Exhuming coffins from the last century

Frank Mittelbach
LaTeX3 Project
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A morbid title ... So what is this all about?

• What it is not about
  • An exercise from the TeXbook
  • Examples, examples, examples, ...
  • A different kind of coffin
  • Poles and handles
  • Recreate „elementare typographie“
• ... and why is this exciting?
• Outlook

Tutankhamun coffin
14th century BC
``Why do you think the author of \TeX\ didn't make boxes more symmetrical between horizontal and vertical, by allowing reference points to be inside the boundary instead of insisting that the reference point must appear at the left edge of each box?''
``No applications of such symmetrical boxes to English-language printing were apparent; it seemed pointless to carry extra generality as useless baggage that would rarely if ever be used, merely for the sake of symmetry.

In other words, the author wore a computer science cap instead of a mathematician's mantle on the day that \TeX's boxes were born. Time will tell whether or not this was a fundamental error!""
Some simple designs ...

Chapter opening from TLC2

The Structure of a \LaTeX\ Document

One of the ideas behind \LaTeX{} is the separation between layout and structure (as far as possible), which allows the user to concentrate on content rather than having to worry about layout issues [104]. This chapter explains how this general principle is implemented in \LaTeX{}.

The first section of this chapter shows how document class files, packages, options, and preamble commands can affect the structure and layout of a document. The logical subdivisions of a document are discussed in general, before explaining in more detail how sectioning commands and their arguments define a hierarchical structure, how they generate numbers for titles, and how they produce running heads and feet. Different ways of typesetting section titles are presented with the help of examples. It is also shown how the information that is written in the table of contents can be controlled and how the look of this table, as well as that of the lists of tables and figures, can be customized. The final section introduces \LaTeX\ commands for managing cross-references and their scope rules.

2.1 The structure of a source file

You can use \LaTeX{} for several purposes, such as writing an article or a letter, or producing overhead slides. Clearly, documents for different purposes may need different logical structures, i.e., different commands and environments. We say that a document belongs to a class of documents having the same general structure (but not necessarily the same typographical appearance). You specify the class to which your document belongs by starting your \LaTeX{} file with a \texttt{documentclass}.

A title page from some book

Practices of Freedom

SELECTED WRITINGS ON HIV/AIDS

by Simon Watney

DUKE UNIVERSITY PRESS  Durham 1994
... or perhaps not so simple after all

- Distances specified as baseline to baseline spacing
- Main title text is shifted to the right
- Chapter text may be required to be always in the same place (red)
... an so much for the unsuspicious title

- The title is centered on the page
- The sub-title is flush-left on the title
- The publisher information is set flush-right
- The author name is centered on the free space between left edge of the title and left edge of the press info
- And again some vertical b2b spacing between the objects
And what about this?

Not quite mainstream, true ...

• but how would you describe its design?

And ...

• would that be in any way related to the way you would specify it in LaTeX?
A „natural“ design description...

- involves relations between objects
  - that are easy to describe
  - use naturally available aspects of objects

- does not force the use of hard-wired metric information where unnecessary
elementare typographie 1925

- Design by Jan Tschichold
- Complex horizontal and vertical alignments between various elements
- How would you describe this layout to somebody?
Graphically depicting the design

- well ...
And what has this to do with coffins?
Some history
sometimes it takes long to realize ...

• A stroll through the English countryside, in 1997 perhaps, discussing the need for general handles on boxes
• As a result coffins were born and implemented and put aside again (in a mausoleum?)
• Last year I tried in vain to provide good templates for heading designs ... and then I remembered ...
• Now in 2010 coffins are back
  – exhumed, cleaned up
  – and ready for display

Coffin End
Private house off Market St in Thornton village
Poles and handles
Natural poles and handles

TeX's box handle

The first line . . .
::
... more lines . . .
::
... even more lines
::
and the last line.

Default coffin handles

The first line . . .
::
... more lines . . .
::
... even more lines
::
and the last line.
Available operations on individual coffins

- Declare new coffin
- Add poles (red)
- Reposition poles (green)
- Rotate coffin
- Typeset coffin with offset
Available operations with several coffins

- Align at handles with optional offset
- Manage resulting BB-box
Applying coffins:
Recreate elementare typographie

• Rules
\sbox\rulei{\color{red}\rule{6.5in}{1pc}}
\sbox\ruleii{\color{red}\rule{23.5cm}{1pc}}
\sbox\ruleiii{\color{black}\rule{152pt}{10pt}}

• H-Coffins
\sbox\BOXa{\fontsize{52}{50}\sffamily\bfseries mitteilungen}
\sbox\BOXb{\fontsize{52}{50}\sffamily\bfseries typographische}
\sbox\BOXc{\fontsize{12}{10}\sffamily\quad zeitschrift des bildungsverbandes der deutschen buchdrucker leipzig \textbullet{} oktoberheft 1925}
\sbox\BOXf{\fontsize{28}{20}\sffamily sonderheft}

• V-Coffins
\setvc coffin \BOXe{180pt}
{\raggedleft\fontsize{31}{36}\sffamily\bfseries elementare typographie}
Applying coffins: Recreate elementare typographie 2

\sbox \result {}
\aligncoffins \result \BOXa

% join mitteilungen and rule
\aligncoffins \result[\BOXa-rt,\BOXa-r] \BOXa-B,rt(0pt,2mm)
\ruleii[b,r](0pt,2mm)

% join typographische
\rotatecoffin \BOXb{90}
\aligncoffins \result[\BOXa-b,\BOXa-l] \BOXb[B,r](2pt,0pt)

% add rule
\rotatecoffin \ruleii {90}
\aligncoffins \result[\BOXb-t,\BOXb-r] \ruleii[b,r](-2mm,0pt)
Applying coffins:
Recreate elementare typographie 3

% add vertical text on the right
\rotatecoffin \BOXc {270}
\aligncoffins \result [\BOXa-B,\BOXa-r]
  \BOXc [B,l](66pt,14pc)

% align „authors“ on two poles
\aligncoffins \result [\BOXb-l,\BOXc-B]
  \BOXd [t,r](-2mm,0pt)

% show the handle defined by the poles
\displaycoffinhandle \result {\BOXb-l}{\BOXc-B} {blue}
Applying coffins:

Recreate elementare typographie 4

% add black rule

\rotatecoffin \ruleiii \{90\}
\aligncoffins \result \[\BOXd-b,\BOXd-r\]
\ruleiii \[t,l\](2mm,0pt)

% add main title (again using two poles from different boxes and bb-spacing)

\aligncoffins \result \[\BOXc-r,\BOXd-l\]
\BOXe \[B,r\]
\displaycoffinhandle \result \{\BOXc-r\}\{\BOXd-l\} \{blue\}

% add word „sonderheft“ (bb-spacing)

\aligncoffins \result \[\BOXe-T,\BOXe-r\]
\BOXf \[B,r\](0pt,4pc)
... and why is this exciting?

- It allows to describe the placement of objects in relation to each other

- It enables parameterising designs in a natural way combining
  - object relations
  - absolute positions
What next ...

• Extend functionality
  – add support for ornaments and rules
  – support „glue“ in offset specification (?!)

• Decide final syntax – change name 😊?

• Apply in templates for
  – headings,
  – TOC entries,
  – floats, and page design
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