Some misunderstood or unknown LaTeX 2ε tricks (IX)

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1 Introduction

We describe here how to

1. display date & time in a standard format,
2. write (draw) dash integrals,
3. number rows in tables,
4. use unhabitual punctuation marks: interrobang and percontation point,
5. draw dependency arrows,
6. distinguish between ConTeXt, LuaTeX, teTeX and XeTeX,

Note: I will use the word 'Context' for point 4. Here, 'Context' is to be taken in its first sense, not as 'ConTeXt.'

The last section gives a LaTeX-related crossword puzzle.

2 Standard display of date and time

It is sometimes useful to write the date and time at compilation in a document. This can be achieved using the `datetime` package, together with

```
\shortdayofweekname{\day}{\month}{\year}
\shortmonthname{} \twodigit{\day}
\hhmmsstime{}
TIMEZONE \number\year
```

where 'TIMEZONE' is your time zone. [9]

Note that metadata serve this role too, and that this does not replace metadata. However, this might be useful if you have a tendancy to modify often some specific documents. By this method, people always know if they have the last version, or not.

3 Dash integrals

You can use the standard `\strokedint` from `MnSymbol` [5], which draws an oblique line on an integral, but if you want an horizontal line on these integrals, you can also define, according to [6],

```
\def\Xint#1{\mathchoice
{\XXint\displaystyle\textstyle{#1}}%
{\XXint\textstyle\scriptstyle{#1}}%
{\XXint\scriptstyle\scriptscriptstyle{#1}}%
{\XXint\scriptscriptstyle%
\scriptscriptstyle{#1}}%
\!\int}
\def\XXint#1#2#3{{\setbox0=\hbox{$#1{#2#3}{%
\int}$ }
\vcenter{\hbox{$#2#3$ }}\kern-.6\wd0}}
\def\ddashint{\Xint=}
\def\dashint{\Xint-}
```

which results in

$$\fint,\quad \dashint,\quad \fint,\quad \dashint$$

for the successive

```
dashint, \displaystyle\dashint, %
\ddashint, \displaystyle\ddashint
```

calls.

4 Rows in tables

A traditional application of tables is to number every row in it. If you put

```
\usepackage{array}
```

in the preamble, and

```
\newcounter{rowno}
\setcounter{rowno}{0}
\begin{document}
\begin{tabular}{>{\stepcounter{rowno}\therowno.}cl}
\multicolumn{1}{r}{No.} & text \\
\hline
 & first  \\
 & second \\
 & third  \\
 & fourth
\end{tabular}
```

in the body, the result is the following:

No.	text
1.	first
2.	second
3.	third
4.	fourth

This might be useful in many situations.

5 Unhabitual punctuation marks

One might feel the need for unhabitual (yet sometimes useful) punctuation marks such as the interrobang and the percontation point (ironicon).

I here adapt the point of view of the English (in the large sense) writer; Spanish-oriented well-known characters will not be exposed here, because already mastered by the public.

Note that I found none of the two further described symbols in [5].

5.1 Interrobang

5.1.1 Context

This symbol is generally used when a question is formulated in an excited manner, expresses excitement or disbelief in the form of a question, or asks a rhetorical question. [12] An example of situation where this would be of interest is given at [12]:

'How much did you pay for those shoes‽'

5.1.2 LaTeX

The Unicode code point is `U+203D`. The interrobang can be displayed in LaTeX by using the package `textcomp` and the command `\textinterrobang` [12]:

‽

5.2 Percontation point (ironicon)

5.2.1 Context

Though in the English language there is no standard accepted method to denote irony or sarcasm in written conversation, several forms of punctuation have been proposed.

Among the oldest and frequently attested are the percontation point (*punctus percontativus*, also known as an ironicon) invented by Henry Denham in the 1580's, and the irony mark, furthered by Alcanter de Brahm in the 19th century. [13]

5.2.2 LaTeX

Both of these marks were represented visually by a backwards question mark (unicode `U+2E2E` reversed question mark). [13]

Using the `graphicx` package, `\reflectbox?` works pretty well [2]:

⸮

One might define a command such as `\ironicon` by e.g. `\newcommand{\ironicon}{\reflectbox?}`. That being done, you can now directly use `\ironicon` in your document.

6 Dependency arrows

For dependency grammar's teachers, it might be useful to know how to draw dependency arrows between 'words.' This method is explained at [1].

6.1 Code

Consider the phrase

'The dog eats food.'

Then, first include the `tree-dvips` package in your document's preamble. Next, declare the nodes:

```
\node{The}{The} \node{dog}{dog}%
\node{eats}{eats} \node{food}{food}.
```

Now, you need to draw the arrows:

```
\anodecurve[t]{The}{dog}{1.1em}
\anodecurve[t]{eats}{the}{1.8em}
\anodecurve[t]{eats}{food}{1.2em}
```

6.2 Result

The result is

The dog eats food.

7 ConTeXt, LuaTeX, teTeX, XeTeX

Beginners often hear these words. Now, what is the difference between these four concepts? We will here inspire from various sources such as Wikipedia [10, 11, 14, 15, 16] and [3, 7, 8] to give an extremely summarized description of these tools.

