

Beamer 源码分析

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1 beamer.cls

```
% Copyright 2003--2007 by Till Tantau
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%
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\RequirePackage{beamerbasercs}
\ProvidesClassRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamer.cls,v 8a ?
? 39122e1f63 2015/01/05 22:01:48 joseph $
[\beamer@version\space A class for typesetting presentations]

\RequirePackage{beamerbasemodes}
% Setup modes and check for article option

\beamer@transferifnecessary

\RequirePackage{ifpdf}

%
%
% Declarations used by beamer
%
%

% Public
\newdimen\headheight % Total height of the headline (including depth)
\newdimen\headdp % Depth of the headline
\newdimen\footheight % Height of the footline
\newdimen\sidebarheight % Height of the sidebars

% Private
\newdimen\beamer@tempdim
\newdimen\beamer@finalheight
\newdimen\beamer@animht
\newdimen\beamer@animdp
\newdimen\beamer@animwd
```

```

\newdimen\beamer@leftmargin
\newdimen\beamer@rightmargin
\newdimen\beamer@leftsidebar
\newdimen\beamer@rightsidebar
\newdimen\beamer@boxsize
\newdimen\beamer@vboxoffset
\newdimen\beamer@descdefault
\newdimen\beamer@descriptionwidth

\newskip\beamer@lastskip

\newbox\beamer@areabox
\newbox\beamer@animcurrent
\newbox\beamer@animshowbox
\newbox\beamer@sectionbox
\newbox\beamer@logobox
\newbox\beamer@linebox

\newcount\beamer@sectioncount
\newcount\beamer@subsubsectionmax
\newcount\beamer@subsectionmax
\newcount\beamer@sectionmax
\newcount\beamer@totalheads
\newcount\beamer@headcounter
\newcount\beamer@partstartpage
\newcount\beamer@sectionstartpage
\newcount\beamer@subsectionstartpage
\newcount\beamer@animationtempa
\newcount\beamer@animationtempb
\newcount\beamer@xpos
\newcount\beamer@ypos
\newcount\beamer@showpartnumber
\newcount\beamer@currentsubsection
\newcount\beamer@coveringdepth
\newcount\beamer@sectionadjust
\newcount\beamer@tocsectionnumber

\newif\ifbeamer@sansmath
\newif\ifbeamer@altmode
\newif\ifbeamer@notes
\newif\ifbeamer@notesnormals
\newif\ifbeamer@compress
\newif\ifbeamer@centered
\newif\ifbeamer@draftmode
\newif\ifbeamer@suppressreplacements % decides whether fonts should be substituted
\newif\ifbeamer@frameswithnotesonly
\newif\ifbeamer@ignorenonframe
\newif\ifbeamer@autopdfinfo

\RequirePackage{beamerbaseoptions}
% For option management

```

```

%
%
```

```

% Document options
%
%

\beamer@suppressreplacementsfalse
\beamer@altmodefalse
\beamer@notesfalse
\beamer@notesnormalstrue
\beamer@compressfalse
\beamer@draftmodefalse
\beamer@frameswithnotesonlyfalse
\beamer@ignorenonframefalse
\beamer@autopdfinfotrue

\DeclareOptionBeamer{usepdftitle}[true]{\csname beamer@autopdfinfo#1\endcsname}
\DeclareOptionBeamer{envcountsect}{\beamer@countsecttrue}
\DeclareOptionBeamer{notheorems}{\beamer@blockfalse}
\DeclareOptionBeamer{noamsthm}{\beamer@blockfalse\beamer@amsfalse}

\DeclareOptionBeamer{compress}{\beamer@compresstrue}

\DeclareOptionBeamer{t}{\beamer@centeredfalse}
\DeclareOptionBeamer{c}{\beamer@centeredtrue}

\DeclareOptionBeamer{leqno}{\input{leqno.clo}}
\DeclareOptionBeamer{fleqn}{\input{fleqn.clo}}

\def\beamer@currentmode{beamer}
\DeclareOptionBeamer{handout}{\gdef\beamer@currentmode{handout}}
\DeclareOptionBeamer{trans}{\gdef\beamer@currentmode{trans}}

\DeclareOptionBeamer{pdftex}{}% Used by hyperref
\DeclareOptionBeamer{nativepdf}{}% Used by hyperref
\DeclareOptionBeamer{pdfmark}{}% Used by hyperref
\DeclareOptionBeamer{dvips}{}% Used by hyperref
\DeclareOptionBeamer{dviwindo}{}% Used by hyperref
\DeclareOptionBeamer{dvipsone}{}% Used by hyperref
\DeclareOptionBeamer{vtex}{}% Used by hyperref
\DeclareOptionBeamer{ps2pdf}{}% Used by hyperref

\DeclareOptionBeamer{ignorenonframetext}{\beamer@ignorenonframetrue}

\DeclareOptionBeamer{noamssymb}{\beamer@amssymbfalse}

\def\beamer@size{{size11.clo}}
\DeclareOptionBeamer{bigger}{\def\beamer@size{{size12.clo}}}
\DeclareOptionBeamer{smaller}{\def\beamer@size{{size10.clo}}}

\DeclareOptionBeamer{8pt}{\def\beamer@size{{size8.clo}}}
\DeclareOptionBeamer{9pt}{\def\beamer@size{{size9.clo}}}
\DeclareOptionBeamer{10pt}{\def\beamer@size{{size10.clo}}}
\DeclareOptionBeamer{11pt}{\def\beamer@size{{size11.clo}}}
\DeclareOptionBeamer{12pt}{\def\beamer@size{{size12.clo}}}
\DeclareOptionBeamer{14pt}{\def\beamer@size{{size14.clo}}}
\DeclareOptionBeamer{17pt}{\def\beamer@size{{size17.clo}}}
\DeclareOptionBeamer{20pt}{\def\beamer@size{{size20.clo}}}

```

```

\DeclareOptionBeamer{draft}{\beamer@draftmodetrue}
\pagenumbering{arabic}
\def\insertpagenumber{\thepage}

\def\beamer@activecjk{}
\def\beamer@hypercjk{}

\DeclareOptionBeamer{CJK}{\ExecuteOptionsBeamer{cjk}}
\DeclareOptionBeamer{cjk}{
  \def\beamer@hypercjk{\hypersetup{CJKbookmarks=true}}

  \def\beamer@activecjk{
    % Activate all >=128 characters.
    \count@=127
    \@whilenum\count@<254 \do{%
      \advance\count@ by 1
      \lccode`~=\count@
      \catcode\count@=\active
      \lowercase{\def~{\kern1ex}}}
    }
  }
}

% obsolete options
\DeclareOptionBeamer{notes}[show]{\csname beamer@notesaction@#1\endcsname}
\def\beamer@notesaction@hide{%
  \ClassWarning{beamer}{This option is obsolete. Use beamer option
    ``hide notes'' instead.}%
  \beamer@notesfalse}
\def\beamer@notesaction@show{%
  \ClassWarning{beamer}{This option is obsolete. Use beamer option
    ``show notes'' instead.}%
  \beamer@notestruetrue}
\def\beamer@notesaction@only{%
  \ClassWarning{beamer}{This option is obsolete. Use beamer option
    ``show only notes'' instead.}%
  \beamer@notestruetrue
  \beamer@notesnormalfalse
  \nofiles
}
\def\beamer@notesaction@onlyslideswithnotes{%
  \beamer@notestruetrue%
  \beamer@frameswithnotesonlytrue%
  \nofiles
}
\DeclareOptionBeamer{inrow}{
  \ClassError{beamer}{``inrow'' no longer supported. Use ``compress'' instead.}{}
}
\DeclareOptionBeamer{compressnotes}{%
  \ClassWarning{beamer}{``compressnotes'' is obsolete. Use
    \noexpand\setbeamertemplate{note page}[compressed] instead}
  \AtBeginDocument{\beamer@templatetotestcompress}}
\DeclareOptionBeamer{notesonly}{
  \ClassWarning{beamer}{``notesonly'' is obsolete. Use beamer option
    ``show only notes'' instead.}
}

```

```

\beamer@notesaction@only}
\DeclareOptionBeamer{blue}{
  \ClassWarning{beamer}{``blue'' is obsolete. Use color theme structure instead}
  \def\beamer@loadlater{\usecolortheme[rgb={0.2,0.2,0.7}]{structure}}
\DeclareOptionBeamer{red}{
  \ClassWarning{beamer}{``red'' is obsolete. Use color theme structure instead}
  \def\beamer@loadlater{\usecolortheme[rgb={0.7,0.2,0.2}]{structure}}
\DeclareOptionBeamer{blackandwhite}{
  \ClassWarning{beamer}{``blackandwhite'' is obsolete. Use color theme structure instead ?
  ? }
  \def\beamer@loadlater{\usecolortheme[rgb={0.2,0.2,0.2}]{structure}}
\DeclareOptionBeamer{brown}{
  \ClassWarning{beamer}{``brown'' is obsolete. Use color theme structure instead}
  \def\beamer@loadlater{\usecolortheme[rgb={0.66,0.4,0.166}]{structure}}
\DeclareOptionBeamer{slidescentered}{
  \ClassWarning{beamer}{``slidescentered'' is obsolete. Use ``c'' instead}
  \beamer@centeredtrue}
\DeclareOptionBeamer{slidestop}{
  \ClassWarning{beamer}{``slidestop'' is obsolete. Use ``t'' instead}
  \beamer@centeredfalse}
\DeclareOptionBeamer{sans}{%
  \ClassWarning{beamer}{``sans'' is obsolete. Just remove this option}
  \def\familydefault{\sfdefault}
  \def\mathfamilydefault{\sfdefault}
  \beamer@sansmathtrue
}
\DeclareOptionBeamer{serif}{%
  \ClassWarning{beamer}{``serif'' is obsolete. Use font theme ``serif'' instead}
  \def\familydefault{\rmdefault}
  \def\mathfamilydefault{\rmdefault}
  \beamer@sansmathfalse
}
\DeclareOptionBeamer{mathsans}{
  \ClassWarning{beamer}{``mathsans'' is obsolete. Use font theme ``serif'' with option ?
  ? ``stillsansserifmath''}
  \def\mathfamilydefault{\sfdefault}\beamer@sansmathtrue}
\DeclareOptionBeamer{mathserif}{
  \ClassWarning{beamer}{``mathserif'' is obsolete. Use font theme ``serif'' with option ?
  ? ``onlymath''}
  \def\mathfamilydefault{\rmdefault}\beamer@sansmathfalse}
\DeclareOptionBeamer{professionalfont}{
  \ClassWarning{beamer}{``professionalfont'' is obsolete. Use font theme `` ?
  ? professionalfonts'' instead}
  \beamer@suppressreplacementstrue}

% has to be done here for compatibility
\def\familydefault{\sfdefault}
\def\mathfamilydefault{\sfdefault}
\beamer@sansmathtrue

\PassOptionsToPackage{bookmarks=true,%
  bookmarksopen=true,%
  pdfborder={0 0 0},%
  pdfhighlight={/N},%
  linkbordercolor={.5 .5 .5}}{hyperref}

```

```

\DeclareOptionBeamer{pgf}{\PassOptionsToPackage{#1}{pgf}}
\DeclareOptionBeamer{hyperref}{\PassOptionsToPackage{#1}{hyperref}}
\DeclareOptionBeamer{color}{\PassOptionsToPackage{#1}{color}}
\DeclareOptionBeamer{xcolor}{\PassOptionsToPackage{#1}{xcolor}}

\def\beamer@loaducs{}

\DeclareOptionBeamer{ucs}{%
  \ifpdf
    \PassOptionsToPackage{pdftex,unicode}{hyperref}
    \def\beamer@loaducs{
      \RequirePackage[hyperref]{ucs}%
      \AtBeginDocument{\PreloadUnicodePage{0}}%
      \AtBeginDocument{\PreloadUnicodePage{1}}%
    }
  \else
    \def\beamer@loaducs{
      \RequirePackage{ucs}%
      \AtBeginDocument{\PreloadUnicodePage{0}}%
      \AtBeginDocument{\PreloadUnicodePage{1}}%
    }
  \fi
}

\DeclareOptionBeamer{utf8x}{\ExecuteOptionsBeamer{ucs}%
  \g@addto@macro\beamer@loaducs{\RequirePackage[utf8x]{inputenc}}%
}

\DeclareOptionBeamer{utf8}{
  \ClassWarning{beamer}{This option works no longer loads ucs.}
  \RequirePackage[utf8]{inputenc}
  \PassOptionsToPackage{unicode}{hyperref}
}

%
% Geometry: allows 16:10, 16:9, 14:9, 5:4 and 4:3 (default 4:3).
% Default value is set right after declaring width and height
% because it doesn't work otherwise.
%
\newlength\beamer@paperwidth%
\beamer@paperwidth 12.80cm%
\newlength\beamer@paperheight%
\beamer@paperheight 9.60cm%

\DeclareOptionBeamer{aspectratio}[43]{%
  \ifnum#1=1610%
    \beamer@paperwidth 16.00cm%
    \beamer@paperheight 10.00cm%
  \else\ifnum#1=169%
    \beamer@paperwidth 16.00cm%
    \beamer@paperheight 9.00cm%
  \else\ifnum#1=149%
    \beamer@paperwidth 14.00cm%
    \beamer@paperheight 9.00cm%
  \else\ifnum#1=54%
    \beamer@paperwidth 12.50cm%
    \beamer@paperheight 10.00cm%
  \else\ifnum#1=43%

```

```

\beamer@paperwidth 12.80cm%
\beamer@paperheight 9.60cm%
\else\ifnum#1=32%
\beamer@paperwidth 13.50cm%
\beamer@paperheight 9.00cm%
\else\ifnum#1=141%
\beamer@paperwidth 14.85cm%
\beamer@paperheight 10.50cm%
\fi\fi\fi\fi\fi\fi%
}

\RequirePackage[%
papersize={\beamer@paperwidth,\beamer@paperheight},
hmargin=1cm,%
vmargin=0cm,%
head=0.5cm,% might be changed later
headsep=0pt,%
foot=0.5cm% might be changed later
]{geometry}

%
% Process Options
%

\ExecuteOptionsBeamer{c}
\ProcessOptionsBeamer

% Load corresponding size file
\expandafter\input\beamer@size

% Filter class option list
\beamer@filterclassoptions

\RequirePackage{pgfcore}
% We need only the core stuff.

\RequirePackage{xxcolor}
% For color management (comes with pgf).

\RequirePackage{atbegshi}
% Normally loaded by hyperref but to be on the safe side ...

\RequirePackage[implicit=false]{hyperref}
% For hyperlinks

\hypersetup{pdfcreator={LaTeX with Beamer class version \beamer@version}}

% Coding stuff
\beamer@loaducs
\beamer@hyperCJK

\RequirePackage{beamerbaserequires}
% Beamer packages required both by presentation and article modes

% Defaults

```

```

\normalfont
\raggedright

\AtBeginDocument
{
  \addtocontents{toc}{\protect\beamer@endinputifotherversion{\beamer@version pt}}
  \addtocontents{nav}{\protect\beamer@endinputifotherversion{\beamer@version pt}}
}

\usetheme{default}

% Compatibility stuff
\csname beamer@loadlater\endcsname

```

2 beamerbasercs.sty

```

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% Define beamer version
\def\beamer@version{3.36}

% Get date and version from RCS Ids
\def\beamer@parseid $#1: #2.#3,v #4 #5/#6/#7 #8${%
  \beamer@parsercsfile$#2/$
  \def\beamer@rcsrevision{#4}
  \def\beamer@rcsdate{#5/#6/#7}
}
\def\beamer@parsercsfile$#1/#2$ {
  \def\beamer@temp{#2}
  \ifx\beamer@temp\@empty
    \def\beamer@rcsfile{#1}
  \else
    \beamer@parsercsfile$#2$
  \fi}

\def\ProvidesPackageRCS $#1$ {
  \beamer@parseid $#1$
  \ProvidesPackage{\beamer@rcsfile}[\beamer@rcsdate\space (rcs-revision \ ?
    ? beamer@rcsrevision)]
}

\def\ProvidesClassRCS $#1$ [#2]{%
  \beamer@parseid $#1$
  \ProvidesClass{\beamer@rcsfile}[\beamer@rcsdate\space#2\space (rcs-revision \ ?
    ? beamer@rcsrevision)]
}

```



```
}
```

```
\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbasercs.sty ?  
? ,v 368aa9ba9d38 2015/03/08 14:19:32 joseph $
```

3 beamerbasemodes.sty

```
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```

```
\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbasemodes. ?  
? sty,v 768f2d98ca64 2013/09/03 09:29:28 joseph $
```

```
%  
% Global Declarations used by beamer in all modes  
%
```

```
\newbox\beamer@tempbox  
\newif\ifbeamer@blocks  
\newif\ifbeamer@ams  
\newif\ifbeamer@amssymb  
\newif\ifbeamer@countsect  
\beamer@blockstrue  
\beamer@amstrue  
\beamer@amssymbtrue  
\beamer@countsectfalse  
\newcount\beamer@tempcount  
\newcounter{beamerpauses}
```

```
\RequirePackage{beamerbasedecode}
```

```
%  
% Presentation/article stuff  
%  
% Copyright notice: Part of the following code is taken from the  
% package comment.sty by Victor Eijkhout  
%
```

```
%  
% Versioning stuff  
%  
\def\beamer@endinputifotherversion#1{%  
  \let\beamer@next=\relax%  
  \@tempdima=\beamer@version pt\relax%  
  \ifdim\@tempdima<#1%  
    \let\beamer@next=\endinput%  
  \else%
```

```

\ifdim\@tempdima>#1%
  \let\beamer@next=\endinput%
\fi%
\fi%
\beamer@next}

%
% Comment stuff. This will also be needed, if we switch to another
% class, so define it here already.
%
\newif\ifbeamer@inpresentation
\beamer@inpresentationtrue

\def\beamer@makeinnocent#1{\catcode`#1=12 }
\def\beamer@startcomment{%
  \begingroup%
  \let\do\beamer@makeinnocent\dospecials%
  \beamer@makeinnocent^^L% and whatever other special cases
  \endlinechar`^^M \catcode`^^M=12 \beamer@processline}

{\catcode`^^M=12\endlinechar=-1%
  \long\gdef\beamer@processline#1^^M{%
    \def\beamer@test{#1}%
    \ifx\beamer@test\beamer@stopmodestart%
      \let\next=\beamer@modeoutsideframe%
    \else%
      \ifx\beamer@test\beamer@stopmode%
        \let\next=\mode%
      \else%
        \ifx\beamer@test\beamer@stopparticle%
          \let\next=\article%
        \else%
          \ifx\beamer@test\beamer@stoppresentation%
            \let\next=\presentation%
          \else%
            \ifx\beamer@test\beamer@stopcommon%
              \let\next=\common%
            \else%
              \ifx\beamer@test\beamer@stopdocument%
                \let\next=\beamer@enddocument%
              \else
                \ifx\beamer@test\beamer@begindocument%
                  \let\next=\beamer@startdocument%
                \else
                  \let\next=\beamer@processline%
                \fi%
              \fi%
            \fi%
          \fi%
        \fi%
      \fi%
    \fi%
  \next}
}

\def\beamer@enddocument{\beamer@closer\end{document}}
\def\beamer@startdocument{\beamer@closer\begin{document}\def\beamer@closer{\common}

```

```

\def\beamer@closer{}
{\escapechar=-1\relax%
  \xdef\beamer@stopmode{\string\mode}
  \xdef\beamer@stopmodestar{\string\mode*}
  \xdef\beamer@stoparticle{\string\article}
  \xdef\beamer@stoppresentation{\string\presentation}
  \xdef\beamer@stopcommon{\string\common}
  \xdef\beamer@stopdocument{\string\end\string\{document\string\}}
  \xdef\beamer@begindocument{\string\begin\string\{document\string\}}
}
\newbox\beamer@commentbox
\def\beamer@startcommentinframe{%
  \begingroup%
  \edef\beamer@closer{\egroup\beamer@closer}%
  \setbox\beamer@commentbox=\vbox\bgroup\leavevmode}

\def\beamer@outsidemode{\afterassignment\beamer@treat\let\beamer@nexttoken=}
\def\beamer@treat{%
  \ifx\beamer@nexttoken\frame\let\next=\beamer@stopoutsidemode\fi%
  \ifx\beamer@nexttoken\lecture\let\next=\beamer@stopoutsidemode\fi%
  \ifx\beamer@nexttoken\note\let\next=\beamer@stopoutsidemode\fi%
  \ifx\beamer@nexttoken\appendix\let\next=\beamer@stopoutsidemode\fi%
  \ifx\beamer@nexttoken\againframe\let\next=\beamer@stopoutsidemode\fi%
  \ifx\beamer@nexttoken\section\let\next=\beamer@stopoutsidemode\fi%
  \ifx\beamer@nexttoken\subsection\let\next=\beamer@stopoutsidemode\fi%
  \ifx\beamer@nexttoken\subsubsection\let\next=\beamer@stopoutsidemode\fi%
  \ifx\beamer@nexttoken\part\let\next=\beamer@stopoutsidemode\fi%
  \ifx\beamer@nexttoken\article\let\next=\beamer@stopoutsidemode\fi%
  \ifx\beamer@nexttoken\mode\let\next=\beamer@stopoutsidemode\fi%
  \ifx\beamer@nexttoken\common\let\next=\beamer@stopoutsidemode\fi%
  \ifx\beamer@nexttoken\presentation\let\next=\beamer@stopoutsidemode\fi%
  \ifx\beamer@nexttoken\begin\let\next=\beamer@checkbeginframe\fi%
  \ifx\beamer@nexttoken\end\let\next=\beamer@checkenddoc\fi%
  \next}

\def\beamer@stopoutsidemode{\beamer@nexttoken}
\def\beamer@checkenddoc#1{%
  \def\beamer@temp{#1}%
  \ifx\beamer@temp\beamer@enddoc%
    \let\next=\beamer@enddocument%
  \else%
    \let\next=\beamer@outsidemode%
  \fi%
  \next}
\def\beamer@enddoc{document}

\def\beamer@checkbeginframe#1{%
  \def\beamer@temp{#1}%
  \ifx\beamer@temp\beamer@frametext%
    \let\next=\beamer@beginframeenv%
  \else%
    \let\next=\beamer@outsidemode%
  \fi%
  \next}
\def\beamer@beginframeenv{\begin{frame}}

\def\beamer@modeoutsideframe{%

```

```

\beamer@closer%
\gdef\beamer@mode{\beamer@modeoutsideframe}%
\ifbeamer@inpresentation%
  \let\next=\beamer@outsidemode%
  \gdef\beamer@closer{}%
\else%
  \let\next=\relax%
  \gdef\beamer@closer{}%
\fi%
\next}

```

%obsolete, do note use:

```

\def\presentation{\mode<presentation>}
\def\article{\mode<article>}
\def\common{\mode<all>}

```

```

%
% Mode command
%

```

```

\def\mode{\@ifstar\beamer@modeoutsideframe\beamer@@@mode}
\def\beamer@@@mode<#1>{\beamer@closer\@ifnextchar\bggroup{\beamer@modeinline<#1>}{\
? beamer@switchmode<#1>}}
\long\def\beamer@modeinline<#1>#2{%
  \gdef\beamer@closer{}%
  \def\beamer@doifnotinframe{\@gobble}\def\beamer@doifinframe{\@firstofone}%
  {\beamer@saveanother\beamer@slideinframe=1\relax%
  \beamer@masterdecode{#1}%
  \beamer@restoreanother}\beamer@donow{#2}%
  \beamer@mode\par}
\def\beamer@switchmode<#1>{%
  \gdef\beamer@mode{\beamer@switchmode<#1>}%
  \def\beamer@doifnotinframe{%
    \let\next=\beamer@startcomment%
    \gdef\beamer@closer{\endgroup}%
  }%
  \def\beamer@doifinframe{%
    \let\next=\relax%
    \gdef\beamer@closer{}%
  }%
  {\beamer@saveanother\beamer@slideinframe=1\relax%
  \beamer@masterdecode{#1}%
  \beamer@restoreanother}\beamer@donow%
  \next}

```

```

\mode
<all>

```

```

\newcount\beamer@modecount
\def\beamer@pushmode#1{%
  \expandafter\gdef\csname beamer@savemode@\the\beamer@modecount\endcsname{#1}%
  \global\advance\beamer@modecount by1\relax}
\def\beamer@popmode{
  \global\advance\beamer@modecount by-1\relax%
  \csname beamer@savemode@\the\beamer@modecount\endcsname}

\def\beamer@savemode{\expandafter\beamer@pushmode\expandafter{\beamer@mode}}

```

```

\def\beamer@resumemode{\beamer@popmode}

%
% Stuff needed in both article and presentation version
%
\def\jobnamebeamerversion{}%

\def\includeslide{\@ifnextchar[{\@includeslide}{\@includeslide[]}}
\def\@includeslide[#1]#2{%
  \ifx\jobnamebeamerversion\@empty%
    \ClassError{beamer}{Invoke macro "setjobnamebeamerversion" first}{}%
  \else%
    \edef\beamer@args{[#{1},page=\csname beamer@slide#2\endcsname]}\jobnamebeamerversion} ?
    ? %
  \expandafter\pgfimage\beamer@args%
  \fi}

\def\setjobnamebeamerversion#1{%
  \def\jobnamebeamerversion{#1}%
  {\makeatletter
  \@input{\jobnamebeamerversion.snm}}
}

%
% Check whether we should initiate transfer to another class (obsolete)
%

% Extract class name, if present
\def\beamer@classname{}
\def\beamer@classoptions{}
\def\beamer@classnamenamename{class}
\def\beamer@eq{=,}
\def\beamer@findclassname#1=#2,#3!{
  \def\beamer@temp{#1}
  \ifx\beamer@temp\beamer@classnamenamename
    \def\beamer@classname{#2}
    \beamer@stripsign#3!
  \fi}
\def\beamer@stripsign#1!{%
  \def\beamer@temp{#1}
  \ifx\beamer@temp\beamer@eq
    % nothing to do
  \else
    \beamer@@stripsign#1!
  \fi
}
\def\beamer@@stripsign#1,=,!{
  \def\beamer@classoptions{#1}
}

\def\beamer@transfer{%
  % Prepare...
  \def\beamer@slide##1##2{\expandafter\gdef\csname

```

```

beamer@slide##1\endcsname{##2}}

\beamer@inpresentationfalse

\def\beamer@currentmode{article}

\common

\edef\beamer@classwhat{[\beamer@classoptions]{\beamer@classname}}
\expandafter\LoadClass\beamer@classwhat
\endinput
}

\expandafter\beamer@findclassname\@classoptionslist,=,!
\ifx\beamer@classname\@empty
\let\beamer@transferifnecessary=\relax
\else
% Need to transfer to another class soon
\let\beamer@transferifnecessary=\beamer@transfer
\fi
\endinput

```

4 beamerbasedecode.sty

```

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```

此文件用于解码 Beamer 的覆盖指令（overlay specification），主要参考文档 §9 特别是 §9.6。

```

\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbasedecode. ?
? sty,v efa082c6111d 2010/05/01 11:27:03 rivanvx $

```

`\beamer@slideinframe` 表示当前在 frame 的第几个 slide。`\beamer@minimum` 表示覆盖指令中的最小的 slide 编号。`\ifbeamer@another slide` 用于表示后面是否还有 slide，即在覆盖指令中是否还有大于 `\beamer@slideinframe` 的编号。而 `\ifbeamer@localanother slide` 与 `\ifbeamer@another slide` 的值总相同，而且最后总变成全局条件（见 `\beamer@masterdecode` 宏），因此可以忽略它。

```

\newcount\beamer@slideinframe
\newcount\beamer@minimum
\newif\ifbeamer@another slide
\newif\ifbeamer@localanother slide

\newif\ifbeamer@plusencountered

%
%
% Empty test
%
```

```
%
\long\def\beamer@ifempty#1{\beamer@xifempty#1@@..\@nil}
\long\def\beamer@xifempty#1#2@#3#4#5\@nil{%
  \ifx#3#4\expandafter\@firstoftwo\else\expandafter\@secondoftwo\fi}
\let\beamer@ifnextchar=\@ifnextchar
```

Beamer 的覆盖指令（overlay specification）可以有连续多个，它们之间用 `|` 隔开。每个覆盖指令实际上由四部分内容组成：

1. 模式指令（mode specification），比如 `beamer:3-5`。
2. 动作指令（action specification），比如 `alert@3-5`。
3. 递增指令（incremental specification），比如 `+5` 和 `.-5`。
4. 编号指令（number specification），比如 `1,3-5,2-,-7`。

其中编号指令是基本指令，必须存在；而前面三部分内容是对它的扩展，可以不存在。当然这四部分内容可以都存在，比如 `beamer:alert@+-5,2-` 也是有效的。但注意要按这里的先后顺序给出，因为下面的代码是按照此顺序解码覆盖指令的。

`\beamer@masterdecode` 是解码命令的主要入口，它设定好 `\catcode` 后调用 `\beamer@decode` 开始解码。`\beamer@decode` 将用 `|` 隔开的覆盖指令分开，对每个覆盖指令按下述流程解码：

1. `\beamer@decodedefind`：解码模式指令
2. `\beameratdecodeaction`：解码动作指令
3. `\beamer@decodeplus`：解码递增指令 `+`
4. `\beamer@decodedot`：解码递增指令 `.`
5. `\beamer@@decode`：解码编号指令

解码时位于 `box0` 中，但这个 `box0` 后面不会用到，它仅用于避免将解码留下的内容排版出来。

```
\def\beamer@stoptexts{| stop:0| }
{
  \catcode`\|=13
  \catcode`\:=13
  \catcode`\,=13
  \catcode`\.=13
  \catcode`\+=13
  \catcode`\-=13
  \catcode`\(=13
  \catcode`\)=13
  \catcode`\ =13
\gdef\beamer@masterdecode#1{% must be called within a group
\ifnum\catcode`\|=13\edef{\string|}\fi%
\ifnum\catcode`\:=13\edef{\string:}\fi%
\ifnum\catcode`\,=13\edef{\string,}\fi%
\ifnum\catcode`\.=13\edef{\string.}\fi%
\ifnum\catcode`\+=13\edef{\string+}\fi%
\ifnum\catcode`\-=13\edef{\string-}\fi%
\ifnum\catcode`\(=13\edef{\string(}\fi%
\ifnum\catcode`\)=13\edef{\string)}\fi%
\ifnum\catcode`\ =13\edef {\string } \fi%
\edef\beamer@@@temp{#1\beamer@stoptexts}%
\beamer@localanotherfalse%
\setbox0=\hbox{%
```

```

\expandafter\beamer@decode\beamer@@temp%
\ifbeamer@localanother\slide\global\beamer@localanother\slidetrue\fi}%
}%
}

% Sets dowhat to doif, if \beamer@slideinframe is in the specified
% interval. Example: 5-7,-3,9,11,13- would mean pages
% 1,2,3,5,6,7,9,11,13,14,15,16,...
%
% As a side effect, \@another is called whenever there is a number
% in the list that is larger than the current serialnumber

\def\beamer@allsign{*}

```

实际解码命令的开始之处，这里先把多个覆盖指令分开。

```

\def\beamer@decode{%
  \beamer@plusencounteredfalse%
  \global\beamer@minimum=10000\relax%
  \gdef\beamer@decaction{}%
  \gdef\beamer@decactionrev{}%
  \global\let\beamer@decodefound=\beamer@allsign%
  \beamer@@decodefind}
\def\beamer@@decodefind#1|{%
  \beamer@ifnextchar\@undefined% get rid of spaces
  {\beamer@@@decodefind#1:|}{\beamer@@@decodefind#1:|}}
\def\beamer@@@decodefind#1:#2|{%
  \beamer@ifempty{#2}%
  {\beamer@decodefind beamer:#1:}%
  {\beamer@decodefind #1:#2}}

```

解码模式指令，比如 `article:2-4`。从上面可以看到，模式未指定时默认为 `beamer`。将得到的模式保存在 `\beamer@ovmode` 宏。（`ovmode` 表示 `overlay mode`）。在这里也依次调用 `\beameratdecaction`、`\beamer@decodeplus`、`\beamer@decodedot`。

```

\def\beamer@default{default}
\def\beamer@articlemode{article}
\def\beamer@secondmode{second}
\def\beamer@beamermode{beamer}
\def\beamer@presentationmode{presentation}
\def\beamer@modeall{all}
\def\beamer@ovmodestop{stop}
\def\beamer@decodefind#1:#2: {%
  \def\beamer@ovmode{#1}%
  \beameratdecaction{#2}%
  \expandafter\futurelet\expandafter\next\expandafter\beamer@checkcat\beamer@spec:%
  \expandafter\beamer@decodeplus\beamer@spec+:%
  \expandafter\beamer@decodedot\beamer@spec.:%
  \ifx\beamer@ovmode\beamer@ovmodestop%
    \expandafter\beamer@@@decode\beamer@decodefound,!%
    \let\beamer@next=\relax%
    \ifbeamer@plusencountered\global\advance\c@beamerpauses by1\relax\fi%
  \else
    \ifx\beamer@ovmode\beamer@currentmode%
      \beamer@@@decodefound%
    \else%
      \ifx\beamer@ovmode\beamer@modeall%

```



```

\beamer@@decodefound%
\else%
\ifx\beamer@ovmode\beamer@presentationmode%
\ifx\beamer@currentmode\beamer@articlemode%
\else%
\beamer@@decodefound%
\fi%
\else%
\ifx\beamer@ovmode\beamer@beamermode%
\ifx\beamer@currentmode\beamer@secondmode%
\beamer@@decodefound%
\fi%
\fi%
\fi%
\fi%
\let\beamer@next=\beamer@@decodefound%
\fi%
\beamer@next}

\def\beamer@checkcat#1:{%
\ifcat\next a%
\gdef\beamer@ovmode{#1}%
\ifx\beamer@decodefound\beamer@allsign
\gdef\beamer@decodefound{0}%
\fi%
\gdef\beamer@spec{1-}%
\fi%
}

\def\beamer@@decodefound{%
\ifx\beamer@action\beamer@default%
\expandafter\gdef\expandafter\beamer@decodefound\expandafter{\beamer@spec}%
\else
\xdef\beamer@decaction{\beamer@decaction{\beamer@action<\beamer@spec>}}
\xdef\beamer@decactionrev{\beamer@action}\beamer@decactionrev}
\fi}
\def\beamer@currentaction{default}

```

解码动作指令，所得结果保存在 `\beamer@action` 和 `\beamer@spec` 中。比如对于指令 `alert@1-3`，`\beamer@action` 将等于 `alert`，`\beamer@spec` 将等于 `1-3`。这些指令不能用于 `frame` 环境，但可用于 `\item` 命令。例如 `\item<alert@1-3> text` 等同于 `\begin{alertenv}\item<1-3> text\end{alertenv}`。

```

{
\makeatother
\gdef\beameratdecodeaction#1{%
\beameratdecodeactionb#1@:}
\gdef\beameratdecodeactionb#1@#2:{%
\beameratdecodeactionc{#1}{#2}}
\gdef\beameratgetridofat#1@{%
\gdef\beameratspec{#1}%
}
}

\def\beameratdecodeactionc#1#2{%
\gdef\beamer@spec{#2}%
\ifx\beamer@spec@empty%

```

```

\xdef\beamer@spec{#1}%
\gdef\beamer@action{default}%
\else%
\xdef\beamer@action{#1}%
\beameratgetridofat#2%
\xdef\beamer@spec{\beameratspec}
\fi%
}

```

解码递增指令 +, 比如 +- 或 +-5。指令中的每个 + 将被替换为计数器 `beamerpauses` 的当前值, 之后该计数器的值将增加 1 (见 `\beamer@decodefind` 宏)。相关地, `\pause` 命令也会增加该计数器的值。

```

\def\beamer@decodeplus{%
\def\beamer@spec{}\beamer@@decodeplus}
\def\beamer@@decodeplus#1+#2:{%
\edef\beamer@spec{\beamer@spec#1}% everything up to first +
\beamer@ifempty{#2}{}
{% ok, check if followed by number:
\beamer@plusencounteredtrue%
\beamer@@@decodeplus#2:}}
\def\beamer@@@decodeplus{%
\beamer@ifnextchar({\beamer@relnumber}{\beamer@relnumber(0)}}
\def\beamer@relnumber(#1){%
\beamer@plusencounteredtrue%
\beamer@tempcount=#1\relax
\advance\beamer@tempcount by\c@beamerpauses\relax%
\edef\beamer@spec{\beamer@spec\the\beamer@tempcount}%
\beamer@@decodeplus}

```

解码递增指令 ., 比如 .- 或 .-5。指令中的每个 . 将被替换为计数器 `beamerpauses` 的当前值减 1, 而且之后该计数器的值不会改变。

```

\def\beamer@decodedot{%
\def\beamer@spec{}\beamer@@decodedot}
\def\beamer@@decodedot#1.#2:{%
\edef\beamer@spec{\beamer@spec#1}% everything up to first .
\beamer@ifempty{#2}{}{\beamer@@@decodedot#2:}}
\def\beamer@@@decodedot{%
\beamer@ifnextchar({\beamer@relnumberdot}{\beamer@relnumberdot(0)}}
\def\beamer@relnumberdot(#1){%
\beamer@tempcount=#1\relax
\advance\beamer@tempcount by\c@beamerpauses\relax%
\advance\beamer@tempcount by-1\relax%
\edef\beamer@spec{\beamer@spec\the\beamer@tempcount}%
\beamer@@decodedot}

```

解码编号指令, 比如 5-7, -3, 9, 11, 13-。首先, 判断当前的 `\beamer@slideinframe` 是否包含在内。若是, 则设定 `\beamer@donow` 等于 `\beamer@doifinframe`; 若否, 则它等于 `\beamer@doifnotinframe`。其次, 判断是否还有比 `\beamer@slideinframe` 大的编号, 并相应的设定 `\ifbeamer@anotherstslide`。

从 `beamerbaseframe.sty` 的 `\beamer@frame` 命令和 `\beamer@doseveralframes` 命令可以看出, 在调用 `\beamer@masterdecode` 之前一般需要先将其 `\ifbeamer@anotherstslide` 设定为 `false`, 并且重新设定 `\beamer@doifnotinframe` 和 `\beamer@doifinframe` 为接下来要执行的操作。

这里设定的 `\beamer@minimum`, 仅在 `beamerbaseoverlay.sty` 的 `\beamer@startcovered` 命令中用到。

```

\def\beamer@doifnotinframe{}
\def\beamer@@decode{%
\beamer@ifnextchar!%

```

```

{\beamer@decodeend}%
{%
  \beamer@ifnextchar*%
  {\beamer@decodeall}{%
    \beamer@ifnextchar-%
    {\beamer@decodeuntil}%
    {\beamer@decodenumbers}}}}
\def\beamer@decodeend!{}
\def\beamer@decodeall*,{%
  \ifnum1<\beamer@minimum\global\beamer@minimum=1\fi%
  \ifnum1>\beamer@slideinframe%
  \global\beamer@anotherstlidetrue%
  \beamer@localanotherstlidetrue%
  \fi%
  \gdef\beamer@doifnotinframe{\beamer@doifinframe}\beamer@@decode}
\def\beamer@decodeuntil-#1,{%
  \ifnum1<\beamer@minimum\global\beamer@minimum=1\fi%
  \ifnum#1>\beamer@slideinframe\global\beamer@anotherstlidetrue\ ?
  ? beamer@localanotherstlidetrue\fi%
  \ifnum\beamer@slideinframe>#1\else\gdef\beamer@doifnotinframe{\beamer@doifinframe}\fi%
  \beamer@@decode}
\def\beamer@decodenumbers#1{%
  \beamer@ifnextchar,%
  {\beamer@decodeone{#1}}%
  {\beamer@ifnextchar-%
    {\beamer@decodenumberto{#1}}%
    {\beamer@decodegobble{#1}}}}
\def\beamer@decodegobble#1#2{%
  \beamer@decodenumbers{#1#2}}
\def\beamer@decodenumberto#1-{\
  \beamer@ifnextchar,%
  {\beamer@decodeto{#1}}%
  {\beamer@decodebetween{#1}}}
\def\beamer@decodeto#1,{%
  \ifnum#1<\beamer@minimum\global\beamer@minimum=#1\fi%
  \ifnum#1>\beamer@slideinframe\global\beamer@anotherstlidetrue\ ?
  ? beamer@localanotherstlidetrue\fi%
  \ifnum#1>\beamer@slideinframe\else\gdef\beamer@doifnotinframe{\beamer@doifinframe}\fi%
  \beamer@@decode}
\def\beamer@decodebetween#1#2,{%
  \ifnum#1<\beamer@minimum\global\beamer@minimum=#1\fi%
  \ifnum#1>\beamer@slideinframe\global\beamer@anotherstlidetrue\ ?
  ? beamer@localanotherstlidetrue\fi%
  \ifnum#2>\beamer@slideinframe\global\beamer@anotherstlidetrue\ ?
  ? beamer@localanotherstlidetrue\fi%
  \ifnum#1>\beamer@slideinframe\else\ifnum#2<\beamer@slideinframe\else\gdef\ ?
  ? beamer@doifnotinframe{\beamer@doifinframe}\fi\fi%
  \beamer@@decode}
\def\beamer@decodeone#1,{%
  \ifnum#1<\beamer@minimum\global\beamer@minimum=#1\fi%
  \ifnum#1>\beamer@slideinframe\global\beamer@anotherstlidetrue\ ?
  ? beamer@localanotherstlidetrue\fi%
  \ifnum#1=\beamer@slideinframe\gdef\beamer@doifnotinframe{\beamer@doifinframe}\fi%
  \beamer@@decode}

\def\beamer@donow{\beamer@doifnotinframe}

```

```

\def\beamer@saveanother{\let\beamer@savedit=\ifbeamer@another@slide}
\def\beamer@restoreanother{\global\let\ifbeamer@another@slide=\beamer@savedit}

```

5 beamerbaseoptions.sty

```

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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbaseoptions ?
? .sty,v 47431932db0d 2013/03/10 09:24:31 joseph $

\RequirePackage[keyval][1997/11/10]

\def\ProcessOptionsBeamer{%
  \let\@tempa\@empty
  \ifx\@current\@clsextension%
  \else
  \@for\CurrentOption:=\@classoptionslist\do{%
    \ifundefined{KV@\@currname \@CurrentOption}%
    {}{\edef\@tempa{\@tempa,\CurrentOption,}}}%
  \fi
  \edef\@tempa{%
    \noexpand\setkeys{\@currname}{\@tempa\@optionlist{\@currname.\@current}}}%
  \let\beamer@origkverr\KV@errx%
  \let\beamer@origxkverr\XKV@err%
  \let\KV@errx=\@gobble% never mind
  \let\XKV@err=\@gobble% never mind
  \@tempa%
  \let\KV@errx\beamer@origkverr%
  \let\XKV@err\beamer@origxkverr%
  \AtEndOfPackage{\let\@unprocessedoptions\relax}}

\def\ExecuteOptionsBeamer#1{%
  \setkeys{\@currname}{#1}}

\def\DeclareOptionBeamer#1{\@ifnextchar[{\beamer@dokv{#1}}{\beamer@dokv{#1}[]}}
\long\def\beamer@dokv#1[#2]#3{\define@key{\@currname}{#1}[#2][#3]}

\def\beamer@filterclassoptions{
  \def\beamer@filteredclassoptionslist{}
  \@for\CurrentOption:=\@classoptionslist\do{%
    \ifx\CurrentOption\@empty\else
    \@expandtwoargs\in@{=}{\CurrentOption}%
    \ifin@
    \else
    \edef\beamer@filteredclassoptionslist{%
      \beamer@filteredclassoptionslist,\CurrentOption}

```

```

\fi
\fi
}%
\let\@classoptionslist=\beamer@filteredclassoptionslist
}

\newcommand\defbeameroption{\define@key{beamer@option}}
\newcommand\setbeameroption{\setkeys{beamer@option}}

```

6 beamerbaserequires.sty

```

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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/ ?
? beamerbaserequires.sty,v efa082c6111d 2010/05/01 11:27:03 rivavax $

%
% Beamer packages
%
\RequirePackage{beamerbasecompatibility}
% Fixes other packages

\RequirePackage{beamerbasefont}
% Font stuff

\RequirePackage{beamerbasetranslator}
% Support for translations

\RequirePackage{beamerbasemisc}
% Miscellaneous commands

\RequirePackage{beamerbasetwoscreens}
% Stuff for using two screens

\RequirePackage{beamerbaseoverlay}
% Overlay stuff

\RequirePackage{beamerbasetitle}
% Commands for constructing the title page

\RequirePackage{beamerbasesection}
% Parts, sections, subsections, appendix

\RequirePackage{beamerbaseframe}

```

```

% Commands for constructing frames

\RequirePackage{beamerbaseverbatim}
% Commands for constructing frames

\RequirePackage{beamerbaseframesize}
% Commands for constructing frames

\RequirePackage{beamerbaseframecomponents}
% Headlines, sidebars, columns

\RequirePackage{beamerbasecolor}
% Color management

\RequirePackage{beamerbasenotes}
% Commands for adding notes

\RequirePackage{beamerbasetoc}
% Table of Contents Format

\RequirePackage{beamerbasetemplates}
% For default templates

\RequirePackage{beamerbaselocalstructure}
% Commands for local structure like alert, itemize, etc.

\RequirePackage{beamerbasenavigation}
% Navigation buttons

\RequirePackage{beamerbasetheorems}
% Theorems

\RequirePackage{beamerbasethemes}
% Commands for including and building themes

\mode
<all>

```

7 beamerbasecompatibility.sty

```

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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/ ?
? beamerbasecompatibility.sty,v 67c48b3b652d 2012/05/01 07:25:30 joseph $

\mode

```

```

<presentation>

%
%
% Hyperlink fix for problem with empty test in pdfmark.def
%
%
\let\beamer@orighyperlink\hyperlink
\def\hyperlink#1#2{\beamer@orighyperlink{#1}{\relax#2}}

\providecommand\hyper@pagetransition{}
\providecommand\hyper@pageduration{}
\providecommand\hyper@pagehidden{}

\mode
<all>
{
  % Things to be done at the beginning of the document
  \def\beamer@lastminutepatches{}
  \def\beamer@firstminutepatches{}
}

%
% Fixes right before the start of the document.
%
\let\beamer@origdocument\document
\def\document{%
  \beamer@firstminutepatches%
  \endgroup%

  \AtBeginDocument{% fix spanish.ldf's meddling with < and >
    %
    % Fix spanish.ldf's meddling with < and >
    %
    \@ifundefined{deactivatequoting}{\deactivatequoting}

    % Fix meddline with enumerate items
    \renewcommand\theenumi{\@arabic\c@enumi}
    \renewcommand\theenumii{\@arabic\c@enumii}
    \renewcommand\theenumiii{\@arabic\c@enumiii}
  }

  \AtBeginDocument{% fix frenchb.ldf's meddling with itemize and :
    \let\labelitemi\beamer@labelitemi
    \let\labelitemii\beamer@labelitemii
    \let\itemize\beamer@itemize
    \let\list\beamer@list
    \let\@trivlist\beamer@@trivlist%
    \catcode`<=12\catcode`>=12}

  \begingroup\beamer@origdocument%
  \beamer@lastminutepatches%
  \ifbeamer@ignorenonframe%
    \expandafter\mode\expandafter*%
  \fi}

```

```

\mode
<article>
{
  \let\beamer@origdocument\document
  \def\document{%
    \beamer@origdocument%
    \beamer@lastminutepatches}

  \g@addto@macro\beamer@lastminutepatches{%
    \ifbeamer@articleactive
    \else
    \catcode`<=12\catcode`>=12
    \fi
  }
}

\AtBeginDocument{\def\es@itemize#1#2#3#4{}}% fix spanish.ldf's with \itemize

%
% Fix for older versions of geometry
% We used to test \ifGm@compatii,
% but as of geometry v5.0, it is no longer provided.
%
\ifx\Gm@lmargin\@undefined
\def\Gm@lmargin{\Geom@lmargin}\def\Gm@rmargin{\Geom@rmargin}
\else
\geometry{includeheadfoot}
\fi

%
% Fix deluxetabular floats
%
\AtBeginDocument{
  \def\@plano@float@#1{\begin{table}}
  \def\end@plano@float@{\end{table}}
}

%
% Fix for implicit=false for hyperref
%
\def\WriteBookmarks{0}
\expandafter\def\csname Parent-1\endcsname{}
\expandafter\def\csname Parent0\endcsname{}
\expandafter\def\csname Parent1\endcsname{}
\def\phantomsection{}

%
% Heiko's fix for correct generation of section* and subsection* bookmarks
%
\g@addto@macro\beamer@lastminutepatches{%
  \long\def\@LongEmpty{}

```



```

\newcommand*{\org@beamer@section}{-}
\let\org@beamer@section\beamer@section{}%
\let\org@writebookmark\Hy@writebookmark{}%
\long\def\beamer@section[#1]#2{%
  \let\Hy@writebookmark\org@writebookmark
  \long\def\@secname{#1}%
  \ifx\@secname\@LongEmpty{}%
    \def\Hy@writebookmark##1##2##3##4##5{}%
  \fi
  \long\def\@secname{#2}%
  \ifx\@secname\@LongEmpty{}%
    \def\Hy@writebookmark##1##2##3##4##5{}%
  \fi
  \org@beamer@section[-{#1}]{#2}%
}
\newcommand*{\org@beamer@subsection}{-}
\let\org@beamer@subsection\beamer@subsection{}%
\long\def\beamer@subsection[#1]#2{%
  \let\Hy@writebookmark\org@writebookmark
  \long\def\@secname{#1}%
  \ifx\@secname\@LongEmpty{}%
    \def\Hy@writebookmark##1##2##3##4##5{}%
  \fi
  \long\def\@secname{#2}%
  \ifx\@secname\@LongEmpty{}%
    \def\Hy@writebookmark##1##2##3##4##5{}%
  \fi
  \org@beamer@subsection[{#1}]{#2}%
}
}

%
% Bugfix for old versions of pdfmark
%
\begingroup
\catcode`P=12
\catcode`T=12
\lowercase{\endgroup
\gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
}
\def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

%
% Make the effect of pdfpagetransition and duration global, not local
%
\define@key{Hyp}{pdfpagetransition}{\gdef\@pdfpagetransition{#1}}
\define@key{Hyp}{pdfpageduration}{\gdef\@pdfpageduration{#1}}

%
%
% Fix for babel
%
\providecommand\textlatin{}
\providecommand\theparagraph{}
\providecommand\thesubparagraph{}
\providecommand\listoffigures{}

```

```

\providecommand\listoftables{}
\providecommand\l@part{}
\providecommand\l@chapter{}

%
% Fix for subfig
%
\providecommand\ext@table{}
\providecommand\ext@figure{}

%
% Obsolete commands from old versions of beamer
%
\mode
<all>
{
  \let\beamer@verb@egroup=\verb@egroup

  \def\beamer@setb{\setbox0=\copy}
  \long\def\defverb#1{%
    \expandafter\newbox\csname @verb\string#1\endcsname%
    \def#1{{\expandafter\beamer@setb\csname
      @verb\string#1\endcsname\unhbox0}}}%
  \def\verb@egroup{\global\let\verb@balance@group\@empty\egroup\egroup\let\verb@egroup ?
    ? =\beamer@verb@egroup}
  \expandafter\setbox\csname @verb\string#1\endcsname=\hbox\bgroup
  \verb}

  \define@key{beamerverb}{colored}[true]{\def\beamer@colorsup{}}
  \define@key{beamerverb}{width}{\def\beamer@verbwidth{#1}}

  \newcommand{\defverbatim}[2][]{%
    \def\beamer@colorsup{\def\set@color{}\def\reset@color{}}%
    \setkeys{beamerverb}{width=\textwidth}%
    \setkeys{beamerverb}{#1}%
    \expandafter\newbox\csname @verb\string#2\endcsname%
    \def#2{{\expandafter\beamer@setb\csname @verb\string#2\endcsname%
      \unvbox0}\color{.}}}%
    \expandafter\setbox\csname @verb\string#2\endcsname=\vbox\bgroup%
    \beamer@colorsup%
    \hsize=\beamer@verbwidth\textwidth=\beamer@verbwidth\linewidth=\beamer@verbwidth%
    \vskip-\baselineskip\strut\bgroup\aftergroup\beamer@verbend%
    \let\@next=}
  \def\beamer@verbend{\vskip-\baselineskip\strut\egroup}
}
\def\tableofcontentscurrent{\tableofcontents[current]}
\def\plainframe{\frame[plain]}%obsolete
\def\pgfonly{\only}%obsolete
\AtBeginDocument{\newcommand{\nameslide}{\alt{\beamer@nameslide}{\@gobble}}}%obsolete
\newenvironment{pauses}[1][\c@beamerpauses]{\setcounter{beamerpauses}{#1}}}%obsolete
\def\newoverlaycommand#1#2#3{\def#1{\alt{#2}{#3}}}
\def\newoverlayenvironment#1#2#3#4#5{\newenvironment{#1}{\begin{altenv ?
  ?}{#2}{#3}{#4}{#5}}{\end{altenv}}}
\newenvironment{columnsonlytextwidth}{\begin{columns}[onlytextwidth]}{\end{columns}}

