



LaTeX Beamer

Introduction to some features and
Examples based on Konqi Konqueror's slides

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- 1 Why Beamer
- 2 Structure, Components
- 3 Overlays
- 4 Trying Details
- 5 Konqi's Slides



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Why use it?

- because it is LaTeX ;)
- professional presentations
- great for mathematicians
- Well, some LaTeX knowledge is necessary.
- Well, obviously some LaTeX-BEAMER knowledge is necessary.
- Goal: Learn how to make structured slides and presentations.



Global structures

- Just like in normal LaTeX!

```
\titlepage
```

```
\tableofcontents
```

```
\section, \subsection ...
```

Titlepage

```
\title{Presentations with LaTeX-Beamer}
```

```
\subtitle{A beginners guide.}
```

```
\author{John Doe}
```

```
\institute{Research Institute For Symbolic Computation, JKU}
```

```
\titlegraphic{\includegraphics[width=2cm]{logo.png}}
```

```
\date{\today}
```



Table of contents

- It is always a good idea to present the agenda of the presentation at the beginning.
- Just like in LaTeX you can achieve this with the *tableofcontents* command:

```
\begin{frame}  
\tableofcontents  
\end{frame}
```



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Basic structure in LaTeX-Beamer

- `frame` → encloses the content of the frame (slide)
 - each frame contains one or more slides
 - if the frame contains commands that have an overlay specification, the frame will contain multiple slides, otherwise it will contain only one slide.
 - if it contains more slides, the slide is called overlay



Components Overview

Basics of the Beamer-style



The Frame consist of

- A headline and a footline
- A left and a right sidebar
- Navigation bars (by many themes)
- Navigation symbols
- A logo: it is a graphic, a picture
- A background: its a complex object
- Some frame content



Headline, footline, sidebars

Components of the Frame I.



Components of a Frame

- A headline and a footline
 - these are the areas at the top and bottom of the frame
 - the headline should give important information for orientation about the talk
 - headline contains: frame title, frame subtitle, navigation bar, etc.
- A left and a right sidebar
 - vertical areas from the lower end of the headline to the upper end of the footline
 - show information (contents) or for aesthetic reason



Navigation bars and Symbols

Components of the Frame II.



Components of a Frame

- Navigation bars (by many themes)
 - visual feedback of how much the talk already covered
 - items of the bar generated based on sections of the talk
 - clicking the items means a direct jump to the section
- Navigation symbols
 - are shown by default on all slide.
 - each icon has a function (direct jump, step, etc.)



Logo, Background, Content

Components of the Frame III.



Components of a Frame

- A logo: it is a graphic, a picture
 - its fix position is defined by the used theme
- A background: its a complex object
- Some frame content
 - this is the main information you want to show



Titles and Blocks

Components and structure of a single Frame



Components of the Frame

- `frametitle` → Top Headline (here: Basics of the Beamer-style)
- `framesubtitle` → Second Headline (here: Components of a frame)

Structuring the Frame

- `block` → encloses the content of a part of the frame
 - there can be more blocks in a frame
 - there are different types of blocks
 - you can use text outside of a block element, too
 - you can use the `itemize`, `enumerate`, etc items in the block



Block types

New commands in Beamer-style



There are lot of new commands for the Beamer presentation

- block types

- normal block

```
\begin{block} block content \end{block}
```

- alert block

```
\begin{alertblock} block content \end{alertblock}
```

- example block

```
\begin{example} block content \end{example}
```

- other solution

```
\alertblock{
block content
}
```



Misc Attributes

New commands in Beamer-style



Attributes for the Beamer presentation

- attributes used in items (for parts of item)

```
\item \highlighton { highlighted text} but
this is normal text
```

```
\item \alerton { alerted text is read by default} not
alerted text
```

- attributes used for the whole item

```
\highlighton { \item highlighted is the whole item}
\alerton { \item alerted is the whole item}
```

- more simple forms of alert

```
\alert{ text }
```



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Environments and Overlays

New in Beamer-style I.



New environments

- Using them as `\begin{environment}` and `\end{environment}`
- Environment types: definition, theorem, lemma, proof, example
 - all predefined by BEAMER

New structures: overlays

- Overlays
 - putting lines on the same slide one after the other
 - an overlay is a slide in a frame



How to define an Overlay



Overlay definition:

- *pause*: defines new overlay
- in pointed brackets: `<1->`
 - `\item <1->` `\item<2->` `\item<2-5>`
 - `<1->` means from slide 1 on, `<2-5>` means from slide 2 to 5
 - `-3,5-6,8-` means on all slides except for slides 4 and 7
- overlay definitions are used in a lot of objects:
 - `\begin{itemize}<1->`
 - `\begin{enumerate}`, `\begin{description}`, etc.
 - `\item<1>` , `\item<2-4>` , etc.
- `\only<2>` defines an overlay, too.



