Colour slides with \LaTeX and seminar.sty

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1 Slides and \LaTeX

Many \LaTeX users want to take advantage of \TeX’s high-quality typesetting when they produce overhead slides for a presentation. This facility was originally provided by a separate package, SL\TeX, but that had a number of disadvantages:

- it was limited to a set of specially-scaled Computer Modern fonts and it was not easy to adapt to other fonts;
- the user was required to have two separate files, one for control information and the other for the actual slides;
- the control of colour and overlays was limited and crude;
- There was only one ‘style’ for slides, and writing a different layout (to, say, put a logo on each slide) was not documented.

\LaTeX users now have a variety of fonts, and vast numbers of styles, to choose from, but SL\TeX has lagged behind. When \LaTeXX was released at the end of 1993, this included a simple \LaTeX package (already available in the New Font Selection Scheme, version 2) to emulate SL\TeX without the overhead of a separate macro package. However, there is a much better \LaTeX package which has been available for some time now—\texttt{seminar.sty}; if used in conjunction with a \texttt{POSTSCRIPT} printer, and a set of useful macros called \texttt{PStricks},\footnote{The \texttt{seminar} package and \texttt{PStricks} are the work of Timothy van Zandt (tvz@princeton.edu).} this offers almost every imaginable facility, including:

- Fancy frames, headers and footers;
- Landscape and portrait slides in the same document;
- Coloured text and tables;
- Interleaving of annotations and slides;
- Slide ‘chapters’ and list of slides;
- Overlays.

\texttt{seminar} is a normal \LaTeX package which can be used with almost all other \LaTeX packages (such as those to change font, include graphics etc). Its main job is to produce transparencies, but it can also make accompanying notes from the same file. It is compatible with \texttt{AMS-\LaTeX} and \texttt{\LaTeXX}.

2 Using the seminar style

Usage is simple; begin your document in the normal way\footnote{We are assuming \texttt{\LaTeXX} here, just to remind you to upgrade.} with
\begin{verbatim}
\documentclass{seminar}
\end{verbatim}

or
\begin{verbatim}
\documentstyle[... options ...]{seminar}
\end{verbatim}

The slide environments are
\begin{verbatim}
\begin{slide}
\end{slide}
\begin{slide*}
\end{slide*}
\end{verbatim}

Where \texttt{slide} is for landscape slides and \texttt{slide*} is for portrait slides. By default, the document is typeset in landscape mode, but if you include the \texttt{portrait} style option, the document is typeset in portrait mode. Typesetting the document in landscape mode is different from printing it in landscape mode; you have to worry about the orientation of the page when printing, but with dvips this is simple, and taken care of in the local control file described below.

So the default output\footnote{We have added a style option output ‘\texttt{times}’ so that the output will reduce properly to thumbnails for this article.} from this input:
\begin{verbatim}
\documentclass{seminar}
\usepackage{times}
\begin{document}
\begin{slide}
My talk is about:
\begin{description}
\item[Cats] Nice furry creatures which should have a place in every good home;
\item[Dogs] Nasty barking things which bite you;
\end{description}
\end{slide}
\end{document}
\end{verbatim}

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\item SnakesThey come slithering through the grass and have no feet; this is most disturbing;
\item Rhinoceroses
\textbf{Never} be rude to a rhino; they are bigger than you, and meaner.
\end{description}
\end{slide}
\end{document}

will look like:

Most slides will be no more complicated than this, using standard \LaTeX\ environments like \itemize, \enumerate and \tabular.

3 Frame styles

A variety of slide framing styles are available, set with the \framestyle command; the following are some of the predefined ones (some assume you have a POSTSCRIPT printer), using the \slideframe command:

<table>
<thead>
<tr>
<th>Frame Style</th>
<th>Sample</th>
</tr>
</thead>
</table>
| none        | On the fifth day of Christmas, my true love gave to me:  
1. Five overfull hboxes  
2. Four fontdimens missing  
3. Three nested groupds  
4. Two undefined commands  
5. … and a token in \TeX\’s stomach |
| double      | On the fifth day of Christmas, my true love gave to me:  
1. Five overfull hboxes  
2. Four fontdimens missing  
3. Three nested groupds  
4. Two undefined commands  
5. … and a token in \TeX\’s stomach |
| oval        | On the fifth day of Christmas, my true love gave to me:  
1. Five overfull hboxes  
2. Four fontdimens missing  
3. Three nested groupds  
4. Two undefined commands  
5. … and a token in \TeX\’s stomach |
| shadow      | On the fifth day of Christmas, my true love gave to me:  
1. Five overfull hboxes  
2. Four fontdimens missing  
3. Three nested groupds  
4. Two undefined commands  
5. … and a token in \TeX\’s stomach |
| empty       | On the fifth day of Christmas, my true love gave to me:  
1. Five overfull hboxes  
2. Four fontdimens missing  
3. Three nested groupds  
4. Two undefined commands  
5. … and a token in \TeX\’s stomach |
| plain       | On the fifth day of Christmas, my true love gave to me:  
1. Five overfull hboxes  
2. Four fontdimens missing  
3. Three nested groupds  
4. Two undefined commands  
5. … and a token in \TeX\’s stomach |
| align       | On the fifth day of Christmas, my true love gave to me:  
1. Five overfull hboxes  
2. Four fontdimens missing  
3. Three nested groupds  
4. Two undefined commands  
5. … and a token in \TeX\’s stomach |

