

Checksum5147

The `mdframed` package ¹

auto-split frame environment

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v1.3

2012/02/04

The standard methods for framing text (`\fbox` or `\fcolorbox`) require you to handle page breaks by hand, meaning that you have to split the `\fbox` into two. The present package defines the environment `mdframed` which automatically deals with pagebreaks in framed text.

By defining new environments the user may choose between several individual designs.

Linked files: [mdframed-example-default.pdf](#) [mdframed-example-tikz.pdf](#)
[mdframed-example-pstricks.pdf](#) [mdframed-example-texsx.pdf](#)

FYI: I create a repository for `mdframed` on [github](#) where you can [download](#) the current development status.

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1. Motivation

Many users wish to (further) emphasize lemmata, definitions, proofs, etc. The package `mdframed` allows you to create environments with breakable frames. I think an example is the best way to demonstrate its properties.

Theorem 1.1 (Pythagorean theorem) *In any right triangle, the area of the square whose side is the hypotenuse is equal to the sum of the areas of the squares whose sides are the two legs.*

¹Extending the package `framed.sty`

$$a^2 + b^2 = c^2$$

The frame was defined with the following settings.

```
\newmdtheoremenv[outerlinewidth=2,leftmargin=40,%
  rightmargin=40,backgroundcolor=yellow,%
  outerlinecolor=blue,innertopmargin=0pt,%
  splittopskip=\topskip,skipbelow=\baselineskip,%
  skipabove=\baselineskip,ntheorem]{theorem}%
{Theorem}[section]
\begin{theorem}[Pythagorean theorem]
...
\end{theorem}
```

2. Syntax

Loadings `mdframed`

The package itself loads the packages

- `kvoptions`,
- `xparse` (new),
- `etoolbox` and
- `color`.

Depending on the options `mdframed` will load

- `xcolor`,
- `tikz` or
- `pstricks`.

Load the package as usual:

```
\usepackage[<GLOBAL OPTIONS>]{mdframed}
```

Only the option `framemethod` should be loaded by the optional argument of `\usepackage`. All other options should be loaded with `\mdfsetup` or related environments. The package should be loaded after `amsthm` if you need the package.

Provided environment

The package defines only one environment with the following syntax:

```
\begin{mdframed}[<LOCAL OPTIONS>]
  <CONTENT>
\end{mdframed}
```

To create own environments with `mdframed` see section 4.

Autodetecting floats

`mdframed` detects whether the environment is used inside `float` or `minipage` environments. If you use `mdframed` in such an environment `mdframed` will use the option `nobreak` automatically.

Twoside-mode

If you are using `mdframed` inside `twoside`-mode you can set the option `innermargin` and `outermargin` (see section 5.2.1). The length will be ignored if you use the option `usetwoside`.

3. The frames

Normally you can say `mdframed` draws only some lines. To allow page breaks the following designs are supported. If you load the package with `framemethod=default` you can only draw a single line. Inside the gray box the text will be printed.

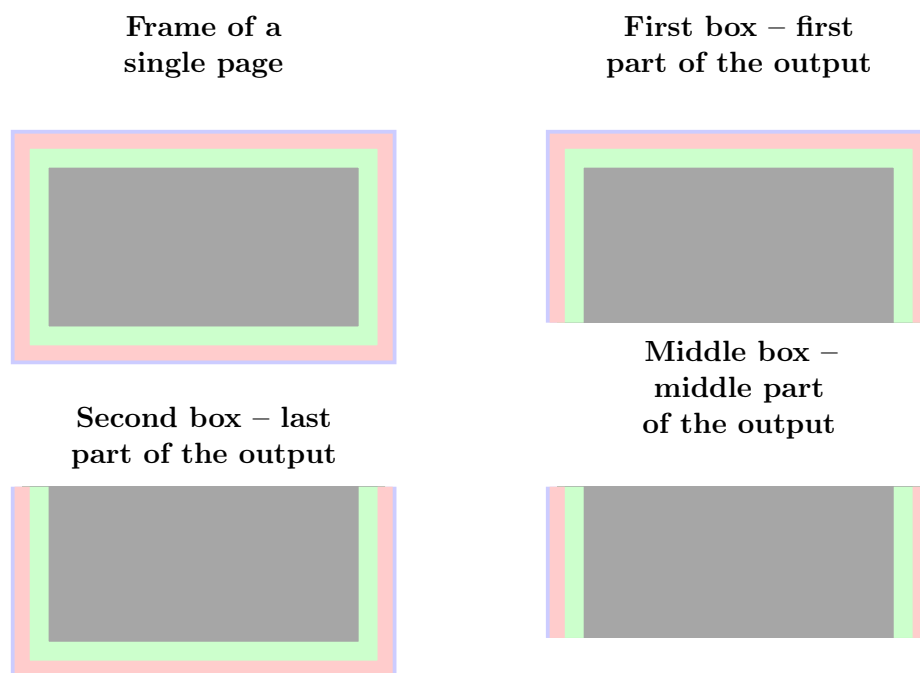


Figure 1: The basic frames

4. Commands

The following commands should countenance your by the handling with `mdframed`

`\newmdenv`

The command has the following syntax:

```
\newmdenv[<MDFRAMED OPTIONS>]{Name of the environment}
```

In this way you can simply use:

```
\newmdenv[ linecolor=red , frametitle=Infobox ]{ infobox }
...
\begin{infobox}[ backgroundcolor=yellow ]
foo   foo   foo   foo   foo   foo
\end{infobox}
```

`\renewmdenv`

By using this command you can redefine environments which are created by `\newmdenv`.

`\surroundwithmdframed`

Sometimes you have predefined environments. This commands allows you to set an `environment` surround this predefined environment. To set a `mdframed` around the environment `verbatim` you can simple say without changing the original name.

```
\surroundwithmdframed [ linewidth=2pt ] { verbatim }
```

`\mdflength`

If you want to work with length defined by `mdframed` (for example `innerleftmargin`) you can now simple use the command `\mdflength`.

```
Some Text \hspace{\mdflength{innerleftmargin}} Some Text

\the\mdflength{innerleftmargin}
```

`\mdfsetup`

To set the options you can use the optional argument of `\usepackage` or you can use the command `\mdfsetup` which is not limited to the preamble. Inside a group the settings work only local.

At this point I want to recommend the using of the command `\mdfsetup` instead of setting package option via the optional argument of `\usepackage`. So you are avoiding breaking of non robust commands.²

`\mdfdefinestyle`

`\mdfdefinestyle` allows the user to define different styles and use as an option of `mdframed` via `style`. The option `style` is explained in section 5.2.3.

Here a small example:

```
\mdfdefinestyle { mystyle } { leftmargin=0pt , %
                                linecolor=blue }

....
\begin { mdframed } [ style=mystyle ]
foo
\end { mdframed }
```

`\mdfapptodefinestyle`

This commands allows to expand a defined style.³

5. Options

The package provides various options to manipulate frames. In the following section all options are listed. Some internal macros which can be manipulated are not shown in this documentation. The listed options are divided in global and local options. The global options can not be used inside `\mdfsetup`.

²Thanks to Heiko Oberdiek and Philipp Stephani [kvoptions-Declaration von Optionen schlägt fehl](#)

³Thanks to Martin Scharrer and Enrico Gregorio:

<http://tex.stackexchange.com/questions/34684/argument-of-setkeys>

5.1. Global Options

The following options are only global options.

xcolor default=`none`

By setting this key, the package `xcolor` will be loaded with the given value(s). Without any value `mdframed` loads the package `color` without any options. If the package `xcolor` is already loaded the given option will be ignored. I recommend to load `xcolor` before `mdframed`.

framemethod default=`default`

With this key you can change the way frames are drawn. You can decide whether the frame is drawn with

1. \LaTeX -commands `\hrule`, `\vrule`, `\rule`,
2. `TikZ` (the package `TikZ` will be loaded) or
3. `PSTricks` (the package `pstricks` will be loaded).

The option `framemethod` requires a string. Allowed combinations are listed in the following table.

Table 1: Allowed keys for `framemethod`

Method	Allowed keys
\LaTeX -commands	<code>default</code> , <code>tex</code> , <code>latex</code> , <code>none</code> , <code>0</code>
<code>TikZ</code>	<code>tikz</code> , <code>pgf</code> , <code>1</code>
<code>PSTricks</code>	<code>pstricks</code> , <code>ps</code> , <code>postscript</code> , <code>2</code>

FYI

It is independently whether the `method` is written with no, one or more capital letter.

Note

The manipulation of the frames depends on the option `framemethod`. For further information see below.

5.2. Global and Local Options

The options listed below can be set globally or locally and they are not limited to the preamble. I tried to define self explained names.

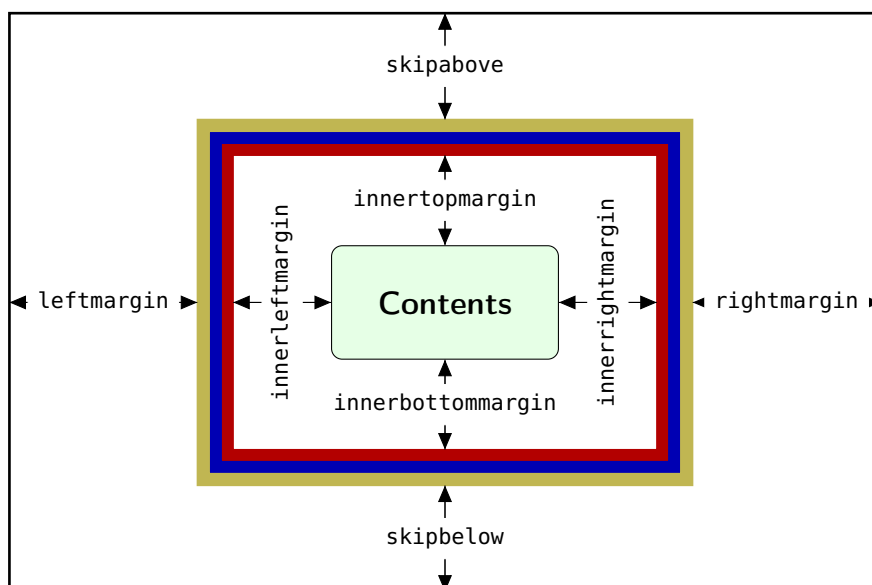
5.2.1. Options with lengths

In figure (2) you can see the adjustable lengths (compare also figure (1)) which will be described below. All lengths accept two kinds of input. The first one is a length (e.g. `2pt`) and the second one is a number (e.g. `2`) which will be multiplied by `1 defaultunit`. The figure shows three different colored frames.

I know that the predefined lengths are not well prepared. Maybe I will change it later.

defaultunit default=`pt`

see the sentence above.

Figure 2: adjustable lengths of `mdframed`

`skipabove` default=0pt

Sets an additional skip above the frame.

`skipbelow` default=0pt

Sets an additional skip below the frame.

`margin`
This option is not longer supported. Use `leftmargin` and `rightmargin` instead.

`leftmargin` default=0pt

Sets the length of the left margin of the environment.

`rightmargin` default=0pt

Sets the length of the right margin of the environment.

`innerleftmargin` default=10pt

Sets the length of the inner left margin of the environment.

`innerrightmargin` default=10pt

Sets the length of the inner right margin of the environment.

`innertopmargin` default=.4\baselineskip

Sets the length of the inner top margin of the environment.

`innerbottommargin` default=.4\baselineskip

Sets the length of the inner bottom margin of the environment.

The following lengths are not shown in figure (2).

<code>userdefinedwidth</code>	default=0pt
Sets the width of the whole <code>mdframed</code> environment. The width represent the width including the line width and the inner margins. The outer margins will be ignored.	
<code>outermargin</code>	
Sets the length of the outer margin. This option is only available in <code>twoside</code> -mode.	
<code>innermargin</code>	
Sets the length of the inner margin. This option is only available in <code>twoside</code> -mode.	
<code>splittopskip</code>	default=0pt
Sets the length of the skip above the split part of the environment.	
<code>splitbottomskip</code>	default=0pt
Sets the length of the skip below the split part of the environment.	
<code>linewidth</code>	default=0.4pt
Sets the width of the line around the environment.	
<code>roundcorner</code>	default=0pt
Sets the size of the radius of the corners of the frames. This works only with <code>framemethod=TikZ</code> or <code>PSTricks</code> .	
<code>innerlinewidth</code>	default=0pt
Sets the width of the inner line around the environment. This works only with <code>framemethod=TikZ</code> or <code>PSTricks</code> .	
<code>outerlinewidth</code>	default=0pt
Sets the width of the outer line around the environment. This works only with <code>framemethod=TikZ</code> or <code>PSTricks</code> .	
<code>middlelinewidth</code>	default=linewidth
Sets the width of the middle line around the environment. This works only with <code>framemethod=TikZ</code> .	

5.2.2. Colored Options

<code>linecolor</code>	default=black
Sets the color of the line around the environment.	
<code>backgroundcolor</code>	default=white
Sets the color of the background of the environment.	
<code>fontcolor</code>	default=black

Sets the color of the contents of the environment.

`innerlinecolor` default=`linecolor`

Sets the color of the inner line around the environment.
This works only with `framemethod=TikZ` or `PSTricks`.

`middlelinecolor` default=`linecolor`

Sets the color of the middle line around the environment.
This works only with `framemethod=TikZ` or `PSTricks`.

`outerlinecolor` default=`linecolor`

Sets the color of the outer line around the environment.
This works only with `framemethod=TikZ` or `PSTricks`.

5.2.3. General options

`font` default=`{}`

Sets the font of the environment.

`ntheorem` default=`false`

Before setting this boolean key, you have to load the package `ntheorem`. With this option you set the values `\theorempreskipamount` and `\theorempostskipamount` to 0pt.

`nobreak` default=`false`

Sometimes it is useful to prevent a frame from splitting. The `nobreak` option is used for this purpose. If you activate this option you can enable it by setting `nobreak=false`.

`usetwoside` default=`true`

If you set the `twoside` option you can work with `outermargin`. This option disable this and you work with `leftmargin` and `rightmargin`.

`needspace` default=`0pt`

Sometimes it is useful to set a minimum height before a frame should be splitted. For such cases you can use `needspace`. The option requires a length which sets the minimum height before a frame will be splitted.

`style`

If you define a special style with `\mdfdefinestyle` you can use the key `style` to load the style. `mdframed` has no predefined styles yet.

`settings` default=`none`

This option allows the user to commit some macros. An example is shown in the example files.

`align` default=`left`

Sometimes it is useful to align the environment itself. For this you have the option `align` which can be set to the following strings:

- `left`,
- `right` and
- `center`.

The alignments `left` or `right` depend on the given lengths `leftmargin` and `rightmargin`. Later I will present an example to demonstrate my bad English explanation.

`shadow` default=false

Draw a shadow. Note if you are using the TikZ you must load the library. `mdframed` doesn't do the job to avoid double loading of a library.

`pstrickssetting` default=none

With this key you can pass several options to `\psset`. For example if you want all lines dashed you will have to set `pstrickssetting={linestyle=dashed}`. It is very important to put the options of `pstrickssetting` in brackets.

This works only with `framemethod=PSTricks`.

`pstricksappsetting` default=none

`mdframed` works with defined style for the different elements. By using `\apptopsstyle` in combination with this option you can expand the definition. The predefined styles are

- `mdfbackgroundstyle`
- `mdfframetitlebackgroundstyle`
- `mdfouterlinestyle`
- `mdfinnerlinestyle`
- `mdfmiddlelinestyle`

Before you change one please have a look at the file `md-frame-2.mdf` to see the settings.

This works only with `framemethod=PSTricks`.

`tikzsetting` default=none

With this key you can pass several options to `\tikzset`. Some examples are listed in the next section. It is very important to put the options of `tikzsetting` in brackets.

This works only with `framemethod=TikZ`.

`apptotikzsetting` default=none

With this key you can add several options to `tikzsetting`. This key based on the idea of manipulation of predefined keys of `mdframed`. The package `mdframed` defines via `\tikzset` the following keys to draw frames.

- `\tikzset{mdfbox/.style}`
- `\tikzset{mdfcorners/.style}`
- `\tikzset{mdfbackground/.style}`
- `\tikzset{mdfinnerline/.style}`

- `\tikzset{mdfouterline/.style}`
- `\tikzset{mdfmiddleline/.style}`
- `\tikzset{mdfframetitlerule/.style}`
- `\tikzset{mdfframetitlebackground/.style}`
- `\tikzset{mdfshadow/.style}`

Before you change one please have a look at the file **md-frame-1.mdf** to see the settings. This works only with `framemethod=TikZ`.

5.3. Hidden Lines

<code>topline</code>	default=true
Draws a line at the top.	
<code>bottomline</code>	default=true
Draws a line at the bottom.	
<code>leftline</code>	default=true
Draws a line on the left.	
<code>rightline</code>	default=true
Draws a line on the right.	
<code>hidealllines</code>	default=false
With this option you can decide whether all lines should be drawn or not.	

5.4. Frametitle

In this section all relevant options of the frame title will be presented. They are not divided in their properties.

<code>frametitle</code>	default=none
The environment gets a title. To set a title use <code>frametitle={The Title of the frame}</code> as an option of the environment.	
<code>frametitlefont</code>	default=\normalfont\bfseries
Sets the format of the <code>frametitle</code> .	
<code>frametitlealignment</code>	default=\raggedleft
Align the <code>frametitle</code> . This option must be set via <code>\mdfsetup</code> .	
<code>frametitlerule</code>	default=false
Set this key to <code>true</code> to get a line between the frame title and the text.	
<code>frametitlerulewidth</code>	default=.2pt

Sets the width of the line between the text and the title of `mdframed`.

`frametitleaboveskip` default=5pt

Sets the skip of the frame title to the margin above of `mdframed`.

`frametitlebelowskip` default=5pt

Sets the skip of the frame title to the rule of the frame title.

`frametitlebackgroundcolor` default=white

Sets the color of the background of the frametitle

FYI and Note

`mdframed` can't handle page breaks inside the frametitle well. If you get a page break please have a closer look to the output.

If a frame title is given the optional length `innertopmargin` is set between the rule under the frame title and the contents of `mdframed`.

`repeatframetitle` default=false

Repeat the frame title on every frame. The feature is currently not well implemented!!!

5.5. Theorems

In this section is described which commands can help you to define theorem environments with `mdframed`.

`\newmdtheoremenv`

Since the package is often used to highlight theorem environments, I have created a command⁴ to simplify this process. The command has the following syntax:

```
\newmdtheoremenv[<mdframed-options>]{<envname>}%
    [<numberedlike>]{<caption>}[<within>]
```

The last four arguments are equivalent to the command `\newtheorem`. Only the first optional argument is able to pass `mdframed`-options. A simple example is:

```
\theoremstyle{<some style>}
\newmdtheoremenv[<linecolor=blue>]{lemma}%
    {Lemma}[<section>]
...
\begin{lemma}[Some title]
    foo    foo    foo    foo    foo    foo
\end{lemma}
```

So far there is no `\renewmdtheoremenv`!

`\mdtheorem`

This is a special kind of `\newtheorem`. The command has the following syntax.

```
\mdtheorem[<mdframed-options>]{<envname>}%
    [<numberedlike>]{<caption>}[<within>]
```

⁴Thanks to Martin Scharrer and Enrico Gregorio:

[Own command to create new environment](#)

As you can see the arguments are equal to `\newtheorem` but the command ignores every `\theoremstyle`. This is based on the following behavior.

The command `\mdtheorem` creates two environments based on the given first mandatory argument. The first environment is named like the given argument and creates a numbered theorem. The second environment is named like the first mandatory argument with a star. This environment has the same formatting but isn't numbered.

The syntax of the new defined environments is equal to the normal theorem environments.

```
\begin{environment}[optional title]
...
\end{environment}
```

What happened? The caption of the command will be set as the frame title. In this way all options of the frame title are available. Furthermore `mdframed` provides additional options explained below.

`theoremseparator` default={:}

Sets the separator of the caption and the title of the theorem. The `theoremseparator` will be printed only if an theorem title is given.

`theoremtitlefont` default={}

Via the option `frametitlefont` you can manipulate the font of the frame title. The option `theoremtitlefont` allows to set a different font to the title of the theorem.

`theoremspace` `\space`

Sets the space after `theoremseparator`.

Examples can be found in the attached files.

5.6. Footnotes

Inside the environment you can use the command `\footnote` as usual. `mdframed` uses the syntax of environment `minipage` with the same counter.

Every footnote text will be collected inside a box and will be displayed at the end of the environment `mdframed`.

`footnotedistance` default= `\bigskipamount`

The length is the distance between the end of the environment `mdframed` and the displaying of the `\footnoterule`.

`footnoteinside` default=true

The position of the footnotes can be changed with the option `footnoteinside`. The footnotes will be displayed at the end of the environment but you can decide whether the output is inside `mdframed` or after.

Note

The output of the footnotes with the option `footnoteinside=false` are not in a splitted frame. I think it isn't useful because the first line of a new page shouldn't be a footnote.

6. Examples

I outsource the examples in four files to limit the documentation. The files are

mdframed-example-default

Demonstration of examples created with `framemethod=default`.

mdframed-example-tikz

Demonstration of examples created with `framemethod=TikZ`.

mdframed-example-pstricks

Demonstration of examples created with `framemethod=pstricks`.

mdframed-example-texsx

Demonstration of examples like interaction with `listings`

The examples are often not equivalent but normally they can be adapted to another method. So I really recommend to have a look to all example files.

7. Errors, Warnings and Messages

The package `mdframed` provides different errors, warnings and messages in the `log`-file. Some \LaTeX -editors like `TEXMaker` or `TEXStudio` have a special tab for errors and warnings but not for messages. So you should look in the `log-File` itself.

The following errors and warnings are generated by `mdframed`.

The package ... does not exist but
needed by **mdframed**

To avoid this problem you should install the required packages which are listed in section 2.

package option **style** is depreciated
use **framemethod** instead **style**

With version 0.9d `mdframed` changed the meaning of the option `style`. The option is used to load a defined style by `\mdfdefinestyle`. Instead use `framemethod` (see section 5.1).

Unknown **framemethod** **mdframed**

The input string for the option `framemethod` is unknown. See section 5.1.

You have not loaded **ntheorem** yet

To use the option `ntheorem` you have to load the package `ntheorem`.

You have only a width of 3cm

The package `mdframed` calculates the width of the contents based on the given options. If the width of the contents is smaller than 3cm you will get this warnings. You should change the settings to get a greater width.

You got a bad break
you have to change it manually
by changing the **text**, the space
or something else

Sometimes you have enough vertical space for the rules and the space between the rules and the contents but not for the contents itself. In this situation you will get this warning because the contents of this box is empty. You have the possibility to change the settings or include a `\clearpage` in front of the environment `mdframed`. So far I have no idea how to avoid such things.

```
You got a bad break
because the split box is empty
You have to change the page settings
like enlargethispage or something else
You got a bad break
```

See the explanation above.

```
You got a bad break
because the last split box is empty
You have to change the settings
```

The same reason as above but only in the last box.

```
Option ... is already consumed
and has no effect on input line ...
```

If you set a global option inside the document body you will get this warning.

8. Known Problems

In this section I will collect known problems. In case you encounter any further problems, please drop me an email, [marco.daniel at mada-nada.de](mailto:marco.daniel@mada-nada.de).

Do you have any ideas / wishes on further extensions to this package? Please let me know!

1. So far the environment isn't compatible with the package `gmverb`.

9. ToDo

It is important to update the documentation

1. see "Known Problems".
2. So far it isn't possible to combine the environment `\begin{multicols}` of the package `multicol` with `mdframed` with the whole option list.
3. Create new styles.
4. Improve page breaks.
5. Improve footnotes.
6. Improve documentation and examples.
7. Create styles for `frametitle`.

10. Acknowledgements

Dick Nickalls; Dietrich Grau; Piazza Luca; Jobst Hoffmann; Martin Scharrer; Enrico Gregorio;
Heiko Oberdiek; Philipp Stephani.

Thanks for proofreading

Alan Munn and Nahid Shajari

I hope I forgot nobody.

A. More information

In the following section I want to present how to create your own frame.

A.1. How does `mdframed` work?

With the environment `\begin{mdframed} ... \end{mdframed}` the whole contents will be saved in a `\savebox` called `\mdf@splitbox@one`. After the calculation of the width and the height of the `\mdf@splitbox@one` (done by `mdframed.sty`) the box will be set sequentially (done by `md-frame-X.mdf`). The following figure demonstrates this.