```

```

\def\untitledsubsection{\subsection*{}}
\def\noteitems{\note[enumerate]}

\define@key{beamer@toc}{current}[]{\beamer@toc@sectionstyle{show/shaded}\ ?
? beamer@toc@subsectionstyle{show/show/shaded}}
\define@key{beamer@toc}{hidesubsections}[]{\beamer@toc@subsectionstyle{show/show/hide}}
\define@key{beamer@toc}{shadesubsections}[]{\beamer@toc@subsectionstyle{shaded}}

\mode
<all>{\def\unpause{\onslide{}}}

\def\beamer@fixedline#1{%
{\setbox\beamer@linebox=\hbox to\textwidth{\hskip-\Gm@lmargin\hskip0.3cm{#1}\hskip-\ ?
? Gm@rmargin\hskip0.3cm}}%
\ht\beamer@linebox=2.125ex%
\dp\beamer@linebox=1.125ex%
\box\beamer@linebox}}
\def\beamer@fixedcolouredline#1#2{%
\hbox{%
\setbox\beamer@linebox=\hbox to\textwidth{\hskip-\Gm@lmargin\hskip0.3cm{#2}\hskip-\ ?
? Gm@rmargin\hskip0.3cm}}%
\ht\beamer@linebox=2.625ex%
\dp\beamer@linebox=0pt%
\setbox\beamer@linebox=\vbox{\box\beamer@linebox\vskip1.125ex}%
{\color{#1}\hskip-\Gm@lmargin\vrule width\paperwidth
height\ht\beamer@linebox\hskip-\paperwidth\hskip\Gm@lmargin}%
\box\beamer@linebox}%
}
\long\def\beamer@colouredline#1#2{%
\hbox{%
\setbox\beamer@linebox=\vbox{\hbox to\textwidth{\hskip-\Gm@lmargin{#2}\hskip-\ ?
? Gm@rmargin}}%
{\color{#1}\hskip-\Gm@lmargin\vrule width\paperwidth
height\ht\beamer@linebox\hskip-\paperwidth\hskip\Gm@lmargin}%
\box\beamer@linebox}%
}
\def\tinyline#1{%
{\tiny\setbox\beamer@linebox=\hbox to\textwidth{\hskip-\Gm@lmargin\hskip0.3cm{#1}\ ?
? \hskip-\Gm@rmargin\hskip0.3cm}}%
\ht\beamer@linebox=2.06ex%
\dp\beamer@linebox=0pt%
\box\beamer@linebox%
\vskip1.125ex}}
\def\tinycolouredline#1#2{%
\hbox{\tiny%
\setbox\beamer@linebox=\hbox to\textwidth{\hskip-\Gm@lmargin\hskip0.3cm{#2}\hskip-\ ?
? Gm@rmargin\hskip0.3cm}}%
\ht\beamer@linebox=2.625ex%
\dp\beamer@linebox=0pt%
\setbox\beamer@linebox=\vbox{\box\beamer@linebox\vskip1.125ex}%
{\color{#1}\hskip-\Gm@lmargin\vrule width\paperwidth
height\ht\beamer@linebox\hskip-\paperwidth\hskip\Gm@lmargin}%
\box\beamer@linebox}%
}
\def\colouredline#1#2{%
\hbox{%

```

```

\setbox\beamer@linebox=\hbox to\textwidth{\hskip-\Gm@lmargin\hskip0.3cm{#2}\hskip-\
? Gm@rmargin\hskip0.3cm}%
\setbox\beamer@linebox=\vbox{\vskip2pt\box\beamer@linebox\vskip2pt}%
{\color{#1}\hskip-\Gm@lmargin\vrule width\paperwidth
height\ht\beamer@linebox\hskip-\paperwidth\hskip\Gm@lmargin}%
\box\beamer@linebox}%
}
\def\beamerline#1{\hbox{\hskip-\Gm@lmargin#1\hskip-\Gm@rmargin}}
\def\insertvrule#1#2{\hbox{\color{#2}\hskip-\Gm@lmargin\vrule width \paperwidth height
? #1\hskip-\Gm@rmargin}}

\def\usetitlepagetemplate{\setbeamertemplate{title page}}
\def\usepartpagetemplate{\setbeamertemplate{part page}}
\mode
<all>{\def\useframetitletemplate{\setbeamertemplate{frametitle}}}
\def\useitemizeitemtemplate{\setbeamertemplate{itemize item}}
\def\usesubitemizeitemtemplate{\setbeamertemplate{itemize subitem}}
\def\usesubsubitemizeitemtemplate{\setbeamertemplate{itemize subsubitem}}
\def\useenumerateitemtemplate{\setbeamertemplate{enumerate item}}
\def\usesubenumerateitemtemplate{\setbeamertemplate{enumerate subitem}}
\def\usesubsubenumerateitemtemplate{\setbeamertemplate{enumerate subsubitem}}
\def\useitemizetemplate#1#2{% before and after
\setbeamertemplate{itemize/enumerate body begin}{#1}%
\setbeamertemplate{itemize/enumerate body end}{#2}}
\def\usesubitemizetemplate#1#2{% before and after
\setbeamertemplate{itemize/enumerate subbody begin}{#1}%
\setbeamertemplate{itemize/enumerate subbody end}{#2}}
\def\usesubsubitemizetemplate#1#2{% before and after
\setbeamertemplate{itemize/enumerate subsubbody begin}{#1}%
\setbeamertemplate{itemize/enumerate subsubbody end}{#2}}
\def\useenumerateitemminitemplate{\setbeamertemplate{enumerate mini template}}
\let\useenumeratetemplate=\useitemizetemplate
\let\usesubenumeratetemplate=\usesubitemizetemplate
\let\usesubsubenumeratetemplate=\usesubsubitemizetemplate
\def\useleftsidebartemplate{\usesidebartemplate[left]}
\def\userightsidebartemplate{\usesidebartemplate[right]}
\def\useleftsidebarbackgroundtemplate{\usesidebarbackgroundtemplate[left]}
\def\userightsidebarbackgroundtemplate{\usesidebarbackgroundtemplate[right]}
\def\useleftsidebarcolortemplate#1{\usesidebarbackgroundtemplate[left]{#1\vrule height\
? paperheight
width\cename beamer@leftsidebar\endcename}}
\def\userightsidebarcolortemplate#1{\usesidebarbackgroundtemplate[right]{#1\vrule height
? \paperheight
width\cename beamer@rightsidebar\endcename}}
\def\useleftsidebarverticalshadingtemplate{\beamertemplatesidebarverticalshading[left]}
\def\userightsidebarverticalshadingtemplate{\beamertemplatesidebarverticalshading[right
? ]}
\def\useleftsidebarhorizontalshadingtemplate{\beamertemplatesidebarhorizontalshading[
? left]}
\def\userightsidebarhorizontalshadingtemplate{\beamertemplatesidebarhorizontalshading[
? right]}
\def\usedescriptionitemtemplate#1#2{\setbeamertemplate{description item}{#1}\
? setbeamer size{description width=#2}}
\def\usedescriptionitemofwidthas#1{\setbeamer size{description width of=#1}}%
\def\usetemplatetocsection{\@ifnextchar[\@usetemplatetocsection\usetemplatetocsection}
\long\def\@usetemplatetocsection[#1]#2{
\@usetemplatetocsection{#2}{\begin{colormixin}{#1}#2\end{colormixin}\unskip}}

```

```

\long\def\@usetemplatetocsection#1#2{\setbeamertemplate{section in toc}{#1}
\setbeamertemplate{section in toc shaded}{#2}}
\def\usetemplatetocsubsection{\@ifnextchar[\@@usetemplatetocsubsection\ ?
? @usetemplatetocsubsection}
\long\def\@@usetemplatetocsubsection[#1]#2{
\@usetemplatetocsubsection{#2}{\begin{colormixin}{#1}#2\end{colormixin}\unskip}}
\long\def\@usetemplatetocsubsection#1#2{\setbeamertemplate{subsection in toc}{#1}%
\setbeamertemplate{subsection in toc shaded}{#2}}
\def\usebibitemtemplate{\setbeamertemplate{bibliography item}}
\newcommand\usebibliographyblocktemplate[4]{%
\setbeamertemplate{bibliography entry author}{#1}%
\setbeamertemplate{bibliography entry title}{#2}%
\setbeamertemplate{bibliography entry location}{#3}%
\setbeamertemplate{bibliography entry note}{#4}}
\def\usebuttontemplate{\setbeamertemplate{button}}
\def\usetemplateabstract#1#2{%
\setbeamertemplate{abstract title}{}
\setbeamertemplate{abstract body begin}{#1}
\setbeamertemplate{abstract body end}{#2}}
\def\usetemplateverse#1#2{\setbeamertemplate{verse begin}{#1}\setbeamertemplate{verse ?
? end}{#2}}
\def\usetemplatenote{\setbeamertemplate{note page}}
\def\useheadtemplate{\@ifstar{\beamer@useheads}{\beamer@usehead}}
\def\beamer@usehead{\setbeamertemplate{headline}[text line]}
\def\beamer@useheads{\setbeamertemplate{headline}}
\def\addtoheadtemplate{\addtobeamertemplate{headline}}
\def\addtofoottemplate{\addtobeamertemplate{footline}}
\def\usefoottemplate{\@ifstar{\beamer@usefoots}{\beamer@usefoot}}
\def\beamer@usefoot{\setbeamertemplate{footline}[text line]}
\def\beamer@usefoots{\setbeamertemplate{footline}}
\def\usecaptiontemplate{\setbeamertemplate{caption}}
\def\insertblockname{\insertblocktitle}
\long\def\usesectionheadtemplate#1#2{%
\setbeamertemplate{section in head/foot}{#1}%
\setbeamertemplate{section in head/foot shaded}{#2}}
\long\def\usesubsectionheadtemplate#1#2{%
\setbeamertemplate{subsection in head/foot}{#1}%
\setbeamertemplate{subsection in head/foot shaded}{#2}}
\long\def\usesectionsidetemplate#1#2{%
\setbeamertemplate{section in sidebar}{#1}%
\setbeamertemplate{section in sidebar shaded}{#2}}
\long\def\usesubsectionsidetemplate#1#2{%
\setbeamertemplate{subsection in sidebar}{#1}%
\setbeamertemplate{subsection in sidebar shaded}{#2}}
\newcommand\usetheoremtemplate[2]{%
\setbeamertemplate{theorem begin}{#1}
\setbeamertemplate{theorem end}{#2}}
\newcommand\useprooftemplate[2]{
\setbeamertemplate{proof begin}{#1}
\setbeamertemplate{proof end}{#2}}
\def\useqedsymboltemplate{\setbeamertemplate{qed symbol}}
\newcommand{\BeispielInline}[1]{\usebeamercolor[fg]{example text}Beispiel: \ ?
? ignorespaces#1}}
\newcommand{\ExampleInline}[1]{\usebeamercolor[fg]{example text}\translate{Example}: \ ?
? ignorespaces#1}}
\def\usenavigationssymbolstemplate{\setbeamertemplate{navigation symbols}}
\def\insertnavigationssymbols{\usebeamertemplate***{navigation symbols}}

```

```

\def\beamersetaveragebackground#1{\setbeamercolor{normal text}{bg={#1}}}
\def\useminislidetemplate#1#2#3#4#5{%
  \setbeamertemplate{mini frame}{#1}%
  \setbeamertemplate{mini frame in current subsection}{#2}%
  \setbeamertemplate{mini frame in other subsection}{#3}%
  \setbeamerfont{mini frame size}={#4},mini frame offset={#5}}
\newcommand\usesidebarbackgroundtemplate[2][left]{\setbeamertemplate{sidebar canvas ?
  ? #1}{#2}}
\def\usefootnotetemplate{\setbeamertemplate{footnote}}

\def\beamertemplatedefaulttoc{\setbeamertemplate{sections/subsections in toc}[default]}
\def\beamertemplatenumbersubsectiontoc{\setbeamertemplate{sections/subsections in toc ?
  ? }[subsections numbered]}
\def\beamertemplatenumberedsectiontoc{\setbeamertemplate{sections/subsections in toc}[ ?
  ? sections numbered]}
\def\beamertemplatenumberedcirclesectiontoc{\setbeamertemplate{sections/subsections in ?
  ? toc}[circle]}
\def\beamertemplatenumberedsquaresectiontoc{\setbeamertemplate{sections/subsections in ?
  ? toc}[square]}
\def\beamertemplatenumberedballsectiontoc{\setbeamertemplate{sections/subsections in toc ?
  ? }[ball]}
\def\beamertemplateballtoc{\setbeamertemplate{sections/subsections in toc}[ball ?
  ? unnumbered]}
\def\beamertemplatedotitem{\setbeamertemplate{itemize items}[circle]}
\def\beamertemplatetriangleitem{\setbeamertemplate{itemize items}[default]}
\def\beamertemplatesquareitem{\setbeamertemplate{itemize items}[square]}
\def\beamertemplateballitem{\setbeamertemplate{items}[ball]}
\def\beamertemplateenumeratealpha{\setbeamertemplate{enumerate items}[default]}
\def\beamertemplateenumeratecircle{\setbeamertemplate{enumerate items}[circle]}
\def\beamertemplateenumeratesquare{\setbeamertemplate{enumerate items}[square]}
\def\beamertemplatelargepartpage{\setbeamertemplate{part page}[default]}
\def\beamertemplateboldpartpage{\setbeamerfont{part}{size=\large}%
  \setbeamerfont{part name}{series=\bfseries}%
  \setbeamertemplate{part page}[default]}
\def\beamertemplatelargetitlepage{\setbeamertemplate{title page}[default]}
\def\beamertemplateboldtitlepage{\setbeamerfont{title}{size=\large,series=\bfseries}%
  \setbeamertemplate{title page}[default]}
\def\beamertemplateboldcenterframetitle{\setbeamerfont{frametitle}{size={},series=\ ?
  ? bfseries}
  \setbeamerfont{framesubtitle}{series=\bfseries}
  \setbeamertemplate{frametitle}[default][center]}
\def\beamertemplateboldframetitle{\setbeamerfont{frametitle}{series=\bfseries}
  \setbeamerfont{framesubtitle}{series=\bfseries}
  \setbeamertemplate{frametitle}[default]}
\def\beamertemplatelargeframetitle{\setbeamertemplate{frametitle}[default]}
\def\beamertemplateboldblocks{\setbeamerfont{block title}{size={},series=\bfseries}\ ?
  ? \setbeamertemplate{blocks}[default]}
\def\beamertemplatelargeblocks{\setbeamertemplate{blocks}[default]}
\def\beamertemplateshadowblocks{\setbeamertemplate{blocks}[rounded][shadow=true]}
\def\beamertemplateplaintoc{\beamertemplatedefaulttoc}
\def\beamertemplatecircleminiframeinverted{\beamertemplatecircleminiframe%
  \usebeamerfont{mini frames}{use=structure,fg=white,bg=structure.bg}}
\def\beamertemplatesphereminiframe{\beamertemplatecircleminiframe}
\def\beamertemplatesphereminiframeinverted{\beamertemplatecircleminiframeinverted}
\def\beamertemplatelightsectionheads{\usesectionheadtemplate{\hfill\insertsectionhead}{\ ?
  ? hfill\color{fg!50!bg}\insertsectionhead}

```

```

\usesubsectionheadtemplate{\insertsubsectionhead}{\color{fg!50!bg}\insertsubsectionhead ?
? }}
\let\beamertemplatedarksectionheads=\beamertemplatedefaultsectionheads
\def\usecontinuationtemplate{\setbeamertemplate{frametitle continuation}}
\def\beamertemplatecontinuationroman{\setbeamertemplate{frametitle continuation}[default ?
? ]}
\def\beamertemplatecontinuationtext{\setbeamertemplate{frametitle continuation}[from ?
? second]}
\def\beamertemplateroundedbuttons{\setbeamertemplate{button}[default]}
\def\beamertemplateoutlinebuttons{\setbeamercolor*{button border}{parent=structure,use=?
? structure,fg=structure.fg!50!bg}}
\def\beamertemplatesolidbuttons{\setbeamercolor*{button}{use=structure,bg=structure.fg ?
? !50!bg,fg=white}
\setbeamercolor*{button border}{use=structure,fg=structure.fg!50!bg}}
\def\usetemplatequotation#1#2{
\setbeamertemplate{quotation begin}{#1}
\setbeamertemplate{quote begin}{#1}
\setbeamertemplate{quotation end}{#2}
\setbeamertemplate{quote end}{#2}}
\def\beamertemplateheadempty{\setbeamertemplate{headline}{}}
\def\beamertemplatefootempty{\setbeamertemplate{footline}{}}
\def\beamertemplatefootpagenumber{\setbeamertemplate{footline}[page number]}
\def\beamertemplatecaptionownline{\setbeamertemplate{caption}[caption name own line]}
\def\beamertemplatecaptionwithnumber{\setbeamertemplate{caption}[numbered]}
\def\beamertemplateroundedblocks{\setbeamertemplate{blocks}[rounded]}
\def\beamertemplatetheoremsunnumbered{\setbeamertemplate{theorems}[default]}
\def\beamertemplatetheoremsnumbered{\setbeamertemplate{theorems}[numbered]}
\def\beamertemplatetheoremsamslike{\setbeamertemplate{theorems}[ams style]}
\def\beamertemplatetheoremssimple{\setbeamertemplate{theorems}[normal font]}
\def\beamertemplatenavigationsymbolsempy{\setbeamertemplate{navigation symbols}{}}
\def\beamertemplatenavigationsymbolsframe{\setbeamertemplate{navigation symbols}[only ?
? frame symbol]}
\def\beamertemplatenavigationsymbolsvertical{\setbeamertemplate{navigation symbols}[ ?
? vertical]}
\def\beamertemplatenavigationsymbolshorizontal{\setbeamertemplate{navigation symbols}[ ?
? horizontal]}
\def\beamertemplatedefaultsectionheads{%
\setbeamertemplate{section in head/foot}[default]
\setbeamertemplate{subsection in head/foot}[default]
\setbeamertemplate{section in head/foot shaded}[default]
\setbeamertemplate{subsection in head/foot shaded}[default]
}
\def\beamertemplatecircleminiframe{\setbeamertemplate{mini frames}[default]}
\def\beamertemplateticksminiframe{\setbeamertemplate{mini frames}[tick]}
\def\beamertemplateboxminiframe{\setbeamertemplate{mini frames}[box]}
\newcommand\usesidebartemplate[3][left]{%
\setbeamersize{sidebar width #1=#2}
\setbeamertemplate{sidebar #1}{#3}
}
\newcommand\beamertemplatesidebarcolor[2][left]{\setbeamercolor{sidebar #1}{bg=#2}}
\def\beamertemplaterightsidebarlogonavigation{\setbeamertemplate{sidebar right}[default]
\setbeamersize{sidebar width right=0pt}}
\newcommand{\beamertemplatesidebarverticalshading}[3][left]{%
\setbeamertemplate{sidebar canvas #1}[vertical shading][top=#3,bottom=#2]}
\newcommand{\beamertemplatesidebarhorizontalshading}[3][left]{%
\setbeamertemplate{sidebar canvas #1}[horizontal shading][right=#3,left=#2]}
\define@key{beamer@margin}{descriptionwidth}{%

```

```

\beamer@descriptionwidth=#1\relax%
}
\define@key{beamer@margin}{descriptionwidthof}{%
  \setbox\beamer@tempbox=\hbox{\def\insertdescriptionitem{#1}\usebeamertemplate**{ ?
    ? description item}}%
  \beamer@descriptionwidth=\wd\beamer@tempbox\relax%
}

\mode
<all>
{
  \def\beamer@setleftmargin#1{\setbeamer@size{text margin left=#1}}
  \def\beamer@setrightmargin#1{\setbeamer@size{text margin right=#1}}
  \long\def\useframetemplate#1#2{\setbeamer@template{frame begin}{#1}\setbeamer@template{ ?
    ? frame end}{#2}}
  \def\usebackgroundtemplate{\setbeamer@template{background canvas}}
  \def\beamer@templatesolidbackgroundcolor#1{\setbeamer@color{normal text}{bg={#1}}}
  \long\def\useblocktemplate#1#2{%
    \setbeamer@template{block begin}{#1}%
    \setbeamer@template{block end}{#2}}
  \long\def\usealertblocktemplate#1#2{%
    \setbeamer@template{block alerted begin}{#1}%
    \setbeamer@template{block alerted end}{#2}}
  \long\def\useexampleblocktemplate#1#2{%
    \setbeamer@template{block example begin}{#1}%
    \setbeamer@template{block example end}{#2}}
  \newcommand{\beamer@templategridbackground}[1][ ]{\setbeamer@template{background}[grid][ ?
    ? step={#1}]}
  \newcommand{\beamer@templateshadingbackground}[2]{\setbeamer@template{background canvas ?
    ? }[vertical shading][bottom={#1},top={#2}]}
  \newcommand\usealerttemplate[2]{\setbeamer@template{alerted text begin}{#1}\ ?
    ? \setbeamer@template{alerted text end}{#2}}
  \newcommand\usestructuretemplate[2]{\setbeamer@template{structure begin}{#1}\ ?
    ? \setbeamer@template{structure end}{#2}}
  \newcommand{\beamer@templatebookbibitems}{\setbeamer@template{bibliography item}[book]}
  \newcommand{\beamer@templatearticlebibitems}{\setbeamer@template{bibliography item}[ ?
    ? article]}
  \newcommand{\beamer@templatetextbibitems}{\setbeamer@template{bibliography item}[text]}
  \newcommand{\beamer@templatearrowbibitems}{\setbeamer@template{bibliography item}[ ?
    ? triangle]}
  \newcommand{\beamer@templateonlinebibitems}{\setbeamer@template{bibliography item}[ ?
    ? online]}

  \def\beamer@templatetransparentcovereddynamic{\setbeamer@covered{highly dynamic}}
  \def\beamer@templatetransparentcovereddynamicmedium{\setbeamer@covered{dynamic}}
  \def\beamer@templatetransparentcovered{\setbeamer@covered{transparent}}
  \def\beamer@templatetransparentcoveredmedium{\setbeamer@covered{transparent=10}}
  \def\beamer@templatetransparentcoveredhigh{\setbeamer@covered{transparent=5}}
  \def\beamer@templatetransparentcoveredhighest{\setbeamer@covered{transparent=2}}
  \def\beamer@setuncovermixins#1#2{\setbeamer@covered{still covered={#1},again covered ?
    ? =#{#2}}}
}

\mode
<all>

```


8 beamerbasefont.sty

```
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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbasefont. ?
? sty,v b4b4bee242e2 2015/01/05 22:45:13 joseph $

\ifbeamer@amssymb
\RequirePackage{amssymb}
% For \blacktriangleright; not explicitly required by article, but can cause
% weird situations if users find that symbols works in presentation, but not
% in article mode.
% However, some classes or font packages clash with amssymb, so allow to
% disable auto-loading optionally.
\fi

\mode
<presentation>

%
% Font theme stuff
%
\define@key{beamerthm}{size}
  {\expandafter\def\csname beamer@thmfsiz@{\beamer@temp}\endcsname{#1}}
\define@key{beamerthm}{size*}
  {\expandafter\def\csname beamer@thmfsiz@{\beamer@temp}\endcsname{\fontsize{#1}}}
\define@key{beamerthm}{shape}
  {\expandafter\def\csname beamer@thmfshap@{\beamer@temp}\endcsname{#1}}
\define@key{beamerthm}{shape*}
  {\expandafter\def\csname beamer@thmfshap@{\beamer@temp}\endcsname{\fontshape{#1}}}
\define@key{beamerthm}{series}
  {\expandafter\def\csname beamer@thmfseries@{\beamer@temp}\endcsname{#1}}
\define@key{beamerthm}{series*}
  {\expandafter\def\csname beamer@thmfseries@{\beamer@temp}\endcsname{\fontseries{#1}}}
\define@key{beamerthm}{family}
  {\expandafter\def\csname beamer@thmffamil@{\beamer@temp}\endcsname{#1}}
\define@key{beamerthm}{family*}
  {\expandafter\def\csname beamer@thmffamil@{\beamer@temp}\endcsname{\fontfamily{#1}}}
\define@key{beamerthm}{parent}
  {\expandafter\def\csname beamer@thmfinherits@{\beamer@temp}\endcsname{%
    \@for\@temp:=#1\do{\expandafter\usebeamerfont\expandafter{\@temp}}}}

\def\setbeamerfont{\@ifstar{\beamer@clearbeamerfont}{\beamer@setbeamerfont}}

\newcommand\beamer@clearbeamerfont [2] {%
  \def\beamer@temp{#1}
  \setkeys{beamerthm}{size={},shape={},series={},family={},parent={}}
  \setkeys{beamerthm}{#2}
```

```

}
\newcommand\beamer@setbeamerfont[2]{%
  \def\beamer@temp{#1}
  \setkeys{beamerthm}{#2}
}

\def\usebeamerfont{\@ifstar{\reset@font\beamer@usebeamerfont}{\beamer@usebeamerfont}}

\newcommand\beamer@usebeamerfont[1]{%
  \csname beamer@thmfinherits@#1\endcsname%
  \csname beamer@thmfsize@#1\endcsname%
  \csname beamer@thmfshape@#1\endcsname%
  \csname beamer@thmfseries@#1\endcsname%
  \csname beamer@thmffamily@#1\endcsname%
  \selectfont}

%
% computer modern font size stuff - redefinition for oversized fonts.
% Not used if other packages like lmodern kick in.
%
\def\EC@family#1#2#3#4#5{%
  \DeclareFontShape{#1}{#2}{#3}{#4}%
    {<5><6><7><8><9><10><10.95><12><14.4>%
      <17.28><20.74><24.88><29.86><35.83><42.99><51.59>genb*#5}{}}
\EC@family{T1}{cmr}{m}{n}{ecrm}
\EC@family{T1}{cmr}{m}{sl}{ecsl}
\EC@family{T1}{cmr}{m}{it}{ecti}
\EC@family{T1}{cmr}{m}{sc}{eccc}
\EC@family{T1}{cmr}{bx}{n}{ecbx}
\EC@family{T1}{cmr}{b}{n}{ecrb}
\EC@family{T1}{cmr}{bx}{it}{ecbi}
\EC@family{T1}{cmr}{bx}{sl}{ecbl}
\EC@family{T1}{cmr}{bx}{sc}{ecxc}
\EC@family{T1}{cmr}{m}{ui}{ecui}
\DeclareFontShape{OT1}{cmr}{m}{n}%
  {<5><6><7><8><9><10><12>gen*cmr%
    <10.95>cmr10%
    <14.4>cmr12%
    <17.28><20.74><24.88><29.86><35.83><42.99><51.59>cmr17}{}}
\DeclareFontShape{OT1}{cmr}{m}{sl}%
  {<5><6><7>cmsl8%
    <8><9>gen*cmsl%
    <10><10.95>cmsl10%
    <12><14.4><17.28><20.74><24.88><29.86><35.83><42.99><51.59>cmsl12%
    }{}}
\DeclareFontShape{OT1}{cmr}{m}{it}%
  {<5><6><7>cmti7%
    <8>cmti8%
    <9>cmti9%
    <10><10.95>cmti10%
    <12><14.4><17.28><20.74><24.88><29.86><35.83><42.99><51.59>cmti12%
    }{}}
\DeclareFontShape{OT1}{cmr}{m}{sc}%
  {<5><6><7><8><9><10><10.95><12>%
    <14.4><17.28><20.74><24.88><29.86><35.83><42.99><51.59>cmcsc10%
    }{}}

```

```

\DeclareFontShape{OT1}{cmr}{m}{ui}
  {<5><6><7><8><9><10><10.95><12>%
   <14.4><17.28><20.74><24.88><29.86><35.83><42.99><51.59>cmu10%
  }{}
\DeclareFontShape{OT1}{cmr}{b}{n}
  {<5><6><7><8><9><10><10.95><12>%
   <14.4><17.28><20.74><24.88><29.86><35.83><42.99><51.59>cmb10%
  }{}
\DeclareFontShape{OT1}{cmr}{bx}{n}
  {<5><6><7><8><9>gen*cmbx%
   <10><10.95>cmbx10%
   <12><14.4><17.28><20.74><24.88><29.86><35.83><42.99><51.59>cmbx12%
  }{}
\DeclareFontShape{OT1}{cmr}{bx}{sl}
  {<5><6><7><8><9>%
   <10><10.95><12><14.4><17.28><20.74><24.88><29.86><35.83><42.99><51.59>cmbxsl10%
  }{}
\DeclareFontShape{OT1}{cmr}{bx}{it}
  {<5><6><7><8><9>%
   <10><10.95><12><14.4><17.28><20.74><24.88><29.86><35.83><42.99><51.59>cmbxti10%
  }{}
\DeclareFontFamily{T1}{cmss}{}
\EC@family{T1}{cmss}{m}{n}{ecss}
\EC@family{T1}{cmss}{m}{sl}{ecsi}
\EC@family{T1}{cmss}{m}{it}{ecsi}
\EC@family{T1}{cmss}{bx}{n}{ecsx}
\EC@family{T1}{cmss}{bx}{it}{ecso}
\EC@family{T1}{cmss}{bx}{sl}{ecso}
\DeclareFontShape{T1}{cmss}{sbc}{n}{%
  <5><6><7><8><9><10><10.95><12><14.4><17.28>%
  <20.74><24.88><29.86><35.83><42.99><51.59>%
  ecssdc10
  }{}
\DeclareFontShape{OT1}{cmss}{m}{n}
  {%
  <5><6><7><8>cmss8%
  <9>cmss9%
  <10><10.95>cmss10%
  <12><14.4>cmss12%
  <17.28><20.74><24.88><29.86><35.83><42.99><51.59>cmss17%
  }{}
\DeclareFontShape{OT1}{cmss}{m}{sl}
  {%
  <5><6><7><8>cmssi8<9>cmssi9%
  <10><10.95>cmssi10%
  <12><14.4>cmssi12%
  <17.28><20.74><24.88><29.86><35.83><42.99><51.59>cmssi17%
  }{}
\DeclareFontShape{OT1}{cmss}{m}{it}
  {%
  <5><6><7><8>cmssi8<9>cmssi9%
  <10><10.95>cmssi10%
  <12><14.4>cmssi12%
  <17.28><20.74><24.88><29.86><35.83><42.99><51.59>cmssi17%
  }{}
\DeclareFontShape{OT1}{cmss}{sbc}{n}
  {%

```

```

<5><6><7><8><9>cmssdc10%
<10><10.95><12><14.4><17.28><20.74><24.88><29.86><35.83><42.99><51.59>cmssdc10%
}{}
\DeclareFontShape{OT1}{cmss}{bx}{n}
{%
<5><6><7><8><9>cmssbx10%
<10><10.95><12><14.4><17.28><20.74><24.88><29.86><35.83><42.99><51.59>cmssbx10%
}{}

\newcommand*{\beamer@font@check}{%
\def\beamer@cmr{cmr}
\edef\beamer@fmdef{\mathfamilydefault}
% supress for standard cm
\ifx\beamer@fmdef\beamer@cmr\beamer@suppresreplacementstrue\fi
% supress for mathtime serif and math minion serif
\@ifpackageloaded{arevmath}{\ifbeamer@sansmath\else\beamer@suppresreplacementstrue\fi ?
? }{}
\@ifpackageloaded{hvmath}{\ifbeamer@sansmath\else\beamer@suppresreplacementstrue\fi ?
? }{}
\@ifpackageloaded{kpfonts}{\ifbeamer@sansmath\else\beamer@suppresreplacementstrue\fi ?
? }{}
\@ifpackageloaded{lucidabr}{\ifbeamer@sansmath\else\beamer@suppresreplacementstrue\fi ?
? }{}
\@ifpackageloaded{lmodern}{\ifbeamer@sansmath\else\beamer@suppresreplacementstrue\fi ?
? }{}
\@ifpackageloaded{lucimatx}{\ifbeamer@sansmath\else\beamer@suppresreplacementstrue\fi ?
? }{}
\@ifpackageloaded{mathastext}{\ifbeamer@sansmath\else\beamer@suppresreplacementstrue\
?
? fi}{}
\@ifpackageloaded{mathpmt}{\ifbeamer@sansmath\else\beamer@suppresreplacementstrue\fi ?
? }{}
\@ifpackageloaded{mathpple}{\ifbeamer@sansmath\else\beamer@suppresreplacementstrue\fi ?
? }{}
\@ifpackageloaded{mathtime}{\ifbeamer@sansmath\else\beamer@suppresreplacementstrue\fi ?
? }{}
\@ifpackageloaded{mtpro}{\ifbeamer@sansmath\else\beamer@suppresreplacementstrue\fi}{}
\@ifpackageloaded{mtpro2}{\ifbeamer@sansmath\else\beamer@suppresreplacementstrue\fi ?
? }{}
}
\AtBeginDocument{%
\beamer@font@check
\ifbeamer@suppresreplacements\else
\ifbeamer@sansmath
\SetSymbolFont{operators}{normal}{OT1}{cmss}{\mddefault}{n}
\ifx\mv@bold\@undefined
\else
\SetSymbolFont{operators}{bold}{OT1}{cmss}{\bfdefault}{n}
\fi
\@ifpackageloaded{lmodern}
{%
\SetSymbolFont{operators}{normal}{OT1}{\sfdefault}{\mddefault}{n}
\ifx\mv@bold\@undefined
\else
\SetSymbolFont{operators}{bold}{OT1}{\sfdefault}{\bfdefault}{n}
\fi
}%
}

```

```

}%
\fi
\DeclareSymbolFont{numbers}{\encodingdefault}{\mathfamilydefault}{\mddefault}{n}
\DeclareSymbolFont{pureletters}{\encodingdefault}{\mathfamilydefault}{\mddefault}{it}
\SetMathAlphabet{\mathrm}{normal}{\encodingdefault}{\rmdefault}{\mddefault}{n}
\DeclareMathAlphabet{\mathbf}{\encodingdefault}{\mathfamilydefault}{\bfdefault}{n}
\DeclareMathAlphabet{\mathsf}{\encodingdefault}{\sfdefault}{\mddefault}{n}
\DeclareMathAlphabet{\mathit}{\encodingdefault}{\mathfamilydefault}{\mddefault}{it}
\DeclareMathAlphabet{\mathhtt}{\encodingdefault}{\ttdefault}{\mddefault}{n}
\ifx\mv@bold@undefined\else
\SetSymbolFont{numbers}{bold}{\encodingdefault}{\mathfamilydefault}{\bfdefault}{n}
\SetSymbolFont{pureletters}{bold}{\encodingdefault}{\mathfamilydefault}{\bfdefault}{it ?
? }
\SetMathAlphabet{\mathrm}{bold}{\encodingdefault}{\rmdefault}{\bfdefault}{n}
\SetMathAlphabet{\mathbf}{bold}{\encodingdefault}{\mathfamilydefault}{\bfdefault}{n}
\SetMathAlphabet{\mathsf}{bold}{\encodingdefault}{\sfdefault}{\bfdefault}{n}
\SetMathAlphabet{\mathit}{bold}{\encodingdefault}{\mathfamilydefault}{\bfdefault}{it}
\SetMathAlphabet{\mathhtt}{bold}{\encodingdefault}{\ttdefault}{\bfdefault}{n}
\fi

\def\operator@font{\mathgroup\symnumbers}

\DeclareMathSymbol{0}\mathalpha{numbers}{"30}
\DeclareMathSymbol{1}\mathalpha{numbers}{"31}
\DeclareMathSymbol{2}\mathalpha{numbers}{"32}
\DeclareMathSymbol{3}\mathalpha{numbers}{"33}
\DeclareMathSymbol{4}\mathalpha{numbers}{"34}
\DeclareMathSymbol{5}\mathalpha{numbers}{"35}
\DeclareMathSymbol{6}\mathalpha{numbers}{"36}
\DeclareMathSymbol{7}\mathalpha{numbers}{"37}
\DeclareMathSymbol{8}\mathalpha{numbers}{"38}
\DeclareMathSymbol{9}\mathalpha{numbers}{"39}

\DeclareMathSymbol{A}\mathalpha{pureletters}{"41}
\DeclareMathSymbol{B}\mathalpha{pureletters}{"42}
\DeclareMathSymbol{C}\mathalpha{pureletters}{"43}
\DeclareMathSymbol{D}\mathalpha{pureletters}{"44}
\DeclareMathSymbol{E}\mathalpha{pureletters}{"45}
\DeclareMathSymbol{F}\mathalpha{pureletters}{"46}
\DeclareMathSymbol{G}\mathalpha{pureletters}{"47}
\DeclareMathSymbol{H}\mathalpha{pureletters}{"48}
\DeclareMathSymbol{I}\mathalpha{pureletters}{"49}
\DeclareMathSymbol{J}\mathalpha{pureletters}{"4A}
\DeclareMathSymbol{K}\mathalpha{pureletters}{"4B}
\DeclareMathSymbol{L}\mathalpha{pureletters}{"4C}
\DeclareMathSymbol{M}\mathalpha{pureletters}{"4D}
\DeclareMathSymbol{N}\mathalpha{pureletters}{"4E}
\DeclareMathSymbol{O}\mathalpha{pureletters}{"4F}
\DeclareMathSymbol{P}\mathalpha{pureletters}{"50}
\DeclareMathSymbol{Q}\mathalpha{pureletters}{"51}
\DeclareMathSymbol{R}\mathalpha{pureletters}{"52}
\DeclareMathSymbol{S}\mathalpha{pureletters}{"53}
\DeclareMathSymbol{T}\mathalpha{pureletters}{"54}
\DeclareMathSymbol{U}\mathalpha{pureletters}{"55}
\DeclareMathSymbol{V}\mathalpha{pureletters}{"56}
\DeclareMathSymbol{W}\mathalpha{pureletters}{"57}
\DeclareMathSymbol{X}\mathalpha{pureletters}{"58}

```

```

\DeclareMathSymbol{Y}\mathalpha{pureletters}{"59}
\DeclareMathSymbol{Z}\mathalpha{pureletters}{"5A}

\DeclareMathSymbol{a}\mathalpha{pureletters}{"61}
\DeclareMathSymbol{b}\mathalpha{pureletters}{"62}
\DeclareMathSymbol{c}\mathalpha{pureletters}{"63}
\DeclareMathSymbol{d}\mathalpha{pureletters}{"64}
\DeclareMathSymbol{e}\mathalpha{pureletters}{"65}
\DeclareMathSymbol{f}\mathalpha{pureletters}{"66}
\DeclareMathSymbol{g}\mathalpha{pureletters}{"67}
\DeclareMathSymbol{h}\mathalpha{pureletters}{"68}
\DeclareMathSymbol{i}\mathalpha{pureletters}{"69}
\DeclareMathSymbol{j}\mathalpha{pureletters}{"6A}
\DeclareMathSymbol{k}\mathalpha{pureletters}{"6B}
\DeclareMathSymbol{l}\mathalpha{pureletters}{"6C}
\DeclareMathSymbol{m}\mathalpha{pureletters}{"6D}
\DeclareMathSymbol{n}\mathalpha{pureletters}{"6E}
\DeclareMathSymbol{o}\mathalpha{pureletters}{"6F}
\DeclareMathSymbol{p}\mathalpha{pureletters}{"70}
\DeclareMathSymbol{q}\mathalpha{pureletters}{"71}
\DeclareMathSymbol{r}\mathalpha{pureletters}{"72}
\DeclareMathSymbol{s}\mathalpha{pureletters}{"73}
\DeclareMathSymbol{t}\mathalpha{pureletters}{"74}
\DeclareMathSymbol{u}\mathalpha{pureletters}{"75}
\DeclareMathSymbol{v}\mathalpha{pureletters}{"76}
\DeclareMathSymbol{w}\mathalpha{pureletters}{"77}
\DeclareMathSymbol{x}\mathalpha{pureletters}{"78}
\DeclareMathSymbol{y}\mathalpha{pureletters}{"79}
\DeclareMathSymbol{z}\mathalpha{pureletters}{"7A}

```

```

\fi
}

```

```

\ifbeamer@sansmath
  \IfFileExists{sansmathaccent.sty}
    {\RequirePackage{sansmathaccent}}
  {}

```

```

\fi

```

```

\DeclareOldFontCommand{\rm}{\normalfont\rmfamily}{\mathrm}
\DeclareOldFontCommand{\sf}{\normalfont\sfamily}{\mathsf}
\DeclareOldFontCommand{\tt}{\normalfont\ttfamily}{\mathtt}
\DeclareOldFontCommand{\bf}{\normalfont\bfseries}{\mathbf}
\DeclareOldFontCommand{\it}{\normalfont\itshape}{\mathit}
\DeclareOldFontCommand{\sl}{\normalfont\slshape}{\@nomath\sl}
\DeclareOldFontCommand{\sc}{\normalfont\scshape}{\@nomath\sc}
\DeclareRobustCommand*\cal{\@fontswitch\relax\mathcal}
\DeclareRobustCommand*\mit{\@fontswitch\relax\mathnormal}

```

```

\newcommand\Tiny{\@setfontsize\Tiny{4}{5}}
\newcommand\TINY{\@setfontsize\Tiny{3}{4}}

```

```

\mode
<article>
{
  \let\Tiny=\tiny
  \let\TINY=\tiny
}

```

```

\newcommand\setbeamerfont{\@ifstar{\@gobbletwo}{\@gobbletwo}}
\newcommand\usebeamerfont{\@ifstar{\beamer@optgog}{\beamer@optgog}}
}

\mode
<all>

```

9 beamerbasetranslator.sty

```

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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/ ?
? beamerbasetranslator.sty,v 85fd1cc7fc42 2010/06/11 14:40:11 rivavx $

%
% Load translator and it's dictionaries
%
\RequirePackage{translator}
\usedictionary{translator-basic-dictionary}
\usedictionary{translator-bibliography-dictionary}
\usedictionary{translator-environment-dictionary}
\usedictionary{translator-months-dictionary}
\usedictionary{translator-numbers-dictionary}
\usedictionary{translator-theorem-dictionary}

\mode
<all>

```

10 beamerbasemisc.sty

```

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```

```

\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbasemisc. ?
? sty,v a55719c41d85 2013/09/03 09:55:28 joseph $

\mode
<presentation>

% Maximum dead cycles
\maxdeadcycles=1000

% Calculate maximum number of sections/subsections per part
\beamer@subsubsectionmax=0\relax
\beamer@subsectionmax=0\relax
\beamer@sectionmax=0\relax
\beamer@sectioncount=0\relax

\def\headcommand#1{\global\advance\beamer@totalheads by1\relax%
\expandafter\gdef\csname @@head\the\beamer@totalheads\endcsname{#1}}
\def\dohead{\beamer@headcounter=0\relax\loop\ifnum\beamer@headcounter<\beamer@totalheads ?
? %
\advance\beamer@headcounter by1\relax%
\csname @@head\the\beamer@headcounter\endcsname\repeat}

\def\beamer@startpageofframe{1}
\def\beamer@endpageofframe{1}
\def\beamer@startpageofsubsection{1}
\def\beamer@endpageofsubsection{1}
\def\beamer@startpageofsection{1}
\def\beamer@endpageofsection{1}
\def\beamer@startpageofpart{1}
\def\beamer@endpageofpart{1}
\def\beamer@endpageofdocument{1}
\def\beamer@startpageofappendix{}
\def\inserttotalframenumbers{1}

\def\partentry#1#2{\beamer@sectioncount=0\relax}
\def\beamer@initsectionentry#1#2#3#4#5{\advance\beamer@sectioncount by1\relax%
\ifnum\beamer@sectionmax<\beamer@sectioncount\beamer@sectionmax=\beamer@sectioncount\ ?
? fi}
\def\beamer@initslideentry#1#2#3#4#5#6{\ifnum\beamer@subsectionmax<#2\relax\ ?
? beamer@subsectionmax=#2\fi}
\def\beamer@initsubsubsectionentry#1#2#3#4#5#6{\ifnum\beamer@subsubsectionmax<#4\relax\ ?
? beamer@subsubsectionmax=#4\fi}
\def\beamer@framepages#1#2{}
\def\beamer@subsectionpages#1#2{}
\def\beamer@sectionpages#1#2{}
\def\beamer@partpages#1#2{}
\def\beamer@appendixpages#1{\gdef\beamer@startpageofappendix{#1}}
\def\beamer@documentpages#1{\gdef\beamer@endpageofdocument{#1}}

\setlength\lineskip{1\p@}
\setlength\normallineskip{1\p@}
\renewcommand\baselinestretch{}

\setlength\parskip{0\p@}% \@plus \p@}
\@lowpenalty 51
\@medpenalty 151

```



```

\@highpenalty 301
\setcounter{topnumber}{2}
\renewcommand\topfraction{.7}
\setcounter{bottomnumber}{1}
\renewcommand\bottomfraction{.3}
\setcounter{totalnumber}{3}
\renewcommand\textfraction{.9}%.2}
\renewcommand\floatpagefraction{.1}%5}
\setcounter{dbltopnumber}{2}
\renewcommand\dbltopfraction{.7}
\renewcommand\dblfloatpagefraction{.5}
\@beginparpenalty -\@lowpenalty
\@endparpenalty -\@lowpenalty
\@itempenalty -\@lowpenalty

\g@addto@macro\beamer@lastminutepatches{
  \beamer@activecjk
  \makeatletter
  \@input{\jobname.nav}
  \let\beamer@sectionentryorig=\sectionentry
  \let\beamer@slideentryorig=\slideentry
  \let\beamer@subsubsectionentryorig=\beamer@subsubsectionentry
  \let\sectionentry=\beamer@initsectionentry
  \let\slideentry=\beamer@initslideentry
  \let\beamer@subsubsectionentry=\beamer@initsubsubsectionentry
  \dohead
  \let\sectionentry=\beamer@sectionentryorig
  \let\slideentry=\beamer@slideentryorig
  \let\beamer@subsubsectionentry=\beamer@subsubsectionentryorig
  \beamer@calculateheadfoot
  \ifbeamer@draftmode
    \setbeamertemplate{footline}{
      \color{black!25}%
      \kern-\Gm@lmargin\vrule width\paperwidth
      height\footheight\kern-\Gm@rmargin}
    \setbeamertemplate{headline}{
      \color{black!25}%
      \kern-\Gm@lmargin\vrule width\paperwidth
      height\headheight\kern-\Gm@rmargin}
    \setbeamertemplate{sidebar left}{%
      \color{black!20}%
      \vrule width \beamer@leftsidebar height\sidebarheight}
    \setbeamertemplate{sidebar right}{%
      \color{black!20}%
      \vrule width \beamer@rightsidebar height\sidebarheight}
    \setbeamertemplate{sidebar canvas left}{}
    \setbeamertemplate{sidebar canvas right}{}
  \fi
  \makeatother
}

\setcounter{tocdepth}{3}

\setlength\arraycolsep{5\p@}
\setlength\tabcolsep{6\p@}
\setlength\arrayrulewidth{.4\p@}

```

```

\setlength\doublecolumnsep{2\p@}
\setlength\tabbingsep{\labelsep}
\skip\@mpfootins = \skip\footins
\setlength\fbboxsep{3\p@}
\setlength\fbboxrule{.4\p@}

\newcommand\contentsname{\translate{Contents}}
\newcommand\listfigurename{\translate{List of Figures}}
\newcommand\listtablename{\translate{List of Tables}}
\newcommand\refname{\translate{References}}
\newcommand\bibname{\translate{Bibliography}}
\newcommand\indexname{\translate{Index}}
\newcommand\figurename{\translate{Figure}}
\newcommand\algorithmname{\translate{Algorithm}}
\newcommand\tablename{\translate{Table}}
\newcommand\partname{\translate{Part}}
\newcommand\chaptername{\translate{Chapter}}
\newcommand\appendixname{\translate{Appendix}}
\newcommand\abstractname{\translate{Abstract}}
% This is suboptimal; for full localization babel should be used.
\def\today{\ifcase\month\or
\translate{January}\or \translate{February}\or \translate{March}\or
\translate{April}\or \translate{May}\or \translate{June}\or
\translate{July}\or \translate{August}\or \translate{September}\or
\translate{October}\or \translate{November}\or \translate{December}\fi
\space\number\day, \number\year}
\setlength\columnsep{10\p@}
\setlength\columnseprule{0\p@}
\onecolumn

\parindent0pt

\AtEndDocument{%
\clearpage
\beamer@tempcount=\c@page\advance\beamer@tempcount by -1%
\if@filesw
\immediate\write\@auxout{\string\@writefile{nav}%
{\noexpand\headcommand{\noexpand\beamer@partpages{\the\beamer@partstartpage}{\the ?
? \beamer@tempcount}}}}}%
\immediate\write\@auxout{\string\@writefile{nav}%
{\noexpand\headcommand{\noexpand\beamer@subsectionpages{\the\ ?
? \beamer@subsectionstartpage}{\the\beamer@tempcount}}}}}%
\immediate\write\@auxout{\string\@writefile{nav}%
{\noexpand\headcommand{\noexpand\beamer@sectionpages{\the\beamer@sectionstartpage ?
?}{\the\beamer@tempcount}}}}}%
\immediate\write\@auxout{\string\@writefile{nav}%
{\noexpand\headcommand{\noexpand\beamer@documentpages{\the\beamer@tempcount}}}}
\immediate\write\@auxout{\string\@writefile{nav}%
{\noexpand\headcommand{\noexpand\def\noexpand\inserttotalframenum{\the\ ?
? \c@framenum}}}}
\newwrite\tf@nav
\immediate\openout\tf@nav\jobname.nav\relax
\newwrite\tf@toc
\immediate\openout\tf@toc\jobname.toc\relax
\newwrite\tf@snm
\immediate\openout\tf@snm\jobname.snm\relax

```

```

\fi
}

%
% Managing short inserts
%

\define@key{beamerst}{respectlinebreaks}[true]{%
  \def\beamer@stlinebreakrule{}}
\define@key{beamerst}{width}{%
  \def\beamer@ststart{%
    \begin{minipage}[t]{#1}%
      \raggedright%
      \beamer@stalign%
      \beamer@stlinebreakrule%
    }%
  \def\beamer@stend{\end{minipage}}}}
\define@key{beamerst}{center}[true]{%
  \def\beamer@stalign{\centering}}
\define@key{beamerst}{spill}[true]{%
  \def\beamer@stalign{\parshape...}}%
\newcommand{\beamer@setupshort}[1]{%
  \def\beamer@stlinebreakrule{\def\\{}}%
  \def\beamer@stalign{}}%
  \def\beamer@ststart{\hbox\bgroup\def\\{}}%
  \def\beamer@stend{\egroup}%
  \setkeys{beamerst}{#1}}%
\newcommand{\beamer@insertshort}[1]{%
  \beamer@ststart#1\beamer@stend%
}

\mode
<all>

\AtBeginDocument
{
  \ifx\includegraphics\@undefined
  \else
    \renewcommand<>\includegraphics[2][]{\only#3{\beameroriginal\includegraphics ?
      ? [{#1}]{#2}}\ignorespaces}
    % Deal with star case (unique for overlay-aware commands)
    \let\beamer@includegraphics@maybe@star\includegraphics
    \DeclareRobustCommand\includegraphics{%
      \@ifstar
        {\Gin@cliptrue \beamer@includegraphics@maybe@star}
        {\Gin@clipfalse \beamer@includegraphics@maybe@star}%
    }
  \fi

  \ifx\pgfuseimage\@undefined
  \else
    \renewcommand<>\pgfuseimage[1]{\only#2{\beameroriginal\pgfuseimage{#1}}\ignorespaces ?
      ? }
    \renewcommand<>\pgfimage[2][]{\only#3{\beameroriginal\pgfimage[{#1}]{#2}}\ ?

```

```

    ? ignorespaces}
\fi
}

```

11 beamerbasetscreens.sty

```

% Copyright 2003--2007 by Till Tantau
% Copyright 2010 by Vedran Miletic\c
%
% This file may be distributed and/or modified
%
% 1. under the LaTeX Project Public License and/or
% 2. under the GNU Public License.
%
% See the file doc/licenses/LICENSE for more details.
%
% version 1.71 bugfix for \pgfpagescurrentpagewillbelogicalpage (hv)
%
%
\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/ ?
    ? beamerbasetscreens.sty,v efa082c6111d 2010/05/01 11:27:03 rivanvx $

\mode
<presentation>

\newif\ifbeamer@twoscreenstext
\newif\ifbeamer@dosecondmode

\defbeameroption{previous slide on second screen}[right]%
{
  \pgfpagesuselayout{two screens with lagging second}[second #1]
  \beamer@twoscreenstexttrue
  \nofiles
}

\defbeameroption{second mode text on second screen}[right]%
{
  \pgfpagesuselayout{two screens with optional second}[second #1]
  \beamer@twoscreenstexttrue
}

\defbeameroption{always typeset second mode}[true]%
{
  \def\beamer@defaultdosecondmode{#1}
}
\def\beamer@defaultdosecondmode{false}

\long\def\beamer@dosecondscreennow#1{% called from \beamer@doseveralframes
  \ifbeamer@dosecondmode%
    {%
      \clearpage%
      \def\beamer@currentmode{second}
      \def\beamer@doifnotinframe{}%
      \def\beamer@doifinframe{\begin\beamer@frameslide}%
    }
  }

```

```

    #1%
    \end{beamer@frameslide}%
    \pgfpagescurrentpagewillbelogicalpage{2}%
    \clearpage%
  }%
  {\beamer@masterdecode{\beamer@whichframes}}%
  \beamer@donow%
}%
\fi%
}

\mode
<all>

```

12 beamerbaseoverlay.sty

```

% Copyright 2003--2007 by Till Tantau
% Copyright 2010 by Vedran Miletic\c
% Copyright 2011 by Vedran Miletic\c, Joseph Wright
%
% This file may be distributed and/or modified
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% 2. under the GNU Public License.
%
% See the file doc/licenses/LICENSE for more details.

```

此文件实现了 Beamer 的各种覆盖效果，主要参考文档 §9。

```

\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbaseoverlay ?
? .sty,v f6bd5e3805da 2013/12/25 18:41:14 joseph $

%
%
% Basic overlay commands
%
%

\long\def\beamer@ifnextcharospec#1#2{%
  \def\reserved@a{#1}%
  \def\reserved@b{#2}%
  \futurelet\@let@token\beamer@ifnch}
\def\beamer@ifnch{%
  \ifx\@let@token<%
    \let\reserved@c\reserved@a%
  \else%
    \let\reserved@c\reserved@b%
  \fi%
  \reserved@c}

```

`\beamer@masterdecode` 在 `beamerbasedecode.sty` 中定义，依据覆盖指令中是否包含当前 slide 编号，分别将 `\beamer@donow` 设定为 `\beamer@doifinframe` 或者 `\beamer@doifnotinframe`。

`\only` 命令的覆盖指令（overlay specification）可以放在前面或者后面。

