The mdframed package

Examples for `frememethod=TikZ`

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

Contents

1 Loading

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

Note

Every `\global` inside the examples is necessary to work with the package `showexpl`.

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,
        outercolor=red,roundcorner=5pt
}
\begin{mdframed}[style=exampledefault]
\ExampleText
\end{mdframed}
```

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{1}$$

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

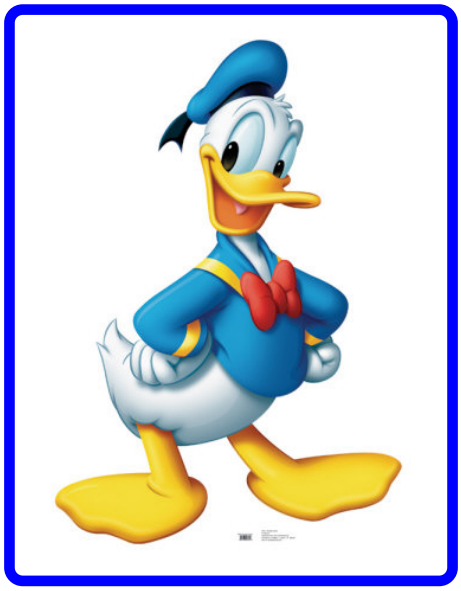
An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{2}$$

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]
\IfFileExists{donald-duck.jpg}%
  {\includegraphics[width=\linewidth]{donald-duck}}%
  {\rule{\linewidth}{4cm}}%
\end{mdframed}
```



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

$$L[v] = f, \tag{3}$$

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

```
\tikzstyle{titregris} =
        [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}~};
        \ifdefempty{\mdf@@exercisepoints}%
        {}%
        {\node[titregris,left,xshift=-1cm] at (P)%
           {~\mdf@frametitlefont{\mdf@@exercisepoints points}~};}%
    },
   firstextra={%
        \node[titregris,xshift=1cm] at (P-|O) %
            {~\mdf@frametitlefont{\theexercise}~};
        \ifdefempty{\mdf@@exercisepoints}%
        {}%
        {\node[titregris,left,xshift=-1cm] at (P)%
           {~\mdf@frametitlefont{\mdf@@exercisepoints points}~};}%
    },
}
\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.