Overlay using with item

```
\begin{frame}
\frametitle{Overlay generated by items}
\begin{block}{Listing sentences}
\begin{itemize}
\item<1-> This is the first sentence in the frame.
\item<2-> This is the second sentence in the frame.
\item<3-> This is the third sentence in the frame.
\item<4-> Overlay ended
\end{itemize}
\end{block}
\end{frame}
```



Listing sentences

- This is the first sentence in the frame.
- This is the second sentence in the frame.
- This is the third sentence in the frame.
- Overlay ended



Listing sentences

- This is the first sentence in the frame.
- This is the second sentence in the frame.
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Listing sentences

- This is the first sentence in the frame.
- This is the second sentence in the frame.
- This is the third sentence in the frame.
- Overlay ended



Overlay using only structure



Overlay generated by only

```
\begin{frame}
\frametitle{Overlay generated by only}
\begin{block}{Overwriting sentences}<1-4>
  \only<1> {This is the first sentence in the frame.}
  \only<2> {This is the second sentence in the frame.}
  \only<3> {This is the third sentence in the frame.}
  \only<4> {Overlay ended}
\end{block}
\end{frame}
```




Overwriting sentences

This is the first sentence in the frame.



Overwriting sentences

This is the second sentence in the frame.



Overwriting sentences

This is the third sentence in the frame.



Overwriting sentences

Overlay ended



Overlay using only structure



Overlay generated by only

```
\begin{frame}
\frametitle{Overlay generated by only}
\begin{block}{Overwriting sentences}<1-4>
  \only<1-> {This is the first sentence in the frame.}
  \only<2-> {This is the second sentence in the frame.}
  \only<3-> {This is the third sentence in the frame.}
  \only<4-> {Overlay ended}
\end{block}
\end{frame}
```



Shifting sentences

This is the first sentence in the frame.



Shifting sentences

This is the first sentence in the frame.

This is the second sentence in the frame.



Shifting sentences

This is the first sentence in the frame.

This is the second sentence in the frame.

This is the third sentence in the frame.



Shifting sentences

This is the first sentence in the frame.

This is the second sentence in the frame.

This is the third sentence in the frame.

Overlay ended



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Objects of the slide Goals, part-I.

Learning Beamer-style



```

\begin{frame}
  \frametitle{Prerequisites \& Goals}
  \framesubtitle{Knowledge is a brick wall that you raise }
  \begin{block}{LaTeX}
    \begin{itemize}
      \item Obviously some basic LaTeX knowledge is necessary
      \item Some more features will be provided here
    \end{itemize}
  \end{block}

  \begin{block}{Beamer}
    \begin{itemize}
      \item You'll learn them by looking at this presentation
    \end{itemize}
  \end{block}

```



Objects of the slide Goals, part-II.

Learning Beamer-style



```
\begin{block}{Goal}
\begin{itemize}
  \item Learn how to make well structured slides
  \item Using a beautiful theme (congrats to the Oxygen t
  \item Take over the world
  \item Relax...
\end{itemize}
\end{block}
\end{frame}
```

Next slide shows the output of this source code!



Prerequisites & Goals

Knowledge is a brick wall that you raise line by line forever



LaTeX

- Obviously some basic LaTeX knowledge is necessary
- Some more features will be provided here

Beamer

- You'll learn them by looking at this presentation source

Goal

- Learn how to make well structured slides
- Using a beautiful theme (congrats to the Oxygen team!)
- Take over the world
- Relax...



Learning Beamer-style

Objects of the slide Types of Block



```

\begin{frame}
  \frametitle{Different type of blocks}
  \framesubtitle{Weeeee! Colors!!}
  \begin{block}{Standard block}
    \begin{itemize}
      \item A standard block, used for grouping. It can contain
    \end{itemize}
  \end{block}
  \begin{alertblock}{Alert block}
    WARNING: Something very important inside this block!
  \end{alertblock}
  \begin{example}
    Note that examples are displayed as a special block...
  \end{example}
\end{frame}

```



Different type of blocks

Weeeee! Colors!!



Standard block

- A standard block, used for grouping. Can contain itemizes too...

Alert block

WARNING: Something very important inside this block!

Example

Note that examples are displayed as a special block...



