Advanced Beamer Techniques

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Outline

1. Transitions
   - Overview
   - Frames
   - Overlays
2. Multimedia
   - movie15
   - Using movie15
3. Drawing in Beamer
   - Intro to pgf
   - pgf Examples
4. Handouts

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Transitions
What are they?

Simply, an animation used to 'enhance' the movement from the current frame to the next.

Transitions
Slide vs Frame

First we need to define the difference between a slide and a frame. With beamer, frames are created with the `\begin{frame}` command. Slides are then created within that frame when using overlays. Transitions are used for frames, but can be applied to overlays if desired (but please don't).

Transitions
Example-Frames

Ready. Set. Go!

How much wood could a Woodchuck chuck if a Woodchuck could chuck wood?

Transitions

Example-Frame cont.

Answer:

42

Transitions
Example Syntax

Placed on the frame to be revealed by the transition.

Rather simple

```
\transboxin
\begin{block}{Answer:}
\hspace*{40pt} 42
\end{block}
```

Transitions
Available transitions

```
\transblindshorizontal  Horizontal blinds pulled away
\transblindsvertical    Vertical blinds pulled away
\transboxin             Move to center from all sides
\transboxout            Move to all sides from center
\transdissolve          Slowly dissolve what was shown before
\transglitter           Glitter sweeps in specified direction
\transslipverticalin    Sweeps two vertical lines in
\transslipverticalout   Sweeps two vertical lines out
\transhorizontalin      Sweeps two horizontal lines in
\transhorizontalout     Sweeps two horizontal lines out
\transwipe              Sweeps single line in specified direction
\transduration{2}       Show slide specified number of seconds
```

Transitions
Overlays

- It's an overlay!
- And another, oh ya!
- And a third! Wow, my lucky day!

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Overlays

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Transitions
Overlay Syntax

Syntax

```
\transboxin<1>
\transglitter<2>
\transwipe<3>
\begin{itemize}
\item  It's an overlay!\\ \pause
\item  And another, oh ya!\\ \pause
\item  And a third! Wow, my lucky day!\\
\end{itemize}
```

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Movie Files
movie15 package

movie15.sty should be included with the MiKTeX package.

```
\usepackage{movie15}
\usepackage{hyperref}
```

Movie Files

.mp4

(Loading...)

