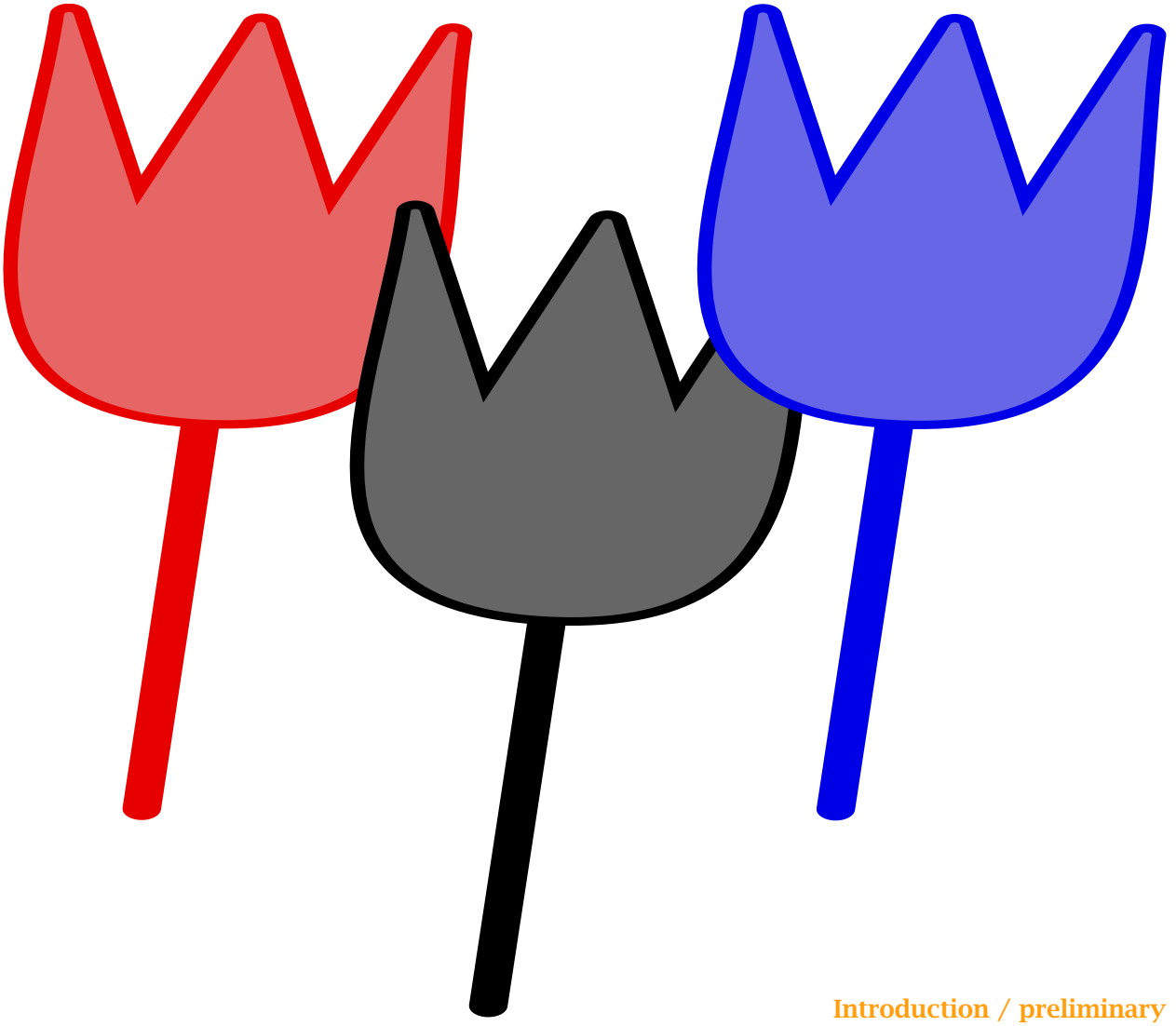
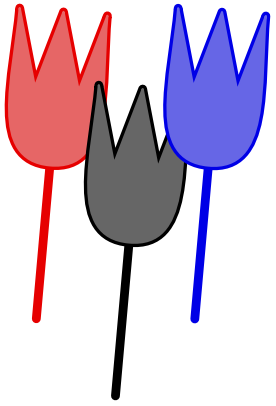
ConTeXt up-to-date 2000/8

Automatic Tables



Pragma ADE
Ridderstraat 27
8061GH Hasselt NL



Introduction / preliminary

The olders table typesetting mechanism present in ConTeXt is based on TABLE. In ConTeXt, this rather powerful table package, written by Michael Wichura, is wrapped into a set of macros that guarantee proper spacing, splitting across pages, colored cells and rules, and some more features not present in TABLE.

