

# Make Slides Using Beamer

## Beamer - The $\text{\LaTeX}$ Document Class

Yu Haijun

Department of Science and Engineering Computing School of Mathematics  
School Peking University

Development in National Day, 2004

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# Part I

## Slides Tools

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# Outline

1 Tools Like Powerpoint

2 T<sub>E</sub>XTools

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# Tools Like Powerpoint

- Advantage

- ① What you see is what you get
- ② All done in one software
- ③ Easy to learn

- Disadvantage

- ① Compared to the other software
- ② It depends on the software
- ③ It's hard for much formula

# Tools Like Powerpoint

- Advantage

- ① What you see is what you get
- ② All done in one software
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- Disadvantage

- ① It's not a real presentation tool
- ② It's based on the Beamer
- ③ It's hard for much formula

# Tools Like Powerpoint

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- ① What you see is what you get
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# TeX Tools

- 1 Base PDF file
- 2 Deal with mathematic formula easily
- 3 Professional typeset
- 4 Plain text, easy to reuse

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**Beamer** A standard L<sup>A</sup>T<sub>E</sub>X Document class, Need no other post progress program Work with other L<sup>A</sup>T<sub>E</sub>X packages smoothly

**foiltex** Work with most of the available L<sup>A</sup>T<sub>E</sub>X commands and environments Use Macro \Mylogo put some graphic as the logo

**prosper** Automatically generated table of contents, Portrait slides support and possible to include notes in your presentation

**pdfscreen** Create document both fit to read in computer and for print

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## Part II

# Guidelines on Making Slides

# Outline

- 3 Guidelines on What to Put on a Frame
- 4 Guidelines on Titles
- 5 Guidelines on the Body Text
- 6 Guidelines on Graphics
- 7 Guidelines on Colors
- 8 Guidelines on Animations and Special Effects

# Guidelines on What to Put on a Frame

- 1 A frame with too little on it is better than a frame with too much on it.
- 2 Do not assume that everyone in the audience is an expert on the subject matter.
- 3 Never put anything on a slide that you are not going to explain during the talk.
- 4 Keep it simple.

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# Outline

- 3 Guidelines on What to Put on a Frame
- 4 Guidelines on Titles**
- 5 Guidelines on the Body Text
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# Guidelines on Titles

- 1 Put a title on each frame
- 2 The title should really explain things.
- 3 Ideally, titles on consecutive frames should “tell a story” all by themselves.
- 4 In English, you should *either always* capitalize all words in frame title except for words like “a” or “the”(as in a title) *or* you *always* use the normal lowercase letters.
- 5 In English, the title of the whole document should be capitalized, regardless of whether you capitalize anything else.

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## Guidelines on the Body Text

- 1 Never use a smaller font size to “fit more on a frame”
- 2 Prefer enumerations and itemize environment over plain text. Do not use long sentences.
- 3 Do not hyphenate words. If absolutely necessary, hyphenate words “by hand”, using the command \-
- 4 Break lines “by hand” using the command \\. Do not rely on automatic line breaking.
- 5 Text and numbers in figures should have the *same size* as normal text. Illegible numbers on axes usually ruin a chart and its message.

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## Guidelines on Graphics

- 1 Put (at least) one graphic on each slide, whenever possible.
- 2 Usually, place graphics to the left of the text
- 3 Graphics should have the same typographic parameters as the text
- 4 While bitmap graphics, like photos, can be much more colorful than the rest of the text, vector graphics should follow the same “color logic” as the main text (like black==normal lines, red==highlighted parts, green==examples, blue==structure)
- 5 Like text, you should explain everything that is shown on a graphic
- 6

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## Guidelines on Colors

- 1 Use colors sparsely. The prepared themes are already quite colorful
- 2 Be careful when using bright colors on white background, *especially* when using green.
- 3 Maximize contrast. Normal text should be black on white or at least something very dark on something very bright.
- 4 Background shadings decrease the legibility without increasing the information content. Inverse video (bright text on dark background) can be a problem during presentations in bright environments since only a small percentage of the presentation area is lit up by the beamer. Inverse video is harder to reproduce on printouts and on transparencies.



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# Guidelines on Animations and Special Effects

- 1 Use animations to explain the dynamics of systems, algorithms, etc.
- 2 Do not use animations just to attract the attention of your audience. This often distracts attention away from the main topic of the slide
- 3 Do not use distracting special effects like “dissolving” slides unless you have a very good reason for using them.

