Module-VI

Beemer Presentation in Latex

Introduction

1. LaTeX pronounced as “tech ”
2. LaTeX is typeset like

   LaTeX (\alert{\bf\huge\LaTeX})
3. Produce a file in
   -
   - Dvi, Postscripts, HTML, XML and **PDF**

Preamble

1. Every LaTeX file contains a **preamble** and **a body**
2. **preamble** is a **collection of commands** that processing parameters for the following
   - text
   - paper format
   - the height of the text
   - width of the text etc.....
3. Everything between \documentclass and \begin{document}

A Simple LaTeX Document

- \documentclass{article}

  preamble

  preamble

  preamble

  \begin{document}

  This is my first document prepared in LaTeX.

  \end{document}

- **Output:** This is my first document prepared in LaTeX.

Beamer Presentation

1. **Beamer** is a LaTeX class for creating presentations that are held using a projector.
2. A beamer presentation is created like any other LATEX document.
3. It has a preamble and a body. The themes to be used are specified in the preamble. Themes make it easy to change the appearance of a presentation.

Types of Themes

Beamer class uses five different kinds of Themes as follows.

1. Presentation Themes
2. Color Themes
3. Font Themes
4. Inner Themes
5. Outer Themes

Presentation Themes

Presentation Themes determines the look of the entire presentation. The available themes are

- \usepackage{beamerthemeBerkeley}
- \usepackage{beamerthemeDresden}
- \usepackage{beamerthemeCambridgeUS}
- \usepackage{beamerthemeMadrid}
- \usepackage{beamerthemePaloAlto}
- \usepackage{beamerthemeAnnArbor}

Color Themes

Color Themes determines the colors used in the presentation.

- \usepackage{beamercolorthemedefault}
- \usepackage{beamercolorthemealbatross}
- \usepackage{beamercolorthemebeaver}
- \usepackage{beamercolorthemebeetle}
- \usepackage{beamercolorthemecrane}
- \usepackage{beamercolorthemedolphin}
- \usepackage{beamercolorthemedove}
- \usepackage{beamercolorthemefly}

Font Themes

Font Themes determines the fonts used in the presentation.

- \usepackage{beamerfontthemestructureitalicserif}
- \usepackage{beamerfontthemestructurebold}
- \usepackage{beamerfontthemestructuresmallcapsserif}
- \usepackage{beamerfontthemeserif}
- \usepackage{beamerfontthemeprofessionalfonts}

Inner and Outer Themes

Inner Themes and **Outer Themes** specifies the appreance of inside elements that are not part of the headline, footline, or sidebars.

- \usepackage{beamerinnerthemeinmargin}
- \usepackage{beamerouterthemeshadow}
- \usepackage{beamerinnerthemecircles}
- \usepackage{beamerouterthemetree}

Title Page

- \title[short title]{title}

  \author[short author names]{author names}

  \institute[short institute]{institute}

  \date[short date]{date}

  \begin{frame}

  \maketitle - which produce a title page

  \end{frame}

Frame

The plain options. Sometimes you need to include a large figure or a large table and you don't want to have the bottom and the top off the slides. In that case, use the plain option:

\frame[plain]{ }

If you want to include lots of text on a slide, use the shrink option.

\frame[shrink]{ }

The allowframebreaks option will auto-create new frames if there is too much content to be displayed on one.

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Blocks

There are three basic types of block. Their formatting depends on the theme being used.

This is a Block

This is important information

This is an Alert block

This is an important alert

This is an Example block

This is an example

Automatically revealing bullet points

- If you just want bullet points to appear one by one in sequence as you click through the presentation, then just add the option [< +− >] after the \begin{frame} command, to give the frame-structure
- For Example: \begin{frame}[< +− >]

  \frametitle{Title}

  \begin{itemize}

  \item ...

  \item ...

Overlay modifications

A number of ordinary commands are modifiable using overlay specifications. In particular note the following example.

This frame produces **four** slides/transparencies

1. This appears from the fourth slide.
2. This appears from the third slide.
3. This appears from the second slide.
4. This appears from the first slide.

For Ex. \item<4->, \item<3->, \item<2->, \item<1-> .

Constructing Tables

- \hline This command may only appear before the first row or immediately after a \\ row termination.
- \cline{m-n} This command draws a horizontal line from the left side of column *m* to the right side of column *n*.
- \multicolumn{num}{col}{text} This command combines the following num columns into a single column with their total width including intercolumn spacings.

