Draft 2024/09/08

SAMPLE DOCUMENT USING `ADENC.STY`

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Contents

Check out the Github Repository for `adenc.sty`.

1. Package Options

The following package options are supported:

- `color`: add background colors for theorem environments (see Section 2).
- `plain`: use the default theorem environments (`definition`, `plain`, and `remark`).
- `hideproofs` and `hidemarkings`: hide, respectively, proof environments and markings generated using the `\markabove` and `\markbelow` commands (see Section 3).
- `workingpaper`: add a watermark with date on the first page to indicate that the current document is a draft; adds more space to the margin so that notes written with the `\todo` command (using the `todonotes` package) can fully display.

To pass an option, use: `\usepackage[Option]{adenc}` .
To pass multiple options, use: `\usepackage[Option1, Option2, ...]{adenc}`.

2. Theorem Environments

Definition 2.1. A definitive **definition** is a definition, by definition.

Lemma 2.2. A lamentable lemma.

Theorem 2.3. A towering theorem.

Corollary 2.4. A cool corollary.

Remark 2.5. A remarkable remark.

Date: September 8th, 2024.

Example 2.6. An exemplary example.

Problem 2.7. A problematic problem.

Proof. A precise proof. □

Numbering can be turned off by using the corresponding * versions of the environments (e.g. `theorem*` instead of `theorem`).

3. Marking the Document

The `\todo` command in the `todonotes` package is a great way to add notes to a document, but among other things, it does not support display style math and, when used frequently, the places to which they point can be hard to decipher.

For example, this points to the word "can"

And this points to "hard".

It is for these reasons that the following commands are introduced:

(a) `\itodo` (inline todo) produces an inline block of notes. This can be used as placeholders for contents to be added later.

This is an example of what notes produced by the `\itodo` command looks like. Unlike the `\todo` command, `\itodo` supports display math:

$$\sum_{n=1}^{\infty} a_n z^n.$$

(b) `\markabove` and `\markbelow` provide a way to mark texts without altering the spacing. Both commands take two arguments: (1) align method (`l`, `c`, or `r`); and (2) text to display. For example,

is produced by the following code:

```
Test test test\markabove{l}{test1} test\markbelow{c}{I'm marking below here}.

Test test test test.

Test test test\markabove{c}{above!} test\markbelow{r}{math! \(\alpha\)}.
```

4. New Commands

Some new commands (mainly for math symbols) are added or modified for aesthetics and/or convenience. A few notable ones are mentioned below:

- A vocab command for styling new vocabulary (in, for example, definitions): **the vocab command** (`\vocab{the vocab command}`).
- A contradiction symbol: ※(`\contradiction`).
- Short cuts for `\mathbb`, `\mathcal`, and `\mathscr`:
  - `\cX` produces `\mathbb{X}`,
  - `\cX` produces `\mathcal{X}`,
  - `\sX` produces `\mathscr{X}`.

E.g. $\mathbb{R}$ (`\RR`), $\mathcal{T}$ (`\cT`), $\mathscr{K}$ (`\sK`). Note that these shortcuts are not available for all letters.

- A better looking complement symbol: A^{c} (`A^\complement`).
- A better empty set symbol: $\varnothing$ (`\emptyset`).
- A command for vectors: $\underline{v}$ (`\vec{v}`).
- Short cuts for matrices:

$$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}, \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}, \begin{vmatrix} 1 & 2 \\ 3 & 4 \end{vmatrix}$$

  (`\bmat{1 & 2 \\ 3 & 4}, \pmat{1 & 2 \\ 3 & 4}, \vmat{1 & 2 \\ 3 & 4}`).
- Differentiation operator: $\mathrm{d}x$ (`\d x`).
- Imaginary number: i (`\I`).

5. Credits

I have stolen a lot of stuff from Andrew Lin's package, lindrew, and Gilles Castel's preamble file for his lecture notes.