Trigon
A Modern, elegant and versatile theme for Beamer

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v0.5.1 — 2021/03/29

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1 Introduction

Trigon found its origin and inspiration in the graphical guidelines resulting from the visual identity overhaul of the University of Liège (Belgium). Although directly inspired from these guidelines, Trigon was stripped out of any mention or specificities related the University and its faculties. This makes the Trigon theme perfectly suitable for many different contexts.

The final product provides a modern, elegant and versatile theme with a high degree of customization.

Trigon’s codebase lives on Gitlab. The implementation of this theme is strongly inspired from the excellent Metropolis theme by Matthias Vogelgesang, from which it borrows numerous options.

Any feature request, issue report or merge requests are welcome.

2 Getting Started

2.1 Installing from CTAN

The latest stable version of Trigon is available on CTAN. As the integration on CTAN is quite recent (March 2021), Trigon is not yet distributed with the usual TeX distributions (TeXLive, MacTex, Miktex,...). However, it should normally be possible to manually install/update it from your distribution package manager.

2.2 Installing from Gitlab

If you want to use the cutting-edge development version of Trigon, you can install it manually by following these steps:

Download the source from Trigon repository using git clone or as a zip archive of the latest development version.

Compile the style files by running make sty inside the downloaded directory. (Or run \TeXX directly on source/trigontheme.ins.)
Move the resulting \*.sty files to the folder containing your presentation. To use
Trigon with many presentations, run make install or move the \*.sty files
to a folder in your \TeX path instead.

Use the theme by declaring \usepackage{trigon} in the preamble of your docu-
ment.

Trigon uses the Make build system to offer the following installation options for
advanced users:

- make sty builds the theme style files.
- make doc builds this documentation manual.
- make demo builds a demo presentation to test the features of Trigon.
- make all builds the theme and manual.
- make clean removes the files generated by make all.
- make install installs the theme into your local texmf folder.
- make uninstall removes the theme from your local texmf folder.

2.3 Other install methods

Trigon will be proposed for integration on CTAN shortly. It will then hopefully
be integrated to texlive, miktex, etc. In the meantime, only the installation from
Gitlab is possible.

Once accepted on CTAN, the theme will also be made available on Overleaf.

2.4 A Minimal Example

The following code shows a minimal example of a Beamer presentation using
Trigon.

```latex
\documentclass{beamer}
\usetheme{trigon} % Use trigon theme
\title{A minimal example}
\subtitle{A subtitle example}
\date{\today}
\author{Thomas Lambert}
\institute{Your university or company}
```
\begin{document}
\maketitle
\section{First Section}
\begin{frame}{First Frame}
Hello, world!
\end{frame}
\end{document}

2.5 Dependencies
Trigon depends on the \texttt{beamer} class and the following standard packages:

- \texttt{tikz}
- \texttt{pgfopts}

The theme works best with the open source \texttt{Source Sans Pro} font from Adobe. Therefore, the package \texttt{sourcesanspro} is loaded by default with the theme. However, if the user prefers to select an other font, the theme option \texttt{nosourcefonts} can be used to prevent the font package from being loaded.

3 Customization

3.1 Package options
Trigon provides a number of options, which can be set using a key=value interface. The primary way to set options is to provide a comma-separated list of option-value pairs when loading Trigon in the preamble:

\begin{verbatim}
\usetheme[option1=value1, option2=value2, ...]{trigon}
\end{verbatim}

Options can be changed at any time — even mid-presentation! — with the \texttt{\trigonset} macro.

\begin{verbatim}
\trigonset{option1=newvalue1, option2=newvalue2, ...}
\end{verbatim}

The list of options is structured as shown in the following example.
As Trigon implementation is heavily inspired from the excellent Metropolis theme by Matthias Vogelgesang, many of Metropolis options are also available in Trigon.

3.1.1 Main theme

**titleformat**  
regular, smallcaps, allsmallcaps, allcaps  
Changes the format of titles, subtitles, section titles, frame titles, and the text on “standout” frames. The available options produce Regular, SmallCaps, allsmallcaps, or ALLCAPS titles. Please refer to Section 5.1 for known issues with these options.

**usesourcefonts**  
true, false  
Choses if the sourcesanspro font package should be loaded true or not false.

3.1.2 Inner theme

**sectionpage**  
none, simple  
Adds a slide at the start of each section (simple). The none option disables the section page.

**titlestyle**  
plain, style1, style2  
Changes the layout of the title page.

**sectionstyle**  
plain, style1, style2, style3  
Changes the layout of the section page. style3 is similar to plain but with the right triangle in grey instead of theme color.
3.1.3 Outer theme

**numbering** none, counter, fraction  
Controls whether the frame number at the bottom right of each slide is omitted (none), shown (counter) or displayed as a fraction of the total number of frames (fraction).

3.1.4 Color theme

**block** transparent, fill  
Optionally adds a light grey background to block environments like theorem and example.

**headingcolor** black, theme  
Controls whether the color of all headings (title page, frame title, etc.) should be in black in a slightly darker shade of the theme color theme.