PsTricks Codes-Circle and Ellipse

- The command \pscircle(2, 1){0.5} produces a circle of radius $0.5cm$ centered at $(2, 1)$.
- The command \pscircle* produces a solid circle.
- The command \psarc draws a circular arc of specified center and radius from a given angle to another going counterclockwise such as \psarc(0, 0){3}{30}{60}.
- The command is \psellipse and we have to specify the center and half the width and height such as \psellipse(1, 1)(2, 1) to draw an ellipse centered at $(1, 1)$ with width width $4cm$ and

PsTricks Codes- Text and Curve

- The command \put(1, 2){*text*} places the word text starting from the point (1, 2).
- Just like the \psline command there is a command \pscurve which draws a curve passing through the given points.
- One can also draw curved lines using the command \psbezier command and for that one must specify four control points.

Matrices

- Using amsmath package one can type matrices.
- Matrices without parantheses, with round parantheses, with square parantheses and determinant is produced by the envoirnments
  - matrix,
  - pmatrix,
  - bmatrix and
  - vmatrix respectively.

Example

$$\begin{matrix} A & B & C \\ d & e & f \\ 1 & 2 & 3 \end{matrix}$$

LaTex code

```
\begin{matrix}
A&B&C\\
d&e&f\\
1&2&3
\end{matrix}
```

Example

$$\begin{pmatrix} a & b & c \\ d & e & f \\ g & h & i \end{pmatrix}$$

LaTex code

```
$\begin{pmatrix}
a&b&c\\
d&e&f\\
g&h&i
\end{pmatrix}$
```

Example

$$\begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

LaTex code

```
$\begin{bmatrix}
a&b&c\\
d&e&f\\
g&h&i
\end{bmatrix}$
```

Example

$$\begin{vmatrix} a & b & c \\ d & e & f \\ g & h & i \end{vmatrix}$$

LaTex code

```
$\begin{vmatrix}
a&b&c\\
d&e&f\\
g&h&i
\end{vmatrix}$
```

Example

$$\begin{Vmatrix} a & b & c \\ d & e & f \\ g & h & i \end{Vmatrix}$$

LaTex code

```
$\begin{Vmatrix}
a&b&c\\
d&e&f\\
g&h&i
\end{Vmatrix}$
```

Example

$$\begin{Bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{Bmatrix}$$

LaTex code

```
$\begin{Bmatrix}
a&b&c\\
d&e&f\\
g&h&i
\end{Bmatrix}$
```

Constructing Tables

- The array environment can only be applied in mathematical mode
- the meaning of its arguments are exactly the same as those of the tabular environment.
- cols The column formatting argument. There must be an entry for every column, as well as possible extra entries for the left and right borders of the table or for the intercolumn spacings.
- The possible column formatting symbols are
  - l the column contents are left justified;

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Examples - Tables

.	a_1	a_2	a_3	x_1
a_1	0	0	0	0
a_2	0	a_1	0	a_3
a_3	0	0	0	a_3
x_1	0	a_3	a_3	x_1

```
\begin{tabular}{|c|c|c|c|c|}
\hline
.&$a_1$ &$a_2$ &$a_3$ &$x_1$\\
\hline
$a_1$ &$0$ &$0$ &$0$ &$0$\\
\hline
$a_2$ &$0$ &$a_1$ &$0$ &$a_3$\\
\hline
$a_3$ &$0$ &$0$ &$0$ &$a_3$\\
\hline
$x_1$ &$0$ &$a_3$ &$a_3$ &$x_1$\\
```

Examples - Tables

Planet	Distance from sun (million km)	
	Maximum	Minimum
Mercury	69.4	46.8
Venus	109.0	107.6
Earth	152.6	147.4
Mars	249.2	207.3
Jupiter	817.4	741.6
Saturn	1512.0	1346.0

References

- Leslie Lamport, 1985. *LaTeX—A Document Preparation System—Users Guide and Reference Manual*, Addision-Wesley, Reading.
- Donald E. Knuth, 1989. *Typesetting Concrete Mathematics*, TUGBoat, 10(1):31-36.
- Ronald L. Graham, Donald E. Knuth, and Ore Patashnik, 1989. *Concrete Mathematics: A Foundation for Computer Science*, Addison-Wesley, Reading.