
Glisterings

Peter Wilson

What e're this youth of fire weares fair,
 Rosy fingers, radiant hair,
 Glowing cheeks, and glistening wings,
 All those fair and fragrant things,
 But before all, that fiery Dart
 Had fill'd the Hand of this great Heart.

The Flaming Heart, RICHARD CRASHAW

The aim of this column is to provide odd hints or small pieces of code that might help in solving a problem or two while hopefully not making things worse through any errors of mine.

Corrections, suggestions, and contributions will always be welcome.

The web, then, or the pattern; a web at once sensuous and logical, an elegant and pregnant texture: that is style, that is the foundation of the art of literature.

The Art of Writing,
 ROBERT LOUIS STEVENSON

1 Ornaments

One of the many free fonts available for use with L^AT_EX is Web-O-Mints, a Type 1 font, from the Galapagos Design Group, with L^AT_EX support provided by Maurizio Loreti [1]. Both of these are available from CTAN. The font consists of a set of printers' ornaments and flowers as displayed in the font table in Table 1.

Before getting in to how you might use the font, one simple application is generating a pattern like this, composed from the Web-O-Mints glyphs accessed as 'T', 'J', 'K', and 'L'.



You could use this, or something similar, to separate writings on different topics.



To make life simpler I've defined a few macros which I'll be using a lot in this column. These first two are from the samples that come with the L^AT_EX support for Web-O-Mints.

```
\newcommand*\wb}[2]{%
  \fontsize{#1}{#2}\usefont{U}{webo}{x1}{n}}
\newcommand*\wbc}[3]{%
  \vspace*{#1}\begin{center}
  \wb{#2}{#2}#3
  \end{center}\vspace*{#1}}
\newlength\wsp\setlength\wsp{1ex}
```

Peter Wilson

The first makes Web-O-Mints the current font with the given size and `\baselineskip`. The second sets up a `center` environment around the third argument with Web-O-Mints as the font with the size and `\baselineskip` equal. The first argument is space before and after the environment. For example, for the previous glyph I used:


```
\wbc{\wsp}{24pt}{4}
```

which centered the glyph accessed as '4', size 24pt, with vertical space of `\wsp` (which has been set to `1ex`) before and after.

For ease of seeing what is happening I am using a much larger glyph size than one would normally.

I will be assembling some glyphs to make more elaborate patterns. The next set of macros move or rotate their argument.

```
\newcommand*\upit}[2]{\raisebox{#1}{#2}}
\newcommand*\rotpi}[1]{\rotatebox{180}{#1}}
\newcommand*\rotrt}[1]{\rotatebox{90}{#1}}
\newcommand*\rotlft}[1]{\rotatebox{-90}{#1}}
```

You can use them on this glyph  (accessed as the character '3') like so

```
\wbc{\wsp}{24pt}{%
  \upit{26pt}{\rotlft{3}}% rotate left & lift
  3% normal position
  \llap{% overlap
    \upit{36pt}{\rotpi{3}}}% rotate & lift
  \upit{10pt}{\rotrt{3}}% rotate right & lift
  }
```

to produce this rather charming device:



































































If you haven't come across `\llap` or its companion `\rlap`, these are T_EX macros that lets its argument overlap its surroundings. More precisely, `\llap` places its argument at the left of the macro but without taking up any space; `\rlap` is similar but puts its argument at the right, again without taking up any space. Knuth's example is typesetting a \neq (neq) symbol by using either `\rlap{/}=` or `\llap{/=}` to create the neq symbol. On the other hand, the `\kern` command moves the next character rightwards (positive length) or leftwards (negative length) the given amount, but the character takes up its normal space.

I do find it difficult to tell just from looking at a single glyph what a group of them will look like. For example:



Table 1: Glyphs in the Web-O-Mints font

32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47
 48	 49	 50	 51	 52	 53	 54	 55
 56	 57	58	59	60	61	62	63
64	 65	 66	 67	 68	 69	 70	 71
 72	 73	 74	 75	 76	 77	 78	 79
 80	 81	 82	 83	 84	 85	 86	 87
 88	 89	 90	 91	92	 93	94	95
96	 97	 98	 99	 100	 101	 102	 103
 104	 105	 106	 107	 108	 109	 110	 111
 112	 113	 114	 115	 116	 117	 118	 119
 120	 121	 122	123	124	125	126	127

doesn't look like much to me, but when put together with another member of the family by using `\wbc{\wsp}{24pt}{[] [] []}` the appearance is rather different.