**textcolor** black, theme  
Controls whether the color of the regular text elements should be in black in a slightly darker shade of the theme color theme.
3.1.5 Font theme

Individually controls the format of titles, subtitles, section titles, and frame titles (see titleformat, above).

3.2 Color Customization

The included Trigon color theme is used by default, but its colors can be easily changed to suit your tastes. All of the theme’s styles are defined in terms of four colors:

- \texttt{tPrim} The primary theme color, used for main triangle elements, and for headings and text if the appropriate options are selected.
- \texttt{tSec} The secondary theme color (lighter shade of the primary color), used for some triangle elements and example text.
- \texttt{tAccent} The accent color, used mostly for alerted text.
- \texttt{tGrey} A grey color, used for background elements (triangles, blocks, etc.).

An easy way to customize the theme is to redefine these colors using

\begin{verbatim}
\colorlet{tPrim}{ ... }
\colorlet{tSec}{ ... }
\colorlet{tAccent}{ ... }
\colorlet{tGrey}{ ... }
\end{verbatim}

in your preamble.

4 Tips & Tricks

4.1 Backup Slides

Speakers will often include extra slides at the end of their presentation to refer to during audience questions. One easy way to do this is to include the \texttt{appendixnumberbeamer} package in your preamble and call \texttt{\appendix} before your backup slides.

Trigon will automatically turn off slide numbering for slides in the appendix.
5 Known Issues

5.1 Title formats

Be aware that not every font supports small caps, so the \texttt{smallcaps} or \texttt{allsmallcaps} options may not work if you use a font other than \texttt{sourcesanspro}.

The title format options \texttt{allsmallcaps} and \texttt{allcaps} are quite nice from an aesthetic point of view, but their use of \texttt{\MakeLowercase} and \texttt{\MakeUppercase} can cause unexpected problems. For example:

- Some commands, like $\backslash$, do not work inside \texttt{\MakeLowercase} and \texttt{\MakeUppercase}. (See Metropolis #125)
- Only alphabetic characters are affected by \texttt{\MakeLowercase}, so numerals and punctuation remain at full height. This can spoil some of the aesthetic benefits of \texttt{allsmallcaps}. (See Metropolis #33)
- \texttt{\MakeLowercase} and \texttt{\MakeUppercase} apply to math mode and \texttt{\scshape} does not. This can easily introduce mathematical errors that are hard to catch.
- It is impossible to typeset symbols which are encoded as uppercase letters in a different font. In particular, \texttt{\mathbb} and \texttt{\mathcal} letters will be replaced by other math glyphs. (See Metropolis #153)

The \texttt{allsmallcaps} and \texttt{allcaps} options are safe to use if your titles contain only alphabetic characters and do not require the expansion of any macros.

6 License

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7 Implementation

7.1 Trigon parent theme

The primary job of this package is to load the component sub-packages of the Trigon theme and route the theme options accordingly. It also provides some custom commands and environments for the user.
7.1.1 Package dependencies

\RequirePackage{pgfopts}
\RequirePackage{tikz}

7.1.2 Options

Most options are passed off to the component sub-packages.

\pgfkeys{/trigon/.cd,
  .search also={
    /trigon/inner,
    /trigon/outer,
    /trigon/color,
    /trigon/font
  } }

(titleformat plain) Controls the formatting of the text on standout “plain” frames.

\pgfkeys{
  /trigon/titleformat plain/.cd,
  .is choice,
  regular/.code={%
    \let\trigon@plaintitleformat\@empty%
    \setbeamerfont{standout}{shape=normalfont}%
  },
  smallcaps/.code={%
    \let\trigon@plaintitleformat\@empty%
    \setbeamerfont{standout}{shape=scshape}%
  },
  allsmallcaps/.code={%
    \let\trigon@plaintitleformat\MakeLowercase%
    \setbeamerfont{standout}{shape=scshape}%
    \PackageWarning{beamerthemetrigon}{%
      Be aware that titleformat plain=allsmallcaps can lead to problems%
    }%
  },
  allcaps/.code={%
    \let\trigon@plaintitleformat\MakeUppercase%
    \setbeamerfont{standout}{shape=normalfont}%
    \PackageWarning{beamerthemetrigon}{%
  }%
}

9
Be aware that titleformat plain=allcaps can lead to problems.

\titleformat
Sets a standard format for titles, subtitles, section titles, frame titles, and the text on standout “plain” frames.

```
\pgfkeys{
/trigon/titleformat/.code=\pgfkeysalso{
 font/titleformat title=#1,
 font/titleformat subtitle=#1,
 font/titleformat section=#1,
 font/titleformat frame=#1,
 titleformat plain=#1,
 }
}
```

\usesourcefonts
Select whereas the Source Sans Pro font is being loaded automatically or not.

```
\newif\@trigon@usesourcefonts
\pgfkeys{/trigon/.cd,
 usesourcefonts/.is if=@trigon@usesourcefonts,
 usesourcefonts=true,
}
```

### 7.1.3 Component sub-packages

Having processed the options, we can now load the component sub-packages of the theme.

```
\useinnertheme{trigon}
\useoutertheme{trigon}
\usecolortheme{trigon}
\usefonttheme{trigon}
```

