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LATEX Beamber 教程

LATEX 让制作演示文稿变得简单

Outline

什么是 Beamer?

- Beamer 是一个灵活的 LaTeX 类，用于制作演示文稿。

- It supports functionality for making PDF slides complete with colors, overlays, environments, themes, transitions, etc.

- Adds a couple new features to the commands you've been working with.

Beamer 的优势

- LaTeX 的标准命令仍可用于 Beamer 中。如果你会使用基础的 LaTeX，你也可以容易地制作 Beamer 演示文稿。

- 你可以轻松地创建排版方式、主题，从而允许你修改演示文稿的外观以适合你的意图。

- 演示文稿中采用的排版方式、颜色和字体可以轻松地做全局调整，但你仍可以控制一些细枝末节。

Beamer 的优势

- 设计主题时应做到使用性高、可读性强，这使得演示文稿更具专业性，同时让观众更容易理解。

- 输出一般为.pdf文件。

- 演示文稿在不同计算机或阅览器中将别无二致。

模板

```
% !TEX program = xelatex
\documentclass[aspectratio=169,utf8]{ctexbeamer}

\usepackage{graphicx,hyperref}
\usepackage{xcolor}
\usefonttheme{serif}
\usepackage{fontspec}
\setmainfont{Helvetica Neue}
\setCJKmainfont{PingFang SC}

\title[short title]{long title}
\subtitle[short subtitle]{long subtitle}
\author[short name]{long name}

⟶
```

```
%\begin{document}
%\begin{frame}
%  \titlepage
%\end{frame}
%\begin{frame}
%  \frametitle{Outline}
%  \tableofcontents
%\end{frame}
%\section{Some Section}
%\begin{frame}
%  \frametitle{Section Title}
%
%  Section content
%\end{frame}
%\end{document}
```

插入标题信息

可修改的命令

- \title[**short title**]{**long title**}
- \subtitle[**short subtitle**]{**long subtitle**}
- \author[**short name**]{**long name**}
- \date[**short date**]{**long date**}
- \institution[**short name**]{**long name**}

框

- 每一个 Beamer 项目都是由一系列框构成的。

- 每一个框产生一个或多个幻灯片，这依赖于幻灯片的排版方式。

基础框

```
% \begin{frame}[<alignment>]
%  \frametitle{Frame Title Goes Here}
%   Frame body text and/or LATEX code
% \end{frame}
```

框

- 框的创建非常简单，只需将你的文本或 LaTeX 代码写在 begin/end frame 命令之间。

- 默认情况下对齐方式为居中 [c]，还允许上对齐 [t]、下对齐 [b]。

A Basic Frame

```
%\begin{frame}[t]
%  \frametitle{Algorithmic Combinatorics on Words}
%  \textit{Words}, or strings of symbols over..
%\end{frame}
```

框

- 选项 [plain] 将隐藏掉页眉、页脚和侧边栏，这在显示大图片时非常有用。

- If you already have a LaTeX document, you can simply wrap \begin{frame} and \end{frame} commands around the information you want to present.

Putting Frames Together

例

```
\begin{frame}
\titlepage
\end{frame}

\begin{frame}
 \frametitle{Outline}
\tableofcontents[part=1,pausesections]
\end{frame}

\begin{frame}
\frametitle{Introduction}
Body text / code of the frame goes here.
\end{frame}
```

Sections and Subsections

- Presentations are divided into sections, subsections, and sub-subsections.

- Each call to the \section{section name}, \subsection{subsection name}, or \subsubsection{sub-subsection name} command:
    - Inserts a new entry into the table of contents at the appropriate tree-level.
    - Inserts a new entry into the navigation bars.
    - Does not create a frame heading.

- Another version of the command, \subsection*{section name}, only adds an entry in the navigation bars, *not* the table of contents.

Sections and Subsections

Section specifications are declared between the frames, so they have no direct effect on what is shown inside each frame.

Example

```
%...
%\end{frame}
%\section{Fine and Wilf's Theorem}
%\subsection{The Case of Two or Three Holes}
%\subsubsection{Definition 3.7}
%\begin{frame}
%...
```

Characters

- `\` and `\par`

- `\# \$ \% \& \{ \} \_ \~{} \~{} \textbackslash`

- `` ` `` `'` and ` `` ` `''`

- `-`, `--`, and `---`

- `\ldots`

- `$\sim$`

Common Text Commands and Environments

You can use the same text commands and environments in Beamer that you do in LaTeX to change the way your text is displayed.

