

The mdframed package

Examples for `framemethod=TikZ`

Marco Daniel

1.9a

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In this document I collect various examples for `framemethod=TikZ`. Some presented examples are more or less exorbitant.

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1 Loading

In the preamble only the package `mdframed` with the option `framemethod=TikZ` is loaded. All other modifications will be done by `\mdfdefinestyle` or `\mdfsetup`.

Note

Every `\global` inside the examples is necessary to work with my own created environment `tltxmdfexample*`.

2 Examples

All examples have the following settings:

```
\mdfsetup{skipabove=\topskip,skipbelow=\topskip}
\newrobustcmd\ExampleText{%
  An \textit{inhomogeneous linear} differential equation has the form
  \begin{align}
    L[v] &= f,
  \end{align}
  where  $L$  is a linear differential operator,  $v$  is the dependent
  variable, and  $f$  is a given non-zero function of the independent
  variables alone.
}
```

Example 1 – round corner

```
\global\mdfdefinestyle{exampledefault}{%
  outerlinewidth=5pt,innerlinewidth=0pt,
  outerlinecolor=red,roundcorner=5pt
}
\begin{mdframed}[style=exampledefault]
\ExampleText
\end{mdframed}
```

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \quad (1)$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.

Example 2 – hidden line + frame title

```
\global\mdfapptodefinestyle{exampledefault}{%
  topline=false,leftline=false,}
\begin{mdframed}[style=exampledefault,frametitle={Inhomogeneous linear}]
\ExampleText
\end{mdframed}
```

Inhomogeneous linear

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \quad (2)$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.

Example 3 – framed picture which is centered

```
\begin{mdframed}[userdefinedwidth=6cm,align=center,
  linecolor=blue,middlelinewidth=4pt,roundcorner=5pt]
\textit{CTAN lion drawing by Duane Bibby; thanks to \url{www.ctan.org}}
\IfFileExists{ctan-lion.png}{%
  {\includegraphics[width=\linewidth]{ctan-lion.png}}}%
}
```

```
\rule{\linewidth}{4cm}}%
\end{mdframed}
```

CTAN lion drawing by Duane
Bibby; thanks to www.ctan.org



Example 4 – Gimmick

```
\mdfsetup{splitbottomskip=0.8cm,splittopskip=0cm,
  innerrightmargin=2cm,innertopmargin=1cm,%
  innerlinewidth=2pt,outerlinewidth=2pt,
  middlelinewidth=10pt,backgroundcolor=red,
  linecolor=blue,middlelinecolor=gray,
  tikzsetting={draw=yellow,line width=3pt,%
    dashed,%
    dash pattern= on 10pt off 3pt},
  rightline=false,bottomline=false}
\begin{mdframed}
\ExampleText
\end{mdframed}
```

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \quad (3)$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.

Example 5 – complex example with TikZ

```

\tikzset{titregris/.style =
  {draw=gray, thick, fill=white, shading = exersicetitle, %
  text=gray, rectangle, rounded corners, right, minimum height=.7cm}}
\pgfdeclarehorizontalshading{exersicebackground}{100bp}
  {color(0bp)=(green!40); color(100bp)=(black!5)}
\pgfdeclarehorizontalshading{exersicetitle}{100bp}
  {color(0bp)=(red!40); color(100bp)=(black!5)}
\newcounter{exercise}
\renewcommand*{\theexercise}{Exercise~n\arabic{exercise}}
\makeatletter
\def\mdf@@exercisepoints{} %new mdframed key:
\define@key{mdf}{exercisepoints}{%
  \def\mdf@@exercisepoints{#1}}
}
\mdfdefinestyle{exercisestyle}{%
  outerlinewidth=1em, outerlinecolor=white, %
  leftmargin=-1em, rightmargin=-1em, %
  middlelinewidth=1.2pt, roundcorner=5pt, linecolor=gray,
  apptotikzsetting={\tikzset{mdfbackground/.append style={%
    shading = exersicebackground}}},
  innertopmargin=1.2\baselineskip,
  skipabove={\dimexpr0.5\baselineskip+\topskip\relax},
  skipbelow={-1em},
  needspace=3\baselineskip,
  frametitlefont=\sffamily\bfseries,
  settings={\global\stepcounter{exercise}},
  singleextra={%
    \node[titregris,xshift=1cm] at (P-O) %
      {\mdf@frametitlefont{\theexercise}\hbox{~}};
    \ifdefempty{\mdf@@exercisepoints}%
    {}%
    {\node[titregris,left,xshift=-1cm] at (P) %
      {\mdf@frametitlefont{\mdf@@exercisepoints points}\hbox{~}};}%
  },
  firstextra={%
    \node[titregris,xshift=1cm] at (P-O) %
      {\mdf@frametitlefont{\theexercise}\hbox{~}};
    \ifdefempty{\mdf@@exercisepoints}%
    {}%
    {\node[titregris,left,xshift=-1cm] at (P) %
      {\mdf@frametitlefont{\mdf@@exercisepoints points}\hbox{~}};}%
  },
}
\makeatother

\begin{mdframed}[style=exercisestyle]
\ExampleText
\end{mdframed}

\begin{mdframed}[style=exercisestyle,exercisepoints=10]
\ExampleText
\end{mdframed}

```

Exercise n1

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{4}$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.

Exercise n2

10points

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{5}$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.

Example 6 – Theorem environments

```

\mdfdefinestyle{theoremstyle}{%
  linecolor=red,middlelinewidth=2pt,%
  frametitlerule=true,%
  apptotikzsetting={\tikzset{mdfframetitlebackground/.append style={%
    shade,left color=white, right color=blue!20}}},
  frametitlerulecolor=green!60,
  frametitlerulewidth=1pt,
  innertopmargin=\topskip,
}
\mdtheorem[style=theoremstyle]{definition}{Definition}
\begin{definition}[Inhomogeneous linear]
\ExampleText
\end{definition}
\begin{definition*}[Inhomogeneous linear]
\ExampleText
\end{definition*}

```

Definition 1: Inhomogeneous linear

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{6}$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.

Definition: Inhomogeneous linear

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{7}$$

where L is a linear differential operator, v is the dependent variable, and f is a given non-zero function of the independent variables alone.