

applications

Drawing a type-case in ConT_EXt

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abstract

There are different environments with which one can typeset tables; all of them have their advantages and disadvantages.

One of the recent problems I had to solve was to draw a typesetter's type-case from the lead-typesetting era. Since it looks like a table, I built the drawing in the `\bTABLE ... \eTABLE` environment.

Introduction

Formerly, when text was typeset by hand, fonts, e.g. letters, were stored in special drawers called type-cases (Dutch: letterkast, German: Setzkasten). These cases were strong wooden frames divided into four compartments by a wooden cross. Each compartment was divided into a series of boxes by thin wooden strips. The depth of such type-cases was small, normally not exceeding 3 cm. The layout of type-cases varied over time. Our drawing is an example of a three-quarter type-case popular in The Netherlands.

When typesetting text by hand, most of the letters are lower case. To facilitate picking the letters, lower case letters were located in the lower part of the type-case. From the size and location of the different boxes, one can deduce the number of single letters needed to assemble a text. The layout of a type-case was optimized for typesetting speed.

You might have realized that the expression of 'lower case' and 'upper case' (capitals) letters for the different fonts is linked to the location of the letters in the type-case. This is true for both English and Dutch: 'onderkast' en 'bovenkast' (kapitalen).

Analysis of the type-case

While looking for a straightforward approach to this drawing, it seemed best to build the type-case from four tables with the following characteristics arranged in a two by two matrix.

- All four tables have the same width.
- All table rows are 6em high.
- The width of the columns of the upper and lower left tables have a relation of 1.75: 2.
- The two top tables each have four rows.
- The two lower tables each have eight rows. Part of the cells are combined rows and / or columns.

Building the tables

General setups for the tables

The row height and the alignment of text within the cells are identical for all cells. These dimensions are defined outside the `\bTABLE ... \eTABLE` environment.

```
\setupTABLE[row]
    [even]
    [align={middle,lohi},
     height=6ex]
\setupTABLE[row]
    [odd]
    [align={middle,lohi},
     height=6ex]
```

The table for upper case letters

A	B	C	D	E	F	G
H	I	K	L	M	N	O
P	Q	R	S	T	V	W
X	Y	Z	J	U	„	— —

```

\bTABLE
\setupTABLE[c]
    [1,2,3,6,7,8]
    [width=3em]
\setupTABLE[c]
    [4,5]
    [width=1.5em]
\bTR
    \bTD A \eTD
    \bTD B \eTD
    \bTD C \eTD
    \bTD[nc=2] D \eTD
    \bTD E \eTD
    \bTD F \eTD
    \bTD G \eTD \eTR
\bTR
    \bTD H \eTD
    \bTD I \eTD
    \bTD K \eTD
    \bTD[nc=2] L \eTD
    \bTD M \eTD
    \bTD N \eTD
    
```

```

    \bTD O \eTD \eTR
\bTR
    \bTD P \eTD
    \bTD Q \eTD
    \bTD R \eTD
    \bTD[nc=2] S \eTD
    \bTD T \eTD
    \bTD V \eTD
    \bTD W \eTD \eTR
\bTR
    \bTD X \eTD
    \bTD Y \eTD
    \bTD Z \eTD
    \bTD J \eTD
    \bTD U \eTD
    \bTD \char132 \eTD
    \bTD -- --- \eTD
    \bTD \char146 \eTD \eTR
\eTABLE
    
```

The special character table

É	È	Ê	Ë	ff	fl	fi	ffl	ffi	^Æ _æ	Ç]
á	é	í	ó	ú	â	ê	î	ô	û	* †	§
à	è	ì	ò	ù	ä	ë	ï	ö	ü	!	?
1	2	3	4	5	6	7	8	9	0	(-

```

\bTABLE
\setupTABLE[c]
    [even]
    [width=1.75em]
\setupTABLE[c]
    [odd]
    [width=1.75em]
\bTR
    \bTD \'E \eTD
    \bTD \^E \eTD
    \bTD \^E \eTD
    \bTD \^E \eTD
    \bTD ff \eTD
    \bTD fl \eTD
    \bTD fi \eTD
    \bTD ffl \eTD
    \bTD ffi \eTD
    \bTD {\tfx \AE \OE \ \ \ae \oe}\eTD
    \bTD \c{C} \eTD
    \bTD $$$ \eTD \eTR
\bTR
    \bTD \'a \eTD
    \bTD \'e \eTD
    \bTD \'i \eTD
    \bTD \'o \eTD
    \bTD \'u \eTD
    \bTD \^a \eTD
    \bTD \^e \eTD
    \bTD \^i \eTD
    \bTD \^o \eTD
    \bTD \^u \eTD
    \bTD $$$ \ \ \$\dagger$ \eTD
    \bTD \char167 \eTD \eTR
\bTR
    \bTD \'a \eTD
    \bTD \'e \eTD
    \bTD \'i \eTD
    \bTD \'o \eTD
    \bTD \'u \eTD
    \bTD \'a \eTD
    \bTD \'e \eTD
    \bTD \'i \eTD
    \bTD \'o \eTD
    \bTD \'u \eTD
    \bTD ! \eTD
    \bTD ? \eTD \eTR
\bTR
    \bTD 1 \eTD
    \bTD 2 \eTD
    \bTD 3 \eTD
    \bTD 4 \eTD
    \bTD 5 \eTD
    \bTD 6 \eTD
    \bTD 7 \eTD
    \bTD 8 \eTD
    \bTD 9 \eTD
    \bTD 0 \eTD
    \bTD $($ \eTD
    \bTD - \eTD \eTR
\eTABLE

