Example vSDMC Beamer

A walkthrough of some features

Tristan Shin

vSDMC

25 Mar 2020

Slides

This is a **frame** (also known as a **slide**).

Slides

This is a **frame** (also known as a **slide**).

You can split a single frame into broken parts for presentation.

Slides

This is a **frame** (also known as a **slide**).

You can split a single frame into broken parts for presentation.

Just put \pause at the point where you want to break the slide.

Slides

This is a **frame** (also known as a **slide**).

You can split a single frame into broken parts for presentation.

Just put `\pause` at the point where you want to break the slide.

You should not put `\pause` at the end of a slide; see this slide for an example of what happens.

Slides

This is a **frame** (also known as a **slide**).

You can split a single frame into broken parts for presentation.

Just put `\pause` at the point where you want to break the slide.

You should not put `\pause` at the end of a slide; see this slide for an example of what happens.

`fragile` option

Sometimes, using packages (such as `asymptote` and `verbatim`) will require the `fragile` option on any slide using it.

`fragile` option

Sometimes, using packages (such as `asymptote` and `verbatim`) will require the `fragile` option on any slide using it.

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

`fragile` option

Sometimes, using packages (such as `asymptote` and `verbatim`) will require the `fragile` option on any slide using it.

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

`itemize` and `enumerate` environments

If you want to break the slide after each item, use the <+-> option.

`itemize` and `enumerate` environments

If you want to break the slide after each item, use the <+-> option.

- Item 1

`itemize` and `enumerate` environments

If you want to break the slide after each item, use the <+-> option.

- Item 1
- Item 2

itemize and enumerate environments

If you want to break the slide after each item, use the <+-> option.

- Item 1
- Item 2

1. Item 1

itemize and enumerate environments

If you want to break the slide after each item, use the <+-> option.

- Item 1
- Item 2

1. Item 1
2. Item 2

Emphasis

In addition to the usual bold, italics, and underlining, you can do a few additional things:

Emphasis

In addition to the usual bold, italics, and underlining, you can do a few additional things:

- `\alert` gives you red standout text.

Emphasis

In addition to the usual bold, italics, and underlining, you can do a few additional things:

- `\alert` gives you red standout text.
- `\boldalert` gives you **the same but in bold**.

Emphasis

In addition to the usual bold, italics, and underlining, you can do a few additional things:

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

Blocks

Blocks are similar to boxes from the `tcolorbox` package.

A block

This is a **block**. It is quite simple to use.

Blocks

Blocks are similar to boxes from the `tcolorbox` package.

A block

This is a **block**. It is quite simple to use.

A different block

This is an **alert block**. Its color is different because it is meant to stand out.

Blocks

Blocks are similar to boxes from the `tcolorbox` package.

A block

This is a **block**. It is quite simple to use.

A different block

This is an **alert block**. Its color is different because it is meant to stand out.

Examples

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

Other blocks

There are other blocks modeled after the main three.

Other blocks

There are other blocks modeled after the main three.

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.

Proof.

Left as an exercise to the reader. □

Proof block

The `proof` environment has also been transformed into a block.

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.

Proof.

We have that

$$\begin{aligned}\sec^2\theta - 1 &= \frac{1-\cos^2\theta}{\cos^2\theta} \\ &= \frac{\sin^2\theta}{\cos^2\theta} \\ &= \tan^2\theta\end{aligned}$$

□

Proof block

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

Proof.

We have that

$$\begin{aligned}\sec^2\theta - 1 &= \frac{1-\cos^2\theta}{\cos^2\theta} \\ &= \frac{\sin^2\theta}{\cos^2\theta} \\ &= \tan^2\theta\end{aligned}$$

□

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

Shortcuts

There are several shortcuts that are included in `vSDMC-beamer`. Check them out in the file!

Shortcuts

There are several shortcuts that are included in `vSDMC-beamer`. Check them out in the file!

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)

Shortcuts

There are several shortcuts that are included in `vSDMC-beamer`. Check them out in the file!

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.

Shortcuts

There are several shortcuts that are included in `vSDMC-beamer`. Check them out in the file!

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.

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.

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