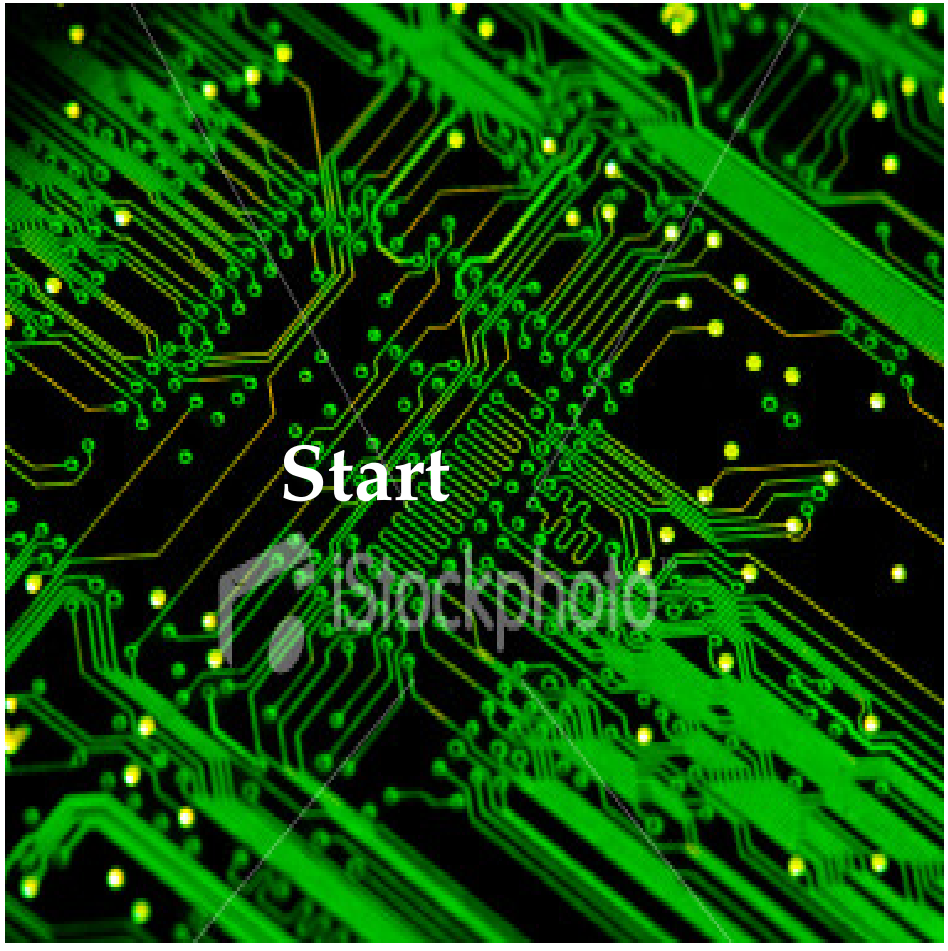
Movie Files

.mp4 syntax

Relatively simple

```
\begin{figure}[ht]
\includemovie[
  poster,
  text={\small(Loading...)}
]{6cm}{6cm}{Circle-m-increase3.mp4}
\end{figure}
```

Movie Files
Flash



Movie Files
Flash syntax

Basically the same.

```
\begin{figure}[h!]
\includemovie[
 poster=pcb.jpg,
 text={\Large\bf\color{white}{Start}\hspace*{40pt}}
]{6cm}{6cm}{blendone.swf}
\end{figure}
```

Files and TeX curtesy of http://www.uoregon.edu/ noeckel/PDFmovie.html

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pgf package
Overview

Used to create basic shapes within beamer.

Can be used to create tables, graphs, flowcharts and anything that you have the patience to create when you don't have an image to import.

pfg package is included with MiKTeX.

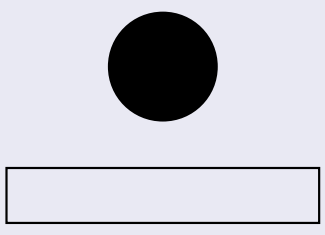
```
\usepackage{pgf,pgfarrows,pgfnodes}
```

Please see the following document for more info:

http://mixing.coas.oregonstate.edu/links/latex_files/pgfuserguide.pdf

pgf package
Example1

Result

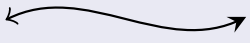


Syntax

```
\begin{pgfpicture}{0cm}{0cm}{5cm}{5cm}
% (0cm,0cm) is the lower left corner,
% (5cm,2cm) is the upper right corner.
\pgfrect[stroke]{\pgfpoint{0cm}{0cm}}{\pgfpoint{2cm}{10pt}}
% Paint a rectangle (stroke it, do not fill it)
% The lower left corner is at (0cm,0cm)
% The rectangle is 2cm wide and 10pt high.
\pgfcircle[fill]{\pgfpoint{3cm}{1cm}}{10pt}
% Paint a filled circle
% The center is at (3cm,1cm)
% The radius is 10pt
\end{pgfpicture}
```

