The Beamer Package

LATEX: A Professional Document Preparation System

Department of Mathematics and Computer Science, RMUTT

Introduction

Here is a working example of a beamer presentation.

```
\documentclass{beamer}
1
      \title{The Beamer Package}
3
      \author{John Doe}
      \institute{A Famous University}
      \date{25 December 2023}
      \begin{document}
9
      \begin{frame}
10
      \maketitle
11
      \end{frame}
12
13
      \begin{frame}
14
      \frametitle{Introduction}
15
      This is a slide. You can put some contents here.
16
      For example, (x^2 + g(y) = \inf f(x) \operatorname{mathrm}{d}x + y^3.)
17
      \end{frame}
18
19
      \end{document}
20
```

The title page

```
\title{The Beamer Package}
\subtitle{Creating good looking presentations in LaTeX}
\author{John Doe\inst{1} and Sam Willy\inst{2}}
\institute{
\inst{1}%
Faculty of Mathematics\\
A Famous University
\and
\inst{2}%
Faculty of Computer Science \\
Another Famous University
\date{25 December 2023}
\logo{\includegraphics[height=2cm]{figures/ctan_lion.png}}
```

The Beamer Package

Creating good looking presentations in LaTeX

John Doe¹ and Sam Willy²

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²Faculty of Computer Science Another Famous University

25 December 2023

e contents here. For example,

$$\int f(x)\mathrm{d}x + y^3.$$



4 m x 4 m x 4 2 x 4 2 x



4 D > 4 B > 4 B > 4 B > 3 9 9

Creating a table of contents

```
\begin{frame}
\frametitle{Table of Contents}
\tableofcontents
\end{frame}
\section{Introduction}
\begin{frame}
\frametitle{Introduction}
This is a slide. You can put some contents here.

→ + v^3. \]

\end{frame}
```

Table of Contents

Introduction

Recent Works

Main Results

Analysis & Discussions

Conclusion



Adding effects to items

```
\begin{frame}
\frametitle{Sample frame title}
This is a text in second frame.
For the sake of showing an example.
\begin{itemize}
 \item<1- > Text visible from slide 1.
 \item<2-3> Text visible from slide 2 to slide 3.
 \item<3> Text visible only on slide 3.
 \item<4- > Text visible from slide 4.
\end{itemize}
\end{frame}
```

This is a text in second frame. For the sake of showing an example.

► Text visible from slide 1.

This is a text in second frame. For the sake of showing an example.

- ► Text visible from slide 1.
- ► Text visible from slide 2 to slide 3.

This is a text in second frame. For the sake of showing an example.

- ► Text visible from slide 1.
- ► Text visible from slide 2 to slide 3.
- Text visible only on slide 3.

This is a text in second frame. For the sake of showing an example.

► Text visible from slide 1.

Text visible from slide 4.

Adding effects to a paragraph

```
\begin{frame}
\c \c <1- < %
Lorem ipsum dolor sit amet, consectetur adipiscing elit.
Curabitur non pellentesque leo. }
\onslide<2->{%}
[ x^2 + y^2 = z^2 ] 
\onslide<3>{%}
Phasellus porttitor malesuada augue,
sit amet congue neque pharetra ac.
Fusce maximus orci non viverra ultricies.
Morbi nec condimentum turpis.
Nullam eleifend varius mauris eget fringilla.}
\onslide<4>{%}
Integer finibus suscipit est et molestie.}
```

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur non pellentesque leo.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur non pellentesque leo.

$$x^2 + y^2 = z^2$$

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur non pellentesque leo.

$$x^2 + y^2 = z^2$$

Phasellus porttitor malesuada augue, sit amet congue neque pharetra ac. Fusce maximus orci non viverra ultricies. Morbi nec condimentum turpis. Nullam eleifend varius mauris eget fringilla.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur non pellentesque leo.

$$x^2 + y^2 = z^2$$

Integer finibus suscipit est et molestie.