Similarly, a variety of page styles (the headers and footers) are available with the \pagesyle command, such as:

<table>
<thead>
<tr>
<th>Page Style</th>
<th>Sample</th>
</tr>
</thead>
</table>
| empty      | On the fifth day of Christmas, my true love gave to me:  
1. Five overfull hboxes  
2. Four fontdimens missing  
3. Three nested groupds  
4. Two undefined commands  
5. … and a token in \TeX\’s stomach |
| plain      | On the fifth day of Christmas, my true love gave to me:  
1. Five overfull hboxes  
2. Four fontdimens missing  
3. Three nested groupds  
4. Two undefined commands  
5. … and a token in \TeX\’s stomach |

Both slide frames and page styles can be customized; for instance, the examples in this paper (eg Figure 1) are suitable for use at the European Particle Physics Laboratory (CERN).
4 Interleaving notes, and selecting subsets

It is easy to intersperse your slides with notes to yourself; these can be simply placed between the \slide environments or enclosed in a specific note environment. You can use any \LaTeX commands in these notes, and include your whole article here if desired. When you want to print the slides, a variety of style options can be used:

- \texttt{slidesonly} Only the slides are printed;
- \texttt{notesonly} Only the slides are printed;
- \texttt{notes} The slides are interleaved with the notes;
- \texttt{article} The document notes are typeset like a normal \LaTeX paper, and the slides are placed as figures (reduced to half size).

The \texttt{/n5cslideplacement} command can be used to affect how slides are placed in the \texttt{article} format; the possible parameters are:

- \texttt{float} (default) Slides are floated
- \texttt{float*} Slides are floated, but if two column format is chosen they will span both columns
- \texttt{here} Slides are placed where they occur in the notes

Further detailed control of the interaction between slides and notes is given in the User's Manual.

Selected slides can be included or excluded with the \texttt{onlyslides} or \texttt{noteslides} commands which a parameter of a comma-separated list of slides; this can be numbers, ranges (e.g., 5–10) or \LaTeX \texttt{ref} commands referring to \texttt{label} commands in the slides.

5 Control over slide size, fonts and magnification

There are a great number of parameters by which the user can change any of the following either on a slide-by-slide basis, or for the whole document:

- Slide height and width;
- Top, bottom, left and right margins;
- Text justification (it is ragged right by default);
- Page breaking by varying tolerance of over-running material;
- Inter-line spacing;
- Point size, and choice of fonts.

How to change the default settings is explained in detail in the User's Guide.

Because \texttt{seminar} works by magnifying pages, sophisticated users should read the manual to see how to deal with setting and changing \TeX dimensions. Most users need not worry about this—in commands like \texttt{epsfig} you should always express your ‘width’ and ‘height’ requests in fractions of the line size anyway.

6 Fonts

As the size of the text on your slides is larger than that for normal text (articles, manuals, etc.), often you will find that some fonts (especially for mathematics) are not available at the size needed. If you use \texttt{dvips}, it tries to generate these fonts but does not always find the necessary Metafont input files to successfully complete the generation of the new font bitmaps. It makes sense, therefore, to use scaleable \texttt{POSTSCRIPT} fonts; the complete Computer Modern family is available in \texttt{POSTSCRIPT} Type1 format, either in the commercial set from Blue Sky or Y&Y, or in (slightly less polished) public domain Paradissa set by Basil Malyshev.
For slide headings, there is a predefined \slideheading command; we will amend this so that it is typeset with a 'shadow'. A \slidechapter command is also defined:

```latex
\newcount\inchap
\def\inchap#1\{% 
  \slide{undotted}{#1}\}
\def\slidechapter#1\{% 
  \begin{slide} 
  \immediate\addtocontents{los}{% 
  \protect\slide{chapter}{#1}\% 
  \protect\ BFSeries \% 
  \protect\large \% 
  \edef\thechapterheading{#1}\% 
  \end{slide} 
  \inchap
}\}
```