```

%
% \only
%
\def\only{\@ifnextchar<{\beamer@only}{\beamer@@only}}
\long\def\beamer@only<#1>#2{%
  \def\beamer@doifnotinframe{\def\beamer@doifinframe{#2}%
    {\beamer@masterdecode{#1}}\beamer@donow}
\long\def\beamer@@only#1{\beamer@ifnextcharospec{\beamer@@only{#1}}{#1}}
\long\def\beamer@@@only#1<#2>{%
  \def\beamer@doifnotinframe{\def\beamer@doifinframe{#1}%
    {\beamer@masterdecode{#2}}\beamer@donow}

```

\alt 命令的覆盖指令同样可以放在最前面或者最后面。

```

%
% \alt and \altenv
%
\def\alt{\@ifnextchar<{\beamer@alt}{\beamer@alttwo}}
\long\def\beamer@alttwo#1#2{\beamer@ifnextcharospec{\beamer@altget{#1}{#2}}{#1}}
\long\def\beamer@altget#1#2<#3>{%
  \def\beamer@doifnotinframe{#2}\def\beamer@doifinframe{#1}%
  {\beamer@masterdecode{#3}}\beamer@donow}
\long\def\beamer@alt<#1>#2#3{%
  \def\beamer@doifnotinframe{#3}\def\beamer@doifinframe{#2}%
  {\beamer@masterdecode{#1}}\beamer@donow}

\def\altenv{\@ifnextchar<{\beamer@altenv}{\beamer@@@altenv}}
\def\beamer@altenv<#1>{\beamer@@altenv{<#1>}}
\long\def\beamer@@@altenv#1#2#3#4{\beamer@ifnextcharospec{\beamer@altenvsort ?
  ? {#1}{#2}{#3}{#4}}{\beamer@@altenv-}{#1}{#2}{#3}{#4}}
\long\def\beamer@altenvsort#1#2#3#4<#5>{\beamer@@altenv{<#5>}{#1}{#2}{#3}{#4}}
\long\def\beamer@@altenv#1#2#3#4#5{\alt#1{\long\def\beamer@eoenvironment{#3}{#2}{\long\def\ ?
  ? beamer@eoenvironment{#5}{#4}}
\def\endaltenv{\beamer@eoenvironment}

%
% \action and actionenv
%
\def\beamer@plus{+}

\def\action{\@ifnextchar<{\beamer@parsedaction}{\expandafter\beamer@parsedaction\ ?
  ? beamer@defaultospec}}
\long\def\beamer@parsedaction<#1>#2{%
  \def\beamer@doifnotinframe{\def\beamer@doifinframe{}}%
  {\beamer@masterdecode{#1}}}%
\ifx\beamer@decodefound\beamer@plus%
  \long\def\beamer@todo{#2}%
\else%
  \expandafter\long\expandafter\def\expandafter\beamer@todo%
  \expandafter{\expandafter\uncover\expandafter<\expandafter a\expandafter l\ ?
    ? expandafter l\expandafter:\beamer@decodefound>{#2}}}%
\fi%
\expandafter\beamer@processactions\beamer@decaction{}%
\beamer@todo}

```

```

\def\beamer@processactions#1{%
  \beamer@ifempty{#1}{-}{%
    \expandafter\beamer@@processactions\expandafter{\beamer@todo}#1}}
\long\def\beamer@@processactions#1#2<#3>{%
  \expandafter\long\expandafter\def\expandafter\beamer@todo\expandafter{%
    \csname#2\endcsname<all:#3>{#1}}%
  \beamer@processactions}

\def\actionenv{\beamer@ifnextcharospec{\beamer@parsedactionenv}{\expandafter\ ?
  ? beamer@parsedactionenv\beamer@defaultospec}}
\def\beamer@parsedactionenv<#1>{%
  \def\beamer@doifnotinframe{}\def\beamer@doifinframe{}%
  {\beamer@masterdecode{#1}}}%
  \ifx\beamer@decodefound\beamer@plus%
    \def\beamer@todobegin{}%
    \def\beamer@todoend{}%
  \else%
    \edef\beamer@todobegin{\noexpand\begin{uncoverenv}<all:\beamer@decodefound>}%
    \def\beamer@todoend{\end{uncoverenv}}%
  \fi%
  \expandafter\beamer@processactionsbegin\beamer@decaction{}%
  \expandafter\beamer@processactionsend\beamer@decaction{}%
  \beamer@todobegin}
\def\endactionenv{\beamer@todoend}

\def\beamer@processactionsbegin#1{%
  \beamer@ifempty{#1}{-}{%
    \expandafter\beamer@@processactionsbegin\expandafter{\beamer@todobegin}#1}}
\long\def\beamer@@processactionsbegin#1#2<#3>{%
  \def\beamer@todobegin{\begin{#2env}<all:#3>#1}%
  \beamer@processactionsbegin}

\def\beamer@processactionsend#1{%
  \beamer@ifempty{#1}{-}{%
    \expandafter\beamer@@processactionsend\expandafter{\beamer@todoend}#1}}
\long\def\beamer@@processactionsend#1#2<#3>{%
  \def\beamer@todoend{#1\end{#2env}}%
  \beamer@processactionsend}

\def\beamer@defaultospec{<*>}
\def\beamer@emptyospec{<*>}

%
% \temporal
%
\long\def\temporal<#1>#2#3#4{% past, present, future
  \def\beamer@doifnotinframe{\beamer@picked}\def\beamer@doifinframe{#3}%
  {\beamer@masterdecode{#1}}%
  \ifbeamer@localanother slide\gdef\beamer@picked{#2}\else\gdef\beamer@picked{#4}\fi\ ?
  ? beamer@donow}

%
% \newoverlaycommand
%

```

```
\def\beameroriginal#1{\csname @orig\string#1\endcsname}
```

```
\newcount\beamer@argscount
```

重新定义 `\newenvironment` 和 `\renewenvironment`, 若后面有 `<>`, 则可以包含覆盖指令, 且覆盖指令作为最后一个参数; 否则保持原定义。

```
%  
% newenvironment extension  
%  
\let\beamer@orignewenvironment=\newenvironment  
  
\def\newenvironment{\@ifnextchar<{\beamer@newenv}{\beamer@orignewenvironment}}  
\def\beamer@newenv<>{\@star@or@long\beamer@new@environment}  
\def\beamer@new@environment#1{\@ifnextchar[{\beamer@@newenv{#1}}{\beamer@newenvnoopt ?  
? {#1}{0}}}  
\def\beamer@@newenv#1[#2]{\@ifnextchar[{\beamer@newenvopt{#1}{#2}}{\beamer@newenvnoopt ?  
? {#1}{#2}}}  
  
\long\def\beamer@newenvnoopt#1#2#3#4{%  
  \expandafter\newcommand\expandafter<\expandafter>\csname#1\endcsname[#2]{#3}%  
  \expandafter\long\expandafter\def\csname end#1\endcsname{#4}%  
}  
  
\long\def\beamer@newenvopt#1#2[#3]#4#5{%  
  \expandafter\newcommand\expandafter<\expandafter>\csname#1\endcsname[#2][#3]{#4}%  
  \expandafter\long\expandafter\def\csname end#1\endcsname{#5}%  
}  
  
\let\beamer@origrenewenvironment=\renewenvironment  
  
\def\renewenvironment{\@ifnextchar<{\beamer@renewenv}{\beamer@origrenewenvironment}}  
\def\beamer@renewenv<>#1{%  
  \edef\beamer@do{\csname original#1\endcsname=\expandafter\noexpand\csname#1\endcsname}  
  \expandafter\let\beamer@do%  
  \edef\beamer@do{\csname endoriginal#1\endcsname=\expandafter\noexpand\csname end#1\  
? endcsname}  
  \expandafter\let\beamer@do%  
  \newenvironment<>{#1}}
```

重新定义 `\newcommand` 和 `\renewcommand`, 如果后面有 `<>`, 则可以包含覆盖指令, 且覆盖指令作为最后一个参数; 否则保持原定义。

```
%  
% newcommand extension  
%  
\let\beamer@orignewcommand=\newcommand  
  
\def\newcommand{\@ifnextchar<{\beamer@newcom}{\beamer@orignewcommand}}  
\def\beamer@newcom<>{\@star@or@long\beamer@new@command}  
\def\beamer@new@command#1{\@ifnextchar[{\beamer@@newcom{#1}}{\beamer@newcomnoopt ?  
? {#1}{0}}}  
\def\beamer@@newcom#1[#2]{\@ifnextchar[{\beamer@newcomopt{#1}{#2}}{\beamer@newcomnoopt ?  
? {#1}{#2}}}  
  
\long\def\beamer@newcomnoopt#1#2#3{%  
  \ifnum#2=0\relax%  
  \expandafter\def\expandafter#1\expandafter{\expandafter\beamer@sortzero\expandafter ?  
? {\csname beamerx@\string#1\endcsname}}%
```



```

\else
  \expandafter\def\expandafter#1\expandafter{\expandafter\beamer@sort\expandafter{\
    ? csname beamerx@\string#1\endcsname}{#2}}%
\fi%
\beamer@argscount=#2\relax%
\advance\beamer@argscount by 1\relax%
\expandafter\newcommand\csname beamerx@\string#1\endcsname[\beamer@argscount]{#3}%
}
\long\def\beamer@newcomopt#1#2[#3]#4{%
  \expandafter\def\expandafter#1\expandafter{\expandafter\beamer@presort\expandafter{\
    ? csname beamerx@\string#1\endcsname}{#2}{#3}}%
  \beamer@argscount=#2\relax%
  \advance\beamer@argscount by 1\relax%
  \expandafter\newcommand\csname beamerx@\string#1\endcsname[\beamer@argscount]{#4}%
}

\let\beamer@origrenewcommand=\renewcommand

\def\renewcommand{\@ifnextchar<{\beamer@renewcom}{\beamer@origrenewcommand}}
\def\beamer@renewcom<>#1{%
  \expandafter\def\expandafter\beamer@name\expandafter{\csname @orig\string#1\endcsname} ?
  ? %
  \expandafter\let\beamer@name=#1\relax%
  \expandafter\let\csname beamerx@\string#1\endcsname\@undefined
  \newcommand<>#1}

\long\def\beamer@presort#1#2#3{%
  \long\def\beamer@todo{#1}%
  \def\beamer@ospec{}%
  \beamer@argscount=#2\relax%
  \beamer@prechecka{#3}}
\long\def\beamer@prechecka#1{\@ifnextchar<{\beamer@preget{#1}}{\beamer@precheckb{#1}}}
\long\def\beamer@preget#1<#2>{\def\beamer@ospec{<#2>}\beamer@precheckb{#1}}
\long\def\beamer@precheckb#1{\@ifnextchar[{\beamer@pregetb}{\beamer@pregetb[#{1}]}}
\long\def\beamer@pregetb[#{1}]{%
  \expandafter\long\expandafter\def\expandafter\beamer@todo\expandafter{\beamer@todo ?
    ? {#1}}%
  \advance\beamer@argscount by-1\relax%
  \beamer@parseargs%
}

\def\beamer@sortzero#1{\beamer@ifnextcharospec{\beamer@sortzeroread{#1}}{#1{}}}
\def\beamer@sortzeroread#1<#2>{#1{<#2>}}

\def\beamer@sort#1#2{%
  \long\def\beamer@todo{#1}%
  \def\beamer@ospec{}%
  \beamer@argscount=#2\relax%
  \beamer@parseargs}

\def\beamer@parseargs{%
  \ifnum\beamer@argscount=0\relax%
    \let\next=\beamer@finalargscheck%
  \else%
    \let\next=\beamer@lookforarg%

```

```

\fi%
\next}
\def\beamer@lookforarg{%
  \@ifnextchar<\beamer@foundspec\beamer@readarg}
\def\beamer@foundspec<#1>{%
  \def\beamer@ospec{<#1>}%
  \beamer@lookforarg}
\long\def\beamer@readarg#1{%
  \expandafter\long\expandafter\def\expandafter\beamer@todo\expandafter{\beamer@todo ?
    ? {#1}}%
  \advance\beamer@argcount by-1\relax%
  \beamer@parseargs%
}

\def\beamer@finalargscheck{\beamer@ifnextcharospec\beamer@finalspec\beamer@finalnospec}
\def\beamer@finalspec<#1>{\def\beamer@ospec{<#1>}\beamer@finalnospec}
\def\beamer@finalnospec{%
  \expandafter\beamer@todo\expandafter{\beamer@ospec}}

\mode
<presentation>

```

将参数前面的水平或垂直 skip 移动到参数后面。

```

% commands for smuggling skips past

\newskip\beamer@lastskipcover
\def\beamer@smuggle#1{%
  {}%
  \beamer@lastskipcover=\lastskip%
  \edef\beamer@lastskiptext{\the\lastskip}%
  \ifx\beamer@lastskiptext\beamer@zeropt\else%
  \ifvmode\unskip\fi\ifhmode\unskip\fi\fi%
  #1%
  \ifx\beamer@lastskiptext\beamer@zeropt\else%
  \ifvmode\vskip\beamer@lastskipcover\fi\ifhmode\hskip\beamer@lastskipcover\fi\fi%
}

```

`\uncover`、`\onslide`（不含 `\onslide+` 和 `\onslide*`）和 `\pause` 命令的实现方式。被覆盖内容的显示样式由 `\setbeamercovered` 命令确定，见文档 §17.6。

`\uncover` 命令是可以嵌套的，嵌套深度记录在 `\beamer@coveringdepth` 中。对于简单的覆盖效果，我们假定 `\uncover` 命令没有嵌套：这样下面的简单文档

```

\setbeamercovered{highly dynamic}
\begin{frame}
one\uncover<2->{two}\uncover<3->{three}
\end{frame}

```

展开后的第一个 slide 约略等于

```

\begin{beamer@frameslide}
one
%
```

```

\let\beamer@oldcolorhook\beamer@colorhook
\xdef\beamer@colorhook{!15!bg\beamer@colorhook}\color{.}
two
\let\beamer@colorhook\beamer@oldcolorhook
%
\let\beamer@oldcolorhook\beamer@colorhook
\xdef\beamer@colorhook{!10!bg\beamer@colorhook}\color{.}
three
\let\beamer@colorhook\beamer@oldcolorhook
\end{beamer@frameslide}

```

从下面的代码 `\newcolormixin\beamer@colorhook` 可以看到，`\beamer@colorhook` 是一个混色。混色功能在 `pgf` 中包含的 `xxcolor` 宏包中定义，参考 `pgf` 文档 §86。添加混色（例如 `!25!white`）后，每次用 `\color` 命令切换颜色时，都会将该混色添加到所选用颜色后面，从而改变了实际得到的颜色。`bg` 是 `beamer` 的背景色，因此用 `!15!bg` 混色将让文本颜色很接近背景色。

虽然用 `colormixin` 很容易改变文本的颜色，但从外部插入的图片的颜色却不会跟着变化。`Beamer` 利用 `\pgfimage` 的 `\pgfalterextension` 功能（见 `pgf` 文档 §106.3），可以根据当前覆盖透明度载入不同的图片，比如本来是载入 `some.png` 的，将改为载入 `some.15opaque.png`。

```

%
% Uncovering management
%
\def\beamer@actions#1#2{%
  \gdef\beamer@do{#1%
    \expandafter\gdef\csname beamer@doafter%
    \the\beamer@coveringdepth\endcsname{#2}}%
}

\def\beamer@startcovered{%
  \beamer@smuggle{%
    \global\advance\beamer@coveringdepth by 1\relax%
    \beamer@actions{\pgfsys@begininvisible\aftergroup\beamer@@spacingcover}{%
      \pgfsys@endinvisible\aftergroup\beamer@@spacingcover%
    }%
  }%
}

\def\opaqueness<##1>##2{%
  \only<##1>{%
    \beamer@actions{%
      \expandafter\xdef\csname beamer@oldcolorhook%
      \the\beamer@coveringdepth\endcsname{\beamer@colorhook}%
      \expandafter\xdef\csname beamer@oldpgfextension%
      \the\beamer@coveringdepth\endcsname{\beamer@pgfextension}%
      {\globalcolorstrue\colorlet{beamer@freeze\the\beamer@coveringdepth}{bg}}%
      \xdef\beamer@colorhook{!##2!beamer@freeze%
        \the\beamer@coveringdepth\beamer@colorhook}%
      \gdef\beamer@pgfextension{!##2opaque}%
      \color{.}%
    }%
  }%
}

\xdef\beamer@colorhook{\csname beamer@oldcolorhook%
  \the\beamer@coveringdepth\endcsname}%
\xdef\beamer@pgfextension{\csname beamer@oldpgfextension%
  \the\beamer@coveringdepth\endcsname}%
\color{.}%
}}%

```

`beamerbasedecode.sty` 定义的 `\beamer@minimum` 仅在这里用到。由于 `\opaqueness` 命令的覆盖指令是相対值，这里在编组中临时修改 `\beamer@slideinframe`，以让该命令得到正确的效果。

```

\ifnum\beamer@slideinframe<\beamer@minimum%ok, at beginning
{%
  \beamer@saveanother%
  \advance\beamer@minimum by-\beamer@slideinframe%
  \beamer@slideinframe=\beamer@minimum%
  \beamer@uncoverbeforeactions%
  \beamer@restoreanother%
}%
\else%
{%
  \beamer@saveanother%
  \advance\beamer@slideinframe by-\beamer@minimum%
  \beamer@uncoverafteractions%
  \beamer@restoreanother%
}%
\fi%
\beamer@do%
}%
}
\def\beamer@endcovered{%
  \beamer@smuggle{%
    \csname beamer@doafter\the\beamer@coveringdepth\endcsname%
    \global\advance\beamer@coveringdepth by -1\relax%
  }%
}%
}

\define@key{beamer@mixin}{still covered}{\def\beamer@uncoverbeforeactions{\ignorespaces ?
? #1}}
\define@key{beamer@mixin}{again covered}{\def\beamer@uncoverafteractions{\ignorespaces ?
? #1}}

\define@key{beamer@mixin}{invisible}[]{%
  \def\beamer@uncoverbeforeactions{\ignorespaces}
  \def\beamer@uncoverafteractions{\ignorespaces}}

\define@key{beamer@mixin}{transparent}[15]{%
  \def\beamer@uncoverbeforeactions{\ignorespaces\opaqueness<1->{#1}}
  \def\beamer@uncoverafteractions{\ignorespaces\opaqueness<1->{#1}}

\define@key{beamer@mixin}{dynamic}[]{%
  \def\beamer@uncoverbeforeactions{\ignorespaces\opaqueness<1-2>{10}\opaqueness<3->{5}}
  \def\beamer@uncoverafteractions{\ignorespaces\opaqueness<1-2>{10}\opaqueness<3->{5}}

\define@key{beamer@mixin}{highly dynamic}[]{%
  \def\beamer@uncoverbeforeactions{\ignorespaces\opaqueness<1>{15}\opaqueness<2>{10}\
? opaqueness<3>{5}\opaqueness<4->{2}}
  \def\beamer@uncoverafteractions{\ignorespaces\opaqueness<1>{15}\opaqueness<2>{10}\
? opaqueness<3>{5}\opaqueness<4->{2}}

\def\setbeamercovered#1{%
  \setkeys{beamer@mixin}{invisible}%
  \setkeys{beamer@mixin}{#1}}

\setbeamercovered{invisible}

```

```

\newcolormixin\beamer@colorhook

\def\pgfalternateextension{\colorcurrentmixin\beamer@pgfextension}

\def\beamer@colorhook{}
\def\beamer@pgfextension{}

\beamer@coveringdepth=0\relax

\mode
<article>
{
  \let\setbeamercovered=\@gobble
}

%
% Pausing
%
```

`\beamer@framepauses` 是 `\beamer@frameslide` 环境的主体部分。`\beamer@endpause` 的内容可以由覆盖命令设置。

```

\newenvironment{beamer@framepauses}%internal
{%
  \global\c@beamerpauses=1\relax%
  \gdef\beamer@endpause{}%
}
{\beamer@endpause}
```

`\pause` 实际上是包装好的 `\onslide` 命令。

```

\newcommand{\beamer@@pause}[1][1][1]{%
  \beamer@ifempty{#1}{%
    {\global\advance\c@beamerpauses by1\relax}%
    {\global\c@beamerpauses=#1\relax}%
    \onslide<\c@beamerpauses->\relax%
  }

\mode
<all>
{
  \AtBeginDocument
  {
    \let\beamer@musixpause=\pause
    \let\pause=\beamer@@pause

    \let\beamer@music=\music
    \def\music{\let\beamer@pause=\pause\let\pause\beamer@musixpause\beamer@music}
  }
}
```

依据文档 §9.3, `\onslide` 命令有多种形式, 其中带花括号参数的三种形式分别为

1. `\onslide<overlay specification>\text`, 它等同于 `\uncover<overlay specification>\text`;

2. `\onslide+<overlay specification>{text}`, 它等同于 `\visible<overlay specification>{text}`;
3. `\onslide* <overlay specification>{text}`, 它等同于 `\only<overlay specification>{text}`。

另外还有两种不带花括号参数的形式: `\onslide` 和 `\onslide+`。

```
\mode
<all>
{
  \def\onslide{\@ifstar{\only}\@ifnextchar+{\expandafter\beamer@visibleonslide\@gobble ?
    ?}{\beamer@mainonslide}}

  \newcommand<>{\beamer@visibleonslide}{%
    \@ifnextchar\bgroup
    {\visible#1}%
    {\beamer@noargsvisibleonslide#1}}

  \newcommand<>{\beamer@mainonslide}{%
    \@ifnextchar\bgroup%
    {\uncover#1}%
    {\beamer@noargsonslide#1}%
  }
}
```

不带花括号参数 `\onslide` 命令。其实现原理见前面 `\beamer@startcovered` 处的注释。

```
\newcommand<>{\beamer@noargsonslide}{%
  \beamer@endpause%
  \alt#1%
  {\beamer@spacingcover\gdef\beamer@endpause{\beamer@spacingcover}}%
  {\beamer@startcovered\gdef\beamer@endpause{\beamer@endcovered}}%
}
```

不带花括号参数的 `\onslide+` 命令。其实现原理见后面 `\beamer@begininvisible` 处的注释。

```
\newcommand<>{\beamer@noargsvisibleonslide}{%
  \beamer@endpause%
  \alt#1%
  {\beamer@spacingcover\gdef\beamer@endpause{\beamer@spacingcover}}%
  {\beamer@begininvisible\gdef\beamer@endpause{\beamer@endinvisible}}%
}

\mode
<article>
{
  \newcommand\beamer@@pause[1][[]]{}
  \newcommand<>{\beamer@noargsonslide}{%}
  \newcommand<>{\beamer@noargsvisibleonslide}{%}
}

%
% Make item overlays
%

\let\beamer@origitem=\item
```

```

\def\beamer@callorigitem{\@ifnextchar[\beamer@callorigitem{\beamer@origitem\kernOpt\ ?
? ignorespaces}}
\def\beamer@@callorigitem[#1]{\beamer@origitem[#1]\kernOpt\ignorespaces}

\def\item{%
  \@ifnextchar\relax\beamer@origitem{%
    \ifhmode%
      \unskip\unskip\par%
    \fi%
    \beamer@closeitem\gdef\beamer@closeitem{}%
    \@ifnextchar<{\beamer@parseitem}{\beamer@itemcheckopt}}%
\def\beamer@itemcheckopt{\@ifnextchar[{\beamer@itemcheckopta}{%
  \ifx\beamer@defaultospec\beamer@emptyospec%
    \let\next=\beamer@callorigitem%
  \else%
    \let\next=\beamer@defaultparse%
  \fi%
  \next%
}}
\def\beamer@defaultparse{\expandafter\beamer@parseitem\beamer@defaultospec}
\long\def\beamer@itemcheckopta[#1]{\@ifnextchar<{\beamer@itemreverse[#{1}]}-%
  \ifx\beamer@defaultospec\beamer@emptyospec%
    \let\next=\beamer@callorigitem%
  \else%
    \let\next=\beamer@defaultparse%
  \fi%
  \next[#{1}]}}
\long\def\beamer@itemreverse[#1]<#2>{\beamer@parseitem<#2>[#{1}]}

\def\beamer@parseitem<#1>{%
  \gdef\beamer@closeitem{%
    %% Handle empty item as LaTeX would do
    \if@inlabel\indent\par\fi
  \end{actionenv}%
  %% Local change inside actionenv should survive, and should be
  %% always false
  \@nparitemfalse}%
\begin{actionenv}<#1>\beamer@callorigitem}

\def\beamerdefaultoverlayspecification#1{%
  \beamer@ifempty{#1}%
  {%
    \def\beamer@gdefaultospec{<*>%
    \def\beamer@defaultospec{<*>}}%
  {%
    \def\beamer@gdefaultospec{#1}%
    \def\beamer@defaultospec{#1}%
  }%
}
\beamerdefaultoverlayspecification{}

\newcount\beamer@trivlistdepth
\beamer@trivlistdepth=0\relax

\let\beamer@orig@trivlist=\@trivlist

```

```

\def\@trivlist{%
  \global\advance\beamer@trivlistdepth by1\relax%
  \expandafter\global\expandafter\let\csname beamer@closeitem\the\beamer@trivlistdepth\ ?
    ? endcsname=\beamer@closeitem%
  \gdef\beamer@closeitem{%
  \beamer@orig@trivlist%
  }
\let\beamer@origendtrivlist=\endtrivlist
\def\endtrivlist{%
  \beamer@closeitem%
  \expandafter\global\expandafter\let\expandafter\beamer@closeitem\expandafter=\csname
  beamer@closeitem\the\beamer@trivlistdepth\endcsname%
  \global\advance\beamer@trivlistdepth by-1\relax%
  \beamer@origendtrivlist}

\def\beamer@closeitem{}

\let\beamer@list=\list
\let\beamer@@trivlist=\@trivlist

\mode
<article>
{
  \AtBeginDocument{%
    \let\beamer@origitem=\item
    \def\item{\@ifnextchar<\beamer@@item\beamer@item}
    \def\beamer@@item<#1>{\beamer@item}
    \def\beamer@item{\@ifnextchar[\beamer@@@item\beamer@origitem}
    \def\beamer@@@item[#1]{\@ifnextchar<\beamer@@@item[#{1}]{\beamer@origitem[#{1}]}}
    \def\beamer@@@item[#1]<#2>{\beamer@origitem[#{1}]}}
  }
}

%
% Overlay commands
%

\mode
<all>
{
  \newcommand\beamer@gobbleoptional[2] [] {}
  \newcommand\beamer@gobbleoptionalinsp[2] [] {\ignorespaces}
}

```

为使 Beamer 覆盖命令在编组结束后能够继续生效，这里使用了 `\aftergroup` 命令。

```

\def\beamer@@spacingcover{\beamer@smuggle{\pgfsys@begininvisible\pgfsys@endinvisible}}
\def\beamer@spacingcover{\beamer@@spacingcover\aftergroup\beamer@@spacingcover}

\def\beamer@begininvisible{\beamer@smuggle{\pgfsys@begininvisible\aftergroup\ ?
  ? beamer@@spacingcover}}
\def\beamer@endinvisible{\beamer@smuggle{\pgfsys@endinvisible\aftergroup\ ?
  ? beamer@@spacingcover}}

```



```

\long\def\beamer@fakeinvisible#1{\beamer@spacingcover#1\beamer@spacingcover}
\long\def\beamer@makecovered#1{\beamer@startcovered#1\beamer@endcovered}
\long\def\beamer@reallymakeinvisible#1{\beamer@begininvisible#1\beamer@endinvisible}

```

`\onslide` 和 `\uncover` 命令的实现在 `\beamer@startcovered` 处已经分析。这里只分析 `\onslide+` 和 `\visible` 命令。实际上它们主要用到 `pgf` 提供的 `\pgfsys@begininvisible` 和 `\pgfsys@endinvisible` 命令 (见 `pgf` 文档 §115.13)。对于下面的简单文档

```

\begin{frame}
\onslide+<1>0\onslide+<2>Two
\end{frame}

```

展开的结果约略等于

```

% slide 1
\begin{beamer@frameslide}
\pgfsys@begininvisible\pgfsys@endinvisible
One
\pgfsys@begininvisible\pgfsys@endinvisible
\pgfsys@begininvisible
Two
\pgfsys@endinvisible
\end{beamer@frameslide}
% slide 2
\begin{beamer@frameslide}
\pgfsys@begininvisible
One
\pgfsys@endinvisible
\pgfsys@begininvisible\pgfsys@endinvisible
Two
\pgfsys@begininvisible\pgfsys@endinvisible
\end{beamer@frameslide}

```

经测试, 未与 `\pgfsys@begininvisible` 配对使用的 `\pgfsys@endinvisible` 将得到错误的结果。因此这里 (即上面的 `\beamer@@spacingcover` 的定义中) 在取消隐藏内容时需要同时使用这两个命令。

实际上, 从 `pgfsys.code.tex` 文件中可以看到, 这两个命令定义为对画布作变换:

```

\def\pgfsys@begininvisible{\pgfsys@transformcm{1}{0}{0}{1}{2000bp}{2000bp}}
\def\pgfsys@endinvisible{\pgfsys@transformcm{1}{0}{0}{1}{-2000bp}{-2000bp}}

```

其中的线性变换矩阵为单位矩阵, 因此只有后面的平移变换有效。结果是将画布移动到页面之外或者移动回来 (`\pgfsys@transformcm` 命令的说明见 `pgf` 文档 §115.3)。因此两者必须配对使用。

实际上, `pgf` 的变换命令在正文中也能使用, 未必得在 `pgfpicture` 环境中使用。因此, `beamer` 的 `\visible` 才会是有效的。

```

\newcommand{\uncover}{\alt{\beamer@fakeinvisible}{\beamer@makecovered}}
\newcommand{\visible}{\alt{\beamer@fakeinvisible}{\beamer@reallymakeinvisible}}
\newcommand{\invisible}{\alt{\beamer@reallymakeinvisible}{\beamer@fakeinvisible}}
\newenvironment{visibleenv}{\begin{altenv}{\beamer@spacingcover}{\beamer@spacingcover}{\ ?
? beamer@begininvisible}{\beamer@endinvisible}}{\end{altenv}}
\newenvironment{invisibleenv}{\begin{altenv}{\beamer@begininvisible}{\ ?
? beamer@endinvisible}{\beamer@spacingcover}{\beamer@spacingcover}}{\end{altenv}}
\newenvironment{uncoverenv}{\begin{altenv}{\beamer@spacingcover}{\beamer@spacingcover}{\ ?
? beamer@startcovered}{\beamer@endcovered}}{\end{altenv}}
\newenvironment{onlyenv}{\begin{altenv}{}{\begin{group}\setbox0=\vbox\bgroup}{\egroup\ ?
? endgroup}}{\end{altenv}}

```

```

\renewcommand<>{\color}{\alt#1{\beameroriginal{\color}}{\beamer@gobbleoptionalinsp}}

\mode
<article>
{
  \newcommand{\uncover}{\alt{\@firstofone}{\@gobble}}
  \newcommand{\visible}{\alt{\@firstofone}{\@gobble}}
  \newcommand{\invisible}{\alt{\@gobble}{\@firstofone}}
  \newenvironment{onlyenv}{\begin{altenv}}{\end{altenv}}{\begin{group}\setbox0=\vbox\bgroup}{\egroup\ ?
  ? endgroup}}{\end{altenv}}
  \newenvironment{uncoverenv}{\begin{altenv}}{\end{altenv}}{\begin{group}\setbox0=\vbox\bgroup}{\ ?
  ? egroup\endgroup}}{\end{altenv}}
  \newenvironment{visibleenv}{\begin{altenv}}{\end{altenv}}{\begin{group}\setbox0=\vbox\bgroup}{\ ?
  ? egroup\endgroup}}{\end{altenv}}
  \newenvironment{invisibleenv}{\begin{altenv}}{\end{altenv}}{\begin{group}\setbox0=\vbox\bgroup}{\egroup ?
  ? \endgroup}}{\end{altenv}}

  \AtBeginDocument{
    % These have to be done late...
    \renewcommand<>{\color}{\alt#1{\beameroriginal{\color}}{\beamer@gobbleoptionalinsp}}
  }
}

\mode
<all>
{
  \renewcommand<>{\textbf}{\only#1{\beameroriginal{\textbf}}}
  \renewcommand<>{\textit}{\only#1{\beameroriginal{\textit}}}
  \renewcommand<>{\textsl}{\only#1{\beameroriginal{\textsl}}}
  \renewcommand<>{\textsf}{\only#1{\beameroriginal{\textsf}}}
  \renewcommand<>{\textrm}{\only#1{\beameroriginal{\textrm}}}
}

\renewcommand<>{\hypertarget}[2]{\only#3{\beameroriginal{\hypertarget}{#1}{#2}}}
\renewcommand<>{\hyperlink}[2]{\only#3{\beameroriginal{\hyperlink}{#1}{#2}}}

\mode
<article>
{
  \g@addto@macro\beamer@lastminutepatches{
    % These have to be done late...
    \renewcommand<>{\hypertarget}[2]{\only#3{\beameroriginal{\hypertarget}{#1}{#2}}}
    \renewcommand<>{\hyperlink}[2]{\only#3{\beameroriginal{\hyperlink}{#1}{#2}}}
  }
}

\newcommand<>{\emph}[1]{\only#2{\itshape}#1}}

\mode
<article>
{
  \renewcommand<>{\emph}{\only#1{\beameroriginal\emph}}
}

```

```

%
% Insert area
%
\newenvironment{overlayarea}[2]{%
  \beamer@animht=#1\relax%
  \beamer@animwd=#2\relax%
  \setbox\beamer@areabox=\vbox to#2\bgroup%
  \strut\begin{minipage}[t]{#1}%
  % Make the minipage behave like the main part of the slide
  \normalfont
  \raggedright
}
{%
\end{minipage}\vfil%
\egroup%
\wd\beamer@areabox=\beamer@animht%
\ht\beamer@areabox=\beamer@animwd%
\dp\beamer@areabox=0pt%
\box\beamer@areabox%
}

\mode
<article>
{
  \newenvironment{overlayarea}[2]{}{}% no effect
}

\newenvironment{overprint}[1][\textwidth]{%
  \let\beamer@noargsonslide=\beamer@onslide%
  \let\beamer@noargvisibleonslide=\beamer@onslide%
  \beamer@animht=0pt%
  \beamer@animdp=0pt%
  \beamer@animwd=#1\relax%
  \setbox\beamer@animcurrent=\box\beamer@animshowbox% makes animshowbox empty
  \setbox\beamer@animcurrent=\hbox{}%
  \def\beamer@endaction{}%
}{}%
  \beamer@endaction%
  \ifvoid\beamer@animshowbox\setbox\beamer@animshowbox=\hbox{}\fi%
  \ht\beamer@animshowbox=\beamer@animht%
  \dp\beamer@animshowbox=\beamer@animdp%
  \wd\beamer@animshowbox=\beamer@animwd%
  \box\beamer@animshowbox%
}

\def\beamer@onslide<#1>{%
  \beamer@endaction%
  \alt<#1>{%
    \ifvoid\beamer@animshowbox\else\ClassError{beamer}{Overprints may not overlap}{}\fi%
    \def\beamer@endaction{}%
  }
  \end{minipage}%
  \egroup%
  \ifdim\beamer@animht<\ht\beamer@animcurrent\beamer@animht=\ht\beamer@animcurrent\ ?
    ? fi%
  \ifdim\beamer@animdp<\dp\beamer@animcurrent\beamer@animdp=\dp\beamer@animcurrent\ ?

```

```

    ? fi%
    \setbox\beamer@animshowbox=\copy\beamer@animcurrent}
}%
{\def\beamer@endaction{%
  \end{minipage}%
  \egroup%
  \ifdim\beamer@animht<\ht\beamer@animcurrent\beamer@animht=\ht\beamer@animcurrent\ ?
    ? fi%
  \ifdim\beamer@animdp<\dp\beamer@animcurrent\beamer@animdp=\dp\beamer@animcurrent\ ?
    ? fi}%
}%
\setbox\beamer@animcurrent=\vbox\bgroup\begin{minipage}[t]{\beamer@animwd}%
}

\mode
<article>
{
  \newenvironment{overprint}[1] []%
  {%
    \let\beamer@noargsonslide=\beamer@onslide%
    \let\beamer@noargsvisibleonslide=\beamer@onslide%
    \begin{onlyenv}}
  {\end{onlyenv}}

  \def\beamer@onslide<#1>{\end{onlyenv}\begin{onlyenv}<#1>}
}

%
% Transitions - DISTRACTING and to be used with CARE!!!!
%

\define@key{beamertrans}{direction}{\def\beamer@transdir{ /Di #1 }}
\define@key{beamertrans}{duration}{\def\beamer@dur{ /D #1 }}

\newcommand\beamer@dotrans [2] [] {%
  \def\beamer@transdir{}%
  \def\beamer@dur{}%
  \setkeys{beamertrans}{#1}%
  \edef\beamer@temp{\pdfpagetransition={#2 \beamer@transdir\space\beamer@dur}}
  \expandafter\hypersetup\beamer@temp}

\mode
<article>
{
  \newcommand\beamer@dotrans [2] [] {}
}

\mode
<all>
{
  \newcommand<>{\transblindshorizontal}[1] [] {\only#2{\beamer@dotrans[#{#1}]{Blinds /Dm /H ?
    ? }}}
  \newcommand<>{\transblindsvERTICAL}[1] [] {\only#2{\beamer@dotrans[#{#1}]{Blinds /Dm /V ?
    ? }}}
  \newcommand<>{\transboxin}[1] [] {\only#2{\beamer@dotrans[#{#1}]{Box /M /I}}}
  \newcommand<>{\transboxout}[1] [] {\only#2{\beamer@dotrans[#{#1}]{Box /M /O}}}
}

```

```

\newcommand<>{\transcover}[1] [] {\only#2{\beamer@dotrans [{#1}] {Cover}}}
\newcommand<>{\transdissolve}[1] [] {\only#2{\beamer@dotrans [{#1}] {Dissolve}}}
\newcommand<>{\transfade}[1] [] {\only#2{\beamer@dotrans [{#1}] {Fade}}}
\newcommand<>{\transglitter}[1] [] {\only#2{\beamer@dotrans [{#1}] {Glitter}}}
\newcommand<>{\transpush}[1] [] {\only#2{\beamer@dotrans [{#1}] {Push}}}
\newcommand<>{\transreplace}[1] [] {\only#2{\beamer@dotrans [{#1}] {Replace}}}
\newcommand<>{\transsplitverticalin}[1] [] {\only#2{\beamer@dotrans [{#1}] {Split /Dm /V / ?
? M /I}}}
\newcommand<>{\transsplitverticalout}[1] [] {\only#2{\beamer@dotrans [{#1}] {Split /Dm /V ?
? /M /O}}}
\newcommand<>{\transsplithorizontalin}[1] [] {\only#2{\beamer@dotrans [{#1}] {Split /Dm /H ?
? /M /I}}}
\newcommand<>{\transsplithorizontalout}[1] [] {\only#2{\beamer@dotrans [{#1}] {Split /Dm / ?
? H /M /O}}}
\newcommand<>{\transuncover}[1] [] {\only#2{\beamer@dotrans [{#1}] {Uncover}}}
\newcommand<>{\transwipe}[1] [] {\only#2{\beamer@dotrans [{#1}] {Wipe}}}
}

\newcommand<>{\transduration}[1]{\only#2{\hypersetup{pdfpageduration={#1}}}}

\mode
<article>
{
  \newcommand<>{\transduration}[1]{}
}

%
% Animation macros
%

\def\animate<#1>{\transduration<#1| handout:0| trans:0>{0}}
\def\animatevalue<#1-#2>#3#4#5{%
  \only<#1-#2>{% enforce these frames
  \ifnum\beamer@slideinframe<#1\relax%
    #3=#4\relax%
  \else%
    \ifnum\beamer@slideinframe<#2\relax%
      #3=#4\relax%
      #3=-#3\relax%
      \advance#3 by#5\relax%
      \beamer@animationtempa=#2\relax%
      \advance\beamer@animationtempa by-#1%
      \ifnum\beamer@animationtempa>0%
        \divide#3 by\beamer@animationtempa%
      \fi%
      \beamer@animationtempa=\beamer@slideinframe%
      \advance\beamer@animationtempa by-#1%
      \multiply#3 by\beamer@animationtempa%
      \advance#3 by#4%
    \else
      #3=#5\relax%
    \fi%
  \fi%
}

\mode

```

```

<article>
{
  \def\animate<#1>{}
  \def\animatevalue<#1-#2>#3#4#5{#3=#4\relax}
}

%
% Labels in overlays
%
\g@addto@macro\beamer@lastminutepatches{%
  \let\beamer@origlabel\label
  \def\label{\@ifnextchar<{\beamer@label}{\beamer@label<1>}}

  \let\beamer@origlabel@in@display\label@in@display
  \def\label@in@display{\@ifnextchar<{\beamer@label@in@display}{\beamer@label@in@display ?
    ? <1>}}
}

\def\beamer@label<#1>#2{\alt<#1>{\beamer@origlabel{#2}\beamer@nameslide{#2}}{\ ?
  ? beamer@dummysnameslide}}
\def\beamer@label@in@display<#1>#2{\alt<#1>{\beamer@origlabel@in@display{#2}\ ?
  ? beamer@nameslide{#2}}{\beamer@dummysnameslide}}

\mode
<article>
{
  \g@addto@macro\beamer@lastminutepatches{
    % Has to be done late...
    \renewcommand<>{\label}{\alt#1{\beameroriginal{\label}}{\@gobble}}
    \renewcommand<>{\label@in@display}{\alt#1{\beameroriginal{\label@in@display}}{\ ?
      ? @gobble}}
  }
}

\AtBeginDocument
{
  \let\beamer@origref=\ref
  \def\ref{%
    \@ifstar
      {\beamer@origref}
      {\beamer@ref}%
  }
  \long\def\beamer@ref#1{%
    \hyperlink{#1}{\beamer@origref{#1}}%
  }
}

\mode
<all>

```

13 beamerbasestyle.sty

```

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% 2. under the GNU Public License.
%
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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbasestyle. ?
? sty,v f0446ed0b6ae 2010/09/21 17:49:40 joseph $

\mode
<presentation>

%
%
% The \maketitle command (for compatibility with other classes)
%
%
\def\maketitle{\ifbeamer@inframe\titlepage\else\frame{\titlepage}\fi}

%
%
% The \titlepage and \partpage
%
%
\def\titlepage{\usebeamertemplate*{title page}\@thanks}
\def\partpage{\usebeamertemplate*{part page}}
\def\sectionpage{\usebeamertemplate*{section page}}
\def\subsectionpage{\usebeamertemplate*{subsection page}}

\mode
<article>
{\providecommand\titlepage{}
\renewcommand\titlepage{}
\providecommand\partpage{}
\providecommand\sectionpage{}
\providecommand\subsectionpage{}}

%
%
% The \title command
%
%
\renewcommand{\title}{\@dblarg\beamer@title}
\long\def\beamer@title[#1]#2{%
\def\inserttitle{#2}%
\def\beamer@shorttitle{#1}%
}
\title{}

\newcommand\insertshorttitle[1] []{%
\beamer@setupshort{#1}%

```

```

\let\thanks=\@gobble%
\ifnum\c@page=1%
  \hyperlinkpresentationend{\beamer@insertshort{\beamer@shorttitle}}%
\else%
  \hyperlinkpresentationstart{\beamer@insertshort{\beamer@shorttitle}}%
\fi}

\mode
<article>
{
  \let\beamer@origtitle=\title
  \renewcommand{\title}[2][\beamer@origtitle{#2}]

}

%
%
% The \subtitle command
%
%
\newcommand{\subtitle}{\@dblarg\beamer@subtitle}
\long\def\beamer@subtitle[#1]#2{%
  \def\insertsubtitle{#2}%
  \def\beamer@shortsubtitle{#1}%
}
\subtitle{}

\newcommand\insertshortsubtitle[1][\%
  \let\thanks=\@gobble%
  \beamer@setupshort{#1}%
  \ifnum\c@page=1%
    \hyperlinkpresentationend{\beamer@insertshort{\beamer@shortsubtitle}}%
  \else%
    \hyperlinkpresentationstart{\beamer@insertshort{\beamer@shortsubtitle}}%
  \fi}

\ifbeamer@autopdfinfo%
  \g@addto@macro\beamer@firstminutepatches
  {
    \begingroup
      \let\beamer@saved@hook\pdfstringdefPreHook
      \pdfstringdefDisableCommands{%
        \let\\=\
        \let\newline=\\%
      }%
      \let\thanks=\@gobble%
      \hypersetup{pdftitle={\inserttitle\ifx\insertsubtitle\@empty\else\ - \ ?
        ? insertsubtitle\fi}}
      \global\let\pdfstringdefPreHook\beamer@saved@hook
    \endgroup
  }
\fi%

\mode

```



```

<article>
{
  \providecommand{\subtitle}[2] [] {\def\insertsubtitle{#2}\g@addto@macro\@title{\< ?
    ? article>{\normalsize#2}}}
}

%
%
% The \date command
%
%
\def\date{\@dblarg\beamer@date}
\long\def\beamer@date[#1]#2{%
  \def\insertdate{#2}%
  \def\beamer@shortdate{#1}%
}
\date{\today}

\newcommand\insertshortdate[1] [] {%
  {%
    \let\thanks=\@gobble%
    \beamer@setupshort{#1}%
    \beamer@insertshort{\beamer@shortdate}%
  }}

\mode
<article>
{
  \let\beamer@origdate=\date
  \renewcommand{\date}[2] [] {\beamer@origdate{#2}}
}

%
%
% The \author command
%
%
\def\author{\@dblarg\beamer@author}
\long\def\beamer@author[#1]#2{%
  \def\insertauthor{\def\inst{\beamer@insttitle}\def\and{\beamer@andtitle}#2}%
  \def\beamer@shortauthor{#1}%
  \ifbeamer@autopdfinfo%
    \def\beamer@andstripped{%
      \beamer@stripands#2 \and\relax
      {\let\inst=\@gobble\let\thanks=\@gobble\def\and{, } \hypersetup{pdfauthor={\
        ? beamer@andstripped}}}}
  \fi%
}

\def\beamer@stripands#1 \and#2\relax{%
  \def\beamer@temp{#2}%
  \ifx\beamer@temp\@empty
    \expandafter\def\expandafter\beamer@andstripped\expandafter{\beamer@andstripped#1}
  \else

```

```

\expandafter\def\expandafter\beamer@andstripped\expandafter{\beamer@andstripped#1, }
\beamer@stripands#2\relax%
\fi
}

\author{}

% Aux commands for \author
\def\beamer@insttitle#1{{\donotcoloroutermaths$^{#1}$}}
\def\beamer@andtitle{\quad}
\def\beamer@instother#1{}
\def\beamer@andother{\unskip, }

\newcommand\insertshortauthor[1] [] {%
  {%
    \def\inst{\beamer@instother}\def\and{\beamer@andother}\let\thanks=@gobble%
    \beamer@setupshort{#1}%
    \beamer@insertshort{\beamer@shortauthor}%
  }}

\mode
<article>
{
  \let\beamer@origauthor=\author
  \renewcommand{\author}[2] [] {\beamer@origauthor{#2}}
}

%
%
% The \titlegraphic command
%
%
\mode
<all>
{
  \newcommand\titlegraphic[1]{\def\inserttitlegraphic{#1}}
  \titlegraphic{}
}

%
%
% The \subject command
%
%
\mode
<all>
{
  \providecommand\subject[1]{\hypersetup{pdfsubject={#1}}}
  \providecommand\keywords[1]{\hypersetup{pdfkeywords={#1}}}
}

```

```

%
%
% The \institute command
%
%
\def\institute{\@dblarg\beamer@institute}
\long\def\beamer@institute[#1]#2{%
  \def\beamer@temp{#2}%
  \ifx\beamer@temp\@empty
    \def\insertinstitute{}
  \else
    \def\insertinstitute{\def\inst{\beamer@instinst}\def\and{\beamer@andinst}#2}%
  \fi
\def\beamer@shortinstitute{#1}}
\institute{}

\def\beamer@instinst#1{{\donotcoloroutermaths $^{#1}$ }\ignorespaces}
\def\beamer@andinst{\[1em]}

\newcommand\insertshortinstitute[1] [] {%
  {%
    \let\thanks=\@gobble%
    \def\inst{\beamer@instother}\def\and{\beamer@andother}%
    \beamer@setupshort{#1}%
    \beamer@insertshort{\beamer@shortinstitute}%
  }}

\mode
<article>
{
  \ifx\institute\@undefined
    \newcommand{\institute}[2] [] {}
  \else
    \let\beamer@originstitute=\institute
    \renewcommand{\institute}[2] [] {\beamer@originstitute{#2}}
  \fi

  \providecommand\and{\unskip, }
  \providecommand\inst[1]{ $^{#1}$ }
}

%
%
% The \logo command
%
%
\def\logo{\setbeamertemplate{logo}}
\def\insertlogo{\usebeamertemplate*{logo}}

\mode

```

```

<article>
{
  \providecommand\logo[1]{}
}

\mode
<all>

```

14 beamerbasesection.sty

```

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%
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% 2. under the GNU Public License.
%
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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbasesection ?
  ? .sty,v 60b9fe0f342f 2013/06/07 08:01:35 joseph $

\mode
<all>
{
  \def\beamer@sec@gobble{\beamer@savemode\@ifnextchar*{\beamer@sec@stargobble}{\ ?
    ? beamer@sec@gobbleoptional}}
  \def\beamer@sec@stargobble*{\beamer@sec@gobbleoptional}
  \newcommand\beamer@sec@gobbleoptional[2] []{\beamer@resumemode}
  \def\secname{}
  \def\subsecname{}
  \def\subsubsecname{}
}

\mode
<presentation>

%
% Lecture Definitions
%
\newif\ifbeamer@inlecture
\beamer@inlecturetrue

\newcommand{\beamer@if@in@clist@TF}[2]{%
  \def\beamer@if@in@clist@aux##1,##2,{}%
  \expandafter\expandafter\expandafter\ifx
    \expandafter\expandafter\expandafter\@nil
    \expandafter\beamer@if@in@clist@aux\expandafter,##1,{}{} ,##2,\@nil
    \expandafter\@secondoftwo
  \else
    \expandafter\@firstoftwo
  \fi
}

```

```

}

\newcounter{lecture}
\renewcommand\thelecture{\@arabic\c@lecture}
\let\insertlecturenumber=\thelecture
\newcommand\lecture{\@dblarg\beamer@lecture}
\long\def\beamer@lecture[#1]#2#3{
  \beamer@savemode
  \mode<all>
  \refstepcounter{lecture}
  \def\beamer@currentlecturelabel{#3}
  \@onelevel@sanitize\beamer@currentlecturelabel
  \def\beamer@lecturename{#2}
  \def\beamer@shortlecturename{#1}
  \ifx\beamer@onlylecture\@empty
  \else
    \expandafter\beamer@ifin@clist@TF\expandafter\beamer@onlylecture
      \expandafter{\beamer@currentlecturelabel}%
      {\beamer@inlecturetrue}
      {\beamer@inlecturefalse}
  \fi
  \beamer@atbeginlecture
  \beamer@resumemode
}

\mode
<all>
{
  \long\def\AtBeginLecture#1{%
    \def\beamer@atbeginlecture{#1}}
  \AtBeginLecture{}

  \newcommand\includeonlylecture[1]{%
    \def\beamer@onlylecture{#1}%
    \@onelevel@sanitize\beamer@onlylecture
  }

  \includeonlylecture{}
}

\newcommand\insertlecture{\beamer@lecturename}
\newcommand\insertshortlecture[1] [] {%
  {%
    \beamer@setupshort{#1}%
    \beamer@insertshort{\beamer@shortlecturename}%
  }}

\mode
<article>
{
  \newcommand\lecture[3] [] {\def\insertlecture{#2}\def\insertshortlecture{#1}}
}

%
% Part Definitions

```



```

\long\def\AtBeginPart#1{%
  \def\beamer@atbeginpart{#1}}
\AtBeginPart{}
}

\mode
<article>
{
  \ifx\part\@undefined%
  \else
    \renewcommand<>{\part}{\alt#1{\beameroriginal\part}{\beamer@gobbleoptional}}
  \fi
}

%
% Section Definitions
%
\def\sectionname{\translate{Section}}
\newcounter{section}
\renewcommand\thesection{\@arabic\c@section}
\beamer@sectionstartpage=1\relax
\beamer@tocsectionnumber=0\relax

\newcommand<>{\section}{\alt#1{\@ifnextchar[\beamer@section\beamer@@section]{\
?
? beamer@secgobble}}

```

`\section` 命令会在 toc 文件中写入这样一行 `\beamer@sectionintoc{#1}{#2}{#3}{#4}{#5}`，此命令在 `beamerbasetoc.sty` 中定义，并由 `\tableofcontents` 命令调用。它的五个参数的含义如下：

- #1 是节编号 `\the\c@section`
- #2 是节标题
- #3 是页码 `\the\c@page`
- #4 是部分编号 `\the\c@part`
- #5 是目录节编号 `\the\beamer@tocsectionnumber`

其中 #1 和 #5 的区别在于：`\c@section` 对应 `\insertsectionnumber`，而 `\beamer@tocsectionnumber` 对应 `\inserttocsectionnumber`。

和 `article` 文档类一样，`\section*` 也不会记录到 toc 文件中。但与 `article` 不同的是，在 `beamer` 中 `\section*` 还是会 `\refstepcounter{section}`。也就是说 `\c@section` 对 `\section` 和 `\section*` 一起编号，而 `\beamer@tocsectionnumber` 只对 `\section` 编号。