7.1 ConTeXt

According to [10], ConTeXt may be compared and contrasted with LaTeX, but the primary thrust of the two are rather distinct. ConTeXt[10, 11]

- provides users easy and consistent access to advanced typographical control-important for general-purpose typesetting tasks,
- 's unified design avoids the package clashes that can happen with LaTeX,
- provides a multi-lingual user interface with support for markup in English, Dutch, German, French, and Italian and support for output in many languages including western European, eastern European, Arabic-script, Chinese, Japanese, and Korean.
- allows the user to use different TeX engines like pdfTeX, XeTeX, and LuaTeX without changing the user interface [7],
- is more monolithic than LaTeX,
- has a more homogeneous balise structure,
- has frequent upgrades,
- is more modular than LaTeX,
- retains LaTeX's structure-oriented approach [7].

ConTeXt is not an engine, but more like a 'format' for TeX [7].

7.2 LuaTeX

As we saw in Subsection 7.1, LuaTeX is an engine. LuaTeX started as a version of pdfTeX with a Lua scripting engine embedded. After some experiments, it was adopted by the pdfTeX team as a successor to pdfTeX [14]. The main objectives of the project are to [3, 14]

- provide a version of TeX where all internals are accessible from Lua,
- ensure downward compatibility,
- make a configurable variant of TeX,
- let the users write their own extensions instead of hard coding new features in TeX itself.

LuaTeX is an UTF-8 engine which is progressively becoming more and more interesting, but it is not yet finished [3].

7.3 teTEX

teTEX is a TEX distribution for Unix-like systems. teTEX is no longer actively maintained and its former maintainer Thomas Esser recommended TEX Live as the replacement. [15]

7.4 XeTEX

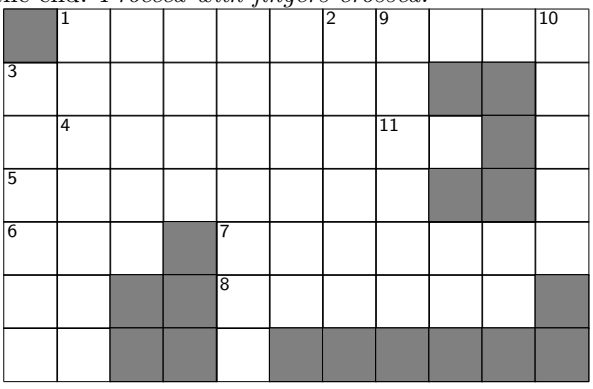
XeTEX is a TEX engine using Unicode and supporting modern font technologies such as OpenType or Apple Advanced Typography (AAT). Initially developed for Mac OS X only, it is now available for all major platforms. It [7, 16]

- natively supports Unicode and the input file is assumed to be in UTF-8 encoding by default,
- can use any fonts installed in the operating system without configuring TEX font metrics,
- can make direct use of advanced typographic features of OpenType, AAT and Graphite technologies such as alternative glyphs and swashes, optional or historic ligatures, and variable font weights,
- supports TrueType/OpenType fonts directly (where LATEX's default fonts are Type 1). This can be harnessed by the powerful `fontspec` package which makes loading and using installed fonts really easy (sigh[1]),
- therefore aims at supporting languages.

A major difference between XeTEX and LuaTEX is that LuaTEX provides an extension mechanism, when XeTEX uses libraries. [3]

8 Test crossword

Here is a test crossword. I managed to use different words from two subjects: TEX-related (mostly) and life-related. Note that the difficulty of this puzzle comes from the fact that you do not need to fill 'all the available' space with each word: just write each word, and if you succeed, every box will be filled at the end. *Proceed with fingers crossed!*



[1] Remember how it is generally difficult to do this in standard TEX, even with `fontinst`?

Here are some obscure clues.

Across. 1 Aligned in the middle 2 Not at left 3 Not with anybody 4 Analog to \\ 5 Like an advocate 6 No clue! 7 What do you sometimes put in a figure? 8 No clue! 11 Ensure that something goes 'out' of the text
Down. 1 Not an engine 2 Roman 3 Has an extension mechanism 7 Insert something 9 Similar to slanted 10 Similar to subject

This crossword puzzle has been prepared using the `cwpuzzle` package. See [4] for more information.

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References

[1] Jon Dehdari. LATEX hints, 2010. `http://www.ling.ohio-state.edu/~jonsafari/latex/`.

[2] Peter Flynn. Typography. *TUGboat*, 28(2):172–173, 2007.

[3] LuaTeX. LuaTEX roadmap, 2011.

[4] Gerd Neugebauer. *A LATEX Package for Typesetting Crossword Puzzles and More*, 2009. Documentation date: 2009/09/13.

[5] Scott Pakin. *The Comprehensive LATEX Symbol List*, 2009.

[6] StackExchange. Average integral symbol, 2010. `http://tex.stackexchange.com/questions/759/average-integral-symbol`.

[7] StackExchange. Differences between LuaTEX, ConTEXt and XeTEX, 2010. `http://tex.stackexchange.com/questions/36/differences-between-luatex-context-and-xetex`.

[8] StackExchange. Drawbacks of XeTEX/LuaTEX, 2010. `http://tex.stackexchange.com/questions/3094/drawbacks-of-xetex-luatex`.

[9] StackExchange. Write date, time, and time zone, 2010. `http://tex.stackexchange.com/questions/8612/write-date-time-and-time-zone`.

[10] Wikipedia. ConTEXt, 2011.

[11] Wikipedia. ConTEXt (French), 2011.

[12] Wikipedia. Interrobang, 2011.

[13] Wikipedia. Irony punctuation, 2011.

[14] Wikipedia. LuaTEX, 2011.

[15] Wikipedia. TeTEX, 2011.

[16] Wikipedia. XeTEX, 2011.