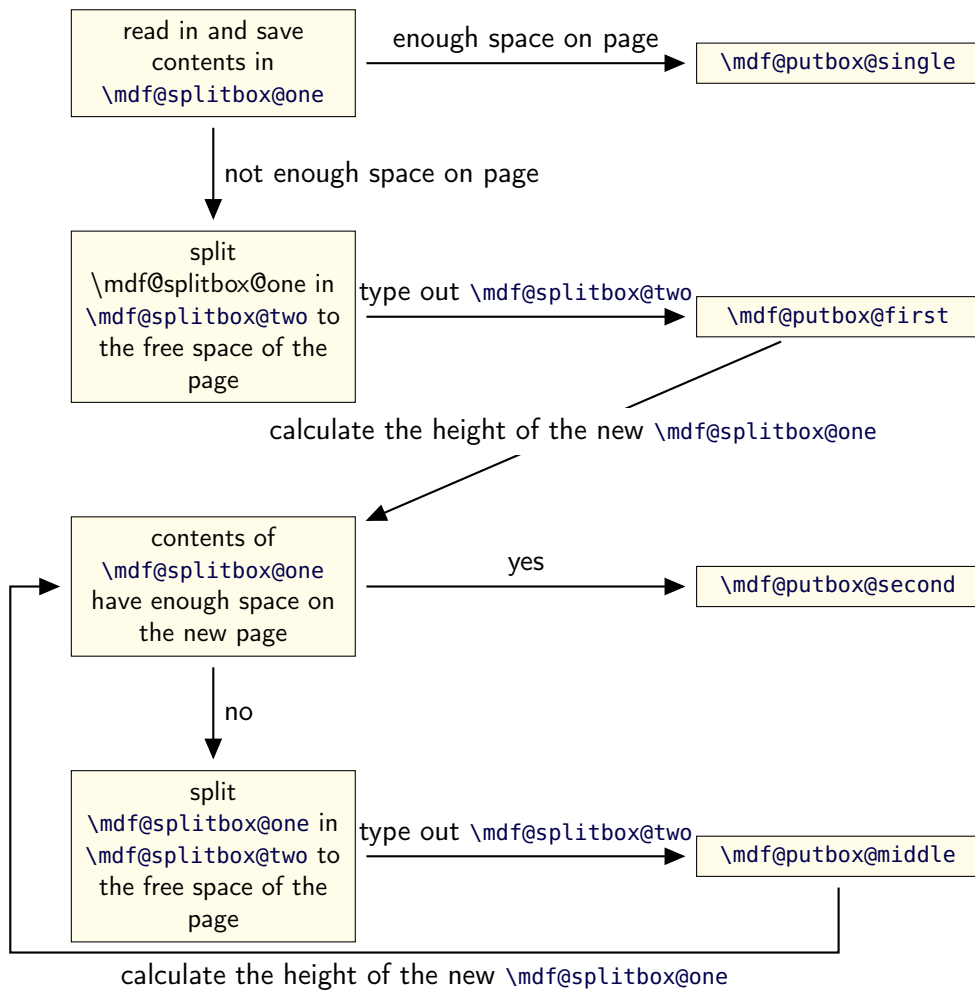


Figure 3: Setting the contents of `mdframed`

The width of the contents is the result of the settings of `leftmargin`, `rightmargin`, `linewidth`, `innerleftmargin` and `innerrightmargin` (see figure (2)).

A.2. The Framecommands

The package `mdframed` knows four kinds of “Framecommand”. These commands tell `LATEX` how to set the contents of `mdframed`.

`\mdf@putbox@single` This command sets the contents of a single unsplit frame.

`\mdf@putbox@first` This command sets the contents of the first frame of a split frame.

`\mdf@putbox@middle` This command sets the contents of the middle frame of a split frame.

`\mdf@putbox@second` This command sets the contents of the last frame of a split frame.

Using the explained commands we give an example. The command `\box` uses the contents of the savebox and types them out.

First we want to type out the single box without any settings (but with the calculated width).

```
\makeatletter
\def\mdf@putbox@single{\box\mdf@splitbox@one}
\makeatother
```

I am using the command `\leftline` to start the “Framecommands” at the left.

```
\makeatletter
\def\mdf@putbox@single{\leftline{\box\mdf@splitbox@one}}
\makeatother
```

Now you have to know how the lengths are named. Every length which can be modified by the options has the following syntax:

```
\mdf@<Name of the Length>@length
```

For example the leftmargin is:

```
\mdf@leftmargin@length
```

To create only a line at the left with the correct `leftmargin` you can set `\mdf@putboxsingle` as follows

```
\makeatletter
\def\mdf@putbox@single{%
  \leftline{%
    \hspace*{\mdf@leftmargin@length}%
    \rule[-\dp\mdf@splitbox@one]{\mdf@linewidth}%
    {\ht\mdf@splitbox@one+\dp\mdf@splitbox@one}%
    \box\mdf@splitbox@one
  }%
}
\makeatother
```

In this way you can do what you want. If you create your own style you can save the file as `md-frame-X.mdf`. `X` must be an integer. In this way you can use the option `framemethod` to load the file by setting `framemethod=X`.

A.3. Revision history

Version 1.3 submitted 8 Jan 2012

- fixed documentation (Thanks to Dietrich Grau) • added option `shadow` • improved handling `\parindent` and `\parskip` (Thanks to Enrico Gregorio and Joseph Wright)

Version 1.2 submitted 8 Jan 2012

- fixed documentation (Thanks to Dietrich Grau) • fixed bug in combination with `amsthm` • fixed bug in `\newmdtheoremenv` • defined new styles via `\newpsstyle`

This works only with `framemethod=PSTricks`. • added new commands for interaction with TikZ and PSTricks • expand frame title option by option `frametitulerule`, `frametitulerulewidth`, `frametitlefont`, `frametitleaboveskip`, `frametitlebelowskip`, `frametitlealignment` • removed limitation of three lines for PSTricks • defined new commands `\surroundwithmdframed`, `\mdflength`, `\mdtheorem` • load `xparse` by default • changed internal names • expanded examples

Version 1.0b submitted 9 Dec 2011

- fixes documentation (Thanks to Dietrich Grau) • fixes bug in `\newmdtheoremenv` • fixes bug with overfull boxes (Thanks to Dietrich Grau) • defined `\newpsstylemdfbackgroundstyle` and `mdflinestyle`

This works only with `framemethod=PSTricks`. • created dtx-file (Thanks to Kevin Godby) • added `\@parboxrestore` to `\mdf@lrbox`

Version 1.0 submitted 13 Nov 2011

- add option `userdefinedwidth` • add option `align` • add option `apptotikzsetting` • create new command `\mdfapptodefinestyle` • changed internal algorithm • removed `calc` instead using ϵ -TeX `\dimexpr` • expand documentation • trying to fix problems with `xcolor` • fixed bug with `framemethod=pstricks` • create file `mdframed-example-default` • create file `mdframed-example-tikz` • create file `mdframed-example-pstricks` • create file `mdframed-example-texsx` (`texsx` stands for `tex stackexchange`)

Version 0.9g submitted 08 Oct 2011

- fixed documentation • added small footnote compatibility

Version 0.9f submitted 04 Oct 2011

- fixes bugs (thanks to Lars Madsen) • added option `hidealllines` • fixed documentation

Version 0.9e submitted 11 Sep 2011

- working with `twoside` modus

Version 0.9d submitted 10 Sep 2011

- **changed the meaning of the option `style`!!!** (inspired by Lars Madsen) • added option `framemethod` (inspired by Lars Madsen) • added options `needspace` (inspired by Lars Madsen) • added new command `\mdfdefinestyle` (inspired by Lars Madsen) • fixes documentation • renamed `md-frame-3.mdf` to `md-frame-2.mdf`

Version 0.9b submitted 7 Sep 2011

- fixes bugs in `\newmdtheoremenv` (Thanks to Enrico Gregorio)

Version 0.9a submitted 5 Sep 2011

- fixes bugs (Thanks to Lars Madsen) • expanded documentation (added revision history)

Version 0.9 submitted 4 Sep 2011

- added option `nobreak` • detecting float environments to prevent split calculation • expand documentation (Thanks to Alan Munn)

Version 0.8a

- fixes bugs • fixes documentation

Version 0.8 submitted 22 Aug 2011

- added commands: `\newmdenv`, `\renewmdenv`, `\newmdtheoremenv` • fixes bugs • fixes documentation

Version 0.7a submitted 6 August 2011

- added option `frametitle` • added option `frametitlefont` • allow `twocolumn`-mode • changed the calculation
- added option `tikzsetting` • added options for hidden lines for all styles • fixes bugs

Version 0.6a submitted 22 Dec 2010

- fixes bugs
- added `\mdfsetup`
- expanded documentation

B. Implementation

And finally, here's how it all works...

B.1. The Explanation of mdframed.sty

Id : mdframed.dtx3392012-02-04 14:29:27Zmarco Rev : 339 Author : marco

Date : 2012-02-04 15:29:27 +0100(Sa, 04.Feb2012)

```
\mdversion
\mdframedpackagename
\mdf@maindate@svn
```

Set package information

```
1 \def\mdversion{v1.3}
2 \def\mdframedpackagename{mdframed}
3 \def\mdf@maindate@svn$#1: #2 #3 #4-#5-#6 #7 #8${#4/#5/#6\space }

4 \NeedsTeXFormat{LaTeX2e}
5 \ProvidesPackage{mdframed}%
6     [\mdf@maindate@svn$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $%
7     \mdversion: \mdframedpackagename]
```

```
\mdf@PackageWarning
\mdf@PackageInfo
\mdf@LoadFile@IfExist
```

Set short form of `\PackageWarning`, `\PackageInfo` and `IfFileExists` in combination with `\RequirePackage`.

```
8 \newcommand*\mdf@PackageWarning[1]{\PackageWarning{\mdframedpackagename}{#1}}
9 \newcommand*\mdf@PackageInfo[1]{\PackageInfo{\mdframedpackagename}{#1}}
10 \newcommand*\mdf@LoadFile@IfExist[1]{%
11   \IfFileExists{#1.sty}{%
12     \RequirePackage{#1}%
13   }{%
14     \mdf@PackageWarning{The file #1 does not exist\MessageBreak
15       but needed by \mdframedpackagename\MessageBreak
16       see documentation fo further information
17     }%
18   }
19 }
```

Loading required packages

```
20 \RequirePackage{kvoptions}
21 \RequirePackage{xparse}
22 \RequirePackage{etoolbox}[2011/01/03]
23 \RequirePackage{zref-abspage}
24 \RequirePackage{color}
```

Set the family and the prefix of all options. (see documentation of `kvoptions`)

```
25 \SetupKeyvalOptions{family=mdf,prefix=mdf@}
```

```
\mdf@iflength
\mdf@iflength@check
\mdf@iflength@check
```

Command which checks the input of length options. If the length option is only a number the `defaultunit` will be used. Syntax: `\mdf@iflength{<Input>}{<length>}{<no length>}`

```

26 \newlength{\mdf@templength}
27 \def\mdf@iflength#1{%
28   \afterassignment\mdf@iflength@check%
29   \mdf@templength=#1\mdf@defaultunit\relax\relax
30   \expandafter\endgroup\next
31 }
32 \def\mdf@iflength@check#1{%
33   \begingroup
34   \ifx\relax#1\@empty
35     \def\next{\@secondoftwo}
36   \else
37     \def\next{\@firstoftwo}
38     \expandafter\mdf@iflength@cleanup
39   \fi
40 }
41 \def\mdf@iflength@cleanup#1\relax{}
```

`\mdf@dolist`

Loop used by *mdframed*.

```
42 \DeclareListParser*{\mdf@dolist}{,}
```

`\mdf@option@length`
`\mdf@define@key@length`

Command to define a new length with a default value.

```

\mdf@option@length{<Laengebezeichnung>}{<Defaultwert>}
43 \newrobustcmd*{\mdf@option@length}[2]{%
44   \expandafter\newlength\csname mdfl@#1@length\endcsname%
45   \expandafter\setlength\csname mdfl@#1@length\endcsname{#2}%
46 }
```

Command to create a new length option. `\mdf@define@key@length{<Bezeichnung der Option der Laenge>}`

```

47 \newrobustcmd*{\mdf@define@key@length}[1]{%
48   \define@key{mdf}{#1}{%
49     \def\@tempa{##1}
50     \mdf@iflength{\@tempa}%
51     {\csxdef{mdfl@#1}{\the\mdf@templength}}%
52     {\csxdef{mdfl@#1}{\the\mdf@length}}%
53     \expandafter\setlength\csname mdfl@#1@length\endcsname{\csname mdfl@#1\endcsname}%
54   }%
55 }
```

`\mdf@do@lengthoption`
`\mdf@lengthoption@doubledo`

The loop of `\mdf@dolist` expected one argument. So I have to define two commands to allow a loop with two arguments. The separation for the input is `==`.

```

56 \def\mdf@do@lengthoption#1{%
57   \mdf@lengthoption@doubledo#1\@nil%
58 }
59 \def\mdf@lengthoption@doubledo#1==#2\@nil{}
```

```

60 \mdf@option@length{#1}{#2}%
61 \mdf@define@key@length{#1}%
62 }

```

```

\mdf@do@stringoption
\mdf@stringoption@doubledo

```

Same as `\mdf@do@lengthoption` and `\mdf@lengthoption@doubledo`.

```

63 \def\mdf@do@stringoption#1{%
64   \mdf@stringoption@doubledo#1\@nil%
65 }
66 \def\mdf@stringoption@doubledo#1==#2\@nil{%
67   \expandafter\gdef\csname mdf@#1\endcsname{#2}%
68   \define@key{mdf}{#1}{%
69     \csdef{mdf@#1}{##1}%
70   }%
71 }

```

```

\mdf@do@booloption
\mdf@booloption@doubledo

```

Same as `\mdf@do@lengthoption` and `\mdf@lengthoption@doubledo`.

```

72 \def\mdf@do@booloption#1{%
73   \mdf@booloption@doubledo#1\@nil%
74 }
75 \def\mdf@booloption@doubledo#1==#2\@nil{%
76   \newbool{mdf@#1}\setbool{mdf@#1}{#2}%
77   \define@key{mdf}{#1}[#2]{%
78     \setbool{mdf@#1}{##1}%
79   }%
80 }

```

```

\mdf@do@alignoption
\mdf@alignoption@tripleo

```

Same as `\mdf@do@lengthoption` and `\mdf@lengthoption@doubledo`. Here three arguments are required.

```

81 \def\mdf@do@alignoption#1{%
82   \mdf@alignoption@tripleo#1\@nil%
83 }
84 \def\mdf@alignoption@tripleo#1==#2==#3\@nil{%
85   \csdef{mdf@align@#1@left}{\null\hspace*{#2}}%
86   \csdef{mdf@align@#1@right}{\hspace*{#3}\null}%
87 }

```

Start declaration of options

```

88 \newcounter{mdf@globalstyle@cnt}
89 \defcounter{mdf@globalstyle@cnt}{0}
90 \newcommand*\mdfglobal@style{0}

```

Only provide to be backward compatible

```

91 \define@key{mdf}{style}{%
92   \mdf@PackageWarning{package option style is depreciated^^J
93     use framemethod instead\MessageBreak}%
94   \renewcommand*\mdfglobal@style{#1}%

```

```

95      \defcounter{mdf@globalstyle@cnt}{#1}%
96      \ifcase\value{mdf@globalstyle@cnt}\relax
97          %0 <- kein Grafikpaket
98          \or\mdf@LoadFile@IfExist{tikz}%
99          \or\mdf@LoadFile@IfExist{pstricks-add}%
100         \or\defcounter{mdf@globalstyle@cnt}{2}%
101             \mdf@LoadFile@IfExist{pst-node}%
102         \or\mdf@LoadFile@IfExist{pst-node}%
103         \else\mdf@PackageWarning{Unknown global style \value{mdf@globalstyle@cnt}}%
104     \fi%
105 }

```

\mdf@framemethod

```

106 \providecommand*\mdf@framemethod{}
107 \def\mdf@framemethod@i{}%
108 \def\mdf@framemethod@ii{}%
109 \def\mdf@framemethod@iii{}%

110 \define@key{mdf}{framemethod}[default]{%
111     \lowercase{\def\mdf@tempa{#1}}
112     \forcsvlist{\listadd\mdf@framemethod@i}{default,tex,latex,none,0}
113     \forcsvlist{\listadd\mdf@framemethod@ii}{pgf,tikz,1}
114     \forcsvlist{\listadd\mdf@framemethod@iii}{pstricks,ps,2,postscript}
115     \xifinlist{\mdf@tempa}{\mdf@framemethod@i}%
116         {\def\mdf@@framemethod{default}\defcounter{mdf@globalstyle@cnt}{0}}%
117     {\xifinlist{\mdf@tempa}{\mdf@framemethod@ii}%
118         {\def\mdf@@framemethod{tikz}\defcounter{mdf@globalstyle@cnt}{1}}%
119     {\xifinlist{\mdf@tempa}{\mdf@framemethod@iii}%
120         {\def\mdf@@framemethod{pstricks}\defcounter{mdf@globalstyle@cnt}{2}}}%
121     {%
122         \mdf@LoadFile@IfExist{#1}%
123     }%
124 }%
125 }%
126 \ifcase\value{mdf@globalstyle@cnt}\relax%
127     %0 <- kein Grafikpaket
128     \or\mdf@LoadFile@IfExist{tikz}%
129     \or\mdf@LoadFile@IfExist{pst-node}%
130     \or\mdf@LoadFile@IfExist{pst-node}%
131 \fi%
132 }

```

\mdf@do@lengthoption

Here the declaration of the length option. The input method is explained above.

```

133 \mdf@dolist{\mdf@do@lengthoption}{%
134     {skipabove==\z@},%
135     {skipbelow==\z@},%
136     {leftmargin==\z@},%
137     {rightmargin==\z@},%
138     {innerleftmargin==10pt},%
139     {innerrightmargin==10pt},%

```



```

140 {innertopmargin==0.4\baselineskip},%
141 {innerbottommargin==0.4\baselineskip},%
142 {splittopskip==\z@},%
143 {splitbottomskip==\z@},%
144 {outermargin==\z@},%
145 {innermargin==\z@},%
146 {linewidth==0.4pt},%
147 {innerlinewidth==\z@},%
148 {middlelinewidth==\expandafter\mdf@linewidth@length},%
149 {outerlinewidth==\z@},%
150 {roundcorner==\z@},%
151 {footenotedistance==\medskipamount},
152 {userdefinedwidth==\linewidth},
153 {frametitleaboveskip==5pt},
154 {frametitlebelowskip==5pt},
155 {frametitlerulewidth==.2pt},
156 {frametitleleftmargin==10pt},%
157 {frametitlerightmargin==10pt},%
158 }

```

`\mdf@do@lengthoption`

Here the declaration of the string option. The input method is explained above.

```

159 \mdf@dolist{\mdf@do@stringoption}{%
160   {frametitle=={}},%
161   {defaultunit==pt},%
162   {linecolor==black},%
163   {backgroundcolor==white},%
164   {fontcolor==black},%
165   {frametitlefontcolor==black},%
166   {innerlinecolor==\mdf@linecolor},%
167   {outerlinecolor==\mdf@linecolor},%
168   {middlelinecolor==\mdf@linecolor},%
169   {psroundlinecolor==\mdf@backgroundcolor},%
170   {frametitlerulecolor==\mdf@linecolor},
171   {frametitlebackgroundcolor==\mdf@backgroundcolor},%
172   {settings=={}},%
173   {frametitlesettings=={}},%
174   {font=={}},%
175   {frametitlefont==\normalfont\bfseries},%
176   {printheight==none},%
177   {alignment=={}},%
178   {frametitlealignment=={}},%
179   {theoremseparator=={:}},%
180   {theoremcountersep=={.}},%
181   {theoremtitlefont=={}},%
182   {theoremspace==\space}},%
183 }

```

`\mdf@do@booloption`

Here the declaration of the string option. The input method is explained above.

```

184 \mdf@dolist{\mdf@do@booloption}{%
185     {ntheorem==false},%
186     {topline==true},%
187     {leftline==true},%
188     {bottomline==true},%
189     {rightline==true},%
190     {frametitletopline==true},%
191     {frametitleleftline==true},%
192     {frametitlebottomline==true},%
193     {frametitlerightline==true},%
194     {hidealllines==false},%
195     {frametitlerule==false},%
196     {nobreak==false},%
197     {footnoteinside==true},%
198     {usetwoside==true},%
199     {repeatframetitle==false},% Noch nicht richtig implementiert
200     {shadow==false},%
201 }

```

`\mdf@do@alignoption`

Here the declaration of the align option. The input method is explained above.

```

202 \mdf@dolist{\mdf@do@alignoption}{%
203     {left==\mdf@leftmargin@length==\z@},%
204     {center==\fill==\fill},%
205     {right==\fill==\mdf@rightmargin@length},%
206     {outer==\fill==\mdf@rightmargin@length},%not supported yet
207     {outer==\mdf@leftmargin@length==\fill},%not supported yet
208 }

```

`\mdf@align`
`\mdf@makeboxalign@left`
`\mdf@makeboxalign@right`
`\mdf@makeboxalign@right`

Set the alignment.

```

209 \newcommand*\mdf@align{%
210 \newcommand*\mdf@makeboxalign@left{\null\hspace*\mdf@leftmargin@length}}%
211 \newcommand*\mdf@makeboxalign@right{}%
212 \define@key{mdf}{align}[left]{%
213     \ifcsundef{mdf@align@#1@left}{%
214         \mdf@PackageWarning{Unknown alignment #1\MessageBreak}%
215         \letcs\mdf@makeboxalign@left{mdf@align@left@left}%
216         \letcs\mdf@makeboxalign@right{mdf@align@left@right}%
217     }{%
218         \def\mdf@makeboxalign@left{\csuse{mdf@align@#1@left}}%
219         \def\mdf@makeboxalign@right{\csuse{mdf@align@#1@right}}%
220     }%
221 }

```

`\mdf@tikzset@local`
`\mdf@psset@local`

Option to pass options to tikz or pstricks

```

222 \def\mdf@tikzset@local{\tikzset{tikzsetting/.style={}}}
223 \define@key{mdf}{tikzsetting}{%
224   \def\mdf@tikzset@local{\tikzset{tikzsetting/.style={#1}}}%
225 }
226 \define@key{mdf}{apptotikzsetting}{%
227   \appto\mdf@tikzset@local{#1}%
228 }
229 \def\mdf@psset@local{}
230 \define@key{mdf}{pstrickssetting}{%
231   \def\mdf@psset@local{#1}
232 }
233 \def\mdfpstricks@appendsettings{}
234 \define@key{mdf}{pstricksappsetting}{%
235   \def\mdfpstricks@appendsettings{#1}%
236 }
237

```

\mdf@xcolor

Problem with xcolor. This part must be reworked!

```

238 \def\mdf@xcolor{}
239 \define@key{mdf}{xcolor}[none]{%
240   \def\@tempa{#1}%
241   \ifpackageloaded{xcolor}{%
242     \let\mdf@xcolor\@empty %ignoriere die Eingabe der Optionen
243     \def\@tempa{}%
244   }{}%
245   \ifx\relax\@tempa\relax\else
246     \PassOptionsToPackage{\mdf@xcolor}{xcolor}%
247     \RequirePackage{xcolor}%
248   \fi%
249 }%

```

\mdf@needspace

Defining the option needspace

```

250 \define@key{mdf}{needspace}[\z@]{%
251   \begingroup%
252     \setlength{\dimen@}{#1}%
253     \vskip\z@\@plus\dimen@%
254     \penalty -100\vskip\z@\@plus -\dimen@%
255     \vskip\dimen@%
256     \penalty 9999%
257     \vskip -\dimen@%
258     \vskip\z@skip % hide the previous |\vskip| from |\addvspace|
259   \endgroup%
260 }

261 \DeclareDefaultOption{%
262   \mdf@PackageWarning{Unknown Option '\CurrentOption' for mdframed}}
263 \ProcessKeyvalOptions*\relax

```

\mdfsetup

Short form of `\setkeys{mdf}`

```
264 \newrobustcmd*{\mdfsetup}{\setkeys{mdf}}
```

`\mdf@style`

Redefinition of the option `style` to use the key in combination with `mdfdefinedstyle`.

```
265 \define@key{mdf}{style}{%
266   \ifcsundef{mdf@definestyle@#1}{%
267     \mdf@PackageWarning{Unknown definedstyle #1^^J
268                       You have to define a style ^^J
269                       via \string\mdfdefinedstyle\MessageBreak
270                       }%
271   }%
272   {\expandafter\expandafter\expandafter\mdfsetup%
273     \expandafter\expandafter\expandafter{\csname mdf@definestyle@#1\endcsname}}%
274 }
```

`\mdf@print@space`

Option to type out the free vertical space of the current page.

```
275 \let\mdf@PackageNoInfo\@gobble
276 \newrobustcmd*{\mdf@ifstrequal@expand{%
277   \expandafter\ifstrequal\expandafter{\mdf@printheight}%
278 }
279 \newrobustcmd*{\mdf@print@space{%
280   %case "none"
281   \mdf@ifstrequal@expand{none}{\def\mdf@tempa{NoInfo}}{%
282     %case "info"
283     \mdf@ifstrequal@expand{info}{\def\mdf@tempa{Info}}{%
284       %case "warning"
285       \mdf@ifstrequal@expand{warning}{\def\mdf@tempa{Warning}}{%
286         %case "unknown"
287         \mdf@PackageWarning{Unknown key for printheight=\mdf@printheight^^J
288                           use none, info or warning}%
289         \def\mdf@tempa{none}%
290       }%
291     }%
292   }%
293   \def\mdf@PackageInfoSpace{\csname mdf@Package\mdf@tempa\endcsname}%
294 }
```

