Presentation using LaTeX Beamer

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Outline

Outline

About Beamer

- Beamer - a LaTeX class for creating presentations.
- Different from WYSWYG programs.
- A Beamer presentation is like any other LaTeX document:
    - It has a preamble and a body.
    - The body contains sections and subsections.
    - The different slides are put in environments.
    - Slides are structured using itemize and enumerate environments, or plain text.

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A Simple Example

```
\documentclass{beamer}
\title{\LaTeX{} Beamer Class Introduction}
\author{Tao Ma}
\institute{Electrical and Computer Engineering \\Auburn
University}
\date{\scriptsize{\today}}

\begin{document}
\maketitle
\section{Section 1}
\begin{frame}
\frametitle{Frame 1 Name}
\Here is one slide.
\end{frame}
\section{Section 2}
\frame{
\frametitle{Frame 2 Name}
\Here is another slide.
}
\end{document}
```

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A Simple Example

```latex
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\begin{document}

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\begin{frame}
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\end{frame}

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\end{document}
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A Simple Example

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\begin{document}
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\begin{frame}
\frametitle{Frame 1 Name}
\Here is one slide.
\end{frame}
\section{Section 2}
\frame{
\frametitle{Frame 2 Name}
\Here is another slide.
}
\end{document}
```

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Preamble

```
\documentclass[10pt]{beamer}
\usetheme{Warsaw}
\setbeamertemplate{footline}[frame number]

\usefonttheme[]{serif}
\usepackage{amsmath, latexsym, color, graphicx}
\usepackage{epsf, epsfig,subfigure}
\usepackage{amsfonts,multicol}

\newcommand{\tbs}{\textbackslash}
\definecolor{cRed}{rgb}{1, 0, 0}
```

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Preamble

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\documentclass[10pt]{beamer}
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```

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Preamble
Choosing a Theme

Different themes can be selected by changing the

```
\usetheme{Warsaw}
```

Themes			
Antibes	Bergen	Berlin	Madrid
Paloalto	Pittsburgh	Rochester	Singapore

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Body

```
\begin{document}

\maketitle

\section{Section 1}
\begin{frame}
\frametitle{Frame 1 Name}
\Here is one slide.
\end{frame}

\section{Section 2}
\frame{
\frametitle{Frame 2 Name}
\Here is another slide.
}

\end{document}
```

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Making the Title Frame

Use the following commands in your preamble:

Commands for the title frame

```
\title{...}
\subtitle{...}
\author{...}
\institute{...}
\date{...}
```

and the command \maketitle,

Generating the title frame in the body

```
\begin{document}
\maketitle
⋮
\end{document}
```

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Creating a Frame

Creating a frame use with commands:

```
\begin{frame}
\frametitle{...}
\framesubtitle{...}
...
\end{frame}
```

Or,

```
\frame{
\frametitle{...}
\framesubtitle{...}
...
}
```

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Section and Subsections

Section specifications are declared between the frames.

```
...
\end{frame}

\section{section name}
\subsection{subsection name}
\subsubsection{subsubsection name}

\begin{frame}
...
```

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Generating the Outline Frame

The outline of your presentation can be added as follows,

manually

```
...
\end{frame}

\begin{frame}
\frametitle{Outline}
\tableofcontents[currentsection]
\end{frame}

\begin{frame}
...
```

automatically

```
...
\AtBeginSection[]{
\begin{frame}{Outline}
\tableofcontents[currentsection]
\end{frame}}
...
```

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Column

Example: two columns

\begin{columns}
\column{.4\textwidth}
Left column
\column{.4\textwidth}
Right column
\end{columns}

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Column

Example: two columns

\begin{columns}
\column{.4\textwidth}
Left column
\column{.4\textwidth}
Right column
\end{columns}

Left column

Right column

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Block

\begin{block}{Beamer Introduction}
Beamer is a {\LaTeX} class.
\end{block}

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Block

\begin{block}{Beamer Introduction}
Beamer is a {\LaTeX} class.
\end{block}

Beamer Introduction

Beamer is a LaTeX class.

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Block

\begin{block}{Beamer Introduction}
Beamer is a {\LaTeX} class.
\end{block}

Beamer Introduction

Beamer is a LaTeX class.