Below is the set of four glyphs that I will be using for the first sets of patterns, specified by: `\wbc{\wsp}{24}{opqn}`



Note that these are in their natural relationship with each other. We can make simple chains like: `\wbc{\wsp}{24pt}{ppqpq}`



Which, although attractive, isn't all that exciting. What I'm going to do is to 'attach' the single horns to the double ones and use these as the basis for a more complex pattern.

The simpler part is to move (and rotate) two single horns to join with the right hand double horn. First move the single horn to join the double with `\wbc{\wsp}{24pt}{q\kern-14pt\upit{-19pt}{n}}`



Then rotate and move a second horn, overlapping the construction we already have

```
\wbc{\wsp}{24pt}{q\kern-14pt\upit{-19pt}{n}%
\llap{\upit{35pt}{\rotpi{o}}}}
```



Doing the other double horn is slightly more complicated because of the order of the operations:

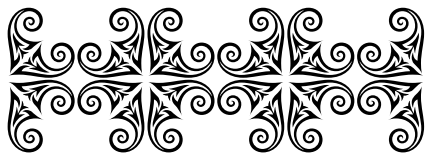
```
\wbc{\wsp}{24pt}{\upit{-19pt}{o}%
\llap{\upit{35pt}{\rotpi{n}}}\kern-14pt p}
```



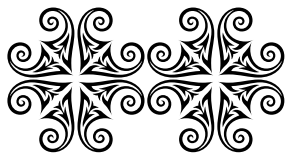
Defining a macro for each assembly will let us mix and match.

```
\newcommand*\{qno}{q\kern-14pt\upit{-19pt}{n}%
\llap{\upit{35pt}{\rotpi{o}}}}
\newcommand*\{onp}{\upit{-19pt}{o}%
\llap{\upit{35pt}{\rotpi{n}}}\kern-14pt p}
```

Now,
`\wbc{\wsp}{24pt}{\onp\qno\onp\qno\onp\qno}`
 produces



and
`\wbc{\wsp}{24pt}{\qno\onp\qno\onp}`
 displays



I had to experiment to decide on the various distances to move things to create the `\onp` and `\qno` assemblies. These distances would have to be changed if something other than 24pt was used as the font size. However, it is always possible to use `\scalebox` from the `graphicx` package to appropriately size a pattern. This gives a half-size result compared with the previous ones.

`\wbc{\wsp}{24}{\scalebox{0.5}{\qno\onp}}`



Except for the simplest scheme of just putting the glyphs in a row, experimentation will nearly always be required to obtain sympathetic relationships among the elements of the pattern. They don't have to be mathematically exact but must look good to the eye.

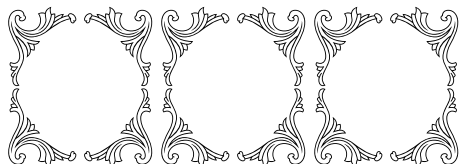
Moving on, here is another set of four glyphs, which would normally be used at the corners of a page, that can be combined in interesting ways.

`\wbc{\wsp}{24pt}{E F G H}`



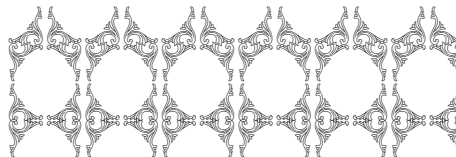
One simple way is just using two lines, which reminds me of a row of gilt mirrors.

`\wbc{\wsp}{24pt}{EFEFEF\HGHHGH}`



We can add some further decorative elements, reducing the size at the same time:

```
\wbc{\wsp}{12pt}{HGHHGHGHGHGH\[-3pt]
EFEFEFEFEFEF\HGHHGHGHGHGH\[-3pt]
EFEFEFEFEFEF}
```



and add more and more if desired. On the other hand, joining the four elements in a different manner can lead to something even fancier.