This allows the user to break the slides into groups; the slide chapter title will be given in the bottom right corner with this CERN style.

```latex
\def@empty{} \def\makeslideheading[1]{\% \edef\slideheading{#1}\% \def\empta{#1}\% \if\empta\empty\else 
  \begin{Bcenter} \large\textbf{#1}\% 
  \end{Bcenter} \end{Bbox} \centerline{\shadowbox{\TheSbox}} \vspace{1ex minus 1ex} \fi }
```

Now the CERN page and frame styles; the plain 'cern' style just places registration '+' marks, and the date:

```latex
\newpagestyle{cern} \% \color{Black}\small \textbf{\today}\% 
\hspace{\textbf{\today}}\% 
\hspace{\textbf{\today}}\% 
```

Whereas the 'cernsections' style has section headings and a logo:

```latex
\newpagestyle{cernsections} \% \color{Black}\small \raisebox{1cm}[0cm][0cm]{% \epsfig{figure=cernlogo.eps,\% \height=8cm}\% 
\hspace{\textbf{\theslideheading}}\% 
\hspace{\textbf{\thechapterheading}}\% 
\color{Black}\today \% 
\hspace{\textbf{\thechapterheading}}\% 
\}
```

For the slide frames, we define a frame with the word 'CERN' set in a coloured box on the lower left; this is done using the PSTricks macros (which are automatically included by the 'semcolor' option above). The colour commands are also defined using PSTricks (the code is not listed here); the names are used in the 'figure' colour.

```latex
\newslideframe{cern}{\% \SlideFront \bbox{(0,-.5,1)}\% \psframebox{linecolor=black,\% fillcolor=ForestGreen,\% fillstyle=solid}\% 
\hbox{} \% 
\color{Black}\CERN\% 
\color{Black}\%}
```

Finally we make sure that each slide starts with the current foreground colour.

```latex
\def\everyslide{\SlideFront} \def\theslideheading{\%}
```

The user sets up slides with the command \SlideColours, with two parameters, which are colour names for foreground and background. A synonym is defined for black on white. We have to be a bit careful defining the frame border, because by default it is coloured using the POST-SCRIPT `setgray' operator, and that might not work with colour separation, so we define an explicit blue frame (for variety).
Many \LaTeX\ users want to take advantage of \TeX\'s high-quality typesetting when they produce overhead slides for a presentation. This facility was originally provided by a separate package, SL\TeX, but that had a number of disadvantages:

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There is a much better \LaTeX\ style file available now – seminar.sty; if used in conjunction with a PostScript printer, and a set of useful macros called PStricks, this offers almost every imaginable facility, including:

- Fancy frames, headers and footers
- Coloured text and tables
- Interleaving of annotations and slides
- Slide ‘chapters’ and list of slides

The slide defaults will be for a detailed layout and CERN logo, with yellow writing on a blue background:

\begin{verbatim}
\documentstyle{seminar}
\pagestyle{cernsections}
\slideframe{cern}
\edef\Framedefault{cern}
\SlideColours{Yellow}{RoyalBlue}
\end{verbatim}

The result of this setup is show in Figure 1; Figure 2 shows how we might combine colour and seminar’s overlay commands to highlight the relationship between parts of a program schema.

If you do not like the CERN layout we describe above (or whatever your local system has provided), you can ‘roll your own’ to various degrees of sophistication. In the simplest case you can just write a ®le in your local directory:

\begin{verbatim}
A do nothing file seminar.con
\end{verbatim}

Of course it might be more sensible to build on our work by rede®ning the commands so that they do what you want. For instance, if you had the seminar.con described above, and wanted to change the default set-up to black on white and use a plain pagestyle and frame, you could add some code in front of the command \begin{verbatim}
\documentstyle{seminar}
\pagestyle{plain}
\slideframe{plain}
\edef\Framedefault{plain}
\edef\SlideFront{}% \edef\SlideFront{Black}
\end{verbatim}

...
If you still would like colour backgrounds for your slides by keeping the ‘SlideColours’ interface, but with a plain border and no CERN logos etc., you can use the following set-up:

\documentstyle{seminar}
\pagestyle{plain}
\renewcommand{\SlideColours}[2]{\%}
\renewcommand{\SlideFront}{\color{#1}}\%
\slideframe\%
\psset{fillcolor=#2,fillstyle=solid}\%

\begin{document}
\begin{slide}
\begin{slide}
\end{slide}
\end{slide}
\end{document}

The complete syntax of the many other commands which you have at your disposal is described in the seminar user guide; you will probably also want to read the PStricks manual!

Figure 2: Slide overlays