### 7.1.4 Custom commands

The parent theme defines custom commands as their proper usage may depend on multiple sub-packages.
\texttt{\texttt{metroset}}  Allows the user to change options midway through a presentation.

\begin{verbatim}
55 \newcommand{\trigonset}[1]{\pgfkeys{/trigon/.cd,#1}}
\end{verbatim}

7.1.5  Process package options

\begin{verbatim}
56 \ProcessOptionsBeamer
57 \ProcessPgfOptions{/trigon}
58 \if@trigon@usesourcefonts%
59 \RequirePackage[default,t1,semibold]{sourcesanspro}
60 \fi
\end{verbatim}

7.2  Trigon inner theme

A \texttt{beamer} inner theme dictates the style of the frame elements traditionally set in the “body” of each slide. These include:

- title, part, and section pages;
- main background elements;
- itemize, enumerate, and description environments;
- block environments including theorems and proofs;
- figures and tables; and
- footnotes and plain text.

7.2.1  Package dependencies

\begin{verbatim}
61 \RequirePackage{pgfplots}
62 \RequirePackage{tikz}
63 \usetikzlibrary{calc,3d}
\end{verbatim}

7.2.2  Definitions

We define the command \texttt{\logobig} to specify the logo that needs to be applied displayed on the title frame.

\begin{verbatim}
64 \def\logobig{}
65 \newcommand\biglogo[1]{
66 \def\logobig[#1]
67 }
\end{verbatim}
7.2.3 Options

**sectionpage** Controls whereas a slide with the section title should be inserted at the beginning of the section or not.

\begin{verbatim}
\pgfkeys{/trigon/inner/sectionpage/.cd,
  .is choice,
  none/.code=\trigon@disablesectionpage,
  simple/.code=\trigon@enablesectionpage
}
\end{verbatim}

**slidestyle** Controls the layout that should be used for regular slides.

\begin{verbatim}
\def\slidestyle{}
\pgfkeys{/trigon/inner/slidestyle/.cd,
  .is choice,
  blank/.code=\def\slidestyle{blank}
  \setbeamertemplate{background}{\slidestyle},
  style1/.code=\def\slidestyle{smallcornertriangle}
  \setbeamertemplate{background}{\slidestyle},
  cyber/.code=\def\slidestyle{cyberbottom}
  \setbeamertemplate{background}{\slidestyle}
}
\end{verbatim}

**titlestyle** Controls the layout that should be used for the title page.

\begin{verbatim}
\def\titlestyle{}
\pgfkeys{/trigon/inner/titlestyle/.cd,
  .is choice,
  plain/.code=\def\titlestyle{bottomtrianglescolor},
  style1/.code=\def\titlestyle{titlesmallimage},
  style2/.code=\def\titlestyle{titlebigimage}
}
\end{verbatim}

**sectionstyle** Controls the layout that should be used for the title page.

\begin{verbatim}
\def\sectionstyle{}
\pgfkeys{/trigon/inner/sectionstyle/.cd,

\trigoninnerinnersetdefaults \ Sets default values for the inner theme options.

102 \newcommand{\trigoninnerinnersetdefaults}{
103 \pgfkeys{/trigon/inner/.cd,
104 sectionpage=simple,
105 slidestyle=blank,
106 titlestyle=style2,
107 sectionstyle=plain
108 }
109 }

7.2.4 Backgrounds

First of all, we define a few commands in order easily create the triangles used as the main design elements of the theme. All these are defined with respect to the \paperwidth and \paperheight of the document, so that it fits the different aspect ratio possible.

\leftTriangle \ Defines a triangle with the base on the left side (pointing right).

110 \newcommand{\leftTriangle}[2]{
111 (#1,#2)
112 -- (0,{#2 + tan(30)*#1} )
113 -- (0,{#2 - tan(30)*#1} )
114 -- cycle;
115 }

\rightTriangle \ Defines a triangle with the base on the right side (pointing left).

116 \newcommand{\rightTriangle}[2]{
117 (#1,#2)
118 -- (\the\paperwidth,{#2 + tan(30)*\the\paperwidth-#1})
119 -- (\the\paperwidth,{#2 - tan(30)*\the\paperwidth-#1})
120 -- cycle;
\topTriangle \text{ Defines a triangle with the base on the bottom side (pointing top).}

\begin{verbatim}
\newcommand{\topTriangle}[2]{
  (#1,#2)
  -- (#1 - \tan(60)\times#2),0)
  -- (#1 + \tan(60)\times#2),0)
  -- cycle;
}
\end{verbatim}

\leftColorTriangle \text{ Defines a colored triangle with the base on the left side (pointing right).}

\begin{verbatim}
\newcommand{\leftColorTriangle}[3]{
  \path[fill=#3]
  \leftTriangle{#1}{#2}
}
\end{verbatim}

\rightColorTriangle \text{ Defines a colored triangle with the base on the right side (pointing left).}

\begin{verbatim}
\newcommand{\rightColorTriangle}[3]{
  \path[fill=#3]
  \rightTriangle{#1}{#2}
}
\end{verbatim}