`\new...`

Initialize all commands and length which will we used later

```
295 \newsavebox\mdf@frametitlebox
296 \newsavebox\mdf@footnotebox
297 \newsavebox\mdf@splitbox@one
298 \newsavebox\mdf@splitbox@two
299 \newlength\mdf@splitboxwidth
300 \newlength\mdf@splitboxtotalwidth
301 \newlength\mdf@splitboxheight
302 \newlength\mdf@splitboxdepth
303 \newlength\mdf@splitboxtotalheight
```

```

304 \newlength\mdfframetitleboxwidth
305 \newlength\mdfframetitleboxtotalwidth
306 \newlength\mdfframetitleboxheight
307 \newlength\mdfframetitleboxdepth
308 \newlength\mdfframetitleboxtotalheight
309 \newlength\mdffootnoteboxwidth
310 \newlength\mdffootnoteboxtotalwidth
311 \newlength\mdffootnoteboxheight
312 \newlength\mdffootnoteboxdepth
313 \newlength\mdffootnoteboxtotalheight
314
315 \newlength\mdftotallinewidth
316
317 \newlength\mdfboundingboxwidth
318 \newlength\mdfboundingboxtotalwidth
319
320 \newlength\mdfboundingboxheight
321 \newlength\mdfboundingboxdepth
322 \newlength\mdfboundingboxtotalheight
323
324 \newlength\mdf@freevspace@length
325 \newlength\mdf@horizontalwidthofbox@length
326 \newlength\mdf@verticalmarginwhole@length
327
328 % Command to expand the tikz code. (see md-frame-1.mdf)
329 \newrobustcmd\mdfcreateextratikz{}
330

```

```

\mdf@lrbox
\endmdf@lrbox

```

Modification of the default `\lrbox` and `\endlrbox`

```

331 \def\mdf@lrbox#1{%
332 %%patch to work with amsthm
333 \mdf@patchamsthm
334 %%end patch
335 \edef\mdf@restoreparams{%
336 \parindent=\the\parindent \parskip=\the\parskip}
337 \setbox#1\vbox\bgroup
338 \color@begingroup%
339 \mdf@horizontalmargin@equation%
340 \columnwidth=\hsize%
341 \textwidth=\hsize%
342 \@parboxrestore%
343 \mdf@restoreparams\@doendpe%Required????
344 }
345 \def\endmdf@lrbox{\color@endgroup\egroup}
346

```

```

\mdf@ignorevbadness
\mdf@restorevbadness

```

Avoiding warnings during the splitting process by `\vsplit`. see [How to avoid underfull vbox in combination with](#)

`\vsplit?`

```

347 \newrobustcmd*\mdf@ignorevbadness{%
348   \edef\mdf@currentvbadness{\the\vbadness}%
349   \vbadness=\@M%
350   \afterassignment\mdf@restorevbadness}
351 \newrobustcmd*\mdf@restorevbadness{\vbadness=\mdf@currentvbadness\relax}

```

`\mdf@patchamsth`

The package `amsthm` provides a not compatible starting of theorem. So I have to change the header of `amsthm`.

```

352 \ifpackageloaded{amsthm}{%
353   \newrobustcmd*\mdf@patchamsthm{%
354     \let\mdf@deferred@thm@head\deferred@thm@head
355     \patchcmd{\deferred@thm@head}{\indent}{\relax}{}{}
356   }%
357 }{\let\mdf@patchamsthm\relax}%

```

`\mdf@trivlist`
`\endmdf@trivlist`

Modification of the default `\trivlist` and `\endtrivlist`.

```

358 \def\mdf@trivlist#1{%
359   \setlength{\topsep}{#1}%
360   \partopsep\z@%
361   \parsep\z@%
362   \@nmblistfalse%
363   \@trivlist%
364   \labelwidth\z@%
365   \leftmargin\z@%
366   \itemindent\z@%
367   \let\itemlabel\empty%
368   \def\makelabel##1{##1}%
369   %% \item\leavevmode\hrule \@height\z@ \@width\linewidth\relax%
370   %% \item\mbox{}\relax% second version
371   \item\relax% first Version
372 }
373 \let\endmdf@trivlist\endtrivlist
374 \patchcmd{\endmdf@trivlist}{\endparenv}{\mdf@endparenv}{}{}
375 \def\mdf@endparenv{%
376   \addpenalty\@endparpenalty\addvspace\mdf@skipbelow@length\endpetrue}
377

```

`\mdf@makebox@out`
`\mdf@makebox@in`

```

378 \newrobustcmd*\mdf@makebox@out[2][\linewidth]{%
379   \noindent\hb@xt@\z@{%
380     \noindent\makebox[\dimexpr #1\relax][l]{#2}%
381   \hss}%
382 }%
383 \newrobustcmd*\mdf@makebox@in[2][\mdf@userdefinedwidth@length]{%
384   \noindent\makebox[\dimexpr #1\relax][l]{#2}%
385 }

```

```
\mdfdefinestyle
\mdfapptodefinestyle
```

See explanation of this commands above.

```
386 \newrobustcmd*\mdfdefinestyle[2]{%
387   \csdef{mdf@definestyle@#1}{#2}%
388 }
389 \newrobustcmd*\mdfapptodefinestyle[2]{%
390   \ifcsundef{mdf@definestyle@#1}%
391     {\mdf@PackageWarning{Unknown style #1}}%
392     {\csappto{mdf@definestyle@#1}{, #2}}%
393 }
```

```
\mdflength
\surroundwithmdframed
```

Helper macros to work with *mdframed*

```
394 \newrobustcmd*\mdflength[1]{\csuse{mdf@#1@length}}
395
396 \newrobustcmd*\surroundwithmdframed[2][]{%
397   \BeforeBeginEnvironment{#2}{\begin{mdframed}[#1]}%
398   \AfterEndEnvironment{#2}{\end{mdframed}}%
399 }
```

```
\newmdenv
\renewmdenv
\newmdtheoremenv
\mdtheorem
```

Defining of the new environment definitions.

```
400 \newrobustcmd*\newmdenv[2][]{%
401   \newenvironment{#2}{%
402     \mdfsetup{#1}%
403     \begin{mdframed}%
404   }{%
405     \end{mdframed}%
406   }%
407 }
408 \newrobustcmd*\renewmdenv[2][]{%
409   \expandafter\let\csname #2\endcsname\relax%
410   \expandafter\let\csname end#2\endcsname\relax%
411   \newmdenv[#1]{#2}%
412  }%
413
414
415 \DeclareDocumentCommand\newmdtheoremenv{0}{m o m o}{%
416   \ifboolexpr{ test {\IfNoValueTF {#3}} and test {\IfNoValueTF {#5}} }{%
417     {\newtheorem{#2}{#4}}{%
418       \IfValueTF{#3}{\newtheorem{#2}[#3]{#4}}{%
419         \IfValueTF{#5}{\newtheorem{#2}{#4}[#5]}{%
420           }%
421       }%
422     }%
423   }%
424   \BeforeBeginEnvironment{#2}{%
425     \begin{mdframed}[#1]}%
426   }%
427 }
```

```

423 \AfterEndEnvironment{#2}{%
424   \end{mdframed}}}%
425 }
426
427 \DeclareDocumentCommand{\mdtheorem}{0}{m o m o }%
428 {\ifcsdef{#2}%
429   {\mdf@PackageWarning{Environment #2 already exists\MessageBreak}}}%
430 {%
431   \IfNoValueTF {#3}%
432     {%#3 not given -- number relationship
433     \IfNoValueTF {#5}
434       {%#3+#5 not given
435       \@definecounter{#2}%
436       \expandafter\xdef\csname the#2\endcsname{\@thmcounter{#2}}
437       \newenvironment{#2}[1][{%
438         \refstepcounter{#2}
439         \ifstrempy{##1}%
440           {\let\@temptitle\relax}%
441           {%
442             \def\@temptitle{\mdf@theoremseparator%
443               \mdf@theoremspace%
444               \mdf@theoremtitlefont%
445               ##1}%
446           }
447       \begin{mdframed}[#1,frametitle={\strut#4\ \csname the#2\endcsname\@temptitle}}}%
448       {\end{mdframed}}}%
449       \newenvironment{#2*}[1][{%
450         \ifstrempy{##1}{\let\@temptitle\relax}{\def\@temptitle{: \ ##1}}
451         \begin{mdframed}[#1,frametitle={\strut#4\@temptitle}}}%
452         {\end{mdframed}}}%
453       }%
454       {%#5 given -- reset counter
455       \@definecounter{#2}\@newctr{#2}[#5]%
456       \expandafter\xdef\csname the#2\endcsname{\@thmcounter{#2}}
457       \expandafter\xdef\csname the#2\endcsname{%
458         \expandafter\noexpand\csname the#5\endcsname \@thmcountersep
459         \@thmcounter{#2}}}%
460       \newenvironment{#2}[1][{%
461         \refstepcounter{#2}
462         \ifstrempy{##1}%
463           {\let\@temptitle\relax}%
464           {%
465             \def\@temptitle{\mdf@theoremseparator%
466               \mdf@theoremspace%
467               \mdf@theoremtitlefont%
468               ##1}%
469           }
470       \begin{mdframed}[#1,frametitle={\strut#4\ \csname the#2\endcsname\@temptitle}}}%
471       {\end{mdframed}}}%
472       \newenvironment{#2*}[1][{%
473         \ifstrempy{##1}%
474           {\let\@temptitle\relax}%
475           {%
476             \def\@temptitle{\mdf@theoremseparator%
477               \mdf@theoremspace%
478               \mdf@theoremtitlefont%

```



```

479             ##1}%
480         }
481         \begin{mdframed}[#1,frametitle={\strut#4\@temptitle}]]%
482         {\end{mdframed}}}%
483     }%
484 }%
485 {%#3 given -- number relationship
486     \global\@namedef{the#2}{\@nameuse{the#3}}%
487     \newenvironment{#2}[1][]{%
488         \refstepcounter{#3}
489         \ifstrempy{##1}%
490             {\let\@temptitle\relax}%
491             {%
492                 \def\@temptitle{\mdf@theoremseparator%
493                     \mdf@theoremspace%
494                     \mdf@theoremtitlefont%
495                     ##1}%
496             }
497             \begin{mdframed}[#1,frametitle={\strut#4\ \csname the#2\endcsname\@temptitle}]]%
498             {\end{mdframed}}}%
499     \newenvironment{#2*}[1][]{%
500         \ifstrempy{##1}{\let\@temptitle\relax}{\def\@temptitle{: \ ##1}}
501         \begin{mdframed}[#1,frametitle={\strut#4\@temptitle}]]%
502         {\end{mdframed}}}%
503     }%
504 }%
505 }
506

```

```

\mdfframedtitleenv
\mdf@@frametitle
\mdf@setopt@body
\mdf@setopt@title

```

Default definition of the frame tile used by *mdframed*.

```

507 %TESTVERSION
508 % \newrobustcmd*\mdf@setopt@title{%
509 %     \ifbool{mdf@frametitulerule}{\booltrue{mdf@bottomline}}{\boolfalse{mdf@bottomline}}%
510 %     \let\ifmdf@leftline\ifmdf@frametitleleftline%
511 %     \let\ifmdf@topline\ifmdf@frametitletopline%
512 %     \let\ifmdf@rightline\ifmdf@frametitlerightline%
513 %     \let\ifmdf@bottomline\ifmdf@frametitlebottomline%
514 %     \mdfsetup{innerbottommargin=\mdf@titlebelowskip@length,%
515 %         innertopmargin=\mdf@titleaboveskip@length,%
516 %         middlelinecolor=\mdf@frametitulerulecolor,%
517 %         backgroundcolor=\mdf@frametitlebackgroundcolor,%
518 %         middlelinewidth=\mdf@frametitulerulewidth@length,%
519 %         innerleftmargin=\mdf@frametitleleftmargin@length,%
520 %         innerrightmargin=\mdf@frametitlerightmargin@length,%
521 %         alignment=\mdf@frametitlealignment,%
522 %         skipbelow=\z@}%
523 %     \def\mdf@linecolor@bottom{\color{\mdf@frametitlebottomrulecolor}}%
524 %     \mdf@frametitlesettings%
525 % }

```

```

526 %
527 % \newrobustcmd*\mdf@setopt@body{%
528 %   \mdfsetup{topline=false,skipabove=\z@}%
529 %   \unskip\nointerlineskip%
530 % }
531 %
532 % \newrobustcmd\mdfframedtitleenv[1]{%
533 %   \begingroup
534 %     \mdf@setopt@title
535 %     \color@setgroup
536 %     \mdf@frametitlefont
537 %     \mdf@lrbox{\mdf@splitbox@one}%
538 %     \mdf@frametitlealignment
539 %     #1\par\unskip
540 %   \endmdf@lrbox
541 %   \mdf@ignorevbadness
542 %   \global\setbox\mdf@frametitlebox\vbox{\unvbox\mdf@splitbox@one}%
543 %   \mdf@ignorevbadness
544 %   \global\setbox\mdf@splitbox@one\vbox{\unvcopy\mdf@frametitlebox}%
545 %   \detected@mdf@put@frame%
546 %   \color@endgroup%
547 %   \endgroup
548 % }
549 \newrobustcmd\mdfframedtitleenv[1]{%
550   \begingroup%
551   \color@setgroup%
552   \mdf@frametitlefont\color{\mdf@frametitlefontcolor}%
553   \mdf@lrbox{\mdf@frametitlebox}%
554   \mdf@frametitlealignment%
555   #1\par\unskip
556   \endmdf@lrbox%
557   \mdf@ignorevbadness%
558   \global\setbox\mdf@frametitlebox\vbox{\unvbox\mdf@frametitlebox}%
559   \global\mdfframetitleboxwidth=\wd\mdf@frametitlebox\relax%
560   \global\mdfframetitleboxheight=\ht\mdf@frametitlebox\relax%
561   \global\mdfframetitleboxdepth=\dp\mdf@frametitlebox\relax%
562   \global\mdfframetitleboxtotalheight=\dimexpr\ht\mdf@frametitlebox+\dp\mdf@frametitlebox
563     +\mdf@frametitleaboveskip@length+\mdf@frametitlebelowskip@length\relax%
564   \color@endgroup%
565   \endgroup%
566 }
567
568 \newrobustcmd*\mdf@@frametitle{%
569   \mdfframedtitleenv{\mdf@frametitle}%
570 }
571
572 \newrobustcmd*\mdf@@frametitle@use{%
573   \begingroup
574   \parskip\z@
575   \parindent\z@
576   \offinterlineskip
577   \mdf@ignorevbadness%
578   \global\setbox\mdf@splitbox@one\vbox{%
579     \unvcopy\mdf@frametitlebox%
580     \mdf@@frametitlerule%
581     \unvbox\mdf@splitbox@one

```

```

582   }%
583   \mdf@ignorevbadness%
584   \global\setbox\mdf@splitbox@one\vbox{%
585       \unvbox\mdf@splitbox@one}%
586   \endgroup
587   \mdfsetup{innertopmargin=\mdf@frametitleaboveskip@length}%
588 }

```

`\mdf@checkntheorem`

Command which checks only `ntheorem`. Later I will support also `thmtools`.

```

589
590 \newrobustcmd*\mdf@checkntheorem{%
591   \ifbool{mdf@ntheorem}%
592     {\ifundef{\theorempreskipamount}%
593       {\mdf@PackageWarning{You have not loaded ntheorem yet}}%
594       {\setlength{\theorempreskipamount}{\z@}%
595        \setlength{\theorempostskipamount}{\z@}%
596       }%
597     }{}%
598 }

```

`\mdf@footnoterule`
`\mdf@footnoteoutput`
`\mdf@footnoteinput`

Support for footnotes.

```

599 \newrobustcmd*\mdf@footnoterule{%
600   \kern0\p@
601   \hrule \@width 1in \kern 2.6\p@}
602 \newrobustcmd*\mdf@footnoteoutput{%
603   \ifvoid\@mpfootins\else
604     \nobreak%
605     \vskip\mdf@footnotedistance@length%
606     \normalcolor%
607     \mdf@footnoterule
608     \unvbox\@mpfootins
609   \fi%
610 }
611 \newrobustcmd*\mdf@footnoteinput{%
612   \def\@mpfn{mpfootnote}%
613   \def\thempfn{\thempfootnote}%
614   \c@mpfootnote\z@%
615   \let\@footnotetext\@mpfootnotetext%
616 }

```

`\mdf@load@style`
`\mdf@styledefinition`

Load the method to draw the frame and set style definition.

```

617 \newrobustcmd*\mdf@load@style{%
618   \ifcase\value{mdf@globalstyle@cnt}\relax%
619     \input{md-frame-0.mdf}%
620   \or\input{md-frame-1.mdf}%

```

```

621 \or\input{md-frame-2.mdf}%
622 \or\input{md-frame-3.mdf}%
623 \else%
624   \IfFileExists{md-frame-\value{mdf@globalstyle@cnt}.mdf}%
625   {\input{md-frame-\value{mdf@globalstyle@cnt}.mdf}}%
626   {%
627     \input{md-frame-0.mdf}%
628     \mdf@PackageWarning{The style number \value{mdf@globalstyle@cnt} does not exist^^J
629                        mdframed ues instead style=0 \mdframedpackagename}%
630   }%
631 \fi%
632 }%
633 \mdf@load@style
634
635 \newrobustcmd*\mdf@styledefinition{%AVOID!!!
636   \ifnumequal{\value{mdf@globalstyle@cnt}}{0}%
637   {\deflength{\mdf@innerlinewidth@length}{\z@}%
638    \deflength{\mdf@middlelinewidth@length}{\mdf@linewidth@length}%
639    \deflength{\mdf@outerlinewidth@length}{\z@}%
640    \let\mdf@innerlinecolor\mdf@linecolor%
641    \let\mdf@middlelinecolor\mdf@linecolor%
642    \let\mdf@outerlinecolor\mdf@linecolor%
643   }{}%
644 % \ifnumequal{\value{mdf@globalstyle@cnt}}{2}%
645 % {\deflength{\mdf@innerlinewidth@length}{\z@}%
646 %  \deflength{\mdf@middlelinewidth@length}{\mdf@linewidth@length}%
647 %  \deflength{\mdf@outerlinewidth@length}{\z@}%
648 %  \let\mdf@innerlinecolor\mdf@linecolor%
649 %  }{}%
650 % \ifnumequal{\value{mdf@globalstyle@cnt}}{3}%
651 % {\deflength{\mdf@innerlinewidth@length}{\z@}%
652 %  \deflength{\mdf@middlelinewidth@length}{\mdf@linewidth@length}%
653 %  \deflength{\mdf@outerlinewidth@length}{\z@}%
654 %  \let\mdf@innerlinecolor\mdf@linecolor%
655 %  }{}%
656 }

```

`\detected@mdf@put@frame`

Detect whether inside a non breakable environment.

```

657 \let\mdf@reserved@a\@empty
658 \newrobustcmd*\detected@mdf@put@frame{%
659   \ifmdf@nobreak%Option nobreak=true?
660   \def\mdf@reserved@a{\mdf@put@frame@standalone}%
661   \else
662     \def\mdf@reserved@a{\mdf@put@frame}%
663     \ifnum\@floatpenalty<0\relax%Detecting float
664       \if@twocolumn%
665         \ifx\@capttype\@undefined
666           \def\mdf@reserved@a{\mdf@put@frame}%
667         \else
668           \mdf@PackageInfo{mdframed inside float ^^J
669                          mdframed uses option nobreak \mdframedpackagename}%
670         \def\mdf@reserved@a{\mdf@put@frame@standalone}%

```

```

671         \fi
672     \else
673         \mdf@PackageInfo{mdframed inside float ^^J
674                         mdframed uses option nobreak \mdframedpackagename}%
675         \def\mdf@reserved@a{\mdf@put@frame@standalone}%
676         \fi%
677     \fi%
678     \if@minipage%
679         \mdf@PackageInfo{mdframed inside minipage ^^J
680                         mdframed uses option nobreak \mdframedpackagename}%
681         \def\mdf@reserved@a{\mdf@put@frame@standalone}%
682         \fi%
683     \ifinner%
684         \mdf@PackageInfo{mdframed inside a box ^^J
685                         mdframed uses option nobreak \mdframedpackagename}%
686         \def\mdf@reserved@a{\mdf@put@frame@standalone}%
687         \fi%
688     \fi%
689 \mdf@reserved@a%
690 }

```

`\mdf@hidealllines@check`

```

691 \newrobustcmd*\mdf@hidealllines@check{%
692   \ifbool{mdf@hidealllines}{%
693     \boolfalse{mdf@leftline}\boolfalse{mdf@rightline}%
694     \boolfalse{mdf@topline}\boolfalse{mdf@bottomline}%
695     \boolfalse{mdf@frametitleleftline}\boolfalse{mdf@frametitlerightline}%
696     \boolfalse{mdf@frametitletopline}\boolfalse{mdf@frametitlebottomline}%
697   }{}%
698 }

```

`\mdframed`
`\mdframed@ii`
`\mdframed@i`

That the user environment.

```

699 \newenvironment{mdframed}[1][[]]{%
700   \begin{group}%
701   \color@setgroup%
702   \mdfsetup{userdefinedwidth=\linewidth,#1}%
703   \mdf@hidealllines@check%
704   \mdf@twoside@checklength%
705   \let\width\z@%
706   \let\height\z@%
707   \mdf@checkntheorem%
708   \mdf@styledefinition%
709   \mdf@footnoteinput%
710   \color{\mdf@fontcolor}%
711   \ifvmode\nointerlineskip\fi%
712   \mdf@trivlist{\mdf@skipabove@length}%
713   \ifdefempty{\mdf@frametitle}{\mdf@@@frametitle}%
714   \mdf@settings%

```

```

715 \mdf@lrbox{\mdf@splitbox@one}%
716 }%
717 {\par\unskip%
718 \ifmdf@footnoteinside%
719 \def\mdf@reserveda{%
720 \mdf@footnoteoutput%
721 \endmdf@lrbox%
722 \ifdefempty{\mdf@frametitle}}{\mdf@@frametitle@use}
723 \detected@mdf@put@frame}%
724 \else%
725 \def\mdf@reserveda{%
726 \endmdf@lrbox%
727 \ifdefempty{\mdf@frametitle}}{\mdf@@frametitle@use}
728 \detected@mdf@put@frame%
729 \mdf@footnoteoutput%
730 }%
731 \fi%
732 \mdf@reserveda%
733 \endmdf@trivlist%
734 \color@endgroup\endgroup\@doendpe%\@endparenv%
735 }
736
737

```

```

\mdf@twoside@checklength
\mdf@zref@label
\ifmdf@pageodd
\mdf@pageisodd
\mdf@pageiseven
\mdf@@setzref

```

The whole bunch is used to work width twoside mode and uses the correct margins.

```

738 \newtoggle{md:checktwoside}
739 \settoggle{md:checktwoside}{false}
740 \newrobustcmd*\mdf@twoside@checklength{%
741 \if@twoside
742 \ifbool{mdf@usetwoside}%
743 {\mdf@PackageInfo{mdframed works in twoside mode}%
744 \settoggle{md:checktwoside}{true}%
745 \setlength\mdf@rightmargin@length{\mdf@outermargin@length}%
746 \setlength\mdf@leftmargin@length{\mdf@innermargin@length}%
747 }%
748 {\mdf@PackageInfo{mdframed inside twoside mode but\MessageBreak
749 works with oneside mode}%
750 \settoggle{md:checktwoside}{false}%
751 }%
752 \fi%
753 }
754
755 \newcounter{mdf@zref@counter}%keine doppelten laebes
756 \zref@newprop*\mdf@pagevalue}[0]{\number\value{page}}
757 \zref@addprop{\ZREF@mainlist}{mdf@pagevalue}
758 \newrobustcmd*\mdf@zref@label{%
759 \stepcounter{mdf@zref@counter}
760 \zref@label{mdf@pagelabel-\number\value{mdf@zref@counter}}%
761 }

```

```

762 \newrobustcmd*\if@mdf@pageodd{%
763     \zref@refused{mdf@pagelabel-\the\value{mdf@zref@counter}}}%
764     \ifodd\zref@extract{mdf@pagelabel-\the\value{mdf@zref@counter}}{mdf@pagevalue}%
765     \setlength\mdf@rightmargin@length{\mdf@outermargin@length}%
766     \setlength\mdf@leftmargin@length{\mdf@innermargin@length}%
767     \else
768     \setlength\mdf@rightmargin@length{\mdf@innermargin@length}%
769     \setlength\mdf@leftmargin@length{\mdf@outermargin@length}%
770     \fi%
771 }
772 \newrobustcmd*\mdf@@setzref{%
773     \iftoggle{md:checktwoside}{\mdf@zref@label\if@mdf@pageodd}{}}%
774 }

```

`\mdf@freepagevspace`

```

775 \newrobustcmd*\mdf@freepagevspace{%
776     \penalty\@M \vskip 2\baselineskip
777     \penalty9999 \vskip -2\baselineskip
778     \penalty9999
779     \ifdimequal{\pagegoal}{\maxdimen}%
780         {\mdf@freevspace@length\vsize}%
781         {\mdf@freevspace@length=\pagegoal\relax%
782         \advance\mdf@freevspace@length by -\pagetotal\relax%
783         \addtolength\mdf@freevspace@length{\dimexpr-\parskip\relax}\relax%
784         }%
785 }

```

`\mdf@advancelength@horizontalmargin@add`
`\mdf@horizontalsofbox`
`\mdf@horizontalmargin@equation`

