing with a 9pt font means the error is only multiplied by 5, relative to the width file.

Here's the file "fontest.x":

```
\chcode`173=1 \chcode`175=2
\chcode`44=3 \chcode`100=4
\chcode`45=5 \chcode`43=6
\chcode`136=7 \chcode`137=8

\def\null{\hbox{}}

\def\boxit#1{\vbox{\hrule
  \hbox{\vrule #1\vrule}\hrule}}
\def\vboxit#1{\hbox{\vrule
  \vbox{\hrule\hbox{#1}\hrule}\vrule}}
\def\need#1{\vskip #1 minus 1fil
  \penalty 0\vskip -#1 minus -1fil}

\output{ \vskip .1in \page \vskip .1in }

\hsize 7in
\vsizer 9in
\maxdepth 2pt
\topbaseline 10pt
\lineskip Opt
\parskip Opt \parindent Opt

\setcount0 1
\chpar0=2
```

```
% --- Standard TeX fonts ---
\font A=life at 9pt % *** Font under test
\font H=helv at 10pt
\font I=helv at 8pt
\font J=helv at 6pt
\font K=helv at 5pt
\font L=helv at 9pt

\def\x#1{\hbox{\:K#1}\hskip .1in
  \hbox to 3in{\hbox to .26in{\hbox{\char`#1}\hss}
  \hbox to .26in{\vboxit{\char`#1}\hss}
  \vboxit{\char`#1\char`#1\char`#1\char`#1\char`#1\char`#1
  \char`#1\char`#1\char`#1\char`#1\char`#1}\hss}}
\def\vsk{\vskip .in plus .1in}

\baselineskip Opt
\A

\hbox{\:H life- 115 }
% *** Name and number of font being tested
\vsk
\hbox{\x{000}\x{001}} \vsk \hbox{\x{002}\x{003}} \vsk
\hbox{\x{004}\x{005}} \vsk \hbox{\x{006}\x{007}} \vsk
\hbox{\x{010}\x{011}} \vsk \hbox{\x{012}\x{013}} \vsk
\hbox{\x{014}\x{015}} \vsk \hbox{\x{016}\x{017}} \vsk
\hbox{\x{020}\x{021}} \vsk \hbox{\x{022}\x{023}} \vsk
\hbox{\x{024}\x{025}} \vsk \hbox{\x{026}\x{027}} \vsk
\hbox{\x{030}\x{031}} \vsk \hbox{\x{032}\x{033}} \vsk
\hbox{\x{034}\x{035}} \vsk \hbox{\x{036}\x{037}} \vsk
\hbox{\x{040}\x{041}} \vsk \hbox{\x{042}\x{043}} \vsk
\hbox{\x{044}\x{045}} \vsk \hbox{\x{046}\x{047}} \vsk
\hbox{\x{050}\x{051}} \vsk \hbox{\x{052}\x{053}} \vsk
\hbox{\x{054}\x{055}} \vsk \hbox{\x{056}\x{057}} \vsk
\hbox{\x{060}\x{061}} \vsk \hbox{\x{062}\x{063}} \vsk
\hbox{\x{064}\x{065}} \vsk \hbox{\x{066}\x{067}} \vsk
\hbox{\x{070}\x{071}} \vsk \hbox{\x{072}\x{073}} \vsk
\hbox{\x{074}\x{075}} \vsk \hbox{\x{076}\x{077}} \vsk
\hbox{\x{100}\x{101}} \vsk \hbox{\x{102}\x{103}} \vsk
\hbox{\x{104}\x{105}} \vsk \hbox{\x{106}\x{107}} \vsk
\hbox{\x{110}\x{111}} \vsk \hbox{\x{112}\x{113}} \vsk
\hbox{\x{114}\x{115}} \vsk \hbox{\x{116}\x{117}} \vsk
\hbox{\x{120}\x{121}} \vsk \hbox{\x{122}\x{123}} \vsk
\hbox{\x{124}\x{125}} \vsk \hbox{\x{126}\x{127}} \vsk
\hbox{\x{130}\x{131}} \vsk \hbox{\x{132}\x{133}} \vsk
\hbox{\x{134}\x{135}} \vsk \hbox{\x{136}\x{137}} \vsk
\hbox{\x{140}\x{141}} \vsk \hbox{\x{142}\x{143}} \vsk
\hbox{\x{144}\x{145}} \vsk \hbox{\x{146}\x{147}} \vsk
\hbox{\x{150}\x{151}} \vsk \hbox{\x{152}\x{153}} \vsk
\hbox{\x{154}\x{155}} \vsk \hbox{\x{156}\x{157}} \vsk
\hbox{\x{160}\x{161}} \vsk \hbox{\x{162}\x{163}} \vsk
\hbox{\x{164}\x{165}} \vsk \hbox{\x{166}\x{167}} \vsk
\hbox{\x{170}\x{171}} \vsk \hbox{\x{172}\x{173}} \vsk
\hbox{\x{174}\x{175}} \vsk \hbox{\x{176}\x{177}}
\vfill
\ejct
\end
```