\topColorTriangle \text{ Defines a colored triangle with the base on the bottom side (pointing top).}

\begin{verbatim}
\newcommand{\topColorTriangle}[3]{
  \path[fill=#3]
  \topTriangle{#1}{#2}
}
\end{verbatim}

We then define the different backgrounds choices.

\begin{verbatim}
\defbeamertemplate{background}{blank}{
}
\end{verbatim}

\begin{verbatim}
\defbeamertemplate{background}{smallcornertriangle}{
}
\end{verbatim}

\textbf{blank} \text{ Blank slide background.}

\begin{verbatim}
\defbeamertemplate{background}{blank}{}
\end{verbatim}

\textbf{smallcornertriangle} \text{ Background with a small triangle in bottom left corner (used for normal frames when the appropriate option is selected).}

\begin{verbatim}
\defbeamertemplate{background}{smallcornertriangle}{}
\end{verbatim}
Background with "mesh" effect on the bottom left corner (used for normal frames when the appropriate option is selected).

\defbeamertemplate{background}{cyberbottom}{
\tikzstyle{cyberVertex}=[scale=1,draw=tGrey!60,circle,fill=white]
\tikzstyle{cyberVertex2}=[scale=0.5,draw=tGrey!60,circle,fill=tGrey!60]
\tikzstyle{cyberEdge} = [draw,color=tGrey!60]
\begin{tikzpicture}[blend group=multiply]
\useasboundingbox (0,0) rectangle(\the\paperwidth,\the\paperheight);
\foreach \pos/\name in {
    {(-0.05\paperwidth,0.75\paperheight)/0},
    {(0.02\paperwidth,0.53\paperheight)/1},
    {(-0.04\paperwidth,0.38\paperheight)/2},
    {(0.08\paperwidth,0.40\paperheight)/3},
    {(0.052\paperwidth,0.21\paperheight)/5},
    {(0.24\paperwidth,0.26\paperheight)/6},
    {(-0.08\paperwidth,-0.06\paperheight)/7},
    {(0.12\paperwidth,0.07\paperheight)/8},
    {(0.2\paperwidth,0.,-0.08\paperheight)/9},
    {(0.38\paperwidth,0.06\paperheight)/10},
    {(0.56\paperwidth,0.06\paperheight)/11}}
\node[cyberVertex] (\name) at \pos {};
\foreach \pos/\name in {
    {(-0.05\paperwidth,0.75\paperheight)/0},
    {(0.02\paperwidth,0.53\paperheight)/1},
    {(-0.04\paperwidth,0.38\paperheight)/2},
    {(0.08\paperwidth,0.40\paperheight)/3},
    {(0.052\paperwidth,0.21\paperheight)/5},
    {(0.24\paperwidth,0.26\paperheight)/6},
    {(-0.08\paperwidth,-0.06\paperheight)/7},
    {(0.12\paperwidth,0.07\paperheight)/8},
    {(0.2\paperwidth,0.,-0.08\paperheight)/9},
    {(0.38\paperwidth,0.06\paperheight)/10},
    {(0.56\paperwidth,0.06\paperheight)/11}
\node[cyberVertex2] (\name_2) at \pos {};
\foreach \source/ \dest in
{0/1,1/2,1/3,2/3,2/5,3/5,3/6,5/6,5/7,7/8,5/8,8/6,8/9,6/9,9/10,10/6,10/11}
\path[cyberEdge] (\source) -- (\dest);
\end{tikzpicture}
}

titlebigimage  Background for title page with a big image in the top left corner.
\defbeamertemplate{background}{titlebigimage}{
\begin{tikzpicture}
\useasboundingbox (0,0) rectangle(\the\paperwidth,\the\paperheight);
\begin{scope}[blend group=multiply]
\path[fill=tPrim]\leftTriangle{0.5\paperwidth}{0};
\topColorTriangle{0.73\paperwidth}{0.70\paperheight}{tGrey!30};
\ifx\inserttitlegraphic\@empty
\leftColorTriangle{0.73\paperwidth}{0.70\paperheight}{tPrim}
\else
\path[clip]\leftTriangle{0.73\paperwidth}{0.70\paperheight};
\node[anchor=north west, inner sep=0pt, outer sep=0pt] at (0,\the\paperheight) {\inserttitlegraphic};
\fi
\end{scope}
\path[fill=white]\rightTriangle{0.45\paperwidth}{\the\paperheight};
\ifx\logbig\@empty \else
\node[anchor=north east,inner sep=0mm] at (.96*\the\paperwidth,.96*\the\paperheight) {\includegraphics[width=0.28\textwidth]{\logbig}};
\fi
\end{tikzpicture}
}
titlesmallimage  Background for the titlepage with a small image in the top left corner.
\defbeamertemplate{background}{titlesmallimage}{
\begin{tikzpicture}[blend group=multiply]
\useasboundingbox (0,0) rectangle(\the\paperwidth,\the\paperheight);
\leftColorTriangle{0.58\paperwidth}{0}{tGrey!30}
\ifx\logbig\@empty \else
\node[anchor=north east,inner sep=0mm] at (.96*\the\paperwidth,.96*\the\paperheight) {\includegraphics[width=0.28\textwidth]{\logbig}};
\fi
\end{tikzpicture}
}
\else
\path[clip] leftTriangle{0.58\paperwidth}{\the\paperheight};
\node[anchor=north west, inner sep=0pt, outer sep=0pt] at (0,\the\paperheight) {\inserttitlegraphic};
\fi
\end{tikzpicture}
}