Width of the box

```

786 \newrobustcmd*\mdf@advancelength@horizontalmargin@sub[1]{%
787     \advance\mdf@horizontalsofbox by -\csname md f@#1@length\endcsname\relax%
788 }
789 \newlength\mdf@horizontalsofbox
790 \newrobustcmd*\mdf@horizontalmargin@equation{%
791     \setlength{\mdf@horizontalsofbox}{\mdf@userdefinedwidth@length}%
792     \mdf@dolist{\mdf@advancelength@horizontalmargin@sub}{%
793         leftmargin,outerlinewidth,middlelinewidth,%
794         innerlinewidth,innerleftmargin,inerrightmargin,%
795         innerlinewidth,middlelinewidth,outerlinewidth,%
796         rightmargin}%
797     \notbool{mdf@leftline}{%
798         \advance\mdf@horizontalsofbox by \mdf@innerlinewidth@length\relax%
799         \advance\mdf@horizontalsofbox by \mdf@middlelinewidth@length\relax%
800         \advance\mdf@horizontalsofbox by \mdf@outerlinewidth@length\relax%
801     }{}%
802     \notbool{mdf@rightline}{%
803         \advance\mdf@horizontalsofbox by \mdf@innerlinewidth@length\relax%
804         \advance\mdf@horizontalsofbox by \mdf@middlelinewidth@length\relax%

```

```

805         \advance\mdf@horizontalsofbox by \mdf@outerlinewidth@length\relax%
806     }{}%
807     \ifdimless{\mdf@horizontalsofbox}{3cm}%
808         {\mdf@PackageWarning{You have only a width of 3cm}}{}
809     \hsize=\mdf@horizontalsofbox%
810 }

```

`\mdf@keeplines@single`

horizontal space in relation of the lines.

```

811 \newrobustcmd*\mdf@keeplines@single{%
812     \notbool{mdf@topline}{%
813         \advance\mdf@verticalmarginwhole@length by -\mdf@innerlinewidth@length%
814         \advance\mdf@verticalmarginwhole@length by -\mdf@middlelinewidth@length%
815         \advance\mdf@verticalmarginwhole@length by -\mdf@outerlinewidth@length%
816     }{}%
817     \notbool{mdf@bottomline}{%
818         \advance\mdf@verticalmarginwhole@length by -\mdf@innerlinewidth@length%
819         \advance\mdf@verticalmarginwhole@length by -\mdf@middlelinewidth@length%
820         \advance\mdf@verticalmarginwhole@length by -\mdf@outerlinewidth@length%
821     }{}%
822 }

```

`\mdf@advancelength@verticalmarginwhole`
`\mdf@advancelength@freevspace@sub`
`\mdf@advancelength@freevspace@add`

Loop macros to calculate the height. Used by `\mdf@dolist`.

```

823 \newrobustcmd*\mdf@advancelength@verticalmarginwhole[1]{%
824     \advance\mdf@verticalmarginwhole@length by \csname mdf@#1@length\endcsname\relax%
825 }
826 \newrobustcmd*\mdf@advancelength@freevspace@sub[1]{%
827     \advance\dimen@ by -\csname mdf@#1@length\endcsname\relax%
828 }
829 \newrobustcmd*\mdf@advancelength@freevspace@add[1]{%
830     \advance\dimen@ by \csname mdf@#1@length\endcsname\relax%
831 }

```

`\mdf@reset`

Reset changes

```

832 \protected@edef\mdf@reset{\boxmaxdepth\the\boxmaxdepth
833     \splittopskip\the\splittopskip}%

```

`\mdf@put@frame@standalone`

Output of `mdframed` inside a non breakable environment.

```

834 \newrobustcmd*\mdf@put@frame@standalone{\relax%
835     \ifvoid\mdf@splitbox@one\relax
836         \mdf@PackageWarning{The environment is empty\MessageBreak}%
837         \let\mdf@reserved@a\relax%
838     \else
839         %Hier berechnung Box-Inhalt+Rahmen oben und unten

```



```

840 \setlength{\mdf@verticalmarginwhole@length}%
841 {\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
842 \mdf@dolist{\mdf@advancelength@verticalmarginwhole}{%
843     outerlinewidth,middlelinewidth,innerlinewidth,innertopmargin,
844     innerbottommargin,innerlinewidth,middlelinewidth,outerlinewidth}%
845 \mdf@keeplines@single%
846 \def\mdf@reserved@a{\mdf@putbox@single}%
847 \fi
848 \mdf@reserved@a%
849 }

```

`\mdf@put@frame`

Output of `mdframed` inside a breakable environment. The comparison are onyl check whether the contents must be split or not.

```

850 \def\mdf@put@frame{\relax%
851 \ifvoid\mdf@splitbox@one\relax
852 \mdf@PackageWarning{The environment is empty\MessageBreak}%
853 \let\mdf@reserved@a\relax%
854 \else
855 \setlength\mdf@boundingboxwidth{\wd\mdf@splitbox@one}%
856 \mdf@print@space%
857 \mdf@freepagevspace@gives \mdf@freevspace@length
858 \mdf@PackageInfoSpace{\the\mdf@freevspace@length before the beginning of \MessageBreak
859     the environment ending on input line \MessageBreak}%
860 \ifdimless{\mdf@freevspace@length}{2\baselineskip}
861     {\mdf@PackageInfo{Not enough space on this page}
862     \vfill\eject%
863     \def\mdf@reserved@a{\mdf@put@frame}%
864     }{%
865     %Hier berechnung Box-Inhalt+Rahmen oben und unten
866     \setlength{\mdf@verticalmarginwhole@length}%
867         {\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
868     \mdf@dolist{\mdf@advancelength@verticalmarginwhole}{%
869         outerlinewidth,middlelinewidth,innerlinewidth,innertopmargin,
870         innerbottommargin,innerlinewidth,middlelinewidth,outerlinewidth}%
871     \mdf@keeplines@single%
872     \ifdimless{\mdf@verticalmarginwhole@length}{\mdf@freevspace@length}%
873         {%passt auf Seite%
874         \begingroup
875         \mdf@@setzref
876         \mdf@putbox@single%
877         \endgroup
878         \let\mdf@reserved@a\relax}%
879     {\def\mdf@reserved@a{\mdf@put@frame@i}}{%passt nicht auf Seite
880     }%
881 \fi
882 \mdf@reserved@a%
883 }

```

`\mdf@put@frame@i`

Output of the first splitted box.

```

884 \def\mdf@put@frame@i{%Box muss gesplittet werden -- Ausgabe der ersten Teilbox

```

```

885 %Berechnung der Splittgroesse -- Linien und Abstand oben
886 %\vbox to 0pt{}%
887 %\rlap{\smash{\the\mdf@freevspace@length}}%\hrule \@height\z@ \@width\hsize
888 \mdf@freepagevspace%gives \mdf@freevspace@length
889 %Berechnung ob nur oberen Linien nur auf die Seite passe
890 \dimen@=\the\mdf@freevspace@length%
891 \dimen@i=\mdf@innertopmargin@length%
892 \advance\dimen@i by \mdf@innerlinewidth@length%
893 \advance\dimen@i by \mdf@middlelinewidth@length%
894 \advance\dimen@i by \mdf@outerlinewidth@length%
895 \advance\dimen@i by 2\baselineskip%
896 \ifdimless{\dimen@}{\dimen@i}%
897   {\hrule \@height\z@ \@width\hsize%
898     \vfill\eject%
899     \def\mdf@reserved@a{\mdf@put@frame}%
900   }{%
901     \mdf@freepagevspace%
902     \dimen@=\the\mdf@freevspace@length%
903     \mdf@dolist{\mdf@advance@length@freevspace@sub}{%calculate with \dimen@
904       outerlinewidth,middlelinewidth,innerlinewidth,%
905       innertopmargin,splitbottomskip}%
906     \ifbool{\mdf@topline}{}%
907       {\advance\dimen@ by \mdf@innerlinewidth@length%
908         \advance\dimen@ by \mdf@middlelinewidth@length%
909         \advance\dimen@ by \mdf@outerlinewidth@length%
910       }%
911     \advance\dimen@.8\pageshrink
912     \ifdimless{\ht\mdf@splitbox@one+\dp\mdf@splitbox@one}{\dimen@}%
913       {\mdf@PackageWarning{You got a bad break\MessageBreak
914         you have to change it manually\MessageBreak
915         by changing the text, the space\MessageBreak
916         or something else}%
917         \advance\dimen@ by -1.8\baselineskip\relax%
918       }{%
919 %       \advance\dimen@ by -1pt\relax%Box darf nicht zu Groß werden.
920       \splitmaxdepth\z@ \splittopskip\mdf@splittopskip@length%
921       \mdf@ignorevbadness%
922       \setbox\mdf@splitbox@two\vsplit\mdf@splitbox@one to \dimen@
923       \setbox\mdf@splitbox@two\vbox{\unvbox\mdf@splitbox@two}%
924       \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@one}%
925       \ifbool{\mdf@repeatframetitle}{%
926         \setbox\mdf@splitbox@one\vbox{%
927           \vbox to \mdf@splittopskip@length{\hsize\z@}
928           %\par\unskip\nointerlineskip
929           \unvcopy\mdf@frametitlebox%
930           \mdf@@frametitlerule%
931           \vbox to\dimexpr
932             -\mdf@splittopskip@length+\ht\strutbox+\dp\strutbox
933             +\mdf@innertopmargin@length\relax{\hsize\z@}%
934           \unvbox\mdf@splitbox@one}%
935         }{%
936           \ifdimgreater{\ht\mdf@splitbox@two+\dp\mdf@splitbox@two}{\dimen@}%
937             {%Falsch gesplittet
938             \mdf@PackageInfo{Box was splittet wrong\MessageBreak}%
939             \dimen@i=\dimen@
940             \advance\dimen@ by -\ht\mdf@splitbox@two

```

```

941      \advance\dimen@ by -\dp\mdf@splitbox@two
942      \advance\dimen@i by 0.5\dimen@
943      \splittopskip\z@%
944      \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@two%
945          %benoetigt um Tiefe zu haben
946          \hrule \@height\dp\strutbox \@width\z@
947          \unvbox\mdf@splitbox@one}
948      \splittopskip\mdf@splittopskip@length%
949      \mdf@ignorevbadness%
950      \setbox\mdf@splitbox@two\vsplit\mdf@splitbox@one to \dimen@i
951      \setbox\mdf@splitbox@two\vbox{\unvbox\mdf@splitbox@two}%
952      \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@one}%
953      \ifbool{mdf@repeatframetitle}{%
954          \setbox\mdf@splitbox@one\vbox{%
955              \vbox to \mdf@splittopskip@length{\hsize\z@}
956              %\par\unskip\nointerlineskip
957              \unvcopy\mdf@frametitlebox%
958              \mdf@@frametitlerule%
959              \vbox to\dimexpr
960                  -\mdf@splittopskip@length+\ht\strutbox+\dp\strutbox
961                  +\mdf@innertopmargin@length\relax{\hsize\z@}%
962              \unvbox\mdf@splitbox@one}%
963          }{}%
964      }{}%
965      \ifvoid\mdf@splitbox@one
966          \mdf@PackageWarning{You got a bad break\MessageBreak
967              because the splittet box is empty\MessageBreak
968              You have to change the page settings\MessageBreak
969              like enlargethispage or something else}%
970          \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@two%
971              %benoetigt um Tiefe zu haben
972              \hrule \@height\dp\strutbox \@width\z@
973              \unvbox\mdf@splitbox@one}%
974          \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@one}%
975          \enlargethispage{\baselineskip}%
976          \def\mdf@reserved@a{\mdf@put@frame}%
977      \fi
978      \ifvoid\mdf@splitbox@two%%pruefe, ob erste Box leer ist
979          \hrule \@height\z@ \@width\hsize
980          \vfill\eject%
981          \def\mdf@reserved@a{\mdf@put@frame}%
982      \else
983          \ifdimequal{\ht\mdf@splitbox@two}{0pt}%
984              {\hrule \@height\z@ \@width\hsize%
985              \vfill\eject%
986              \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@two\unvbox\mdf@splitbox@one}
987              \def\mdf@reserved@a{\mdf@put@frame}%
988              }%
989              {%
990              \begingroup%
991                  \mdf@@setzref
992                  \mdf@putbox@first%%Groesse des Splittens passt
993              \endgroup%
994              \hrule \@height\z@ \@width\hsize%
995              \vfill\eject%
996              \def\mdf@reserved@a{\mdf@put@frame@ii}%

```

```

997         }%
998     \fi%
999     }%
1000 \mdf@reserved@a%
1001 }

```

`\mdf@put@frame@ii`

Output of the middle and last box.

```

1002 \def\mdf@put@frame@ii{%Ausgabe der mittleren Box(en) wenn vorhanden
1003   \setlength{\mdf@freevspace@length}{\vsize}%
1004   \setlength{\dimen@}{\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
1005   \mdf@dolist{\mdf@advance@length@freevspace@add}{%used \dimen@
1006               outerlinewidth,middlelinewidth,innerlinewidth,%
1007               innerbottommargin}%%Addition der Linien unten
1008   \ifbool{mdf@bottomline}{}%
1009       \advance\dimen@i by \mdf@innerlinewidth@length%
1010       \advance\dimen@i by \mdf@middlelinewidth@length%
1011       \advance\dimen@i by \mdf@outerlinewidth@length%
1012       \relax}%
1013   \ifdimgreater{\dimen@}{\mdf@freevspace@length}%
1014       {%
1015       \advance\mdf@freevspace@length by -\mdf@splitbottomskip@length\relax%
1016       \ifbool{mdf@bottomline}{}%
1017           \advance\dimen@i by -\mdf@innerlinewidth@length%
1018           \advance\dimen@i by -\mdf@middlelinewidth@length%
1019           \advance\dimen@i by -\mdf@outerlinewidth@length%
1020           \relax}%
1021       \splitmaxdepth\z@ \splittopskip\mdf@splittopskip@length%
1022       \mdf@ignorevbadness%
1023       \setbox\mdf@splitbox@two\vsplit\mdf@splitbox@one to \mdf@freevspace@length%
1024       \setbox\mdf@splitbox@two\vbox{\unvbox\mdf@splitbox@two}%PRUEFEN!!!
1025       \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@one}%PRUEFEN!!!!
1026       \ifbool{mdf@repeatframetitle}{%
1027           \setbox\mdf@splitbox@one\vbox{%
1028               \vbox to \mdf@splittopskip@length{\hsize\z@}
1029               %\par\unskip\nointerlineskip
1030               \unvcopy\mdf@frametitlebox%
1031               \mdf@@@frametitlerule%
1032               \vbox to\dimexpr
1033                   -\mdf@splittopskip@length+\ht\strutbox+\dp\strutbox
1034                   +\mdf@innertopmargin@length\relax{\hsize\z@}%
1035               \unvbox\mdf@splitbox@one}%
1036           }{}%
1037       \ifvoid\mdf@splitbox@one\relax%
1038           \mdf@PackageWarning{You got a bad break\MessageBreak
1039                               because the split box is empty\MessageBreak
1040                               You have to change the settings}%
1041       \setbox\mdf@splitbox@one{\unvbox\mdf@splitbox@two}%
1042       \def\mdf@reserved@a{\enlargethispage{\baselineskip}\mdf@put@frame@ii}%
1043   \else
1044       \begingroup
1045       \mdf@@@setzref
1046       \mdf@putbox@middle%
1047   \endgroup

```

```

1048      \hrule \@height\z@ \@width\hsize
1049      \vfill\ject
1050      \def\mdf@reserved@a{\mdf@put@frame@ii}%
1051      \fi
1052      }%Hier die Ausgabe der mittleren Box
1053      {\ifvoid\mdf@splitbox@one
1054        \mdf@PackageWarning{You got a bad break\MessageBreak
1055                          because the last split box is empty\MessageBreak
1056                          You have to change the settings}%
1057        \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@one\hrule \@height\z@ \@width\mdfbounding
1058      \fi%
1059      \ifdimless{\ht\mdf@splitbox@one}{lsp}{%
1060        \mdf@PackageWarning{You got a bad break\MessageBreak
1061                          because the last split box is empty\MessageBreak
1062                          You have to change the settings}%
1063        %\hb@xt@\z@{\box\mdf@splitbox@one}%
1064        \let\mdf@reserved@a\relax%
1065        \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@one\hrule \@height\z@ \@width\mdfboundin
1066      }{}%
1067      \begingroup%
1068        \mdf@@@setzref
1069        \mdf@putbox@second%
1070        \hrule \@height\z@ \@width\hsize%
1071      \endgroup%
1072      \let\mdf@reserved@a\relax%
1073      }%Hier kommt die Ausgabe der letzten Box
1074      \mdf@reserved@a%
1075    }
1076

```

```

\mdf@test@lrb
\mdf@test@ltr
\mdf@test@ltb
\mdf@test@trb
\mdf@test@lrb
\mdf@test@lb
\mdf@test@rb
\mdf@test@tr
\mdf@test@lt
\mdf@test@lr
\mdf@test@tb
\mdf@test@l
\mdf@test@r
\mdf@test@t
\mdf@test@b
\mdf@test@noline

```

Short forms of checking the option which lines should be drawn.

```

1077 %%%      -----t-----
1078 %%%      |                |
1079 %%%      |                |
1080 %%%      |                |
1081 %%%      l|                |r
1082 %%%      |                |
1083 %%%      |                |
1084 %%%      |-----|

```

```

1085 %%%          b
1086 %%Zusammenhaenge abfragen:
1087 \newrobustcmd*{\mdf@test@ltrb}%
1088     \ifboolexpr{ (bool {mdf@topline}) and (bool {mdf@bottomline})
1089                 and (bool {mdf@leftline}) and (bool {mdf@rightline})}}
1090 %3-set
1091 \newrobustcmd*{\mdf@test@ltr}%
1092     \ifboolexpr{ (bool {mdf@topline}) and not (bool {mdf@bottomline})
1093                 and (bool {mdf@leftline}) and (bool {mdf@rightline})}}
1094 \newrobustcmd*{\mdf@test@ltb}%
1095     \ifboolexpr{ (bool {mdf@topline}) and (bool {mdf@bottomline})
1096                 and (bool {mdf@leftline}) and not (bool {mdf@rightline})}}
1097 \newrobustcmd*{\mdf@test@trb}%
1098     \ifboolexpr{ (bool {mdf@topline}) and (bool {mdf@bottomline})
1099                 and not (bool {mdf@leftline}) and (bool {mdf@rightline})}}
1100 \newrobustcmd*{\mdf@test@lrb}%
1101     \ifboolexpr{ not (bool {mdf@topline}) and (bool {mdf@bottomline})
1102                 and (bool {mdf@leftline}) and (bool {mdf@rightline})}}
1103 %2-set
1104 \newrobustcmd*{\mdf@test@lb}%
1105     \ifboolexpr{ not (bool {mdf@topline}) and (bool {mdf@bottomline})
1106                 and (bool {mdf@leftline}) and not (bool {mdf@rightline})}}
1107 \newrobustcmd*{\mdf@test@rb}%
1108     \ifboolexpr{ not (bool {mdf@topline}) and (bool {mdf@bottomline})
1109                 and not (bool {mdf@leftline}) and (bool {mdf@rightline})}}
1110 \newrobustcmd*{\mdf@test@tr}%
1111     \ifboolexpr{ (bool {mdf@topline}) and not (bool {mdf@bottomline})
1112                 and not (bool {mdf@leftline}) and (bool {mdf@rightline})}}
1113 \newrobustcmd*{\mdf@test@lt}%
1114     \ifboolexpr{ (bool {mdf@topline}) and not (bool {mdf@bottomline})
1115                 and (bool {mdf@leftline}) and not (bool {mdf@rightline})}}
1116 \newrobustcmd*{\mdf@test@lr}%
1117     \ifboolexpr{not (bool {mdf@topline}) and not (bool {mdf@bottomline})
1118                 and (bool {mdf@leftline}) and (bool {mdf@rightline})}}
1119 \newrobustcmd*{\mdf@test@tb}%
1120     \ifboolexpr{ (bool {mdf@topline}) and (bool {mdf@bottomline})
1121                 and not (bool {mdf@leftline}) and not (bool {mdf@rightline})}}
1122 %Einzellinien
1123 \newrobustcmd*{\mdf@test@l}%
1124     \ifboolexpr{ not (bool {mdf@topline}) and not (bool {mdf@bottomline})
1125                 and (bool {mdf@leftline}) and not (bool {mdf@rightline})}}
1126 \newrobustcmd*{\mdf@test@r}%
1127     \ifboolexpr{ not (bool {mdf@topline}) and not (bool {mdf@bottomline})
1128                 and not (bool {mdf@leftline}) and (bool {mdf@rightline})}}
1129 \newrobustcmd*{\mdf@test@t}%
1130     \ifboolexpr{ (bool {mdf@topline}) and not (bool {mdf@bottomline})
1131                 and not (bool {mdf@leftline}) and not (bool {mdf@rightline})}}
1132 \newrobustcmd*{\mdf@test@b}%
1133     \ifboolexpr{ not (bool {mdf@topline}) and (bool {mdf@bottomline})
1134                 and not (bool {mdf@leftline}) and not (bool {mdf@rightline})}}
1135 %keine Linien
1136 \newrobustcmd*{\mdf@test@noline}%
1137     \ifboolexpr{ not (bool {mdf@topline}) and not (bool {mdf@bottomline})
1138                 and not (bool {mdf@leftline}) and not (bool {mdf@rightline})}}
1139 \newrobustcmd*{\mdf@test@single}%
1140     \ifboolexpr{ not (test {\mdf@test@ltrb} or test {\mdf@test@ltr} or

```

```

1141      test {\mdf@test@ltb} or test {\mdf@test@trb} or
1142      test {\mdf@test@lrb} or test {\mdf@test@lb} or
1143      test {\mdf@test@rb} or test {\mdf@test@tr} or
1144      test {\mdf@test@lt} ) }}
1145 %

1146 \DisableKeyvalOption[action=warning,package=mdframed]{mdf}{framemethod}%
1147 \DisableKeyvalOption[action=warning,package=mdframed]{mdf}{xcolor}%
1148
1149 \endinput

```

B.2. The Explanation of md-frame-0.mdf

```

1150 %% Style file for mdframed for package option 'framemethod=default'
1151 %%
1152 %% This package may be distributed under the terms of the LaTeX Project
1153 %% Public License, as described in lppl.txt in the base LaTeX distribution.
1154 %% Either version 1.0 or, at your option, any later version.
1155 %%
1156 %%
1157 %%$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $
1158 %

```

```

\mdframed0packagename
\mdf@frame0date@svn

```

local settings

```

1159 \def\mdframed0packagename{md-frame-0}
1160 \def\mdf@frame0date@svn$#1: #2 #3 #4-#5-#6 #7 #8$#{#4/#5/#6\space }
1161 \ProvidesFile{md-frame-0.mdf}%
1162     [\mdf@frame0date@svn$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $]
1163     \mdversion: \mdframed0packagename]

```

```

\mdf@background@default
\mdf@linecolor@default
\mdf@linecolor@bottom

```

short command

```

1164 \def\mdf@background@default{\color{\mdf@backgroundcolor}}
1165 \def\mdf@frametitlebackground@default{\color{\mdf@frametitlebackgroundcolor}}
1166 \def\mdf@innerlinecolor@default{\color{\mdf@innerlinecolor}}
1167 \def\mdf@middlelinecolor@default{\color{\mdf@middlelinecolor}}
1168 \def\mdf@outerlinecolor@default{\color{\mdf@outerlinecolor}}
1169 \def\mdf@frametitlerulecolor@default{\color{\mdf@frametitlerulecolor}}
1170 \let\mdf@linecolor@default\mdf@middlelinecolor@default
1171 \def\mdf@@frametitlerule{%
1172   \ifbool{mdf@frametitlerule}{%
1173     \vbox to \mdf@frametitlerulewidth@length {\hsize\mdfframetitleboxwidth%
1174       \par\unskip\vskip\mdf@frametitlebelowskip@length%
1175       \rlap{\noindent\hspace*{-\mdf@innerleftmargin@length}%
1176         \mdf@frametitlerulecolor@default%
1177         \rule{\dimexpr\mdfframetitleboxwidth%
1178           +\mdf@innerleftmargin@length
1179           +\mdf@innerrightmargin@length\relax
1180           }{\mdf@frametitlerulewidth@length}%

```

```

1181     }}%
1182   }}
1183   \par\unskip\vskip\mdf@innertopmargin@length%
1184 }%
1185

```

```

\mdf@putbox@single
\mdf@frame@background@single
\mdf@frame@topandbottomline@single
\mdf@frame@leftline@single
\mdf@frame@rightline@single
\mdf@frame@rightline@single

```

The frame of of a non splitted contents of mdframed

```

1186 \def\mdf@frame@background@single{%
1187   \rlap{\mdf@background@default%
1188     \rule[-\mdf@boundingboxdepth]%
1189       {\mdf@boundingboxtotalwidth}%
1190       {\mdf@boundingboxtotalheight}%
1191   }%
1192 }%
1193 \def\mdf@frame@frametitlebackground@single{%
1194   \rlap{\mdf@frametitlebackground@default%
1195     \rule[\dimexpr-\mdf@boundingboxdepth+\mdf@boundingboxtotalheight-\mdf@frametitleboxtotalheight\relax]
1196       {\mdf@boundingboxtotalwidth}%
1197       {\mdf@frametitleboxtotalheight}%
1198   }%
1199 }%
1200
1201 \def\mdf@frame@topline@single{%
1202   \rlap{\mdf@linecolor@default%
1203     \ifbool{mdf@topline}{%
1204       \rule[\dimexpr\mdf@boundingboxheight-\mdf@boundingboxdepth%
1205         +\mdf@innerbottommargin@length+\mdf@innertopmargin@length\relax]%
1206         {\mdf@boundingboxtotalwidth}%
1207         {\mdf@middlelinewidth@length}}%
1208     }%
1209 }%
1210 }%
1211 \def\mdf@frame@bottomline@single{%
1212   \rlap{\ifbool{mdf@leftline}{\hspace*{-\mdf@middlelinewidth@length}}{\mdf@linecolor@default%
1213     \ifbool{mdf@bottomline}{%
1214       \rule[\dimexpr-\mdf@boundingboxdepth-\mdf@middlelinewidth@length\relax]%
1215         {\dimexpr\mdf@boundingboxtotalwidth
1216           \ifbool{mdf@rightline}{+\mdf@middlelinewidth@length}{}%
1217           \ifbool{mdf@leftline}{+\mdf@middlelinewidth@length}{\relax}%
1218         {\mdf@middlelinewidth@length}}%
1219     }%
1220   }%
1221 }%
1222 \def\mdf@frame@leftline@single{%
1223   \llap{\mdf@linecolor@default%
1224     \rule[-\mdf@boundingboxdepth]%
1225       {\mdf@middlelinewidth@length}%
1226       {\dimexpr\mdf@boundingboxtotalheight%
1227         \ifbool{mdf@topline}{+\mdf@middlelinewidth@length}{\relax}%