Learning Beamer-style

Objects of the slide Types of Block



```
\begin{frame}
  \frametitle{Highlighting}
  \framesubtitle{Hey! Look here! here!}

  \begin{block}{A regular block}
    \begin{itemize}
      \item Normal text
      \item \highlighton{Highlighted text} to draw attention
      \item \alert{"Alert'ed" text} to spot very important info
    \end{itemize}
  \end{block}
\end{frame}
```




Learning Beamer-style

Objects of the slide Types of Block



```

\begin{block}{A regular block again}
\begin{itemize}
  \item Alternatively you can
  \begin{itemize}
    \alert{\item "Alert" the item itself}
    \highlighton{\item Or "Highlight" it}
  \end{itemize}
\end{itemize}
\end{block}
\begin{alertblock}{If it's very very important...}
\alert{... you can "alert" in an "alertblock"}\
Ewww, nasty, heh?
\end{alertblock}
\end{frame}

```



Highlighting

Hey! Look here! here!



A regular block

- Normal text
- **Highlighted text** to draw attention
- **"Alert'ed" text** to spot very important information

A regular block again

- Alternatively you can
 - **"Alert" the item itself**
 - **Or "Highlight" it**

If it's very very important...

... you can **"alert" in an "alertblock"**

Ewww, nasty, heh?



Learning Beamer-style

Overlay effects



```
\begin{frame}
  \frametitle{Overlay effects}
  \framesubtitle{Keep the suspense!}
  \begin{block}{Time bomb}
  \begin{enumerate}
    \item<1-> Three more to go
    \item<2-> Two more to go
    \item<3-> One more to go
    \item<4-> Last chance...
    \item<5-> BOOM!
  \end{enumerate}
  \end{block}
\end{frame}
```



Overlay effects

Keep the suspense!



Time bomb

- 1 Three more to go
- 2 Two more to go
- 3 One more to go
- 4 Last chance...
- 5 BOOM!



Overlay effects

Keep the suspense!



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Overlay effects

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Learning Beamer-style

Animation



```

\begin{frame}
  \frametitle{Animation}
  \framesubtitle{What is this?}
  \begin{block}{"Animation"}<1->
    \begin{pgfpicture}{0cm}{0cm}{7cm}{2cm}
      \only<1-2>{ \putlink{2} }
      \only<3>{ \putlink{4} }
      \only<4>{ \putlink{6} }
      \only<5>{ \putlink{8} }
      \only<6>{ \putlink{10} }
    \end{pgfpicture}
  \end{block}
\end{frame}

```



Animation

What is this?



"Animation"



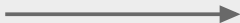


Animation

What is this?



"Animation"





Animation

What is this?



"Animation"





Animation

What is this?



"Animation"





Animation

What is this?



"Animation"





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LaTeX

- Obviously some basic LaTeX knowledge is necessary
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Beamer

- You'll learn them by looking at this presentation source

Goal

- Learn how to make well structured slides
- Using a beautiful theme (congrats to the Oxygen team!)
- Take over the world
- Relax...



Sections, Frames and Blocks

Put everything into boxes



The current section is "Basic structuring". And the current frame is what you have on the screen right now.

A beautiful block

A block has a title, and some content. You can put in a block almost everything you want that is provided by LaTeX. For example math works as usual:

$$\sum_{i=1}^n i = \frac{n \times (n + 1)}{2} \quad (1)$$

Also works outside a block:

$$\sum_{i=1}^n i^2 = \frac{n \times (n + 1) \times (2n + 1)}{6} \quad (2)$$



Different type of blocks

Weeeee! Colors!!



Standard block

- A standard block, used for grouping
- Obviously can contain itemizes too...
 - And nested itemizes...
 - of course!

Alert block

WARNING: Something very important inside this block!

Example

Note that examples are displayed as a special block...



Highlighting

Hey! Look here! here!



A regular block

- Normal text
- **Highlighted text** to draw attention
- **"Alert'ed" text** to spot very important information
- Alternatively you can
 - **"Alert"** the item itself
 - Or **"Highlight"** it

If it's very very important...

... you can **"alert"** in an **"alertblock"**

Ewww, nasty, heh?



Overlay effects

Keep the suspense!



Time bomb

- 1 Two more to go
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"Animation"





Overlay effects

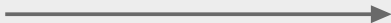
Keep the suspense!



Time bomb

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- 3 Last chance...
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"Animation"





Overlay effects

Keep the suspense!



Time bomb

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- 2 One more to go
- 3 Last chance...
- 4 BOOM!

"Animation"





Overlay effects

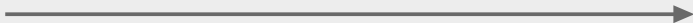
Keep the suspense!



Time bomb

- 1 Two more to go
- 2 One more to go
- 3 Last chance...
- 4 BOOM!

"Animation"





And now?
Enter the secret section



Contributing to this beamer style

We want you !



Why?

- Beamer is hot!
- This style deserves to be improved

How?

- Grab it
- Improve its LaTeX code
- Use your artistic skills
- Document it
- Help other people to use it
- Use it...



Resources

If you want to improve this style



LaTeX Beamer

<http://latex-beamer.sourceforge.net/>



KDE Presentations

<http://www.kde.org/kdeslides/>



Questions ?



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