```

\def\beamer@@section{\@ifnextchar*\beamer@@ssection\beamer@@@section}
\long\def\beamer@@ssection*#1{\beamer@section[#{#1}]{}}
\long\def\beamer@@@section#1{\beamer@section[#{#1}]{#1}}
\long\def\beamer@section[#1]#2{%
  \beamer@savemode%
  \mode<all>%
  \ifbeamer@inlecture
    \refstepcounter{section}%
    \beamer@ifempty{#2}%
    {\long\def\secname{#1}\long\def\lastsection{#1}}%
    {\global\advance\beamer@tocsectionnumber by 1\relax%

```

```

\long\def\secname{#2}%
\long\def\lastsection{#1}%
\addtocontents{toc}{\protect\beamer@sectionintoc{\the\c@section}{#2}{\the\c@page ?
?}{\the\c@part}}%
{\the\beamer@tocsectionnumber}}}%
{\let\=\relax\def\sectionlink{Navigation\the\c@page}{\noexpand\secname}}}%
\beamer@tempcount=\c@page\advance\beamer@tempcount by -1%
\beamer@ifempty{#1}{}{%
\addtocontents{nav}{\protect\headcommand{\protect\sectionentry{\the\c@section ?
?}{#1}{\the\c@page}{\secname}{\the\c@part}}}%
\addtocontents{nav}{\protect\headcommand{\protect\beamer@sectionpages{\the\ ?
? \beamer@sectionstartpage}{\the\beamer@tempcount}}}%
\addtocontents{nav}{\protect\headcommand{\protect\beamer@subsectionpages{\the\ ?
? \beamer@subsectionstartpage}{\the\beamer@tempcount}}}%
}%
\beamer@sectionstartpage=\c@page%
\beamer@subsectionstartpage=\c@page%
\def\insertsection{\expandafter\hyperlink\sectionlink}%
\def\insertsubsection{}%
\def\insertsubsubsection{}%
\def\insertsectionhead{\hyperlink{Navigation\the\c@page}{#1}}%
\def\insertsubsectionhead{}%
\def\insertsubsubsectionhead{}%
\def\lastsubsection{}%
\Hy@writebookmark{\the\c@section}{\secname}{Outline\the\c@part.\the\c@section}{2}{ ?
? toc}%
\hyper@anchorstart{Outline\the\c@part.\the\c@section}\hyper@anchorend%
\beamer@ifempty{#2}{\beamer@atbeginsections}{\beamer@atbeginsection}%
\fi%
\beamer@resumemode}%
\def\insertsection{}
\def\lastsubsection{}

\def\insertsectionnumber{\@arabic\c@section}

\def\breakhere{\protect\beamer@breakhere}
\def\beamer@breakhere{}

\def\insertsectionhead{}
\def\insertsubsectionhead{}

\mode
<all>
{
\def\AtBeginSection{\@ifnextchar[{\beamer@AtBeginSection}{\beamer@@AtBeginSection}}
\long\def\beamer@@AtBeginSection#1{\beamer@AtBeginSection[#{1}]{#1}}
\long\def\beamer@AtBeginSection[#1]#2{%
\def\beamer@atbeginsection{#2}%
\def\beamer@atbeginsections{#1}%
}
\AtBeginSection{}
}

\mode
<article>
{
\renewcommand<>{\section}{\alt#1{\beameroriginal\section}{\beamer@secgobble}}

```



```

}

%
% Subsection Definitions
%
\def\subsectionname{\translate{Subsection}}
\newcounter{subsection}[section]
\renewcommand\thesubsection{\@arabic\c@section}

\beamer@subsectionstartpage=1

\newcommand<>{\subsection}{\alt#1{\@ifnextchar[\beamer@subsection\beamer@@subsection]{\ ?
? beamer@secgobble}}

\def\beamer@@subsection{\@ifnextchar*\beamer@@subsection\beamer@@@subsection}
\long\def\beamer@@subsection*#1{\beamer@subsection[#1]}
%\long\def\beamer@@subsection*#1{%
% \beamer@ifempty{#1}{\beamer@untitledsubsection}{\beamer@subsection[#1]}
\def\beamer@@@subsection#1{\beamer@subsection[#1]}
\def\beamer@subsection[#1]#2{%
\beamer@savemode%
\mode<all>%
\ifbeamer@inlecture%
\refstepcounter{subsection}%
\beamer@ifempty{#2}{\long\def\subsecname{#1}\long\def\lastsubsection{#1}}
{%
\long\def\subsecname{#2}%
\long\def\lastsubsection{#1}%
\addtocontents{toc}{\protect\beamer@subsectionintoc{\the\c@section}{\the\ ?
? c@subsection}{#2}{\the\c@page}{\the\c@part}{\the\beamer@tocsectionnumber}}%
}%
\beamer@tempcount=\c@page\advance\beamer@tempcount by -1%
\addtocontents{nav}{%
\protect\headcommand{\protect\beamer@subsectionentry{\the\c@part}{\the\c@section ?
?}{\the\c@subsection}{\the\c@page}{\lastsubsection}}%
\protect\headcommand{\protect\beamer@subsectionpages{\the\ ?
? beamer@subsectionstartpage}{\the\beamer@tempcount}}%
}%
\beamer@subsectionstartpage=\c@page%
\edef\subsectionlink{\Navigation\the\c@page}{\noexpand\subsecname}}%
\def\insertsubsection{\expandafter\hyperlink\subsectionlink}%
\def\insertsubsubsection{}%
\def\insertsubsectionhead{\hyperlink{Navigation\the\c@page}{#1}}%
\def\insertsubsubsectionhead{}%
\Hy@writebookmark{\the\c@subsection}{#2}{Outline\the\c@part.\the\c@section.\the\ ?
? c@subsection.\the\c@page}{3}{toc}%
\hyper@anchorstart{Outline\the\c@part.\the\c@section.\the\c@subsection.\the\c@page}\ ?
? hyper@anchorend%
\beamer@ifempty{#2}{\beamer@atbeginsubsections}{\beamer@atbeginsubsection}%
\fi%
\beamer@resumemode}
\def\insertsubsection{}

\def\insertsubsectionnumber{\@arabic\c@section}

\def\beamer@untitledsubsection{%

```

```

\refstepcounter{subsection}%
\def\insertsubsection{}%
\def\lastsubsection{}}

\mode
<all>
{
\def\AtBeginSubsection{\@ifnextchar[{\beamer@AtBeginSubsection}{\ ?
? beamer@@AtBeginSubsection}}
\long\def\beamer@@AtBeginSubsection#1{\beamer@AtBeginSubsection[#{#1}]{#1}}
\long\def\beamer@AtBeginSubsection[#1]#2{%
\def\beamer@atbeginsubsection{#2}%
\def\beamer@atbeginsubsections{#1}}
\AtBeginSubsection{}
}

\mode
<article>
{
\renewcommand<>{\subsection}{\alt#1{\beameroriginal\subsection}{\beamer@secgobble}}
}

%
% Subsubsection Definitions
%
\newcounter{subsubsection}[subsection]
\renewcommand\thesubsubsection{\@arabic\c@subsubsection}

\beamer@subsectionstartpage=1

\newcommand<>{\subsubsection}{\alt#1{\@ifnextchar[\beamer@subsubsection\ ?
? beamer@@subsubsection}{\beamer@secgobble}}

\def\beamer@@subsubsection{\@ifnextchar*\beamer@@ssubsubsection\beamer@@@subsubsection}
\long\def\beamer@@ssubsubsection*#1{\beamer@subsubsection[#{#1}]{}}
\def\beamer@@@subsubsection#1{\beamer@subsubsection[#{#1}]{#1}}
\def\beamer@subsubsection[#1]#2{%
\beamer@savemode%
\mode<all>%
\ifbeamer@inlecture%
\refstepcounter{subsubsection}%
\beamer@ifempty{#2}{\long\def\subsubsecname{#1}\long\def\lastsubsubsection{#1}}
{%
\long\def\subsubsecname{#2}%
\long\def\lastsubsubsection{#1}%
\addtocontents{toc}{\protect\beamer@subsubsectionintoc%
{\the\c@section}{\the\c@subsection}{\the\c@subsubsection}{#2}{\the\c@page}{\the\ ?
? c@part}{\the\beamer@tocsectionnumber}}%
}%
\addtocontents{nav}{\protect\headcommand{\protect\beamer@subsubsectionentry%
{\the\c@part}{\the\c@section}{\the\c@subsection}{\the\c@subsubsection}{\the\ ?
? c@page}{\lastsubsubsection}}}%
\edef\subsubsectionlink{\Navigation\the\c@page}{\noexpand\subsubsecname}}%
\def\insertsubsubsection{\expandafter\hyperlink\subsubsectionlink}%
\def\insertsubsubsectionhead{#1}%

```

```

\Hy@writebookmark{\the\c@subsection}{#2}{Outline\the\c@part.\the\c@section.\the\
? c@subsection.\the\c@subsection.\the\c@page}{4}{toc}%
\hyper@anchorstart{Outline\the\c@part.\the\c@section.\the\c@subsection.\the\
? c@subsection.\the\c@page}\hyper@anchorend%
\beamer@ifempty{#2}{\beamer@atbeginsubsections}{\beamer@atbeginsubsubsection}%
\fi%
\beamer@resumemode}
\def\insertsubsubsection{}
\def\insertsubsubsectionhead{}

\mode
<all>
{
\def\AtBeginSubsubsection{\@ifnextchar[{\beamer@AtBeginSubsubsection}{\
?
? beamer@@AtBeginSubsubsection}}
\long\def\beamer@@AtBeginSubsubsection#1{\beamer@AtBeginSubsubsection[#1]{#1}}
\long\def\beamer@AtBeginSubsubsection[#1]#2{%
\def\beamer@atbeginsubsubsection{#2}%
\def\beamer@atbeginsubsections{#1}}
\AtBeginSubsubsection{}
}

\mode
<article>
{
\renewcommand<>{\subsection}{\alt#1{\beameroriginal\subsection}{\
?
? beamer@secgobble}}
}

%
% Appendix stuff
%

\newcommand<>\appendix{%
\only#1{\part{\appendixname}}
\addtocontents{nav}{\protect\headcommand{\protect\beamer@appendixpages{\the\c@page
?
? }}}}}

\mode
<article>
{
\ifx\appendix\@undefined
\else
\renewcommand<>{\appendix}{\only#1{\beameroriginal\appendix}}
\fi
}

\mode
<all>

```

```

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%
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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbaseframe. ?
? sty,v 4b8ceeeff434 2014/02/20 09:01:14 joseph $

\mode
<presentation>

\newbox\beamer@framebox
\newbox\beamer@frametitlebox
\newbox\beamer@zoombox
\newcount\beamer@zoomcount
\newcount\beamer@zoomframecount
\newdimen\beamer@frametextheight

\mode
<all>
{
  \newif\ifbeamer@inframe
  \beamer@inframefalse
% Save!
  \let\framelatex=\frame
  \def\@iframepicbox(#1,#2)[#3]#4{%
    \framelatex{\@imakepicbox(#1,#2)[#3]{#4}}%
  }%
}

\def\refcounter#1{\protected@edef\@currentlabel%
  {\csname p@#1\endcsname\csname the#1\endcsname}}%

%
% Slide Definitions
%

\newcounter{subsectionslide}[subsection]
\renewcommand\thesubsectionslide{\@arabic\c@subsectionslide}
\def\beamer@entrycode{}
\def\beamer@exitcode{}

\def\beamer@setuplinks{%
  {%
    \def\sectionentry##1##2##3##4##5{}%
    \def\slideentry##1##2##3##4##5##6{}%
    \dohead%
  }%
}

```

Beamer 的每个 slide 放在 `beamer@frameslide` 环境中, 实际上是放在 `beamer@framepauses` 环境中, 然后放入 `\beamer@framebox` 盒子中, 接着作伸缩 (`shrink`) 和放大 (`zoom`) 处理, 最后才取出此盒子 (伸缩和放大处理的代码见 `beamerbaseframesize.sty`)。

这里的 `beamer@framepauses` 环境在 `beamerbaseoverlay.sty` 文件中定义, 所有的覆盖命令将在这个环境里面处理。

注意 `frame` 环境的 `frametitle` 和 `framesubtitle` 参数在这里调用 `\beamer@checkframetitle` 检测。在 `beamer@framepauses` 环境结束时生成 `\beamer@frametitlebox`。

可以看到 `\usebeamertemplate***{frametitle}` 上面有个空白 `\vbox{}`, 所以 `frametitle` 上面总有行间距。在 `frametitle` 的背景颜色存在时, 这个竖直空白看来很碍眼。因此, 在定义 `frametitle` 模板时, 可以用 `\nointerlineskip` 命令去掉这个空白, 在 `beamerouterthemedefault.sty` 中就是这样处理的。

由于这里使用的是带星号的 `\usebeamertemplate`, 它实际上已经调用了 `frametitle` 的字体和颜色, 所以定义 `frametitle` 模板时可以不用写 `\usebeamerfont{frametitle}` 和 `\usebeamercolor{frametitle}`。

另外, 带星号的 `\usebeamertemplate` 会将模版内容放在一个编组内, 这里载入 `frametitle` 后又加上 `\vskip0.25em`, 这导致 `frametitle` 模板末尾有无 `\par` 的效果不同。比如

```
\setbeamertemplate{frametitle}{\insertframetitle}
\setbeamertemplate{frametitle}{\insertframetitle\par}
```

这两种写法, 前者在编组结束后用 `\vskip0.25em` 结束段落, 此时所用字体为正常的 `\normalsize` 尺寸; 后者在编组内部用 `\par` 结束段落, 此时所用字体是 `frametitle` 的 `\Large` 尺寸。这样计算出的在 `frametitle` 上面插入的行间距大小就会不相同。

```
\newenvironment{beamer@frameslide}{%
  \ifbeamer@autobreak\else%
    \ifx\beamer@againname\@empty%
      {\let\@elt\beamer@restorecounter\beamer@overlaycounterresets}%
    \else%
      {\let\@elt\beamer@labelrestorecounter\beamer@overlaycounterresets}%
    \fi%
  \fi%
  \global\c@beamerpauses=1\relax%
  \expandafter\beamer@ifempty\expandafter{\beamer@framestartpage}{%
    \stepcounter{subsectionslide}%
    \xdef\beamer@framestartpage{\the\c@page}% only first time
  }{\clearpage\beamer@notesactions}% cleanup from previous slide
  \hypersetup{pdfpagetransition=R}%
  \hypersetup{pdfpageduration=}%
  \@ifundefined{thispdfpagelabel}{}{%
    \thispdfpagelabel{\insertframenumbers}%
  }
  \xdef\beamer@frameendpage{\the\c@page}% every time
  \beamer@setuplinks%
  \beamer@displaybreak%
  \global\setbox\beamer@zoombox=\box\voidb@x%
  \def\beamer@zoomer{}%
  \beamer@slidehaszoomfalse%
  \gdef\insertframetitle{}%
  \gdef\insertframesubtitle{}%
  \gdef\beamer@frametitle{}%
  \gdef\beamer@shortframetitle{}%
  \gdef\beamer@framesubtitle{}%
  \let\beamer@startcomment=\beamer@startcommentinframe%
  % Start slide:
  \beamer@framenotesbegin%
    \global\setbox\beamer@framebox=\vbox\bgroup%
    \beamer@inframetrue%
```

```

\let\frame=\framelatex% inside frames, use LaTeX's \frame command
\begin{beamer@framepauses}%
  \refcounter{framenumbers}use frame number for \label
  \ifbeamer@shrink%
    \hsize=\beamer@shrinkfactorinv\hsize%
    \textwidth=\beamer@shrinkfactorinv\textwidth%
    \linewidth=\beamer@shrinkfactorinv\linewidth%
  \fi%
  % Insert labels if necessary:
  \ifx\beamer@againname\@empty\else%
    \nointerlineskip\vbox to0pt{\vss%
      \label<\the\beamer@slideinframe>{\beamer@againname<\the\beamer@slideinframe>}%
      \ifnum\beamer@slideinframe=1\relax%
        \label<1>{\beamer@againname}%
      \fi%
    }\nointerlineskip%
  \fi%
  \ifx\beamer@framehypertargets\@empty\else%
    \nointerlineskip\vbox to0pt{\vss%
      \beamer@framehypertargets%
      \global\let\beamer@framehypertargets\@empty%
    }\nointerlineskip%
  \fi%
  \vskip-\parskip\vbox{}%
  \beamer@initfirstlineunskip%
  \ifbeamer@plainframe\nointerlineskip\fi%
\beamer@checkframetitle}%
{\par
\end{beamer@framepauses}%
\egroup%
\ifx\beamer@frametitle\@empty%
  \setbox\beamer@frametitlebox=\box\voidb@x%
\else%
  \setbox\beamer@frametitlebox=\vbox{%
    \vbox{}%
    {\parskip0pt\usebeamertemplate***{frametitle}\vskip0.25em}%
  }%
\fi%
\ifbeamer@plainframe%
  \beamer@frametextheight=\paperheight%
\else%
  \beamer@frametextheight=\textheight%
\fi%
\advance\beamer@frametextheight by-\ht\beamer@frametitlebox%
\advance\beamer@frametextheight by-\dp\beamer@frametitlebox%
\advance\beamer@frametextheight by-\beamer@frametopskip%
\ifbeamer@shrink%
  \beamer@shrinkframebox%
\fi%
\ifx\beamer@zoomer\@empty
  \setbox\beamer@framebox=\vbox{%
    \nobreak\vbox{}\nobreak\par\nobreak\beamer@entrycode\nobreak%
    \nointerlineskip\unvbox\beamer@frametitlebox%
    \nobreak%
    \ifbeamer@autobreak%
      \vskip\beamer@frametopskipautobreak%
    \else%

```

```

    \vskip\beamer@frametopskip%
  \fi%
  \nobreak%
  \nointerlineskip\box\beamer@zoombox\nointerlineskip%
  \nobreak%
  \ifbeamer@slidehaszoom\box\beamer@framebox\else\unvbox\beamer@framebox\fi%
  % bottom skip is added in autobreakframebox
}%
\beamer@autobreakframebox%
\else%
  \beamer@zoomer%
\fi%
\beamer@undolabels%
\beamer@framenotesend%
\box\beamer@framebox}

\mode
<all>
{
  \def\beamer@checkframetitle{\@ifnextchar\bgroupp\beamer@inlineframetitle{}}
  \def\beamer@inlineframetitle#1{%
    \@ifnextchar\bgroupp{\framesubtitle}{\frametitle{#1}\relax}}%
  }
}

%
% Resetting counters
%
\def\resetcounteronoverlays#1{%
  \@cons\beamer@overlaycounterresets{{c@#1}}%
}

\def\resetcountonoverlays#1{%
  \@cons\beamer@overlaycounterresets{{#1}}%
}

\def\beamer@overlaycounterresets{}

\resetcounteronoverlays{equation}
\resetcounteronoverlays{parentequation}
\resetcounteronoverlays{footnote}
\resetcounteronoverlays{mpfootnote}
\resetcounteronoverlays{figure}
\resetcounteronoverlays{table}
\resetcountonoverlays{beamer@zoomframecount}
\resetcounteronoverlays{ExNo}
\resetcounteronoverlays{SubExNo}
\resetcounteronoverlays{SubSubExNo}

\def\beamer@savecounter#1{%
  \@ifundefined{#1}{-%
    {\expandafter\xdef\csname saved@#1\endcsname%

```

```

{\expandafter\the\csname #1\endcsname}}}%
}
\def\beamer@restorecounter#1{%
  \@ifundefined{#1}{}%
  {\edef\temp{\csname saved@#1\endcsname}%
  \expandafter\global\csname #1\endcsname=\temp}%
}

\def\beamer@labelsavecounter#1{%
  \@ifundefined{#1}{}%
  {\expandafter\xdef\csname saved@\beamer@againname @#1\endcsname%
  {\expandafter\the\csname #1\endcsname}}}%
}

\def\beamer@labelrestorecounter#1{%
  \@ifundefined{#1}{}%
  {\edef\temp{\csname saved@\beamer@againname @#1\endcsname}%
  \expandafter\global\csname #1\endcsname=\temp}%
}

%
% Skips
%
\newskip\beamer@frametopskip
\newskip\beamer@framebottomskip
\newskip\beamer@frametopskipautobreak
\newskip\beamer@framebottomskipautobreak

%
% Keys
%
\define@key{beamerframe}{label}{\def\beamer@againname{#1}%
  {\let\@elt\beamer@labelsavecounter\beamer@overlaycounterresets}}%
}
\define@key{beamerframe}{relabel}{\def\beamer@againname{#1}%
  \def\beamer@undolabels{\let\@elt\beamer@restorecounter\beamer@overlaycounterresets}}%
}
\define@key{beamerframe}{plain}[true]{%
  \beamer@plainframetrue%
  \def\beamer@frametemplate{\beamer@frametemplate@plain}}
\define@key{beamerframe}{containsverbatim}[true]{\csname beamer@containsverbatim#1\
? \endcsname}
\define@key{beamerframe}{fragile}[true]{%
  \beamer@containsverbatimfalse%
  \beamer@isfragilefalse%
  \csname beamer@fragile#1\endcsname%
}
\def\beamer@fragilefalse{}
\def\beamer@fragiletrue{\beamer@isfragiletrue}
\def\beamer@fragilesingleslide{\beamer@containsverbatimtrue}
\define@key{beamerframe}{c}[true]{% centered
  \beamer@frametopskip=0pt plus 1fill\relax%
  \beamer@framebottomskip=0pt plus 1.5fill\relax%
  \beamer@frametopskipautobreak=0pt plus .4\paperheight\relax%
  \beamer@framebottomskipautobreak=0pt plus .6\paperheight\relax%

```



```

\def\beamer@initfirstlineunskip{}%
}
\define@key{beamerframe}{t}[true]{% top
\beamer@frametopskip=.2cm plus .5\paperheight\relax%
\beamer@framebottomskip=0pt plus 1fill\relax%
\beamer@frametopskipautobreak=\beamer@frametopskip\relax%
\beamer@framebottomskipautobreak=\beamer@framebottomskip\relax%
\def\beamer@initfirstlineunskip{}%
}
\define@key{beamerframe}{b}[true]{% bottom
\beamer@frametopskip=0pt plus 1fill\relax%
\beamer@framebottomskip=0pt\relax%
\beamer@frametopskipautobreak=\beamer@frametopskip\relax%
\beamer@framebottomskipautobreak=\beamer@framebottomskip\relax%
\def\beamer@initfirstlineunskip{}%
}

\newif\ifbeamer@noframenumbering
\beamer@noframenumberingfalse

\define@key{beamerframe}{noframenumbering}[true]{\beamer@noframenumberingtrue}

\define@key{beamerframe}{environment}{\def\beamer@frameenvironmentsubst{#1}}

\define@key{beamerframe}{typeset second}[true]{\csname beamer@dosecondmode#1\endcsname}

\newif\ifbeamer@containsverbatim
\newif\ifbeamer@isfragile
\newif\ifbeamer@autobreak
\newif\ifbeamer@shrink
\newif\ifbeamer@plainframe
\newif\ifbeamer@slidehaszoom

\let\beamer@firstlineitemizeunskip\relax

%
% The frame environment (a trifle ugly...)
%

% Copyright notice: the following code is adapted from code from the
% amsmath package.

\newtoks\beamer@envbody
\def\beamer@frameenv{%
\def\beamer@process@envbody{\endgroup%
\expandafter\expandafter\expandafter\beamer@framecommand\expandafter\ ?
? beamer@frameoptions\expandafter{\the\beamer@envbody}}%
\global\beamer@envbody{}\def\beamer@begin@stack{b}%
\begingroup
\let\frame\beamer@collect@@body
\def\beamer@process@envbody{\frame}%
\beamer@process@envbody%
}

% Normally not executed; only in containsverbatim context:

```

```

\def\endframe{\egroup\begingroup\def\@currentenv{frame}}

\long\def\beamer@push@begins#1\begin#2{\ifx\end#2\else b\expandafter\beamer@push@begins\ ?
? fi}
\long\def\beamer@collect@@body#1\end#2{%
\def\test{#1}%
\edef\beamer@begin@stack{\beamer@push@begins#1\begin\end \expandafter\@gobble\ ?
? beamer@begin@stack}%
\ifx\@empty\beamer@begin@stack
\global\beamer@envbody\expandafter{\the\beamer@envbody#1}%
\def\reserved@a{#2}
\ifx\reserved@a\beamer@frametext%
\endgroup%
\let\@next=\beamer@process@envbody % A little tricky! Note the grouping
\checkend{#2}%
\else%
% ok, just expand it, presumably it will generate the desired \end{frame}
\let\@next=\beamer@process@expander%
\fi
\else
\global\beamer@envbody\expandafter{\the\beamer@envbody#1\end{#2}}%
\let\@next=\beamer@process@envbody%
\fi
\@next
}

\def\beamer@process@expander{%
\def\beamer@begin@stack{b}%
\expandafter\expandafter\expandafter\beamer@collect@@body\csname end\reserved@a\ ?
? endcsname\endgroup}

\mode
<all>
{\def\beamer@frametext{frame}}

```

\frame 命令调用 \beamer@framecommand 命令。

```

\def\frame{%
\ifx\@currentenv\beamer@frametext%
\gdef\beamer@frameoptions{%}
\let\beamer@next=\beamer@copewithframeenv%
\else%
\let\beamer@next=\beamer@framecommand%
\fi%
\beamer@next}

\def\beamer@copewithframeenv{%
\@ifnextchar<%
{\beamer@@frameenvspec}%
{%
\@ifnextchar[%
{\beamer@@frameenvopt}%
{\expandafter\beamer@checkforverbatim\beamer@frameoptions containsverbatim\relax}}%
}
\def\beamer@@frameenvspec<#1>{%
\expandafter\gdef\expandafter\beamer@frameoptions\expandafter{\beamer@frameoptions ?
?

```

```

? <#1>}%
\beamer@copewithframeenv}
\def\beamer@@frameenvopt[#1]{%
\expandafter\gdef\expandafter\beamer@frameoptions\expandafter{\beamer@frameoptions ?
? [#1]}%
\beamer@copewithframeenv}

\def\beamer@checkforverbatim#1containsverbatim#2\relax{%
\beamer@ifempty{#2}%
{\beamer@checkforfragile#1fragile\relax}
{% contains verbatim
\endgroup% end environment
\expandafter\beamer@framecommand\beamer@frameoptions\bgroup}%
}
\def\beamer@checkforfragile#1fragile#2\relax{%
\beamer@ifempty{#2}%
{\beamer@frameenv}% normal frame
{% contains verbatim
\endgroup% end environment
\expandafter\beamer@framecommand\beamer@frameoptions\bgroup}%
}

% Check for old version:

```

\beamer@framecommand 命令调用 \beamer@frame 命令。估计在旧版本中 frame 环境的参数形式不一致，所以得特别检测。

```

\def\beamer@framecommand{%
\edef\beamer@defaultspec{\beamer@gdefaultspec}%
\@ifnextchar<\beamer@frame\beamer@checkoldframe}
\def\beamer@checkoldframe{\@ifnextchar[\beamer@@checkoldframe{\beamer@frame<*>}}
\def\beamer@@checkoldframe[{\@ifnextchar<{\beamer@frame<*>[]}{\beamer@@@checkoldframe[]}]
\def\beamer@@@checkoldframe[#1#2]{%
\let\beamer@next=\beamer@newframesyntax%
\ifcat#1% a number-like first letter in argument
\let\beamer@next=\beamer@oldframesyntax%
\else%
\beamer@checkforcolon#2:.%
\fi%
\beamer@next{#1#2}}
\def\beamer@checkforcolon#1:#2.{%
\beamer@ifempty{#2}{\let\beamer@next=\beamer@oldframesyntax}}
\def\beamer@newframesyntax#1{\beamer@@@frame<*>[#1]}
\def\beamer@oldframesyntax#1{\beamer@@@frame<#1>[]}]

\def\beamer@framedefaultspec<#1>[#2]{%
\def\beamer@defaultspec{#2}%
\@ifnextchar[{\beamer@@@frame<#1>}{\beamer@@@frame<#1>[]}]

```

这里的 \beamer@frame 命令仅处理 frame 环境的前面三个可选参数，各个参数的介绍见文档 §8.1 的描述。

第一个可选参数就是覆盖指令（overlay specification）。Beamer 设定 \beamer@slideinframe=0，然后调用 \beamer@masterdecode 看是否存在 slide。如果存在，一般调用 \beamer@doseveralframes 处理。

```

\newdimen\framewidth
\def\beamer@frame<#1>{

```

```

\@ifnextchar [{\beamer@@@frame<#1>}{\beamer@@@frame<#1> []}]
\def\beamer@@@frame<#1>[{\@ifnextchar<{\beamer@framedefaultospec<#1>[]}{\beamer@@@frame ?
? <#1>[]}]
\def\beamer@@@frame<#1>[#2]{%
\framewidth\textwidth
\beamer@savemode%
\def\beamer@mode{\mode<all>}%
\def\beamer@frametemplate{}%
\def\beamer@againname{}%
\def\beamer@undolabels{}%
\def\beamer@cramped{}%
\def\beamer@displaybreak{}%
\setbox\beamer@footins=\box\voidb@x%
\beamer@autobreakcount=0\relax%
\beamer@autobreaklastheight=16000pt%
\beamer@zoomcount=0\relax%
\beamer@containsverbatimfalse%
\beamer@isfragilefalse%
\beamer@autobreakfalse%
\beamer@shrinkfalse%
\beamer@plainframefalse%
\global\advance\beamer@zoomframecount by1\relax%
\csname beamer@dosecondmode\beamer@defaultdosecondmode\endcsname%
\ifbeamer@centered\setkeys{beamerframe}{c}\else\setkeys{beamerframe}{t}\fi%
\setkeys{beamerframe}{environment=frame}%
\setkeys{beamerframe}{#2}%
\beamer@frametemplate%
\ifbeamer@noframenumbering%
\beamer@noframenumberingfalse%
\else%
\stepcounter{framenumber}%do not set \label here - it interferes with AtBegin*
\fi%
{\let\@elt\beamer@savecounter\beamer@overlaycounterresets}
\gdef\beamer@framestartpage{}%
\gdef\beamer@whichframes{#1}%
\ifx\beamer@framerestriction\@undefined\else% restriction stuff
\expandafter\beamer@checkifinlist\beamer@framerestriction\relax%
\fi%
\ifbeamer@inlecture%
\else%
\gdef\beamer@whichframes{all:0}%
\fi%
\ifx\beamer@againname\@empty%
\beamer@slideinframe=0\relax%
\beamer@anotherslidefalse%
{\beamer@masterdecode{\beamer@whichframes}}%
\ifbeamer@anotherslide%
%% \beamer@slideinframe=2\relax%
%% \def\beamer@doifnotinframe{}%
%% \def\beamer@doifinframe{\let\beamer@howtotreatframe\beamer@doseveralframes}%
%% \beamer@anotherslidefalse%
%% {\beamer@masterdecode{\beamer@whichframes}}%
%% \ifbeamer@anotherslide%
\let\beamer@howtotreatframe\beamer@doseveralframes%
%% \else% single slide in frame
%% \let\beamer@howtotreatframe\beamer@dosingleframe%
%% \fi%

```

```

%%% \beamer@donow%
\ifbeamer@containsverbatim%
  \let\beamer@howtotreatframe\beamer@dosingleframe%
\fi%
\ifbeamer@autobreak%
  \let\beamer@howtotreatframe\beamer@autobreakframe%
\fi%
\ifbeamer@isfragile%
  \let\beamer@howtotreatframe\beamer@doexternalframe%
\fi%
\else% no slides in frame
  \let\beamer@howtotreatframe\beamer@donoframe%
\fi%
\else% again mode
  \let\beamer@howtotreatframe\beamer@doseveralframes%
\ifbeamer@isfragile%
  \let\beamer@howtotreatframe\beamer@doexternalframe%
\fi%
\ifbeamer@containsverbatim
  \let\beamer@howtotreatframe\beamer@dosingleframe
\fi
\fi%
\beamer@howtotreatframe}
\def\gobble@onslide{%
  \@ifnextchar<%>
  \gobble@onslide@aux
  \@firstofone
}
\def\gobble@onslide@aux<#1>{\@firstofone}
\def\beamer@donoframe{%
  \beamer@slideinframe=1\relax%
  \setbox\beamer@tempbox\ vbox\bggroup%
  \beamer@inframetrue%
  \leavevmode%
  \def\pause{}%
  \let\onslide\gobble@onslide
  \afterassignment\beamer@checknoslide\let\beamer@next}
\def\beamer@checknoslide{%
  \ifcat\bggroup\ noexpand\beamer@next%
  \let\beamer@do\relax%
  \aftergroup\beamer@reseteecodes%
\else%
  \let\beamer@do\beamer@noframesingletoken%
\fi%
\beamer@do}
\def\beamer@noframesingletoken{\beamer@next\egroup\beamer@reseteecodes}

```

`\beamer@doseveralframes` 循环解码并构造 frame 中的各个 slide。

这里的 #1 包含 frame 环境的后两个可选参数 (frametitle 和 framesubtitle), 它们在 `beamer@frameslide` 环境的开始处检测并处理。

```

\long\def\beamer@doseveralframes#1{%
  \ifx\beamer@againname\@empty\else%
    % Again stuff
    \expandafter \gdef\csname beamer@again@\beamer@againname\endcsname{{#1}}%
  \fi%
  \beamer@slideinframe=1\relax%
}

```

```

\loop%
\beamer@anotherslidefalse%
\def\beamer@doifnotinframe{}%
\def\beamer@doifinframe{\begin{beamer@frameslide}%
#1%
\end{beamer@frameslide}}%
{\beamer@masterdecode{\beamer@whichframes}}%
\beamer@donow%
\ifbeamer@twoscreenstext%
\beamer@dosecondscreennow{#1}% two screen stuff
\fi%
\ifbeamer@anotherslide
\advance\beamer@slideinframe by 1\relax
\repeat%
\beamer@writeslidentry%
\beamer@reseteecodes}

\def\beamer@dosingleframe{%
\beamer@slideinframe=1\relax%
\begin{beamer@frameslide}\relax%
\bgrouplast\aftergroup\beamer@endslide\afterassignment\beamer@checkslide\let\beamer@next ?
? }

\def\beamer@checkslide{%
\ifcat\bgrouplast\noexpand\beamer@next%
\let\beamer@do\beamer@checkframetitle%
\else\let\beamer@do\beamer@singletoken\fi%
\beamer@do}

\def\beamer@endslide{\end{beamer@frameslide}\beamer@writeslidentry\beamer@reseteecodes}
\def\beamer@singletoken{\beamer@next\egroup}

\def\beamer@doexternalframe{%
\edef\beamer@verbfilename{\jobname\ifx\beamer@againname\@empty\else.\insertframenum ?
? \fi.vrb}% .vrb for `verbatim'
\beamer@setupstoppers{\beamer@frameenvironmentssubst}%
\immediate\openout\beamer@verbatimfileout=\beamer@verbfilename%
\expandafter\beamer@checktitleverbatim\@gobble}
\def\beamer@checktitleverbatim{\@ifnextchar\bgrouplast{\beamer@verbatim@frametitle}{\ ?
? beamer@verbatimreadframe}}
\def\beamer@verbatim@frametitle#1{%
\@ifnextchar\bgrouplast{\beamer@verbatim@framesubtitle{#1}}
{%
\@temptokena{#1}%
\edef\@tempa{\string\frametitle\string{\the\@temptokena\string}}%
\@temptokena\expandafter{\@tempa}%
\immediate\write\beamer@verbatimfileout{\the\@temptokena}%
\beamer@verbatimreadframe
}%
}
\def\beamer@verbatim@framesubtitle#1#2{\beamer@verbatimreadframe\frametitle{#1}\ ?
? framesubtitle{#2}}

% will return to following command with frame contents written to \beamer@verbfilename
\def\beamer@afterexternalframe{%
\ifx\beamer@frameenvironmentssubst\beamer@frametext%
\else%
\immediate\write\beamer@verbatimfileout{\noexpand\beamer@close substituted environment ?
? {\beamer@frameenvironmentssubst}}%
\fi%

```

```

\immediate\closeout\beamer@verbatimfileout%
\expandafter\beamer@doframeinput\beamer@frameoptions\relax}

\def\beamer@doframeinput{\@ifnextchar<{\beamer@frameinput}{\beamer@frameinput<*>}}
\def\beamer@frameinput<#1>{\@ifnextchar[{\beamer@@frameinput<#1>}{\beamer@@frameinput ?
? <#1> []}}
\def\beamer@@frameinput<#1>[{\@ifnextchar<{\beamer@@@frameinput<#1>[]}{\ ?
? beamer@@@frameinput<#1>[<*>] []}}
\def\beamer@@@frameinput<#1>[#2]{\@ifnextchar[{\beamer@@@frameinput<#1>[#{2}]}{\ ?
? beamer@@@frameinput<#1>[#{2}] []}}
\def\beamer@@@frameinput<#1>[#2][#3]{%
\global\advance\c@framenumbersubst by-1\relax%
\edef\beamer@temp{\noexpand\frame<#1>[#2][#{3,fragile=false}]%
{\begingroup\noexpand\input{\beamer@verbfilename}\endgroup}}%
\beamer@temp%
\ifx\beamer@frameenvironmentsubst\beamer@frametext%
\else%
\expandafter\endgroup%
\fi%
\beamer@reseteecodes}

\def\beamer@framesubstitutedenvironment#1{
\let\end\beamer@specialend%
\let\endframe\relax%
\csname end#1\endcsname}

\def\beamer@writeslidentry{%
\expandafter\beamer@ifempty\expandafter{\beamer@framestartpage}{}% does not happen ?
? normally
{%else
\addtocontents{nav}%
{\protect\headcommand{%
\protect\slideentry{\the\c@section}{\the\csubsection}{\the\csubsectionslide}%
{\beamer@framestartpage/\beamer@frameendpage}{\lastsubsection}{\the\c@part}}}%
\addtocontents{nav}%
{\protect\headcommand{%
\protect\beamer@framepages{\beamer@framestartpage}{\beamer@frameendpage}}}%
\clearpage\beamer@notesactions%
}
}
\def\beamer@reseteecodes{\gdef\beamer@entrycode{} \gdef\beamer@exitcode{}%
\beamer@slideinframe=1\relax\beamer@resumemode}

\let\beamer@origend\end
\def\beamer@specialend#1{%
\def\beamer@temp{#1}%
\ifx\beamer@temp\beamer@frametext%
\def\beamer@next{}%
\else%
\def\beamer@next{\expandafter\beamer@origend\expandafter{\beamer@temp}%
\let\end\beamer@specialend%
\let\endframe\relax%
}
\fi%
\beamer@next}

```

```

%
% \includeonlyframes
%

\def\beamer@checkifinlist#1,#2\relax{%
\def\beamer@temp{#1}%
\ifx\beamer@temp\beamer@againname\else
\def\beamer@temp{#2}%
\ifx\beamer@temp\@empty
\gdef\beamer@whichframes{all:0}%
\else%
\beamer@checkifinlist#2\relax%
\fi%
\fi%
}

\def\includeonlyframes#1{\def\beamer@framerestriction{#1,}}

%
% Frames in article mode
%

\mode
<article>
{
\def\endframe{\egroup}

\def\frame{\@ifnextchar<\beamer@frame{\beamer@frame<*>}}
\def\beamer@frame<#1>{\@ifnextchar[{\beamer@@frame<#1>}{\beamer@@frame<#1>[]}}
\long\def\beamer@@frame<#1>[#2]{%
\global\let\insertframetitle=\@empty%
\global\let\insertframesubtitle=\@empty%
\beamer@slideinframe=1\relax%
\refstepcounter{framenummer}%
\beamer@slideinframe=0\relax%
\beamer@anotherslidefalse%
{\beamer@masterdecode{#1}}%
\ifbeamer@anotherslide%
\let\beamer@howtotreatframe\beamer@dosingleframe%
\else% no slides in frame
\let\beamer@howtotreatframe\beamer@donoframe%
\fi%
\beamer@slideinframe=1\relax%
\beamer@howtotreatframe}

\long\def\beamer@donoframe{%
\setbox\beamer@tempbox\ vbox\ bgroup%
\beamer@inframetrue%
\let\frame=\framelatex
\usebeamertemplate{frame begin}%
\ bgroup\ aftergroup\ beamer@endframe%
\beamer@article@startframe}%
\def\beamer@dosingleframe{%
\ bgroup%

```



```

\beamer@inframetrue%
\let\frame=\framelatex
\usebeamertemplate{frame begin}%
\bgroup\aftergroup\beamer@endframe%
\beamer@article@startframe}%
\def\beamer@endframe{%
\usebeamertemplate{frame end}\egroup}

\def\beamer@article@startframe{%
\ifx\@currentenv\beamer@frametext%
\let\beamer@next=\beamer@checkframetitle%
\else%
\let\beamer@next=\beamer@article@framecmd%
\fi%
\beamer@next}%

\def\beamer@article@framecmd{%
\afterassignment\beamer@checkframetitle
\let\beamer@next=}

\providecommand\includeonlyframes[1]{}% no effect
}

\mode
<all>
{
\beamer@slideinframe=1\relax%
}

%
% Frame counter
%
\mode
<all>
{
\newcounter{framenum}
\def\insertframenum{\@arabic\c@framenum}
}

%
% Pagebreak command
%
\mode
<all>
{
\renewcommand<>{\pagebreak}[1][4]{\only#2{\beameroriginal\pagebreak[#{1}]}}
\renewcommand<>{\nopagebreak}[1][4]{\only#2{\beameroriginal\nopagebreak[#{1}]}}
\def\framebreak{\pagebreak<presentation>}
\def\noframebreak{\nopagebreak<presentation>}
}

%

```

```

% Linebreak command
%
\renewcommand<>{\}\{\only#1{\beameroriginal\}}
\renewcommand<>{\@centercr}\{\only#1{\beameroriginal\@centercr}}
\renewcommand<>{\@normalcr}\{\only#1{\beameroriginal\@normalcr}}

\mode
<article>
{
\expandafter\let\expandafter\beamer@origbreak\expandafter=%
\csname\expandafter@gobble\string\ \endcsname% evil trickery to add a space to the ?
? name
\DeclareRobustCommand\{\beamer@ifnextcharospec{\beamer@breaker}\beamer@@breaker}}
\def\beamer@breaker<#1>{\only<#1>{\beamer@origbreak}}
\def\beamer@@breaker{\ifbeamer@inframe\else\expandafter\beamer@origbreak\fi}

\let\beamer@origbreakcenter=\@centercr
\def\@centercr{\beamer@ifnextcharospec{\beamer@breakercenter}\beamer@@breakercenter}}
\def\beamer@breakercenter<#1>{\only<#1>{\beamer@origbreakcenter}}
\def\beamer@@breakercenter{\ifbeamer@inframe\else\expandafter\beamer@origbreakcenter\ ?
? fi}
}

%
% Plain frames
%

\def\beamer@frametemplate@plain{%
\def\beamer@entrycode{\vspace*{-\headheight}}%
\def\beamer@exitcode{\vspace*{-\footheight}\thispagestyle{empty}}

%
% Again frame
%

\def\againframe{\@ifnextchar<{\beamer@againframe}\beamer@againframe<*>}}
\def\beamer@againframe<#1>{\@ifnextchar [ {\beamer@@againframe<#1>}\beamer@@againframe ?
? <#1> []}}
\def\beamer@@againframe<#1>[{\@ifnextchar<{\beamer@@@againframe<#1>[]\ ?
? beamer@@@againframe<#1>[<*>] []}}
\def\beamer@@@againframe<#1>[#2][{\@ifnextchar [ {\beamer@@@againframe<#1>[#{2}]\ ?
? beamer@@@againframe<#1>[#{2}] []}}
\def\beamer@@@againframe<#1>[#2][#3]#4{%
\@ifundefined{beamer@again@#4}%
{\ClassError{beamer}{No frame has been designated to resume under
the name "#4"}{}}%
{%
\def\beamer@temp{\frame<#1>[#2] [#{3},relabel=#4]}%
\expandafter\let\expandafter\beamer@temp\csname beamer@again@#4\endcsname%
\expandafter\beamer@temp\beamer@temp}%
}

\mode
<article>

```

```

{
\def\againframe{\@ifnextchar<{\beamer@againframe}&{\beamer@againframe<>}}
\def\beamer@againframe<#1>{\@ifnextchar[{\beamer@@againframe<#1>}&{\beamer@@againframe ?
? <#1>[]}}
\def\beamer@@againframe<#1>[{\@ifnextchar<{\beamer@@@againframe<#1>}&{\ ?
? beamer@@againframe<#1>[<*>] []}}
\def\beamer@@@againframe<#1>[#2]{\@ifnextchar[{\beamer@@@againframe<#1>[#{2}]}&{\ ?
? beamer@@@againframe<#1>[#{2}] []}}
\def\beamer@@@againframe<#1>[#2][#3]#4{} % do nothing
}

\mode
<all>

```

16 beamerbaseverbatim.sty

```

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%
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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/ ?
? beamerbaseverbatim.sty,v 431510bb5890 2015/01/05 13:17:51 joseph $

\mode
<presentation>

\newwrite\beamer@verbatimfileout

\def\beamer@verbatimreadframe{%
\begingroup%
\let\do\beamer@makeinnocent\dospecials%
\count@=127%
\@whilenum\count@<255 \do{%
\advance\count@ by 1%
\catcode\count@=11%
}%
\beamer@makeinnocent\^^L% and whatever other special cases
\beamer@makeinnocent\^^I % Allow tab chars
\endlinechar\^^M \catcode\^^M=12%
\@ifnextchar\bgroup{\afterassignment\beamer@specialprocessframefirstline\let\ ?
? beamer@temp=}&{\beamer@processframefirstline}}%

{
\catcode`\{=12%
\catcode`\<=1%
\gdef\beamer@specialprocessframefirstline<%

```

```

\beamer@processframefirstline{%
}
}

{\catcode\^^M=12\endlinechar=-1%
\long\gdef\beamer@processframefirstline#1#2^^M{%
\def\beamer@test{#1#2}%
\ifx\beamer@test\beamer@stopframefirst%
\let\next=\beamer@framewritten%
\else%
\def\beamer@test{#1}%
\def\beamer@test@par{\par}%
\ifx\beamer@test\beamer@test@par
\def\beamer@test{^^J}%
\else%
\@onelevel@sanitize\beamer@test
\edef\beamer@test{\beamer@test\space}%
\edef\beamer@test{\expandafter\zap@space\beamer@test\@empty}%
\fi
\@temptokena{#2}%
\immediate\write\beamer@verbatimfileout{\beamer@test\the\@temptokena}%
\let\next=\beamer@processframeline%
\fi%
\next%
}%
\long\gdef\beamer@processframeline#1^^M{%
\def\beamer@test{#1}%
\ifx\beamer@test\beamer@stopframe%
\let\next=\beamer@framewritten%
\else%
\immediate\write\beamer@verbatimfileout{#1}%
\let\next=\beamer@processframeline%
\fi%
\next%
}%
}

\def\beamer@setupstoppers#1{%
{
\escapechar=-1\relax%
\xdef\beamer@stopframe{\string\\end\string\{#1\string\}}
\xdef\beamer@stopframefirst{\noexpand\end\string\{#1\string\}}
}
}

\def\beamer@framewritten{\endgroup%
\beamer@afterexternalframe%
}

```

% The following code is partly adapted from code from the alltt package.