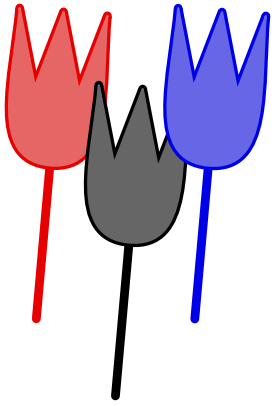
Early 1999, a second mechanism was added, which was better suited for tabular information that has an in–line character. Opposite to the first mechanism, this one could automatically handle multiple paragraphs in a row, calculate their width, and, most important, break them across pages. Support for rules was (at least at that moment) minimal.

Now there is a third mechanism, which is a curious combination of the other two. This time the focus is on spanning columns and rows, versatile backgrounds, paragraph handling. Opposite to its two predecessors, this mechanism does not uses a template, but tries to figure our the layout itself. Options can be set per table, row, column or cell. Odd and even rows and columns can be set efficiently as well.

Users who are familiar with HTML will recognize some similarities. Where in traditional TEX table mechanisms rows and columns should be entered following a rigorous scheme, which definitely has advantages, in this third mechanism they can (and even should) be omited when they make no sense.

If needed, ConTeXt will make several passes and trial runs to determine the optimal layout. It uses a mixture of TEX's alignment features and the `\framed` macro. The speed penalty paid by the latter, is largerly compensated by complete control over cells.

Since this mechanism is supposed to operate as automatically as possible, something that is needed for HTML and XML input with minimal directives, future versions may give a different, but hopefully better, outcome of border cases, that lack specifications.



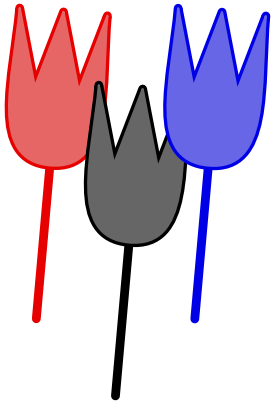
The basic setup of a ‘third class’ table is:

```
\bTABLE
\bTR \bTD \eTD \bTD \eTD \eTR
\eTABLE
```

Outside the table, or directly after \bTABLE, one can specify the characteristics.

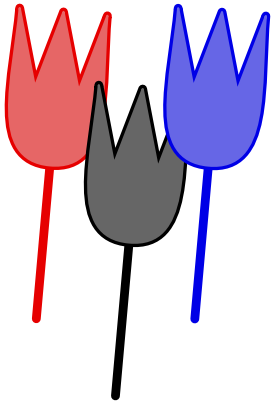
```
\setupTABLEx[n(x)|odd|even|first|last][n(y)|odd|even|first|last][a=b]
\setupTABLEy[n(y)|odd|even|first|last][n(x)|odd|even|first|last][a=b]
\setupTABLE [n(x)|odd|even|first|last][n(y)|odd|even|first|last][a=b]
\setupTABLE [n(x)|odd|even|first|last]                          [a=b]
\setupTABLE                                                     [a=b]
\setupTABLE [c|column||x/r|row|y][n(y)/n(x)|odd|even|first|last][a=b]
```

Alternatively, the \bTD command accepts settings. The settings correspond with those of \framed, with an additional nx and ny to specify column and row spans.



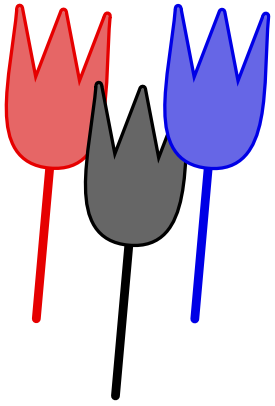
	c		dddd
	aaa	b	
	aaa	b	
11	111	3	5555
22	221	4	6655

```
\bTABLE
\bTR \bTD[ny=3]  \eTD \bTD[nx=2] c\eTD \bTD[ny=3] dddd\eTD      \eTR
\bTR                  \bTD aaa\eTD     \bTD b\eTD                \eTR
\bTR                  \bTD aaa\eTD     \bTD b\eTD                \eTR
\bTR \bTD 11\eTD      \bTD 111\eTD     \bTD 3\eTD \bTD 5555\eTD \eTR
\bTR \bTD 22\eTD      \bTD 221\eTD     \bTD 4\eTD \bTD 6655\eTD \eTR
\eTABLE
```



