Example vSDMC Beamer

A walkthrough of some features

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vSDMC

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

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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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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

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

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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`.