```

\mode
<all>

```

```

{
\begingroup
\lccode`~=`\`
\lowercase{\endgroup}
\newenvironment{semiverbatim}{%
\trivlist
\item\relax
\if@minipage
\else
\vskip\parskip
\fi
\leftskip\@totalleftmargin
\rightskip\z@skip
\parindent\z@
\parfillskip\@flushglue
\parskip\z@skip
\@@par
\@tempswafalse
\def\par{%
\if@tempswa
\leavevmode\null\@@par\penalty\interlinepenalty
\else
\@tempswatrue
\ifhmode\@@par\penalty\interlinepenalty\fi
\fi}
\obeylines
\def\verbatim@nolig@list{\do\`do\,\do\'\do\{-}
\verbatim@font
\let\org@prime~%
\everymath\expandafter{\the\everymath}
\catcode`\'=12 \let~\org@prime}
\everydisplay\expandafter{\the\everydisplay}
\catcode`\'=12 \let~\org@prime}
\def\dospecials{\do\ \do\$\do\&%
\do\#\do\~\do\_ \do\% \do\~\do\` \do\,\do\'\do\{-}
\let\do\@makeoother
\dospecials
\def\\{\char`\\}
\def\{\{\char`{\}
\def\}\{\char`\}\}
\frenchspacing\@vobeyspaces
\everypar \expandafter{\the\everypar \unpenalty}}
{\endtrivlist}}
}

\mode
<all>

```

17 beamerbaseframesize.sty

```

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%

```

```

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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/ ?
? beamerbaseframesize.sty,v 70f9d8411e54 2011/09/12 18:58:34 joseph $

\mode
<presentation>

\define@key{beamerframe}{allowdisplaybreaks}[4]{%
  \def\beamer@displaybreak{\allowdisplaybreaks[{\#1}]}
}
\define@key{beamerframe}{allowframebreaks}[0.95]{%
  \def\beamer@autobreakfactor{\#1}\beamer@autobreaktrue
}
\define@key{beamerframe}{squeeze}[]{%
  \def\beamer@cramped{\itemsep0pt\topsep0.5pt\relax}}
\define@key{beamerframe}{shrink}[0]{%
  \def\beamer@shrinkpercentage{\#1}%
  \@tempdima=-\#1pt%
  \@tempdima=0.01\@tempdima%
  \advance\@tempdima by1pt%
  \edef\beamer@shrinkfactor{\strip@pt\@tempdima}%
  \@tempcnta=\@tempdima%
  \divide\@tempcnta by256\relax%
  \@tempdima=256pt%
  \divide\@tempdima by\@tempcnta%
  \edef\beamer@shrinkfactorinv{\strip@pt\@tempdima}%
  \beamer@shrinktrue%
  \def\beamer@cramped{\itemsep0pt\topsep0.5pt\relax}}

```

`\framezoom` 用于放大 frame 的其中一部分，在包含大型图片时比较有用，见文档 §11.3。

在 `beamerbaseframe.sty` 的 `beamer@frameslide` 环境的定义中可以看到，下面的 `\beamer@framebox` 包含当前 slide 的正文内容。在该环境结束前，如果 `\beamer@zoomer` 非空将调用该命令。

```

%
% Zoom stuff
%

\define@key{beamerzoom}{border}[1]{\def\beamer@zoomborderwidth{\#1}}

\def\framezoom<\#1><\#2>{\@ifnextchar[{\beamer@framezoom<\#1><\#2>}{\beamer@framezoom ?
? <\#1><\#2> []}}
\def\beamer@framezoom<\#1><\#2>[#3](\#4,\#5)(\#6,\#7){%
  \par\nointerlineskip%
  \global\beamer@slidehaszoomtrue%
  \advance\beamer@zoomcount by1\relax%
  \def\beamer@zoomborderwidth{0}%
  \edef\beamer@labelzoomed{\beamer@labelzoomed@the\beamer@zoomframecount @the\ ?
? beamer@zoomcount}%
  \setkeys{beamerzoom}{\#3}%
  \only<\#1>{%
    {\hypersetup{pdfhighlight={/P},pdfborder={0 0 \beamer@zoomborderwidth}}}%
    \global\setbox\@tempboxa=\vbox{\hyperlink{\beamer@labelzoomed}{\vbox to \#7{\hbox

```

```

    to#6{\hfil}\vfil}}}}}%
\ht\@tempboxa=0pt%
\wd\@tempboxa=0pt%
\dp\@tempboxa=0pt%
\setbox\@tempboxa=\vbox{\moveright#4\hbox{\lower#5\vbox{\box\@tempboxa}}}%
\ht\@tempboxa=0pt%
\wd\@tempboxa=0pt%
\dp\@tempboxa=0pt%
\global\setbox\beamer@zoombox=\vbox to0pt{\unvbox\beamer@zoombox\box\@tempboxa}%
}%
\only<#2>{%
\ifundefined{\beamer@labelzoomed}%
{%
\hypertarget{\beamer@labelzoomed}{}%
\expandafter\gdef\csname\beamer@labelzoomed\endcsname{%
}}}%
\gdef\beamer@zoomer{%
% compute zoom factor
\@tempdima=\beamer@frametextheight%
\@tempdimb=#7\relax%
\@tempcnta=\@tempdimb%
\divide\@tempcnta by4096\relax%
\multiply\@tempdima by16\relax%
\divide\@tempdima by\@tempcnta%
\@tempdimb=\paperwidth%
\ifbeamer@plainframe%
\else%
\advance\@tempdimb by-\beamer@leftsidebar%
\advance\@tempdimb by-\beamer@rightsidebar\relax%
\fi%
\@tempdimc=#6\relax%
\@tempcntb=\@tempdimc%
\divide\@tempcntb by4096\relax%
\multiply\@tempdimb by16\relax%
\divide\@tempdimb by\@tempcntb%
\ifdim\@tempdimb<\@tempdima%
\@tempdima=\@tempdimb%
\fi%
\edef\beamer@temp{\strip@pt\@tempdima}%
\@tempdimc=\beamer@frametextheight%
\advance\@tempdimc by4pt%
\@tempdimb=\paperwidth%
\ifbeamer@plainframe%
\else%
\advance\@tempdimb by-\beamer@leftsidebar%
\advance\@tempdimb by-\beamer@rightsidebar\relax%
\fi%
\setbox\@tempboxa=\vbox{\hsize=\@tempdimb\Acrobatmenu{GoBack}{\vbox to
\beamer@frametextheight{\hbox to\@tempdimb{\hfil}\vfil}}}%
\ht\@tempboxa=0pt%
\wd\@tempboxa=0pt%
\dp\@tempboxa=0pt%
\setbox\beamer@framebox=\vbox to\beamer@frametextheight{%
\ifbeamer@plainframe\beamer@leftmargin=\Gm@lmargin\fi%
\begin{pgfpicture}{\beamer@leftmargin}{-\beamer@frametextheight}{\
? beamer@leftmargin}{0pt}
\pgftext[left,top]{\box\@tempboxa}

```

```

\pgfpathrectangle{\pgfpoint{0pt}{-\@tempdimc}}{\pgfpoint{\@tempdimb}{\@tempdimc}}%
\pgfusepath{clip}
\begingroup
\pgftransformscale{\beamer@temp}
\@tempdima=#4\relax%
\@tempdimb=#5\relax%
{\pgftransformshift{\pgfpoint{-\@tempdima}{-\@tempdimb}}}%
\pgftext[left,top]{\vbox{\vbox{\nointerlineskip\unvbox\beamer@framebox}}}
\endgroup
\endpgfpicture}%
}}%
\setbox\beamer@framebox=\vbox{%
\nobreak\vbox{\nobreak\par\nobreak\beamer@entrycode\nobreak%
\nointerlineskip\unvbox\beamer@frametitlebox%
\nobreak%
\box\beamer@framebox%
\nobreak%
\vss%
\beamer@exitcode%
}%
\global\setbox\beamer@footins=\box\voidb@x% no footnotes in zoomed slides
}%
}
}

\mode
<article>
{
\def\framezoom<#1><#2>{\@ifnextchar[{\beamer@framezoom<#1><#2>}{\beamer@framezoom ?
? <#1><#2> []}}
\def\beamer@framezoom<#1><#2>[#3](#4,#5)(#6,#7){}
}
}

```

Beamer 的 frame 环境有个 shrink 选项，用于收缩各个 slide 的正文内容，避免溢出；见文档 §8.1。

在 beamerbaseframe.sty 的 beamer@frameslide 环境的定义中可以看到，下面的 \beamer@framebox 包含当前 slide 的正文内容。在该环境结束前，如果 \ifbeamer@shrink 为真，将调用 \beamer@shrinkframebox 命令。

```

%
% Shrink stuff
%
\def\beamer@shrinkframebox{%
\@tempdima=\ht\beamer@framebox%
%\ifdim\@tempdima>\beamer@frametextheight%
\@tempcnta=\@tempdima%
\divide\@tempcnta by 65536\relax%
\@tempdimc=\beamer@frametextheight%
\divide\@tempdimc by\@tempcnta\relax%
\ifdim\@tempdimc>\beamer@shrinkfactor pt%
\@tempdimc=\beamer@shrinkfactor pt%
\else%
\@tempdima=-100\@tempdimc%
\advance\@tempdima by100pt%
\ClassWarning{beamer}{Frame text is shrunk by a factor of %
\strip@pt\@tempdima\space percent instead of

```



```

\beamer@shrinkpercentage\space percent}%
\fi%
\edef\beamer@factortemp{\strip@pt\@tempdimc}%
\setbox\beamer@framebox=\vbox to\beamer@frametextheight{%
\begin{pgfpicture}{0pt}{-\beamer@frametextheight}{0pt}{0pt}
{\pgftransformscale{\beamer@factortemp}%
\pgftext[left,top]{\box\beamer@framebox}}%
\end{pgfpicture}%
}%
% \fi%
}

%
% Auto break stuff
%

\splittopskip=10pt
\newbox\beamer@splitbox
\newcount\beamer@autobreakcount
\newdimen\beamer@autobreaklastheight

\def\beamer@autobreakframe{%
\beamer@slideinframe=1\relax%
\advance\beamer@autobreakcount by1\relax%
\begin{beamer@frameslide}\relax%
\bggroup%
\aftergroup\beamer@endautobreak%
\afterassignment\beamer@checkframetitle%
\let\beamer@next% gobble opening brace
}
\def\beamer@endautobreak{\end{beamer@frameslide}%
\beamer@writeslidentry%
\ifvoid\beamer@splitbox%
\let\beamer@next=\beamer@reseteecodes%
\else%
\let\beamer@next=\beamer@continueautobreak%
\fi%
\beamer@next%
}

\def\beamer@autobreakframebox{%
\global\setbox\beamer@splitbox=\box\voidb@x%
\ifbeamer@autobreak%
% Ok, frame was overful -> split it!
\setbox\@tempboxa=\vsplit\beamer@framebox to\beamer@autobreakfactor\textheight%
\global\setbox\beamer@splitbox=\box\beamer@framebox%
\@tempdima=\ht\beamer@splitbox%
\ifdim\@tempdima<\beamer@autobreaklastheight%
\global\beamer@autobreaklastheight=\@tempdima\relax%
\else%
\setbox\@tempboxa=\vbox{\unvbox\@tempboxa\unvbox\beamer@splitbox}%
\global\setbox\beamer@splitbox=\box\voidb@x%
\fi%
\setbox\beamer@framebox=\vbox to\textheight{\unvbox\@tempboxa%
\vskip\beamer@framebottomskipautobreak%

```

```

\ifvoid\beamer@splitbox%
\ifvoid\beamer@footins%
\else%
\begingroup
\usebeamercolor*[fg]{footnote}%
\footnoterule%
\unvbox \beamer@footins%
\global\setbox\beamer@footins=\box\voidb@x%
\endgroup
\fi%
\fi%
\beamer@exitcode%
}%
\else%
\setbox\beamer@framebox=\vbox to\textheight{\unvbox\beamer@framebox%
\vskip\beamer@framebottomskip%
\ifvoid\beamer@footins%
\else%
\begingroup
\usebeamercolor*[fg]{footnote}%
\footnoterule%
\unvbox \beamer@footins%
\global\setbox\beamer@footins=\box\voidb@x%
\endgroup
\fi%
\beamer@exitcode}%
\global\setbox\beamer@footins=\box\voidb@x%
\fi%
}

\newtoks\beamer@frametitletoks
\newtoks\beamer@framesubtitletoks

\def\beamer@continueautobreak{%
\refstepcounter{framenumbers}%
\expandafter\beamer@frametitletoks\expandafter{\beamer@frametitle}%
\expandafter\beamer@framesubtitletoks\expandafter{\beamer@shortframetitle}%
\edef\beamer@callframetitle{\noexpand\frametitle[\the\beamer@framesubtitletoks]{\the\ ?
? beamer@frametitletoks}}%
\expandafter\expandafter\expandafter\beamer@autobreakframe
\expandafter\expandafter\expandafter{%
\expandafter\beamer@callframetitle%
\expandafter\framesubtitle\expandafter{\insertframesubtitle}%
\unvbox\beamer@splitbox}%
}

\newcommand\insertcontinuationcount{\the\beamer@autobreakcount}
\newcommand\insertcontinuationcountroman{@Roman\beamer@autobreakcount}
\newcommand\insertcontinuationtext{(\translate{cont}.)}

\mode
<all>

```

18 beamerbaseframecomponents.sty

```
% Copyright 2003--2007 by Till Tantau
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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/ ?
    ? beamerbaseframecomponents.sty,v 5cf6c5555a45 2013/10/18 11:51:48 e $

\mode
<presentation>

%
% Setting the left and right margin
%
%
\beamer@leftmargin=1cm
\beamer@rightmargin=1cm

\newif\ifbeamer@dogeometry

\define@key{beamer@margin}{text margin left}{\beamer@leftmargin=#1\beamer@dogeometrytrue ?
? }
\define@key{beamer@margin}{text margin right}{\beamer@rightmargin=#1\ ?
? beamer@dogeometrytrue}
\define@key{beamer@margin}{sidebar width left}{\beamer@leftsidebar=#1\ ?
? beamer@dogeometrytrue}
\define@key{beamer@margin}{sidebar width right}{\beamer@rightsidebar=#1\ ?
? beamer@dogeometrytrue}

\newcommand{\setbeamersize}[1]{%
  \beamer@dogeometryfalse%
  \setkeys{beamer@margin}{#1}%
  \ifbeamer@dogeometry%
    % Reset left margin now
    \beamer@tempdim=\beamer@leftmargin%
    \advance\beamer@tempdim by\beamer@leftsidebar%
    \geometry{left=\the\beamer@tempdim}%
    % Reset right margin now
    \beamer@tempdim=\beamer@rightmargin%
    \advance\beamer@tempdim by\beamer@rightsidebar%
    \geometry{right=\the\beamer@tempdim}%
  \fi%
}

\mode
<article>
{
  \newcommand{\setbeamersize}[1]{}
```

```
}
```

这里用 `\ps@navigation` 定义一个名为 `navigation` 的页面样式，然后用 `\pagestyle{navigation}` 启用此样式，参考 `source2e` 文档 §63。

这个页面样式有些特殊，因为它的页眉包含背景、侧栏和顶栏，而页脚包含底栏。

```
% Constructing a frame:
```

```
\let\@mkboth\@gobbletwo
\def\ps@navigation{
  \def\@oddhead{%
    \begingroup%
    \setbox\beamer@tempbox=\hbox{\usebeamertemplate***{background canvas}\ ?
      ? hyper@pagetransition\hyper@pageduration}%
    \beamer@tempdim=\ht\beamer@tempbox%
    \setbox\beamer@tempbox=\hbox{\lower\beamer@tempdim\hbox{\box\beamer@tempbox}}%
    \wd\beamer@tempbox=0pt\ht\beamer@tempbox=0pt\dp\beamer@tempbox=0pt%
    \setbox\@tempboxa=\hbox{\usebeamertemplate***{background}}%
    \beamer@tempdim=\ht\@tempboxa%
    \setbox\@tempboxa=\hbox{\lower\beamer@tempdim\hbox{\box\@tempboxa}}%
    \wd\@tempboxa=0pt\ht\@tempboxa=0pt\dp\@tempboxa=0pt%
    \vbox{\hbox{\hskip-\Gm@lmargin\box\beamer@tempbox\box\@tempboxa}%
      \hbox{%
        {%
          \setbox\beamer@tempbox=\hbox{\hskip-\Gm@lmargin%
            {\setbox\beamer@tempbox=\hbox{\vbox to \sidebarheight{%
              \usebeamercolor*{sidebar left}%
              \usebeamertemplate{sidebar canvas left}%
              \vss%
            }}}%
          \wd\beamer@tempbox=0pt\ht\beamer@tempbox=0pt\dp\beamer@tempbox=0pt%
          \box\beamer@tempbox}%
        {%
          \vbox to \sidebarheight{%
            \usebeamertemplate***{sidebar left}%
            \vfil%
          }}}%
        \beamer@tempdim=\ht\beamer@tempbox%
        \setbox\beamer@tempbox=\hbox{\lower\beamer@tempdim\hbox{\box\beamer@tempbox}}}%
        ? %
        \wd\beamer@tempbox=0pt\ht\beamer@tempbox=0pt\dp\beamer@tempbox=0pt%
        \box\beamer@tempbox%
      }%
    {% print right sidebar first, since it should be overwritten by headline
      \setbox\beamer@tempbox=\hbox{\hskip\textwidth\hskip\beamer@rightmargin%
        {\setbox\beamer@tempbox=\hbox{\vbox to \sidebarheight{%
          \usebeamercolor*{sidebar right}%
          \usebeamertemplate{sidebar canvas right}%
          \vss%
        }}}%
        \wd\beamer@tempbox=0pt\ht\beamer@tempbox=0pt\dp\beamer@tempbox=0pt%
        \box\beamer@tempbox}%
      {%
        \vbox to \sidebarheight{%
          \usebeamertemplate***{sidebar right}%
          \vfil%
        }}}%
    }%
  }%
}
```

```

\beamer@tempdim=\ht\beamer@tempbox%
\setbox\beamer@tempbox=\hbox{\lower\beamer@tempdim\hbox{\box\beamer@tempbox}} ?
? %
\wd\beamer@tempbox=0pt\ht\beamer@tempbox=0pt\dp\beamer@tempbox=0pt%
\box\beamer@tempbox%
}%
\beamer@typesetheadorfoot{headline}%
}%
\hfil}%
\endgroup}
\def\@oddfoot{%
\ vbox{\offinterlineskip\hbox{\beamer@typesetheadorfoot{footline}%
\hfil}\hbox{}}\hfil
}%
\let\@evenhead\@oddhead
\let\@evenfoot\@oddfoot}
\pagestyle{navigation}

\def\beamer@typesetheadorfoot#1{% typeset the head or footline
{\parskip0pt\offinterlineskip%
\hbox{%
\hskip-\Gm@lmargin%
\hbox{%
\ vbox{%
\@tempdima=\textwidth%
\textwidth=\paperwidth%
\hsize=\textwidth%
\def\{,\}%
\usebeamertemplate***{#1}%
}}%
\hskip-\Gm@rmargin%
}}\hfil%
}

%
% Patch empty page style, so that transitions and navigation still works
%
\def\ps@empty{%
\let\@mkboth\@gobbletwo%
\def\@oddhead{\begingroup%
\setbox\beamer@tempbox=\hbox{\usebeamertemplate***{background canvas}\ ?
? hyper@pagetransition\hyper@pageduration}%
\beamer@tempdim=\ht\beamer@tempbox%
\setbox\beamer@tempbox=\hbox{\lower\beamer@tempdim\hbox{\box\beamer@tempbox}}%
\wd\beamer@tempbox=0pt\ht\beamer@tempbox=0pt\dp\beamer@tempbox=0pt%
\setbox\@tempboxa=\hbox{\usebeamertemplate***{background}}%
\beamer@tempdim=\ht\@tempboxa%
\setbox\@tempboxa=\hbox{\lower\beamer@tempdim\hbox{\box\@tempboxa}}%
\wd\@tempboxa=0pt\ht\@tempboxa=0pt\dp\@tempboxa=0pt%
\ vbox{\hbox{\hskip-\Gm@lmargin\raise\headheight\box\beamer@tempbox\box\@tempboxa}\ ?
? hfil}%
\endgroup%
}
\def\@oddfoot{\normalcolor{\hfil%
\setbox\beamer@tempbox=\hbox{\usebeamertemplate***{navigation symbols}\hskip-\ ?
? Gm@rmargin\hskip2pt}%
\ht\beamer@tempbox=0pt%

```

```

\dp\beamer@tempbox=0pt%
\box\beamer@tempbox}}
\let\@evenhead\@oddhead\let\@evenfoot\@oddfoot}

\def\beamer@calculateheadfoot{%
\setbox\beamer@tempbox=\hbox{{\beamer@typesetheadorfoot{footline}}}%
\footheight=\ht\beamer@tempbox%
\advance\footheight by \dp\beamer@tempbox%
\advance\footheight by 4pt%
\setbox\beamer@tempbox=\hbox{{\beamer@typesetheadorfoot{headline}}}%
\headheight=\ht\beamer@tempbox%
\headdp=\dp\beamer@tempbox%
\advance\headheight by\headdp%
\sidebarheight=\paperheight%
\advance\sidebarheight by-\headheight%
\advance\sidebarheight by\headdp%
\advance\sidebarheight by-\footheight%
\advance\sidebarheight by 4pt%
\footskip=\footheight%
\textheight=\paperheight%
\advance\textheight by-\footheight%
\advance\textheight by-\headheight%
\@colht\textheight%
\@colroom\textheight%
\vsizetextheight%
}

\def\insertpagenumber{\thepage}

%
%
% Columns
%
%
\define@key{beamer@col}{onlytextwidth}[true]{%
\def\beamer@colentrycode{\hbox to\textwidth\bgroup\ignorespaces}%
\def\beamer@colexitcode{\unskip\egroup}}
\define@key{beamer@col}{totalwidth}{%
\def\beamer@colentrycode{\hbox to#1\bgroup\ignorespaces}%
\def\beamer@colexitcode{\unskip\egroup}}
\define@key{beamer@col}{c}[true]{\def\beamer@colmode{c}\def\beamer@colalign{c}\def\
? beamer@colheadskip{}}
\define@key{beamer@col}{t}[true]{\def\beamer@colmode{t}\def\beamer@colalign{t}\def\
? beamer@colheadskip{}}
\define@key{beamer@col}{T}[true]{\def\beamer@colmode{T}\def\beamer@colalign{t}\def\
? beamer@colheadskip{\vskip-1ex\nointerlineskip}}
\define@key{beamer@col}{b}[true]{\def\beamer@colmode{b}\def\beamer@colalign{b}\def\
? beamer@colheadskip{}}

\newenvironment<>{columns}[1][]{%
\begin{actionenv}#2%
\def\beamer@colentrycode{%
\hbox to\textwidth\bgroup%
\leavevmode%

```

```

\hskip-\beamer@leftmargin%
\nobreak%
\beamer@tempdim=\textwidth%
\advance\beamer@tempdim by\beamer@leftmargin%
\advance\beamer@tempdim by\beamer@rightmargin%
\hbox to\beamer@tempdim\bgroup%
\hbox{\hfill\ignorespaces}%
\def\beamer@colexitcode{\egroup%
\nobreak%
\hskip-\beamer@rightmargin\egroup}%
\ifbeamer@centered\setkeys{beamer@col}{c}\else\setkeys{beamer@col}{t}\fi%
\setkeys{beamer@col}{#1}%
\par%
\beamer@colentrycode%
\def\beamer@colclose{\ignorespaces}%
{\beamer@colclose\def\beamer@colclose{\beamer@colexitcode\end{actionenv}}}%

\mode
<article>
{
% do sth. more intelligent in the future
\newenvironment<>{columns}[1][{}]{%
}

%
%
% Column command/environment
%
%

\mode
<all>
{
\def\beamer@columnname{column}
\def\column{%
\ifx\@currenvir\beamer@columnname%
\let\beamer@next=\beamer@columnenv%
\else%
\let\beamer@next=\beamer@columncom%
\fi%
\beamer@next}
}

\newenvironment<>{beamer@columnenv}[2][\beamer@colmode]{%
\beamer@colclose\def\beamer@colclose{}%
\begin{actionenv}#3%
\setkeys{beamer@col}{#1}%
\begin{minipage}[\beamer@colalign]{#2}%
\leavevmode raggedright\beamer@colheadskip\ignorespaces}
{\end{minipage}\hfill\end{actionenv}\@ignoretrue}
\let\endcolumn\endbeamer@columnenv

\newcommand<>\beamer@columncom[2][\beamer@colmode]{%
\beamer@colclose%

```

```

\def\beamer@colclose{\end{minipage}\hfill\end{actionenv}\ignorespaces}%
\begin{actionenv}#3%
\setkeys{beamer@col}{#1}%
\begin{minipage}[\beamer@colalign]{#2}%
\leavevmode\raggedright\beamer@colheadskip\ignorespaces}

\mode
<article>
{
\newenvironment<>{beamer@columnenv}[2][{}]{%
\newcommand<>{\beamer@columncom}[2][{}]}
}

%
%
% Footnotes
%
%

\def\@makefnmark{\hbox{\@textsuperscript{\usebeamerfont{footnote mark}\@theftnmark}}
? usebeamerfont*{footnote mark}\@theftnmark}}

\def\@makefntext#1{%
\def\insertfootnotetext{#1}%
\def\insertfootnotemark{\@makefnmark}%
\usebeamertemplate***{footnote}}

\newbox\beamer@footins

\newcommand<>\beamer@framefootnotetext[1]{%
\global\setbox\beamer@footins\ vbox{%
\hsize\framewidth
\textwidth\hsize
\columnwidth\hsize
\unvbox\beamer@footins
\reset@font\footnotesize
\@parboxrestore
\protected@edef\@currentlabel
{\csname p@footnote\endcsname\@theftnmark}%
\color@begingroup
\uncover#2{\@makefntext{%
\rule\z@{\footnotesep\ignorespaces#1\@finalstrut\strutbox}}%
\color@endgroup}}

\renewcommand<>\@mpfootnotetext[1]{%
\global\setbox\@mpfootins\ vbox{%
\unvbox\@mpfootins
\reset@font\footnotesize
\hsize0.85\paperwidth
\@parboxrestore
\protected@edef\@currentlabel
{\csname p@mpfootnote\endcsname\@theftnmark}%
\color@begingroup
\uncover#2{\@makefntext{%

```



```

\rule\z@{\footnotesep\ignorespaces#1\@finalstrut\strutbox}}%
\color@endgroup}}

\let\@footnotetext=\beamer@framefootnotetext

\define@key{beamerfootnote}{frame}[true]{%
\let\beamer@footnotetext=\beamer@framefootnotetext%
\def\beamer@mpfn{footnote}%
\def\beamer@thempfn{\thefootnote}}

\renewcommand<>{\footnote}[1][]{%
\let\beamer@footnotetext=\@footnotetext%
\let\beamer@mpfn=\@mpfn%
\let\beamer@thempfn=\thempfn%
\let\beamer@kvorig=KV@errx%
\def\beamer@footarg{}%
\def\KV@errx##1{\edef\beamer@footarg{\@tempa}}%
\setkeys{beamerfootnote}{#1}%
\let\KV@errx=\beamer@kvorig%
\ifx\beamer@footarg\empty%
\def\beamer@next{\stepcounter\beamer@mpfn
\protected@xdef\@thefnmark{\beamer@thempfn}%
\@footnotemark\beamer@footnotetext#2}%
\else%
\def\beamer@next{%
\begingroup
\csname c@\beamer@mpfn\endcsname\beamer@footarg\relax
\unrestored@protected@xdef\@thefnmark{\beamer@thempfn}%
\endgroup
\@footnotemark\beamer@footnotetext#2}%
\fi%
\beamer@next}

\mode
<article>
{
\define@key{beamerfootnote}{frame}[true]{}

\let\beamer@origfootnote=\footnote
\renewcommand\footnote[1][]{%
\let\beamer@kvorig=KV@errx%
\def\beamer@footarg{}%
\def\KV@errx##1{\edef\beamer@footarg{\@tempa}}%
\setkeys{beamerfootnote}{#1}%
\let\KV@errx=\beamer@kvorig%
\ifx\beamer@footarg\empty%
\edef\beamer@next{\noexpand\beamer@origfootnote}%
\else%
\edef\beamer@next{\noexpand\beamer@origfootnote[\beamer@footarg]}%
\fi%
\beamer@next}
}

\mode
<all>

```

19 beamerbasecolor.sty

```
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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbasecolor. ?
? sty,v d944b04ee2d5 2015/02/21 15:47:58 joseph $

\mode
<presentation>

%
% Color theme stuff
%

\define@key{beamerthc}{fg}
  {\expandafter\def\csname beamer@thcfg@\beamer@temp\endcsname{\def\beamer@thc@fg{#1}}}
\define@key{beamerthc}{bg}
  {\expandafter\def\csname beamer@thcbg@\beamer@temp\endcsname{\def\beamer@thc@bg{#1}}}
\define@key{beamerthc}{parent}
  {\expandafter\def\csname beamer@thcinherits@\beamer@temp\endcsname{%
    \@for\@temp:={#1}\do{\expandafter\beamer@thc@docolor\expandafter{\@temp}}}}
\define@key{beamerthc}{use}
  {\expandafter\def\csname beamer@thcuse@\beamer@temp\endcsname{%
    \@for\@temp:={#1}\do{\expandafter\beamer@thc@usecolor\expandafter{\@temp}}}}

\def\beamer@thc@prepcolor{%
  \let\beamer@thc@fg=\@empty%
  \let\beamer@thc@bg=\@empty%
}

\def\beamer@thc@docolor#1{%
  \csname beamer@thcuse@#1\endcsname%
  \csname beamer@thcinherits@#1\endcsname%
  \csname beamer@thcfg@#1\endcsname%
  \csname beamer@thcbg@#1\endcsname%
}

\def\beamer@thc@usecolor#1{%
  \begingroup%
  \beamer@thc@prepcolor%
  \beamer@thc@docolor{#1}%
  \ifx\beamer@thc@fg@\empty\def\beamer@thc@fg{fg}\fi%
  \ifx\beamer@thc@bg@\empty\def\beamer@thc@bg{bg}\fi%
  \global\let\beamer@thc@gfg\beamer@thc@fg%
  \global\let\beamer@thc@gbg\beamer@thc@bg%
  \globalcolorstrue%
  \colorlet{#1.fg}{\beamer@thc@gfg}%
  \colorlet{#1.bg}{\beamer@thc@gbg}%
}
```

```

\endgroup%
}

\def\setbeamercolor{\@ifstar{\beamer@clearbeamercolor}{\beamer@setbeamercolor}}

\newcommand\beamer@clearbeamercolor[2]{%
  \def\beamer@temp{#1}%
  \expandafter\let\csname beamer@thcfg@#1\endcsname=\relax%
  \expandafter\let\csname beamer@thcbg@#1\endcsname=\relax%
  \setkeys{beamerthc}{use={},parent={}}%
  \setkeys{beamerthc}{#2}%
}

\newcommand\beamer@setbeamercolor[2]{%
  \def\beamer@temp{#1}%
  \setkeys{beamerthc}{#2}%
}

\newcommand\ifbeamercolorempy[2][ ]{%
  \beamer@thc@prepcolor%
  \beamer@thc@docolor{#2}%
  \expandafter\ifx\csname beamer@thc@#1\endcsname\@empty%
    \expandafter\@firstoftwo%
  \else%
    \expandafter\@secondoftwo%
  \fi%
}

\def\usebeamercolor{\@ifstar{\beamer@usebeamercolor[fg]{normal text}\ ?
  ? beamer@usebeamercolor}{\beamer@usebeamercolor}}

\newcommand\beamer@usebeamercolor[2][ ]{%
  \beamer@thc@prepcolor%
  \beamer@thc@docolor{#2}%
  \ifx\beamer@thc@fg\@empty%
    \@namelet{\string\color@ temp@fg}{\string\color@ fg}%
  \else%
    \colorlet{temp@fg}{\csname beamer@thc@fg\endcsname}%
  \fi%
  \ifx\beamer@thc@bg\@empty%
    \@namelet{\string\color@ temp@bg}{\string\color@ bg}%
  \else%
    \colorlet{temp@bg}{\csname beamer@thc@bg\endcsname}%
  \fi%
  \@namelet{\string\color@ parent.fg}{\string\color@ fg}%
  \@namelet{\string\color@ parent.bg}{\string\color@ bg}%
  \@namelet{\string\color@ fg}{\string\color@ temp@fg}%
  \@namelet{\string\color@ bg}{\string\color@ temp@bg}%
  \begingroup%
    \global\@namelet{\string\color@ #2.fg}{\string\color@ temp@fg}%
    \global\@namelet{\string\color@ #2.bg}{\string\color@ temp@bg}%
  \endgroup%
  \def\beamer@temp{#1}%
  \ifx\beamer@temp\@empty%
  \else%
    \color{#1}%
  \fi%
}

```

```

\colorlet{fg}{black}
\colorlet{bg}{white}

\mode
<article>
{
  \newcommand\setbeamercolor{\@ifstar{\@gobbletwo}{\@gobbletwo}}
  \newcommand\usebeamercolor{\@ifstar{beamer@optgog}{beamer@optgog}}
  \newcommand\beamer@optgog[2] [] {}
}

%
% Colored boxes
%

\define@key{beamercolbox}{wd}{\def\beamer@colbox@wd{#1}}
\define@key{beamercolbox}{ht}{\def\beamer@colbox@ht{#1}}
\define@key{beamercolbox}{dp}{\def\beamer@colbox@dp{#1}}
\define@key{beamercolbox}{leftskip}{\def\beamer@colbox@ls{#1}}
\define@key{beamercolbox}{rightskip}{\def\beamer@colbox@rs{#1}}
\define@key{beamercolbox}{left}[0pt]{\def\beamer@colbox@ls{0pt}\def\beamer@colbox@rs{#1 ?
? plus1fill}}
\define@key{beamercolbox}{center}[0pt]{\def\beamer@colbox@ls{#1 plus1fill}\def\ ?
? beamer@colbox@rs{#1 plus1fill}}
\define@key{beamercolbox}{right}[0pt]{\def\beamer@colbox@ls{#1 plus1fill}\def\ ?
? beamer@colbox@rs{0pt}}
\define@key{beamercolbox}{sep}{\def\beamer@colbox@sep{#1}}
\define@key{beamercolbox}{colsep}{\def\beamer@colbox@colsep{#1}}
\define@key{beamercolbox}{colsep*}{\def\beamer@colbox@colseps{#1}}
\define@key{beamercolbox}{shadow}[true]{\def\beamer@colbox@shadow{#1}}
\define@key{beamercolbox}{rounded}{\csname beamer@colbox@rounded#1\endcsname}
\define@key{beamercolbox}{ignorebg}[true]{\csname beamer@colbox@ignorebg#1\endcsname}
\define@key{beamercolbox}{vmode} [] {\def\beamer@vmode{}}

\newif\ifbeamer@colbox@rounded
\newif\ifbeamer@colbox@ignorebg

\newenvironment{beamercolorbox}[2] [] {%
  \begingroup%
  \def\beamer@colbox@coladd{0pt}%
  \def\beamer@vmode{\leavevmode}%
  \setkeys{beamercolbox}{%
    wd=\textwidth,ht={},dp={},%
    leftskip=0pt,rightskip=0pt plus1fil,%
    sep=0pt,colsep=0pt,colsep*=0pt,%
    shadow=false,rounded=false,ignorebg=false}%
  \setkeys{beamercolbox}{#1}%
  \ifbeamercolorempy[bg]{#2}{\@tempwafalse}{\@tempwatrue}%
  \ifbeamer@colbox@ignorebg\@tempwafalse\fi%
  \def\beamer@colbox@color{#2}%
  \hsize=\beamer@colbox@wd%
  \setbox\beamer@tempbox=\hbox\bgroup\ vbox\bgroup%
  \leftskip=\beamer@colbox@ls%

```

```

\advance\leftskip by\beamer@colbox@sep%
\rightskip=\beamer@colbox@rs%
\advance\rightskip by\beamer@colbox@sep%
\ifbeamer@colbox@ignorebg%
  \colorlet{beamer@temp@color}{bg}%
  \usebeamercolor[fg]{#2}%
  \colorlet{bg}{beamer@temp@color}%
\else%
  \usebeamercolor[fg]{#2}%
\fi%
\if@tempswa%
  \advance\leftskip by\beamer@colbox@colsep%
  \advance\rightskip by\beamer@colbox@colsep%
  \ifdim\beamer@colbox@colsep=0pt\else\vskip\beamer@colbox@colsep\fi%
  \ifdim\beamer@colbox@colseps=0pt\else\vskip\beamer@colbox@colseps\fi%
\fi%
\ifdim\beamer@colbox@sep=0pt\else\vskip\beamer@colbox@sep\fi%
\beamer@vmode\ignorespaces}{%
\ifdim\beamer@colbox@sep=0pt\else\vskip\beamer@colbox@sep\fi%
\if@tempswa\ifdim\beamer@colbox@colsep=0pt\else\vskip\beamer@colbox@colsep\fi\fi%
\if@tempswa\ifdim\beamer@colbox@colseps=0pt\else\vskip\beamer@colbox@colseps\fi\fi%
? %
\egroup\egroup%
\wd\beamer@tempbox=\hsize%
@tempdima=\wd\beamer@tempbox%
\ifx\beamer@colbox@ht@empty%
\else%
  \ht\beamer@tempbox=\beamer@colbox@ht%
\fi%
\ifx\beamer@colbox@dp@empty%
\else%
  \dp\beamer@tempbox=\beamer@colbox@dp%
\fi%
\ifbeamer@colbox@rounded%
\if@tempswa%
  \begin{beamerboxesrounded}[%
    shadow=\beamer@colbox@shadow,%
    lower=\beamer@colbox@color,%
    upper=normal text,%
    width=\beamer@colbox@wd]{%
    \box\beamer@tempbox%
  \end{beamerboxesrounded}%
\else%
  \ifdim@tempdima>\textwidth%
    \setbox\beamer@tempbox=\hbox to\textwidth{\hss\box\beamer@tempbox\hss}%
  \fi%
  \box\beamer@tempbox%
\fi%
\else%
\if@tempswa\setbox\beamer@tempbox=\hbox{\vbox{%
  \usebeamercolor{\beamer@colbox@color}%
  \advance\hsize by\beamer@colbox@colseps\relax%
  \advance\hsize by\beamer@colbox@colseps\relax%
  \hskip-\beamer@colbox@colseps%
  \fboxsep=0pt\colorbox{bg}{%
    \hskip\beamer@colbox@colseps%
    \hbox{\box\beamer@tempbox}%
  }%

```

```

    \hskip\beamer@colbox@colseps%
  }%
  \hskip-\beamer@colbox@colseps%
}}\fi%
\ifdim\@tempdima>\textwidth%
  \setbox\beamer@tempbox=\hbox to\textwidth{\hskipOpt minus\beamer@leftmargin\relax ?
    ? \box\beamer@tempbox\hskipOpt minus\beamer@rightmargin\relax}%
  \fi%
  \box\beamer@tempbox%
\fi%
\endgroup%
}

\mode
<article>
{
  \newenvironment{beamercolorbox}[2][\color{fg}]{}{}
}

%
% Install these colors at the start of the document
%

\AtBeginDocument{
  \usebeamercolor*{alerted text} % Define these colors
  \usebeamercolor*{example text} % Define these colors
  \usebeamercolor*{structure} % Define these colors
  \usebeamercolor{normal text}
  \color{fg}
  \def\normalcolor{\color{normal text.fg}}
}

%
% Math mode color hackery
%

\newcommand\beamer@setmathcolor{%
  \usebeamercolor{math text inlined}%
  \ifbeamercolorempy[fg]{math text inlined}{\color{fg}}
}

\newcommand\donotcoloroutermaths{%
  \everymath\expandafter\expandafter\expandafter{%
    \expandafter\donotcoloroutermaths@aux\the\everymath
    \beamer@setmathcolor\beamer@setmathcolor\beamer@stop
    \everymath\expandafter{\the\everymath\beamer@setmathcolor}%
  }%
}
\newcommand\donotcoloroutermaths@aux{}
\long\def\donotcoloroutermaths@aux
#1\beamer@setmathcolor#2\beamer@setmathcolor#3\beamer@stop{%
  #1#2%
}

```

```

\newcommand\beamer@setdisplaymathcolor{%
  \usebeamercolor{math text displayed}%
  \ifbeamercolorempy[fg]{math text displayed}{-}{\color{fg}\aftergroup\ignorespaces}}%

\newcommand\donotcolorouterdisplaymaths{%
  \everydisplay\expandafter\expandafter\expandafter{%
    \expandafter\donotcolorouterdisplaymaths@aux\the\everydisplay
    \beamer@setdisplaymathcolor\beamer@setdisplaymathcolor\beamer@stop
    \everydisplay\expandafter{\the\everydisplay\beamer@setdisplaymathcolor}%
  }%
}

\newcommand\donotcolorouterdisplaymaths@aux{}

\long\def\donotcolorouterdisplaymaths@aux
  #1\beamer@setdisplaymathcolor#2\beamer@setdisplaymathcolor#3\beamer@stop{%
  #1#2%
}

\AtBeginDocument
{
  \everymath\expandafter{\the\everymath\beamer@setmathcolor}
  \everydisplay\expandafter{\the\everydisplay\beamer@setdisplaymathcolor}
}

\AtBeginDocument{
  % Fix $ usage in tabular:
  \let\beamer@orig@tabular=\@tabular
  \def\@tabular{\donotcoloroutermaths\beamer@orig@tabular}

  % Fix $ usage in underline:
  \let\beamer@orig@underline=\underline
  \def\underline#1{\donotcoloroutermaths\beamer@orig@underline{#1}}

  % Fix $ usage in underline:
  \let\beamer@orig@@textsuperscript=\@textsuperscript
  \def\@textsuperscript#1{\donotcoloroutermaths\beamer@orig@@textsuperscript{#1}}

  % Fix $ usage in parbox:
  \let\beamer@orig@pboxswture=\@pboxswtrue
  \def\@pboxswtrue{\donotcoloroutermaths\beamer@orig@pboxswture}

  % Fix $$ usage in align:
  \let\beamer@orig@start@align=\start@align
  \def\start@align{\donotcolorouterdisplaymaths\donotcoloroutermaths\
    ? beamer@setdisplaymathcolor\beamer@orig@start@align}

  % Fix $$ usage in gather:
  \let\beamer@orig@start@gather=\start@gather
  \def\start@gather{\donotcolorouterdisplaymaths\donotcoloroutermaths\
    ? beamer@setdisplaymathcolor\beamer@orig@start@gather}

  % Fix $$ usage in multicolumn:
  \let\beamer@orig@start@multiline=\start@multiline
  \def\start@multiline{\donotcolorouterdisplaymaths\donotcoloroutermaths\
    ? beamer@setdisplaymathcolor\beamer@orig@start@multiline}

  % Fix $$ usage in eqnarray:
  \let\beamer@orig@eqnarray=\eqnarray

```

```

\def\eqnarray{\donotcolorouterdisplaymaths\donotcoloroutermaths\ ?
? beamer@setdisplaymathcolor\beamer@orig@eqnarray}

% Fix \text:
\let\beamer@orig@text@=\text@
\def\text@#1{{\ifbeamercolorempy[fg]{normal text in math text}{ }\usebeamercolor[fg]{ ?
? normal text in math text}}\beamer@orig@text@{#1}}
}

%
% Allow mixins to survive groups:
%

\let\beamerorig@set@color=\set@color
\let\beamerorig@reset@color=\reset@color

\edef\beamer@zeropt{\the\z@}

\def\beamer@current@colorhook{ }

\def\set@color{%
\edef\beamer@current@colorhook{\beamer@colorhook}%
\beamerorig@set@color}
\def\reset@color{%
\beamer@lastskip=\lastskip%
\edef\beamer@lastskiptexta{\the\lastskip}%
\ifx\beamer@lastskiptexta\beamer@zeropt\else%
\ifvmode\unskip\fi%
\ifhmode\unskip\fi%
\fi%
\ifx\beamer@current@colorhook\beamer@colorhook%
\beamerorig@reset@color%
\else% mixin changed -> recalculate
\colorlet{beamer@tempcolor}{.}%
\applycolormixins{beamer@tempcolor}%
\@namelet{current@color}{\string\color@beamer@tempcolor}%
\beamerorig@reset@color%
\pgfsys@color@unstacked{beamer@tempcolor}%
\fi%
\ifx\beamer@lastskiptexta\beamer@zeropt%
\else%
\ifvmode\vskip\beamer@lastskip\fi%
\ifhmode\hskip\beamer@lastskip\fi%
\fi%
}

% compatibility:

\AtBeginDocument{
\colorlet{structure}{structure.fg}
\colorlet{beamerstructure}{structure.fg}
\colorlet{averagebackgroundcolor}{normal text.bg}
}

```



```

\mode
<article>
{
  \def\beameraveragebackground#1{}

  \ifbeamer@articlexcolor
    \colorlet{averagebackgroundcolor}{white}
  \fi
}

\colorlet{alert}{red!95!black}
\definecolor{structure}{rgb}{0.2,0.2,0.7} % dummy -- not used

\colorlet{beameralert}{alert}
\colorlet{beamerexample}{green!50!black}
\colorlet{beamerstructure}{structure} % dummy

\mode
<article>
{
  \ifbeamer@articlexcolor
    \definecolor{alert}{rgb}{1,0,0}

    \colorlet{beameralert}{alert}
    \colorlet{beamerexample}{green!50!black}
    \colorlet{beamerstructure}{black}
    \colorlet{structure}{beamerstructure}
  \fi
}

\mode
<all>

```

20 beamerbasenotes.sty

```

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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbasenotes. ?
? sty,v 1686da3db3c9 2012/12/19 12:35:18 nicolas $

\mode
<presentation>

\newbox\beamer@frameboxcopy
\newif\ifbeamer@twoscreensnotes

```

```
% Notes options
```

```
\defbeameroption{hide notes}[]%  
{  
  \beamer@notesfalse  
}
```

```
\defbeameroption{show notes}[]%  
{  
  \beamer@notestru  
}
```

```
\defbeameroption{show notes on second screen}[right]%  
{  
  \pgfpagesuselayout{two screens with optional second}[second #1]  
  \beamer@twoscreensnotestru  
  \beamer@notestru  
}
```

```
\defbeameroption{show only notes}[]%  
{  
  \beamer@notestru  
  \beamer@notesnormalfalse  
  \nofiles  
}
```

```
%  
% Notes  
%
```

```
\define@key{beamernotes}{enumerate}[true]{%  
  \def\beamer@noteenvstart{\begin{enumerate}\itemsep=0pt\parskip=0pt}%  
  \def\beamer@noteenvend{\end{enumerate}}}  
\define@key{beamernotes}{itemize}[true]{%  
  \def\beamer@noteenvstart{\begin{itemize}\itemsep=0pt\parskip=0pt}%  
  \def\beamer@noteenvend{\end{itemize}}}
```

```
\newcommand\beamer@outsideframenote[2] []{%  
  \beamer@savemode%  
  \ifbeamer@inlecture%  
    \def\beamer@noteenvstart{}%  
    \def\beamer@noteenvend{}%  
    \setkeys{beamernotes}{#1}%  
    \ifbeamer@notes  
      \beginingroup  
        \setbeamertemplate{itemize item}{\textbullet}  
        \setbeamertemplate{itemize subitem}{--}  
        \setbeamertemplate{enumerate item}{\insertenumlabel.}  
        \setbeamertemplate{enumerate subitem}{\insertenumlabel.\insertsubenumlabel}  
        \def\@oddhead{}  
        \def\@oddfoot{}  
        \let\@evenhead\@oddhead  
        \let\@evenfoot\@oddfoot
```

```

\def\beamer@backgroundtemplate{}%
\setbeamercolor{item}{fg=black,bg=white}
\color{black}%
\nointerlineskip
\hbox{\hskip-\Gm@lmargin\hskip1cm\ vbox to\textheight{%
%pretend to have ``standard'' margins
\edef\beamer@origlmargin{\Gm@lmargin}%
\edef\beamer@origrmargin{\Gm@rmargin}%
\def\Gm@lmargin{1cm}%
\def\Gm@rmargin{1cm}%
\textwidth=10.8cm%
\hsize=\textwidth%
\vskip-\headheight%
\def\insertnote{\vbox{%
\beamer@noteenvstart#2\beamer@noteenvend%
}%
\usebeamertemplate*{note page}%
\vfil%
\vskip-4pt% foot separator
\vskip-\footheight}\hskip-\Gm@lmargin\hskip1cm}%
\ifbeamer@twoscreensnotes%
\pgfpagescurrentpagewillbelogicalpage{2}%
\advance\c@page by-1\relax%
\fi%
\clearpage
\endgroup
\fi%
\fi%
\beamer@resumemode}

%
% Notes in frames
%

\def\beamer@itemtext{item}

\newcommand<>{\beamer@inframenote}[2][ ]{%
\ifbeamer@inlecture%
\only#3{%
\def\beamer@temp{#1}%
\ifx\beamer@temp\beamer@itemtext%
\expandafter\gdef\expandafter\beamer@noteitems%
\expandafter{\beamer@noteitems\item#2}%
\else
\expandafter\gdef\expandafter\beamer@notes%
\expandafter{\beamer@notes#2}%
\fi%
}%
\fi%
}

\def\note{%
\ifbeamer@inframe%
\let\next=\beamer@inframenote%
\else%
\let\next=\beamer@outsideframenote%
\fi%
}

```

```

\next}

\def\beamer@framenotesbegin{% at beginning of slide
\gdef\beamer@noteitems{}%
\gdef\beamer@notes{}%
}

\def\beamer@framenotesend
{% at end of slide
\global\setbox\beamer@frameboxcopy
=\hbox{\leaders\copy\beamer@framebox\hskip\wd\beamer@framebox}
\ifx\beamer@noteitems\@empty%
\ifx\beamer@notes\@empty%
% possibly suppress this slide
\ifbeamer@frameswithnotesonly
% suppress frame
\global\setbox\beamer@framebox=\box\voidb@x%
\fi%
\ifbeamer@twoscreensnotes%
\beamer@setupnote%
\fi%
\else%
\beamer@setupnote%
\fi
\else%
\beamer@setupnote%
\fi
\ifbeamer@notesnormals%
\else%
\global\setbox\beamer@framebox=\box\voidb@x%
\fi%
}

\def\beamer@setupnote{%
\gdef\beamer@notesactions{%
\beamer@outsideframenote{%
\beamer@atbeginnote%
\beamer@notes%
\ifx\beamer@noteitems\@empty\else
\begin{enumerate}\itemsep=0pt\parskip=0pt%
\beamer@noteitems%
\end{enumerate}%
\fi%
\beamer@atendnote%
}%
\gdef\beamer@notesactions{}%
}
}

\def\beamer@notesactions{}

\newcommand\AtBeginNote[1]{\long\def\beamer@atbeginnote{#1}}
\newcommand\AtEndNote[1]{\long\def\beamer@atendnote{#1}}

\AtBeginNote{}

```

```

\AtEndNote{}

%
% Note frame insert
%

\newcommand{\insertslideintonotes}[1]{%
  \begin{pgfpicture}{0cm}{0cm}{#1\paperwidth}{#1\paperheight}
    \begin{pgfflowlevelscope}{\pgftransformscale{#1}}%
      \color{normal text.bg}
      \pgfpathrectangle{\pgfpointorigin}{\pgfpoint{\paperwidth}{\paperheight}}
      \pgfusepath{fill}
      \color{normal text.fg}
      {\pgftransformshift{\pgfpoint{\beamer@origlmargin}{\footheight}}\pgftext[left, ?
        ? bottom]{\copy\beamer@frameboxcopy}}
    \end{pgfflowlevelscope}
  \end{pgfpicture}%
}

\mode
<article>
{
  \newcommand<>\note[2] [] {}
}

\mode
<all>

```

21 beamerbasetoc.sty

```

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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbasetoc.sty ?
  ? ,v 7270298bbaae 2015/03/08 13:12:26 joseph $

\mode
<presentation>

%
% Local counters/ifs/dimensions
%
\newif\ifbeamer@pausesections

```

```

\newif\ifbeamer@pausesubsections

%
%
% Table of Contents Format
%
%

\def\beamer@toc@sectionstyle#1{\beamer@toc@process\beamer@toc@cs\beamer@toc@os#1//}
\def\beamer@toc@subsectionstyle#1{\beamer@toc@sprocess\beamer@toc@css\beamer@toc@oss\ ?
 ? beamer@toc@ooss#1///}
\def\beamer@toc@subsubsectionstyle#1{\beamer@toc@ssprocess\beamer@toc@csss\ ?
 ? beamer@toc@osss\beamer@toc@oosss\beamer@toc@ooosss#1///}

\define@key{beamertoc}{sectionstyle}{\beamer@toc@sectionstyle{#1}}
\define@key{beamertoc}{subsectionstyle}{\beamer@toc@subsectionstyle{#1}}
\define@key{beamertoc}{subsubsectionstyle}{\beamer@toc@subsubsectionstyle{#1}}
\def\beamer@toc@process#1#2#3/#4/{%
 \beamer@ifempty{#4}{\def#1{#3}\def#2{#3}}{\def#1{#3}\def#2{#4}\@gobble}}

\def\beamer@toc@sprocess#1#2#3#4/#5/#6/{%
 \beamer@ifempty{#5}%
 {\def#1{#4}\def#2{#4}\def#3{#4}}
 {\beamer@ifempty{#6}
 {\def#1{#4}\def#2{#5}\def#3{#5}\@gobble}
 {\def#1{#4}\def#2{#5}\def#3{#6}\@gobbletwo}}}

\def\beamer@toc@ssprocess#1#2#3#4#5/#6/#7/#8/{%
 \beamer@ifempty{#6}%
 {\def#1{#5}\def#2{#5}\def#3{#5}\def#4{#5}}
 {\beamer@ifempty{#7}
 {\def#1{#5}\def#2{#6}\def#3{#6}\def#4{#6}\@gobble}
 {\beamer@ifempty{#8}
 {\def#1{#5}\def#2{#6}\def#3{#7}\def#4{#7}\@gobbletwo}
 {\def#1{#5}\def#2{#6}\def#3{#7}\def#4{#8}\expandafter\@gobble\@gobbletwo}}}% no ?
 ? gobblethree?
}

\define@key{beamertoc}{pausesections}[true]{\beamer@pausesectionstrue}
\define@key{beamertoc}{pausesubsections}[true]{\beamer@pausesubsectionstrue}

\define@key{beamertoc}{currentsection}[]{\beamer@toc@sectionstyle{show/shaded}\ ?
 ? beamer@toc@subsectionstyle{show/show/shaded}\beamer@toc@subsubsectionstyle{show/ ?
 ? show/shaded}}
\define@key{beamertoc}{currentsubsection}[]{\beamer@toc@subsectionstyle{show/shaded}\ ?
 ? beamer@toc@subsubsectionstyle{show/shaded}}
\define@key{beamertoc}{hideallsubsections}[]{\beamer@toc@subsectionstyle{hide}\ ?
 ? beamer@toc@subsubsectionstyle{hide}}
\define@key{beamertoc}{hideothersubsections}[]{\beamer@toc@subsectionstyle{show/show/ ?
 ? hide}\beamer@toc@subsubsectionstyle{show/shaded/hide}}

\define@key{beamertoc}{part}{\beamer@showpartnumber=#1\relax}
\define@key{beamertoc}{sections}{\beamer@parsetocsections#1 []}
\define@key{beamertoc}{firstsection}{\beamer@sectionadjust=-#1\relax\advance\ ?
 ? beamer@sectionadjust by 1\relax}
\def\beamer@parsetocsections{\@ifnextchar<\beamer@parsetocsections\ ?
 ? beamer@@@parsetocsections}

```

```
\def\beamer@@parsetocsections#1[]{\def\beamer@tocsections{#1}}
\def\beamer@@parsetocsections#1[]{\def\beamer@tocsections{<all:#1>}}
```

依据文档 §10.5 的说明，下面这些宏对应 `\tableofcontents` 的如下这些选项

- `\beamer@toc@cs`: style for current section
- `\beamer@toc@os`: style for other sections
- `\beamer@toc@css`: style for current subsection
- `\beamer@toc@oss`: style for other subsections in current section
- `\beamer@toc@ooss`: style for subsections in other sections
- `\beamer@toc@csss`: style for current subsubsection
- `\beamer@toc@osss`: style for other subsubsections in current subsection
- `\beamer@toc@oosss`: style for subsubsections in other subsections in current section
- `\beamer@toc@ooosss`: style for subsubsections in other subsections in other sections

```
\def\tableofcontents{\@ifnextchar[{\beamer@tableofcontents}{\beamer@tableofcontents[]}}
\def\beamer@tableofcontents[#1]{%
  \def\beamer@toc@cs{show}%
  \def\beamer@toc@os{show}%
  \def\beamer@toc@css{show}%
  \def\beamer@toc@oss{show}%
  \def\beamer@toc@ooss{show}%
  \def\beamer@toc@csss{show}%
  \def\beamer@toc@osss{show}%
  \def\beamer@toc@oosss{show}%
  \def\beamer@toc@ooosss{show}%
  \beamer@showpartnumber=\c@part%
  \beamer@pausesectionsfalse%
  \beamer@pausesubsectionsfalse%
  \def\beamer@tocsections{<*>}%
  \setkeys{beamertoc}{firstsection=1}%
  \setkeys{beamertoc}{#1}%
  \vspace*{-.5em}{\makeatletter%
    \pause[0]%
    \@input{\jobname.toc}%
    \vfill}%
  }

\renewcommand\addcontentsline[3]{\addtocontents{#1}{\protect\contentsline{#2}{#3}}}

\def\beamer@tocaction@show#1{\usebeamertemplate**{#1}}
\def\beamer@tocaction@shaded#1{\usebeamertemplate**{#1 shaded}}
\def\beamer@tocaction@hide#1{}

\def\beamer@tocact#1#2{\csname beamer@tocaction@#1\endcsname{#2}}

\def\beamer@tocifnohide#1{\csname beamer@tocinvcheck@#1\endcsname}
\let\beamer@tocinvcheck@hide@gobble

\def\beamer@hidetext{hide}
```

在 beamerbasesection.sty 中定义了 \section 命令，它在 toc 文件中写入 \beamer@sectionintoc 行，而 \tableofcontents 命令载入并执行 toc 文件。

文档 §10.5 说明 \tableofcontents 有多个选项可以设置，其中的 firstsection 选项指定从第几节开始编号，这个选项决定了 \beamer@sectionadjust 的值，从而影响 \inserttocsectionnumber 的值。

在 \beamer@sectionintoc 中必须先设定 \inserttocsectionnumber 和 \inserttocsection 的内容，因为之后的 \beamer@tocact 命令实际上就执行 usebeamertemplate**{section in toc} 命令，而在 section in toc 模板中一般会用到 \inserttocsectionnumber 和 \inserttocsection 命令。

Beamer 将 section in toc 模板的内容放在 vbox 中，这样太长的节标题可以自动折行。但中文节标题一般较短，如果你希望将它们居中而且左对齐显示时，简单地用 center 嵌套 varwidth 环境将无效。你可以用 etoolbox 修改此命令，将这里的 \vbox{} 去掉。

从代码中可以看到，如果在目录中不显示小节标题，各个节标题上面会有 1.5em 的垂直空白。这个空白似乎太大，可以用 etoolbox 将它改得小一点，比如 0.5em。

```
\def\sectionintoc{}
\def\beamer@sectionintoc#1#2#3#4#5{%
  \ifnum\c@tocdepth>0%
  \ifnum#4=\beamer@showpartnumber%
  {
  \beamer@saveanother%
  \gdef\beamer@todo{}%
  \beamer@slideinframe=#1\relax%
  \expandafter\only\beamer@tocsections{\gdef\beamer@todo{%
    \beamer@tempcount=#5\relax%
    \advance\beamer@tempcount by\beamer@sectionadjust%
    \ifnum\beamer@tempcount>0
    \edef\inserttocsectionnumber{\the\beamer@tempcount}%
    \else
    \def\inserttocsectionnumber{}}%
    \fi%
    \def\inserttocsection{\hyperlink{Navigation#3}{#2}}%
    \beamer@tocifnothide{\ifnum\c@section=#1\beamer@toc@cs\else\beamer@toc@os\fi}%
    {
    \ifbeamer@pausessections\pause\fi%
    \ifx\beamer@toc@ooss\beamer@hidetext
    \vskip1.5em
    \else
    \vfill
    \fi
    {%
    \hbox{\vbox{%
      \def\beamer@breakhere{\}%
      \beamer@tocact{\ifnum\c@section=#1\beamer@toc@cs\else\beamer@toc@os\fi}{ ?
        ? section in toc}}}%
      \par%
    }%
  }%
  }
}%
\beamer@restoreanother%
}
\beamer@todo%
\fi\fi%
}