## Part III

# Make Slides Using Beamer Class

# Outline

## 9 The Features of Beamer

## 10 Installation

## 11 Workflow

# The Features of Beamer

Beamer is standard  $\text{\LaTeX}$  document class, it has following features:

- 1 Only  $\text{\LaTeX}$  and  $\text{pdf\LaTeX}$  is need
- 2 Retain section structures
- 3 Themes and content and indenpent
- 4 Easy to use

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# Outline

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# Installation

- 1 First, copy xcolor, pgf, beamer files in preper texmf directory
- 2 Second, Rehash the  $\text{\TeX}$ configuration

# Outline

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# Workflow

- ① Create the structure, using `\part \section \subsection`
- ② Add Frames and Overlays, using `\frame`
- ③ Apply Themes and templates, using `\usepackage`

# A Beginning File of Beamer

```
\documentclass{beamer}
\usepackage{beamerthemesplit}
\title{Example Presentation Created with Beamer}
\author{Till Tantau}
\date{\today}
\begin{document}
\frame{\titlepage}
\section*{Outline}
\frame{\tableofcontents}
\section{Introduction}
\subsection{Overview of the Beamer Class}
\frame {
  \frametitle{Features of the Beamer Class}
  \begin{itemize}
```

# Part IV

## Step by Step

# Outline

## 12 Frames and Overlays

- Overlays
- Frames

## 13 Color Management

## 14 Graphics, Animations, sounds, and Slide Transitions

## 15 Customization

# Overlays

## Commands of Overlays:

- `\onslide<slide-list>`
- `\FromeSlide<slide-number>`
- `\only<slide-number>`
- slide specificity after other command, e.g. `\textbf<2>`



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1 alert

2 uncover

3 invisible

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# Action of Overlays

- 1 alert
- 2 uncover
- 3 invisible

A small, square, light blue icon with the text "pku-tower" inside, located in the bottom right corner of the slide.

# Action of Overlays

- ① alert
- ② uncover
- ③ only
- ④
- ⑤ invisible

A small rectangular box containing the text "pku-tower".

# Action of Overlays

- ❶ alert
- ❷ uncover
- ❸
- ❹ visible
- ❺ invisible

A small rectangular box containing the text "pku-tower".

# Action of Overlays

- 1 alert
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pku-tower



# Action of Overlays II

- You can specific action indendent, e.g  
 $\backslash action < \text{action-specification} > \{ < \text{text} > \}$
- Set the default action using following command  
 $\backslash beamerdefaultoverlayspecification \{ < \text{default} - \text{overlay} - \text{specification} > \}$

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# Frames

## Theorem

$$A = B$$

Proof.

• Clearly,

$$A = \int_0^{\infty} e^{x^2} dx$$

• As show earlier,

$$\int_0^{\infty} e^{x^2} dx = B$$

thus  $A = B$



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# Frames II I

## Options of Frame

- `allowdisplaybreaks=<break-desirability>`
- `allowframebreaks=<fraction>` Note: Frame break will has no overlays effects!
- `b,c,t` – vertically aligned at bottom/center/top
- `containsverbatim` Only one slide of the frame is typeset!
- `label=<name>`
- `plain` – cause the headlines, footlines and sidebars to be suppressed
- `shrink=<minimum-shrink-percentage>`
- `squeeze` – squeeze vertical spaces.



# Components of a Frame

- a headline
- a footline
- a left sidebar
- a right sidebar
- navigation symbols
- a logo
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# Hyperlink and Navigation Bars

- Use **hypertarget** add hyper link.

`\hypertarget < overlay-specification > {target-name{text}}`

▶ Jump to second slide

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# Color Management

- Change the main color of navigation and title bar  
`\documentclass[red]{beamer}`
- Change the average background color  
`\beamersetaveragebackground{red!10}`
- Set how to render overlay covered text.  
`\beamersetunconvermixins{not-yet-list}{once-more-list}`
- Set on which slides covered text should have which  
opaqueness. `\opaqueness < overlay-specification >`  
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- Graphics

- Animations
- Sound Here's some music

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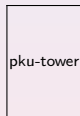
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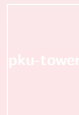
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# Slide Transitions

- 1 Horizontal blinds
- 2 Vertical blinds
- 3 Moving to the center from all four sides
- 4 Moving from the center to four sides
- 5 Dissolve
- 6 Glitter
- 7 Split verticalin
- 8 Split verticalout
- 9 wipe
- 10 transduration

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## 16 Tips and (Dirty) Tricks

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*Thank You!!!*

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