A simple LaTeX document

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In normal, non-mathematical text, we write almost everything in the usual way. But only *almost* everything, because some "special" characters do not stand for themselves. One of the most notable of these is \$, because it is one of LaTeX's favourite special characters. When it sees one, it thinks that an inline formula follows. We need some way to signal when it is wrong...

We'll talk about maths next week, but you can probably already write $\frac{1}{2}$ or even $\frac{12}{34}$. How many pairs of braces are needed to write this: $\frac{1}{23}$?

1 New section

Let's also give this section a label so we can refer to it later (or earlier)! It may be the first one now, but that will change, and you don't want to rewrite the references to it as well, because that's tedious — and an inexhaustible source of errors. By the way, you can try a bit later, when there will be a second one, with a reference to this one, to replace the first two sections , and see if the links still point to the right place! Warning: they won't at first. You have to compile the file twice to get them right.

Let's start a new section!

2 Next section

Of course, let's label this one too! And now let's refer to section 1 to see that labeling is not a futile activity. By the way, here's a trick that didn't come up in the lecture: by default, the period (.) is (rightly) assumed by LaTeX to indicate the end of a sentence. And in most languages, it's customary to leave a little more blank space after the end of a sentence. But you don't want that after, say "e.g." if you write "e.g. something". So we put a \ before the space after the (second) period.

3 A section full of lists and theorems

It's time to write some lists and theorems[1].

[1] Maybe not the list of *our* theorems yet...

What can we already write?

1. Normal text
2. Listings
3. Theorems and proofs

The same without numbering:

- Normal text
- Listings
- Theorems and proofs

It's only the last one that we haven't tried yet.

Theorem 3.1. *All bears like honey.*

Proof. It's a bit long, so we'll refer you to the literature: [1] contains all the details. □

Obviously we have labelled this theorem too! The way a theorem is numbered and other things about it can be changed. See the line

`\newtheorem{theorem}{Theorem}[section].`

in the preamble.

Corollary 3.2. *All teddy bears are sticky.*

Proof. This is a trivial corollary of theorem 3.1: if you rummage in honey pots and rarely wash your hands, you're bound to get sticky. □

4 Summary

Now we could easily write a book. There would be little maths in it, but readers might not be unhappy about that.

Before we say goodbye, let's move our theorem to the previous section and check that (after two compilations) the reference to it stays correct.

Bonuses:

- use the documentclass option `twocolumn`
- change the document class from `article` to `amsart`

and see how our document changes its appearance. (Don't use `twocolumn` with `amsart`, because it looks bad.)

type of doc	name of style
article	`article`, `amsart`
book	`book`
report	`report`
presentation	`beamer`
letter	`letter`

Table 1: A (floating) table

type of doc	name of style
article	`article`, `amsart`
book	`book`
report	`report`
presentation	`beamer`
letter	`letter`

Table 2: A (floating) table, like table 1

Document styles	
type of doc	name of style
article	`article`, `amsart`
book	`book`
report	`report`
presentation	`beamer`
letter	`letter`

Table 3: Another floating table, like table 2

Document styles	
type of doc	name of style
article	`article`, `amsart`
book	`book`
report	`report`
presentation	`beamer`
letter	`letter`

Table 4: Yet another floating table

5 Tables

(Write `\texttt{abc}` to get `abc`.)

References

[1] A. A. Milne, *Winnie-the-Pooh*, 1926