\def\subsectionintoc{}
\long\def\beamer@subsectionintoc#1#2#3#4#5#6%
```



```

\ifnum\c@tocdepth>1%
\ifnum#5=\beamer@showpartnumber%
{%
  \beamer@saveanother%
  \gdef\beamer@todo{}%
  \beamer@slideinframe=#1\relax%
  \expandafter\only\beamer@tocsections{\gdef\beamer@todo{%
    \ifbeamer@pausesubsections\pause\fi%
    \beamer@tempcount=#6%
    \advance\beamer@tempcount by\beamer@sectionadjust%
    \edef\inserttocsectionnumber{\the\beamer@tempcount}%
    \def\inserttocsubsectionnumber{#2}%
    \def\inserttocsubsection{\hyperlink{Navigation#4}{#3}}%
    \beamer@tocifnothide{\ifnum\c@section=#1\beamer@toc@css\else\beamer@toc@oss\fi}%
    {%
      \def\beamer@breakhere{\\}%
      \beamer@tocact{\ifnum\c@section=#1\ifnum\csubsection=#2\beamer@toc@css\else\
?
? beamer@toc@oss\fi\else\beamer@toc@ooss\fi}
      {subsection in toc}%
    }%
  }}%
  \beamer@restoreanother%
}
\beamer@todo%
\fi\fi%
}

\def\subsubsectionintoc{}
\long\def\beamer@subsubsectionintoc#1#2#3#4#5#6#7{%
\ifnum\c@tocdepth>2%
\ifnum#6=\beamer@showpartnumber%
{
  \beamer@saveanother%
  \gdef\beamer@todo{}%
  \beamer@slideinframe=#1\relax%
  \expandafter\only\beamer@tocsections{\gdef\beamer@todo{%
    \ifbeamer@pausesubsections\pause\fi%
    \beamer@tempcount=#7%
    \advance\beamer@tempcount by\beamer@sectionadjust%
    \edef\inserttocsectionnumber{\the\beamer@tempcount}%
    \def\inserttocsubsectionnumber{#2}%
    \def\inserttocsubsubsectionnumber{#3}%
    \def\inserttocsubsubsection{\hyperlink{Navigation#5}{#4}}%
    \beamer@tocifnothide{\ifnum\c@section=#1\beamer@toc@css\else\beamer@toc@ooss\fi}%
    {%
      \def\beamer@breakhere{\\}%
      \beamer@tocact{\ifnum\c@section=#1\ifnum\csubsection=#2\ifnum\csubsubsection
?
? =#3\beamer@toc@css\else\beamer@toc@ooss\fi\else\beamer@toc@ooss\fi\else\
?
? beamer@toc@oooss\fi}
      {subsubsection in toc}%
    }%
  }}%
  \beamer@restoreanother%
}
\beamer@todo%
\fi\fi%
}

```

```

\mode
<article>
{
  \AtBeginDocument{
    \let\beamer@origtableofcontents=\tableofcontents
    \renewcommand{\tableofcontents}[1] [] {\beamer@origtableofcontents}
  }
}

\mode
<all>

```

22 beamerbasetemplates.sty

```

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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/ ?
  ? beamerbasetemplates.sty,v efa082c6111d 2010/05/01 11:27:03 rivanvx $

%
% Template Installation Commands
%

\def\usebeamertemplate{\@ifstar{\beamer@usebeamertemplates}{\beamer@usebeamertemplatedo ?
  ? }}
\def\beamer@usebeamertemplates{\@ifstar{\beamer@usebeamertemplates}{\ ?
  ? beamer@usebeamertemplatedos}}
\def\beamer@usebeamertemplatess{\@ifstar{\beamer@usebeamertemplatedosss}{\ ?
  ? beamer@usebeamertemplatedoss}}
\def\beamer@usebeamertemplatedo#1{\csname beamer@@tmpl@#1\endcsname}
\def\beamer@usebeamertemplatedos#1{{{\usebeamerfont{#1}\usebeamercolor[fg]{#1}\csname ?
  ? beamer@@tmpl@#1\endcsname}}}}
\def\beamer@usebeamertemplatedoss#1{{{\usebeamerfont*{#1}\usebeamercolor[fg]{#1}\csname ?
  ? beamer@@tmpl@#1\endcsname}}}}
\def\beamer@usebeamertemplatedosss#1{{{\usebeamerfont*{#1}\usebeamercolor*[fg]{#1}\ ?
  ? csname beamer@@tmpl@#1\endcsname}}}}

\long\def\beamer@@empty{}
\def\expandbeamertemplate#1{\csname beamer@@tmpl@#1\endcsname}
\def\ifbeamertemplateempty#1#2#3{%
  \def\beamer@ifdo{#3}%
  \expandafter\ifx\csname beamer@@tmpl@#1\endcsname\relax\def\beamer@ifdo{#2}\fi%
  \expandafter\ifx\csname beamer@@tmpl@#1\endcsname\beamer@@empty\def\beamer@ifdo{#2}\fi ?
  ? %
  \beamer@ifdo}

```

```

\mode
<article>
{
% the following do the same in article mode:
\let\beamer@usebeamertemplatedosss=\beamer@usebeamertemplatedo
\let\beamer@usebeamertemplatedoss=\beamer@usebeamertemplatedo
\let\beamer@usebeamertemplatedos=\beamer@usebeamertemplatedo
}

\newif\ifbeamer@sbt
\newtoks\beamer@sbttoks

\newcommand<>\defbeamertemplate{
  \beamer@ifempty{#1}
  {\def\beamer@@oar{<presentation>}}
  {\def\beamer@@oar{#1}}\beamer@defbeamertemplate}
\def\beamer@defbeamertemplate{\@ifstar{\beamer@sbtrue\beamer@sbttoo}{\beamer@sbtfalse\
? beamer@sbttoo}}
\def\beamer@sbttoo#1#2{\@ifnextchar[{\beamer@sbtto{#1}{#2}}{\beamer@sbtto{#1}{#2}[0]}}
\def\beamer@sbtto#1#2[#3]{\@ifnextchar[{\beamer@@sbtto{#1}{#2}][#3]}{\def\beamer@sbtotemp ?
? {\beamer@@@sbtto{#1}{#2}[#3]}}}}
\long\def\beamer@@sbtto#1#2[#3][#4]{\long\def\beamer@sbtotemp{[#4]}\beamer@@@sbtto ?
? {#1}{#2}[#3]}}
\long\def\beamer@@@sbtto#1#2[#3]#4{%
  \beamer@sbttoks={\beamer@@@sbtto{#1}{#2}[#3]#4}%
  \@ifnextchar[{\the\beamer@sbttoks}{\the\beamer@sbttoks[action] }]}%
}
\long\def\beamer@@@sbtto#1#2[#3]#4[#5]#6{%
  \edef\beamer@@sbttoarg{\expandafter\noexpand\csname beamer@@tmpop@#1@#2\endcsname ?
? [#3]}}%
  \expandafter\expandafter\expandafter\newcommand\expandafter\beamer@@sbttoarg\ ?
? beamer@sbtotemp{%
  \expandafter\long\expandafter\def\csname beamer@@tmpl@#1\endcsname{#4}#6}%
  \let\beamer@@next=\beamer@resetsbtoarg%
  \expandafter\mode\beamer@@oar{\let\beamer@@next=\relax}%
  \beamer@@next%
  \ifbeamer@sbt\setbeamertemplate{#1}[#2]\relax\relax\relax\relax\relax\relax\relax\ ?
? relax\relax\fi%
}
\def\beamer@resetsbtoarg{%
  \expandafter\expandafter\expandafter\renewcommand\expandafter\beamer@@sbttoarg\ ?
? beamer@sbtotemp{}
}

\def\defbeamertemplatealias#1#2#3{%
  \edef\beamer@@temp{\def\expandafter\noexpand\csname beamer@@tmpop@#1@#2\endcsname{\
? expandafter\noexpand\csname beamer@@tmpop@#1@#3\endcsname}}%
  \beamer@@temp}

\def\defbeamertemplateparent#1{\@ifnextchar[{\beamer@sbttoparo{#1}}{\beamer@sbttoparo ?
? {#1}[*]}}
\def\beamer@sbttoparo#1#2#3{\@ifnextchar[{\beamer@sbttopar{#1}[#2]#3}]{\ ?
? beamer@sbttopar{#1}[#2]#3[0]}}

```

```

\def\beamer@sbtotemp#1[#2]#3[#4]{\ifnextchar[
  {\beamer@@sbtotemp{#1}[#2]#3[#4]}
  {\def\beamer@sbtotemp{#1}[#2]#3[#4]}}
\long\def\beamer@@sbtotemp#1[#2]#3[#4]#5{\long\def\beamer@sbtotemp{[#5]}\
  ? beamer@@sbtotemp{#1}[#2]#3[#4]}
\long\def\beamer@@sbtotemp#1[#2]#3[#4]#5{
  \expandafter\def\csname beamer@@tmpgrp@#1\endcsname{#3}%
  \edef\beamer@@sbtotemp{\noexpand\newcommand\expandafter\noexpand\csname beamer@@tmpop@
  ? #1@#2\endcsname[#4]}%
  \expandafter\beamer@@sbtotemp\beamer@sbtotemp{
  \def\beamer@sbtlist{#3}%
  \@for\beamer@templ:=\beamer@sbtlist\do
  {\expandafter\expandafter\expandafter\setbeamertemplate
  \expandafter\expandafter\expandafter{\expandafter\beamer@templ\expandafter}\
  ? \expandafter[\beamer@@sbt@option]#5}}
}

\def\setbeamertemplate#1{%
  \@ifnextchar[{\beamer@sbtchoose{#1}}{\beamer@sbtexec{#1}}
\long\def\beamer@sbtexec#1#2{%
  \expandafter\long\expandafter\def\csname beamer@@tpl@#1\endcsname{#2}%
  \expandafter\ifx\csname beamer@@tmpgrp@#1\endcsname\relax%
  \else%
  \expandafter\expandafter\expandafter\def
  \expandafter\expandafter\expandafter\beamer@sbt@group
  \expandafter\expandafter\expandafter{\csname beamer@@tmpgrp@#1\endcsname}%
  \@for\beamer@templ:=\beamer@sbt@group\do{\expandafter\setbeamertemplate\expandafter
  ? {\beamer@templ}{#2}}%
  \fi%
}
}

\long\def\beamer@sbtchoose#1[#2]{\def\beamer@@sbt@option{#2}%
  \expandafter\ifx\csname beamer@@tmpop@#1@#2\endcsname\relax%
  \expandafter\let\expandafter\beamer@@next\csname beamer@@tmpop@#1@*\endcsname%
  \else%
  \expandafter\let\expandafter\beamer@@next\csname beamer@@tmpop@#1@#2\endcsname%
  \fi%
\beamer@@next%
}

\newcommand\addtobeamertemplate[3]{%
  \long\def\beamer@temp{#2}%
  \expandafter\def\expandafter\beamer@@temp\expandafter{\expandafter\long\expandafter\
  ? \def\csname beamer@@tpl@#1\endcsname}%
  \expandafter\expandafter\expandafter\long%
  \expandafter\expandafter\expandafter\def%
  \expandafter\expandafter\expandafter\beamer@@addtemplate%
  \expandafter\expandafter\expandafter{\csname beamer@@tpl@#1\endcsname}%
  \expandafter\expandafter\expandafter\beamer@@temp%
  \expandafter\expandafter\expandafter{\expandafter\beamer@temp\beamer@@addtemplate#3}%
}

\RequirePackage{beamerbaseauxtemplates}

\mode

```

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```
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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/ ?
? beamerbaseauxtemplates.sty,v 580088513a67 2014/06/30 17:15:11 ivan $

\mode<presentation>

\RequirePackage{beamerbaseboxes}

%
% declare some balls
%

\normalsize
\pgfdeclareradialshading[bg,parent.bg]{tocsphere}{\pgfpoint{-0.5ex}{0.6ex}}%
{%
  color(0cm)=(bg!35!white);
  color(0.44ex)=(bg!75!white);
  color(0.88ex)=(bg!70!black!90!parent.bg);
  color(1.2ex)=(bg!50!black!90!parent.bg);
  color(1.3ex)=(parent.bg)}

\pgfdeclareradialshading[bg,parent.bg]{bigsphere}{\pgfpoint{-0.1849315ex}{.2260273ex}}%
{%
  color(0cm)=(bg!15);
  color(0.1643835ex)=(bg!75);
  color(0.3287671ex)=(bg!70!black);
  color(0.4520547ex)=(bg!50!black);
  color(0.53ex)=(parent.bg)}

\pgfdeclareradialshading[bg,parent.bg]{smallsphere}{\pgfpoint{-0.1479452ex}{0.18287671ex ?
? }}%
{%
  color(0cm)=(bg!15);
  color(0.1315068ex)=(bg!75);
  color(0.2630136ex)=(bg!70!black);
  color(0.36164383ex)=(bg!50!black);
  color(0.427ex)=(parent.bg)}

\def\beamer@usesphere#1#2{%
```



```

}

\def\beamer@calchorishading#1#2#3{%
  {\usebeamercolor{palette primary}}
  \usebeamercolor{normal text}
  \setkeys{beamer@backgroundshade}{left=palette primary.bg!25!bg,right=bg,middle={}, ?
    ? midpoint=0.5}%
  \setkeys{beamer@backgroundshade}{#3}
  \ifx\beamer@bgsm\@empty
    \pgfdeclarehorizontalshading{#1}{\the\paperheight}%
      {color(0cm)=(\beamer@bgst); color(#2)=(\beamer@bgst)}
    \colorlet{beamer@backgroundshadestart}{\beamer@bgst}%
    \colorlet{beamer@backgroundshadeend}{\beamer@bgst}%
    \colorlet{beamer@average}{beamer@backgroundshadestart!50!beamer@backgroundshadeend}%
  \else
    \pgfdeclarehorizontalshading{#1}{\the\paperheight}%
      {color(0cm)=(\beamer@bgst); color(\beamer@bgsm)=(\beamer@bgsm); color(#2)=(\
    ? beamer@bgst)}
    \colorlet{beamer@average}{\beamer@bgsm}
  \fi%
}

\defbeamer@template{background canvas}{vertical shading}[1] []
{%
  \pgfuses shading{beamer@backgroundshading}%
}
[action]
{
  \beamer@calcvertshading{beamer@backgroundshading}{\the\paperwidth}{#1}
  \colorlet{beamer@@average}{beamer@average}
  \setbeamercolor{normal text}{bg=beamer@@average}
}

%
% Side bars
%

\defbeamer@template{sidebar canvas left}{vertical shading}[1] []
{%
  \pgfuses shading{beamer@sidebarcanvasleftshading}%
}
[action]
{
  \beamer@calcvertshading{beamer@sidebarcanvasleftshading}{\the\beamer@leftsidebar}{#1}
}

\defbeamer@template{sidebar canvas right}{vertical shading}[1] []
{%
  \pgfuses shading{beamer@sidebarcanvasrightshading}%
}
[action]
{

```

```

\beamer@calcvvertshading{\beamer@sidebarcanvasrightshading}{\the\beamer@rightsidebar ?
? }{#1}
}

\defbeamertemplate{sidebar canvas left}{horizontal shading}[1] []
{%
\pgfuses shading{\beamer@sidebarcanvasleftshading}%
}
[action]
{
\beamer@calchorishading{\beamer@sidebarcanvasleftshading}{\beamer@leftsidebar}{#1}
}

\defbeamertemplate{sidebar canvas right}{horizontal shading}[1] []
{%
\pgfuses shading{\beamer@sidebarcanvasrightshading}%
}
[action]
{
\beamer@calchorishading{\beamer@sidebarcanvasrightshading}{\beamer@rightsidebar}{#1}
}

% (sub-)section in toc: sections numbered

\defbeamertemplate{section in toc}{sections numbered}
{\leavevmode\inserttocsectionnumber. \inserttocsection\par}

\defbeamertemplate{subsection in toc}{sections numbered}
{\leavevmode\leftskip=2.5em\inserttocsubsection\par}

\defbeamertemplate{subsubsection in toc}{sections numbered}
{\leavevmode\normalsize\usebeamerfont{subsection in toc}\leftskip=3.5em\usebeamerfont{ ?
? subsubsection in toc}%
\inserttocsubsubsection\par}

% (sub-)section in toc: subsections numbered

\defbeamertemplate{section in toc}{subsections numbered}
{\leavevmode\leftskip=2em\inserttocsection\par}

\defbeamertemplate{subsection in toc}{subsections numbered}
{\leavevmode\leftskip=2em\rlap{\hskip-2em\inserttocsectionnumber.\ ?
? inserttocsubsectionnumber}\inserttocsubsection\par}

\defbeamertemplate{subsubsection in toc}{subsections numbered}
{\leavevmode\normalsize\usebeamerfont{subsection in
toc}\leftskip=3em\usebeamerfont{subsubsection in toc}%
\inserttocsubsubsection\par}

```



```
% (sub-)section in toc: circle
```

```
\defbeamertemplate{section in toc}{circle}  
{\leavevmode\leftskip=2ex%  
  \llap{%  
    \usebeamerfont*{section number projected}%  
    \usebeamercolor{section number projected}%  
    \begin{pgfpicture}{-1ex}{0ex}{1ex}{2ex}  
      \color{bg}  
      \pgfpathcircle{\pgfpoint{0pt}{.75ex}}{1.2ex}  
      \pgfusepath{fill}  
      \pgftext[base]{\color{fg}\inserttocsectionnumber}  
    \end{pgfpicture}\kern1.25ex%  
  }%  
  \inserttocsection\par}
```

```
\defbeamertemplate{subsection in toc}{circle}  
{\leavevmode\leftskip=2em\inserttocsubsection\par}
```

```
\defbeamertemplate{subsubsection in toc}{circle}  
{\leavevmode\normalsize\usebeamerfont{subsection in  
  toc}\leftskip=3em\usebeamerfont{subsubsection in toc}%  
  \inserttocsubsubsection\par}
```

```
% (sub-)section in toc: square
```

```
\defbeamertemplate{section in toc}{square}  
{\leavevmode\leftskip=1.75ex%  
  \llap{%  
    \usebeamerfont*{section number projected}%  
    \usebeamercolor[bg]{section number projected}%  
    \vrule width2.25ex height1.85ex depth.4ex%  
    \hskip-2.25ex%  
    \hbox to2.25ex{\hfil\color{fg}\inserttocsectionnumber\hfil}}%  
  \kern1.25ex\inserttocsection\par}
```

```
\defbeamertemplate{subsection in toc}{square}  
{\leavevmode\leftskip=5ex\llap{%  
  \usebeamercolor[bg]{subsection number projected}%  
  \vrule width1ex height1ex\kern1ex}\inserttocsubsection\par}
```

```
\defbeamertemplate{subsubsection in toc}{square}  
{\leavevmode\normalsize\usebeamerfont{subsection in  
  toc}\leftskip=7ex\usebeamerfont{subsubsection in toc}%  
  \llap{%  
    \usebeamercolor[bg]{subsubsection number projected}%  
    \vrule width0.75ex height0.75ex\kern1ex}\inserttocsubsubsection\par}
```

```
% (sub-)section in toc: ball
```

```
\defbeamertemplate{section in toc}{ball unnumbered}  
{\leavevmode\raise0.1ex\beamer@usesphere{section number projected}{bigsphere}\kern1.25ex ?  
 ? \inserttocsection\par}
```

```
\defbeamertemplate{subsection in toc}{ball unnumbered}  
{\leavevmode\leftskip=1.5em\raise0.2ex\beamer@usesphere{subsection number projected}{ ?  
 ? smallsphere}%  
 \kern1ex\inserttocsubsection\par}
```

```
\defbeamertemplate{subsubsection in toc}{ball unnumbered}  
{\leavevmode\normalsize\usebeamerfont{subsection in  
 toc}\leftskip=3em\usebeamerfont{subsubsection in toc}%  
 \beamer@usesphere{subsubsection number projected}{smallsphere}%  
 \kern0.75ex\inserttocsubsubsection\par}
```

```
% (sub-)section in toc: ball numbered
```

```
\defbeamertemplate{section in toc}{ball}  
{\leavevmode\leftskip=2.75ex%  
 \llap{%  
 \normalsize%  
 \begin{pgfpicture}{-1ex}{-0.7ex}{1ex}{1ex}  
 \pgftext{\beamer@usesphere{section number projected}{tocsphere}}  
 \pgftext{%  
 \usebeamerfont*{section number projected}%  
 \usebeamerfont{section number projected}%  
 \color{fg!90!bg}%  
 \inserttocsectionnumber}  
 \end{pgfpicture}%  
 \kern1.25ex}%  
 \inserttocsection\par  
}
```

```
[action]  
{\setbeamerfont{section number projected}{size=\scriptsize}}
```

```
\defbeamertemplate{subsection in toc}{ball}  
{\leavevmode\leftskip=5ex%  
 \llap{\raise0.1ex\beamer@usesphere{subsection number projected}{bigsphere}\kern1ex}%  
 \inserttocsubsection\par%  
}
```

```
\defbeamertemplate{subsubsection in toc}{ball}  
{\leavevmode\normalsize\usebeamerfont{subsection in  
 toc}\leftskip=7ex\usebeamerfont{subsubsection in toc}%  
 \llap{\beamer@usesphere{subsubsection number projected}{bigsphere}\kern0.75ex}%  
 \inserttocsubsubsection\par%  
}
```

```

% Itemize items, circle

\defbeamertemplatealias{itemize item}{triangle}{default}
\defbeamertemplatealias{itemize subitem}{triangle}{default}
\defbeamertemplatealias{itemize subsubitem}{triangle}{default}

% Itemize items, circle

\defbeamertemplate{itemize item}{circle}{\small\raise0.5pt\hbox{\textbullet}}
\defbeamertemplate{itemize subitem}{circle}{\footnotesize\raise0.5pt\hbox{\textbullet}}
\defbeamertemplate{itemize subsubitem}{circle}{\footnotesize\raise0.5pt\hbox{\textbullet} ?
? }}

% Itemize items, square

\defbeamertemplate{itemize item}{square}{\hbox{\vrule width 1ex height 1ex}}
\defbeamertemplate{itemize subitem}{square}{\small\hbox{\vrule width 1ex height 1ex}}
\defbeamertemplate{itemize subsubitem}{square}{\small\hbox{\vrule width 1ex height 1ex}}

% Itemize items, ball

\defbeamertemplate{itemize item}{ball}{\raise0.2pt\beamer@usesphere{item projected}{ ?
? bigsphere}}
\defbeamertemplate{itemize subitem}{ball}{\raise0.2pt\beamer@usesphere{subitem projected ?
? }{smallsphere}}
\defbeamertemplate{itemize subsubitem}{ball}{\raise0.2pt\beamer@usesphere{subsubitem ?
? projected}{smallsphere}}

% Enumerate items, ball

\defbeamertemplate{enumerate item}{ball}
{
\begin{pgfpicture}{-1ex}{-0.65ex}{1ex}{1ex}
\usebeamercolor{item projected}
{\pgftransformscale{1.75}\pgftext{\normalsize\pgfuseshading{bigsphere}}}
{\pgftransformshift{\pgfpoint{0pt}{0.5pt}}
\pgftext{%
\usebeamerfont*{item projected}%
\color{fg}\insertenumlabel}}
\end{pgfpicture}%
}

\defbeamertemplate{enumerate subitem}{ball}
{
\begin{pgfpicture}{-1ex}{-0.55ex}{1ex}{1ex}
\usebeamercolor{subitem projected}
{\pgftransformscale{1.4}\pgftext{\normalsize\pgfuseshading{bigsphere}}}

```

```

\pgftext{%
  \usebeamerfont*{subitem projected}%
  \color{fg}\insertsubenumlabel}
\end{pgfpicture}%
}

\defbeamertemplate{enumerate subsubitem}{ball}
{
  \begin{pgfpicture}{-1ex}{-0.55ex}{1ex}{1ex}
    \usebeamerfont*{subsubitem projected}
    {\pgftransformscale{1.4}\pgftext{\normalsize\pgfuses shading{big sphere}}}
    \pgftext{%
      \usebeamerfont*{subitem projected}%
      \color{fg}\insertsubsubenumlabel}
    \end{pgfpicture}%
  }

\defbeamertemplate{enumerate mini template}{ball}
{
  \begin{pgfpicture}{-1ex}{-0.65ex}{1ex}{1ex}
    \usebeamerfont*{beameritemnestingprefix item projected}
    {\pgftransformscale{1.75}\pgftext{\normalsize\pgfuses shading{big sphere}}}
    {\pgftransformshift{\pgfpoint{0pt}{0.5pt}}}%
    \usebeamerfont*{\beameritemnestingprefix item projected}%
    \pgftext{\color{fg}\insertenumlabel}}
  \end{pgfpicture}
}

```

% Enumerate items, square

```

\defbeamertemplate{enumerate item}{square}
{
  \hbox{%
    \usebeamerfont*{item projected}%
    \usebeamerfont*{item projected}%
    \vrule width2.25ex height1.85ex depth.4ex%
    \hskip-2.25ex%
    \hbox to2.25ex{%
      \hfil%
      \color{fg}\insertenumlabel%
      \hfil}%
    }%
  }
[action]
{\setbeamerfont{item projected}{size=\scriptsize}}

\defbeamertemplate{enumerate subitem}{square}
{
  \hbox{%
    \usebeamerfont*{subitem projected}%
    \usebeamerfont*{subitem projected}%
    \vrule width2.25ex height1.85ex depth.4ex%
    \hskip-2.25ex%
    \hbox to2.25ex{%
      \hfil%

```

```

        \color{fg}\insertsubenumlabel%
        \hfil}%
    }%
}

\defbeamertemplate{enumerate subsubitem}{square}
{
    \hbox{%
        \usebeamerfont*{subitem projected}%
        \usebeamercolor[bg]{subsubitem projected}%
        \vrule width2.25ex height1.85ex depth.4ex%
        \hskip-2.25ex%
        \hbox to2.25ex{%
            \hfil%
            \color{fg}\insertsubsubenumlabel%
            \hfil}%
        }%
    }%
}

\defbeamertemplate{enumerate mini template}{square}
{
    \hbox{%
        \usebeamerfont*{\beameritemnestingprefix item projected}%
        \usebeamercolor[bg]{\beameritemnestingprefix item projected}%
        \vrule width2.25ex height1.85ex depth.4ex%
        \hskip-2.25ex%
        \hbox to2.25ex{%
            \hfil%
            \color{fg}\insertenumlabel%
            \hfil}%
        }%
    }%
}

```

% Enumerate items, circle

```

\defbeamertemplate{enumerate item}{circle}
{
    \usebeamerfont*{item projected}%
    \usebeamercolor[bg]{item projected}%
    \begin{pgfpicture}{-1ex}{0ex}{1ex}{2ex}
        \pgfpathcircle{\pgfpoint{0pt}{.75ex}}{1.2ex}
        \pgfusepath{fill}
        \pgftext [base]{\color{fg}\insertenumlabel}
    \end{pgfpicture}%
}
[action]
{\setbeamerfont{item projected}{size=\scriptsize}}

\defbeamertemplate{enumerate subitem}{circle}
{
    \usebeamerfont*{subitem projected}%
    \usebeamercolor[bg]{subitem projected}%
    \begin{pgfpicture}{-1ex}{0ex}{1ex}{2ex}
        \pgfpathcircle{\pgfpoint{0pt}{.75ex}}{1.2ex}

```

```

\pgfusepath{fill}
\pgftext[base]{\color{fg}\insertsubenumlabel}
\end{pgfpicture}%
}

\defbeamertemplate{enumerate subsubitem}{circle}
{
\usebeamerfont*{subsubitem projected}%
\usebeamercolor[bg]{subsubitem projected}%
\begin{pgfpicture}{-1ex}{0ex}{1ex}{2ex}
\pgfpathcircle{\pgfpoint{0pt}{.75ex}}{1.2ex}
\pgfusepath{fill}
\pgftext[base]{\color{fg}\insertsubsubenumlabel}
\end{pgfpicture}%
}

\defbeamertemplate{enumerate mini template}{circle}
{
\usebeamerfont*{\beameritemnestingprefix item projected}%
\usebeamercolor[bg]{\beameritemnestingprefix item projected}%
\begin{pgfpicture}{-1ex}{0ex}{1ex}{2ex}
\pgfpathcircle{\pgfpoint{0pt}{.75ex}}{1.2ex}
\pgfusepath{fill}
\pgftext[base]{\color{fg}\insertenumlabel}
\end{pgfpicture}%
}

%
% Frame title continuations
%

\defbeamertemplatealias{frametitle continuation}{roman}{default}

\defbeamertemplate{frametitle continuation}{from second}[1][\insertcontinuationtext]
{\expandafter\ifnum\insertcontinuationcount>1\relax#1\fi}

% Bibliography items

\defbeamertemplatealias{bibliography item}{article}{default}

\defbeamertemplate{bibliography item}{book}
{\lower2pt\hbox{\pgfuseimage{beamericonbook}}}

\defbeamertemplate{bibliography item}{text}
{\insertbiblabel}

\defbeamertemplate{bibliography item}{triangle}
{\scriptsize\raise1.25pt\hbox{\donotcoloroutermaths$\blacktriangleright$}}

\defbeamertemplate{bibliography item}{online}
{\lower3pt\hbox{\pgfuseimage{beamericononline}}}

```

% Headline

```
\defbeamertemplate{headline}{text line}[1]
{\hskip\Gm@lmargin\hbox to\@tempdima{\textwidth=\@tempdima\hsize=\textwidth\relax#1\hfil ?
? }\hskip\Gm@rmargin}
```

% Footline

```
\defbeamertemplate{footline}{text line}[1]
{\hskip\Gm@lmargin\hbox to\@tempdima{\textwidth=\@tempdima\hsize=\textwidth\relax#1\hfil ?
? }\hskip\Gm@rmargin}
```

```
\defbeamertemplate{footline}{page number}
{%
\hfill%
\usebeamercolor[fg]{page number in head/foot}%
\usebeamerfont{page number in head/foot}%
\insertpagenumber\,/,\,insertpresentationendpage\kern1em\vskip2pt%
}
```

```
\defbeamertemplate{footline}{frame number}
{
\hfill%
\usebeamercolor[fg]{page number in head/foot}%
\usebeamerfont{page number in head/foot}%
\insertframenum\,/,\,inserttotalframenum\kern1em\vskip2pt%
}
```

% Mini frames

```
\defbeamertemplate{mini frame}{box}
{%
\begin{pgfpicture}{0pt}{0pt}{.1cm}{.1cm}
\pgfpathrectangle{\pgfpointorigin}{\pgfpoint{\the\beamer@boxsize}{\the\ ?
? beamer@boxsize}}
\pgfusepath{fill,stroke}
\end{pgfpicture}%
}
[action]
{
\setbeamersize{mini frame size=.1cm,mini frame offset=.05cm}
}
```

```
\defbeamertemplate{mini frame in current subsection}{box}
{%
\begin{pgfpicture}{0pt}{0pt}{.1cm}{.1cm}
\pgfpathrectangle{\pgfpointorigin}{\pgfpoint{\the\beamer@boxsize}{\the\ ?
? beamer@boxsize}}
\pgfusepath{stroke}
\end{pgfpicture}%
}
```

```

\defbeamertemplate{mini frame}{tick}
{%
  \hskip-0.4pt\vrule height\beamer@boxsize width1.2pt%
}
[action]
{
  \setbeamersize{mini frame size=.1cm,mini frame offset=.05cm}
}

\defbeamertemplate{mini frame in current subsection}{tick}
{%
  \vrule height\beamer@boxsize width0.4pt%
}

%
% Captions
%

\defbeamertemplate{caption}{numbered}
{%
  \raggedright
  {%
    \usebeamercolor[fg]{caption name}%
    \usebeamerfont*{caption name}%
    \insertcaptionname~\insertcaptionnumber
    \usebeamertemplate{caption label separator}%
  }%
  \insertcaption\par
}
\defbeamertemplate{caption label separator}{none}{}
\defbeamertemplate{caption label separator}{colon}{:\ }
\defbeamertemplate{caption label separator}{period}{.\ }
\defbeamertemplate{caption label separator}{space}{\ }
\defbeamertemplate{caption label separator}{quad}{\quad\ }
\defbeamertemplate{caption label separator}{endash}{\ --\ }

\defbeamertemplate{caption}{caption name own line}
{%
  \begin{minipage}{\textwidth}
  \raggedright
  {%
    \usebeamercolor[fg]{caption name}%
    \usebeamerfont*{caption name}%
    \insertcaptionname%
  }\ \
  \insertcaption
  \end{minipage}
}

```



```

%
% Buttons
%

\newdimen\beamer@blockheadheight%

\defbeamertemplate{navigation symbols}{only frame symbol}
{\insertframenavigationsymbol}

\defbeamertemplate{navigation symbols}{vertical}
{%
  \vbox{%
    \hbox{\insertslidenavigationsymbol}
    \hbox{\insertframenavigationsymbol}
    \hbox{\insertsubsectionnavigationsymbol}
    \hbox{\insertsectionnavigationsymbol}
    \hbox{\insertdocnavigationsymbol}
    \hbox{\insertbackfindforwardnavigationsymbol}}%
}

\defbeamertemplatealias{navigation symbols}{horizontal}{default}

%
% Blocks
%

\defbeamertemplateparent{blocks}{rounded}{block begin,block end,%
  block alerted begin,block alerted end,%
  block example begin,block example end}[1] []
{[#1]}

\defbeamertemplate{block begin}{rounded}[1] [shadow=false]
{
  \par\vskip\medskipamount%
  \begin{beamerboxesrounded}[upper=block title,lower=block body,#1]%
    {\raggedright\usebeamerfont*{block title}\insertblocktitle}%
    \raggedright%
    \usebeamerfont{block body}%
  }
}

\defbeamertemplate{block end}{rounded}[1] []
{\end{beamerboxesrounded}\vskip\smallskipamount}

\defbeamertemplate{block alerted begin}{rounded}[1] [shadow=false]
{
  \par\vskip\medskipamount%
  \begin{beamerboxesrounded}[upper=block title alerted,lower=block body alerted,#1]%
    {\raggedright\usebeamerfont*{block title alerted}\insertblocktitle}%
    \raggedright%
    \usebeamerfont{block body alerted}%
  }%
}

\defbeamertemplate{block alerted end}{rounded}[1] []
{\end{beamerboxesrounded}\vskip\smallskipamount}

\defbeamertemplate{block example begin}{rounded}[1] [shadow=false]

```

```

{
  \par\vskip\medskipamount%
  \begin{beamerboxesrounded}[upper=block title example,lower=block body example,#1]
    {\raggedright\usebeamerfont*{block title example}\insertblocktitle}%
    \raggedright%
    \usebeamerfont{block body example}%
  }%
\defbeamertemplate{block example end}{rounded}[1] []
{\end{beamerboxesrounded}\vskip\smallskipamount}

```

```

%
% Note templates
%

```

```

\defbeamertemplate{note page}{plain}
{\insertnote}

```

```

\defbeamertemplate{note page}{compressed}
{%
  {%
    \tiny
    \let\=\relax%
    \insertvrule{0.125\paperheight}{white!90!black}%
    \vskip-0.125\paperheight
    \nointerlineskip
    \vbox{\hfill\insertslideintonotes{0.125}\hskip-\Gm@rmargin\hskip0pt%
      \vskip-0.125\paperheight\nointerlineskip}%
    \nointerlineskip
    \vbox to .125\paperheight{
      \setbox\beamer@tempbox=\hbox{\hbox{\insertsection}}}%
      \ht\beamer@tempbox=1em
      \box\beamer@tempbox
      \nointerlineskip
      \setbox\beamer@tempbox=\hbox{\hbox{\quad\insertsubsection}}}%
      \ht\beamer@tempbox=1em
      \box\beamer@tempbox
      \nointerlineskip
      \setbox\beamer@tempbox=\hbox{\hbox{\quad\quad\insertshortframetitle}}}%
      \ht\beamer@tempbox=1em
      \box\beamer@tempbox
      \vfil
    }\vskip0.5em
  }
  \nointerlineskip
  \insertnote
}

```

```

%
% Theorem templates
%

```

```

\defbeamertemplate{theorem begin}{ams style}
{%

```

```

\begin{\inserttheoremblockenv}
  {%
    \inserttheoremheadfont
    \inserttheoremname
    \inserttheoremnumber
    \ifx\inserttheoremaddition\@empty\else\ (\inserttheoremaddition)\fi%
    \inserttheorempunctuation
  }%
}

\defbeamertemplate{theorem end}{ams style}
{\end{\inserttheoremblockenv}}

\defbeamertemplate{theorem begin}{numbered}
{%
  \begin{\inserttheoremblockenv}
    {%
      \inserttheoremname
      \inserttheoremnumber
      \ifx\inserttheoremaddition\@empty\else\ (\inserttheoremaddition)\fi%
    }%
  }
}

\defbeamertemplate{theorem end}{numbered}
{\end{\inserttheoremblockenv}}

\defbeamertemplate{theorem begin}{normal font}
{
  \normalfont
  \begin{\inserttheoremblockenv}
    {%
      \inserttheoremname
      \ifx\inserttheoremaddition\@empty\else\ (\inserttheoremaddition)\fi%
    }%
  }
}

\defbeamertemplate{theorem end}{normal font}
{\end{\inserttheoremblockenv}}

\mode
<all>

```

24 beamerbaseboxes.sty

```

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```

```

%
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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbaseboxes. ?
? sty,v 56972908a390 2012/05/13 13:45:08 joseph $

\def\beamerboxesdeclarecolorscheme#1#2#3{% scheme name, upper color, lower color
\setbeamercolor{@scheme upper #1}{fg=white,bg=#2}
\setbeamercolor{@scheme lower #1}{bg=#3}
}

\define@key{beamerboxes}{scheme}{\def\bmb@upper{@scheme upper #1}\def\bmb@lower{@scheme ?
? lower #1}}
\define@key{beamerboxes}{upper}{\def\bmb@upper{#1}}
\define@key{beamerboxes}{lower}{\def\bmb@lower{#1}}
\define@key{beamerboxes}{width}{\edef\bmb@width{#1}}
\define@key{beamerboxes}{shadow}[true]{\csname bmb@shadow#1\endcsname}

\newif\ifbmb@shadow
\newbox\bmb@box
\newbox\bmb@colorbox
\newbox\bmb@boxshadow
\newbox\bmb@boxshadowball
\newbox\bmb@boxshadowballlarge
\newdimen\bmb@temp
\newdimen\bmb@dima
\newdimen\bmb@dimb
\newdimen\bmb@prevheight

\newcommand\beamerboxesrounded[2][ ]{%
\global\let\beamer@firstlineitemizeunskip=\relax%
\ vbox\bgroup%
\setkeys{beamerboxes}{upper=block title,lower=block body,width=\textwidth,shadow=false ?
? }%
\setkeys{beamerboxes}{#1}%
{%
\usebeamercolor{\bmb@lower}%
\globalcolorstrue%
\colorlet{lower.bg}{bg}%
}%
{%
\usebeamercolor{\bmb@upper}%
\globalcolorstrue%
\colorlet{upper.bg}{bg}%
}%
%
% Typeset head
%
\vskip4bp
\setbox\bmb@box=\hbox{%
\begin{minipage}[b]{\bmb@width}%
\usebeamercolor[fg]{\bmb@upper}%
#2%
\end{minipage}}%
\ifdim\wd\bmb@box=0pt%
\setbox\bmb@box=\hbox{}%
\ht\bmb@box=1.5pt%

```

```

\ bmb@prevheight=-4.5pt%
\ else%
\ wd\ bmb@box=\ bmb@width%
\ bmb@temp=\ dp\ bmb@box%
\ ifdim\ bmb@temp<1.5pt%
\ bmb@temp=1.5pt%
\ fi%
\ setbox\ bmb@box=\ hbox{\ raise\ bmb@temp\ hbox{\ box\ bmb@box}}%
\ dp\ bmb@box=0pt%
\ bmb@prevheight=\ ht\ bmb@box%
\ fi%
\ bmb@temp=\ bmb@width%
\ bmb@dima=\ bmb@temp\ advance\ bmb@dima by2.2bp%
\ bmb@dimb=\ bmb@temp\ advance\ bmb@dimb by4bp%
\ hbox{%
\ begin{pgfpicture}{0bp}{+-\ ht\ bmb@box}{0bp}{+-\ ht\ bmb@box}
\ ifdim\ wd\ bmb@box=0pt%
\ color{lower.bg}%
\ else%
\ color{upper.bg}%
\ fi%
\ pgfpathmoveto{-4bp}{-1bp}
\ pgfpathcurveto{-4bp}{1.2bp}{-2.2bp}{3bp}{0bp}{3bp}
\ pgfpathlineto{\pgfpoint{\ bmb@temp}{3bp}}
\ pgfpathcurveto%
{\pgfpoint{\ bmb@dima}{3bp}}%
{\pgfpoint{\ bmb@dimb}{1.2bp}}%
{\pgfpoint{\ bmb@dimb}{-1bp}}%
\ bmb@dima=-\ ht\ bmb@box%
\ advance\ bmb@dima by-2pt%
\ pgfpathlineto{\pgfpoint{\ bmb@dimb}{\ bmb@dima}}
\ pgfpathlineto{\pgfpoint{-4bp}{\ bmb@dima}}
\ pgfusepath{fill}
\ end{pgfpicture}%
\ copy\ bmb@box%
}%
\ nointerlineskip%
\ vskip-1pt%
\ ifdim\ wd\ bmb@box=0pt%
\ else%
\ hbox{%
\ begin{pgfpicture}{0pt}{0pt}{\ bmb@width}{6pt}
\ bmb@dima=\ bmb@width%
\ advance\ bmb@dima by8bp%
\ pgfpathrectangle{\pgfpoint{-4bp}{-1bp}}{\pgfpoint{\ bmb@dima}{8bp}}
\ pgfusepath{clip}
{\pgftransformshift{\pgfpoint{-4bp}{0bp}}\pgftext[left,base]{\pgfuseshading{ ?
? bmb@transition}}}%
\ end{pgfpicture}%
}%
\ nointerlineskip%
\ vskip-0.5pt%
\ fi%
\ ifbmb@shadow%
\ setbox\ bmb@boxshadow=\ hbox{\pgfuseshading{\ bmb@shadow}}%
\ setbox\ bmb@boxshadowball=\ hbox{\pgfuseshading{\ bmb@shadowball}}%
\ setbox\ bmb@boxshadowballlarge=\ hbox{\pgfuseshading{\ bmb@shadowballlarge}}%

```

```

\fi%
\setbox\bmb@colorbox=\hbox{\pgfpicturetrue\pgfsetcolor{lower.bg}}}%
\setbox\bmb@box=\hbox\bgroup\begin{minipage}[b]{\bmb@width}%
  \vskip2pt%
  \usebeamercolor[fg]{\bmb@lower}%
  \colorlet{beamerstructure}{upper.bg}%
  \colorlet{structure}{upper.bg}%
  %\color{.}%
}

\def\endbeamerboxesrounded{%
  \end{minipage}\egroup%
  \wd\bmb@box=\bmb@width%
  \bmb@temp=\dp\bmb@box%
  \advance\bmb@temp by.5pt%
  \setbox\bmb@box=\hbox{\raise\bmb@temp\hbox{\box\bmb@box}}%
  \dp\bmb@box=0pt%
  \bmb@temp=\wd\bmb@box%
  \bmb@dima=\bmb@temp\advance\bmb@dima by2.2bp%
  \bmb@dimb=\bmb@temp\advance\bmb@dimb by4bp%
  \hbox{%
    \begin{pgfpicture}{0bp}{0bp}{0bp}{0bp}
      \ifbmb@shadow%
        {\pgftransformshift{\pgfpoint{4bp}{-3bp}}\pgftext{\copy\bmb@boxshadowball}}
      \begin{pgfscope}
        {%
          \advance\bmb@temp by-1bp%
          \pgfpathrectangle{\pgfpoint{\bmb@temp}{-7bp}}{\pgfpoint{9bp}{9bp}}%
          \pgfusepath{clip}
        }%
        {\pgftransformshift{\pgfpoint{\bmb@temp}{1bp}}\pgftext{\box\ ?
          ? bmb@boxshadowballlarge}}
      \end{pgfscope}
      \begin{pgfscope}
        \advance\bmb@temp by-4bp%
        \pgfpathrectangle{\pgfpoint{4bp}{-7bp}}{\pgfpoint{\bmb@temp}{5bp}}
        \pgfusepath{clip}
        {\pgftransformshift{\pgfpoint{4bp}{-7bp}}\pgftext[left,base]{\copy\bmb@boxshadow ?
          ? }}%
      \end{pgfscope}
      \begin{pgfscope}
        \advance\bmb@temp by 4bp%
        \bmb@dima=\ht\bmb@box%
        \advance\bmb@dima by\bmb@prevheight%
        \advance\bmb@dima by 4bp%
        \pgfpathrectangle{\pgfpoint{\bmb@temp}{1bp}}{\pgfpoint{4bp}{\bmb@dima}}
        \pgfusepath{clip}
        \advance\bmb@dima by-4bp%
        {\pgftransformshift{\pgfpoint{\bmb@temp}{\bmb@dima}}\pgftext{\box\ ?
          ? bmb@boxshadowball}}
        \advance\bmb@dima by-1bp%
        \pgfpathrectangle{\pgfpoint{\bmb@temp}{1bp}}{\pgfpoint{4bp}{\bmb@dima}}
        \pgfusepath{clip}
        \advance\bmb@temp by4bp%
        {\pgftransformshift{\pgfpoint{\bmb@temp}{-3bp}}%
          \pgftransformrotate{90}%
          \pgftext[left,base]{\box\bmb@boxshadow}}%
      \end{pgfscope}
    }%
  }%
}

```

```

\end{pgfscope}
\fi%
\unhbox\bmb@colorbox%
\pgfpathmoveto{-4bp}{1bp}
\pgfpathcurveto{-4bp}{-1.2bp}{-2.2bp}{-3bp}{0bp}{-3bp}
\pgfpathlineto{\pgfpoint{\the\bmb@temp}{-3bp}}
\pgfpathcurveto%
{\pgfpoint{\the\bmb@dima}{-3bp}}%
{\pgfpoint{\the\bmb@dimb}{-1.2bp}}%
{\pgfpoint{\the\bmb@dimb}{1bp}}%
{
\bmb@dima=\ht\bmb@box%
\pgfpathlineto{\pgfpoint{\bmb@dimb}{\bmb@dima}}
\pgfpathlineto{\pgfpoint{-4bp}{\bmb@dima}}
\pgfusepath{fill}
}
\ifbmb@shadow%
{
\color{black!50!bg}
\pgfsetlinewidth{0pt}
\pgfpathmoveto{\pgfpoint{\bmb@dimb}{-.5bp}}
\bmb@dima=\ht\bmb@box%
\advance\bmb@dima by\bmb@prevheight%
\advance\bmb@dima by 1bp%
\pgfpathlineto{\pgfpoint{\bmb@dimb}{\bmb@dima}}
\pgfusepath{stroke}
\bmb@temp=\bmb@dima
\advance\bmb@dima by 1bp%
\color{black!31!bg}
\pgfpathmoveto{\pgfpoint{\bmb@dimb}{\bmb@temp}}
\pgfpathlineto{\pgfpoint{\bmb@dimb}{\bmb@dima}}
\pgfusepath{stroke}
\advance\bmb@dima by 1bp%
\advance\bmb@temp by 1bp%
\color{black!19!bg}
\pgfpathmoveto{\pgfpoint{\bmb@dimb}{\bmb@temp}}
\pgfpathlineto{\pgfpoint{\bmb@dimb}{\bmb@dima}}
\pgfusepath{stroke}
\advance\bmb@dima by 1bp%
\advance\bmb@temp by 1bp%
\color{black!6!bg}
\pgfpathmoveto{\pgfpoint{\bmb@dimb}{\bmb@temp}}
\pgfpathlineto{\pgfpoint{\bmb@dimb}{\bmb@dima}}
\pgfusepath{stroke}
\advance\bmb@dima by 1.5bp%
\advance\bmb@temp by 1bp%
\color{bg}
\pgfpathmoveto{\pgfpoint{\bmb@dimb}{\bmb@temp}}
\pgfpathlineto{\pgfpoint{\bmb@dimb}{\bmb@dima}}
\pgfusepath{stroke}
}
\fi
\end{pgfpicture}%
\box\bmb@box%
}%
\ifbmb@shadow%
\vskip4bp minus 2bp%

```

```

\else%
  \vskip2bp%
\fi%
\egroup% of \vbox\bgroup
}

%
% Shadings
%

% Shadows
\pgfdeclareradialshading[black,bg]{bmb@shadowball}{\pgfpointorigin}{%
  color(0bp)=(black!50!bg); color(4bp)=(bg)}
\pgfdeclareradialshading[black,bg]{bmb@shadowballlarge}{\pgfpointorigin}{%
  color(0bp)=(black!50!bg); color(4bp)=(black!50!bg); color(8bp)=(bg)}
\pgfdeclareverticalshading[black,bg]{bmb@shadow}{200cm}{%
  color(0bp)=(bg); color(4bp)=(black!50!bg); color(8bp)=(black!50!bg)}

% Transition line
\pgfdeclareverticalshading[lower.bg,upper.bg]{bmb@transition}{200cm}{%
  color(0pt)=(lower.bg); color(2pt)=(lower.bg); color(4pt)=(upper.bg)}

```

25 beamerbaselocalstructure.sty

```

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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/ ?
  ? beamerbaselocalstructure.sty,v 393f6dcff371 2014/09/10 07:50:17 joseph $

\mode
<all>

\RequirePackage{enumerate}

\mode
<presentation>

%
%
% The \frametitle command
%
%
\newcommand<>\frametitle{\alt#1{\@dblarg\beamer@@frametitle}{\beamer@gobbleoptional}}
\long\def\beamer@@frametitle[#1]#2{%
  \beamer@ifempty{#2}{-}{%
    \gdef\insertframetitle{#2\ifnum\beamer@autobreakcount>0\relax}\space\ ?
    ? usebeamertemplate*{frametitle continuation}\fi}}%

```



```

\gdef\beamer@frametitle{#2}%
\gdef\beamer@shortframetitle{#1}%
}%
}

\newcommand\insertshortframetitle[1] [] {%
  {%
    \beamer@setupshort{#1}%
    \beamer@insertshort{\beamer@shortframetitle}%
  }}

\mode
<all>
{
  \let\beamer@aftersubtitle=\relax
  \newcommand<>\framesubtitle[1]{\only#2{\beamer@ifempty{#1}{}\{\gdef\insertframesubtitle ?
    ? {#1}\beamer@aftersubtitle}}}
}

\mode
<article>
{
  \newcommand<>\frametitle[2] [] {\only#3{\gdef\insertframetitle{#2}%
    \@ifnextchar\framesubtitle{\beamer@donextssubtitle}{\usebeamertemplate{frametitle ?
    ? }}}}
  \def\beamer@donextssubtitle{%
    % Ugly hack...
    \def\beamer@aftersubtitle{\usebeamertemplate{frametitle}\let\beamer@aftersubtitle=\ ?
    ? relax}
  }
}

%
% Alerting
%

\mode
<all>
{
  \newenvironment{alertenv}{\begin{alertenv}}%
    {\usebeamertemplate{alerted text begin}\usebeamercolor[fg]{alerted text}\ ?
    ? usebeamerfont{alerted text}}
    {\usebeamertemplate{alerted text end}}{\color{.}}{\}}{\end{alertenv}}

  \newenvironment{structureenv}{\begin{structureenv}}%
    {\usebeamertemplate{structure text begin}\usebeamercolor[fg]{structure}\ ?
    ? usebeamerfont{structure}}
    {\usebeamertemplate{structure text end}}{\color{.}}{\}}{\end{structureenv}}

  \newcommand<>{\alert}[1]{\begin{alertenv}#2\relax#1\end{alertenv}}
  \newcommand<>{\structure}[1]{\begin{structureenv}#2\relax#1\end{structureenv}}
}

```

```

%
%
% Predefined Blocks
%
%

\mode
<all>
{
  \newenvironment<>{block}[1]{%
    \begin{actionenv}#2%
      \def\insertblocktitle{#1}%
      \par%
      \usebeamertemplate{block begin}}
  {\par%
    \usebeamertemplate{block end}%
    \end{actionenv}}

\newenvironment<>{alertblock}[1]{%
  \begin{actionenv}#2%
    \def\insertblocktitle{#1}%
    \par%
    \mode<presentation>{%\usebeamerfont{block}}%
    \setbeamercolor{local structure}{parent=alerted text}}%
  \usebeamertemplate{block alerted begin}}
  {\par%
    \usebeamertemplate{block alerted end}%
    \end{actionenv}}

\newenvironment<>{exampleblock}[1]{%
  \begin{actionenv}#2%
    \def\insertblocktitle{#1}%
    \par%
    \mode<presentation>{%\usebeamerfont{block}}%
    \setbeamercolor{local structure}{parent=example text}}%
  \usebeamertemplate{block example begin}}
  {\par%
    \usebeamertemplate{block example end}%
    \end{actionenv}}
}

%
% List stuff
%

\setlength\leftmargini {2em}
\setlength\leftmarginii {2em}
\setlength\leftmarginiii {2em}
\setlength \labelsep {0.5em}
\setlength \labelwidth{\leftmargini}
\addtolength\labelwidth{-\labelsep}