Common Text Commands

`\emph {Sample Text}`	*Sample Text*
`\textbf {Sample Text}`	**Sample Text**
`\textit {Sample Text}`	*Sample Text*
`\textsl {Sample Text}`	*Sample Text*
`\alert {Sample Text}`	Sample Text
`\textrm {Sample Text}`	Sample Text
`\textsf {Sample Text}`	Sample Text
`\color {green} Sample Text`	Sample Text

Verbatim Text

It is often helpful to write code or formulas as verbatim text, which shows the text exactly as you type it, without any LaTeX formatting.

- For inline verbatim text, such as sample text, use the text command:
  `\verb|sample text|`
- The verbatim environment is also available in Beamer and can be used in the same way as it is in LaTeX:
  ```
  \begin{verbatim}
  Sample text
  \end{verbatim}
  ```

For either of these methods to work, the `[fragile]` option must be added to the frame environment.

Fonts

```
\usepackage{fontspec}
%\setmainfont{Helvetica Neue}
\setmainfont{Arial}
\setCJKmainfont{Microsoft YaHei}
%\setCJKmainfont[BoldFont=STHeiti,ItalicFont=STKaiti]{STHeiti}
%\setCJKsansfont[BoldFont=STHeiti]{STXihei}
%\setCJKmonofont{STKaiti}
```

\tiny

\scriptsize

\footnotesize

\small

\normalsize

\large

\Large

\LARGE

\huge

\Huge

Alightment

- `\begin{center} ...\end{center}`

- `\begin{flushleft} ...\end{flushleft}`

- `\begin{flushright} ...\end{flushright}`

- `\centering \raggedright \raggedleft`

Spacing

- A vertical space can be indicated by using the `\vskip<number>pt` command. For example, `\vskip15pt` will produce a 15 point vertical space

- Horizontal spaces are indicated similarly with the command `\hskip<number>pt`

- Horizontal spaces are useful for indenting text or graphics

- Other measurements can also be used, such as centimeters: `\vskip2cm`

- Negative values can also be used to squeeze text or graphics together: `\vskip-10pt` or `\hskip-1cm`

Overlays

- Having parts of your slides appear incrementally aids the audience by bringing their attention to the information that is currently being discussed.
- In Beamer, overlays control the order in which parts of the frame appear.

Overlays - Pause

An easy way to implement an overlay is to place the \pause command between the parts you want to show up separately.

For example, you could separate three items like this:

Step1: Step1

Step 2: Step2

Step 3: Step3

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Overlays - Specifications

- Overlay specifications are given in pointed brackets (<,>) and indicate which slide the corresponding information should appear on.
- The specification `<1->` means display from slide 1 on. `<1-3>` means display from slide 1 to slide 3.

Example

- *abcadcabca*
- *abcabcabca*
- *bacabacaba*
- *cacdaccacc*

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Structure - Tables

```
\begin{tabular}{|c|r|r|}
  \hline
  \multirow{2}*{姓名} & \multicolumn{2}{c|}{成绩}  \\ \cline{2-3}
                  & 语文 &  数学  \\
  \hline
  张三            & 87      &  100 \\
  \hline
\end{tabular}
```

姓名	成绩	
	语文	数学
张三	87	100

Structure - Columns

col1   col2

```
\begin{columns}[t]
  \begin{column}{.5\textwidth}
    col1
  \end{column}
  \begin{column}{.5\textwidth}
    col2
  \end{column}
\end{columns}
```

Structure - Boxes

黄色盒子　　红色盒子　　绿色盒子　　蓝色盒子

Math

The mass-energy equivalence is described by the famous equation

$$E = mc^2$$

discovered in 1905 by Albert Einstein. In natural units ($c = 1$), the formula expresses the identity

$$E = m \tag{1}$$

Graphics

Transition

This page has transition effect when PDF entering presentation mode, this works perfectly in Adobe Acrobat Reader or Adobe Acrobat DC, other PDF viewers, ermmmmm …

- The PDF format offers a standardized way of defining transition effects from one slide to the next. For example, whatever was shown before the slide with the transition effect may dissolve to uncover the new slide.

- These effects should be used sparingly as to not distract from the content of the presentation.

- Be forewarned, different PDF viewers have different interpretations and levels of support for these effects.

Frame Transition Commands

`\transblindshorizontal`	Horizontal blinds pulled away
`\transblindsvertical`	Vertical blinds pulled away
`\transboxin`	Move to center from all sides
`\transboxout`	Move to all sides from center
`\transdissolve`	Slowly dissolve what was shown before
`\transglitter`	Glitter sweeps in specified direction
`\transsplitverticalin`	Sweeps two vertical lines in
`\transsplitverticalout`	Sweeps two vertical lines out
`\transsplithorizontalin`	Sweeps two horizontal lines in
`\transsplithorizontalout`	Sweeps two horizontal lines out
`\transwipe`	Sweeps single line in specified direction
`\transduration{2}`	Show slide specified number of seconds

Thanks.