CST Part IA: Defence Against the Dark Arts, SV 1
Harry Potter
2011-10-13

Compilers are great. Ones that optimise are called optimising compilers, and are better. A compiler that works is better than a compiler that doesn't, and it's better to have no compiler than a broken one. Optimising compilers are sometimes a bit slow and sometimes it's better to turn off optimisations.

This is paragraph two, containing some maths. Normally, you'd number your equations (for example in Equation 1 below)—even if you don't refer to them in the text—in order that they might be easier to refer to in conversation.

$$2x_1^2 = 3x_0 + \alpha \times \infty \tag{1}$$

[JKF] This is a new bit. The original paragraph [JKF] reads~~looked~~ like this. Jack and Jill[JKF] ~~ate lots of ice cream then~~ went up the hill. This is a[JKF] n additional word. This is a [JKF] ~~superfluous~~ deleted word.

This is a comment in the margin. Supervisors will normally talk about what you've said in marginal comments, or tick stuff.

Notes

1. Use a full stop after a truncation abbreviation such as "Prof. Dante" but not after a contraction like "Dr" (from Doctor). Taking letters out of the middle of a word (as opposed to from the end) does not use a full stop. Note the use of the escape character before the space, to ensure a longer sentence space is not used erroneously.

2. Never use the double quote character. Use one or two back-ticks for opening single or double quotes, and one or two apostrophes for closing quotes, like this "Hello mum," said John.

3. Use `enumerate` for a numbered list and `itemize` for a bulleted list. For either type of list, introduce each item with `item`.

4. When used in a sentence, dashes should always occur in pairs. If you find yourself tempted to use an odd number of dashes in a sentence, you probably mean to use a colon. Note that there are two types of dashes: either the em dash—which looks like this—or the en dash – which looks like this – can be used. The choice of which to use is largely a matter of style, but you need to be consistent. If using the shorter en dash, leave a space between the dash and the words surrounding it; if using the longer em dash, do not use a space. Note that a hyphen is not a dash. A hyphen is used to hyphenate words.

This is page 2 of a double-sided document. This should be an even page.

$$x + y = z$$
$$\ldots = \ldots \qquad \text{a label}$$
$$ab/c \qquad \text{EXCHANGE rule}$$
$$p < 5 \qquad \text{(note that } p \in \mathbb{R}\text{)}$$

```
fun fib 0 = 1
  | fib n = fib (n-1) + fib(n-2);
```

Digital Electronics

Truth Tables

A	B	$\overline{A.B}$
0	0	1
0	1	1
1	0	1
1	1	0

A	B	$A \oplus B$
0	0	0
0	1	1
1	0	1
1	1	0

State Transition Tables

CURRENT STATE			INPUTS		NEXT STATE		
Name	Q_1	Q_0	X	Y	Name	Q_1'	Q_0'
S_0	0	0	0	0	S_2	1	0
S_0	0	0	0	1	S_1	0	1
S_0	0	0	1	0	S_2	1	0
S_0	0	0	1	1	S_3	1	1
S_1	0	1	0	0	S_0	0	0
S_1	0	1	0	1	S_0	0	0
S_1	0	1	1	0	S_1	0	1
S_1	0	1	1	1	S_2	1	0
S_2	1	0	0	0	X	X	X
S_2	1	0	0	1	X	X	X
S_2	1	0	1	0	S_2	1	0
S_2	1	0	1	1	X	X	X
S_3	1	1	0	0	S_0	0	0
S_3	1	1	0	1	S_2	1	0
S_3	1	1	1	0	S_1	0	1
S_3	1	1	1	1	S_3	1	1

siunitx

Examples taken from http://anorien.csc.warwick.ac.uk/mirrors/CTAN/macros/latex/
contrib/siunitx/siunitx.pdf:

12 345.678 90

$1 \pm 2\mathrm{i}$

0.3×10^{45}

$1.654 \times 2.34 \times 3.430$

$\mathrm{kg\,m\,s^{-1}}$
$\mathrm{kg\,m\,s^{-1}}$
$\mathrm{kg\,m/s}$
$\mathrm{kg\,m/(A\,s)}$

10, 20 and 30
0.13 mm, 0.67 mm and 0.80 mm
10 to 20
0.13 mm to 0.67 mm

$\mathrm{kg\,m\,s^{-2}}$
$\mathrm{g\,cm^{-3}}$
$\mathrm{V^2\,lm^3\,F^{-1}}$
$\mathrm{m^2\,Gy^{-1}\,lx^3}$
$\mathrm{H\,s}$

$10°$
$12.3°$
$4.5°$
$1°2'3''$
$1''$
$10°$
$-0°1'$

$1.23\,\mathrm{J\,mol^{-1}\,K^{-1}}$
$0.23 \times 10^7\,\mathrm{cd}$
\$1.99/kg
$1.345\,\frac{\mathrm{C}}{\mathrm{mol}}$