\defbeamertemplate{background}{bottomtrianglescolor}{
\defbeamertemplate{background}{bottomtrianglesbw}{
\defbeamertemplate{background}{lefttriangles}{

bottomtrianglescolor Background for title/section pages with two colored triangles in the bottom.

bottomtrianglesbw Background for title/section pages with two black and white triangles in the bottom.

bigtriangles Background for section pages with a big triangle on the left.

lefttriangles Background for section pages with small triangles on the left.
Before anything, the regular frame background is selected.

Finally, we need to set the backgrounds properly before creating the different frames, create the special frames (title, section) and restore the regular background afterwards.

\titleframe Sets the titleframe.

\sectionframe Sets the titleframe.
7.2.5 Layout

The following macros define the proper position of the various elements of the frame, so the fit nicely with the different background selected.

\textbf{titlebigimage} Place the text on the title frame with a big image on the top left side.

270 \defbeamertemplate{title page}{titlebigimage}
271 {
272 \vskip140pt
273 \begin{flushright}
274 \begin{minipage}[t][c]{0.5\textwidth}%
275 \centering
276 \usebeamerfont{title}\usebeamercolor[fg]{title}
277 \inserttitle\par
278 \end{minipage}
279 \ifx \insertsubtitle\@empty
280 \else
281 \vskip15pt
282 \begin{minipage}[t][c]{0.5\textwidth}%
283 \centering
284 \usebeamerfont{subtitle}\insertsubtitle\par%
285 \end{minipage}
286 \fi
287 \vskip15pt
288 \begin{minipage}[t][c]{0.5\textwidth}%
289 \centering
290 \usebeamerfont{author}\insertauthor
291 \vskip15pt
292 \usebeamerfont{date}\insertdate%
293 \end{minipage}
294 \end{flushright}
295 \vfill
296 }

\textbf{titlesmallimage} Place the text on the title frame with a small image on the top left side.

297 \defbeamertemplate{title page}{titlesmallimage}
298 {
299 \vskip140pt
300 \begin{beamercolorbox}[wd=\textwidth,sep=4pt]{title page header}
bottomtrianglescolor Place the text on the title frame with two triangles on the bottom.
bottomtrianglescolor  Place the text on the section frame with two colored triangles on the bottom.

\defbeamertemplate{section page}{bottomtrianglescolor} {
  \vskip40pt
  \begin{center}
  \begin{minipage}[t][c]{\textwidth}
    \centering
    \usebeamerfont{section title}\usebeamercolor[fg]{title}
    \insertsectionhead\par
  \end{minipage}
  \end{center}
  \vfill
}

bottomtrianglesbw  Place the text on the section frame with two black and white triangles on the bottom.

\defbeamertemplate{section page}{bottomtrianglesbw} {
  \vskip40pt
  \begin{center}
  \begin{minipage}[t][c]{\textwidth}
    \centering
    \usebeamerfont{section title}\usebeamercolor[fg]{title}
  \end{minipage}
  \end{center}
  \vfill
}
7.2.6 Lists and floats

7.2.7 Margins

The margins are defined as

\setbeamerfont{section title}\usebeamercolor[fg]{title}
\insertsectionhead\par
end{minipage}
end{center}
vfill
}

bigtriangles Place the text on the section frame with two big triangles.

\defbeamertemplate{section page}{bigtriangles}
{
\vskip200pt
\begin{flushright}
\begin{minipage}[t]{0.62\textwidth}%7
usebeamerfont{section title}\usebeamercolor[fg]{title}
\raggedleft
\insertsectionhead\par
end{minipage}
end{flushright}
vfill
}

lefttriangles Place the text on the section frame with two small left triangles.

\defbeamertemplate{section page}{lefttriangles}
{
\vskip25pt
\begin{beamercolorbox}[wd=\textwidth,leftskip=100pt,sep=4pt]{section page header}
usebeamerfont{section title}\usebeamercolor[fg]{title}
\insertsectionhead\par
end{beamercolorbox}%
\vfill
}

\setbeamerfont{section title}\usebeamercolor[fg]{title}
\insertsectionhead\par
end{minipage}
end{center}
vfill
}

\vfill
7.2.8 Process package options

\texttt{\textbackslash trigon@inner@setdefaults}\texttt{\textbackslash ProcessPgfPackageOptions{\textbackslash trigon/inner}}

7.3 Trigon outer theme

A \texttt{beamer} outer theme dictates the style of the frame elements traditionally set outside the “body” of each slide, such as the frame title, the logo, the footer, etc.