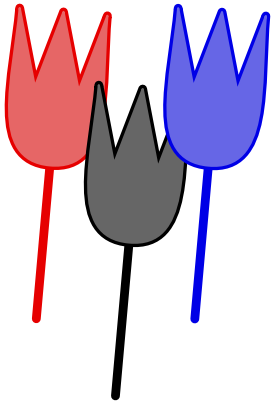
		cc		dd
		aa	bb	
		aa	bb	
11	11	33	55	
22	22	44	66	

```
\bTABLE
\setupTABLE[1][2][background=color,backgroundcolor=red]
\bTR \bTD[ny=3,nx=2]    \eTD \bTD[nx=2]    cc \eTD \bTD[ny=3] dd \eTD \eTR
\bTR                    \bTD aa \eTD \bTD bb \eTD                \eTR
\bTR                    \bTD aa \eTD \bTD bb \eTD                \eTR
\bTR \bTD 11 \eTD       \bTD 11 \eTD \bTD 33 \eTD \bTD 55       \eTD \eTR
\bTR \bTD 22 \eTD       \bTD 22 \eTD \bTD 44 \eTD \bTD 66       \eTD \eTR
\eTABLE
```



		cc		dd	
		aa	bb		
		aa	bb		
11	22	33	55		
22	22	44	66		
22	22	44	77	8	9

```
\bTABLE
\bTR \bTD[ny=3,nx=2] \eTD \bTD[nx=2] cc \eTD \bTD[ny=3,nx=2] dd \eTD \eTR
\bTR \bTD aa \eTD \bTD bb \eTD \eTR
\bTR \bTD aa \eTD \bTD bb \eTD \eTR
\bTR \bTD[background=color,backgroundcolor=green]  11 \eTD
     \bTD[background=color,backgroundcolor=blue]   22 \eTD
     \bTD[background=color,backgroundcolor=yellow] 33 \eTD \bTD 55 \eTD \eTR
\bTR \bTD 22 \eTD \bTD 22 \eTD \bTD 44 \eTD \bTD 66 \eTD \eTR
\bTR \bTD 22 \eTD \bTD 22 \eTD \bTD 44 \eTD \bTD 77 \eTD \bTD 8 \eTD \bTD 9 \eTD
\eTABLE
```



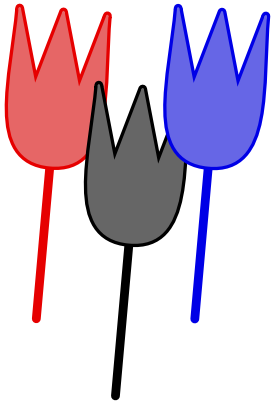
aa	xx		cc
bb			dd

aa	xx	cc	ee
bb		dd	

```
\hbox \bgroup \ignorespaces

\bTABLE
\bTR \bTD aa \eTD \bTD[ny=2] xx \eTD \bTD cc \eTD \eTR
\bTR \bTD bb \eTD                \bTD dd \eTD \eTR
\eTABLE

\unskip \quad \ignorespaces

\bTABLE
\bTR \bTD aa \eTD \bTD[ny=2] xx \eTD \bTD cc \eTD \bTD ee \eTD \eTR
\bTR \bTD bb \eTD                \bTD dd \eTD               \eTR
\eTABLE

\unskip \egroup
```

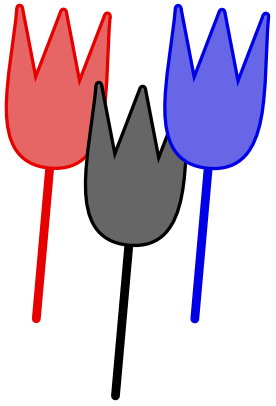
aa	bbbb	cc	ddd	ee
aa	bbbb	cc	ddd	ee
aa	bbbb	cc	ddd	ee
aa	bbbb	cc	ddd	ee
aa	bbbb	cc	ddd	ee
aa	bbbb	cc	ddd	ee
aa	bbbb	cc	ddd	ee