\def\@listi{\leftmargin\leftmargini
  \topsep 3\p@ \@plus2\p@ \@minus2.5\p@

```

```

\parsep 0\p@
\itemsep3\p@ \@plus2\p@ \@minus3\p@}
\let\@listI\@listI
\def\@listii{\leftmargin\leftmarginii
\topsep 2\p@ \@plus1\p@ \@minus2\p@
\parsep 0\p@ \@plus\p@
\itemsep \parsep}
\def\@listiii{\leftmargin\leftmarginiii
\topsep 2\p@ \@plus1\p@ \@minus2\p@
\parsep 0\p@ \@plus\p@
\itemsep \parsep}

%
%
% Enumerations
%
%

\def\enumerate{%
\ifnum\@enumdepth>2\relax\@toodeep
\else%
\advance\@enumdepth\@ne%
\edef\@enumctr{enum\romannumeral\the\@enumdepth}%
\advance\@itemdepth\@ne%
\fi%
\beamer@computepref\@enumdepth% sets \beameritemnestingprefix
\edef\beamer@enumtempl{enumerate \beameritemnestingprefix item}%
\@ifnextchar[{\beamer@@enum@}{\beamer@enum@}}
\def\beamer@@enum@[{\@ifnextchar<{\beamer@enumdefault [ ]{\beamer@@@enum@ [ ]}}
\def\beamer@enumdefault[#1]{\def\beamer@defaulttospec{#1}%
\@ifnextchar[{\beamer@@@enum@}{\beamer@enum@}}
\def\beamer@@@enum@[#1]{% partly copied from enumerate.sty
\@enLab{}\let\@enThe\@enQmark
\@enloop#1\@enum@
\ifx\@enThe\@enQmark\@warning{The counter will not be printed.%
^^J\space\@spaces\@spaces\@spaces The label is: \the\@enLab}\fi
\def\insertenumlabel{\the\@enLab}
\def\beamer@enumtempl{enumerate mini template}%
\expandafter\let\csname the\@enumctr\endcsname\@enThe
\csname c@\@enumctr\endcsname7
\expandafter\settowidth
\csname leftmargin\romannumeral\@enumdepth\endcsname
{\the\@enLab\hspace{\labelsep}}}%
\beamer@enum@}
\def\beamer@enum@{%
\beamer@computepref\@itemdepth% sets \beameritemnestingprefix
\usebeamerfont{itemize/enumerate \beameritemnestingprefix body}%
\usebeamerfont[fg]{itemize/enumerate \beameritemnestingprefix body}%
\usebeamertemplate{itemize/enumerate \beameritemnestingprefix body begin}%
\expandafter
\list
{\usebeamertemplate{\beamer@enumtempl}}
{\usecounter\@enumctr%
\def\makelabel##1{{\hss\llap{ {%
\usebeamerfont*{enumerate \beameritemnestingprefix item}%
\usebeamerfont[fg]{enumerate \beameritemnestingprefix item}##1}}}}}%

```

```

\beamer@cramped%
\raggedright%
\beamer@firstlineitemizeunskip%
}
\def\endenumerate{\ifhmode\unskip\fi\endlist%
  \usebeamertemplate{itemize/enumerate \beameritemnestingprefix body end}}

\def\beamer@computepref#1{%
  \let\beameritemnestingprefix\@empty%
  \ifcase#1\or\or\def\beameritemnestingprefix{sub}\or\def\beameritemnestingprefix{subsub ?
    ? }\or\@toodeep\fi%
}

\def\insertenumlabel{\theenumi}
\def\insertsubenumlabel{\theenumii}
\def\insertsubsubenumlabel{\theenumiii}

\mode
<article>
{
  \AtBeginDocument{ % Remove any overlay specification
    \let\beamer@@@enum@\@@enum@
    \def\@@enum@[{%
      \@ifnextchar<%
        {\beamer@@@num@@}
        {\beamer@@@enum@[}%
      }
      \def\beamer@@@num@@<#1>{%
        \@ifnextchar[%
          {\beamer@@@enum@}
          {\@enum@}%
        }
        %\let\beamer@origenumerate=\enumerate
        %\renewcommand*\enumerate{\beamer@origenumerate}
      }
    }
}

%
%
% Itemize
%
%

\renewcommand{\itemize}[1][[]]{%
  \beamer@ifempty{#1}{-}{\def\beamer@defaultospec{#1}}%
  \ifnum \@itemdepth >2\relax\@toodeep\else
    \advance\@itemdepth\@ne
    \beamer@computepref\@itemdepth% sets \beameritemnestingprefix
    \usebeamerfont{itemize/enumerate \beameritemnestingprefix body}%
    \usebeamerfont[fg]{itemize/enumerate \beameritemnestingprefix body}%
    \usebeamertemplate{itemize/enumerate \beameritemnestingprefix body begin}%
    \list
      {\usebeamertemplate{itemize \beameritemnestingprefix item}}
      {\def\makelabel##1{%
        {%

```

```

\hss\llap{%
  \usebeamerfont*{itemize \beameritemnestingprefix item}%
  \usebeamercolor[fg]{itemize \beameritemnestingprefix item}##1}}%
}%
}%
}
\fi%
\beamer@cramped%
\raggedright%
\beamer@firstlineitemizeunskip%
}

\def\enditemize{\ifhmode\unskip\fi\endlist%
  \usebeamertemplate{itemize/enumerate \beameritemnestingprefix body end}}

\let\beamer@itemize\itemize

\mode
<article>
{
  \AtBeginDocument{
    \let\beamer@origitemize=\itemize
    \def\itemize{%
      \@ifnextchar[{\beamer@itemize@}{\beamer@origitemize}%
    }
    \def\beamer@itemize@[{%
      \@ifnextchar<{\beamer@itemize@@}{\beamer@origitemize[]}%
    }
    \def\beamer@itemize@@<#1>{\beamer@origitemize}
  }
}

\def\description{\@ifnextchar[{\beamer@testforospec}{\beamer@descdefault\ ?
  ? beamer@descriptionwidth@@description}}
\def\beamer@testforospec[{\@ifnextchar<{\beamer@scandefaultospec[]}{\@description[]}]
\def\beamer@scandefaultospec[#1]{\def\beamer@defaultospec{#1}\description}
\def\@description[#1]{\setbox\beamer@tempbox=\hbox{\def\insertdescriptionitem{#1}\ ?
  ? usebeamertemplate**{description item}}%
  \beamer@descdefault\wd\beamer@tempbox\@description}
\def\@@description{%
  \advance\beamer@descdefault by \labelsep%
  \list
  {}
  {\labelwidth\beamer@descdefault\leftmargin\beamer@descdefault\let\makelabel\ ?
    ? beamer@descriptionitem}%
  \beamer@cramped%
  \raggedright
  \beamer@firstlineitemizeunskip%
}
\def\enddescription{\ifhmode\unskip\fi\endlist}
\long\def\beamer@descriptionitem#1{%
  \def\insertdescriptionitem{#1}%
  \hfil\hspace\labelsep{\usebeamertemplate**{description item}}}

```

```

\beamer@descriptionwidth=2cm
\define@key{beamer@margin}{description width}{%
  \beamer@descriptionwidth=#1\relax%
}
\define@key{beamer@margin}{description width of}{%
  \setbox\beamer@tempbox=\hbox{\def\insertdescriptionitem{#1}\usebeamertemplate**{ ?
    ? description item}}%
  \beamer@descriptionwidth=\wd\beamer@tempbox\relax%
}

\mode
<article>
{
  \AtBeginDocument{
    \let\beamer@origdescription=\description
    % The description environment doesn't use either optional
    % arg in article mode, so simply gobble them
    \def\description{%
      \@ifnextchar[%]
        {\beamer@description@}
        {\beamer@origdescription}%
    }
    \def\beamer@description@[#1]{%
      \@ifnextchar[%]
        {\beamer@description@@}
        {\beamer@origdescription}%
    }
    \def\beamer@description@@[#1]{\beamer@origdescription}
  }
}

%
% Abstract command
%

\newenvironment<>{abstract}%
{\actionenv#1%
  \usebeamertemplate{abstract begin}%
  \usebeamerfont{abstract}%
  \usebeamercolor{abstract}%
  \usebeamertemplate**{abstract title}}%
{\usebeamertemplate{abstract end}\endactionenv}

%
% Verse, quotation, quote environments
%

\newenvironment<>{verse}
{\actionenv#1%
  \usebeamertemplate{verse begin}%
  \usebeamerfont{verse}%

```

```

\usebeamercolor{verse}%
\let\\@centercr%
\list{}{\itemsep \z@
\itemindent -1.5em%
\listparindent\itemindent
\rightmargin \leftmargin
\advance\leftmargin 1.5em
\parsep .75em plus .25em minus.25em}%
\item\relax}
{\endlist\usebeamertemplate{verse end}\endactionenv}

\newenvironment<>{quotation}
{\actionenv#1%
\usebeamertemplate{quotation begin}
\usebeamerfont{quotation}%
\usebeamercolor{quotation}%
\list{}{\listparindent 1.5em%
\itemindent \listparindent
\rightmargin \leftmargin
\parsep \z@ \@plus\p@}%
\item\relax}
{\endlist\usebeamertemplate{quotation end}\endactionenv}

\newenvironment<>{quote}
{\actionenv#1%
\usebeamertemplate{quote begin}%
\usebeamerfont{quote}%
\usebeamercolor{quote}%
\list{}{\rightmargin \leftmargin}
\item\relax}
{\endlist\usebeamertemplate{quote end}\endactionenv}

\mode
<article>
{
\renewenvironment<>{verse}{\actionenv#1\originalverse}{\endoriginalverse\endactionenv}
\renewenvironment<>{quotation}{\actionenv#1\originalquotation}{\endoriginalquotation\
?
? endactionenv}
\renewenvironment<>{quote}{\actionenv#1\originalquote}{\endoriginalquote\endactionenv}
}

%
% Bibliography code
%
\newenvironment{thebibliography}[1]
{\leavevmode\unskip%
\list{\@biblabel{\@arabic{c@enumiv}}}%
\settowidth\labelwidth{\beamer@biblabeltemplate{\@biblabel{#1}}}%
\leftmargin\labelwidth
\advance\leftmargin\labelsep
\itemsep=0pt%
\partopsep=0pt%

```

```

\topsep=Opt%
\usecounter{enumiv}%
\let\p@enumiv\@empty
\renewcommand\theenumiv{\@arabic\c@enumiv}
\let\makelabel\beamer@biblabeltemplate}%
\slippy\raggedright
\clubpenalty10000
\@clubpenalty \clubpenalty
\widowpenalty10000%
\sffcode\.\@m}
{\def\@noitemerr
{\@latex@warning{Empty `thebibliography' environment}}}%
\ifhmode\unskip\fi\endlist}

\long\def\beamer@biblabeltemplate#1{\def\insertbiblabel{#1}\usebeamertemplate*{ ?
? bibliography item}\hfil}

\def\bibitem{\@ifnextchar<{\beamer@bibitem@store}{\gdef\beamer@bibstore{} \ ?
? beamer@plainbibitem}}
\def\beamer@bibitem@store<#1>{\gdef\beamer@bibstore{<#1>}\beamer@plainbibitem}
\def\beamer@plainbibitem{\@ifnextchar[\@lbibitem\beamer@bibitem}
\def\@lbibitem[#1]#2{\expandafter\item\beamer@bibstore[\@biblabel{#1}\hfill]}
\@ifundefined{beamerbib#2@the\c@framenummer}{\if@filesw
{\let\protect\noexpand
\immediate
\write\@auxout{\string\bibcite{#2}{\noexpand\hyperlink{beamerbib#2}{#1}}}\fi}
\global\@namedef{beamerbib#2@the\c@framenummer}{\relax}%
\hypertarget{beamerbib#2}{}}%
}{}}%
\def\newblock{\beamer@newblock}\newblock%
\hbox{} \ignorespaces}
\def\beamer@bibitem#1{\@bibitem{#1}\ignorespaces}
\def\@bibitem#1{\expandafter\item\beamer@bibstore\@ifundefined{beamerbib#1@the \ ?
? c@framenummer}}%
{\if@filesw \immediate\write\@auxout
{\string\bibcite{#1}{\noexpand\hyperlink{beamerbib#1}{\the\value{\@listctr}}}\fi}
\global\@namedef{beamerbib#1@the\c@framenummer}{\relax}%
\hypertarget{beamerbib#1}{}}%
}{}}%
\def\newblock{\beamer@newblock}\newblock}
\def\newblock{\beamer@newblock}

\def\beamer@newblock{%
\usebeamercolor[fg]{bibliography entry author}%
\usebeamerfont{bibliography entry author}%
\usebeamertemplate{bibliography entry author}%
\def\newblock{%
\usebeamercolor[fg]{bibliography entry title}%
\usebeamerfont{bibliography entry title}%
\usebeamertemplate{bibliography entry title}%
\def\newblock{%
\usebeamercolor[fg]{bibliography entry location}%
\usebeamerfont{bibliography entry location}%
\usebeamertemplate{bibliography entry location}%
\def\newblock{%
\usebeamercolor[fg]{bibliography entry note}%
\usebeamerfont{bibliography entry note}%

```



```

\usebeamertemplate{bibliography entry note}}}}}%
\leavevmode\setbox\beamer@tempbox=\hbox{}\ht\beamer@tempbox=1.5em\box\beamer@tempbox}

% The following code provided by Audrey http://tex.stackexchange.com/a/57247
\AtBeginDocument{%
\@ifpackageloaded{biblatex}
{\apptocmd{\blx@env@bibliography}
{\let\makelabel\beamer@biblabeltemplate}}{}
\apptocmd{\abx@macro@begentry}
{\let\bbx@tempa\@empty%
\usebeamercolor[fg]{bibliography entry author}}{}
\pretocmd{\abx@macro@labeltitle}
{\ifboolexpr{ test {\ifcsundef{abx@field@label}}
and test {\ifcsundef{abx@field@labeltitle}} }{}{\let\bbx@tempa\labelnamepunct ?
? }}{}
\pretocmd{\abx@macro@title}
{\ifcsundef{abx@name@labelname}}{}{\let\bbx@tempa\labelnamepunct}%
\bbx@tempa\newblock\unspace\usebeamercolor[fg]{bibliography entry title}}{}
\apptocmd{\abx@macro@title}
{\ifcsundef{abx@field@title}}{}{\newunitpunct}%
\newblock\usebeamercolor[fg]{bibliography entry note}}{}
{}}

\mode
<article>
{
\AtBeginDocument{
\renewcommand<>{\bibitem}{\beameroriginal{\bibitem}}%should actually suppress
}
}

%
% Floats and tables
%

\newenvironment{figure}[1][ ]{%
\def\@captive{figure}%
\par\nobreak\begin{center}\nobreak
{\par\nobreak\end{center}}
\newcounter{figure}
\renewcommand\thefigure{\@arabic\c@figure}

\newenvironment{table}[1][ ]{%
\def\@captive{table}%
\par\nobreak\begin{center}\nobreak
{\par\nobreak\end{center}\nobreak}
\newcounter{table}
\renewcommand\thetable{\@arabic\c@table}

\newlength\abovecaptionskip
\newlength\belowcaptionskip
\setlength\abovecaptionskip{7pt}
\setlength\belowcaptionskip{7pt}

\def\caption{%

```

```

\ifx\@capttype\@undefined
  \@latex@error{\noexpand\caption outside figure or table}\@ehd
  \expandafter\@gobble
\else
  \refstepcounter\@capttype
  \expandafter\@firstofone
\fi
{\@dblarg{\@caption\@capttype}}%
}
\long\def\@caption#1[#2]#3{% second argument ignored
  \par\nobreak
  \begingroup
  \@parboxrestore
  \if@minipage
    \@setminipage
  \fi
  \beamer@makecaption{#1}{\ignorespaces #3}\par\nobreak
  \endgroup}
\long\def\beamer@makecaption#1#2{%
  \def\insertcaptionname{\csname#1name\endcsname}%
  \def\insertcaptionnumber{\csname the#1\endcsname}%
  \def\insertcaption{#2}%
  \nobreak\vskip\abovecaptionskip\nobreak
  \sbox\@tempboxa{\usebeamertemplate**{caption}}%
  \ifdim \wd\@tempboxa >\hsize
    \usebeamertemplate**{caption}\par
  \else
    \global \@minipagefalse
    \hbxt@\hsize{\hfil\box\@tempboxa\hfil}%
  \fi
  \nobreak\vskip\belowcaptionskip\nobreak}

\mode
<all>

```

26 beamerbasenavigation.sty

```

% Copyright 2003--2007 by Till Tantau
% Copyright 2010 by Vedran Miletic
%
% This file may be distributed and/or modified
%
% 1. under the LaTeX Project Public License and/or
% 2. under the GNU Public License.
%
% See the file doc/licenses/LICENSE for more details.

\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/ ?
? beamerbasenavigation.sty,v 923f4bf87efa 2015/02/27 08:36:20 joseph $

\mode
<presentation>

%

```

```

% Navigation buttons
%

% The following commands are called by the .nav file.
\def\beamer@framepages#1#2{%
  \ifnum\c@page<#1%
  \else%
    \ifnum\c@page>#2%
    \else%
      \gdef\beamer@startpageofframe{#1}%
      \gdef\beamer@endpageofframe{#2}%
    \fi%
  \fi%
}
\def\beamer@subsectionpages#1#2{%
  \ifnum\c@page<#1%
  \else%
    \ifnum\c@page>#2%
    \else%
      \gdef\beamer@startpageofsubsection{#1}%
      \gdef\beamer@endpageofsubsection{#2}%
    \fi%
  \fi%
}
\def\beamer@sectionpages#1#2{%
  \ifnum\c@page<#1%
  \else%
    \ifnum\c@page>#2%
    \else%
      \gdef\beamer@startpageofsection{#1}%
      \gdef\beamer@endpageofsection{#2}%
    \fi%
  \fi%
}
\def\beamer@partpages#1#2{%
  \ifnum\c@page<#1%
  \else%
    \ifnum\c@page>#2%
    \else%
      \gdef\beamer@startpageofpart{#1}%
      \gdef\beamer@endpageofpart{#2}%
    \fi%
  \fi%
}
\def\beamer@nextpage#1{%
  \beamer@tempcount=#1%
  \advance\beamer@tempcount by1\relax%
  \ifnum\beamer@tempcount>\beamer@endpageofdocument%
  \beamer@tempcount=\beamer@endpageofdocument%
  \fi}
\def\beamer@prevpage#1{%
  \beamer@tempcount=#1\relax%
  \ifnum\beamer@tempcount>1%
  \advance\beamer@tempcount by-1%
  \fi%
}

```

```

\def\hyperlinkslideprev{%
  \beamer@prevpage\c@page%
  \hyperlink{Navigation\the\beamer@tempcount}}
\def\hyperlinkslidenext{%
  \beamer@nextpage\c@page%
  \hyperlink{Navigation\the\beamer@tempcount}}
\def\hyperlinkframestart{\hyperlink{Navigation\beamer@startpageofframe}}
\def\hyperlinkframeend{\hyperlink{Navigation\beamer@endpageofframe}}
\def\hyperlinkframestartnext{%
  \beamer@nextpage\beamer@endpageofframe%
  \hyperlink{Navigation\the\beamer@tempcount}}
\def\hyperlinkframeendprev{%
  \beamer@prevpage\beamer@startpageofframe%
  \hyperlink{Navigation\the\beamer@tempcount}}

\def\hyperlinksubsectionstart{\hyperlink{Navigation\beamer@startpageofsubsection}}
\def\hyperlinksubsectionend{\hyperlink{Navigation\beamer@endpageofsubsection}}
\def\hyperlinksubsectionstartnext{%
  \beamer@nextpage\beamer@endpageofsubsection%
  \hyperlink{Navigation\the\beamer@tempcount}}
\def\hyperlinksubsectionendprev{%
  \beamer@prevpage\beamer@startpageofsubsection%
  \hyperlink{Navigation\the\beamer@tempcount}}

\def\hyperlinksectionstart{\hyperlink{Navigation\beamer@startpageofsection}}
\def\hyperlinksectionend{\hyperlink{Navigation\beamer@endpageofsection}}
\def\hyperlinksectionstartnext{%
  \beamer@nextpage\beamer@endpageofsection%
  \hyperlink{Navigation\the\beamer@tempcount}}
\def\hyperlinksectionendprev{%
  \beamer@prevpage\beamer@startpageofsection%
  \hyperlink{Navigation\the\beamer@tempcount}}

\def\hyperlinkpartstart{\hyperlink{Navigation\beamer@startpageofpart}}
\def\hyperlinkpartend{\hyperlink{Navigation\beamer@endpageofpart}}
\def\hyperlinkpartstartnext{%
  \beamer@nextpage\beamer@endpageofpart%
  \hyperlink{Navigation\the\beamer@tempcount}}
\def\hyperlinkpartendprev{%
  \beamer@prevpage\beamer@startpageofpart%
  \hyperlink{Navigation\the\beamer@tempcount}}

\def\hyperlinkpresentationstart{\hyperlink{Navigation1}}
\def\hyperlinkpresentationend{%
  \ifx\beamer@startpageofappendix\@empty%
    \beamer@tempcount=\beamer@endpageofdocument%
  \else%
    \beamer@prevpage\beamer@startpageofappendix%
  \fi%
  \hyperlink{Navigation\the\beamer@tempcount}}
\def\hyperlinkappendixstart{%
  \ifx\beamer@startpageofappendix\@empty%
    \beamer@tempcount=\beamer@endpageofdocument%
  \else%
    \beamer@tempcount=\beamer@startpageofappendix%
  \fi%
  \hyperlink{Navigation\the\beamer@tempcount}}

```

```

\def\hyperlinkappendixend{\hyperlink{Navigation\beamer@endpageofdocument}}

\def\hyperlinkdocumentstart{\hyperlink{Navigation1}}
\def\hyperlinkdocumentend{\hyperlink{Navigation\beamer@endpageofdocument}}

\mode
<article>
{
  \newcommand<>\hyperlinkslideprev[1]{ }
  \newcommand<>\hyperlinkslidenext[1]{ }

  \newcommand<>\hyperlinkframestart[1]{ }
  \newcommand<>\hyperlinkframeend[1]{ }
  \newcommand<>\hyperlinkframestartnext[1]{ }
  \newcommand<>\hyperlinkframeendprev[1]{ }

  \newcommand<>\hyperlinksubsectionstart[1]{ }
  \newcommand<>\hyperlinksubsectionend[1]{ }
  \newcommand<>\hyperlinksubsectionstartnext[1]{ }
  \newcommand<>\hyperlinksubsectionendprev[1]{ }

  \newcommand<>\hyperlinksectionstart[1]{ }
  \newcommand<>\hyperlinksectionend[1]{ }
  \newcommand<>\hyperlinksectionstartnext[1]{ }
  \newcommand<>\hyperlinksectionendprev[1]{ }

  \newcommand<>\hyperlinkpartstart[1]{ }
  \newcommand<>\hyperlinkpartend[1]{ }
  \newcommand<>\hyperlinkpartstartnext[1]{ }
  \newcommand<>\hyperlinkpartendprev[1]{ }

  \newcommand<>\hyperlinkpresentationstart[1]{ }
  \newcommand<>\hyperlinkpresentationend[1]{ }
  \newcommand<>\hyperlinkappendixstart[1]{ }
  \newcommand<>\hyperlinkappendixend[1]{ }

  \newcommand<>\hyperlinkdocumentstart[1]{ }
  \newcommand<>\hyperlinkdocumentend[1]{ }
}

\newcommand\insertframestartpage{\beamer@startpageofframe}
\newcommand\insertframeendpage{\beamer@endpageofframe}
\newcommand\insertsubsectionstartpage{\beamer@startpageofsubsection}
\newcommand\insertsubsectionendpage{\beamer@endpageofsubsection}
\newcommand\insertsectionstartpage{\beamer@startpageofsection}
\newcommand\insertsectionendpage{\beamer@endpageofsection}
\newcommand\insertpartstartpage{\beamer@startpageofpart}
\newcommand\insertpartendpage{\beamer@endpageofpart}
\newcommand\insertpresentationstartpage{1}
\newcommand\insertpresentationendpage{{%
  \ifx\beamer@startpageofappendix\@empty%
    \beamer@tempcount=\beamer@endpageofdocument\relax%
  \else%
    \beamer@prevpage\beamer@startpageofappendix\relax%
  \fi%
  \the\beamer@tempcount}}
\newcommand\insertappendixstartpage{{%

```

```

\ifx\beamer@startpageofappendix\@empty%
  \beamer@tempcount=\beamer@endpageofdocument\relax%
\else%
  \beamer@tempcount=\beamer@startpageofappendix\relax%
\fi%
\the\beamer@tempcount}}
\newcommand\insertappendixendpage{\beamer@endpageofdocument}
\newcommand\insertdocumentstartpage{1}
\newcommand\insertdocumentendpage{\beamer@endpageofdocument}

%
% Navigation Button Art
%

\def\beamer@linkspace#1{\vbox to7.5pt{ }\kern#1}

% Due to what could be regarded as a bug in hyperref or DVIPDFm and
% derivatives, no links are made to empty boxes with XeTeX. This is
% fixed by drawing some 'real' content, which makes the PDF bigger!
\begingroup\expandafter\expandafter\expandafter\endgroup
  \expandafter\ifx\cscname XeTeXrevision\endcsname\relax
  \expandafter\@gobble
\else
  \expandafter\@firstofone
\fi
  {%
    \def\beamer@linkspace#1{%
      \begin{pgfpicture}{0pt}{-1.5pt}{#1}{5.5pt}
        \pgfsetfillopacity{0}
        \pgftext[x=0pt,y=-1.5pt]{.}
        \pgftext[x=#1,y=5.5pt]{.}
      \end{pgfpicture}}
  }

\pgfdefobject{beamerslidenavlight}{\pgfpoint{0pt}{-1pt}}{\pgfpoint{20pt}{5pt}}
{\pgfpathqmoveto{4bp}{0.5bp}
  \pgfpathqlineto{2bp}{2bp}
  \pgfpathqlineto{4bp}{3.5bp}
  \pgfusepathqfill
  \pgfpathqmoveto{16bp}{0.5bp}
  \pgfpathqlineto{18bp}{2bp}
  \pgfpathqlineto{16bp}{3.5bp}
  \pgfusepathqfill}
\pgfdefobject{beamerslidenavstrong}{\pgfpoint{0pt}{-1pt}}{\pgfpoint{20pt}{5pt}}
{%
  \pgfpathrectangle{\pgfpoint{8.3pt}{0.8pt}}{\pgfpoint{3.4pt}{2.4pt}}%
  \pgfusepathqstroke%
}

\def\insertslidenavigationssymbol{%
  \begin{pgfpicture}{0pt}{-1.5pt}{20pt}{5.5pt}
    \pgfuseobject{beamerslidenavstrong}%
    \usebeamercolor[fg]{navigation symbols dimmed}
    \pgfuseobject{beamerslidenavlight}%
  \end{pgfpicture}\kern-20pt%
  \hyperlinkslideprev{\beamer@linkspace{6pt}}%

```

```

\Acrobatmenu{GoToPage}{\beamer@linkspace{8pt}}%
\hyperlinkslidenext{\beamer@linkspace{6pt}}}}

\pgfdefobject{beamerframenavlight}{\pgfpoint{0pt}{-1pt}}{\pgfpoint{20pt}{5pt}}
{\pgfpathqmoveto{4bp}{0.5bp}
\pgfpathqlineto{2bp}{2bp}
\pgfpathqlineto{4bp}{3.5bp}
\pgfpathqmoveto{16bp}{0.5bp}
\pgfpathqlineto{18bp}{2bp}
\pgfpathqlineto{16bp}{3.5bp}
\pgfusepathqfill}
\pgfdefobject{beamerframenavstrong}{\pgfpoint{0pt}{-1pt}}{\pgfpoint{20pt}{5pt}}
{f%
\pgfpathrectangle{\pgfpoint{7pt}{0pt}}{\pgfpoint{3.4pt}{2.4pt}}
\pgfpathqmoveto{7.8bp}{2.4bp}
\pgfpathqlineto{7.8bp}{3.2bp}
\pgfpathqlineto{11.2bp}{3.2bp}
\pgfpathqlineto{11.2bp}{.8bp}
\pgfpathqlineto{10.4bp}{.8bp}
\pgfpathqmoveto{8.6bp}{3.2bp}
\pgfpathqlineto{8.6bp}{4bp}
\pgfpathqlineto{12bp}{4bp}
\pgfpathqlineto{12bp}{1.6bp}
\pgfpathqlineto{11.2bp}{1.6bp}
\pgfusepathqstroke}

\def\insertframenavigationssymbol{f%
\begin{pgfpicture}{0pt}{-1.5pt}{20pt}{5.5pt}
\pgfuseobject{beamerframenavstrong}%
\usebeamercolor[fg]{navigation symbols dimmed}
\pgfuseobject{beamerframenavlight}%
\end{pgfpicture}\kern-20pt%
\hyperlinkframeendprev{\beamer@linkspace{5pt}}%
\hyperlinkframestart{\beamer@linkspace{5pt}}%
\hyperlinkframeend{\beamer@linkspace{5pt}}%
\hyperlinkframestartnext{\beamer@linkspace{5pt}}}}

\pgfdefobject{beamersubsectionnavlight}{\pgfpoint{0pt}{-1pt}}{\pgfpoint{20pt}{5pt}}
{f%
\pgfpathqmoveto{4bp}{0.5bp}
\pgfpathqlineto{2bp}{2bp}
\pgfpathqlineto{4bp}{3.5bp}
\pgfpathqmoveto{16bp}{0.5bp}
\pgfpathqlineto{18bp}{2bp}
\pgfpathqlineto{16bp}{3.5bp}
\pgfusepathqfill
\pgfsetlinewidth{0.6pt}
\pgfpathqmoveto{8bp}{4bp}
\pgfpathqlineto{11bp}{4bp}
\pgfpathqmoveto{9bp}{2bp}
\pgfpathqlineto{12bp}{2bp}
\pgfpathqmoveto{8bp}{1bp}
\pgfpathqlineto{11bp}{1bp}
\pgfpathqmoveto{9bp}{0bp}
\pgfpathqlineto{12bp}{0bp}
\pgfusepathqstroke}
\pgfdefobject{beamersubsectionnavstrong}{\pgfpoint{0pt}{-1pt}}{\pgfpoint{20pt}{5pt}}

```

```

{%
\pgfsetlinewidth{0.6pt}
\pgfpathmoveto{9bp}{3bp}
\pgfpathqlineto{12bp}{3bp}
\pgfusepathqstroke}

\def\insertsubsectionnavigationssymbol{%
\begin{pgfpicture}{0pt}{-1.5pt}{20pt}{5.5pt}
\pgfuseobject{beamersubsectionnavstrong}%
\usebeamercolor[fg]{navigation symbols dimmed}
\pgfuseobject{beamersubsectionnavlight}%
\end{pgfpicture}\kern-20pt%
\hyperlinksubsectionendprev{\beamer@linkspace{5pt}}%
\hyperlinksubsectionstart{\beamer@linkspace{5pt}}%
\hyperlinksubsectionend{\beamer@linkspace{5pt}}%
\hyperlinksubsectionstartnext{\beamer@linkspace{5pt}}}

\pgfdefobject{beamersectionnavlight}{\pgfpoint{0pt}{-1pt}}{\pgfpoint{20pt}{5pt}}
{%
\pgfpathmoveto{4bp}{0.5bp}
\pgfpathqlineto{2bp}{2bp}
\pgfpathqlineto{4bp}{3.5bp}
\pgfpathmoveto{16bp}{0.5bp}
\pgfpathqlineto{18bp}{2bp}
\pgfpathqlineto{16bp}{3.5bp}
\pgfusepathqfill
\pgfsetlinewidth{0.6pt}
\pgfpathmoveto{8bp}{1bp}
\pgfpathqlineto{11bp}{1bp}
\pgfpathmoveto{9bp}{0bp}
\pgfpathqlineto{12bp}{0bp}
\pgfusepathqstroke}
\pgfdefobject{beamersectionnavstrong}{\pgfpoint{0pt}{-1pt}}{\pgfpoint{20pt}{5pt}}
{%
\pgfsetlinewidth{0.6pt}
\pgfpathmoveto{8bp}{4bp}
\pgfpathqlineto{11bp}{4bp}
\pgfpathmoveto{9bp}{3bp}
\pgfpathqlineto{12bp}{3bp}
\pgfpathmoveto{9bp}{2bp}
\pgfpathqlineto{12bp}{2bp}
\pgfusepathqstroke
}

\def\insertsectionnavigationssymbol{%
\begin{pgfpicture}{0pt}{-1.5pt}{20pt}{5.5pt}
\pgfuseobject{beamersectionnavstrong}%
\usebeamercolor[fg]{navigation symbols dimmed}
\pgfuseobject{beamersectionnavlight}%
\end{pgfpicture}\kern-20pt%
\hyperlinksectionendprev{\beamer@linkspace{5pt}}%
\hyperlinksectionstart{\beamer@linkspace{5pt}}%
\hyperlinksectionend{\beamer@linkspace{5pt}}%
\hyperlinksectionstartnext{\beamer@linkspace{5pt}}}

\pgfdefobject{beamerdocnavlight}{\pgfpoint{0pt}{-1pt}}{\pgfpoint{20pt}{5pt}}
{%

```



```

\pgfpathmoveto{\10bp}{-.5bp}
\pgfpathqlineto{\10bp}{4.5bp}
\pgfusepathqstroke
}
\pgfdefobject{beamerdocnavstrong}{\pgfpoint{0pt}{-1pt}}{\pgfpoint{20pt}{5pt}}
{
\pgfsetlinewidth{0.6pt}
\pgfpathmoveto{4bp}{4bp}
\pgfpathqlineto{7bp}{4bp}
\pgfpathmoveto{5bp}{3bp}
\pgfpathqlineto{8bp}{3bp}
\pgfpathmoveto{5bp}{2bp}
\pgfpathqlineto{8bp}{2bp}
\pgfpathmoveto{3bp}{1bp}
\pgfpathqlineto{7bp}{1bp}
\pgfpathmoveto{5bp}{0bp}
\pgfpathqlineto{8bp}{0bp}
\pgfpathmoveto{12bp}{3bp}
\pgfpathqlineto{15bp}{3bp}
\pgfpathmoveto{13bp}{2bp}
\pgfpathqlineto{16bp}{2bp}
\pgfpathmoveto{13bp}{1bp}
\pgfpathqlineto{16bp}{1bp}
\pgfusepathqstroke
}

\pgfdefobject{beamerdocnavstrongsingle}{\pgfpoint{0pt}{-1pt}}{\pgfpoint{20pt}{5pt}}
{%
\pgfsetlinewidth{0.6pt}
\pgfpathmoveto{8bp}{4bp}
\pgfpathqlineto{11bp}{4bp}
\pgfpathmoveto{9bp}{3bp}
\pgfpathqlineto{12bp}{3bp}
\pgfpathmoveto{9bp}{2bp}
\pgfpathqlineto{12bp}{2bp}
\pgfpathmoveto{8bp}{1bp}
\pgfpathqlineto{11bp}{1bp}
\pgfpathmoveto{9bp}{0bp}
\pgfpathqlineto{12bp}{0bp}
\pgfusepathqstroke%
}

\def\insertdocnavigationssymbol{%
\ifx\beamer@startpageofappendix\@empty%
\begin{pgfpicture}{0pt}{-1.5pt}{20pt}{5.5pt}
\pgfuseobject{beamerdocnavstrongsingle}%
\end{pgfpicture}\kern-20pt%
\hyperlinkpresentationstart{\beamer@linkspace{9pt}}%
\hyperlinkpresentationend{\beamer@linkspace{11pt}}%
\else%
\begin{pgfpicture}{0pt}{-1.5pt}{20pt}{5.5pt}
\pgfuseobject{beamerdocnavstrong}%
\usebeamercolor[fg]{navigation symbols dimmed}
\pgfuseobject{beamerdocnavlight}%
\end{pgfpicture}\kern-20pt%
\hyperlinkpresentationstart{\beamer@linkspace{5pt}}%
\hyperlinkpresentationend{\beamer@linkspace{5pt}}%

```

```

\hyperlinkappendixstart{\beamer@linkspace{3.5pt}}%
\hyperlinkappendixend{\beamer@linkspace{6.5pt}}%
\fi}

\pgfdefobject{beamerbackfindforwardnav}{\pgfpoint{0pt}{-1pt}}{\pgfpoint{20pt}{5pt}}
{
% search symbol
\pgfsetlinewidth{0.6pt}
\pgfpathqmoveto{10.4bp}{1.6bp}
\pgfpathqlineto{12bp}{0bp}
\pgfusepathqstroke
\pgfsetlinewidth{0.4pt}
\pgfpathcircle{\pgfpoint{9.5pt}{2.5pt}}{1.2pt}
\pgfusepathqstroke
% left arrow
\pgfsetroundcap
\pgfpathqmoveto{4bp}{0bp}
\pgfpathqcurveto{5.1pt}{0pt}{6bp}{0.9bp}{6bp}{2bp}
\pgfpathqcurveto{6bp}{3.1bp}{5.1bp}{4bp}{4bp}{4bp}
\pgfpathqcurveto{2.9bp}{4bp}{2bp}{3.1bp}{2bp}{2bp}
\pgfpathqmoveto{3.2bp}{2.6bp}
\pgfpathqlineto{2bp}{1.6bp}
\pgfpathqlineto{0.8bp}{2.6bp}
% right arrow
\pgfpathqmoveto{16bp}{0bp}
\pgfpathqcurveto{14.9bp}{0bp}{14bp}{0.9bp}{14bp}{2bp}
\pgfpathqcurveto{14bp}{3.1bp}{14.9bp}{4bp}{16bp}{4bp}
\pgfpathqcurveto{17.1bp}{4bp}{18bp}{3.1bp}{18bp}{2bp}
\pgfpathqmoveto{19.2bp}{2.6bp}
\pgfpathqlineto{18bp}{1.6bp}
\pgfpathqlineto{16.8bp}{2.6bp}
\pgfusepathqstroke
}

\def\insertbackfindforwardnavigationsymbol{%
\begin{pgfpicture}{0pt}{-1.5pt}{20pt}{5.5pt}
\pgfuseobject{beamerbackfindforwardnav}%
\end{pgfpicture}\kern-20pt%
\Acrobatmenu{GoBack}{\beamer@linkspace{7pt}}%
\Acrobatmenu{Find}{\beamer@linkspace{6pt}}%
\Acrobatmenu{GoForward}{\beamer@linkspace{7pt}}}}

%
% User Buttons
%

\pgfdefobject{beamergetosymbol}{\pgfpoint{0pt}{-1pt}}{\pgfpoint{5pt}{5pt}}
{
\pgfpathqmoveto{1.5bp}{0.5bp}
\pgfpathqlineto{3.5bp}{2bp}
\pgfpathqlineto{1.5bp}{3.5bp}
\pgfusepathqfill
}

\def\insertgetosymbol{%

```

```

\begin{pgfpicture}{1pt}{0pt}{6pt}{5pt}
  \pgfuseobject{beamergotosymbol}%
\end{pgfpicture}}

\pgfdefobject{beamerskipssymbol}{\pgfpoint{0pt}{-1pt}}{\pgfpoint{7pt}{5pt}}
{
  \pgfpathmoveto{1.5bp}{0.5bp}
  \pgfpathqlineto{3.5bp}{2bp}
  \pgfpathqlineto{1.5bp}{3.5bp}
  \pgfpathmoveto{3.5bp}{0.5bp}
  \pgfpathqlineto{5.5bp}{2bp}
  \pgfpathqlineto{3.5bp}{3.5bp}
  \pgfusepathqfill
}

\def\insertskipsymbol{%
  \begin{pgfpicture}{1pt}{0pt}{8pt}{5pt}
    \pgfuseobject{beamerskipssymbol}%
  \end{pgfpicture}}

\pgfdefobject{beamerreturnsymbol}{\pgfpoint{0pt}{-1pt}}{\pgfpoint{5pt}{5pt}}
{
  \pgfpathmoveto{3.5bp}{0.5bp}
  \pgfpathqlineto{1.5bp}{2bp}
  \pgfpathqlineto{3.5bp}{3.5bp}
  \pgfusepathqfill
}

\def\insertreturnsymbol{%
  \begin{pgfpicture}{1pt}{0pt}{6pt}{5pt}
    \pgfuseobject{beamerreturnsymbol}%
  \end{pgfpicture}}

\def\beamerbutton#1{\def\insertbuttontext{#1}\usebeamertemplate**{button}}
\def\beamergetobutton#1{\beamerbutton{\insertgotosymbol#1}}
\def\beamerskipbutton#1{\beamerbutton{\insertskipsymbol#1}}
\def\beamerreturnbutton#1{\beamerbutton{\insertreturnsymbol#1}}

\mode
<article>
{
  \let\beamerbutton=\@firstofone
  \let\beamergetobutton=\beamerbutton
  \let\beamerskipbutton=\beamerbutton
  \let\beamerreturnbutton=\beamerbutton
}

%
% Inserting navigation bars
%

\newdimen\beamer@section@min@dim
\newcommand*{\beamer@section@set@min@width}{%
  \ifdim\wd\beamer@sectionbox>\beamer@section@min@dim

```

```

\else
  \setbox\beamer@sectionbox=\hbox to \beamer@section@min@dim
    {\box\beamer@sectionbox\hfil}%
  \global\beamer@section@min@dim\z@
\fi
}

\def\insertnavigation#1{%
  \vbox{%
    \usebeamerfont{section in head/footer}\usebeamercolor[fg]{section in head/footer}%
    \beamer@xpos=0\relax%
    \beamer@ypos=1\relax%
    \hbox to #1{\hskip.3cm\setbox\beamer@sectionbox=\hbox{\kern1sp}%
      \ht\beamer@sectionbox=1.875ex%
      \dp\beamer@sectionbox=0.75ex%
      \hskip-1.875ex plus-1fill%
      \global\beamer@section@min@dim\z@
      \dohead%
      \beamer@section@set@min@width
      \box\beamer@sectionbox\hfil\hskip.3cm}%
    }}

\def\sectionentry#1#2#3#4#5{% section number, section title, page
  \ifnum#5=\c@part%
    \beamer@section@set@min@width
    \box\beamer@sectionbox\hskip1.875ex plus 1fill%
    \beamer@xpos=0\relax%
    \beamer@ypos=1\relax%
    \setbox\beamer@sectionbox=
    \hbox{\def\insertsectionhead{#2}%
      \def\insertsectionheadnumber{#1}%
      \def\insertpartheadnumber{#5}%
      {%
        \usebeamerfont{section in head/footer}\usebeamercolor[fg]{section in head/footer}%
        \ifnum\c@section=#1%
          \hyperlink{Navigation#3}{\usebeamertemplate{section in head/footer}}%
        \else%
          \hyperlink{Navigation#3}{\usebeamertemplate{section in head/footer shaded}}%
        \fi}%
      }%
    \ht\beamer@sectionbox=1.875ex%
    \dp\beamer@sectionbox=0.75ex%
    \fi\ignorespaces}

\def\beamer@nav@subsectionstyle#1{\beamer@toc@sprocess\beamer@nav@css\beamer@nav@oss\
  ? beamer@nav@ooss#1///}
\beamer@nav@subsectionstyle{show}

\def\beamer@subsectionentry#1#2#3#4#5{% no effect by default.
\def\beamer@subsubsectionentry#1#2#3#4#5#6{% no effect by default.

\def\insertverticalnavigation#1{%
  \vbox{%
    \def\sectionentry##1##2##3##4##5{%
      \ifnum##5=\c@part%
        \def\insertsectionhead{##2}%
        \def\insertsectionheadnumber{##1}%

```

```

\def\insertpartheadnumber{##5}%
\hbox to #1{
  \usebeamerfont{section in sidebar}\usebeamercolor[fg]{section in sidebar}%
  \hyperlink{Navigation##3}{%
    \ifnum\c@section=##1%
      \ifnum\c@subsection=0\relax%
        {\usebeamertemplate{section in sidebar}}%
      \else%
        \ifx\beamer@nav@css\beamer@hidetext%
          {\usebeamertemplate{section in sidebar}}%
        \else%
          {\usebeamertemplate{section in sidebar shaded}}%
        \fi%
      \fi%
    \else%
      {\usebeamertemplate{section in sidebar shaded}}%
    \fi}}%
\beamer@currentsubsection=0\relax\fi}%
\def\slideentry##1##2##3##4##5##6{
\def\beamer@subsectionentry##1##2##3##4##5{
  \ifnum##1=\c@part%
    \def\insertpartheadnumber{##1}%
    \def\insertsectionheadnumber{##2}%
    \def\insertsubsectionheadnumber{##3}%
    \def\insertsubsectionhead{##5}%
    \beamer@tocifnohide{\ifnum\c@section=##2\ifnum\c@subsection=##3\beamer@nav@css\ ?
      ? else\beamer@nav@oss\fi\else\beamer@nav@ooss\fi}%
    {\hbox{
      \usebeamerfont{subsection in sidebar}\usebeamercolor[fg]{subsection in sidebar}%
      \hyperlink{Navigation##4}{%
        \ifnum\c@section=##2%
          \ifnum\c@subsection=##3%
            \ifnum\c@subsubsection=0\relax%
              {\usebeamertemplate{subsection in sidebar}}%
            \else%
              {\usebeamertemplate{subsection in sidebar shaded}}%
            \fi%
          \else%
            {\usebeamertemplate{subsection in sidebar shaded}}%
          \fi%
        \else%
          {\usebeamertemplate{subsection in sidebar shaded}}%
        \fi}}%
    }%
    \fi}%
\def\beamer@subsubsectionentry##1##2##3##4##5##6{
  \ifnum##1=\c@part%
    \def\insertpartheadnumber{##1}%
    \def\insertsectionheadnumber{##2}%
    \def\insertsubsectionheadnumber{##3}%
    \def\insertsubsubsectionheadnumber{##4}%
    \def\insertsubsubsectionhead{##6}%
    \beamer@tocifnohide{\ifnum\c@section=##2\ifnum\c@subsection=##3\ifnum\ ?
      ? c@subsubsection=##4\beamer@nav@css\else\beamer@nav@oss\fi\else\ ?
      ? beamer@nav@ooss\fi\else\beamer@nav@ooss\fi}%
    {\hbox{
      \usebeamerfont{subsubsection in sidebar}\usebeamercolor[fg]{subsubsection in ?

```

```

    ? sidebar}%
\hyperlink{Navigation##5}{%
\ifnum\c@section=##2%
  \ifnum\c@subsection=##3%
    \ifnum\c@subsubsection=##4%
      {\usebeamertemplate{subsubsection in sidebar}}%
    \else
      {\usebeamertemplate{subsubsection in sidebar shaded}}%
    \fi%
  \else%
    {\usebeamertemplate{subsubsection in sidebar shaded}}%
  \fi%
\else%
  {\usebeamertemplate{subsubsection in sidebar shaded}}%
\fi}}}%
}%
\fi}%
%\beamer@currentsubsection=0\relax%
\dohead%
}%
}

\def\slideentry#1#2#3#4#5#6{%
%section number, subsection number, slide number, first/last frame, page number, part ?
? number
\ifnum#6=\c@part\ifnum#2>0\ifnum#3>0%
  \ifbeamer@compress%
    \advance\beamer@xpos by1\relax%
  \else%
    \beamer@xpos=#3\relax%
    \beamer@ypos=#2\relax%
  \fi%
\hbox to 0pt{%
  \beamer@tempdim=-\beamer@vboxoffset%
  \advance\beamer@tempdim by-\beamer@boxsize%
  \multiply\beamer@tempdim by\beamer@ypos%
  \advance\beamer@tempdim by -.05cm%
  \raise\beamer@tempdim\hbox{%
    \beamer@tempdim=\beamer@boxsize%
    \multiply\beamer@tempdim by\beamer@xpos%
    \advance\beamer@tempdim by -\beamer@boxsize%
    \advance\beamer@tempdim by 1pt%
    \kern\beamer@tempdim
    \global\beamer@section@min@dim\beamer@tempdim
    \hbox{\beamer@link(#4){%
      \usebeamerfont{mini frame}%
      \ifnum\c@section=#1%
        \ifnum\c@subsection=#2%
          \usebeamercolor[fg]{mini frame}%
          \ifnum\c@subsubsection=#3%
            \usebeamertemplate{mini frame}%\beamer@minislidehighlight%
          \else%
            \usebeamertemplate{mini frame in current subsection}%\?
            ? beamer@minisliderowhighlight%
          \fi%
        \else%
          \usebeamercolor{mini frame}%

```

```

        %\color{fg!50!bg}%
        \usebeamertemplate{mini frame in other subsection}%\beamer@minislide%
    \fi%
\else%
    \usebeamercolor{mini frame}%
    %\color{fg!50!bg}%
    \usebeamertemplate{mini frame in other subsection}%\beamer@minislide%
    \fi%
}}\hskip-10cm plus 1fil%
}\fi\fi%
\else%
\fakeslideentry{#1}{#2}{#3}{#4}{#5}{#6}%
\fi\ignorespaces
}

\def\fakeslideentry#1#2#3#4#5#6{%
    \ifnum#2>0\ifnum#3>0%
    \ifbeamer@compress%
    \advance\beamer@xpos by1\relax%
    \else%
    \beamer@xpos=#3\relax%
    \beamer@ypos=#2\relax%
    \fi%
    \hbox to 0pt{\beamer@tempdim=-\beamer@vboxoffset%
        \advance\beamer@tempdim by -\beamer@boxsize%
        \multiply\beamer@tempdim by\beamer@ypos%
        \advance\beamer@tempdim by -.05cm%
        \raise\beamer@tempdim\hbox{}}\fi\fi\ignorespaces}

\def\beamer@link(#1/#2){%
    \def\beamer@goto{\Navigation#1}}% default: first slide of frame
    \ifnum\c@page<#2%
    \ifnum\c@page<#1\else% go to last slide of frame, on all slides of
        % the frame, except for the last one
    \def\beamer@goto{\Navigation#2}}% jump to last slide of frame
    \fi\fi%
    \expandafter\hyperlink\beamer@goto}

\define@key{beamer@margin}{mini frame size}{\beamer@boxsize=#1}
\define@key{beamer@margin}{mini frame offset}{\beamer@vboxoffset=#1}

\def\insertsectionnavigation#1{%
    \hbox to #1{%
        \vbox{{\usebeamerfont{section in head/foot}\usebeamercolor[fg]{section in head/foot} ?
            ? %
        \vskip0.5625ex%
        \def\slideentry##1##2##3##4##5##6{}%
        \def\sectionentry##1##2##3##4##5{%
            \ifnum##5=\c@part%
            \def\insertsectionhead{##2}%
            \def\insertsectionheadnumber{##1}%
            \def\insertpartheadnumber{##5}%
            \setbox\beamer@tempbox=\hbox{%
                \hyperlink{\Navigation##3}{\hbox to #1{%
                    \hskip0.3cm%
                    \ifnum\c@section=##1%

```

```

        {\usebeamertemplate{section in head/footer}}%
    \else%
        {\usebeamertemplate{section in head/footer shaded}}%
    \fi\hskip0.3cm}}%
    \ht\beamer@tempbox=1.6875ex\dp\beamer@tempbox=0.75ex%
    \box\beamer@tempbox\fi}%
\dohead\vskip0.5625ex}\hfil}}

```

```

\def\insertsectionnavigationhorizontal#1#2#3{%

```

```

    \hbox to #1{%
        \def\slideentry##1##2##3##4##5##6{%
            #2\hskip.3cm%
            \usebeamerfont{section in head/footer}\usebeamercolor[fg]{section in head/footer}%
            \setbox\beamer@sectionbox=\hbox{%
                \ht\beamer@sectionbox=1.875ex%
                \dp\beamer@sectionbox=0.75ex%
                \hskip-1.875ex plus-1fill\dohead%
                \box\beamer@sectionbox\hfil\hskip.3cm%
            #3}}

```

```

\def\insertsubsectionnavigation#1{%

```

```

    \hbox to #1{%
        \vbox{%
            \usebeamerfont{subsection in head/footer}\usebeamercolor[fg]{subsection in head/footer
            ? }%
            \vskip0.5625ex%
            \beamer@currentsubsection=0%
            \def\sectionentry##1##2##3##4##5{%
            \def\slideentry##1##2##3##4##5##6{\ifnum##6=\c@part\ifnum##1=\c@section%
                \ifnum##2>\beamer@currentsubsection%
                \beamer@currentsubsection=##2%
                \def\insertsubsectionhead{##5}%
                \def\insertsectionheadnumber{##1}%
                \def\insertsubsectionheadnumber{##2}%
                \def\insertpartheadnumber{##6}%
                \setbox\beamer@tempbox=\hbox{\beamer@link(##4){%
                    \hbox to #1{\hskip0.3cm%
                        \ifnum\c@subsection=##2%
                            {\usebeamertemplate{subsection in head/footer}}%
                        \else%
                            {\usebeamertemplate{subsection in head/footer shaded}}%
                        \fi\hfil\hskip0.3cm}}}%
                    \ht\beamer@tempbox=1.6875ex\dp\beamer@tempbox=0.75ex%
                    \box\beamer@tempbox\fi\fi\fi}%
                \dohead\vskip0.5625ex}\hfil}}

```

```

\def\insertsubsectionnavigationhorizontal#1#2#3{%

```

```

    \hbox to #1{%
        \usebeamerfont{subsection in head/footer}\usebeamercolor[fg]{subsection in head/footer}%
        \beamer@currentsubsection=0%
        \def\sectionentry##1##2##3##4##5{%
        \def\slideentry##1##2##3##4##5##6{\ifnum##6=\c@part\ifnum##1=\c@section%
            \ifnum##2>\beamer@currentsubsection%
            \beamer@currentsubsection=##2%
            \box\beamer@sectionbox\hskip1.875ex plus1fill%
            \setbox\beamer@sectionbox=
            \hbox{\def\insertsubsectionhead{##5}%

```