7.3.1 Package dependencies

\texttt{\textbackslash RequirePackage{pgfopts}}

7.3.2 Definitions

We define the command \texttt{\logsmall} to specify the logo that needs to be applied displayed on all normal frames.

\texttt{\def\logsmall{}}
\texttt{\newcommand\smalllogo[1]{\def\logsmall{#1}}}

% \end{macrocode}
% %
% \subsubsection{Options}
% %
% \begin{macro}{numbering}
% % Adds slide number to the bottom of each regular frame
% \begin{macrocode}
\pgfkeys{
/trigon/outer/numbering/.cd,
  .is choice,
  none/.code=\setbeamertemplate{frame numbering}[none],
  counter/.code=\setbeamertemplate{frame numbering}[counter],
  fraction/.code=\setbeamertemplate{frame numbering}[fraction]
}
\end{macrocode}
% \end{macro}

% \begin{macro}{\trigon@outer@setdefaults}
% \end{macro}
% % Sets default values for the outer theme options.
\begin{macrocode}
\newcommand\trigon@outer@setdefaults{
  \pgfkeys{/trigon/outer/.cd,
    numbering=counter}
}
\end{macrocode}

\subsubsection{Frame title}
\begin{macro}{frametitle}
\end{macro}

\begin{macrocode}
\defbeamertemplate*{frametitle}{trigon}
{\vspace{-1pt}
  \begin{beamercolorbox}[wd=\paperwidth,leftskip=0.05\paperwidth]{frametitle}
  \vskip.4cm
  \ifx\insertframesubtitle\@empty
    {\usebeamerfont{frametitle}\usebeamercolor[fg]{frametitle}\insertframetitle}
  \else
    {\usebeamerfont{frametitle}\usebeamercolor[fg]{frametitle}\insertframetitle}\
    {\usebeamerfont{framesubtitle}\usebeamercolor[fg]{framesubtitle}\insertframesubtitle}
  \fi
  \vskip.3cm
  \end{beamercolorbox}
}
\end{macrocode}

\subsubsection{Frame header}
\begin{macro}{headline}
\end{macro}

\begin{macrocode}
\defbeamertemplate{headline}{none}{}\defbeamertemplate*{headline}{logo}{}
{\ifx\logsmall\@empty\else\hfill\includegraphics[width=20pt]{\logsmall}\hspace{20pt}\vspace{-40pt}\fi}
\vspace{-1pt}
{\begin{beamercolorbox}[wd=\paperwidth,leftskip=0.05\paperwidth]{frametitle}}
{\ifx\insertframesubtitle\@empty
  {\usebeamerfont{frametitle}\usebeamercolor[fg]{frametitle}\insertframetitle}
}{\else
  {\usebeamerfont{frametitle}\usebeamercolor[fg]{frametitle}\insertframetitle}\
  {\usebeamerfont{framesubtitle}\usebeamercolor[fg]{framesubtitle}\insertframesubtitle}
}\fi\vspace{3cm}
\end{beamercolorbox}
}\end{macrocode}
\fi
\end{macrocode}
\end{macro}
\%

\subsection{Frame footer}
\begin{macrocode}
\setbeamertemplate{navigation symbols}{}
\end{macrocode}
\%
\begin{macro}{appendix}
\begin{macrocode}
\AtBeginDocument{\
\apptocmd{\appendix}{%\fi\end{macrocode}
\begin{macrocode}
\setbeamertemplate{footline}{plain}\
\% \end{macrocode}
\begin{macro}{appendix}
\begin{macrocode}
\AtBeginDocument{\
\apptocmd{\appendix}{%\fi\end{macrocode}
\begin{macrocode}
\setbeamertemplate{footline}{plain}\
\% \end{macrocode}
\begin{macro}{appendix}
\begin{macrocode}
\AtBeginDocument{\
\apptocmd{\appendix}{%\fi\end{macrocode}
7.4 Trigon font theme

A beamer font theme sets the style of the font used in the document.

7.4.1 Package dependencies

\RequirePackage{pgfopts}

7.4.2 Title format options

titleformat title Controls the format of the title.

\pgfkeys{
    /trigon/font/titleformat title/.cd,
    .is choice,\%
    regular/.code=\%
        \let\trigon@titleformat@empty\%
        \setbeamerfont{title}{shape=\normalfont}\%
    },\%
    smallcaps/.code=\%
        \let\trigon@titleformat@empty\%
        \setbeamerfont{title}{shape=\scshape}\%
    },\%
    allsmallcaps/.code=\%
        \let\trigon@titleformat@empty\lowercase\%
        \setbeamerfont{title}{shape=\scshape}\%
        \PackageWarning{beamerthemetrigon}{Be aware that titleformat title=allsmallcaps can lead to problems%\%

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Controls the format of the subtitle.

```latex
\pgfkeys{/trigon/font/titleformat subtitle/.cd,
  .is choice,
  regular/.code={%
    \let\trigon@subtitleformat\@empty%
    \setbeamerfont{subtitle}{shape=normalfont}%
  },
  smallcaps/.code={%
    \let\trigon@subtitleformat\@empty%
    \setbeamerfont{subtitle}{shape=scshape}%
  },
  allsmallcaps/.code={%
    \let\trigon@subtitleformat\lowercase%
    \setbeamerfont{subtitle}{shape=scshape}%
    \PackageWarning{beamerthemetrigon}{% 
      Be aware that titleformat subtitle=allsmallcaps can lead to problems%
  }
  },
  allcaps/.code={%
    \let\trigon@subtitleformat\uppercase%
    \setbeamerfont{subtitle}{shape=normalfont}%
    \PackageWarning{beamerthemetrigon}{% 
      Be aware that titleformat subtitle=allcaps can lead to problems%
  }
  }
}
```
titleformat section  Controls the format of the section title.