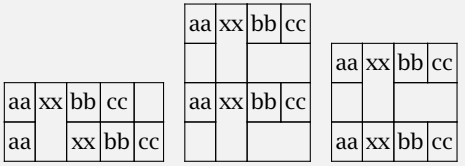
```
\setupTABLE[x][odd][background=color,backgroundcolor=white]
\setupTABLE[y][odd][background=color,backgroundcolor=blue]
\bTABLE
\bTR \bTD aa \eTD \bTD bbbb \eTD \bTD cc \eTD \bTD ddd \eTD \bTD ee \eTD \eTR
\bTR \bTD aa \eTD \bTD bbbb \eTD \bTD cc \eTD \bTD ddd \eTD \bTD ee \eTD \eTR
\bTR \bTD aa \eTD \bTD bbbb \eTD \bTD cc \eTD \bTD ddd \eTD \bTD ee \eTD \eTR
\bTR \bTD aa \eTD \bTD bbbb \eTD \bTD cc \eTD \bTD ddd \eTD \bTD ee \eTD \eTR
\bTR \bTD aa \eTD \bTD bbbb \eTD \bTD cc \eTD \bTD ddd \eTD \bTD ee \eTD \eTR
\bTR \bTD aa \eTD \bTD bbbb \eTD \bTD cc \eTD \bTD ddd \eTD \bTD ee \eTD \eTR
\bTR \bTD aa \eTD \bTD bbbb \eTD \bTD cc \eTD \bTD ddd \eTD \bTD ee \eTD \eTR
\eTABLE
```



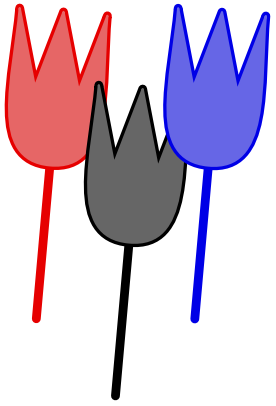
aa	bbbb	cc	ddd	eeee
aa	bbbb	cc	ddd	eeee
aa	bbbb	cc	ddd	eeee

```
\setupTABLE[x][width=3em]
\bTABLE
\bTR \bTD aa \eTD \bTD bbbb \eTD \bTD cc \eTD \bTD ddd \eTD \bTD eeee \eTD \eTR
\bTR \bTD aa \eTD \bTD bbbb \eTD \bTD cc \eTD \bTD ddd \eTD \bTD eeee \eTD \eTR
\bTR \bTD aa \eTD \bTD bbbb \eTD \bTD cc \eTD \bTD ddd \eTD \bTD eeee \eTD \eTR
\eTABLE
```



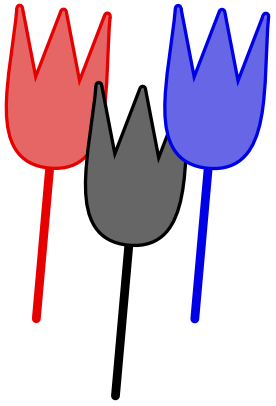



```
\hbox \bgroup \ignorespaces
\bTABLE
\bTR \bTD aa \eTD \bTD[ny=2] xx \eTD \bTD bb \eTD \bTD cc \eTD \eTR
\bTR \bTD aa \eTD \bTD[ny=2] xx \eTD \bTD bb \eTD \bTD cc \eTD \eTR
\eTABLE
\unskip \quad \ignorespaces
\bTABLE
\bTR \bTD aa \eTD \bTD[ny=2] xx \eTD \bTD bb \eTD \bTD cc \eTD \eTR
\bTR                                                          \eTR
\bTR \bTD aa \eTD \bTD[ny=2] xx \eTD \bTD bb \eTD \bTD cc \eTD \eTR
\bTR                                                          \eTR
\eTABLE
\unskip \quad \ignorespaces
\bTABLE
\bTR \bTD aa \eTD \bTD[ny=2] xx \eTD \bTD bb \eTD \bTD cc \eTD \eTR
\bTR                                                          \eTR
\bTR \bTD aa \eTD \bTD[ny=2] xx \eTD \bTD bb \eTD \bTD cc \eTD \eTR
\eTABLE
\unskip \egroup
```