```



```

1228 }%
1229 }%
1230 \def\mdf@frame@rightline@single{%
1231   \rlap{\mdf@linecolor@default%
1232     \hspace*{\mdfboundingboxwidth}%
1233     \hspace*{\mdf@innerrightmargin@length}%
1234     \rule[\dimexpr-\mdfboundingboxdepth%
1235       \relax]{\mdf@middlelinewidth@length}%
1236       {\dimexpr\mdfboundingboxtotalheight%
1237         +\ifbool{mdf@topline}{\mdf@middlelinewidth@length}{0pt}\relax}%
1238   }%
1239 }%
1240 }%
1241 \def\mdf@putbox@single{%%%% Ausgabe der ungesplitteten Gesamtbox
1242   \ifvoid\mdf@splitbox@one
1243   \else%
1244     \mdf@makebox@out{%
1245       \mdf@makeboxalign@left%
1246       \setlength{\mdfboundingboxwidth}%
1247         {\wd\mdf@splitbox@one}%
1248       \setlength{\mdfboundingboxtotalwidth}%
1249         {\dimexpr\mdfboundingboxwidth+\mdf@innerleftmargin@length%
1250           +\mdf@innerrightmargin@length\relax}%
1251       \setlength{\mdfboundingboxheight}%
1252         {\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
1253       \setlength{\mdfboundingboxdepth}%
1254         {\dimexpr\dp\mdf@splitbox@one+\mdf@innerbottommargin@length\relax}%
1255       \setlength{\mdfboundingboxtotalheight}%
1256         {\dimexpr\mdfboundingboxheight+\mdf@innertopmargin@length%
1257           +\mdf@innerbottommargin@length\relax}%
1258       \setlength{\mdftotalllinewidth}{%
1259         \dimexpr\mdf@innerlinewidth@length+\mdf@middlelinewidth@length%
1260         +\mdf@outerlinewidth@length}%
1261       \noindent%
1262       \setlength{\@tempdima}{\dimexpr\mdfboundingboxtotalwidth%
1263         +\ifbool{mdf@leftline}%
1264           {\mdf@middlelinewidth@length}{\z@}%
1265         +\ifbool{mdf@rightline}%
1266           {\mdf@middlelinewidth@length}{\z@}\relax}%
1267       \mdf@makebox@in[\@tempdima]{%
1268         \null%
1269         \ifbool{mdf@leftline}{%
1270           \hspace*{\mdftotalllinewidth}%
1271           \mdf@frame@leftline@single%
1272         }{}%
1273         \mdf@frame@topline@single%
1274         \mdf@frame@bottomline@single%
1275         \mdf@frame@background@single%
1276         \ifdefempty{\mdf@frametitle}{\mdf@frame@frametitlebackground@single}%
1277         \hspace*{\mdf@innerleftmargin@length}%
1278         \ifbool{mdf@rightline}{%
1279           \mdf@frame@rightline@single%
1280         }{}%
1281         {\box\mdf@splitbox@one}%
1282       }%
1283     \mdf@makeboxalign@right%

```

```

1284 }%
1285 \fi%
1286 }

```

```

\mdf@putbox@first
\mdf@frame@background@first
\mdf@frame@leftline@first
\mdf@frame@topline@first
\mdf@frame@rightline@first

```

The first frame of of a splitted contents of mdframed

```

1287 \def\mdf@frame@background@first{%
1288   \rlap{\mdf@background@default%
1289     \rule[-\mdfboundingboxdepth]%
1290       {\mdfboundingboxtotalwidth}%
1291       {\mdfboundingboxtotalheight}%
1292   }%
1293 }%
1294 \def\mdf@frame@frametitlebackground@first{%
1295   \ifdimless{\mdfframetitleboxtotalheight}{\mdfboundingboxtotalheight}%
1296   {%
1297     \rlap{\mdf@frametitlebackground@default%
1298       \rule[\dimexpr-\mdfboundingboxdepth+\mdfboundingboxtotalheight-\mdfframetitleboxtotalheight\relax]
1299         {\mdfboundingboxtotalwidth}%
1300         {\mdfframetitleboxtotalheight}%
1301     }%
1302     \global\mdfframetitleboxtotalheight=-\p@\relax%
1303   }\mdf@PackageWarning{You got a page break inside the frame title\MessageBreak
1304     Current this isn't well supported}%
1305   \rlap{\mdf@frametitlebackground@default%
1306     \rule[-\mdfboundingboxdepth]%
1307       {\mdfboundingboxtotalwidth}%
1308       {\mdfboundingboxtotalheight}%
1309   }%
1310   \global\mdfframetitleboxtotalheight=\dimexpr\mdfframetitleboxtotalheight
1311     -\mdfboundingboxheight
1312     +\mdf@frametitlebelowskip@length
1313     +.5\baselineskip-1pt
1314   %
1315     +\dp\strutbox
1316     \relax%
1317 }%
1318 \def\mdf@frame@leftline@first{%
1319   \llap{\mdf@linecolor@default%
1320     \rule[-\mdfboundingboxdepth]%
1321       {\mdf@middlelinewidth@length}%
1322       {\dimexpr\mdfboundingboxtotalheight%
1323         +\ifbool{\mdf@topline}{\mdf@middlelinewidth@length}{0pt}}\relax}%
1324 }%
1325 }%
1326 \def\mdf@frame@topline@first{%
1327   \rlap{\mdf@linecolor@default%
1328     \rule[\dimexpr\mdfboundingboxheight-\mdfboundingboxdepth+%
1329       \mdf@splitbottomskip@length+\mdf@innertopmargin@length\relax]%
1330     {\mdfboundingboxtotalwidth}%

```

```

1331         {\mdf@middlelinewidth@length}%
1332     }%
1333 }
1334 \def\mdf@frame@rightline@first{%
1335     \rlap{\mdf@linecolor@default\hspace*{\mdfboundingboxwidth}%
1336         \hspace*{\mdf@innerrightmargin@length}%
1337         \rule[-\mdfboundingboxdepth]%
1338             {\mdf@middlelinewidth@length}%
1339             {\dimexpr\mdfboundingboxtotalheight%
1340                 +\ifbool{mdf@topline}{\mdf@middlelinewidth@length}{0pt}\relax}%
1341     }%
1342 }%
1343 \def\mdf@putbox@first{%%%% Ausgabe der Teilbox 1
1344     \ifvoid\mdf@splitbox@two
1345     \else%
1346         \mdf@makebox@out[\linewidth]{%
1347             \mdf@makeboxalign@left%
1348             \setlength{\mdfboundingboxwidth}{\wd\mdf@splitbox@two}%
1349             \setlength{\mdfboundingboxtotalwidth}%
1350                 {\dimexpr\mdfboundingboxwidth+\mdf@innerleftmargin@length%
1351                     +\mdf@innerrightmargin@length\relax}%
1352             \setlength{\mdfboundingboxheight}{\dimexpr\ht\mdf@splitbox@two+\dp\mdf@splitbox@two\relax}%
1353             \setlength{\mdfboundingboxdepth}%
1354                 {\dimexpr\dp\mdf@splitbox@two+\mdf@splitbottomskip@length\relax}%
1355             \setlength{\mdfboundingboxtotalheight}%
1356                 {\dimexpr\mdfboundingboxheight+\mdf@innertopmargin@length%
1357                     +\mdf@splitbottomskip@length\relax}%
1358             \setlength{\@tempdima}%
1359                 {\dimexpr\mdfboundingboxtotalwidth%
1360                     +\ifbool{mdf@leftline}{\mdf@middlelinewidth@length}{\z@}%
1361                     +\ifbool{mdf@rightline}{\mdf@middlelinewidth@length}{\z@}%
1362                     \relax}%
1363             \mdf@makebox@in[\@tempdima]{%
1364                 \null%
1365                 \ifbool{mdf@leftline}{%
1366                     \hspace*{\mdf@middlelinewidth@length}%
1367                     \mdf@frame@leftline@first}{}%
1368                 \ifbool{mdf@topline}{%
1369                     \mdf@frame@topline@first}{}%
1370                 \mdf@frame@background@first%
1371                 \ifdefempty{\mdf@frametitle}{\mdf@frame@frametitlebackground@first}%
1372                 \hspace*{\mdf@innerleftmargin@length}%
1373                 \ifbool{mdf@rightline}{%
1374                     \mdf@frame@rightline@first}{}%
1375                 {\box\mdf@splitbox@two}%
1376             }%
1377             \mdf@makeboxalign@right%
1378         }%
1379     \fi%
1380 }

```

```

\mdf@putbox@second
\mdf@frame@background@second
\mdf@frame@leftline@second
\mdf@frame@bottomline@second
\mdf@frame@rightline@second

```

The last frame of of a splitted contents of mdframed

```

1381 \def\mdf@frame@background@second{%
1382   \rlap{\mdf@background@default%
1383     \rule[-\mdf@boundingboxdepth]{%
1384       {\mdf@boundingboxtotalwidth}%
1385       {\mdf@boundingboxtotalheight}%
1386     }%
1387   }%
1388 \def\mdf@frame@frametitlebackground@second{%
1389   \ifdimless{\mdfframetitleboxtotalheight}{\z@}%
1390   {%
1391     {\rlap{\mdf@frametitlebackground@default%
1392       \rule[\dimexpr-\mdf@boundingboxdepth+\mdf@boundingboxtotalheight-\mdfframetitleboxtotalheight\relax]{%
1393         {\mdf@boundingboxtotalwidth}%
1394         {\mdfframetitleboxtotalheight}%
1395       }%
1396     }%
1397   }%
1398 \def\mdf@frame@leftline@second{%
1399   \llap{\mdf@linecolor@default%
1400     \rule[-\mdf@boundingboxdepth]{%
1401       {\mdf@middlelinewidth@length}%
1402       {\dimexpr\mdf@boundingboxtotalheight}%
1403     }%
1404   }%
1405 \def\mdf@frame@bottomline@second{%
1406   \rlap{\ifbool{mdf@leftline}{\hspace*{-\mdf@middlelinewidth@length}}{\mdf@linecolor@default%
1407     \rule[\dimexpr-\mdf@boundingboxdepth-\mdf@middlelinewidth@length\relax]{%
1408       {\dimexpr\mdf@boundingboxtotalwidth
1409         \ifbool{mdf@rightline}{+\mdf@middlelinewidth@length}{%
1410           \ifbool{mdf@leftline}{+\mdf@middlelinewidth@length}{\relax}%
1411         {\mdf@middlelinewidth@length}%
1412       }%
1413     }%
1414 \def\mdf@frame@rightline@second{%
1415   \rlap{\mdf@linecolor@default\hspace*{\mdf@boundingboxwidth}%
1416     \hspace*{\mdf@innermargin@length}%
1417     \rule[-\mdf@boundingboxdepth]{%
1418       {\mdf@middlelinewidth@length}%
1419       {\mdf@boundingboxtotalheight}%
1420     }%
1421   }%
1422 \def\mdf@putbox@second{%
1423   \ifvoid\mdf@splitbox@one%
1424   \else
1425     \mdf@makebox@out{%
1426       \mdf@makeboxalign@left%
1427       \setlength{\mdf@boundingboxwidth}{\wd\mdf@splitbox@one}%
1428       \setlength{\mdf@boundingboxtotalwidth}%
1429         {\dimexpr\mdf@boundingboxwidth+\mdf@innerleftmargin@length%

```

```

1430          +\mdf@innerrightmargin@length\relax}%
1431 \setlength{\mdfboundingboxheight}{\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
1432 \setlength{\mdfboundingboxdepth}%
1433   {\dimexpr\dp\mdf@splitbox@one+\mdf@innerbottommargin@length\relax}%
1434 \setlength{\mdfboundingboxtotalheight}%
1435   {\dimexpr\mdfboundingboxheight+\mdf@innerbottommargin@length\relax}%
1436 \setlength{\@tempdima}{\dimexpr\mdfboundingboxtotalwidth%
1437   +\ifbool{mdf@leftline}{\mdf@middlelinewidth@length}{\z@}%
1438   +\ifbool{mdf@rightline}{\mdf@middlelinewidth@length}{\z@}%
1439   \relax}%
1440 \mdf@makebox@in[\@tempdima]{%
1441 \null%
1442   \ifbool{mdf@leftline}{%
1443     \hspace*{\mdf@middlelinewidth@length}%
1444     \mdf@frame@leftline@second}{}%
1445   \ifbool{mdf@bottomline}{%
1446     \mdf@frame@bottomline@second}{}%
1447   \mdf@frame@background@second%
1448   \ifdefempty{\mdf@frametitle}{\mdf@frame@frametitlebackground@second}%
1449   \hspace*{\mdf@innerleftmargin@length}%
1450   \ifbool{mdf@rightline}{%
1451     \mdf@frame@rightline@second}{}%
1452   {\box\mdf@splitbox@one}%
1453 }%
1454 \mdf@makeboxalign@right%
1455 }%
1456 \fi%
1457 }%

```

```

\mdf@putbox@middle
\mdf@frame@background@middle
\mdf@frame@leftline@middle
\mdf@frame@rightline@middle

```

The last frame of of a splitted contents of mdframed

```

1458 \def\mdf@frame@leftline@middle{%
1459   \llap{\mdf@linecolor@default%
1460     \rule[-\mdfboundingboxdepth]%
1461       {\mdf@middlelinewidth@length}%
1462       {\mdfboundingboxtotalheight}}%
1463 }%
1464 }%
1465 \def\mdf@frame@background@middle{%
1466   \rlap{\mdf@background@default%
1467     \rule[-\mdfboundingboxdepth]%
1468       {\mdfboundingboxtotalwidth}%
1469       {\mdfboundingboxtotalheight}}%
1470 }%
1471 }%
1472 \def\mdf@frame@frametitlebackground@middle{%
1473   \ifdimless{\mdfframetitleboxtotalheight}{\z@}%
1474   {}%
1475   {\rlap{\mdf@frametitlebackground@default%
1476     \rule[\dimexpr-\mdfboundingboxdepth+\mdfboundingboxtotalheight-\mdfframetitleboxtotalheight\relax]
1477       {\mdfboundingboxtotalwidth}}%

```

```

1478         {\mdfframetitleboxtotalheight}%
1479     }%
1480     \global\mdfframetitleboxtotalheight=-\p@\relax%
1481 }%
1482 }%
1483 \def\mdf@frame@rightline@middle{%
1484     \rlap{\mdf@linecolor@default\hspace*{\mdfboundingboxwidth}%
1485         \hspace*{\mdf@innerrightmargin@length}%
1486         \rule[-\mdfboundingboxdepth]%
1487             {\mdf@middlelinewidth@length}%
1488             {\mdfboundingboxtotalheight}%
1489     }%
1490 }%
1491 \def\mdf@putbox@middle{%
1492     \ifvoid\mdf@splitbox@two%
1493     \else
1494         \mdf@makebox@out{%
1495             \mdf@makeboxalign@left%
1496             \setlength{\mdfboundingboxwidth}{\wd\mdf@splitbox@two}%
1497             \setlength{\mdfboundingboxtotalwidth}%
1498                 {\dimexpr\mdfboundingboxwidth+\mdf@innerleftmargin@length%
1499                     +\mdf@innerrightmargin@length\relax}%
1500             \setlength{\mdfboundingboxheight}{\dimexpr\ht\mdf@splitbox@two+\dp\mdf@splitbox@two\relax}%
1501             \setlength{\mdfboundingboxdepth}%
1502                 {\dimexpr\dp\mdf@splitbox@two+\mdf@splitbottomskip@length\relax}%
1503             \setlength{\mdfboundingboxtotalheight}%
1504                 {\dimexpr\mdfboundingboxheight+\mdf@splitbottomskip@length\relax}%
1505             \setlength{\@tempdima}{\dimexpr\mdfboundingboxtotalwidth%
1506                 +\ifbool{mdf@leftline}{\mdf@middlelinewidth@length}{\z@}%
1507                 +\ifbool{mdf@rightline}{\mdf@middlelinewidth@length}{\z@}%
1508                 \relax}%
1509             \mdf@makebox@in[\@tempdima]{%
1510                 \null%
1511                 \ifbool{mdf@leftline}{%
1512                     \hspace*{\mdf@middlelinewidth@length}%
1513                     \mdf@frame@leftline@middle}{}%
1514                 \mdf@frame@background@middle%
1515                 \ifdefempty{\mdf@frametitle}{\mdf@frame@frametitlebackground@middle}%
1516                 \hspace*{\mdf@innerleftmargin@length}%
1517                 \ifbool{mdf@rightline}{%
1518                     \mdf@frame@rightline@middle}{}%
1519                 {\box\mdf@splitbox@two}%
1520             }%
1521             \mdf@makeboxalign@right%
1522         }
1523     \fi
1524 }
1525 \endinput

```

B.3. The Explanation of md-frame-1.mdf

```

1526 %% Style file for mdframed for package option 'framemethod=default'
1527 %%
1528 %% This package may be distributed under the terms of the LaTeX Project
1529 %% Public License, as described in lppl.txt in the base LaTeX distribution.

```

```
1530 %% Either version 1.0 or, at your option, any later version.
```

```
1531 %%
```

```
1532 %%
```

```
1533 %%$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $
```

```
1534 %
```

```
\mdframedIpackagename
\mdf@frameIdate@svn
```

local settings

```
1535 \def\mdframedIpackagename{md-frame-1}
```

```
1536 \def\mdf@frameIdate@svn$#1: #2 #3 #4-#5-#6 #7 #8${#4/#5/#6\space }
```

```
1537 \ProvidesFile{md-frame-1.mdf}%
```

```
1538 [\mdf@frameIdate@svn$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $ %
```

```
1539 \mdversion: \mdframedIpackagename]
```

```
1540 %
```

```
\mdf@tikz@settings
```

Define settings for tikz

```
1541 %Allgemeine Einstellungen fuer tikz
```

```
1542 \def\mdf@tikz@settings{%
```

```
1543 %
```

```
1544 \tikzset{mdfbox/.style={anchor=south west,%
```

```
inner sep=0pt,%
```

```
outer sep=0pt,%
```

```
\mdf@fontcolor,}}% anchor der Ausgabebox ist unten links
```

```
1548 \tikzset{mdfcorners/.style={rounded corners=\mdf@roundcorner@length}}%
```

```
1549 \tikzset{mdfbackground/.style={fill=\mdf@backgroundcolor,%
```

```
draw=\mdf@backgroundcolor}}%
```

```
1551 \tikzset{mdfframetitlebackground/.style={fill=\mdf@frametitlebackgroundcolor,%
```

```
draw=none,%
```

```
rounded corners={max(\mdf@roundcorner@length%
```

```
- \mdf@innerlinewidth@length%
```

```
-.5\mdf@middlelinewidth@length,0)}}}%
```

```
1556 %
```

```
1557 \tikzset{mdfouterline/.style={}}%
```

```
1558 % nur wenn outerlinewidth>0 wird aussere Linie gezeichnet
```

```
1559 \ifdimgreater{\mdf@outerlinewidth@length}{\z@}
```

```
{\tikzset{mdfouterline/.append style={%
```

```
draw=\mdf@outerlinecolor,%
```

```
line width=2\mdf@outerlinewidth@length+\mdf@middlelinewidth@length}}}%
```

```
1563 %
```

```
1564 \tikzset{mdfinnerline/.style={}}%
```

```
1565 % nur wenn innerlinewidth>0 wird innere Linie gezeichnet
```

```
1566 \ifdimgreater{\mdf@innerlinewidth@length}{\z@}
```

```
{\tikzset{mdfinnerline/.append style={%
```

```
draw=\mdf@innerlinecolor,%
```

```
line width=2\mdf@innerlinewidth@length+\mdf@middlelinewidth@length}}}%
```

```
1570 %
```

```
1571 \tikzset{mdfshadow/.style={drop shadow={%
```

```
shadow xshift=2.0ex,
```

```
shadow yshift=-0.5em,
```

```
fill=black!50,
```

```
every shadow }}}%
```

```
1576 %
```

```

1577 \mdf@tikzset@local
1578 \tikzset{mdfmiddleline/.style={}}%
1579 % nur wenn middlelinewidth>0 wird mittlere Linie gezeichnet
1580 \ifdimgreater{\mdf@middlelinewidth@length}{\z@}
1581   {\tikzset{mdfmiddleline/.append style={%
1582     preaction={draw=\mdf@middlelinecolor,%
1583       line width=\mdf@middlelinewidth@length},%
1584     line width=\mdf@middlelinewidth@length,%
1585     tikzsetting}}}%
1586   }{}%
1587 }%

```

```

\mdf@tikzbox@tfl
\mdf@tikzbox@otl

```

Befehle fuer Ausgabe von Rahmen und Hintergrund

```

1588 \newrobustcmd*\mdf@tikzbox@tfl[1]{%three or four borders
1589   \clip(0,0)rectangle(\mdfboundingboxwidth,\mdfboundingboxheight);%
1590   \begin{scope}[mdfcorners]%
1591     \clip[preaction=mdfouterline]%
1592       [postaction=mdfbackground]%
1593       [postaction=mdfinnerline]#1;%
1594   \end{scope}%
1595   \path[mdfmiddleline,mdfcorners]#1;
1596 }%
1597
1598
1599
1600 \newrobustcmd*\mdf@tikzbox@otl[2]{%one or two borders
1601   \clip(0,0)rectangle(\mdfboundingboxwidth,\mdfboundingboxheight);%
1602   \begin{scope}
1603     \path[mdfouterline,mdfcorners]#1;%
1604     \clip[postaction=mdfbackground]#2;%
1605     \path[mdfinnerline,mdfcorners]#1;%
1606   \end{scope}%
1607   \path[mdfmiddleline,mdfcorners]#1;%

```

```
\mdf@put@frametitlerule
```

frametitlerule with tikz

```

1608 \tikzset{mdfframetitlerule/.style={%
1609   draw=none,
1610   fill=\mdf@frametitlerulecolor,
1611 }%
1612 }
1613 \def\mdf@@frametitlerule{%
1614   \ifbool{mdf@frametitlerule}{%
1615     \vbox{\hsize0pt
1616       \par\unskip\vskip\mdf@frametitlebelowskip@length
1617       \noindent\rlap{\hspace*{-\mdf@innerleftmargin@length}}%
1618       \begingroup%
1619       \pgfmathsetlength{\dimen@}{\mdfframetitleboxwidth+\mdf@innerleftmargin@length+\mdf@innerrightmargin@length}%
1620       \tikz\draw[mdfframetitlerule] (0,0)%
1621         rectangle (\dimen@,\mdf@frametitlerulewidth@length);
1622     \endgroup}

```



```

1623 }%
1624 }{}
1625 \par\unskip\vskip\mdf@innertopmargin@length%
1626 }%
1627

```

`\mdf@putbox@single`

Output of the non breakable contents.

```

1628 % Info zu den verwendeten Punkten:
1629 % O ist die untere linke Ecke der Mitte der middleline
1630 % P ist die obere rechte Ecke der Mitte der middleline
1631 % A ist der Punkt fuer den anchor (d.h. die untere linke Ecke) der Ausgabebox
1632 %
1633 \def\mdf@putbox@single{%
1634   \ifvoid\mdf@splitbox@one
1635   \else%
1636     \mdf@makebox@out{%
1637       \mdf@makeboxalign@left%
1638       \mdf@tikz@settings%
1639     }%
1640     \setlength\mdfboundingboxwidth{\wd\mdf@splitbox@one}%
1641     \advance\mdfboundingboxwidth by \mdf@innerleftmargin@length\relax%
1642     \advance\mdfboundingboxwidth by \mdf@innerrightmargin@length\relax%
1643     \ifbool{mdf@leftline}{%
1644       \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
1645       \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
1646       \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}%{}%
1647     \ifbool{mdf@rightline}{%
1648       \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
1649       \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
1650       \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}%{}%
1651   }%
1652   \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
1653   \advance\mdfboundingboxheight by \mdf@innertopmargin@length\relax%
1654   \advance\mdfboundingboxheight by \mdf@innerbottommargin@length\relax%
1655   \ifbool{mdf@topline}{%
1656     \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
1657     \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%
1658     \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}%{}%
1659   \ifbool{mdf@bottomline}{%
1660     \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
1661     \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%
1662     \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}%{}%
1663   \mdf@makebox@in[\mdfboundingboxwidth]{%
1664     \null%
1665     \begin{tikzpicture}[remember picture]%
1666       \pgfmithsetlengthmacro\mdf@Ax{+\mdf@innerleftmargin@length}%
1667       \pgfmithsetlengthmacro\mdf@Ay{+\mdf@innerbottommargin@length}%
1668       \pgfmithsetlengthmacro\mdf@Ox{+0pt}%
1669       \pgfmithsetlengthmacro\mdf@Oy{+0pt}%
1670       \pgfmithsetlengthmacro\mdf@Px{+\mdfboundingboxwidth}%
1671       \pgfmithsetlengthmacro\mdf@Py{+\mdfboundingboxheight}%
1672       \ifbool{mdf@leftline}%
1673         {%