\pgfkeys{
  /trigon/font/titleformat section/.cd,
  .is choice,
  regular/.code={%  \let\trigon@sectiontitleformat\@empty%
  \setbeamerfont{section title}{shape=\normalfont}%,
  smallcaps/.code={%  \let\trigon@sectiontitleformat\@empty%
  \setbeamerfont{section title}{shape=\scshape}%,
  allsmallcaps/.code={%  \let\trigon@sectiontitleformat\MakeLowercase
  \setbeamerfont{section title}{shape=\scshape}%,
  \PackageWarning{beamerthemetrigon}{%  Be aware that titleformat section=allsmallcaps can lead to problems%
  },
  allcaps/.code={%  \let\trigon@sectiontitleformat\MakeUppercase%
  \setbeamerfont{section title}{shape=\normalfont}%,
  \PackageWarning{beamerthemetrigon}{%  Be aware that titleformat section=allcaps can lead to problems%
  },
  }
}

titleformat frame  Controls the format of the frame title.

\pgfkeys{
  /trigon/font/titleformat frame/.cd,
  .is choice,
  regular/.code={%  \let\trigon@frametitleformat\@empty%
  \setbeamerfont{frametitle}{shape=\normalfont}%,
  smallcaps/.code={%  \let\trigon@frametitleformat\@empty%
  \setbeamerfont{frametitle}{shape=\scshape}%,
  }
}
titleformat aliases Allows titleformat title et al. to be used in the \usetheme declaration, where \LaTeX automatically removes all spaces.

\trigon@font@setdefaults Sets default values for font theme options.

We first define hooks to change the case format of the titles.
To make the uppercase and lowercase macros work in the title, subtitle, etc., we have to patch the appropriate \texttt{beamer} commands that set their values. This solution was suggested by Enrico Gregorio in an answer to this StackExchange question.

\verbatim
\def\trigon@titleformat#1{#1}
\def\trigon@subtitleformat#1{#1}
\def\trigon@sectiontitleformat#1{#1}
\def\trigon@frametitleformat#1{#1}

\patchcmd{\beamer@title}{\def\inserttitle{#2}}{\def\inserttitle{\trigon@titleformat{#2}}}{}
\PackageError{beamerfontthemetrigon}{Patching title failed}\@ehc
\patchcmd{\beamer@subtitle}{\def\insertsubtitle{#2}}{\def\insertsubtitle{\trigon@subtitleformat{#2}}}{}
\PackageError{beamerfontthemetrigon}{Patching subtitle failed}\@ehc
\patchcmd{\sectionentry}{\def\insertsectionhead{#2}}{\def\insertsectionhead{\trigon@sectiontitleformat{#2}}}{}
\PackageError{beamerfontthemetrigon}{Patching section title failed}\@ehc
\@tempswafalse
\patchcmd{\beamer@section}{\edef\insertsectionhead{
\noexpand\hyperlink{Navigation\the\c@page}{\unexpanded{#1}}}}{\edef\insertsectionhead{
\noexpand\trigon@sectiontitleformat{\unexpanded{#1}}}}\@tempswatrue
\patchcmd{\beamer@section}{\def\insertsectionhead{\hyperlink{Navigation\the\c@page}{#1}}}{\def\insertsectionhead{\hyperlink{Navigation\the\c@page}{\trigon@sectiontitleformat{#1}}}}\@tempswatrue
\@tempswafalse
\patchcmd{\beamer@section}{\protected@edef\insertsectionhead{\noexpand\hyperlink{Navigation\the\c@page}{\unexpanded{#1}}}}{\protected@edef\insertsectionhead{\noexpand\trigon@sectiontitleformat{\unexpanded{#1}}}}
Similarly, to make the \MakeLowercase and \MakeUppercase macros work in the frame title we have to patch \beamer@frametitle.