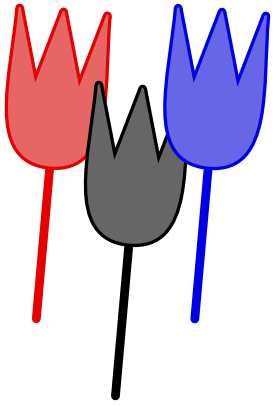
aa	xx	bb	cc	
aa		xx	bb	cc

```
\bTABLE
\bTR \bTD aa \eTD \bTD[ny=2] xx \eTD \bTD bb \eTD \bTD cc \eTD \eTR
\bTR \bTD aa \eTD \bTD[ny=2] xx \eTD \bTD bb \eTD \bTD cc \eTD \eTR
\bTR                                                          \eTR
\eTABLE
```



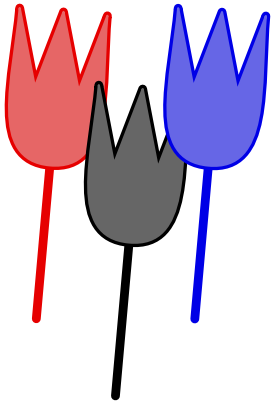
aa	xx	bb	cc	
			xx	cc
aa	xx	bb		cc

```
\bTABLE
\bTR \bTD aa \eTD \bTD[ny=2] xx \eTD \bTD bb       \eTD \bTD cc \eTD \eTR
\bTR \bTD    \eTD \bTD          \eTD \bTD[ny=2] xx \eTD \bTD cc \eTD \eTR
\bTR \bTD aa \eTD \bTD[ny=2] xx \eTD \bTD bb       \eTD \bTD cc \eTD \eTR
\bTR                                                            \eTR
\eTABLE
```



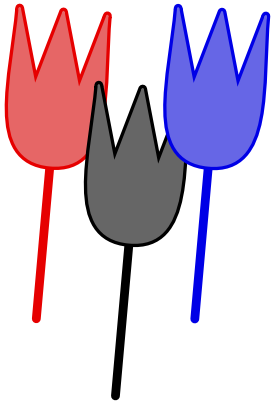
Thus, I came to the conclusion that the designer of a new system must not only be the implementer and first large-scale user; the designer should also write the first user manual.	Thus, I came to the conclusion that the designer of a new system must not only be the implementer and first large-scale user; the designer should also write the first user manual.	Thus, I came to the conclusion that the designer of a new system must not only be the implementer and first large-scale user; the designer should also write the first user manual.

```
\setupTABLE[x][width=.2\textwidth,background=crossed,frame=off]
\bTABLE \bTR
\bTD[align=left]   \getbuffer[knuth-1] \eTD
\bTD[align=middle] \getbuffer[knuth-1] \eTD
\bTD[align=right]  \getbuffer[knuth-1] \eTD
\eTR \eTABLE
```



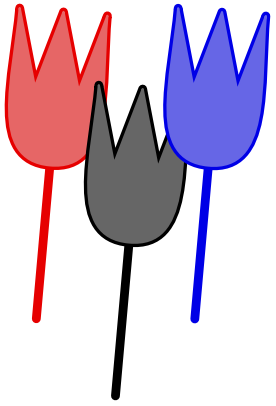
left	middle	right
first	second	third

```
\setupTABLE[x][width=.2\textwidth,background=crossed,frame=off]
\bTABLE
  \bTR
    \bTD[align=left]   left   \par first  \eTD
    \bTD[align=middle] middle \par second \eTD
    \bTD[align=right]  right  \par third  \eTD
  \eTR
\eTABLE
```



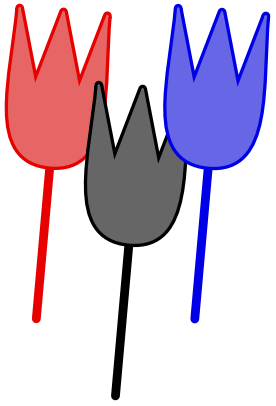
first	alpha	one
second	beta	two
third	gamma	three

```
\setupTABLE[y][odd] [background=color,backgroundcolor=red,frame=off]
\setupTABLE[y][even][background=color,backgroundcolor=gray,frame=off]
\bTABLE
\bTR \bTD first  \eTD \bTD alpha \eTD \bTD one   \eTD \eTR
\bTR \bTD second \eTD \bTD beta  \eTD \bTD two   \eTD \eTR
\bTR \bTD third  \eTD \bTD gamma \eTD \bTD three \eTD \eTR
\eTABLE
```