Other choices: `example`, `lemma`, `proof`.

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List-itemize

```
\begin{itemize}
\item The first one.
\item The second one.
\begin{itemize}
\item The larger one.
\item The smaller one.
\end{itemize}
\item The third one.
\end{itemize}
```

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List-itemize

```
\begin{itemize}
\item The first one.
\item The second one.
\begin{itemize}
\item The larger one.
\item The smaller one.
\end{itemize}
\item The third one.
\end{itemize}
```

- The first one.
- The second one.
  - The larger one.
  - The smaller one.
- The third one.

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List-enumerate

```
\begin{enumerate}
\item The first one.
\item The second one.
\begin{enumerate}
\item The large one.
\item The small one.
\end{enumerate}
\item The third one.
\end{enumerate}
```

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List-enumerate

```
\begin{enumerate}
\item The first one.
\item The second one.
\begin{enumerate}
\item The large one.
\item The small one.
\end{enumerate}
\item The third one.
\end{enumerate}
```

1. The first one.
2. The second one.
   1. The large one.
   2. The small one.
3. The third one.

Outline

Simple Overlays Using `pause`

- Beamer overlay frame 1
- Beamer overlay frame 2
- Beamer overlay frame 3

```
\begin{frame}[fragile]
\frametitle{Simple Overlays Using {\tt pause}}
\setbeamercovered{dynamic}
\begin{itemize}
\item  Beamer overlay frame 1\\ \pause
\item  Beamer overlay frame 2\\ \pause
\item  Beamer overlay frame 3\\
\end{itemize}
```

Simple Overlays Using `pause`

- Beamer overlay frame 1
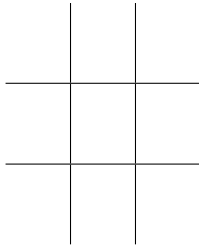- Beamer overlay frame 2
- Beamer overlay frame 3

```
\begin{frame}[fragile]
\frametitle{Simple Overlays Using {\tt pause}}
\setbeamercovered{dynamic}
\begin{itemize}
\item  Beamer overlay frame 1\\ \pause
\item  Beamer overlay frame 2\\ \pause
\item  Beamer overlay frame 3\\
\end{itemize}
```
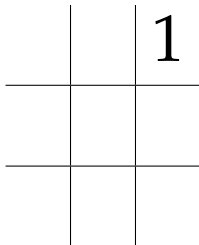
Simple Overlays Using `pause`

- Beamer overlay frame 1
- Beamer overlay frame 2
- Beamer overlay frame 3

```
\begin{frame}[fragile]
\frametitle{Simple Overlays Using {\tt pause}}
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\begin{itemize}
\item  Beamer overlay frame 1\\ \pause
\item  Beamer overlay frame 2\\ \pause
\item  Beamer overlay frame 3\\
\end{itemize}
```

Simple Overlays Using `pause`

- Beamer overlay frame 1
- Beamer overlay frame 2
- Beamer overlay frame 3

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\begin{frame}[fragile]
\frametitle{Simple Overlays Using {\tt pause}}
\setbeamercovered{dynamic}
\begin{itemize}
\item  Beamer overlay frame 1\\ \pause
\item  Beamer overlay frame 2\\ \pause
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\end{itemize}
```
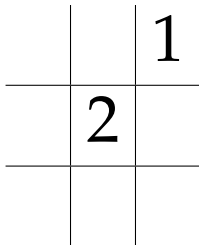
Advanced Overlays Using `onslide`

Advanced Overlays Using `onslide`

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Advanced Overlays Using `onslide`

$$\begin{array}{c|c|c} & & 1 \\ \hline 5 & 2 & 4 \\ \hline & & 3 \end{array}$$

Advanced Overlays Using `onslide`

Advanced Overlays Using `onslide`

Advanced Overlays Using `onslide`

$$
\begin{array}{c|c|c}
8 & 7 & 1 \\
\hline
5 & 2 & 4 \\
\hline
 & 6 & 3
\end{array}
$$

Advanced Overlays Using `onslide`

$$\begin{array}{|c|c|c|} \hline 8 & 7 & 1 \\ \hline 5 & 2 & 4 \\ \hline 9 & 6 & 3 \\ \hline \end{array}$$

Questions?