

The L^AT_EX User's Column

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Since the last column, I have received one question and two answers to questions that appeared in the last issue. Leslie Lamport has agreed to lend his fine knowledge in helping me to answer those questions that I cannot answer. Should you send a question, I will answer it as soon as possible via electronic mail and then publish the question and answer in the next issue of TUGboat.

A challenging question of my own is included. This question was given to me by one of my professors who said, "I am sure that L^AT_EX cannot do this." But after a little hard work on my part, I did manage to prove that L^AT_EX could do what he wanted.

Until the next TUGboat, happy L^AT_EXing.

Question 1

Jackie - I noticed in TUGboat that you were prepared to accept questions from beginners. Well I was wondering if you could suggest a way in L^AT_EX of allowing text to "wrap-round" a small square space (say 3 inches square) set flush right or flush left. The space would contain a line drawing or photograph. The macros given by Alan Hoenig in TUGboat Vol 8, No 2 would appear to do the job. Can I use these macros within a L^AT_EX document? Any help or suggestions would be appreciated.

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Answer

A quick glance at Hoenig's macros reveals no reason why they shouldn't work in L^AT_EX. However, users of such sophisticated macros should be aware that it is very difficult to make them robust, and there are bound to be L^AT_EX or Plain T_EX commands that "break" when used with them. For example, I would not be surprised if errors resulted when a L^AT_EX `\footnote` command appears in one of the shaped paragraphs, or if Hoenig's macros are used inside a L^AT_EX 'figure' environment. So, my guess is that Hoenig's macros would work properly 95% of the time for a L^AT_EX user. A T_EX hacker could probably figure out what to do the other 5% of the time; a naive user could be in trouble.

Even when the macros do work, they are not going to be easy to use; one will have to do page layout one page at a time, and changes to the document may require extensive manual reformatting. L^AT_EX was designed so that users don't have to worry about this kind of formatting; a user should think very hard about whether the advantage of this kind of figure placement is worth the hassle. I can think of no justification unless the user is producing camera-ready copy for a book—or perhaps for a journal article.

Answers to earlier questions

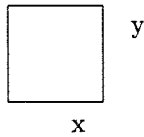
These answers to Questions 2 and 4 from the last TUGboat [Vol. 8 (1987), No. 3] were submitted by R. A. Bailey, Statistics Department, Rothamsted Experimental Station.

Answer (Question 2)

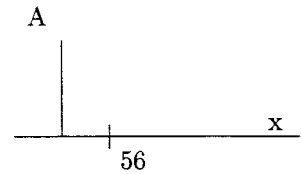
You have to be very careful with `verbatim`. After `\begin{verbatim}`, no other command is obeyed until `\end{verbatim}` is encountered. In particular, if `\begin{myenv}` is translated as `\begin{verbatim}`, then the `\end{myenv}` is processed as `verbatim` text, and so is not interpreted as `\end{verbatim}`. This is why `verbatim` must not appear in the argument of any command, including the `\newenvironment` command: see page 168 of the L^AT_EX manual.

Answer (Question 4)

The `table` environment creates a box of exactly the right size, into which it puts the table contents and the caption. Unlike a page, this box has no predetermined height, so there is nothing for `\vfill` to stretch to. I can suggest only one method for achieving the requested result, and it is not very elegant: replace `\vfill` by a `\vskip` of a length calculated after a trial run. (I tried using the `picture` environment to put the table contents and the caption in the correct places in a box whose size is the same as the usual text, but you do not seem to be allowed to use `\caption` in this environment.)

Example

$$\begin{aligned} \text{maximized area} &= xy \\ 224 &= \text{perimeter} = 2x + 2y, \\ y' &= \frac{224 - 2x}{2} = 112 - x \\ A &= xy = x(112 - x) = 112x^2 \\ \frac{dA}{dx} &= 112 - 2x = 0 \text{ at } x = 56 \\ \text{dim. for largest area} &\text{ are } 56 \times 56 \end{aligned}$$

**Answer**

```

\parbox[b]{1.5in}{
\setlength{\unitlength}{.25in}
\begin{picture}(5,5)
\put(1,1){\line(1,0){2}}
\put(1,3){\line(1,0){2}}
\put(1,1){\line(0,1){2}}
\put(3,1){\line(0,1){2}}
\put(2,0){\makebox(1,1){x}}
\put(3.25,2){\makebox(1,1){y}}
\end{picture}
} \quad
%
\parbox[b]{2.5in}{
maximized area $ = xy $ \\\
$ 224 = $ perimeter $ = 2x+2y $, \\\
$ y' = \frac{224-2x}{2} = 112-x $ \\\
$ A = xy = x(112-x) = 112x^2 $ \\\
$ \frac{dA}{dx} = 112-2x = 0 $ at $ x=56 $ \\\
dim. for largest area are $ 56 \times 56 $ \\\
%
\parbox[b]{1.5in}{
\setlength{\unitlength}{.25in}
\begin{picture}(5,5)
\put(1,1){\line(1,0){6}}
\put(2,1){\line(0,1){2}}
\put(3..75){\line(0,1){.5}}
\put(3,0){\makebox(1,1){56}}
\put(6..75){\makebox(1,1){x}}
\put(1,3){\makebox(1,1){A}}
\end{picture}
}

```