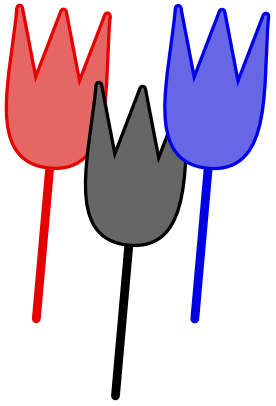
a	α	i	1
b	β	ii	2
c	γ	iii	3

```
\setupTABLE[y][1,2,3][background=color,backgroundcolor=red,frame=off]
\setupTABLE[x][2]    [background=color,backgroundcolor=gray,frame=off]
\bTABLE
\bTR \bTD a \eTD \bTD $\alpha$ \eTD \bTD i   \eTD \bTD 1 \eTD \eTR
\bTR \bTD b \eTD \bTD $\beta $ \eTD \bTD ii  \eTD \bTD 2 \eTD \eTR
\bTR \bTD c \eTD \bTD $\gamma$ \eTD \bTD iii \eTD \bTD 3 \eTD \eTR
\eTABLE
```



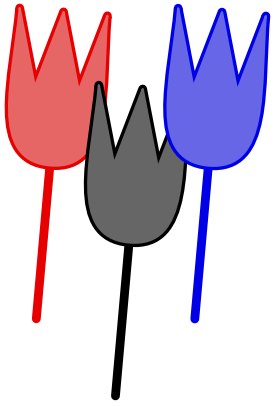
	1		2
	a	b	
	alpha	beta	
one	two	thee	four
first	second	third	fourth

```
\bTABLE
\bTR \bTD[ny=3] \eTD  \bTD[nx=2] 1              \eTD \bTD[ny=3] 2 \eTD \eTR
\bTR                  \bTD a      \eTD \bTD b     \eTD                \eTR
\bTR                  \bTD alpha  \eTD \bTD beta  \eTD                \eTR
\bTR \bTD one    \eTD \bTD two    \eTD \bTD thee  \eTD \bTD four    \eTD \eTR
\bTR \bTD first  \eTD \bTD second \eTD \bTD third \eTD \bTD fourth  \eTD \eTR
\eTABLE
```



Thus, I came to the conclusion that the designer of a new system must not only be the implementer and first large-scale user; the designer should also write the first user manual.	Thus, I came to the conclusion that the designer of a new system must not only be the implementer and first large-scale user; the designer should also write the first user manual.	first
The separation of any of these four components would have hurt TEX significantly. If I had not participated fully in all these activities, literally hundreds of improvements would never have been made, because I would never have thought of them or perceived why they were important.	The separation of any of these four components would have hurt TEX significantly. If I had not participated fully in all these activities, literally hundreds of improvements would never have been made, because I would never have thought of them or perceived why they were important.	second

```
\bTABLE
\setupTABLE[x][1][width=200pt]
\bTR \bTD \getbuffer[knuth-1] \eTD
     \bTD \getbuffer[knuth-1] \eTD \bTD first  \eTD \eTR
\bTR \bTD \getbuffer[knuth-2] \eTD
     \bTD \getbuffer[knuth-2] \eTD \bTD second \eTD \eTR
\eTABLE
```



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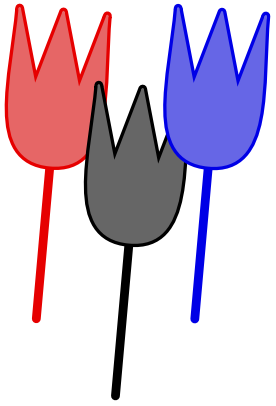
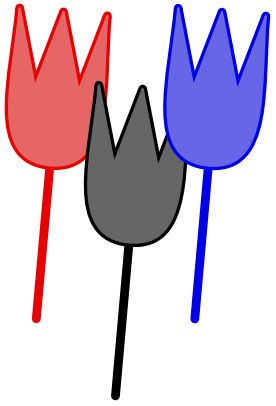
```
\bTABLE
\bTR \bTD \getbuffer[knuth-1] \eTD
     \bTD \getbuffer[knuth-1] \eTD \bTD first  \eTD \eTR
\bTR \bTD \getbuffer[knuth-2] \eTD
     \bTD \getbuffer[knuth-2] \eTD \bTD second \eTD \eTR
\eTABLE
```