```

```

1674 \pgfmathsetlengthmacro\mdf@Ax%
1675     {\mdf@Ax+\mdf@outerlinewidth@length+%
1676      \mdf@middlelinewidth@length+\mdf@innerlinewidth@length}%
1677 \pgfmathsetlengthmacro\mdf@0x%
1678     {\mdf@0x+\mdf@outerlinewidth@length+0.5\mdf@middlelinewidth@length}%
1679 }{}%
1680 \ifbool{mdf@rightline}%
1681 {%
1682     \pgfmathsetlengthmacro\mdf@Px%
1683     {\mdf@Px-\mdf@outerlinewidth@length-0.5\mdf@middlelinewidth@length}%
1684 }{}%
1685 \ifbool{mdf@bottomline}%
1686 {%
1687     \pgfmathsetlengthmacro\mdf@Ay%
1688     {\mdf@Ay+\mdf@outerlinewidth@length+\mdf@middlelinewidth@length%
1689      +\mdf@innerlinewidth@length}%
1690     \pgfmathsetlengthmacro\mdf@0y%
1691     {\mdf@0y+\mdf@outerlinewidth@length+0.5\mdf@middlelinewidth@length}%
1692 }{}%
1693 \ifbool{mdf@topline}%
1694 {%
1695     \pgfmathsetlengthmacro\mdf@Py%
1696     {\mdf@Py-\mdf@outerlinewidth@length-0.5\mdf@middlelinewidth@length}%
1697 }{}%
1698 %
1699 \coordinate(0)at(\mdf@0x,\mdf@0y);%
1700 \coordinate(P)at(\mdf@Px,\mdf@Py);%
1701 %
1702 \ifbool{mdf@shadow}
1703     {\path[mdfshadow,mdfcorners](0) rectangle (P);}{}%
1704 %
1705 \begin{scope}[use as bounding box]
1706     \mdf@test@lrb{\mdf@tikzbox@tfl{(0)--(0|-P)--(P)--(P|-0)--cycle)}}{}%
1707 %
1708     \mdf@test@ltb{\mdf@tikzbox@tfl{(P|-0)--(0)--(0|-P)--(P)}}{}%
1709     \mdf@test@trb{\mdf@tikzbox@tfl{(0|-P)--(P)--(P|-0)--(0)}}{}%
1710     \mdf@test@ltr{\mdf@tikzbox@tfl{(0)--(0|-P)--(P)--(P|-0)}}{}%
1711     \mdf@test@lrb{\mdf@tikzbox@tfl{(P|-0)--(0)--(0|-P)--(P)}}{}%
1712 %
1713     \mdf@test@lb{\mdf@tikzbox@otl{(P|-0)--(0)--(0|-P)}}%
1714         {(P)--(P|-0)[mdfcorners]--(0)--(0|-P)}%
1715     }{}%
1716     \mdf@test@rb{\mdf@tikzbox@otl{(P)--(P|-0)--(0)}}%
1717         {(0|-P)--(P)[mdfcorners]--(P|-0)--(0)}%
1718     }{}%
1719     \mdf@test@tr{\mdf@tikzbox@otl{(0|-P)--(P)--(P|-0)}}%
1720         {(0)--(0|-P)[mdfcorners]--(P)--(P|-0)}%
1721     }{}%
1722     \mdf@test@lt{\mdf@tikzbox@otl{(0)--(0|-P)--(P)}}%
1723         {(P|-0)--(0)[mdfcorners]--(0|-P)--(P)}%
1724     }{}%
1725     \mdf@test@lr{\mdf@tikzbox@otl{(0)--(0|-P)(P)--(P|-0)}}%
1726         {(0)rectangle(P)}%
1727     }{}%
1728     \mdf@test@tb{\mdf@tikzbox@otl{(0)--(0|-P)(0|-P)--(P)}}%
1729         {(0)rectangle(P)}%

```

```

1730         }{}%
1731 %
1732     \mdf@test@l{\mdf@tikzbox@otl{(0)--(0|-P)}%
1733                 {(0)rectangle(P)}%
1734         }{}%
1735     \mdf@test@r{\mdf@tikzbox@otl{(0|-P)--(P)}%
1736                 {(0)rectangle(P)}%
1737     }{}%
1738     \mdf@test@t{\mdf@tikzbox@otl{(0|-P)--(P)}%
1739                 {(0)rectangle(P)}%
1740     }{}%
1741     \mdf@test@b{\mdf@tikzbox@otl{(0)--(0|-P)}%
1742                 {(0)rectangle(P)}%
1743     }{}%
1744 %
1745     \mdf@test@noline{\path[mdfbackground,mdfcorners](0)rectangle(P);}{}%
1746 %
1747     %Frametitlebackground
1748     \drawbackgroundframetitle@single
1749 %
1750     \node[mdfbox]at(\mdf@Ax,\mdf@Ay){\box\mdf@splitbox@one};% Ausgabebox einfüegen
1751 \end{scope}
1752 %HIER KOMMT EIN WEITERES MAKRO
1753 \mdfcreateextratikz
1754 \end{tikzpicture}%
1755 }%
1756 \mdf@makeboxalign@right%
1757 }%
1758 \fi
1759 }%
1760 \def\drawbackgroundframetitle@single{%
1761 \ifdefempty{\mdf@frametitle}{}{}%
1762 \drawbackgroundframetitle@@single%
1763 }%
1764 }%
1765 \def\drawbackgroundframetitle@@single{%
1766 \begin{scope}%background frame title
1767 \ifbool{mdf@leftline}{
1768 \pgfmathsetlengthmacro\mdf@0x%
1769 {\mdf@0x+\mdf@innerlinewidth@length+0.5\mdf@middlelinewidth@length}
1770 }{}%
1771 \ifbool{mdf@rightline}{%
1772 \pgfmathsetlengthmacro\mdf@Px%
1773 {\mdf@Px-\mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length}
1774 }{}%
1775 \ifbool{mdf@topline}{%
1776 \pgfmathsetlengthmacro\mdf@Py%
1777 {\mdf@Py-\mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length}
1778 }{}%
1779 \pgfmathsetlengthmacro\mdf@Fy
1780 {\mdf@Py-\mdfframetitleboxtotalheight}
1781 \path[mdfframetitlebackground]
1782 (\mdf@0x,\mdf@Fy) -- (\mdf@0x,\mdf@Py)%
1783 -- (\mdf@Px,\mdf@Py) -- (\mdf@Px,\mdf@Fy);
1784 \end{scope}
1785 }

```

\mdf@putbox@first

Output of the first breakable contents.

```

1786 \def\drawbackgroundframetitle@first{%
1787 \ifdefempty{\mdf@frametitle}}{%
1788 \ifdimgreater{\mdfboundingboxheight}{\mdfframetitleboxtotalheight}%
1789 {%
1790 \drawbackgroundframetitle@@first
1791 \pgfmathsetlength{\global\mdfframetitleboxtotalheight}{-\p@}%
1792 }{\mdf@PackageWarning{You got a page break inside the frame title\MessageBreak
1793 Currently this isn't well supported}%
1794 \drawbackgroundframetitle@@first
1795 \pgfmathsetlength{\global\mdfframetitleboxtotalheight}%
1796 {\mdfframetitleboxtotalheight-\mdfboundingboxheight-
1797 \mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length%
1798 +\mdf@frametitlebelowskip@length+\mdf@splitbottomskip@length+\mdf@splittopskip@length%
1799 +\dp\strutbox%
1800 }%
1801 }%
1802 }%
1803 }%
1804 %
1805 \def\drawbackgroundframetitle@@first{%
1806 \begin{scope}%background frame title
1807 \ifbool{mdf@leftline}{%
1808 \pgfmathsetlengthmacro\mdf@0x%
1809 {\mdf@0x+\mdf@innerlinewidth@length+0.5\mdf@middlelinewidth@length}
1810 }{%
1811 \ifbool{mdf@rightline}{%
1812 \pgfmathsetlengthmacro\mdf@Px%
1813 {\mdf@Px-\mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length}
1814 }{%
1815 \ifbool{mdf@topline}{%
1816 \pgfmathsetlengthmacro\mdf@Py%
1817 {\mdf@Py-\mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length}
1818 }{%
1819 \pgfmathsetlengthmacro\mdf@Fy
1820 {\max(0,\mdf@Py-\mdfframetitleboxtotalheight)}
1821 \path[mdfframetitlebackground]
1822 (\mdf@0x,\mdf@Fy) -- (\mdf@0x,\mdf@Py)%
1823 -- (\mdf@Px,\mdf@Py) -- (\mdf@Px,\mdf@Fy);
1824 \end{scope}%
1825 }%
1826 %
1827 \def\mdf@putbox@first{%
1828 \ifvoid\mdf@splitbox@two
1829 \else%
1830 \mdf@makebox@out{%
1831 \mdf@makeboxalign@left%
1832 \mdf@tikz@settings%
1833 \setlength\mdfboundingboxwidth{\wd\mdf@splitbox@two}%
1834 \advance\mdfboundingboxwidth by \mdf@innerleftmargin@length\relax%
1835 \advance\mdfboundingboxwidth by \mdf@innerrightmargin@length\relax%
1836 \ifbool{mdf@leftline}{%
1837 \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
1838 \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%

```

```

1839     \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}}%
1840 \ifbool{mdf@rightline}{%
1841     \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
1842     \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
1843     \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}}%
1844 %
1845 \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@two+\dp\mdf@splitbox@two\relax}%
1846 \advance\mdfboundingboxheight by \mdf@innertopmargin@length\relax%
1847 \advance\mdfboundingboxheight by \mdf@splitbottomskip@length\relax%
1848 \ifbool{mdf@topline}{%
1849     \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
1850     \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%
1851     \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}}}%
1852 %
1853 %\ifdimequal{\pagegoal}{\maxdimen}{\enlargethispage{\baselineskip}}}% ???
1854 \ifdimgreater{\pagegoal-\maxdimen}{0pt}}{\enlargethispage{\baselineskip}}}%
1855 \mdf@makebox@in[\mdfboundingboxwidth]{%
1856 \null%
1857 \begin{tikzpicture}[remember picture]
1858 %
1859     \pgfmathsetlengthmacro\mdf@Ax{+\mdf@innerleftmargin@length}%
1860     \pgfmathsetlengthmacro\mdf@Ay{+\mdf@splitbottomskip@length}%
1861     \pgfmathsetlengthmacro\mdf@Ox{+0pt}%
1862     \pgfmathsetlengthmacro\mdf@Oy{+0pt}%
1863     \pgfmathsetlengthmacro\mdf@Px{+\mdfboundingboxwidth}%
1864     \pgfmathsetlengthmacro\mdf@Py{+\mdfboundingboxheight}%
1865     \ifbool{mdf@leftline}{%
1866         {%
1867             \pgfmathsetlengthmacro\mdf@Ax%
1868                 {\mdf@Ax+\mdf@outerlinewidth@length+
1869                 \mdf@middlelinewidth@length+\mdf@innerlinewidth@length}%
1870             \pgfmathsetlengthmacro\mdf@Ox%
1871                 {\mdf@Ox+\mdf@outerlinewidth@length+0.5\mdf@middlelinewidth@length}%
1872             }{}%
1873         \ifbool{mdf@rightline}{%
1874             \pgfmathsetlengthmacro\mdf@Px%
1875                 {\mdf@Px-\mdf@outerlinewidth@length-0.5\mdf@middlelinewidth@length}%
1876             }{}%
1877         \ifbool{mdf@topline}{%
1878             \pgfmathsetlengthmacro\mdf@Py%
1879                 {\mdf@Py-\mdf@outerlinewidth@length-0.5\mdf@middlelinewidth@length}%
1880             }{}%
1881 %
1882 \coordinate(0)at(\mdf@Ox,\mdf@Oy);%
1883 \coordinate(P)at(\mdf@Px,\mdf@Py);%
1884 %
1885 \ifbool{mdf@shadow}{
1886     {\path[mdfshadow] (0) -- (0|-P) to[mdfcorners] (P) -- (P|-0) -- (0);}}}%
1887 %
1888 \begin{scope}[use as bounding box]
1889     \ifboolexpr{test {\mdf@test@ltrb} or test {\mdf@test@ltr}}{%
1890         {\mdf@tikzbox@tfl{(0) -- (0|-P) -- (P) -- (P|-0)}}}%
1891         {}%
1892     \ifboolexpr{test {\mdf@test@ltb} or test {\mdf@test@lt}}{%
1893         {\mdf@tikzbox@otl{(0) -- (0|-P) -- (P)}{(P|-0) -- (0)[mdfcorners] -- (0|-P) -- (P)}}}%
1894         {}%

```

```

1895 \ifbool{test {\mdf@test@trb} or test {\mdf@test@tr}}{%
1896   {\mdf@tikzbox@otl{(0|-P)--(P)--(P|-0)}{(0)--(0|-P)[mdfcorners]--(P)--(P|-0)}}%
1897   }%
1898 \ifbool{test {\mdf@test@lrb} or test {\mdf@test@lr}}{%
1899   {\mdf@tikzbox@otl{(0)--(0|-P)(P)--(P|-0)}{(0)rectangle(P)}}%
1900   }%
1901 \ifbool{test {\mdf@test@tbb} or test {\mdf@test@t}}{%
1902   {\mdf@tikzbox@otl{(0|-P)--(P)}{(0)rectangle(P)}}%
1903   }%
1904 \ifbool{test {\mdf@test@lbb} or test {\mdf@test@l}}{%
1905   {\mdf@tikzbox@otl{(0)--(0|-P)}{(0)rectangle(P)}}%
1906   }%
1907 \ifbool{test {\mdf@test@rbb} or test {\mdf@test@r}}{%
1908   {\mdf@tikzbox@otl{(0|-P)--(P)}{(0)rectangle(P)}}%
1909   }%
1910 \mdf@test@b{\path[mdfbackground](0)rectangle(P);}%
1911 %
1912 \mdf@test@noline{\path[mdfbackground,mdfcorners](0)--(0|-P)--(P)--(P|-0);}%
1913 %
1914 \drawbackgroundframetitle@first
1915 %
1916 \node[mdfbox]at(\mdf@Ax,\mdf@Ay){\box\mdf@splitbox@two};% Ausgabebox einfuegen
1917 \end{scope}
1918 %HIER KOMMT EIN WEITERES MAKRO
1919 \mdfcreateextratikz%
1920 \end{tikzpicture}%
1921 }%
1922 \mdf@makeboxalign@right%
1923 }%
1924 \fi
1925 }%

```

\mdf@putbox@middle

Output of the middle breakable contents.

```

1926 \def\drawbackgroundframetitle@middle{%
1927 \ifempty{\mdf@frametitle}}{%
1928 \ifdimless{\mdfframetitleboxtotalheight}{\z@}
1929 }{%
1930 \drawbackgroundframetitle@@middle%
1931 \pgfmathsetlength{\global\mdfframetitleboxtotalheight}{-\p@}%
1932 }%
1933 }%
1934 }%
1935 %
1936 \def\drawbackgroundframetitle@@middle{%
1937 \begin{scope}%background frame title
1938 \ifbool{mdf@leftline}{
1939 \pgfmathsetlengthmacro\mdf@0x%
1940 {\mdf@0x+\mdf@innerlinewidth@length+0.5\mdf@middlelinewidth@length}
1941 }{%
1942 \ifbool{mdf@rightline}{%
1943 \pgfmathsetlengthmacro\mdf@Px%
1944 {\mdf@Px-\mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length}
1945 }{%

```

```

1946      \pgfmathsetlengthmacro\mdf@Fy
1947          {\mdf@Py-\mdfframetitleboxtotalheight}
1948      \path[mdfframetitlebackground,rounded corners=\z@]
1949          (\mdf@Ox,\mdf@Fy) -- (\mdf@Ox,\mdf@Py)%
1950          --(\mdf@Px,\mdf@Py) --(\mdf@Px,\mdf@Fy);
1951      \end{scope}
1952 }%
1953 %
1954 \def\mdf@putbox@middle{%
1955     \ifvoid\mdf@splitbox@two
1956     \else%
1957         \mdf@makebox@out{%
1958             \mdf@makeboxalign@left%
1959             \mdf@tikz@settings%
1960 %
1961             \setlength\mdfboundingboxwidth{\wd\mdf@splitbox@two}%
1962             \advance\mdfboundingboxwidth by \mdf@innerleftmargin@length\relax%
1963             \advance\mdfboundingboxwidth by \mdf@innerrightmargin@length\relax%
1964             \ifbool{mdf@leftline}{%
1965                 \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
1966                 \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
1967                 \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}{%
1968             \ifbool{mdf@rightline}{%
1969                 \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
1970                 \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
1971                 \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}}%
1972 %
1973             \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@two+\dp\mdf@splitbox@two\relax}%
1974             \advance\mdfboundingboxheight by \mdf@splitbottomskip@length\relax%
1975 %
1976             \mdf@makebox@in[\mdfboundingboxwidth]{%
1977                 \null%
1978                 \begin{tikzpicture}[remember picture]
1979                     \pgfmathsetlengthmacro\mdf@Ax{+\mdf@innerleftmargin@length}%
1980                     \pgfmathsetlengthmacro\mdf@Ay{+\mdf@splitbottomskip@length}%
1981                     \pgfmathsetlengthmacro\mdf@Ox{+0pt}%
1982                     \pgfmathsetlengthmacro\mdf@Oy{+0pt}%
1983                     \pgfmathsetlengthmacro\mdf@Px{+\mdfboundingboxwidth}%
1984                     \pgfmathsetlengthmacro\mdf@Py{+\mdfboundingboxheight}%
1985                     \ifbool{mdf@leftline}%
1986                     {%
1987                         \pgfmathsetlengthmacro\mdf@Ax%
1988                             {\mdf@Ax+\mdf@outerlinewidth@length+
1989                             \mdf@middlelinewidth@length+\mdf@innerlinewidth@length}%
1990                         \pgfmathsetlengthmacro\mdf@Ox%
1991                             {\mdf@Ox+\mdf@outerlinewidth@length+0.5\mdf@middlelinewidth@length}%
1992                     }{}%
1993                     \ifbool{mdf@rightline}%
1994                     {%
1995                         \pgfmathsetlengthmacro\mdf@Px%
1996                             {\mdf@Px-\mdf@outerlinewidth@length-0.5\mdf@middlelinewidth@length}%
1997                     }{}%
1998 %
1999                     \coordinate(0)at(\mdf@Ox,\mdf@Oy);%
2000                     \coordinate(P)at(\mdf@Px,\mdf@Py);%
2001 %

```



```

2002     \ifbool{mdf@shadow}
2003         {\path[mdfshadow](0) rectangle (P);}%
2004 %
2005 \begin{scope}[use as bounding box]
2006     \ifboolexpr{bool {mdf@leftline} and bool {mdf@rightline}}%
2007         {\mdf@tikzbox@otl{(0)--(0|-P)(P)--(P|-0)}{(0)rectangle(P)}}}%
2008     \ifboolexpr{bool {mdf@leftline} and not (bool {mdf@rightline})}%
2009         {\mdf@tikzbox@otl{(0)--(0|-P)}{(0)rectangle(P)}}}%
2010     \ifboolexpr{not (bool {mdf@leftline}) and bool {mdf@rightline}}%
2011         {\mdf@tikzbox@otl{(P)--(P|-0)}{(0)rectangle(P)}}}%
2012     \ifboolexpr{not (bool {mdf@leftline}) and not (bool {mdf@rightline})}%
2013         {\path[mdfbackground](0) rectangle(P);}%
2014 %
2015     \drawbackgroundframetitle@middle
2016 %
2017     \node[mdfbox]at(\mdf@Ax,\mdf@Ay){\box\mdf@splitbox@two};% Ausgabebox einfuegen
2018 \end{scope}
2019 %HIER KOMMT EIN WEITERES MAKRO
2020 \mdfcreateextratikz
2021 \end{tikzpicture}%
2022 }%
2023 \mdf@makeboxalign@right%
2024 }%
2025 \fi
2026 }%

```

\mdf@putbox@second

Output of the last breakable contents.

```

2027 \def\drawbackgroundframetitle@second{%
2028     \ifdefempty{\mdf@frametitle}}{%
2029         \ifdimless{\mdfframetitleboxtotalheight}{\z@}
2030             {}{%
2031                 \drawbackgroundframetitle@@second%
2032             }%
2033         }%
2034     }%
2035 %
2036 \def\drawbackgroundframetitle@@second{%
2037     \begin{scope}%background frame title
2038         \ifbool{mdf@leftline}{
2039             \pgfmathsetlengthmacro\mdf@0x%
2040                 {\mdf@0x+\mdf@innerlinewidth@length+0.5\mdf@middlelinewidth@length}
2041             }{%
2042             \ifbool{mdf@rightline}{%
2043                 \pgfmathsetlengthmacro\mdf@Px%
2044                 {\mdf@Px-\mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length}
2045             }{%
2046                 \pgfmathsetlengthmacro\mdf@Fy
2047                 {\mdf@Py-\mdfframetitleboxtotalheight}
2048                 \path[mdfframetitlebackground,rounded corners=\z@]
2049                     (\mdf@0x,\mdf@Fy) -- (\mdf@0x,\mdf@Py)%
2050                     -- (\mdf@Px,\mdf@Py) -- (\mdf@Px,\mdf@Fy);
2051             }
2052         }

```



```

2053 \def\mdf@putbox@second{%
2054   \ifvoid\mdf@splitbox@one
2055   \else%
2056     \mdf@makebox@out{%
2057       \mdf@makeboxalign@left%
2058       \mdf@tikz@settings%
2059   %
2060     \setlength\mdfboundingboxwidth{\wd\mdf@splitbox@one}%
2061     \advance\mdfboundingboxwidth by \mdf@innerleftmargin@length\relax%
2062     \advance\mdfboundingboxwidth by \mdf@innerrightmargin@length\relax%
2063     \ifbool{mdf@leftline}{%
2064       \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2065       \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2066       \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}{%
2067     \ifbool{mdf@rightline}{%
2068       \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2069       \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2070       \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}}%
2071   %
2072   \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
2073   \advance\mdfboundingboxheight by \mdf@innerbottommargin@length\relax%
2074   \ifbool{mdf@bottomline}{%
2075     \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
2076     \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%
2077     \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}}}%
2078   %
2079   \mdf@makebox@in[\mdfboundingboxwidth]{%
2080     \null%
2081     \begin{tikzpicture}[remember picture]
2082       \pgfmithsetlengthmacro\mdf@Ax{+\mdf@innerleftmargin@length}%
2083       \pgfmithsetlengthmacro\mdf@Ay{+\mdf@innerbottommargin@length}%
2084       \pgfmithsetlengthmacro\mdf@Ox{+0pt}%
2085       \pgfmithsetlengthmacro\mdf@Oy{+0pt}%
2086       \pgfmithsetlengthmacro\mdf@Px{+\mdfboundingboxwidth}%
2087       \pgfmithsetlengthmacro\mdf@Py{+\mdfboundingboxheight}%
2088       \ifbool{mdf@leftline}%
2089         {%
2090           \pgfmithsetlengthmacro\mdf@Ax%
2091             {\mdf@Ax+\mdf@outerlinewidth@length+
2092              \mdf@middlelinewidth@length+\mdf@innerlinewidth@length}%
2093           \pgfmithsetlengthmacro\mdf@Ox%
2094             {\mdf@Ox+\mdf@outerlinewidth@length+0.5\mdf@middlelinewidth@length}%
2095         }{}%
2096       \ifbool{mdf@rightline}%
2097         {%
2098           \pgfmithsetlengthmacro\mdf@Px%
2099             {\mdf@Px-\mdf@outerlinewidth@length-0.5\mdf@middlelinewidth@length}%
2100         }{}%
2101       \ifbool{mdf@bottomline}%
2102         {%
2103           \pgfmithsetlengthmacro\mdf@Ay%
2104             {\mdf@Ay+\mdf@outerlinewidth@length+
2105              \mdf@middlelinewidth@length+\mdf@innerlinewidth@length}%
2106           \pgfmithsetlengthmacro\mdf@Oy%
2107             {\mdf@Oy+\mdf@outerlinewidth@length+0.5\mdf@middlelinewidth@length}%
2108         }{}%