\patchcmd{\beamer@frametitle}{% 
  \edef\insertframetitle{{#2}\ifnum\beamer@autobreakcount>0\relax{}\space% 
  \usebeamertemplate*{frametitle continuation}\fi}}% 
  \gdef\beamer@frametitle{#2}% 
  \gdef\beamer@shortframetitle{#1}% 
}}% 
}{}{}
7.4.3 General font definitions

\setbeamerfont{author} {size=\normalsize}
\setbeamerfont{title} {size=\LARGE,series=bfseries}
\setbeamerfont{section title}{size=\LARGE,series=mdseries}
\setbeamerfont{date} {size=\small}
\setbeamerfont*{subtitle} {size=\Large}
\setbeamerfont{frametitle} {size=\LARGE}
\setbeamerfont{framesubtitle}{size=\large}
\setbeamerfont{alerted text} {size=\normalsize,series=bfseries}
\setbeamerfont{block title}{size=\normalsize,series=bfseries}
\setbeamerfont{block title alerted}{size=\normalsize,series=bfseries}
\setbeamerfont{section in toc}{size=\Large}
\setbeamerfont{subsection in toc}{size=\large}
\setbeamerfont{page number in head/foot}{size=\scriptsize}
\setbeamerfont{description item}{series=bfseries}
\setbeamerfont{caption}{size=\small}
\setbeamerfont{caption name}{series=bfseries}
% \end{macrocode}
% % \subsubsection{Process package options}
% \begin{macrocode}
\trigon@font@setdefaults
\ProcessPgfPackageOptions{/trigon/font}
\end{macrocode}
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7.5 Trigon color theme

A `beamer` color theme sets the colors used for the different elements of the document.

7.5.1 Package dependencies

\\begin{verbatim}
\RequirePackage{pgfopts}
\end{verbatim}

7.5.2 Options

- **headingcolor** Select the color to use for all headings (title, section, frame, etc.).

\\begin{verbatim}
\def\headcol{black}
\pgfkeys{
  /trigon/color/headingcolor/.cd,
  .is choice,
  black/.code=\def\headcol{black},
  theme/.code=\def\headcol{tPrim}
}
\end{verbatim}

- **textcolor** Select the color to use for all headings (title, section, frame, etc.).

\\begin{verbatim}
\def\txtcol{black}
\pgfkeys{
  /trigon/color/textcolor/.cd,
  .is choice,
  black/.code=\def\txtcol{black},
  theme/.code=\def\txtcol{tPrim!50!black}
}
\end{verbatim}

- **block** Optionally removes the light grey background to block environments like `theorem` and `example`.

\\begin{verbatim}
\pgfkeys{
  /trigon/color/block/.cd,
  .is choice,
  transparent/.code=\trigon@block@transparent,
  fill/.code=\trigon@block@fill
}
\end{verbatim}

\%
\% \begin{macro}{\trigon@color@setdefaults}

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% Sets default values for color theme options.
\begin{macrocode}
\newcommand{\trigon@color@setdefaults}{
\pgfkeys{/trigon/color/.cd,
block=fill,
headingcolor=black,
textcolor=black
}
}
\end{macrocode}

7.5.3 Base colors

\definecolor{tPrim}{HTML}{00707F} % Green-Blue
\definecolor{tSec}{HTML}{5FA4B0} % Green-Blue light
\definecolor{tAccent}{HTML}{F07F3C} % Orange
\definecolor{tGrey}{HTML}{E6E6E1} % Grey-Beige

7.5.4 Derived elements

All the elements are set using the base colors defined here above.

\setbeamercolor{background canvas}{bg=white}
\setbeamercolor{normal text}{fg=\txtcol, bg= }
\setbeamercolor{alerted text}{fg=tAccent}
\setbeamercolor{example text}{fg=tSec}
\setbeamercolor{title}{fg=\headcol, bg= , parent=normal text}
\setbeamercolor{titlelike}{use=title, parent=title}
\setbeamercolor{author}{use=normal text, bg= , parent=normal text}
\setbeamercolor{date}{use=normal text, bg= , parent=normal text}
\setbeamercolor{institute}{use=normal text, parent=normal text}
\setbeamercolor{structure}{use=normal text, fg=normal text.fg}
\setbeamercolor{palette primary}{use=titlelike, parent=titlelike}
\setbeamercolor{frametitle}{use=titlelike, parent=titlelike}

Block environments such as \texttt{theorem} and \texttt{example} have a \texttt{tGrey} background color by default. The option \texttt{block=transparent} removes the background color.

\newcommand{\trigon@block@transparent}{
\setbeamercolor{block title}{%
use=normal text,
The color of other smaller elements is defined as follows

\setbeamercolor{footnote}{fg=normal text.fg!90}
\setbeamercolor{footnote mark}{fg=.}
\setbeamercolor{footline}{fg=normal text.fg!50, parent=normal text}
\setbeamercolor{caption}{fg=black!60, parent=normal text}
\setbeamercolor{itemize item}{fg=tPrim, parent=normal text}
7.5.5 Process package options

\setbeamercolor{itemize subitem}{use=itemize item, parent=itemize item}
\setbeamercolor{itemize subsubitem}{use=itemize item, parent=itemize item}
\setbeamercolor{enumerate item}{fg=tPrim, parent=normal text}
\setbeamercolor{enumerate subitem}{use=enumerate item, parent=enumerate item}
\setbeamercolor{enumerate subsubitem}{use=enumerate item, parent=enumerate item}
\setbeamercolor{description item}{fg=tPrim, parent=normal text}

\trigon@color@setdefaults
\ProcessPgfPackageOptions{/trigon/color}