```

\def\insertsectionheadnumber{##1}%
\def\insertsubsectionheadnumber{##2}%
\def\insertpartheadnumber{##6}%
\ifnum\c@section=##2%
\beamer@link{##4}{\usebeamertemplate{subsection in head/foot}}\else%
\beamer@link{##4}{\usebeamertemplate{subsection in head/foot shaded}}\fi%
\ht\beamer@sectionbox=1.875ex%
\dp\beamer@sectionbox=0.75ex%
\fi\fi\fi\ignorespaces}%
#2\hskip.3cm\setbox\beamer@sectionbox=\hbox{}%
\hskip-1.875ex plus-1fill\dohead%
\box\beamer@sectionbox\hfil\hskip.3cm%
#3}}

```

```

%
% Name slides
%

```

```

\def\beamer@inserttarget#1{%
\ifbeamer@inframe%
\ifvmode%
\nointerlineskip\vbox to0pt{#1}%
\else%
\hbox{#1}%
\fi%
\else% defer to next frame
\expandafter\gdef\expandafter\beamer@framehypertargets\expandafter{\ ?
? beamer@framehypertargets#1}%
\fi%
}

```

```

\def\beamer@nameslide#1{%
\addtocontents{snm}{\protect\beamer@slide{#1}{\the\c@page}}%
\beamer@inserttarget{\hypertarget{#1}{}}}
\def\beamer@dummysnameslide{\beamer@inserttarget{}}

```

```

\def\beamer@slide#1#2{\expandafter\def\csname beamer@hyperlink#1\endcsname{%
\hyperlink{Navigation#2}}}

```

```

\let\beamer@framehypertargets\@empty

```

```

%
% Page anchors
%

```

```

% This code is copied from hyperref, which doesn't activate this part with
% option "implicit = false" set. Things are much simplified as we already
% know that anchors are required and what to use for them.

```

```

\def\Hy@EveryPageAnchor{%
\Hy@DistillerDestFix
\vbox to 0pt{%
\kern\voffset
\kern\topmargin

```

```

\kern-1bp\relax
\hbox to 0pt{%
  \kern\hoffset
  \kern\ifodd\value{page}%
  \oddsidemargin
  \else
  \evensidemargin
  \fi
  \kern-1bp\relax
  \hyper@@anchor{Navigation\the\c@page}\relax%
  \hyper@@anchor{page.\the\c@page}\relax%
  \hss
}%
\vss
}%
}

\AtBeginShipout{%
  \setbox\AtBeginShipoutBox=\vbox{%
    \offinterlineskip
    \Hy@EveryPageAnchor
    \box\AtBeginShipoutBox
  }%
}

\providecommand*\Hy@DistillerDestFix{}

\mode
<all>

```

27 beamerbasetheorems.sty

```

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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/ ?
? beamerbasetheorems.sty,v 7e7cc5e53e9d 2010/06/06 12:18:42 rivavx $

\mode
<presentation>

\ifbeamer@ams

\RequirePackage{amsmath}
\RequirePackage{amsthm}

% For old versions of amsthm
\providecommand\thm@space@setup{}

```

```

\providecommand\pushQED[1]{\def\beamerqed{#1}}
\providecommand\popQED{\beamerqed}
\providecommand\qedhere{\qed}

% Redefine certain amsthm internals:
\def\@thm#1#2#3{%
  \ifhmode\unskip\unskip\par\fi
  \normalfont
  \let\thmheadnl\relax
  \let\thm@swap@gobble
  \thm@headpunct{.}% add period after heading
  \thm@space@setup
  #1% style overrides
  \def\inserttheoremname{#3}
  \def\inserttheorem punctuation{\the\thm@headpunct}
  \def\@tempa{#2}%
  \ifx\@empty\@tempa
    \def\inserttheoremnumber{}
  \else
    \refstepcounter{#2}%
    \expandafter\def\expandafter\inserttheoremnumber\expandafter{ \csname the#2\ ?
      ? endcsname}
  \fi
  \beamer@begintheorem%
}

\let\beamer@origxthm=\@xthm
\def\@xthm#1{\resetcounteronoverlays{#1}\beamer@origxthm{#1}}

\def\inserttheoremheadfont{\the\thm@headfont}
\def\inserttheoremblockenv{block}

\def\th@example{%
  \normalfont % body font
  \def\inserttheoremblockenv{exampleblock}
}

\newcommand<>\beamer@begintheorem[1][\proofname]{%
  \beamer@ifempty{#1}
  {\def\inserttheoremaddition{}}
  {\def\inserttheoremaddition{#1}}
  \usebeamertemplate{theorem begin}#2}
\def\@endtheorem{\usebeamertemplate{theorem end}}

\renewenvironment<>{proof}[1][\proofname]{%
  \par
  \def\insertproofname{#1\@addpunct{.}}%
  \pushQED{\qed}
  \usebeamertemplate{proof begin}#2}
{\popQED\usebeamertemplate{proof end}}

\fi

\def\qedsymbol{\leavevmode\hbox{\usebeamertemplate*{qed symbol}}}

\mode

```

```

<article>
{
  \ifbeamer@ams
    \RequirePackage{amsmath}
    \RequirePackage{amsthm}

  \renewenvironment<>{proof}[1][\proofname]
  {\begin{actionenv}#2\begin{originalproof}[{#1}]}{\end{originalproof}\end{actionenv}}

  % Make new theorem overlay-specification-aware
  \let\beamer@origthm=\@thm
  \def\@thm#1#2#3{\def\beamer@store#{#1}#{2}#{3}\beamer@readspec}
  \def\beamer@storeaction{\begin{actionenv}}
  \newcommand<>\beamer@readspec[1][\def\beamer@storeaction{\begin{actionenv}#2}%
    \expandafter\beamer@origthm\beamer@store[#{1}]}

  \let\beamer@origbegintheorem=\@begintheorem
  \def\@begintheorem{\beamer@storeaction\beamer@origbegintheorem}

  \let\beamer@origendtheorem=\@endtheorem
  \def\@endtheorem{\beamer@origendtheorem\end{actionenv}}
\fi

\def\th@example{\th@remark}

\newcommand{\ExampleInline}[1]{\translate{Example}: \ignorespaces#1}

% Compatibility:
\newcommand{\BeispielInline}[1]{Beispiel: \ignorespaces#1}
}

\mode
<all>
{
  \ifbeamer@blocks
    \ifbeamer@countsect
      \newtheorem{theorem}{\translate{Theorem}}[section]
    \else
      \newtheorem{theorem}{\translate{Theorem}}
    \fi
    \newtheorem{corollary}[theorem]{\translate{Corollary}}
    \newtheorem{fact}[theorem]{\translate{Fact}}
    \newtheorem{lemma}[theorem]{\translate{Lemma}}
    \newtheorem{problem}[theorem]{\translate{Problem}}
    \newtheorem{solution}[theorem]{\translate{Solution}}

    \theoremstyle{definition}
    \newtheorem{definition}[theorem]{\translate{Definition}}
    \newtheorem{definitions}[theorem]{\translate{Definitions}}

    \theoremstyle{example}
    \newtheorem{example}[theorem]{\translate{Example}}
    \newtheorem{examples}[theorem]{\translate{Examples}}

    % Compatibility
    \newtheorem{Beispiel}[theorem]{Beispiel}

```

```

\newtheorem{Beispiele}[theorem]{Beispiele}
\theoremstyle{plain}
\newtheorem{Loesung}[theorem]{L\"osung}
\newtheorem{Satz}[theorem]{Satz}
\newtheorem{Folgerung}[theorem]{Folgerung}
\newtheorem{Fakt}[theorem]{Fakt}
\newenvironment{Beweis}{\begin{proof}[Beweis.]}{\end{proof}}
\newenvironment{Lemma}{\begin{lemma}}{\end{lemma}}
\newenvironment{Proof}{\begin{proof}}{\end{proof}}
\newenvironment{Theorem}{\begin{theorem}}{\end{theorem}}
\newenvironment{Problem}{\begin{problem}}{\end{problem}}
\newenvironment{Corollary}{\begin{corollary}}{\end{corollary}}
\newenvironment{Example}{\begin{example}}{\end{example}}
\newenvironment{Examples}{\begin{examples}}{\end{examples}}
\newenvironment{Definition}{\begin{definition}}{\end{definition}}
\fi
}

\mode
<all>

```

28 beamerbasethemes.sty

```

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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbasethemes. ?
? sty,v efa082c6111d 2010/05/01 11:27:03 rivanvx $

%
% Basic commands for including themes
%
\mode
<presentation>
{
  \def\beamer@calltheme#1#2#3{%
    \def\beamer@themelist{#2}
    \@for\beamer@themenam:=\beamer@themelist\do
    {\usepackage[#{#1}]{#3\beamer@themenam}}

    \newcommand\settheme[2] [] {\beamer@calltheme{#1}{#2}{beamertheme}}
    \newcommand\usecolortheme[2] [] {\beamer@calltheme{#1}{#2}{beamercolortheme}}
    \newcommand\usefonttheme[2] [] {\beamer@calltheme{#1}{#2}{beamerfonttheme}}
    \newcommand\useoutertheme[2] [] {\beamer@calltheme{#1}{#2}{beameroutertheme}}
    \newcommand\useinnertheme[2] [] {\beamer@calltheme{#1}{#2}{beamerinnertheme}}
  }
}

\mode

```

```

<article>
{
  \newcommand\usetheme[2] [] {}
  \newcommand\usecolortheme[2] [] {}
  \newcommand\usefonttheme[2] [] {}
  \newcommand\useoutertheme[2] [] {}
  \newcommand\useinnertheme[2] [] {}
}

\mode
<all>

```

29 beamerarticle.sty

```

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\RequirePackage{beamerbasercs}
\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerarticle.sty ?
  ,v cc6557182d97 2012/04/15 14:37:19 rivanvx $

\RequirePackage{beamerbasemodes}
% Setup modes and check for article option

\DeclareOption{utf8}{\PassOptionsToPackage{utf8}{beamerbasearticle}}
\DeclareOption{hyperref}{\PassOptionsToPackage{hyperref}{beamerbasearticle}}
\DeclareOption{noxcolor}{\PassOptionsToPackage{noxcolor}{beamerbasearticle}}
\DeclareOption{notheorems}{\PassOptionsToPackage{notheorems}{beamerbasearticle}}
\DeclareOption{noamsthm}{\PassOptionsToPackage{noamsthm}{beamerbasearticle}}
\DeclareOption{noamssymb}{\PassOptionsToPackage{noamssymb}{beamerbasearticle}}
\DeclareOption{envcountsect}{\PassOptionsToPackage{envcountsect}{beamerbasearticle}}
\DeclareOption{activeospeccharacters}{\PassOptionsToPackage{activeospeccharacters}{ ?
  ? beamerbasearticle}}

\ProcessOptions

\def\beamer@slide#1#2{\expandafter\gdef\csname beamer@slide#1\endcsname{#2}}
\beamer@inpresentationfalse

\ifx\beamer@currentmode\undefined
  \def\beamer@currentmode{article}
\fi

\mode
<all>

```

```
\RequirePackage{beamerbasearticle}
```

30 beamerbasearticle.sty

```
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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/beamerbasearticle ?
? .sty,v cc6557182d97 2012/04/15 14:37:19 rivanvx $

\newif\ifbeamer@articleutf
\beamer@articleutffalse

\newif\ifbeamer@articlehyperref
\beamer@articlehyperreffalse

\newif\ifbeamer@articlexcolor
\beamer@articlexcolortrue

\newif\ifbeamer@articleactive
\beamer@articleactivefalse

\newif\ifbeamer@amssymb
\beamer@amssymbtrue

\DeclareOption{utf8}{\beamer@articleutftrue}
\DeclareOption{hyperref}{\beamer@articlehyperreftrue}
\DeclareOption{noxcolor}{\beamer@articlexcolorfalse}
\DeclareOption{noblockblocks}{\beamer@blockfalse}% obsolete. use notheorems
\DeclareOption{notheorems}{\beamer@blockfalse}
\DeclareOption{noamsthm}{\beamer@blockfalse\beamer@amsfalse}
\DeclareOption{noamssymb}{\beamer@amssymbfalse}
\DeclareOption{envcountsect}{\beamer@countsecttrue}
\DeclareOption{activeospeccharacters}{\beamer@articleactivetrue}

\ProcessOptions

\RequirePackage{beamerbaseoptions}
% For option management

\ifbeamer@articleutf
\RequirePackage[utf8]{inputenc}
\fi

\ifbeamer@articlehyperref
\RequirePackage[pdfborder={0 0 0},bookmarksnumbered]{hyperref}
```

```

% For hyperlinks

\hypersetup{pdfcreator={LaTeX with Beamer class version \beamer@version\space (article ?
? mode)}}
\ifbeamer@articleutf
  \hypersetup{unicode=true}
\fi
\fi

\ifbeamer@articlexcolor
  \RequirePackage[override]{xcolor}
  % For color support
\fi

\RequirePackage{beamerbaserequires}
% Beamer packages required both by presentation and article modes

% Default article templates:
\defbeamertemplate<article>*{frame begin}{default}{}
\defbeamertemplate<article>*{frame end}{default}{}
\defbeamertemplate<article>*{frametitle}{default}{\paragraph*{\insertframetitle}\ \par\ ?
? noindent\emph{\insertframesubtitle}\par}
\defbeamertemplate<article>*{alerted text begin}{default}{\ifmmode\else\begin{itshape}\ ?
? fi}
\defbeamertemplate<article>*{alerted text end}{default}{\ifmmode\else\end{itshape}\fi}
\defbeamertemplate<article>*{structure begin}{default}{\ifmmode\else\begin{bfseries}\fi}
\defbeamertemplate<article>*{structure end}{default}{\ifmmode\else\end{bfseries}\fi}
\defbeamertemplate<article>*{block begin}{default}
  {\par\vskip\medskipamount{\noindent\textbf{\insertblocktitle}}\par\noindent\ ?
? ignorespaces}
\defbeamertemplate<article>*{block end}{default}{\vskip\medskipamount}
\defbeamertemplate<article>*{block alerted begin}{default}
  {\par\vskip\medskipamount{\noindent\textbf{\emph{\insertblocktitle}}}\par\noindent\ ?
? ignorespaces}
\defbeamertemplate<article>*{block alerted end}{default}{\vskip\medskipamount}
\defbeamertemplate<article>*{block example begin}{default}
  {\par\vskip\medskipamount{\noindent\emph{\insertblocktitle}}\par\noindent\ignorespaces ?
? }
\defbeamertemplate<article>*{block example end}{default}{\vskip\medskipamount}

\mode
<all>

```

31 beamerbaseexercise.sty

```

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```



```

\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/ ?
? beamerbaseexercise.sty,v efa082c6111d 2010/05/01 11:27:03 rivavx $

\renewcommand{\exerSolnInput}
{%
  \let\webnewpage=\relax
  \immediate\closeout\ex@solns
  \ifeq@nosolutions\else
    \iftherearesolutions%
      \eqsolutionshook
      \input{\jobname.sol}%
    \fi
  \fi
}
\renewcommand{\quizSolnInput}
{%
  \let\webnewpage=\relax
  \immediate\closeout\quiz@solns
  \ifeq@noquizsolutions\else
    \iftherearequizsolutions%
      \input{\jobname.qsl}%
    \fi
  \fi
}
\def\eqEXt{\frame[containsverbatim]\bgroup}
\def\endeqEXt{\egroup}
\def\eqSQt{\frame[containsverbatim]\bgroup}
\def\endeqSQt{\egroup}
\def\eqQt{\frame[containsverbatim]\bgroup}
\def\endeqQt{\egroup}

```

32 beamerthemedefault.sty

```

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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/themes/theme/ ?
? beamerthemedefault.sty,v d02a7cf4d8ae 2010/06/17 09:11:41 rivavx $

\mode<presentation>

\usefonttheme{default}
\usecolortheme{default}
\useinnertheme{default}
\useoutertheme{default}

\mode

```

33 beamerfontthemedefault.sty

```
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\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/themes/font/ ?
? beamerfontthemedefault.sty,v 1686da3db3c9 2012/12/19 12:35:18 nicolas $

\mode<presentation>

\setbeamerfont{normal text}{} % ignored currently
\setbeamerfont{alerted text}{}
\setbeamerfont{example text}{}

\setbeamerfont{structure}{}
\setbeamerfont{tiny structure}{size=\tiny}

\setbeamerfont{title}{size=\Large,parent=structure}
\setbeamerfont{title in head/foot}{}
\setbeamerfont{title in sidebar}{size=\tiny}

\setbeamerfont{subtitle}{size=\normalsize,parent=title}

\setbeamerfont{author}{}
\setbeamerfont{author in head/foot}{}
\setbeamerfont{author in sidebar}{size=\tiny}

\setbeamerfont{institute}{size=\scriptsize}
\setbeamerfont{institute in head/foot}{}
\setbeamerfont{institute in sidebar}{}

\setbeamerfont{date}{}
\setbeamerfont{date in head/foot}{}
\setbeamerfont{date in sidebar}{}

\setbeamerfont{part name}{size=\LARGE}
\setbeamerfont{part title}{size=\LARGE,parent=title}

\setbeamerfont{section name}{size=\Large}
\setbeamerfont{section title}{size=\Large,parent=title}

\setbeamerfont{section in toc}{parent=structure}
\setbeamerfont{section in toc shaded}{parent=section in toc}
\setbeamerfont{section in head/foot}{}
\setbeamerfont{section in sidebar}{size=\tiny}
```

```

\setbeamerfont{section number projected}{size=\small,parent={section in toc,projected
? text}}

\setbeamerfont{subsection name}{size=\large}
\setbeamerfont{subsection title}{size=\large,parent=title}

\setbeamerfont{subsection in toc}{}
\setbeamerfont{subsection in toc shaded}{parent=subsection in toc}
\setbeamerfont{subsection in head/foot}{}
\setbeamerfont{subsection in sidebar}{}

\setbeamerfont{subsubsection in toc}{size=\footnotesize}
\setbeamerfont{subsubsection in toc shaded}{parent=subsubsection in toc}
\setbeamerfont{subsubsection in head/foot}{}
\setbeamerfont{subsubsection in sidebar}{}

\setbeamerfont{headline}{parent={tiny structure}}
\setbeamerfont{footline}{parent={tiny structure}}

\setbeamerfont{sidebar}{size=\Tiny,parent={tiny structure}}
\setbeamerfont{sidebar left}{parent=sidebar}
\setbeamerfont{sidebar right}{parent=sidebar}

\setbeamerfont{frametitle}{parent=structure,size=\Large}
\setbeamerfont{framesubtitle}{parent=frametitle,size=\footnotesize}

\setbeamerfont{caption}{size=\small}
\setbeamerfont{caption name}{parent={structure,caption}}

\setbeamerfont{button}{size=\tiny}

\setbeamerfont{block body}{}
\setbeamerfont{block body alerted}{}
\setbeamerfont{block body example}{}
\setbeamerfont{block title}{size=\large,parent={structure,block body}}
\setbeamerfont{block title alerted}{parent={block title,alerted text}}
\setbeamerfont{block title example}{parent={block title,example text}}

\setbeamerfont{item}{parent=structure}
\setbeamerfont{subitem}{parent=item}
\setbeamerfont{subsubitem}{parent=subitem}

\setbeamerfont{item projected}{size=\tiny,parent={item,projected text}}
\setbeamerfont{subitem projected}{parent=item projected}
\setbeamerfont{subsubitem projected}{parent=subitem projected}

\setbeamerfont{itemize item}{parent=item}
\setbeamerfont{itemize subitem}{parent=subitem}
\setbeamerfont{itemize subsubitem}{parent=subsubitem}

\setbeamerfont{enumerate item}{parent=item}
\setbeamerfont{enumerate subitem}{parent=subitem}
\setbeamerfont{enumerate subsubitem}{parent=subsubitem}

\setbeamerfont{itemize/enumerate body}{}
\setbeamerfont{itemize/enumerate subbody}{size=\small}
\setbeamerfont{itemize/enumerate subsubbody}{size=\footnotesize}

```

```

\setbeamerfont{description item}{parent=item}

\setbeamerfont{projected text}{parent={tiny structure}}

\setbeamerfont{abstract}{size=\small}
\setbeamerfont{abstract title}{parent={abstract,structure},size=\normalsize}

\setbeamerfont{verse}{family=\rmfamily,shape=\itshape}

\setbeamerfont{quotation}{shape=\itshape}
\setbeamerfont{quote}{parent=quotation}

\setbeamerfont{note page}{size=\small}
\setbeamerfont{note title}{parent=note page}
\setbeamerfont{note date}{size=\footnotesize}

\mode
<all>

```

34 beamercolorthemedefault.sty

```

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? beamercolorthemedefault.sty,v 1686da3db3c9 2012/12/19 12:35:18 nicolas $

\mode<presentation>

\definecolor{beamer@blendedblue}{rgb}{0.2,0.2,0.7} % use structure theme to change

\setbeamercolor{normal text}{fg=black,bg=white}
\setbeamercolor{alerted text}{fg=red}
\setbeamercolor{example text}{fg=green!50!black}

\setbeamercolor{structure}{fg=beamer@blendedblue}

\setbeamercolor{background canvas}{parent=normal text}
\setbeamercolor{background}{parent=background canvas}

\setbeamercolor{palette primary}{use=structure,fg=structure.fg}
\setbeamercolor{palette secondary}{use=structure,fg=structure.fg!75!black}
\setbeamercolor{palette tertiary}{use=structure,fg=structure.fg!50!black}
\setbeamercolor{palette quaternary}{fg=black}

\setbeamercolor{palette sidebar primary}{use=normal text,fg=normal text.fg}

```

```

\setbeamercolor{palette sidebar secondary}{use=structure,fg=structure.fg}
\setbeamercolor{palette sidebar tertiary}{use=normal text,fg=normal text.fg}
\setbeamercolor{palette sidebar quaternary}{use=structure,fg=structure.fg}

\setbeamercolor{math text}{}
\setbeamercolor{math text inlined}{parent=math text}
\setbeamercolor{math text displayed}{parent=math text}

\setbeamercolor{normal text in math text}{}

\setbeamercolor{local structure}{parent=structure}

\setbeamercolor{titlelike}{parent=structure}

\setbeamercolor{title}{parent=titlelike}
\setbeamercolor{title in head/foot}{parent=palette quaternary}
\setbeamercolor{title in sidebar}{parent=palette sidebar quaternary}

\setbeamercolor{subtitle}{parent=title}

\setbeamercolor{author}{}
\setbeamercolor{author in head/foot}{parent=palette primary}
\setbeamercolor{author in sidebar}{use=palette sidebar tertiary,fg=palette sidebar
? tertiary.fg}

\setbeamercolor{institute}{}
\setbeamercolor{institute in head/foot}{parent=palette tertiary}
\setbeamercolor{institute in sidebar}{use=palette sidebar tertiary,fg=palette sidebar
? tertiary.fg}

\setbeamercolor{date}{}
\setbeamercolor{date in head/foot}{parent=palette secondary}
\setbeamercolor{date in sidebar}{use=palette sidebar tertiary,fg=palette sidebar
? tertiary.fg}

\setbeamercolor{titlegraphic}{}

\setbeamercolor{part name}{}
\setbeamercolor{part title}{parent=titlelike}

\setbeamercolor{section name}{}
\setbeamercolor{section title}{parent=titlelike}

\setbeamercolor{section in toc}{parent=structure}
\setbeamercolor{section in toc shaded}{parent=section in toc}
\setbeamercolor{section in head/foot}{parent=palette tertiary}
\setbeamercolor{section in sidebar}{parent=palette sidebar secondary}
\setbeamercolor{section in sidebar shaded}{use=section in sidebar,fg=section in sidebar.
? fg!40!bg}
\setbeamercolor{section number projected}{parent=item projected}

\setbeamercolor{subsection name}{}
\setbeamercolor{subsection title}{parent=titlelike}

\setbeamercolor{subsection in toc}{}
\setbeamercolor{subsection in toc shaded}{parent=subsection in toc}
\setbeamercolor{subsection in head/foot}{parent=palette secondary}

```

```

\setbeamercolor{subsection in sidebar}{parent=palette sidebar primary}
\setbeamercolor{subsection in sidebar shaded}{use=subsection in sidebar,fg=subsection in ?
? sidebar.fg!40!bg}
\setbeamercolor{subsection number projected}{parent={subitem projected}}

\setbeamercolor{subsubsection in toc}{parent=subsection in toc}
\setbeamercolor{subsubsection in toc shaded}{parent=subsubsection in toc}
\setbeamercolor{subsubsection in head/foot}{parent=subsection in head/foot}
\setbeamercolor{subsubsection in sidebar}{parent=subsection in sidebar}
\setbeamercolor{subsubsection in sidebar shaded}{parent=subsection in sidebar shaded}
\setbeamercolor{subsubsection number projected}{parent=subsubitem projected}

\setbeamercolor{headline}{}
\setbeamercolor{footline}{}

\setbeamercolor{sidebar}{}
\setbeamercolor{sidebar left}{parent=sidebar}
\setbeamercolor{sidebar right}{parent=sidebar}

\setbeamercolor{logo}{parent=palette secondary}

\setbeamercolor{frametitle}{parent=titlelike}
\setbeamercolor{framesubtitle}{parent=frametitle}

\setbeamercolor{frametitle right}{parent=frametitle}

\setbeamercolor{caption}{}
\setbeamercolor{caption name}{parent=structure}

\setbeamercolor{button}{use=local structure,bg=local structure.fg!50!bg,fg=white}
\setbeamercolor{button border}{use=button,fg=button.bg}
\setbeamercolor{navigation symbols}{use=structure,fg=structure.fg!40!bg}
\setbeamercolor{navigation symbols dimmed}{use=structure,fg=structure.fg!20!bg}
\setbeamercolor{mini frame}{parent=section in head/foot}

\setbeamercolor{block body}{}
\setbeamercolor{block body alerted}{}
\setbeamercolor{block body example}{}
\setbeamercolor{block title}{parent=structure}
\setbeamercolor{block title alerted}{parent=alerted text}
\setbeamercolor{block title example}{parent=example text}

\setbeamercolor{item}{parent=local structure}
\setbeamercolor{subitem}{parent=item}
\setbeamercolor{subsubitem}{parent=subitem}

\setbeamercolor{item projected}{parent=item,use=item,fg=white,bg=item.fg}
\setbeamercolor{subitem projected}{parent=item projected}
\setbeamercolor{subsubitem projected}{parent=subitem projected}

\setbeamercolor{enumerate item}{parent=item}
\setbeamercolor{enumerate subitem}{parent=subitem}
\setbeamercolor{enumerate subsubitem}{parent=subsubitem}

\setbeamercolor{itemize item}{parent=item}
\setbeamercolor{itemize subitem}{parent=subitem}
\setbeamercolor{itemize subsubitem}{parent=subsubitem}

```

```

\setbeamercolor{itemize/enumerate body}{}
\setbeamercolor{itemize/enumerate subbody}{}
\setbeamercolor{itemize/enumerate subsubbody}{}

\setbeamercolor{description item}{parent=item}

\setbeamercolor{bibliography item}{parent=item}

\setbeamercolor{bibliography entry author}{use=structure,fg=structure.fg}
\setbeamercolor{bibliography entry title}{use=normal text,fg=normal text.fg}
\setbeamercolor{bibliography entry location}{use=structure,fg=structure.fg!65!bg}
\setbeamercolor{bibliography entry note}{use=structure,fg=structure.fg!65!bg}

\setbeamercolor{separation line}{}

\setbeamercolor{upper separation line head}{parent=separation line}
\setbeamercolor{middle separation line head}{parent=separation line}
\setbeamercolor{lower separation line head}{parent=separation line}

\setbeamercolor{upper separation line foot}{parent=separation line}
\setbeamercolor{middle separation line foot}{parent=separation line}
\setbeamercolor{lower separation line foot}{parent=separation line}

\setbeamercolor{abstract}{}
\setbeamercolor{abstract title}{parent=structure}

\setbeamercolor{verse}{}

\setbeamercolor{quotation}{}
\setbeamercolor{quote}{parent=quotation}

\setbeamercolor{page number in head/foot}{fg=fg!50!bg}

\setbeamercolor{qed symbol}{parent=structure}

\setbeamercolor{note page}{bg=white!90!black, fg=black}
\setbeamercolor{note title}{bg=white!80!black, fg=black}
\setbeamercolor{note date}{parent=note title}

\mode
<all>

```

35 beamerinnerthemedefault.sty

```

% Copyright 2007 by Till Tantau
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% 1. under the LaTeX Project Public License and/or
% 2. under the GNU Public License.
%
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```

```
\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/themes/inner/ ?
? beamerinnerthemedefault.sty,v 580088513a67 2014/06/30 17:15:11 ivan $
```

```
\mode<presentation>
```

```
% Some images:
```

```
\pgfdeclareimage[width=14pt,height=12pt]{beamericonbook}{beamericonbook}
\pgfdeclareimage[width=14pt,height=12pt]{beamericonbookshaded}{beamericonbook.20}
\pgffaliasimage{beamericonbook.!20opaque}{beamericonbookshaded}
\pgffaliasimage{beamericonbook.!15opaque}{beamericonbookshaded}
\pgffaliasimage{beamericonbook.!10opaque}{beamericonbookshaded}
\pgffaliasimage{beamericonbook.!5opaque}{beamericonbookshaded}
\pgffaliasimage{beamericonbook.!2opaque}{beamericonbookshaded}
\pgfdeclareimage[width=11pt,height=14pt]{beamericonarticle}{beamericonarticle}
\pgfdeclareimage[width=11pt,height=14pt]{beamericonarticleshaded}{beamericonarticle.20}
\pgffaliasimage{beamericonarticle.!20opaque}{beamericonarticleshaded}
\pgffaliasimage{beamericonarticle.!15opaque}{beamericonarticleshaded}
\pgffaliasimage{beamericonarticle.!10opaque}{beamericonarticleshaded}
\pgffaliasimage{beamericonarticle.!5opaque}{beamericonarticleshaded}
\pgffaliasimage{beamericonarticle.!2opaque}{beamericonarticleshaded}
\pgfdeclareimage[width=14pt,height=14pt]{beamericononline}{beamericononline}
\pgfdeclareimage[width=14pt,height=14pt]{beamericononlineshaded}{beamericononline.20}
\pgffaliasimage{beamericononline.!20opaque}{beamericononlineshaded}
\pgffaliasimage{beamericononline.!15opaque}{beamericononlineshaded}
\pgffaliasimage{beamericononline.!10opaque}{beamericononlineshaded}
\pgffaliasimage{beamericononline.!5opaque}{beamericononlineshaded}
\pgffaliasimage{beamericononline.!2opaque}{beamericononlineshaded}
```

```
% Title page: default
```

```
\defbeamertemplate*{title page}{default}[1] []
{
  \vbox{}
  \vfill
  \begingroup
  \centering
  \begin{beamercolorbox}[sep=8pt,center,#1]{title}
    \usebeamerfont{title}\inserttitle\par%
    \ifx\insertsubtitle\@empty%
    \else%
      \vskip0.25em%
      {\usebeamerfont{subtitle}\usebeamercolor[fg]{subtitle}\insertsubtitle\par}%
    \fi%
  \end{beamercolorbox}%
  \vskip1em\par
  \begin{beamercolorbox}[sep=8pt,center,#1]{author}
    \usebeamerfont{author}\insertauthor
  \end{beamercolorbox}
  \begin{beamercolorbox}[sep=8pt,center,#1]{institute}
    \usebeamerfont{institute}\insertinstitute
  \end{beamercolorbox}
  \begin{beamercolorbox}[sep=8pt,center,#1]{date}
    \usebeamerfont{date}\insertdate
  \end{beamercolorbox}\vskip0.5em
  {\usebeamercolor[fg]{titlegraphic}\inserttitlegraphic\par}
```



```

\endgroup
\vfill
}

% Part page: default

\defbeamertemplate*{part page}{default}[1] []
{
  \begingroup
  \centering
  {\usebeamerfont{part name}\usebeamercolor[fg]{part name}\partname-\ ?
   ? insertromanpartnumber}
  \vskip1em\par
  \begin{beamercolorbox}[sep=16pt,center,#1]{part title}
    \usebeamerfont{part title}\insertpart\par
  \end{beamercolorbox}
\endgroup
}

% Section page: default

\defbeamertemplate*{section page}{default}[1] []
{
  \begingroup
  \centering
  {\usebeamerfont{section name}\usebeamercolor[fg]{section name}\sectionname-\ ?
   ? insertsectionnumber}
  \vskip1em\par
  \begin{beamercolorbox}[sep=12pt,center,#1]{part title}
    \usebeamerfont{section title}\insertsection\par
  \end{beamercolorbox}
\endgroup
}

% Subection page: default

\defbeamertemplate*{subsection page}{default}[1] []
{
  \begingroup
  \centering
  {\usebeamerfont{subsection name}\usebeamercolor[fg]{subsection name}\subsectionname ?
   ? ~\insertsubsectionnumber}
  \vskip1em\par
  \begin{beamercolorbox}[sep=8pt,center,#1]{part title}
    \usebeamerfont{subsection title}\insertsubsection\par
  \end{beamercolorbox}
\endgroup
}

%
% Table of contents
%
```

```

\defbeamertemplateparent{sections/subsections in toc}{section in toc,subsection in toc, ?
? subsection in toc}
{}

\defbeamertemplateparent{sections/subsections in toc shaded}{section in toc shaded, ?
? subsection in toc shaded,subsection in toc shaded}[1][20]
{[#1]}

% (sub-)section in toc: default

\defbeamertemplate*{section in toc}{default}
{\inserttocsection\par}

\defbeamertemplate*{subsection in toc}{default}
{\leavevmode\leftskip=1.5em\inserttocsubsection\par}

\defbeamertemplate*{subsubsection in toc}{default}
{\leavevmode\normalsize\usebeamerfont{subsection in toc}\leftskip=3em%
\usebeamerfont{subsubsection in toc}\inserttocsubsubsection\par}

% (sub-)section in toc shaded, default

\defbeamertemplate*{section in toc shaded}{default}[1][20]
{\begin{colormixin}{#1!parent.bg}\usebeamertemplate{section in toc}\end{colormixin}\ ?
? unskip}

\defbeamertemplate*{subsection in toc shaded}{default}[1][20]
{\begin{colormixin}{#1!parent.bg}\usebeamertemplate{subsection in toc}\end{colormixin}\ ?
? unskip}

\defbeamertemplate*{subsubsection in toc shaded}{default}[1][20]
{\begin{colormixin}{#1!parent.bg}\usebeamertemplate{subsubsection in toc}\end{colormixin} ?
? }\unskip}

%
% Item
%

\defbeamertemplateparent{items}{itemize items,enumerate items}
{}

% Itemize items

\defbeamertemplateparent{itemize items}{itemize item,itemize subitem,itemize subsubitem}
{}

```

% Itemize items, default

```
\defbeamertemplate*{itemize item}{default}{\scriptsize\raise1.25pt\hbox{\ ?
? donotcoloroutermaths$\blacktriangleright$}}
\defbeamertemplate*{itemize subitem}{default}{\tiny\raise1.5pt\hbox{\ ?
? donotcoloroutermaths$\blacktriangleright$}}
\defbeamertemplate*{itemize subsubitem}{default}{\tiny\raise1.5pt\hbox{\ ?
? donotcoloroutermaths$\blacktriangleright$}}
```

% Enumerate items, default

```
\defbeamertemplateparent{enumerate items}{enumerate item,enumerate subitem,enumerate ?
? subsubitem,enumerate mini}
{}
\defbeamertemplate*{enumerate item}{default}{\insertenumlabel.}
\defbeamertemplate*{enumerate subitem}{default}{\insertenumlabel.\insertsubenumlabel}
\defbeamertemplate*{enumerate subsubitem}{default}{\insertenumlabel.\insertsubenumlabel ?
? .\insertsubsubenumlabel}
\defbeamertemplate*{enumerate mini template}{default}{\insertenumlabel}
```

% Description item width

```
\defbeamertemplate*{description item}{default}{\insertdescriptionitem}
```

% Itemize/Enumerate body

```
\defbeamertemplate*{itemize/enumerate body begin}{default}{}
\defbeamertemplate*{itemize/enumerate body end}{default}{}
\defbeamertemplate*{itemize/enumerate subbody begin}{default}{}
\defbeamertemplate*{itemize/enumerate subbody end}{default}{}
\defbeamertemplate*{itemize/enumerate subsubbody begin}{default}{}
\defbeamertemplate*{itemize/enumerate subsubbody end}{default}{}
```

% Alerted text

```
\defbeamertemplate*{alerted text begin}{default}{\setbeamercolor{local structure}{parent ?
? =alerted text}}
```

% Structured text

% empty defaults

% Bibliography items

```
\defbeamertemplate*{bibliography item}{default}
```

```
{\lower3.5pt\hbox{\hskip2pt\pgfuseimage{beamericonarticle}\hskip1pt}}
```

```
\defbeamertemplate*{bibliography entry article}{default}{}  
\defbeamertemplate*{bibliography entry title}{default}{\par}  
\defbeamertemplate*{bibliography entry location}{default}{\par}  
\defbeamertemplate*{bibliography entry note}{default}{\par}
```

```
% Buttons
```

```
\newdimen\beamer@dima%
```

```
\newdimen\beamer@dimb%
```

```
\defbeamertemplate*{button}{default}
```

```
{%
```

```
  \setbox\beamer@tempbox=\hbox{\insertbuttontext}}%
```

```
  \ht\beamer@tempbox=6pt%
```

```
  \dp\beamer@tempbox=0pt%
```

```
  \setbox\beamer@tempbox=\vbox{\box\beamer@tempbox\vskip2pt}}%
```

```
  \beamer@tempdim=\wd\beamer@tempbox%
```

```
  \beamer@dima=\beamer@tempdim\advance\beamer@dima by2.2pt
```

```
  \beamer@dimb=\beamer@tempdim\advance\beamer@dimb by4pt
```

```
  \begin{pgfpicture}{-4pt}{0pt}{\the\beamer@tempdim}{8pt}
```

```
    \color{bg}
```

```
    \pgfsetlinewidth{0.8pt}
```

```
    \pgfpathqmoveto{0pt}{0pt}
```

```
    \pgfpathqcurveto{-2.2pt}{0pt}{-4pt}{1.8pt}{-4pt}{4pt}
```

```
    \pgfpathqcurveto{-4pt}{6.2pt}{-2.2pt}{8pt}{0pt}{8pt}
```

```
    \pgfpathlineto{\pgfpoint{\the\beamer@tempdim}{8pt}}
```

```
    \pgfpathcurveto%
```

```
    {\pgfpoint{\the\beamer@dima}{8pt}}%
```

```
    {\pgfpoint{\the\beamer@dimb}{6.2pt}}%
```

```
    {\pgfpoint{\the\beamer@dimb}{4pt}}
```

```
    \pgfpathcurveto%
```

```
    {\pgfpoint{\the\beamer@dimb}{1.8pt}}%
```

```
    {\pgfpoint{\the\beamer@dima}{0pt}}%
```

```
    {\pgfpoint{\the\beamer@tempdim}{0pt}}
```

```
    \pgfpathclose
```

```
    \pgfusepathqfill
```

```
    \colorlet{bg}{parent.bg}
```

```
    \usebeamercolor[fg]{button border}
```

```
    \pgfpathqmoveto{0pt}{0pt}
```

```
    \pgfpathqcurveto{-2.2pt}{0pt}{-4pt}{1.8pt}{-4pt}{4pt}
```

```
    \pgfpathqcurveto{-4pt}{6.2pt}{-2.2pt}{8pt}{0pt}{8pt}
```

```
    \pgfpathlineto{\pgfpoint{\the\beamer@tempdim}{8pt}}
```

```
    \pgfpathcurveto%
```

```
    {\pgfpoint{\the\beamer@dima}{8pt}}%
```

```
    {\pgfpoint{\the\beamer@dimb}{6.2pt}}%
```

```
    {\pgfpoint{\the\beamer@dimb}{4pt}}
```

```
    \pgfpathcurveto%
```

```
    {\pgfpoint{\the\beamer@dimb}{1.8pt}}%
```

```
    {\pgfpoint{\the\beamer@dima}{0pt}}%
```

```
    {\pgfpoint{\the\beamer@tempdim}{0pt}}
```

```
    \pgfpathclose
```

```
    \pgfusepathqstroke
```

```
\end{pgfpicture}}%
```

```
\hskip-\beamer@tempdim%
```

```

\box\beamer@tempbox%
\kern4pt%
}

% Abstract

\defbeamertemplate*{abstract title}{default}
{%
  \begin{center}%
    \abstractname
  \end{center}%
}

\defbeamertemplate*{abstract begin}{default}
{\beamercolorbox[vmode]{abstract}\leftskip2em\rightskip2em plus 1fill\usebeamerfont*{ ?
  ? abstract}}

\defbeamertemplate*{abstract end}{default}
{\medskip\endbeamercolorbox}

% Verse

\defbeamertemplate*{verse begin}{default}
{\beamercolorbox[vmode]{verse}}

\defbeamertemplate*{verse end}{default}
{\endbeamercolorbox}

% Quotation

\defbeamertemplate*{quotation begin}{default}
{\beamercolorbox[vmode]{quotation}}

\defbeamertemplate*{quotation end}{default}
{\endbeamercolorbox}

% Quote

\defbeamertemplate*{quote begin}{default}
{\beamercolorbox[vmode]{quote}}

\defbeamertemplate*{quote end}{default}
{\endbeamercolorbox}

% Footnotes

\defbeamertemplate*{footnote}{default}
{
  \parindent 1em\noindent%
  \raggedright
  \hbox to 1.8em{\hfil\insertfootnotemark}\insertfootnotetext\par%
}

```

% Captions

```
\defbeamertemplate*{caption}{default}
{%
  \raggedright
  {%
    \usebeamercolor[fg]{caption name}%
    \usebeamerfont*{caption name}%
    \insertcaptionname
    \usebeamertemplate{caption label separator}%
  }%
  \insertcaption\par
}
\defbeamertemplate*{caption label separator}{default}{:\ }
```

% Blocks

```
\defbeamertemplateparent{blocks}{block begin,block end,%
  block alerted begin,block alerted end,%
  block example begin,block example end}
{}

\defbeamertemplate*{block begin}{default}
{
  \par\vskip\medskipamount%
  \begin{beamercolorbox}[colsep*=.75ex]{block title}
    \usebeamerfont*{block title}\insertblocktitle%
  \end{beamercolorbox}%
  {\parskip0pt\par}%
  \ifbeamercolorempy[bg]{block title}
  {}
  {\ifbeamercolorempy[bg]{block body}{}\{\nointerlineskip\vskip-0.5pt}}%
  \usebeamerfont{block body}%
  \begin{beamercolorbox}[colsep*=.75ex,vmode]{block body}%
    \ifbeamercolorempy[bg]{block body}{\vskip-.25ex}{\vskip-.75ex}\vbox{}%
  }
}

\defbeamertemplate*{block end}{default}
{\end{beamercolorbox}\vskip\smallskipamount}

\defbeamertemplate*{block alerted begin}{default}
{
  \par\vskip\medskipamount%
  \begin{beamercolorbox}[colsep*=.75ex]{block title alerted}
    \usebeamerfont*{block title alerted}\insertblocktitle%
  \end{beamercolorbox}%
  {\parskip0pt\par}%
  \ifbeamercolorempy[bg]{block title alerted}
  {}
  {\ifbeamercolorempy[bg]{block body alerted}{}\{\nointerlineskip\vskip-0.5pt}}%
  \usebeamerfont{block body alerted}%
  \begin{beamercolorbox}[colsep*=.75ex,vmode]{block body alerted}%
    \ifbeamercolorempy[bg]{block body alerted}{\vskip-.25ex}{\vskip-.75ex}\vbox{}%
  }
}

\defbeamertemplate*{block alerted end}{default}
```

```

{\end{beamercolorbox}\vskip\smallskipamount}

\defbeamertemplate*{block example begin}{default}
{
  \par\vskip\medskipamount%
  \begin{beamercolorbox}[colsep*=.75ex]{block title example}
    \usebeamerfont*{block title example}\insertblocktitle%
  \end{beamercolorbox}%
  {\parskip0pt\par}%
  \ifbeamercolorempy[bg]{block title example}
  {}
  {\ifbeamercolorempy[bg]{block body example}{\nointerlineskip\vskip-0.5pt}}%
  \usebeamerfont{block body example}%
  \begin{beamercolorbox}[colsep*=.75ex,vmode]{block body example}%
    \ifbeamercolorempy[bg]{block body example}{\vskip-.25ex}{\vskip-.75ex}\vbox{}%
  }
}
\defbeamertemplate*{block example end}{default}
{\end{beamercolorbox}\vskip\smallskipamount}

```

% Theorems

```

\defbeamertemplateparent{theorems}{theorem begin,theorem end}
{}

\defbeamertemplate*{theorem begin}{default}
{%
  \begin{\inserttheoremblockenv}
  {%
    \inserttheoremname
    \ifx\inserttheoremaddition\@empty\else\ (\inserttheoremaddition)\fi%
  }%
}

\defbeamertemplate*{theorem end}{default}
{\end{\inserttheoremblockenv}}

```

% Proofs

```

\defbeamertemplate*{proof begin}{default}
{\begin{block}{\insertproofname}}

\defbeamertemplate*{proof end}{default}
{\end{block}}

\defbeamertemplate*{qed symbol}{default}
{\openbox}

```

```

\mode
<all>

```

36 beamerouterthemedefault.sty

```
% Copyright 2007 by Till Tantau
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% 1. under the LaTeX Project Public License and/or
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%
% See the file doc/licenses/LICENSE for more details.

\ProvidesPackageRCS $Header: /Users/joseph/Documents/LaTeX/beamer/base/themes/outer/ ?
? beamerouterthemedefault.sty,v 1686da3db3c9 2012/12/19 12:35:18 nicolas $

\mode<presentation>

% Mini frames

\defbeamertemplateparent{mini frames}
{mini frame,mini frame in current section,mini frame in current subsection}
{}

\defbeamertemplate*{mini frame}{default}
{%
  \begin{pgfpicture}{0pt}{0pt}{0.1cm}{0.1cm}
    \pgfpathcircle{\pgfpoint{0.05cm}{0.05cm}}{0.05cm}
    \pgfusepath{fill,stroke}
  \end{pgfpicture}%
}
[action]
{
  \setbeamersize{mini frame size=.14cm,mini frame offset=.03cm}
}

\defbeamertemplate*{mini frame in current section}{default}
{%
  \begin{pgfpicture}{0pt}{0pt}{0.1cm}{0.1cm}
    \pgfpathcircle{\pgfpoint{0.05cm}{0.05cm}}{0.05cm}
    \pgfusepath{stroke}
  \end{pgfpicture}%
}

\defbeamertemplate*{mini frame in current subsection}{default}
{%
  \begin{pgfpicture}{0pt}{0pt}{0.1cm}{0.1cm}
    \pgfpathcircle{\pgfpoint{0.05cm}{0.05cm}}{0.05cm}
    \pgfusepath{stroke}
  \end{pgfpicture}%
}

\defbeamertemplate*{mini frame in other section}{default}[1][50]
{\color{fg!#1!bg}\usebeamertemplate{mini frame in current section}}
\defbeamertemplate*{mini frame in other subsection}{default}[1][50]
{\color{fg!#1!bg}\usebeamertemplate{mini frame in current subsection}}
```


% Navigation symbols

```
\defbeamertemplate*{navigation symbols}{default}
{%
  \hbox{%
    \hbox{\insertslidenavigationsymbol}
    \hbox{\insertframenavigationsymbol}
    \hbox{\insertsubsectionnavigationsymbol}
    \hbox{\insertsectionnavigationsymbol}
    \hbox{\insertdocnavigationsymbol}
    \hbox{\insertbackfindforwardnavigationsymbol}%
  }%
}%

% No navigation symbols in handout or trans mode:
\only<handout|trans>{\setbeamertemplate{navigation symbols}{}}
```

% Section and subsections in head/foot

```
\defbeamertemplate*{section in head/foot}{default}
{\insertsectionhead}

\defbeamertemplate*{section in head/foot shaded}{default}[1][50]
{\color{fg!#1!bg}\usebeamertemplate{section in head/foot}}

\defbeamertemplate*{subsection in head/foot}{default}
{\insertsubsectionhead}

\defbeamertemplate*{subsection in head/foot shaded}{default}[1][50]
{\color{fg!#1!bg}\usebeamertemplate{subsection in head/foot}}

\defbeamertemplate*{subsubsection in head/foot}{default}
{\insertsubsubsectionhead}

\defbeamertemplate*{subsubsection in head/foot shaded}{default}[1][50]
{\color{fg!#1!bg}\usebeamertemplate{subsubsection in head/foot}}
```

% Headline and footline

```
\defbeamertemplate*{headline}{default}
{}

\defbeamertemplate*{footline}{default}
{}

% background
```

```

\defbeamertemplate*{background}{default}
{}

\defbeamertemplate*{background canvas}{default}
{%
  \ifbeamercolorempy[bg]{background canvas}{}{\color{bg}\vrule width\paperwidth height\ ?
  ? paperheight}%
}

% Sidebar

\defbeamertemplate*{sidebar left}{default}
{}

\defbeamertemplate*{sidebar right}{default}
{
  \vfill%
  \llap{\insertlogo\hskip0.1cm}%
  \vskip2pt%
  \llap{\usebeamertemplate***{navigation symbols}\hskip0.1cm}%
  \vskip2pt%
}

\defbeamertemplate*{sidebar canvas left}{default}
{%
  \ifbeamercolorempy[bg]{sidebar left}{}
  {\color{bg}\vrule height\sidebarheight width\beamer@leftsidebar}%
}

\defbeamertemplate*{sidebar canvas right}{default}
{%
  \ifbeamercolorempy[bg]{sidebar right}{}
  {\color{bg}\vrule height\sidebarheight width\beamer@rightsidebar}%
}

% Frame title: default

```

在 beamerbaseframe.sty 的 beamer@frameslide 环境的定义中，在插入 frametitle 模板前有个空白 \vbox{}。因此 frametitle 上面会有行间距空白。在背景颜色非空时很难看，所以要用 \nointerlineskip 去掉这个多余空白。

```

\defbeamertemplate*{frametitle}{default}[1][left]
{
  \ifbeamercolorempy[bg]{frametitle}{}{\nointerlineskip}%
  \@tempdima=\textwidth%
  \advance\@tempdima by\beamer@leftmargin%
  \advance\@tempdima by\beamer@rightmargin%
  \begin{beamercolorbox}[sep=0.3cm,#1,wd=\the\@tempdima]{frametitle}
    \usebeamerfont{frametitle}%
    \vbox{} \vskip-1ex%
    \if@tempswa\else\csname beamer@fte#1\endcsname\fi%
    \strut\insertframetitle\strut\par%
  {%

```

```

\ifx\insertframesubtitle\@empty%
\else%
{\usebeamerfont{framesubtitle}\usebeamercolor[fg]{framesubtitle}\ ?
 ? insertframesubtitle\strut\par}%
\fi
}%
\vskip-1ex%
\if@tempswa\else\vskip-.3cm\fi% set inside beamercolorbox... evil here...
\end{beamercolorbox}%
}

\def\beamer@fteright{\vskip0.35cm\advance\leftskip by 1.7cm\advance\rightskip by1.7cm}

% Frame title continuations, default

\defbeamer@template*{frametitle continuation}{default}{\insertcontinuationcountroman}

% Notes

\defbeamer@template*{note page}{default}
{%
{%
\scriptsize
\usebeamerfont{note title}\usebeamercolor[fg]{note title}%
\ifbeamer@colorempy[bg]{note title}{\ ?
\insertvrule{.25\paperheight}{note title.bg}%
\vskip-.25\paperheight%
\nointerlineskip%
}%
\ vbox{
\hfill\insertslideintonotes{0.25}\hskip-\Gm@rmargin\hskip0pt%
\vskip-0.25\paperheight%
\nointerlineskip
\begin{pgfpicture}{0cm}{0cm}{0cm}{0cm}
\begin{pgf@flowlevels@scope}{\pgf@transform@rotate{90}}
{\pgf@transform@shift{\pgf@point{-2cm}{0.2cm}}}%
\pgf@text[base,left]{\usebeamerfont{note date}\usebeamercolor[fg]{note date}\the ?
 ? \year-\ifnum\month<10\relax0\fi\the\month-\ifnum\day<10\relax0\fi\the\day ?
 ? }}
\end{pgf@flowlevels@scope}
\end{pgfpicture}}
\nointerlineskip
\ vbox to .25\paperheight{\vskip0.5em
\hbox{\insertshorttitle[width=8cm]}%
\setbox\beamer@tempbox=\hbox{\insertsection}%
\hbox{\ifdim\wd\beamer@tempbox>1pt{\hskip4pt\raise3pt\hbox{\vrule
width0.4pt height7pt\vrule width 9pt
height0.4pt}}\hskip1pt\hbox{\begin{minipage}[t]{7.5cm}\def\breakhere{\ ?
 ? insertsection\end{minipage}}\fi%
}%
\setbox\beamer@tempbox=\hbox{\insertsubsection}%
\hbox{\ifdim\wd\beamer@tempbox>1pt{\hskip17.4pt\raise3pt\hbox{\vrule
width0.4pt height7pt\vrule width 9pt
height0.4pt}}\hskip1pt\hbox{\begin{minipage}[t]{7.5cm}\def\breakhere{\ ?
 ?

```

```

? insertsubsection\end{minipage}}\fi%
}%
\setbox\beamer@tempbox=\hbox{\insertshortframetitle}%
\hbox{\ifdim\wd\beamer@tempbox>1pt{\hskip30.8pt\raise3pt\hbox{\vrule
width0.4pt height7pt\vrule width 9pt
height0.4pt}}\hskip1pt\hbox{\insertshortframetitle[width=7cm]}\fi%
}%
\vfil}%
}%
\ifbeamercolorempy[bg]{note page}{}{-%
\nointerlineskip%
\insertvrule{.75\paperheight}{note page.bg}%
\vskip-.75\paperheight%
}%
\vskip.25em
\nointerlineskip
\insertnote
}

\mode
<all>

```