Adding effects with pauses

\begin{frame}
Lorem ipsum dolor sit amet,
consec adipisc elit. Curabit pellentes leo. \pause

 $\ \[x^2 + y^2 = z^2 \] \$

Phasellus porttitor malesuada augue, sit amet congue neque pharetra ac. Fusce maximus orci non viverra ultricies. \pause Morbi nec condimentum turpis. Nullam eleifend varius mauris fringilla. \pause

Integer finibus suscipit est et molestie.
\end{frame}

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur non pellentesque leo.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur non pellentesque leo.

$$x^2 + y^2 = z^2$$

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur non pellentesque leo.

$$x^2 + y^2 = z^2$$

Phasellus porttitor malesuada augue, sit amet congue neque pharetra ac. Fusce maximus orci non viverra ultricies.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur non pellentesque leo.

$$x^2 + y^2 = z^2$$

Phasellus porttitor malesuada augue, sit amet congue neque pharetra ac. Fusce maximus orci non viverra ultricies. Morbi nec condimentum turpis. Nullam eleifend varius mauris eget fringilla.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur non pellentesque leo.

$$x^2 + y^2 = z^2$$

Phasellus porttitor malesuada augue, sit amet congue neque pharetra ac. Fusce maximus orci non viverra ultricies. Morbi nec condimentum turpis. Nullam eleifend varius mauris eget fringilla. Integer finibus suscipit est et molestie.

Columns

Sometimes the information in a presentation looks better in a two-column format. In such cases use the columns environment:

```
\begin{frame}
111
      \frametitle{Two-column slide}
112
      \begin{columns}
113
      \column{0.5\textwidth}
114
      This is a text in first column.
115
      $$E=mc^2$$
116
      \begin{itemize}
117
      \item First item
118
      \item Second item
119
120
      \end{itemize}
121
122
      \column{0.5\textwidth}
      This text will be in the second column
123
124
      and on a second thoughts, this is a nice looking
      layout in some cases.
125
126
      \end{columns}
      \end{frame}
127
```

This is a text in first column.

$$E = mc^2$$

- ► First item
- Second item

This text will be in the second column and on a second thoughts, this is a nice looking layout in some cases.

Highlighting important stuffs

A good practice is to highlight the important points to make it easier for audiences to identify the main topic.

```
\begin{frame}
\frametitle{Sample frame title}
In this slide, some important text will be
\alert{highlighted} because it's important.
Please, don't abuse it.
\begin{block}{Remark}
Sample text
\end{block}
\begin{alertblock}{Important box}
Sample text in red box
\end{alertblock}
\begin{examples}
Sample text in green box. The title of the block is ``Examples".
\end{examples}
\end{frame}
```

In this slide, some important text will be highlighted because it's important. Please, don't abuse it.

Remark

Sample text

Important box

Sample text in red box

Examples

Sample text in green box. The title of the block is "Examples".

Using Themes

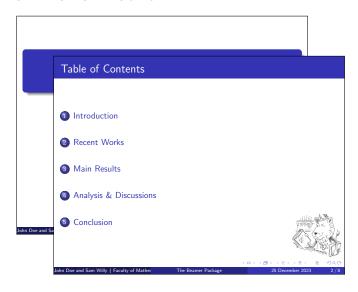
It's really easy to use a different theme in your slideshow. For example, the Madrid theme is set by adding the following command to the preamble:

```
\documentclass{beamer}
1
     \usetheme{Berkeley}
3
     \title{The Beamer Package}
4
     \subtitle{Creating good looking presentations in LaTeX}
     \author{John Doe\inst{1} and Sam Willy\inst{2}}
     \institute{
     \inst{1}%
     Faculty of Mathematics \\A Famous University
     \and
10
     \inst{2}%
11
     Faculty of Computer Science\\Another Famous University
12
13
     \date{25 December 2023}
14
     \logo{\includegraphics[height=2cm]{figures/ctan_lion.png}}
15
     \begin{document}
16
     \begin{frame}
17
     \maketitle
18
     \end{frame}
19
```