In the days of lead type, a sort (a single character) was a rectangular bar of lead with the glyph in relief on the end that was to be inked and printed. There was no way of stretching or shrinking a piece of type, and neither was there any way of getting one piece of type to overlap another, except by printing twice, once with one sort and then with the second sort. With digital fonts these restrictions no longer apply. In the next example, the bounding boxes of the glyphs overlap, even if the glyphs themselves do not.

```
\newcommand*{\kl}{\kern-24pt}
\newcommand*{\ks}{\kern-4pt}
\newcommand*{\mir}{E\kl H\ks G\kl F}
\wbc{\wsp}{24pt}{\scalebox{0.75}%
{\mir\ks\mir\ks\mir\ks\mir}}
```



Again, you can add to this basic scheme, embellishing it as much as you think bearable. For instance, by inserting another set of glyphs inside a mirror, although this may get complicated. The experimentally determined code below appears to produce a reasonable result.

First, here is a macro for producing a more vertically oriented version of the four leaves that I showed earlier.

```
\newcommand*{\leaves}{\upit{32pt}{\rotlft{3}}%
\kern-6pt3%
\kern-9pt\upit{17pt}{\rotrt{3}}%
\kern-30pt\upit{49pt}{\rotpi{3}}}%
\wbc{\wsp}{24pt}{\leaves}
```



And secondly, this is the code for combining the mirror and leaves so that they will be centered:

```
\wbc{\wsp}{24pt}{\mbox{}\kern-24ptEF%
\kern-43pt{\upit{-22pt}%
{\scalebox{0.6}{\leaves}}}%
\[-18pt]\mbox{}\kern0ptGH}
```



Moving on to a more organic feel, represented above by `\wbc{\wsp}{16pt}{m/m/m/m/m}`, many of the traditional ornaments were based on vines, although whether this was due to a proclivity towards wine by the typesetters I couldn't say.

This is a typical scheme, mixing grapes and leaves.

```
\wbc{\wsp}{15pt}{cedafbcedced}
```



And here is another with major emphasis on the grapes:

```
\wbc{\wsp}{15pt}{ghghghghghgh}
```



And a third, back to the grapes plus leaves:

```
\wbc{\wsp}{15pt}{fgfgfgfgfgf}
```



This one, you may have noticed, forms the top and bottom of the frame around page 204. The sides are also formed from similar grapes and leaves.

The method I used for framing was to create the frame as a zero-sized picture and add that to the page footer; I could just as well have added it to the header but the footer was easier for me in this case, because I wanted to keep the *TUGboat* header. You would normally use the facilities provided by the `fancyhdr` package [2] or the `memoir` class [3] for this, both of which should be available on your system.

Here's the code for the picture of the frame.

```
%% draws a (page) frame
\newcommand*{\goddfoot}{\begin{picture}(0,0)
```

```
\wb{10pt}{10pt}
\put(-29,-20){% change these to move the frame
\begin{picture}(0,0)
\multiput(0,0)(25,0){21}{fg} % bottom

\multiput(-5,5)(0,24){31}{i} % left
\multiput(-5,23)(0,24){31}{\rotpi{k}}

\multiput(520,5)(0,24){31}{j} % right
\multiput(520,23)(0,24){31}{\rotpi{1}}

\multiput(0,742)(25,0){21}{fg} % top
\end{picture}}
\end{picture}}
\let\gevenfoot\goddfoot
```

For the example on the previous page, I created a new pagestyle using the *TUGboat* headers and adding my feet (this is code that is normally hidden in a class or package).

```
\makeatletter
%% new 'glistner' pagestyle
\newcommand*{\ps@glistner}{%
\def\@evenfoot{\gevenfoot}
\def\@oddfoot{\goddfoot}}
\makeatother
```

Zero-sized pictures have other uses as well. I put one containing a gray checkerboard pattern, composed from the Web-O-Mints 'z' and '7' glyphs, at the start of the previous paragraph to form a textured background. You may love or hate this particular result but the technique can be useful.

May you have many happy hours designing your own ornaments and embellishments, but consider that maybe simple and few are better than elaborate and many; it all depends on the feel you are trying to convey.

References

- [1] Maurizio Loreti. *webomints*, 2002. mirror.ctan.org/latex/macros/contrib/webomints.
- [2] Piet van Oostrum. Page layout in L^AT_EX, 2005. mirror.ctan.org/latex/macros/contrib/fancyhdr.
- [3] Peter Wilson. The memoir class for configurable typesetting, 2011. mirror.ctan.org/latex/macros/contrib/memoir.

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