```

```

2109 %
2110 \coordinate(0)at(\mdf@0x,\mdf@0y);%
2111 \coordinate(P)at(\mdf@Px,\mdf@Py);%
2112 %
2113 \ifbool{mdf@shadow}
2114 {\path[mdfshadow] (0|-P) to[mdfcorners] (0) to[mdfcorners] (P|-0) -- (P) -- (0|-P);}%
2115 %
2116 \begin{scope}[use as bounding box]
2117 \ifbool{test {\mdf@test@lrb} or test {\mdf@test@lrb}}%
2118 {\mdf@tikzbox@otl{(P|-0)--(0)--(0|-P)--(P)}}%
2119 {}%
2120 \ifbool{test {\mdf@test@ltb} or test {\mdf@test@ltb}}%
2121 {\mdf@tikzbox@otl{(P|-0)--(0)--(0|-P)}{(P)--(P|-0)[mdfcorners]--(0)--(0|-P)}}%
2122 {}%
2123 \ifbool{test {\mdf@test@trb} or test {\mdf@test@trb}}%
2124 {\mdf@tikzbox@otl{(P)--(P|-0)--(0)}{(0|-P)--(P)[mdfcorners]--(P|-0)--(0)}}%
2125 {}%
2126 \ifbool{test {\mdf@test@ltr} or test {\mdf@test@ltr}}%
2127 {\mdf@tikzbox@otl{(0)--(0|-P)(P)--(P|-0)}{(0)rectangle(P)}}%
2128 {}%
2129 \ifbool{test {\mdf@test@tb} or test {\mdf@test@tb}}%
2130 {\mdf@tikzbox@otl{(0)--(0|-P)}{(0)rectangle(P)}}%
2131 {}%
2132 \ifbool{test {\mdf@test@lt} or test {\mdf@test@lt}}%
2133 {\mdf@tikzbox@otl{(0)--(0|-P)}{(0)rectangle(P)}}%
2134 {}%
2135 \ifbool{test {\mdf@test@tr} or test {\mdf@test@tr}}%
2136 {\mdf@tikzbox@otl{(0|-P)--(P)}{(0)rectangle(P)}}%
2137 {}%
2138 \mdf@test@t{\path[mdfbackground,mdfcorners](0|-P)--(0)--(0|-P)--(P);}%
2139 %
2140 \mdf@test@noline{\path[mdfbackground,mdfcorners](0|-P)--(0)--(0|-P)--(P);}%
2141 %
2142 \drawbackgroundframetitle@second
2143 %
2144 \node[mdfbox] at (\mdf@Ax,\mdf@Ay){\box\mdf@splitbox@one};% Ausgabebox einfuegen
2145 \end{scope}
2146 %HIER KOMMT EIN WEITERES MAKRO
2147 \mdfcreateextratikz
2148 \end{tikzpicture}%
2149 }%
2150 \mdf@makeboxalign@right%
2151 }%
2152 \fi
2153 }%

2154 \endinput

```

B.4. The Explanation of md-frame-2.mdf / md-frame-3.mdf

```

2155 %% Style file for mdframed for package option 'framemethod=default'
2156 %%
2157 %% This package may be distributed under the terms of the LaTeX Project
2158 %% Public License, as described in lppl.txt in the base LaTeX distribution.
2159 %% Either version 1.0 or, at your option, any later version.
2160 %%

```

```

2161 %%
2162 %$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $
2163 %

```

```

\mdframedIIPackagename
\mdf@frameIIDate@svn

```

local settings

```

2164 \def\mdframedIIPackagename{md-frame-2}
2165 \def\mdf@frameIIDate@svn$#1: #2 #3 #4-#5-#6 #7 #8${#4/#5/#6\space }
2166 \ProvidesFile{md-frame-2.mdf}%
2167 [\mdf@frameIIDate@svn$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $ %
2168 \mdversion: \mdframedIIPackagename]

```

```

\mdf@ptlength@to@pscode
\ptTps

```

Command to calculate a latex length to postscript

```

2169 \def\mdf@ptlength@to@pscode#1{\pst@number{#1} \pst@number\psxunit div }
2170 \def\mdf@ptlength@to@pscode@length#1{\pst@number{\csname mdf@#1@length\endcsname} \pst@number\psxunit o
2171 \let\ptTps\mdf@ptlength@to@pscode\relax
2172 \let\ptTpsL\mdf@ptlength@to@pscode@length\relax

```

```

\mdfbackgroundstyle
\mdflinestyle
\mdfframetitlestyle
\mdfframetitlebackground

```

background and line settings for pstricks

```

2173 \def\mdf@pstricks@settings{%expand by \addtopsstyle
2174 \newpsstyle{mdfbackgroundstyle}%
2175 {linecolor=\mdf@backgroundcolor,fillstyle=solid,%
2176 fillcolor=\mdf@backgroundcolor,linestyle=none,%
2177 ,dimen=middle,%
2178 }%
2179 %
2180 \newpsstyle{mdfframetitlebackgroundstyle}{%
2181 linecolor=\mdf@frametitlebackgroundcolor,
2182 fillcolor=\mdf@frametitlebackgroundcolor,
2183 fillstyle=solid,linestyle=none,
2184 linearc=\ifdimgreater{\mdf@roundcorner@length%
2185 -\mdf@innerlinewidth@length%
2186 -.5\mdf@middlelinewidth@length}
2187 {\z@}{\dimexpr\mdf@roundcorner@length%
2188 -\mdf@innerlinewidth@length%
2189 -.5\mdf@middlelinewidth@length}{\z@},
2190 }
2191 %
2192 \newpsstyle{mdfouterlinestyle}{linestyle=none}%
2193 \ifdimgreater{\mdf@outerlinewidth@length}{\z@}
2194 {\newpsstyle{mdfouterlinestyle}{%
2195 linecolor=\mdf@outerlinecolor,%
2196 linewidth=\dimexpr2\mdf@outerlinewidth@length+\mdf@middlelinewidth@length\relax,
2197 dimen=middle,
2198 }}}%

```

```

2199 %
2200 \newsstyle{mdfinnerlinestyle}{linestyle=none}%
2201 \ifdimgreater{\mdf@innerlinewidth@length}{\z@}%
2202   {\newsstyle{mdfinnerlinestyle}{%
2203     linecolor=\mdf@innerlinecolor,%
2204     linewidth=\dimexpr2\mdf@innerlinewidth@length+\mdf@middlelinewidth@length\relax,
2205     dimen=middle,
2206   }}}%
2207 %
2208 \newsstyle{mdfmiddlelinestyle}{linestyle=none}%
2209 \ifdimgreater{\mdf@middlelinewidth@length}{\z@}%
2210   {\newsstyle{mdfmiddlelinestyle}{%
2211     linewidth=\mdf@middlelinewidth@length,%
2212     linecolor=\mdf@middlelinecolor,dimen=middle
2213   }}}%
2214 \mdfpstricks@appendsettings
2215 }%
2216 %
2217 \newrobustcmd*{\mdf@pstricksbox@fl[2]}{%four lines
2218   \psframe[style=mdfouterlinestyle](#1)(#2)%aussen=3mm
2219   \psframe[style=mdfbackgroundstyle](#1)(#2)%Hintergrund
2220   \psclip{\psframe[style=mdfmiddlelinestyle](#1)(#2)}
2221     \psframe[style=mdfinnerlinestyle](#1)(#2)%innere=3mm
2222   \endpsclip
2223   \psframe[style=mdfmiddlelinestyle](#1)(#2)%mittlere=2mm
2224 }%
2225 \newrobustcmd*{\mdf@pstricksbox@tl[1]}{%three lines
2226   \psline[style=mdfouterlinestyle]#1%aussen=3mm
2227   \psline[style=mdfbackgroundstyle]#1%Hintergrund
2228   \psclip{\psline[style=mdfmiddlelinestyle]#1}
2229     \psline[style=mdfinnerlinestyle]#1%innere=3mm
2230   \endpsclip
2231   \psline[style=mdfmiddlelinestyle]#1%mittlere=2mm
2232 }%
2233 \newrobustcmd*{\mdf@pstricksbox@tcl[2]}{%two combined lines
2234 %%#1 background comple
2235 %%#2 line path
2236   \psline[style=mdfouterlinestyle]#2%aussen=3mm
2237   \psline[style=mdfbackgroundstyle]#2%Hintergrund
2238   \psclip{\pscustom[linestyle=none]{
2239     \psline[style=mdfmiddlelinestyle]#2
2240     \psline[linestyle=none,lineararc=0pt]#1}
2241   }
2242   \psframe[style=mdfbackgroundstyle,lineararc=0pt](mdf@0)(mdf@P)%Hintergrund
2243   \psline[style=mdfinnerlinestyle]#2%innere=3mm
2244   \endpsclip
2245   \psline[style=mdfmiddlelinestyle]#2%mittlere=2mm
2246 }%
2247 \newrobustcmd*{\mdf@pstricksbox@tncl[2]}{%two not combined lines
2248 \begingroup
2249   \psset{lineararc=0pt}
2250   \psline[style=mdfouterlinestyle](mdf@0)#1%aussen=3mm
2251   \psline[style=mdfouterlinestyle](mdf@P)#2%aussen=3mm
2252   \psclip{
2253     \pscustom[linestyle=none]{%
2254       \psline[style=mdfmiddlelinestyle](mdf@0)#1%mittlere=2mm

```

```

2255      \psline[linestyle=none](mdf@0)#2
2256      \psline[style=mdfmiddlelinestyle](mdf@P)#2%mittlere=2mm
2257      \psline[linestyle=none](mdf@P)#1
2258  }%
2259  }%
2260  \psframe[style=mdfbackgroundstyle,lineararc=0pt](mdf@0)(mdf@P)%Hintergrund
2261  \psline[style=mdfinnerlinestyle](mdf@0)#1%innere=3mm
2262  \psline[style=mdfinnerlinestyle](mdf@P)#2%innere=3mm
2263  \endpsclip
2264  \psline[style=mdfmiddlelinestyle](mdf@0)#1%mittlere=2mm
2265  \psline[style=mdfmiddlelinestyle](mdf@P)#2%mittlere=2mm
2266  \endgroup
2267  }%
2268  \newrobustcmd*\mdf@pstricksbox@ol[1]{%one line
2269  \begingroup
2270    \psset{lineararc=0pt}
2271    \psline[style=mdfouterlinestyle]#1%ausen=3mm
2272    \psline[style=mdfbackgroundstyle]#1%Hintergrund
2273    \psclip{\pscustom[linestyle=none]{
2274      \psline[style=mdfmiddlelinestyle]#1
2275      \psframe[linestyle=none,fillstyle=none,dimen=inner](mdf@0)(mdf@P)
2276    }}
2277    \psframe[style=mdfbackgroundstyle](mdf@0)(mdf@P)
2278    \psline[style=mdfinnerlinestyle]#1%innere=3mm
2279  \endpsclip
2280  \psline[style=mdfmiddlelinestyle]#1%mittlere=2mm
2281  \endgroup%
2282  }%
2283
2284  %
2285  \newpsstyle{mdfframetitlerule}{%
2286    linecolor=\mdf@frametitlerulecolor,%
2287    fillcolor=\mdf@frametitlerulecolor,%
2288    fillstyle=solid,dimen=outer,%
2289  }
2290  %

```

`\mdf@put@frametitlerule`

frametitlerule with pstricks

```

2291  \def\mdf@@frametitlerule{%
2292    \ifbool{mdf@frametitlerule}{%
2293      \vbox{\hsize0pt
2294        \par\unskip\vskip\mdf@frametitlebelowskip@length
2295        \noindent\rlap{%
2296          \begingroup%
2297            \begin{pspicture}(0,0)(0,\mdf@frametitlerulewidth@length)
2298              \psframe[style=mdfframetitlerule](!\ptTpsL{innerleftmargin} neg 0)%
2299              (! \ptTpsL{innerrightmargin}
2300                \ptTps{\mdfframetitleboxwidth} add \ptTpsL{frametitlerulewidth})
2301            \end{pspicture}
2302          \endgroup}
2303        }%
2304      }{}
2305      \par\unskip\vskip\mdf@innertopmargin@length%

```

```

2306 }%
2307 %
2308 % \begin{macro}{mdf@putbox@single}
2309 % Single output
2310 % \begin{macrocode}
2311 % Info zu den verwendeten Punkten:
2312 % O ist die untere linke Ecke der Mitte der middleline
2313 % P ist die obere rechte Ecke der Mitte der middleline
2314 % A ist der Punkt fuer den anchor (d.h. die untere linke Ecke) der Ausgabebox
2315 \def\mdf@putbox@single{%
2316   \ifvoid\mdf@splitbox@one
2317   \else%
2318     \mdf@makebox@out{%
2319       \mdf@makeboxalign@left%
2320       \setlength\mdfboundingboxwidth{\wd\mdf@splitbox@one}%
2321       \advance\mdfboundingboxwidth by \mdf@innerleftmargin@length\relax%
2322       \advance\mdfboundingboxwidth by \mdf@innerrightmargin@length\relax%
2323       \ifbool{mdf@leftline}{%
2324         \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2325         \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2326         \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}{%
2327       \ifbool{mdf@rightline}{%
2328         \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2329         \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2330         \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}}%
2331 %
2332 \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
2333 \advance\mdfboundingboxheight by \mdf@innerbottommargin@length\relax%
2334 \advance\mdfboundingboxheight by \mdf@innertopmargin@length\relax%
2335 \ifbool{mdf@topline}{%
2336   \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
2337   \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%
2338   \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}}{%
2339 \ifbool{mdf@bottomline}{%
2340   \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
2341   \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%
2342   \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}}}%
2343 %
2344 \setlength\mdftotallinewidth{\dimexpr\mdf@innerlinewidth@length%
2345                               +\mdf@middlelinewidth@length
2346                               +\mdf@outerlinewidth@length\relax}%
2347 \psset{unit=1truecm}%
2348 \mdf@makebox@in[\mdfboundingboxwidth]{%
2349   \null%
2350   \begin{pspicture}(0,0)(\mdfboundingboxwidth,\mdfboundingboxheight)
2351     \mdfpstricks@settings%
2352     \psset{linear=\mdf@roundcorner@length, cornersize=absolut,}%
2353     \expandafter\psset\expandafter{\mdf@psset@local}%
2354     \pnode(\mdf@innerleftmargin@length,\mdf@innerbottommargin@length){mdf@A}
2355     \pnode(0,0){mdf@O}
2356     \pnode(\mdfboundingboxwidth,\mdfboundingboxheight){mdf@P}
2357     \ifbool{mdf@leftline}%
2358     {%
2359       \nodexn{(mdf@A)+(\mdf@outerlinewidth@length,0)
2360              +(\mdf@middlelinewidth@length,0)
2361              +(\mdf@innerlinewidth@length,0)}{mdf@A}%

```

```

2362      \nodexn{(mdf@0)+(\mdf@outerlinewidth@length,0)
2363              +0.5(\mdf@middlelinewidth@length,0)}{mdf@0}%
2364    }{}%
2365    \ifbool{mdf@rightline}%
2366    {%
2367      \nodexn{(mdf@P) - (\mdf@outerlinewidth@length,0)
2368              -0.5(\mdf@middlelinewidth@length,0)}{mdf@P}%
2369    }{}%
2370    \ifbool{mdf@bottomline}%
2371    {%
2372      \nodexn{(mdf@A)+(0,\mdf@outerlinewidth@length)
2373              +(0,\mdf@middlelinewidth@length)
2374              +(0,\mdf@innerlinewidth@length)}{mdf@A}%
2375      \nodexn{(mdf@0)+(0,\mdf@outerlinewidth@length)
2376              +0.5(0,\mdf@middlelinewidth@length)}{mdf@0}%
2377    }{}%
2378    \ifbool{mdf@topline}%
2379    {%
2380      \nodexn{(mdf@P) - (0,\mdf@outerlinewidth@length)
2381              -0.5(0,\mdf@middlelinewidth@length)}{mdf@P}
2382    }{}%
2383    %
2384    %Four lines
2385    \mdf@test@lrb{\mdf@pstricksbox@fl{mdf@0}{mdf@P}}{}
2386    %three lines
2387    \mdf@test@ltb{\mdf@pstricksbox@tl{(mdf@P|mdf@0)(mdf@0)(mdf@0|mdf@P)(mdf@P)}}{}
2388    \mdf@test@trb{\mdf@pstricksbox@tl{(mdf@0)(mdf@P|mdf@0)(mdf@P)(mdf@0|mdf@P)}}{}
2389    \mdf@test@ltr{\mdf@pstricksbox@tl{(mdf@0)(mdf@0|mdf@P)(mdf@P)(mdf@P|mdf@0)}}{}
2390    \mdf@test@lrb{\mdf@pstricksbox@tl{(mdf@0|mdf@P)(mdf@0)(mdf@P|mdf@0)(mdf@P)}}{}
2391    %two lines combined
2392    \mdf@test@lb{\mdf@pstricksbox@tcl{(mdf@P|mdf@0)(mdf@P)(mdf@0|mdf@P)}%
2393              {(mdf@0|mdf@P)(mdf@0)(mdf@P|mdf@0)}}{}
2394    \mdf@test@rb{\mdf@pstricksbox@tcl{(mdf@P)(mdf@0|mdf@P)(mdf@0)}%
2395              {(mdf@0)(mdf@P|mdf@0)(mdf@P)}}{}
2396    \mdf@test@tr{\mdf@pstricksbox@tcl{(mdf@P|mdf@0)(mdf@0)(mdf@0|mdf@P)}%
2397              {(mdf@0|mdf@P)(mdf@P)(mdf@P|mdf@0)}}{}
2398    \mdf@test@lt{\mdf@pstricksbox@tcl{(mdf@0)(mdf@P|mdf@0)(mdf@P)}%
2399              {(mdf@0)(mdf@0|mdf@P)(mdf@P)}}{}
2400    %two lines not combined combined
2401    \mdf@test@lr{\mdf@pstricksbox@tncl{(mdf@0|mdf@P)}{(mdf@P|mdf@0)}
2402              {}{}
2403    \mdf@test@tb{\mdf@pstricksbox@tncl{(mdf@P|mdf@0)}{(mdf@0|mdf@P)}
2404              {}{}
2405    %single line
2406    \mdf@test@l{\mdf@pstricksbox@ol{(mdf@0)(mdf@0|mdf@P)}}{}
2407    \mdf@test@r{\mdf@pstricksbox@ol{(mdf@P)(mdf@P|mdf@0)}}{}
2408    \mdf@test@t{\mdf@pstricksbox@ol{(mdf@P)(mdf@0|mdf@P)}}{}
2409    \mdf@test@b{\mdf@pstricksbox@ol{(mdf@0)(mdf@P|mdf@0)}}{}
2410    %no line
2411    \mdf@test@noline{\psframe[style=mdfbackgroundstyle](mdf@0)(mdf@P)}{}
2412    %
2413    %Frametitlebackground
2414    \drawbrackgroundframetitle@single
2415    %output%
2416    \rput[bl](mdf@A){\box\mdf@splitbox@one}
2417    %
    \psdot(mdf@A)\uput[90](mdf@A){mdf at A}

```



```

2418 %          \psdot(mdf@P)\uput[90](mdf@P){mdf at P}
2419 %          \psdot(mdf@O)\uput[90](mdf@O){mdf at O}
2420 %
2421 %          \endpsclip
2422          \end{pspicture}%
2423      }%
2424      \mdf@makeboxalign@right%
2425      }%
2426 \fi
2427 }%
2428 \def\drawbackgroundframetitle@single{%
2429 \ifdefempty{\mdf@frametitle}{\}%
2430 \drawbackgroundframetitle@@single%
2431 }%
2432 }%
2433 \def\drawbackgroundframetitle@@single{%
2434 \begingroup%
2435 \ifbool{mdf@leftline}{%
2436     \nodexn{(mdf@O)+(\mdf@innerlinewidth@length,0)
2437             +0.5(\mdf@middlelinewidth@length,0)}{mdf@O}%
2438     }{%
2439 \ifbool{mdf@rightline}{%
2440     \nodexn{(mdf@P)-(\mdf@innerlinewidth@length,0)
2441             -0.5(\mdf@middlelinewidth@length,0)}{mdf@P}%
2442     }{%
2443 \ifbool{mdf@topline}{%
2444     \nodexn{(mdf@P)-(0,\mdf@innerlinewidth@length)
2445             -0.5(0,\mdf@middlelinewidth@length)}{mdf@P}%
2446     }{%
2447 \nodexn{(mdf@P)-(0,\mdfframetitleboxtotalheight)}{mdf@F}%
2448 \psline[style=mdfframetitlebackgroundstyle](mdf@O|mdf@F)(mdf@O|mdf@P)
2449                                             (mdf@P)(mdf@P|mdf@F)%
2450 \endgroup
2451 }

```

\mdf@putbox@first

First output

```

2452 \def\mdf@putbox@first{%
2453 \ifvoid\mdf@splitbox@two
2454 \else%
2455 \mdf@makebox@out{%
2456 \mdf@makeboxalign@left%
2457 %\ifbool{mdf@leftline}{\hspace*{\mdf@middlelinewidth@length}}{%
2458 \setlength\mdf@boundingboxwidth{\wd\mdf@splitbox@two}%
2459 \advance\mdf@boundingboxwidth by \mdf@innerleftmargin@length\relax%
2460 \advance\mdf@boundingboxwidth by \mdf@innerrightmargin@length\relax%
2461 \ifbool{mdf@leftline}{%
2462 \advance\mdf@boundingboxwidth by \mdf@innerlinewidth@length\relax%
2463 \advance\mdf@boundingboxwidth by \mdf@middlelinewidth@length\relax%
2464 \advance\mdf@boundingboxwidth by \mdf@outerlinewidth@length\relax}{%
2465 \ifbool{mdf@rightline}{%
2466 \advance\mdf@boundingboxwidth by \mdf@innerlinewidth@length\relax%
2467 \advance\mdf@boundingboxwidth by \mdf@middlelinewidth@length\relax%
2468 \advance\mdf@boundingboxwidth by \mdf@outerlinewidth@length\relax}{%

```



```

2469 \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@two+\dp\mdf@splitbox@two\relax}%
2470 \advance\mdfboundingboxheight by \mdf@innertopmargin@length\relax%
2471 \advance\mdfboundingboxheight by \mdf@splitbottomskip@length\relax%
2472 \ifbool{mdf@topline}{%
2473   \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
2474   \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%
2475   \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}}{%
2476 \psset{lineararc=\mdf@roundcorner@length, cornersize=absolute}%
2477 \expandafter\psset\expandafter{\mdf@psset@local}%
2478 \mdf@makebox@in[\mdfboundingboxwidth]{%
2479   \null%
2480   \psset{unit=1truecm}%
2481   \ifdimgreater{\mdfboundingboxheight}{\vsize}
2482     {\begin{pspicture}(0,0)(\mdfboundingboxwidth,\vsize)}
2483     {\begin{pspicture}(0,0)(\mdfboundingboxwidth,\mdfboundingboxheight)}
2484       \mdfpstricks@settings%
2485       \psset{lineararc=\mdf@roundcorner@length, cornersize=absolut,}%
2486       \expandafter\psset\expandafter{\mdf@psset@local}%
2487       \pnode(\mdf@innerleftmargin@length,\mdf@splitbottomskip@length){mdf@A}
2488       \pnode(0,0){mdf@0}
2489       \pnode(\mdfboundingboxwidth,\mdfboundingboxheight){mdf@P}
2490       \ifbool{mdf@leftline}%
2491         {%
2492           \nodexn{(\mdf@A)+(\mdf@outerlinewidth@length,0)
2493                 +(\mdf@middlelinewidth@length,0)
2494                 +(\mdf@innerlinewidth@length,0)}{mdf@A}
2495           \nodexn{(\mdf@0)+(\mdf@outerlinewidth@length,0)
2496                 +0.5(\mdf@middlelinewidth@length,0)}{mdf@0}
2497         }{}%
2498       \ifbool{mdf@rightline}%
2499         {%
2500           \nodexn{(\mdf@P)-(\mdf@outerlinewidth@length,0)
2501                 -0.5(\mdf@middlelinewidth@length,0)}{mdf@P}
2502         }{}%
2503       \ifbool{mdf@topline}%
2504         {%
2505           \nodexn{(\mdf@P)-(0,\mdf@outerlinewidth@length)
2506                 -0.5(0,\mdf@middlelinewidth@length)}{mdf@P}
2507         }{}%
2508 % \psclip{
2509 %Four or Three lines
2510 \ifboolexpr{test {\mdf@test@ltrb} or test {\mdf@test@ltr}}{%
2511   {\mdf@pstricksbox@tl{(\mdf@0)(\mdf@0|\mdf@P)(\mdf@P)(\mdf@P|\mdf@0)}}%
2512   }{}%
2513 %two combined lines
2514 \ifboolexpr{test {\mdf@test@ltb} or test {\mdf@test@lt}}{
2515   {\mdf@pstricksbox@tcl{(\mdf@0)(\mdf@P|\mdf@0)(\mdf@P)}%
2516     {(\mdf@0)(\mdf@0|\mdf@P)(\mdf@P)}}{}
2517 \ifboolexpr{test {\mdf@test@trb} or test {\mdf@test@tr}}{
2518   {\mdf@pstricksbox@tcl{(\mdf@P|\mdf@0)(\mdf@0)(\mdf@0|\mdf@P)}%
2519     {(\mdf@0|\mdf@P)(\mdf@P)(\mdf@P|\mdf@0)}}{}
2520 %two not combined lines
2521 \ifboolexpr{test {\mdf@test@lrb} or test {\mdf@test@lr}}{
2522   {\mdf@pstricksbox@tncl{(\mdf@0|\mdf@P)}{(\mdf@P|\mdf@0)}}{}
2523 %single line
2524 \ifboolexpr{test {\mdf@test@tb} or test {\mdf@test@t}}{