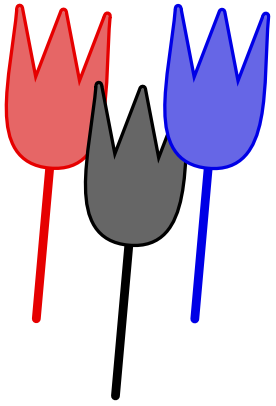
Thus, I came to the conclusion that the designer of a new system must not only be the implementer and first large-scale user; the designer should also write the first user manual.	first attempt
The separation of any of these four components would have hurt TEX significantly. If I had not participated fully in all these activities, literally hundreds of improvements would never have been made, because I would never have thought of them or perceived why they were important.	second best
But a system cannot be successful if it is too strongly influenced by a single person. Once the initial design is complete and fairly robust, the real test begins as people with many different viewpoints undertake their own experiments.	third at last

```
\bTABLE
\setupTABLE         [background=color,backgroundcolor=red, frame=off]
\setupTABLE[1][2]   [background=color,backgroundcolor=gray,frame=off]
\setupTABLE[2][1,3][background=color,backgroundcolor=gray,frame=off]
\bTR \bTD \getbuffer[knuth-1] \eTD \bTD first attempt \eTD \eTR
\bTR \bTD \getbuffer[knuth-2] \eTD \bTD second best   \eTD \eTR
\bTR \bTD \getbuffer[knuth-3] \eTD \bTD third at last \eTD \eTR
\eTABLE
```



Thus, I came to the conclusion that the designer of a new system must not only be the implementer and first large-scale user; the designer should also write the first user manual.	first
The separation of any of these four components would have hurt TEX significantly. If I had not participated fully in all these activities, literally hundreds of improvements would never have been made, because I would never have thought of them or perceived why they were important.	second
But a system cannot be successful if it is too strongly influenced by a single person. Once the initial design is complete and fairly robust, the real test begins as people with many different viewpoints undertake their own experiments.	third

```
\bTABLE
\bTR \bTD[width=80pt]  \getbuffer[knuth-1] \eTD \bTD first  \eTD \eTR
\bTR \bTD[width=200pt] \getbuffer[knuth-2] \eTD \bTD second \eTD \eTR
\bTR \bTD              \getbuffer[knuth-3] \eTD \bTD third  \eTD \eTR
\eTABLE
```



Thus, I came to the conclusion that the designer of a new system must not only be the implementer and first large-scale user; the designer should also write the first user manual.	
The separation of any of these four components would have hurt TEX significantly. If I had not participated fully in all these activities, literally hundreds of improvements would never have been made, because I would never have thought of them or perceived why they were important.	The separation of any of these four components would have hurt TEX significantly. If I had not participated fully in all these activities, literally hundreds of improvements would never have been made, because I would never have thought of them or perceived why they were important.
But a system cannot be successful if it is too strongly influenced by a single person. Once the initial design is complete and fairly robust, the real test begins as people with many different viewpoints undertake their own experiments.	Thus, I came to the conclusion that the designer of a new system must not only be the implementer and first large-scale user; the designer should also write the first user manual.

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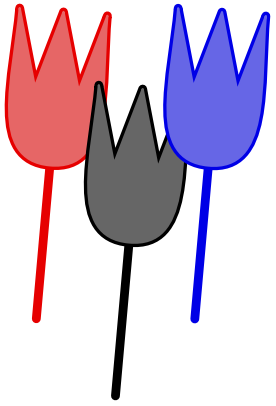

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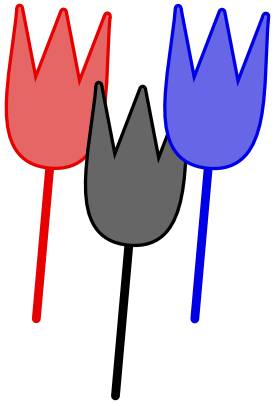

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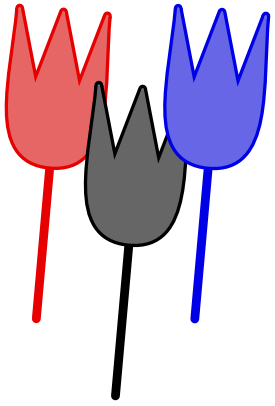

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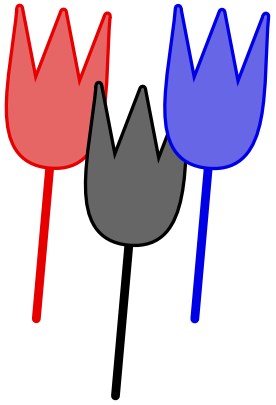

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