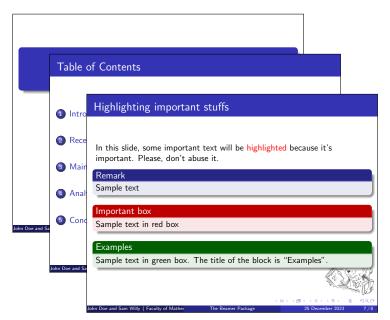
Beamer Theme: Madrid



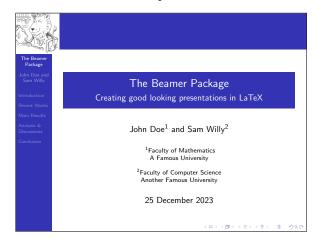
Beamer Theme: Madrid



Beamer Theme: Madrid



Beamer Theme: Berkeley



Beamer Theme: Berkeley



Beamer Theme: Berkeley



Beamer Theme: Copenhagen



Beamer Theme: Copenhagen



Beamer Theme: Copenhagen



Using a colortheme

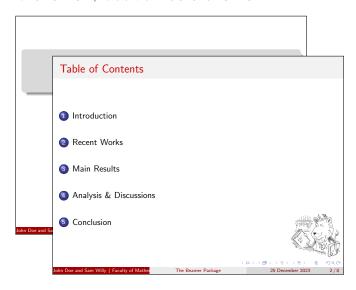
A theme can be combined with a colortheme to change the color used for different elements:

```
\documentclass{beamer}
 1
     \usetheme{Madrid}
     \usecolortheme{beaver}
3
4
     \title{The Beamer Package}
5
     \subtitle{Creating good looking presentations in LaTeX}
6
     \institute{
     \inst{1}%
9
     Faculty of Mathematics \\A Famous University
10
     \and
11
     \inst{2}%
12
     Faculty of Computer Science\\Another Famous University
13
14
     \date{25 December 2023}
15
     \logo{\includegraphics[height=2cm]{figures/ctan_lion.png}}
16
     \begin{document}
17
     \begin{frame}
18
     \maketitle
19
```

Madrid theme +beaver colortheme



Madrid theme +beaver colortheme



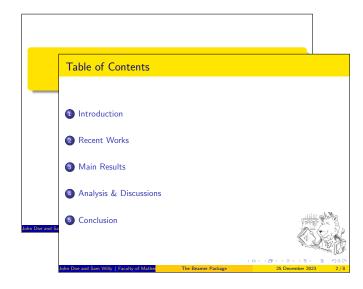
Madrid theme +beaver colortheme



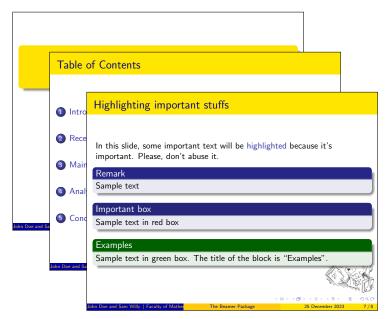
Madrid theme +wolverine colortheme



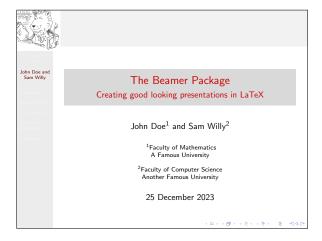
Madrid theme +wolverine colortheme



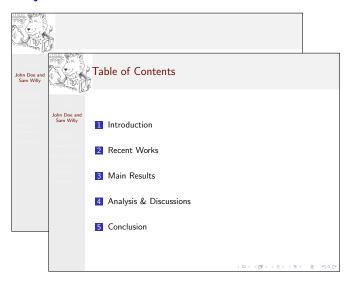
Madrid theme +wolverine colortheme



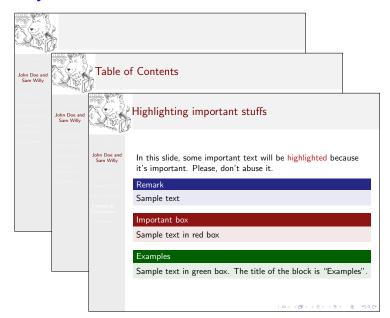
Berkeley theme +beaver colortheme



Berkeley theme +beaver colortheme



Berkeley theme +beaver colortheme



Themes and colorthemes

For a beamer presentation, we can use different combinations of themes and colorthemes. To have a complete list of them, see the following.

- The package documentation: https://ctan.org/pkg/beamer?lang=en.
- Piping's beamer theme matrix: https://hartwork.org/beamer-theme-matrix/.
- Petroff's beamer theme matrix: https://mpetroff.net/files/beamer-theme-matrix/