LaTeX and Friends
Creating beamer Presentations

http://csweb.ucc.ie/~dongen/LAF/LAF.html

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Frames

`\begin{frame}[options] ⟨frame material⟩ \end{frame}`
Creates frame.

`\frametitle{⟨frame title⟩}`
Defines title of the frame.

`\framesubtitle{⟨frame subtitle⟩}`
Defines frame subtitle.

- `\begin{frame}` & `\end{frame}` *must* be in the first column.

Creating a Titlepage

LaTeX Input

```
\documentclass{beamer}

\title{{\LaTeX} and Friends}
\author{M.\,R.\,C.
        van Dongen}
\date{September 16, 2011}

\begin{document}
\begin{frame}[fragile]
  \maketitle
\end{frame}
\end{document}
```

Creating a Titlepage (Output)

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September 16, 2011

Creating Frame Titles

LaTeX Input

```
\begin{frame}[fragile]
  \frametitle{A Slide}
  \framesubtitle{An Example}

  \begin{itemize}
  \item Hello world.
  \item Bonjour monde.
  \end{itemize}
\end{frame}
```

Creating Frame Titles (Output)

A Slide

An Example

- Hello world.
- Bonjour monde.

Careful

- Using beamer may lead to nasty errors.
- Know thine manual.
- For example, environments may not work.

Don't Try This at Home

```
\newenvironment{myframe}[0]
                {\begin{frame}[fragile]}
                {\end{frame}}
```

Beamer Modes

`beamer`	Default mode. Frame results in one or several screens.
`second`	Mode for second output screen.
`handout`	Mode for handouts. Frame results in one slide.
`trans`	Mode for transparancies.
`article`	Typeset using other existing style.

The beamerarticle Package

LaTeX Usage

```
\documentclass{book}
\usepackage{beamerarticle}
\makeatletter
\def\frametitle{%
    \@ifnextchar<%
        {\@frametitle@lt}%
        {\@frametitle@lt<>}%
}
\def\@frametitle@lt<#1>#2{}
\makeatother
```

Auxiliary Modes

`all`	Guess?
`presentation`	All, except `article`.

Overlay Specifications

```
\begin{frame}<⟨overlay specs⟩>[⟨options⟩]
    ⟨frame material⟩
\end{frame}
```

- ⟨overlay specs⟩ determines mode.
- You may combine modes using the pipe symbol (|) as a separator.
  - beamer|handout.

Example (Input)

LaTeX Input

```
\documentclass[handout]{beamer}

\begin{document}
\begin{frame}<handout|beamer>[fragile]
  Handout or beamer mode.
\end{frame}
\begin{frame}<beamer>[fragile]
  Beamer mode.
\end{frame}
\end{document}
```

Example (Output)

Handout or beamer mode.

Explicit Mode Transitions

`\mode<⟨mode spec⟩>{⟨text⟩}`
: Inserts ⟨text⟩ if beamer is in ⟨mode spec⟩ mode.

`\mode<⟨mode spec⟩>`
: Leaves out text not corresponding to ⟨mode spec⟩.

`\mode*`
: Ignore text outside `frame` in `presentation` mode.

Incremental Presentations

`\pause`
: Insert a pause.

`\pause[⟨number⟩]`
: Display text following the command from Slide ⟨number⟩ and further.

Example (Input)

LaTeX Input

```
\begin{frame}[fragile]
\begin{itemize}
\item First. \pause
\item Second.
\item Third. \pause
\item Last.
\end{itemize}
\end{frame}
```

Example (Second Slide of Output)

- First.
- Second.
- Third.

Additional Commands

`\item<⟨overlay spec⟩>`
Display item on slides corresponding to ⟨overlay spec⟩.

Overlay specifications

⟨number⟩

⟨number⟩-

-⟨number⟩

⟨number$_1$⟩-⟨number$_2$⟩

⟨overlay spec$_1$⟩,⟨overlay spec$_2$⟩

Example (Input)

LaTeX Input

```
\begin{frame}[fragile]
\begin{itemize}
\item<1-2> First.
\item<3,4> Second.
\item<2> Third.
\item Last.
\end{itemize}
```

Example (Second Slide of Output)

- First.
- Third.
- Last.

Visual Alerts

```
\alert<⟨overlay spec⟩>{⟨text⟩}
\item<alert@⟨overlay spec⟩>
\item<⟨overlay spec_1⟩|alert@⟨overlay spec_2⟩>
```

Example

LaTeX Input

```
\begin{frame}[fragile]
\frametitle{Visual Alerts}
\begin{itemize}
\item<alert@2> First.
\item<alert@3> Second.
\item<alert@4> Third.
\end{itemize}
\end{frame}
```

Example (Third Slide of Output)

Visual Alerts

- First.
- Second.
- Third.

