Example vSDMC Beamer

A walkthrough of some features

Tristan Shin

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Slides

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For example, the previous slide uses verbatim to display a LaTeX command properly, so it requires the fragile option.

This slide does not use any special packages though, so we do not require fragile here.

itemize and enumerate environments

The itemize and enumerate environments are still around.

- Item 1
- Item 2

1. Item 1
2. Item 2

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- `\alert` gives you red standout text.
- `\boldalert` gives you **the same but in bold**.
- `\vocab` gives you **blue, intended for definitions**.

Drawing

If you want to draw, you can use the drawing option in vSDMC-beamer.
To do this, replace the line

\usepackage{vSDMC-beamer}

with

\usepackage[drawing]{vSDMC-beamer}

This will import asymptote as well as some common tikz packages.

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This will import asymptote as well as some common tikz packages.

Alternatively, feel free to import your own packages separately.

Blocks

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Examples

This is an **example block**. Its color differentiates statements from examples.

Other blocks

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Theorem

Beamer is cool!

Corollary (Wright, 2003)

Everyone should use beamer!

Other blocks

Here is a list of environments that act just like `theorem`:

- `theorem`, `corollary`, and `lemma`
- `proposition`, `claim`, `fact`, and `observation`
- `conjecture` and `hypothesis`
- `problem`, `exercise`, and `question`
- `definition` and `remark`

See the next two slides for examples.

Other blocks

Lemma (Ruzsa covering lemma)

Let X and B be subsets of an abelian group. If $|X + B| \leq K|B|$, then there exist $T \subseteq X$ with $|T| \leq K$ such that $X \subseteq T + B - B$.

Claim

There are finitely many countries.

Conjecture (Riemann hypothesis)

For all $n \in \mathbb{N}$,

$$\sigma(n) \leq H_n + (\ln H_n)e^{H_n}.$$

Note that `conjecture` and `hypothesis` are a lighter shade of blue.

Other blocks

Problem

Determine all possible values of the expression

$$A^3 + B^3 + C^3 - 3ABC$$

where A, B, and C are nonnegative integers.

Definition (Continuity)

Let (X, d_X) and (Y, d_Y) be metric spaces and $f \colon X \to Y$ be a function. For $x_0 \in X$, we say that f **is continuous at** x_0 if for all $\epsilon > 0$, there exists a $\delta > 0$ such that $d_X(x, x_0) < \delta$ implies $d_Y(f(x), f(x_0)) < \epsilon$.

Note that `definition` and `remark` are black.

Proof block

The proof environment has also been transformed into a block.

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Left as an exercise to the reader. □

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> **Proof.**
>
> Left as an exercise to the reader. □

This environment also has an option to let you retitle the proof.

> **Proof sketch.**
>
> Still left as an exercise to the reader. □

Proof block

A common mistake in spacing is to leave the $\square$ dangling.

> **Proof.**
> We have that
> $$\begin{aligned} \sec^2 \theta - 1 &= \frac{1 - \cos^2 \theta}{\cos^2 \theta} \\ &= \frac{\sin^2 \theta}{\cos^2 \theta} \\ &= \tan^2 \theta \end{aligned}$$
> $\square$

Proof block

To fix this, use \qedhere where the end of your last line is.

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$$
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> \end{aligned}$$

You will need this when you use itemize, enumerate, or any form of display math environment to end your proof.

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Feel free to import other packages in the preamble, or make your own shortcuts. Common packages to import include

- asymptote
- tikz-cd (highly recommend checking out tikzducks too for fun)

Keep in mind that the more packages you import, the slower your presentation will compile. This is especially important for live-TeXing.

For example, this presentation takes about 3 seconds to compile (only additional import is verbatim). This is probably fine for live-TeXing.

Good luck!

One final note: LaTeX table of contents requires two compilations to update correctly. So if you create a new frame or change references, the first compilation after this may have incorrect referencing or page numbers. Be wary of this.

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Have fun creating your own beamer! For questions, contact me at `shint@mit.edu`.