```


The table with the rest of the letters

Due to the fact that the last row of this table has the height of two ordinary rows, this has to be setup so:

```
\setupTABLE[r][last][height=12ex]
```

w	dunne spaties	f	g	h	j	hel
s					;	:
o	p	ij	sup.	dunne spaties	spaties	
			$\frac{1}{2}$ pt	inf.	vierkanten	
a	r		,	.	kwadraat wit	

```
\bTABLE
\setupTABLE[c]
  [1]
  [width=5.25em]
\setupTABLE[c]
  [2,3,4,5,6,7]
  [width=2.625em]
\setupTABLE[r]
  [last]
  [height=12ex]
\bTR
  \bTD w \eTD
  \bTD[nr=2] {\tfx dunne spaties} \eTD
  \bTD[nr=2] f \eTD
  \bTD[nr=2] g \eTD
  \bTD[nr=2] h \eTD
  \bTD j \eTD
  \bTD hel \eTD \eTR
\bTR
  \bTD s \eTD
  \bTD ; \eTD
```

```
\bTD : \eTD \eTR
\bTR
  \bTD[nr=2] o \eTD
  \bTD[nr=2] p \eTD
  \bTD[nr=2] ij \eTD
  \bTD {\tfx sup.} \eTD
  \bTD {\tfx dunne spaties} \eTD
  \bTD[nc=2] {\tfx spaties} \eTD \eTR
\bTR
  \bTD {\tfx $\frac{1}{2}$pt} \eTD
  \bTD {\tfx inf.} \eTD
  \bTD[nc=2] {\tfx vierkanten} \eTD \eTR
\bTR
  \bTD a \eTD
  \bTD[nc=2] r \eTD
  \bTD , \eTD
  \bTD . \eTD
  \bTD[nc=2] {\tfx kwadraat wit} \eTD \eTR
\eTABLE
```

Assembly of the type-case

In order to present the drawing as a type-case, the four tables are put into a frame. To get the placement right, several steps are necessary:

First, two times two tables are placed into a `\hbox`. The horizontal placement is achieved by `\removeunwantedspaces\quad`. Vertically the two `\hboxes` are separated by a `\vskip` of `2ex`.

Finally, to enclose the drawing in a frame, the whole is placed into a `\framed` command.

```
\framed
[ frame=on,
  rulethickness=1pt,
  offset=-.5em,
  align=normal]
{\hbox{\getbuffer[Caps]
       \removeunwantedspaces\quad
       \getbuffer[Spec-Char]
       \removeunwantedspaces}
\vskip2ex
\hbox{\getbuffer[Lower-Case1]
       \removeunwantedspaces\quad
       \getbuffer[Lower-Case2]
       \removeunwantedspaces}}
```

A	B	C	D	E	F	G	É	È	Ê	Ë	ff	fl	fi	ffl	ffi	Æ	Ç]	
H	I	K	L	M	N	O	á	é	í	ó	ú	â	ê	î	ô	û	*	§	
P	Q	R	S	T	V	W	à	è	ì	ò	ù	ä	ë	ï	ö	ü	!	?	
X	Y	Z	J	U	„	—	,	1	2	3	4	5	6	7	8	9	o	(-

&	b	k	d	e	w	dunne spaties	f	g	h	j	hel
ç		c			s					;	:
g	l	m	n	i	o	p	ij	sup.	dunne spaties	spaties	
z								$\frac{1}{2}$ pt	inf.	vierkanten	
y	v	u	t	pasjes	a	r	,	.	kwadraat wit		
x											

This is a large table, and will scale with the fontsize (height definitions in ex and width definitions in em). However, in order to typeset this drawing to fit in a given typesetting layout one can use the following mechanism:

A	B	C	D	E	F	G	É	È	Ê	Ë	ff	fl	fi	ffl	ffi	Æ	Ç	l	
H	I	K	L	M	N	O	á	é	í	ó	ú	â	ê	î	ô	û	*	‡	§
P	Q	R	S	T	V	W	à	è	ì	ò	ù	ä	ë	ï	ö	ü	!	?	
X	Y	Z	J	U	„	—	’	1	2	3	4	5	6	7	8	9	o	(-

&		k			w					j	hel
	b		d	e		dunne spaties	f	g	h		
ç		c			s					;	:
g			n					sup.	dunne spaties	spaties	
	l	m		i	o	p	ij	$\frac{1}{2}$ pt	inf.	vierkanten	
z											
y			t	pasjes	a	r	,	.	kwadraat wit		
x	v	u									

Figure 1 Layout¹ of an ordinary (dutch) type-case

```
\placefigure
[here]
[]
{Layout
\footnote{\quote{{\sc BOEK}
{\em over het maken van boeken
({\sc BOOK} on making books)}},
H. van Krimpen, 1966}
of an ordinary (dutch) type-case}
{\externalfigure[Type-Case]
[type=buffer,
width=\textwidth]}
```

1. 'BOEK over het maken van boeken (BOOK on making books)', H. van Krimpen, 1966