A Beamer Example
With code!

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Capstone Class
April 7, 2013

Outline

How to begin

Every Beamer presentation should start something like

```
1  \documentclass{beamer}
2  ...   % preamble goes here
3  \begin{document}
4  \title{Your Title}
5  \author{Your Name}
6  \begin{frame}
7  \titlepage
8  \end{frame}
9  ...   % Your presentation goes here
10 \end{document}
```

Making Frames

A **frame** is a unit of display – roughly, one per slide. You use the frame environment to create them. Remember to give your frames a title!

Put a frame environment between your \begin{document} and \end{document}.

```
1  \begin{frame}{Making Frames}
2    A \textbf{frame} is a unit of display -- roughly,
3    one per slide. You use the \verb|frame| environment
4    to create them. Remember to give your frames a
5    title!
6  \end{frame}
```

Table of Contents

Right after your title slide, it is useful to include a frame with the table of contents. (You'll have to compile your document a couple of times after updating a section name for the table of contents to change.)

```
1 \begin{frame}{Outline}
2 \tableofcontents
3 \end{frame}
```

Sectioning

You can use the \section and \subsection commands as usual. These make the sections in your talk, and show up on your table of contents slide.

Math!

You can do the same kinds of mathematically wondrous things
that you could do before. These include:

- Inline math expressions: $e^{100} \approx 2.69 \times 10^{43}$.

```
1  $e^{100} \approx 2.69 \times 10^{43}$
```

- Displayed math expressions:

$$\int_{-\infty}^{\infty} e^{-x^2} \, dx = \sqrt{\pi}$$

```
1  \[
2    \int_{-\infty}^\infty e^{-x^2}\,dx = \sqrt{\pi}
3  \]
```

$\mathcal{A}_{\mathcal{M}}$S-LATEXcommands

You also have all `amsmath`,`amsthm`, `amsfonts`, and `amssymb`
commands available to you. See the documentation:

- amsldoc.pdf
- amsthdoc.pdf

amsthm commands

Lemma

LaTeX is cool.

Proof.

Apparent from observation. $\square$

Theorem

Beamer is cool!

Proof by name-calling.

Anyone who disagrees is a dweeb. $\square$

amsthm commands

The lemma, theorem, corollary, and proof commands are automatically defined.

```
1  \begin{lemma}
2    \LaTeX{} is cool.
3  \end{lemma}
4  \begin{proof}
5    Apparent from observation.
6  \end{proof}
7  \begin{theorem}
8    Beamer is cool!
9  \end{theorem}
10 \begin{proof}[Proof by name-calling]
11   Anyone who disagrees is a dweeb.
12 \end{proof}
```

amsfonts

You have \mathbb, \mathrm, \mathbf, \mathcal, and \mathfrac, as usual.

- Normal math: *ABCDEFGHIJKLMNOPQRSTUVWXYZ*
- \mathbb: $\mathbb{ABCDEFGHIJKLMNOPQRSTUVWXYZ}$
- \mathbf: **ABCDEFGHIJKLMNOPQRSTUVWXYZ**
- \mathcal: $\mathcal{ABCDEFGHIJKLMNOPQRSTUVWXYZ}$
- \mathfrak: $\mathfrak{ABCDEFGHIJKLMNOPQRSTUVWXYZ}$
- \mathrm: ABCDEFGHIJKLMNOPQRSTUVWXYZ

amsfonts

```
1  \begin{itemize}
2  \item Normal math: $ABCDEFGHIJKLMNOPQRSTUVWXYZ$
3  \item \verb|\mathbb|: $\mathbb{
       ABCDEFGHIJKLMNOPQRSTUVWXYZ}$
4  \item \verb|\mathbf|: $\mathbf{
       ABCDEFGHIJKLMNOPQRSTUVWXYZ}$
5  \item \verb|\mathcal|: $\mathcal{
       ABCDEFGHIJKLMNOPQRSTUVWXYZ}$
6  \item \verb|\mathfrak|: $\mathfrak{
       ABCDEFGHIJKLMNOPQRSTUVWXYZ}$
7  \item \verb|\mathrm|: $\mathrm{
       ABCDEFGHIJKLMNOPQRSTUVWXYZ}$
8  \end{itemize}
```

amssymb

You can use all of the many special-purpose symbols defined by amssymb, which you can find in the Comprehensive LaTeX Symbol List.

amsmath

You can use the many excellent facilities of the amsmath package. This includes

- the \text command, to include text in math mode;
- the align environment, to line up equations like

$$
\begin{aligned}
(x + 1)(x - 1) &= x(x - 1) + 1(x - 1) && \text{distribute} \\
&= x^2 - x + x - 1 && \text{distribute} \\
&= x^2 - 1 && \text{combine}
\end{aligned}
$$

and

- matrices like

$$
\begin{pmatrix} 1 & 3 & 5 \\ 4 & 7 & -1 \end{pmatrix} \begin{bmatrix} 9 \\ 5 \\ 3 \end{bmatrix} = \begin{bmatrix} (9)(1) + (5)(3) + (3)(5) \\ (9)(4) + (5)(7) + (3)(-1) \end{bmatrix} = \begin{bmatrix} 39 \\ 68 \end{bmatrix}
$$

amsmath

```
1  % Alignment occurs on ampersands
2  \begin{align*}
3    (x+1)(x-1) &= x(x-1) + 1(x-1) & \text{distribute}\\
4          &= x^2 - x + x - 1 & \text{distribute}\\
5          &= x^2 - 1 & \text{combine}
6  \end{align*}
7
8  % pmatrix uses parentheses, bmatrix uses
9  % square brackets
10 \[
11 \begin{pmatrix}
12   1 & 3 & 5\\
13   4 & 7 & -1
14 \end{pmatrix}
15 \]
```

Pausing

Using the \pause command, you can hold off on showing
something until appropriate.

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Using the \pause command, you can hold off on showing something until appropriate.
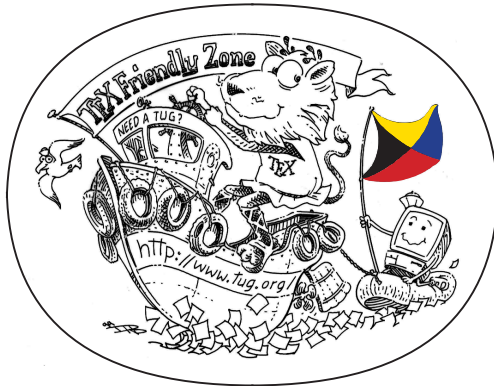
Like this!

Pausing

Using the \pause command, you can hold off on showing something until appropriate.

Like this!

```
1  Using the \verb|\pause| command, you can hold off on
       showing something until appropriate.
2  \pause
3  \begin{center}
4  \Huge Like this!
5  \end{center}
```

Pictures

Pictures can be included with the \includegraphics command; this can be used for PNG, JPEG, or PDF files.

Pictures

```
1  \begin{center}
2    \includegraphics[height=2in]{filename.pdf}
3  \end{center}
```

The entire slide is only about 3.5 inches tall. You can get the full
height by using the [plain] option on the frame:

```
1  \begin{frame}[plain]{Title here}
2  \begin{center}
3    \includegraphics[height=3.5in]{filename.pdf}
4  \end{center}
5  \end{frame}
```

Further Information

Another tutorial is available from here (credit to Charles Batts).

If you really want to drink from the firehose, check out the beamer user guide.