RECIPES AND FRACTIONS

Donald E. Knuth

Pages 233, 236, and 237 of *The TEXbook* contain examples of alignment based on excerpts from the well-known book *Mastering the Art of French Cooking*, by Julia Child et al. Several of the measurements in those examples involve fractions like '$\frac{1}{2}$', and this caused unpleasant interference between adjacent lines when I first looked at proofs of the tables for pages 236–237. The fractions on different lines didn't actually touch each other, but they came close enough to be visually disturbing. That's why I increased the distance between baselines by 2 pt in those examples.

Since writing *The TEXbook* I've had several opportunities to typeset recipes for various social occasions, and I learned something that I should have realized long ago: The typographer's '$1/2$' works better than a mathematician's '$\frac{1}{2}$' in such texts. Hence I recently added a new exercise 11.6 to *The TEXbook*, explaining how to make fractions like '$1/2$' when they aren't already present in a font; I also changed the examples on pages 233, 236, and 237 so that they would use this idea. (See the current errata list for details.)

Last December, my wife and I made a keepsake for the Associates of the Stanford University Libraries: My grandmother's recipe for "Stollen" was used to bake some of the goodies at their annual Christmas Tea, and we provided copies of the recipe as an example of digital typography. I was glad to find that the members of this group were pleased not only by the delicious cake; they also liked the quality of the typesetting, even though it was done by a computer! If I hadn't used an appropriate style of fractions, I'm sure we wouldn't have gotten such a favorable response.

Here is a copy of the keepsake, and the TEX code that produced it, in case the reader is interested in seeing another small but complete example of TEX usage (based only on the plain TEX macros). The final output was printed in such a way that we could easily fold the two pages, making essentially a $3'' \times 5''$ card that could be filed with other recipes. Since the recipe is so short, I didn't use any fancy macros to do the double-column formatting of the list of ingredients.

```
\hsize=4.5in
\vsize=2.3in
\nopagenumbers

\font\ninerm=amr9 % someday this will be "cmr9" instead!

\def\frac#1/#2{\leavevmode\kern.1em
  \raise.5ex\hbox{\the\scriptfont0 #1}\kern-.1em
  /\kern-.15em\lower.25ex\hbox{\the\scriptfont0 #2}}

\parskip=3pt
\parindent=0pt

{\bf Christmas Stollen}
\medskip

\tabskip=20pt plus 1fil
\halign{&#\hfil\cr
1 pint milk, scalded and cooled&
 \frac1/2 teaspoon nutmeg\cr
1 ounce compressed or dry yeast&
 1\frac1/2 teaspoons salt\cr
1 cup butter&
 8 cups flour\cr
1 cup sugar&
 1 pound mixed candied fruit\cr
4 eggs&
```

```
   \frac3/4 pound candied cherries\cr
grated rind of 1 lemon&
 1 cup nuts\cr
}


\smallskip
Dissolve yeast in scalded, cooled milk. Add 1 cup of the flour.
Let it rise \frac1/2 hour.
Cream butter and sugar. Beat in eggs, one at a time. Stir in
yeast mixture. Add lemon rind, nutmeg and salt. Dredge the fruit
in a little flour to keep the pieces from sticking together.
Add the rest of the flour to the dough, and finally stir in the
fruit and nuts. Knead the dough until smooth. Put in a warm place
in a covered bowl and let rise until doubled in bulk. \ (Because
the fruit makes the dough heavy, it may take two or three hours to
rise.) \ Divide the dough into three parts. Roll each portion out
to about 1~inch thick, then fold over in thirds to form a long, loaf
shape. Place on a greased cookie sheet, cover and let rise until
doubled again. Bake at $325^\circ\,$F. for 45 minutes.

Stollen is traditionally frosted with thin powdered-sugar-and-butter
icing. Decorate each loaf with red and green candied cherries.

Vary the fruit and nuts to suit your taste. You may use cherries
alone, mixed fruit, and/or dates; almonds, pecans, walnuts, or no
nuts at all.

\medskip \ninerm \baselineskip=11pt
This is the recipe that was used each Christmas by Don's
grandmother, Pauline Ehlert~Bohning, Cleveland, Ohio. Don's
mother, Louise Bohning~Knuth, still makes over 20 loaves each
year, and when we were married she passed the recipe on to us.
We hope you enjoy it.

\vskip-\baselineskip
\rightline{Don and Jill Knuth, Stanford, 1984}
\eject
\end
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Christmas Stollen

1 pint milk, scalded and cooled	$1/2$ teaspoon nutmeg
1 ounce compressed or dry yeast	$1\,1/2$ teaspoons salt
1 cup butter	8 cups flour
1 cup sugar	1 pound mixed candied fruit
4 eggs	$3/4$ pound candied cherries
grated rind of 1 lemon	1 cup nuts

Dissolve yeast in scalded, cooled milk. Add 1 cup of the flour. Let it rise $1/2$ hour. Cream butter and sugar. Beat in eggs, one at a time. Stir in yeast mixture. Add lemon rind, nutmeg and salt. Dredge the fruit in a little flour to keep the pieces from sticking together. Add the rest of the flour to the dough, and finally stir in the fruit and nuts. Knead the dough until smooth. Put in a warm place in a covered bowl and let rise

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This is the recipe that was used each Christmas by Don's grandmother, Pauline Ehlert Bohning, Cleveland, Ohio. Don's mother, Louise Bohning Knuth, still makes over 20 loaves each year, and when we were married she passed the recipe on to us. We hope you enjoy it.   Don and Jill Knuth, Stanford, 1984

News & Announcements

TEX: The Program

Addison-Wesley announces the publication of TEX: *The Program*, Donald Knuth's "almost final draft" of the program listing for TEX. It is printed in an $8\,1/2 \times 11$ inch, 3-hole punched format. The price is $24.95. To order, call or write Gail Goodell, Educational & Professional Technologies Division, Addison-Wesley Publishing Co., Inc., Reading, MA 01867, Phone: 617-944-3700.