pgf package
Example2

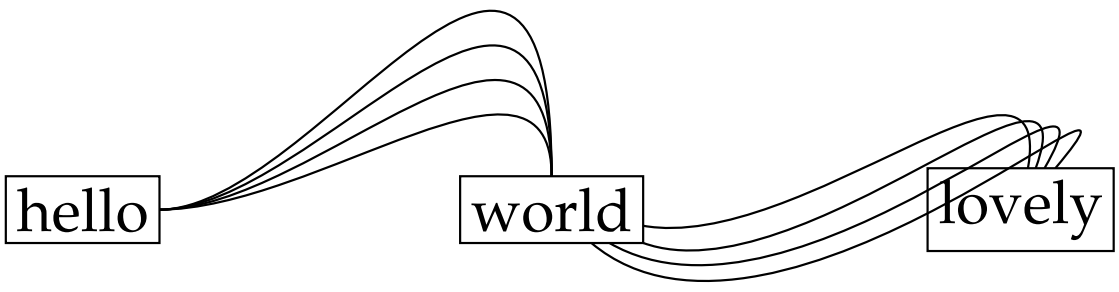
Result



Syntax

```
\begin{pgfpicture}{.2cm}{.2cm}{5cm}{5cm}
\pgfsetstartarrow{\pgfarrowto}
\pgfsetendarrow{\pgfarrowsingle}
\pgfxycurve(0,0.25)(0.5,0.5)(1,0)(1.5,0.25)
\end{pgfpicture}
```

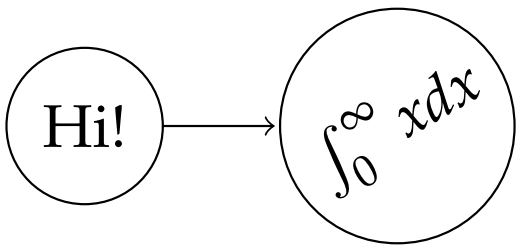
pgf package
Example3



pgf package
Example3-Syntax

```
\begin{pgfpicture}{0cm}{0cm}{5cm}{5cm}
\pgfnodebox{Node1}[stroke]{\pgfxy(1,0.5)}{hello}{2pt}{2pt}
\pgfnodebox{Node2}[stroke]{\pgfxy(4,.5)}{world}{2pt}{2pt}
\pgfnodebox{Node3}[stroke]{\pgfxy(7,.5)}{lovely}{2pt}{2pt}
\pgfnodeconncurve{Node1}{Node2}{0}{90}{1cm}{1cm}
\pgfnodeconncurve{Node1}{Node2}{0}{90}{1cm}{1.5cm}
\pgfnodeconncurve{Node1}{Node2}{0}{90}{1cm}{2cm}
\pgfnodeconncurve{Node1}{Node2}{0}{90}{1cm}{2.5cm}
\pgfnodeconncurve{Node2}{Node3}{-10}{80}{1cm}{1cm}
\pgfnodeconncurve{Node2}{Node3}{-20}{70}{1cm}{1cm}
\pgfnodeconncurve{Node2}{Node3}{-30}{60}{1cm}{1cm}
\pgfnodeconncurve{Node2}{Node3}{-40}{50}{1cm}{1cm}
\end{pgfpicture}
```

pgf package
Example4



pgf package
Example4-Syntax

```
\begin{pgfpicture}{0cm}{0cm}{5cm}{2cm}
\pgfputat{\pgfxy(1,1)}{\pgfbox[center,center]{Hi!}}
% pgfputat places something at a certain position
% pgfbox shows the text hi!. The horizontal alignment
% is centered (other options: left, right). The vertical
% alignment is also centered (other options: top, bottom,base)
\pgfcircle[stroke]{\pgfxy(1,1)}{0.5cm}
\pgfsetendarrow{\pgfarrowto}
% In the following, all lines will end with an arrow that
% looks like the arrow of TeXs \to command
\pgfline{\pgfxy(1.5,1)}{\pgfxy(2.2,1)}
\pgfputat{\pgfxy(3,1)}{
\begin{pgfrotateby}{\pgfdegree{30}}
% You can rotate things like this
\pgfbox[center,center]{$\int_0^\infty xdx$}
\end{pgfrotateby}}
\pgfcircle[stroke]{\pgfxy(3,1)}{0.75cm}
\end{pgfpicture}
```

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Handouts
Printable Handouts

Slides + Notes field

For those times when you actually want to take notes...

```
\usepackage{handoutWithNotes}
\pgfpagesuselayout{3 on 1 with notes}[a4paper,border shrink=5mm]
Or
\pgfpagesuselayout{1 on 1 with notes landscape}[a4paper,border shrink=5mm]
```

Several options, see http://www.guidodiepen.nl/2009/07/creating-latex-beamer-handouts-with-notes/

Handouts
Results