Outer Themes: default

There is No Largest Prime Number

The Proof Uses *Reductio ad Absurdum*

Proof.

1. Suppose the number of primes is finite.
2. Let p be the product of all primes.
3. Then $p + 1$ is not divisible by any prime.
4. Therefore, $p + 1$ is also a prime.

□

Outer Themes: Boadilla

Main Result

There is No Largest Prime Number

The Proof Uses *Reductio ad Absurdum*

Proof.

1. Suppose the number of primes is finite.
2. Let p be the product of all primes.
3. Then $p + 1$ is not divisible by any prime.
4. Therefore, $p + 1$ is also a prime. □

Outer Themes: Antibes

There is No Largest Prime Number

The Proof Uses *Reductio ad Absurdum*

Proof.

1. Suppose the number of primes is finite.
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4. Therefore, $p + 1$ is also a prime. □

Outer Themes: Goettingen

There is No Largest Prime Number

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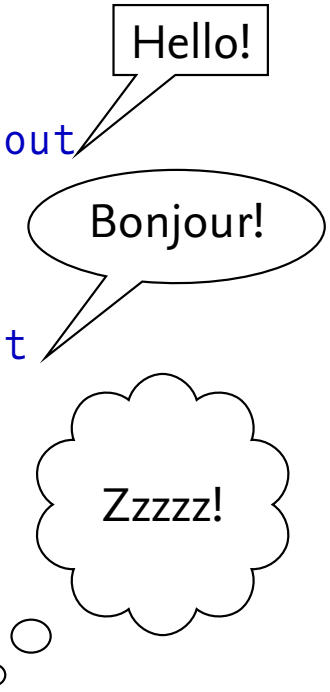
□

Callout Shapes

- The `tikz` package provides a “callouts” library:
  - `\usetikzlibrary{shapes.callouts}`.
- The shapes it defines are useful for presentations.
  - `rectangle callout`
  - `ellipse callout`
  - `cloud callout`



The Callout Pointer

- The *callout pointer* is a coordinate.
- The coordinate may be inside/outside the `tikzpicture`.
  - We shall only use coordinates inside the `tikzpicture`.
- There are two kinds of callout pointers:

  absolute An absolute coordinate in the `tikzpicture`.

  relative A coordinate, relative to the callout shape.

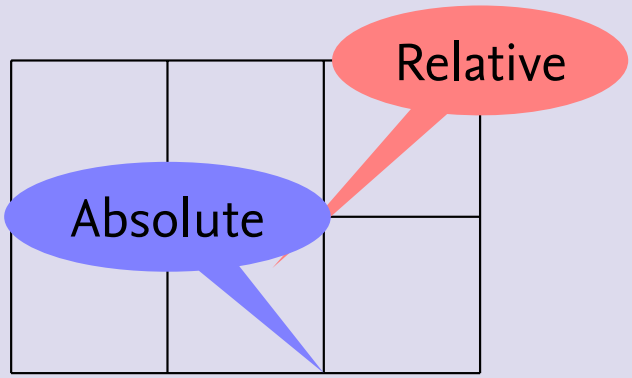
  1. First `tikz` computes the angle of the specified coordinate relative to the shape's center;
  2. Next it locates the point on the border to which this angle corresponds;
  3. Finally, it adds the relative coordinate to this point.

Example

LaTeX Input

```
\tikzset{note/.style=ellipse callout, fill={#1},
         abs/.style=callout absolute pointer={#1},
         rel/.style=callout relative pointer={#1}}
\begin{tikzpicture}
\draw[help lines] (0,0) grid (3,2);
\node[note=red!50,  rel={(-1,-1)}] at (3,2) {Relative};
\node[note=blue!50, abs={(2,0)}]   at (1,1) {Absolute};
\end{tikzpicture}
```

LaTeX Output



Bibliography

Acronyms and Abbreviations

AMS	American Mathematical Society
API	Application Programming Interface
APL	A Programming Language
CTAN	Comprehensive TEX Archive Network
CD	Compact Disk
FAQ	Frequently Asked Question
GUI	Graphical User Interface
IDE	Integrated Development Environment
ISBN	International Standard Book Number
OS	Operating System
SI	Système International d'Unités/International System of Units
TUG	TEX Users Group
URL	Uniform Resource Locator
WYSIWYG	What You See Is What You Get

About this Document

- This document was created with `pdflatex`.
- The LaTeX document class is `beamer`.