```

```

2525         {\mdf@pstricksbox@ol{(mdf@P)(mdf@O|mdf@P)}}{}
2526     \ifboolexpr{test {\mdf@test@lb} or test {\mdf@test@l}}%
2527         {\mdf@pstricksbox@ol{(mdf@O)(mdf@O|mdf@P)}}{}
2528     \ifboolexpr{test {\mdf@test@rb} or test {\mdf@test@r}}%
2529         {\mdf@pstricksbox@ol{(mdf@P)(mdf@P|mdf@O)}}{}
2530     %no line
2531     \mdf@test@b{\psframe[style=mdfbackgroundstyle](mdf@O)(mdf@P)}}{}%
2532     \mdf@test@noline{\psframe[style=mdfbackgroundstyle](mdf@O)(mdf@P)}}{}%
2533 %    }
2534 %Frametitlebackground
2535     \drawbackgroundframetitle@first
2536     %output%
2537     \rput[bl](mdf@A){\box\mdf@splitbox@two}
2538 %     \psdot(mdf@A)\uput[90](mdf@A){mdf at A}
2539 %     \psdot(mdf@P)\uput[90](mdf@P){mdf at P}
2540 %     \psdot(mdf@O)\uput[90](mdf@O){mdf at O}
2541 %     \endpsclip
2542     \end{pspicture}
2543 }%
2544 \mdf@makeboxalign@right%
2545 }%
2546 \fi
2547 }%
2548 \def\drawbackgroundframetitle@first{%
2549 \ifdefempty{\mdf@frametitle}}{}%
2550 \ifdimgreater{\mdfboundingboxheight}{\mdfframetitleboxtotalheight}%
2551 {%
2552     \drawbackgroundframetitle@@first
2553     \global\mdfframetitleboxtotalheight=-\p@%
2554 }{\mdf@PackageWarning{You got a page break inside the frame title\MessageBreak
2555     Currently this isn't well supported}%
2556     \drawbackgroundframetitle@@first
2557     \global\mdfframetitleboxtotalheight=\dimexpr\mdfframetitleboxtotalheight
2558         -\mdfboundingboxheight
2559         -\mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length%
2560         +\mdf@frametitlebelowskip@length+\mdf@splitbottomskip@length
2561         +\mdf@splittopskip@length
2562         +\dp\strutbox\relax%
2563 }%
2564 }%
2565 }%
2566 \def\drawbackgroundframetitle@@first{%
2567 \begingroup%
2568 \ifbool{mdf@leftline}{%
2569     \nodexn{(mdf@O)+(\mdf@innerlinewidth@length,0)
2570         +0.5(\mdf@middlelinewidth@length,0)}{mdf@O}%
2571     }{}%
2572 \ifbool{mdf@rightline}{%
2573     \nodexn{(mdf@P)-(\mdf@innerlinewidth@length,0)
2574         -0.5(\mdf@middlelinewidth@length,0)}{mdf@P}%
2575     }{}%
2576 \ifbool{mdf@topline}{%
2577     \nodexn{(mdf@P)-(0,\mdf@innerlinewidth@length)
2578         -0.5(0,\mdf@middlelinewidth@length)}{mdf@P}%
2579     }{}%
2580 \ifdimgreater{\mdfboundingboxheight}{\mdfframetitleboxtotalheight}

```

```

2581      {\nodexn{(mdf@P)-(0,\mdfframetitleboxtotalheight)}{mdf@F}}%
2582      {\nodexn{(mdf@0)}{mdf@F}}%
2583      \psline[style=mdfframetitlebackgroundstyle](mdf@0|mdf@F)(mdf@0|mdf@P)
2584              (mdf@P)(mdf@P|mdf@F)%
2585  \endgroup
2586 }

```

\mdf@putbox@middle

Middle output

```

2587 \def\mdf@putbox@middle{%
2588   \ifvoid\mdf@splitbox@two
2589   \else%
2590     \mdf@makebox@out{%
2591       \mdf@makeboxalign@left%
2592       % \ifbool{mdf@leftline}{\hspace*{\mdf@middlelinewidth@length}}{}%
2593       \setlength\mdfboundingboxwidth{\wd\mdf@splitbox@two}%
2594       \advance\mdfboundingboxwidth by \mdf@innerleftmargin@length\relax%
2595       \advance\mdfboundingboxwidth by \mdf@innerrightmargin@length\relax%
2596       \ifbool{mdf@leftline}{%
2597         \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2598         \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2599         \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}%{}%
2600       \ifbool{mdf@rightline}{%
2601         \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2602         \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2603         \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}%{}%
2604       \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@two+\dp\mdf@splitbox@two\relax}%
2605       \advance\mdfboundingboxheight by \mdf@splitbottomskip@length\relax%
2606       \psset{unit=1truecm}%
2607       \mdf@makebox@in[\mdfboundingboxwidth]{%
2608         \null%
2609         \ifdimgreater{\mdfboundingboxheight}{\vsize}
2610           {\begin{pspicture}(0,0)(\mdfboundingboxwidth,\vsize)}
2611           {\begin{pspicture}(0,0)(\mdfboundingboxwidth,\mdfboundingboxheight)}
2612             \mdfpstricks@settings%
2613             \psset{lineararc=0pt, cornersize=absolut,}%
2614             \expandafter\psset\expandafter{\mdf@psset@local}%
2615             %%%
2616             \pnode(\mdf@innerleftmargin@length,\mdf@splitbottomskip@length){mdf@A}
2617             \pnode(0,0){mdf@0}
2618             \pnode(\mdfboundingboxwidth,\mdfboundingboxheight){mdf@P}
2619             \ifbool{mdf@leftline}%
2620               {%
2621                 \nodexn{(mdf@A)+(\mdf@outerlinewidth@length,0)
2622                   +(\mdf@middlelinewidth@length,0)
2623                   +(\mdf@innerlinewidth@length,0)}{mdf@A}
2624                 \nodexn{(mdf@0)+(\mdf@outerlinewidth@length,0)
2625                   +0.5(\mdf@middlelinewidth@length,0)}{mdf@0}
2626               }{}%
2627             \ifbool{mdf@rightline}%
2628               {%
2629                 \nodexn{(mdf@P)-(\mdf@outerlinewidth@length,0)
2630                   -0.5(\mdf@middlelinewidth@length,0)}{mdf@P}
2631               }{}%

```

```

2632 %%
2633 \ifbool{bool {mdf@leftline} and bool {mdf@rightline}}%
2634     {\mdf@pstricksbox@tncl{(mdf@0|mdf@P)}{(mdf@P|mdf@0)}}{}%
2635 \ifbool{bool {mdf@leftline} and not (bool {mdf@rightline})}%
2636     {\mdf@pstricksbox@ol{(mdf@0)(mdf@0|mdf@P)}}{}%
2637 \ifbool{not (bool {mdf@leftline}) and bool {mdf@rightline}}%
2638     {\mdf@pstricksbox@ol{(mdf@P)(mdf@P|mdf@0)}}{}%
2639 \ifbool{not (bool {mdf@leftline}) and not (bool {mdf@rightline})}%
2640     {\psframe[style=mdfbackgroundstyle](mdf@0)(mdf@P)}{}%
2641 %Frametitlebackground
2642 \drawbackgroundframetitle@middle
2643 %output%
2644 \rput[bl](mdf@A){\box\mdf@splitbox@two}
2645 % \psdot(mdf@A)\uput[90](mdf@A){mdf at A}
2646 % \psdot(mdf@P)\uput[90](mdf@P){mdf at P}
2647 % \psdot(mdf@0)\uput[90](mdf@0){mdf at 0}
2648 \end{pspicture}%
2649 }%
2650 \mdf@makeboxalign@right%
2651 }%
2652 \fi
2653 }%
2654 \def\drawbackgroundframetitle@middle{%
2655 \ifdefempty{\mdf@frametitle}{}%
2656 \ifdimless{\mdfframetitleboxtotalheight}{\z@}
2657 {}{}%
2658 \drawbackgroundframetitle@@middle
2659 \global\mdfframetitleboxtotalheight=-\p@{\relax%
2660 }%
2661 }%
2662 }%
2663 \def\drawbackgroundframetitle@@middle{%
2664 \begin{group}%
2665 \ifbool{mdf@leftline}%
2666     \nodexn{(mdf@0)+(\mdf@innerlinewidth@length,0)
2667             +0.5(\mdf@middlelinewidth@length,0)}{mdf@0}%
2668     {}{}%
2669 \ifbool{mdf@rightline}%
2670     \nodexn{(mdf@P)-(\mdf@innerlinewidth@length,0)
2671             -0.5(\mdf@middlelinewidth@length,0)}{mdf@P}%
2672     {}{}%
2673 \nodexn{(mdf@P)-(0,\mdfframetitleboxtotalheight)}{mdf@F}%
2674 \psline[style=mdfframetitlebackgroundstyle,linearc=\z@](mdf@0|mdf@F)(mdf@0|mdf@P)
2675     (mdf@P)(mdf@P|mdf@F)%
2676 \end{group}
2677 }

```

`\mdf@putbox@second`

Last output

```

2678 \def\mdf@putbox@second{
2679 \ifvoid\mdf@splitbox@one
2680 \else%
2681 \mdf@makebox@out{%
2682 \mdf@makeboxalign@left%

```

```

2683 %      \ifbool{mdf@leftline}{\hspace*{\mdf@middlelinewidth@length}}{}%
2684 \setlength\mdfboundingboxwidth{\wd\mdf@splitbox@one}%
2685 \advance\mdfboundingboxwidth by \mdf@innerleftmargin@length\relax%
2686 \advance\mdfboundingboxwidth by \mdf@innerrightmargin@length\relax%
2687 \ifbool{mdf@leftline}{%
2688   \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2689   \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2690   \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}{}%
2691 \ifbool{mdf@rightline}{%
2692   \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2693   \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2694   \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}{}%
2695 \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
2696 \advance\mdfboundingboxheight by \mdf@innerbottommargin@length\relax%
2697 \ifbool{mdf@bottomline}{%
2698   \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
2699   \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%
2700   \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}}{}%
2701 \psset{unit=1truecm}%
2702 \mdf@makebox@in[\mdfboundingboxwidth]{%
2703   \null%
2704   \begin{pspicture}(0,0)(\mdfboundingboxwidth,\mdfboundingboxheight)
2705     \mdfpstricks@settings%
2706     \psset{lineararc=\mdf@roundcorner@length, cornersize=absolut,}%
2707     \expandafter\psset\expandafter{\mdf@psset@local}%
2708     \pnode(\mdf@innerleftmargin@length,\mdf@innerbottommargin@length){mdf@A}
2709     \pnode(0,0){mdf@0}
2710     \pnode(\mdfboundingboxwidth,\mdfboundingboxheight){mdf@P}
2711     \ifbool{mdf@leftline}%
2712     {%
2713       \nodexn{(\mdf@A)+(\mdf@outerlinewidth@length,0)
2714               +(\mdf@middlelinewidth@length,0)
2715               +(\mdf@innerlinewidth@length,0)}{mdf@A}
2716       \nodexn{(\mdf@0)+(\mdf@outerlinewidth@length,0)
2717               +0.5(\mdf@middlelinewidth@length,0)}{mdf@0}
2718     }{}%
2719     \ifbool{mdf@rightline}%
2720     {%
2721       \nodexn{(\mdf@P)-(\mdf@outerlinewidth@length,0)
2722               -0.5(\mdf@middlelinewidth@length,0)}{mdf@P}
2723     }{}%
2724     \ifbool{mdf@bottomline}%
2725     {%
2726       \nodexn{(\mdf@A)+(0,\mdf@outerlinewidth@length)
2727               +(0,\mdf@middlelinewidth@length)
2728               +(0,\mdf@innerlinewidth@length)}{mdf@A}
2729       \nodexn{(\mdf@0)+(0,\mdf@outerlinewidth@length)
2730               +0.5(0,\mdf@middlelinewidth@length)}{mdf@0}
2731     }{}%
2732     %Four + Three
2733     \ifboolexpr{test {\mdf@test@lrb} or test {\mdf@test@lrb}}{}%
2734     {\mdf@pstricksbox@tcl{(\mdf@0|\mdf@P)(\mdf@0)(\mdf@P|\mdf@0)(\mdf@P)}}{}%
2735     %Two combined
2736     \ifboolexpr{test {\mdf@test@ltb} or test {\mdf@test@lb}}{}%
2737     {\mdf@pstricksbox@tcl{(\mdf@P|\mdf@0)(\mdf@P)(\mdf@0|\mdf@P)}%
2738      {(\mdf@0|\mdf@P)(\mdf@0)(\mdf@P|\mdf@0)}}{}

```

```

2739 \ifbool{test {\mdf@test@trb} or test {\mdf@test@rb}}%
2740 {\mdf@pstricksbox@tcl{(mdf@P)(mdf@0|mdf@P)(mdf@0)}%
2741 {(mdf@0)(mdf@P|mdf@0)(mdf@P)}}}%
2742 %Two not combined
2743 \ifbool{test {\mdf@test@ltr} or test {\mdf@test@lr}}%
2744 {\mdf@pstricksbox@tnc{(mdf@0|mdf@P)}{(mdf@P|mdf@0)}}}%
2745 %one line
2746 \ifbool{test {\mdf@test@tb} or test {\mdf@test@b}}%
2747 {\mdf@pstricksbox@ol{(mdf@0)(mdf@P|mdf@0)}}}%
2748 \ifbool{test {\mdf@test@lt} or test {\mdf@test@l}}%
2749 {\mdf@pstricksbox@ol{(mdf@0)(mdf@0|mdf@P)}}}%
2750 \ifbool{test {\mdf@test@tr} or test {\mdf@test@r}}%
2751 {\mdf@pstricksbox@ol{(mdf@P)(mdf@P|mdf@0)}}}%
2752 %no line
2753 \mdf@test@t{\psframe[style=mdfbackgroundstyle](mdf@0)(mdf@P)}%
2754 \mdf@test@noline{\psframe[style=mdfbackgroundstyle](mdf@0)(mdf@P)}%
2755 %Frametitlebackground
2756 \drawbackgroundframetitle@second
2757 %output%
2758 \rput[bl](mdf@A){\box\mdf@splitbox@one}
2759 % \psdot(mdf@A)\uput[90](mdf@A){mdf at A}
2760 % \psdot(mdf@P)\uput[90](mdf@P){mdf at P}
2761 % \psdot(mdf@0)\uput[90](mdf@0){mdf at 0}
2762 \end{pspicture}%
2763 }%
2764 \mdf@makeboxalign@right%
2765 }%
2766 \fi
2767 }%
2768 \def\drawbackgroundframetitle@second{%
2769 \ifdefempty{\mdf@frametitle}}{%
2770 \ifdimless{\mdfframetitleboxtotalheight}{\z@}
2771 }{%
2772 \drawbackgroundframetitle@@second
2773 }%
2774 }%
2775 }%
2776 \def\drawbackgroundframetitle@@second{%
2777 \begingroup%
2778 \ifbool{mdf@leftline}%
2779 \nodexn{(mdf@0)+(\mdf@innerlinewidth@length,0)
2780 +0.5(\mdf@middlelinewidth@length,0)}{mdf@0}%
2781 }{%
2782 \ifbool{mdf@rightline}%
2783 \nodexn{(mdf@P)-(\mdf@innerlinewidth@length,0)
2784 -0.5(\mdf@middlelinewidth@length,0)}{mdf@P}%
2785 }{%
2786 \nodexn{(mdf@P)-(0,\mdfframetitleboxtotalheight)}{mdf@F}%
2787 \psline[style=mdfframetitlebackgroundstyle,linear=\z@](mdf@0|mdf@F)(mdf@0|mdf@P)
2788 (mdf@P)(mdf@P|mdf@F)%
2789 \endgroup
2790 }

2791 \endinput
2792 %eof

```

C. The file mdframed-example-default

```

2793 %Documentation of the package mdframed
2794 %$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $
2795 \setcounter{errorcontextlines}{999}
2796 \documentclass[parskip=false,english,11pt]{ltxmdf}
2797 \ltxmdfsetifoot $Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $
2798
2799 \usepackage{showexpl}
2800 \lstset{style=lstltxmdf,explpreset={pos=b,rframe={}},}
2801
2802 \newcommand\Loadedframemethod{default}
2803 \usepackage[framemethod=\Loadedframemethod]{mdframed}
2804
2805 \title{The \Pack{mdframed} package}
2806 \subtitle{Examples for \Opt{framemethod=\Loadedframemethod}}
2807 \author{\href{mailto:marco.daniel@mada-nada.de}{Marco Daniel}}
2808 \date{\mdfdateID$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $}
2809 \version{\mdversion}
2810 \introduction{In this document I collect various examples for \Opt{framemethod=\Loadedframemethod}.
2811 Some presented examples are more or less exorbitant.}
2812
2813 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
2814 \newrobustcmd\ExampleText{%
2815     An \textit{inhomogeneous linear} differential equation has the form
2816     \begin{align}
2817         L[v] &= f,
2818     \end{align}
2819     where  $L$  is a linear differential operator,  $v$  is
2820     the dependent variable, and  $f$  is a given non-zero
2821     function of the independent variables alone.
2822 }
2823
2824 \newcounter{examplecount}
2825 \setcounter{examplecount}{0}
2826 \renewcommand\thesubsection{}
2827 \newcommand\Examplesec[1]{%
2828 \stepcounter{examplecount}%
2829 \subsection{Example~\arabic{examplecount}~---\#1\relax}%
2830 }
2831
2832 \begin{document}
2833 \maketitle
2834 \section{Loading}
2835 In the preamble only the package \Pack{mdframed} with the option \Opt{framemethod=\Loadedframemethod}
2836
2837 {\large\color{red!50!black}
2838 \NOTE Every \Cmd{global} inside the examples is necessary to work with the package \Pack{showexpl}.}
2839
2840 \section{Examples}
2841 All examples have the following settings:
2842
2843 \begin{tltltxmdfexample}
2844 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
2845 \newrobustcmd\ExampleText{%
2846 An \textit{inhomogeneous linear} differential equation

```



```

2847 has the form
2848 \begin{align}
2849 L[v] = f,
2850 \end{align}
2851 where  $L$  is a linear differential operator,  $v$  is
2852 the dependent variable, and  $f$  is a given non-zero
2853 function of the independent variables alone.
2854 }
2855 \end{tltxmdfexample}
2856 \clearpage
2857 \Examplesec{very simple}
2858 \begin{LTXexample}
2859 \global\mdfdefinestyle{exampledefault}{%
2860     linecolor=red,linewidth=3pt,%
2861     leftmargin=1cm,rightmargin=1cm
2862 }
2863 \begin{mdframed}[style=exampledefault]
2864 \ExampleText
2865 \end{mdframed}
2866 \end{LTXexample}
2867
2868 \Examplesec{hidden line + frame title}
2869 \begin{LTXexample}
2870 \global\mdfapptodefinestyle{exampledefault}{%
2871     topline=false,rightline=true,bottomline=false}
2872 \begin{mdframed}[style=exampledefault,frametitle={Inhomogeneous linear}]
2873 \ExampleText
2874 \end{mdframed}
2875 \end{LTXexample}
2876 \clearpage
2877
2878 \Examplesec{colored frame title}
2879 \begin{LTXexample}
2880
2881 \global\mdfapptodefinestyle{exampledefault}{%
2882     rightline=true,innerleftmargin=10,innerrightmargin=10,
2883     frametitlerule=true,frametitlerulecolor=green,
2884     frametitlebackgroundcolor=yellow,
2885     frametitlerulewidth=2pt}
2886 \begin{mdframed}[style=exampledefault,frametitle={Inhomogeneous linear}]
2887 \ExampleText
2888 \end{mdframed}
2889 \end{LTXexample}
2890
2891 \Examplesec{framed picture which is centered}
2892 \begin{LTXexample}
2893 \begin{mdframed}[userdefinedwidth=6cm,align=center,
2894     linecolor=blue,linewidth=4pt]
2895 \includegraphics[width=\linewidth]{donald-duck}
2896 \end{mdframed}
2897 \end{LTXexample}
2898
2899 \clearpage
2900 \Examplesec{Theorem environments}
2901 \begin{LTXexample}
2902 \mdfdefinestyle{theoremstyle}{%

```



```

2903     linecolor=red,linewidth=2pt,%
2904     frametitle=rule=true,%
2905     frametitlebackgroundcolor=gray!20,
2906     innertopmargin=\topskip,
2907   }
2908 \mdtheorem[style=theoremstyle]{definition}{Definition}
2909 \begin{definition}
2910 \ExampleText
2911 \end{definition}
2912 \begin{definition}[Inhomogeneous linear]
2913 \ExampleText
2914 \end{definition}
2915 \begin{definition*}[Inhomogeneous linear]
2916 \ExampleText
2917 \end{definition*}
2918 \end{LTXexample}
2919
2920
2921 \clearpage
2922 \Examplesec{theorem with separate header and the help of TikZ (complex)}
2923 \begin{LTXexample}
2924 \newcounter{theo}[section]
2925 \newenvironment{theo}[1][]{%
2926   \stepcounter{theo}%
2927   \ifstrempy{#1}%
2928   {\mdfsetup{%
2929     frametitle={%
2930       \tikz[baseline=(current bounding box.east),outer sep=0pt]
2931       \node[anchor=east,rectangle,fill=blue!20]
2932       {\strut Theorem~\thetheo};}}
2933   }%
2934   {\mdfsetup{%
2935     frametitle={%
2936       \tikz[baseline=(current bounding box.east),outer sep=0pt]
2937       \node[anchor=east,rectangle,fill=blue!20]
2938       {\strut Theorem~\thetheo:~#1};}}%
2939   }%
2940   \mdfsetup{innertopmargin=10pt,linecolor=blue!20,%
2941     linewidth=2pt,topline=true,
2942     frametitleaboveskip=\dimexpr-\ht\strutbox\relax,}
2943   \begin{mdframed}[]\relax%
2944   }\end{mdframed}}
2945 \begin{theo}[Inhomogeneous Linear]
2946 \ExampleText
2947 \end{theo}
2948
2949 \begin{theo}
2950 \ExampleText
2951 \end{theo}
2952 \end{LTXexample}
2953
2954 \clearpage
2955 \Examplesec{hide only a part of a line}
2956 The example below is inspired by the following post on StackExchange \href{http://tex.stackexchange.com}
2957 \begin{LTXexample}
2958 \makeatletter

```

```

2959 \newlength{\interruptlength}
2960 \setlength{\interruptlength}{2.5ex}
2961 \newrobustcmd\overlaplines{%
2962   \appto\mdf@frame@leftline@single{%
2963     \llap{\color{white}%
2964       \rule[\dimexpr-\mdfboundingboxdepth+\interruptlength\relax]%
2965         {\mdf@middlelinewidth@length}%
2966         {\dimexpr\mdfboundingboxtotalheight%
2967           \ifbool{mdf@topline}{+\mdf@middlelinewidth@length}{}}
2968         -2\interruptlength\relax}%
2969   }%
2970 }%
2971 \appto\mdf@frame@rightline@single{%
2972   \rlap{\color{white}%
2973     \hspace*{\mdfboundingboxwidth}%
2974     \hspace*{\mdf@innerrightmargin@length}%
2975     \rule[\dimexpr-\mdfboundingboxdepth%
2976       +\interruptlength\relax]%
2977       {\mdf@middlelinewidth@length}%
2978       {\dimexpr\mdfboundingboxtotalheight%
2979         +\ifbool{mdf@topline}{\mdf@middlelinewidth@length}{0pt}}
2980       -2\interruptlength\relax}%
2981   }%
2982 }%
2983 }
2984 \makeatother
2985 \overlaplines
2986
2987 \begin{mdframed}[linecolor=blue,linewidth=8pt]
2988 \ExampleText
2989 \end{mdframed}
2990 \end{LTXexample}
2991 \end{document}
2992 \endinput

```

D. The file mdframed-example-tikz

```

2993 %Documenation of the package mdframed
2994 %$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $
2995 \setcounter{errorcontextlines}{999}
2996 \documentclass[parskip=false,english,11pt]{ltxmdf}
2997 \ltxmdfsetifoot $Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $
2998
2999
3000 \usepackage{showexpl}
3001 \lstset{style=lstltxmdf,explpreset={pos=b,rframe={}},}
3002
3003 \newcommand\Loadedframemethod{TikZ}
3004 \usepackage[framemethod=\Loadedframemethod]{mdframed}
3005
3006 \title{The \Pack{mdframed} package}
3007 \subtitle{Examples for \Opt{framemethod=\Loadedframemethod}}
3008 \author{\href{mailto:marco.daniel@mada-nada.de}{Marco Daniel}}
3009 \date{\mdfdateID$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $}
3010 \version{\mdversion}
3011 \introduction{In this document I collect various examples for \Opt{framemethod=\Loadedframemethod}.

```

```

3012 Some presented examples are more or less exorbitant.}
3013
3014 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
3015 \newrobustcmd\ExampleText{%
3016     An \textit{inhomogeneous linear} differential equation has the form
3017     \begin{align}
3018         L[v] = f,
3019     \end{align}
3020     where  $L$  is a linear differential operator,  $v$  is
3021     the dependent variable, and  $f$  is a given non-zero
3022     function of the independent variables alone.
3023 }
3024
3025 \newcounter{examplecount}
3026 \setcounter{examplecount}{0}
3027 \renewcommand\thesubsection{}
3028 \newcommand\Examplesec[1]{%
3029 \stepcounter{examplecount}%
3030 \subsection{Example~\arabic{examplecount}~---~#1\relax}%
3031 }
3032
3033 \begin{document}
3034 \maketitle
3035 \section{Loading}
3036 In the preamble only the package \Pack{mdframed} with the option \Opt{framemethod=Loadedframemethod}
3037
3038 {\large\color{red!50!black}
3039 \NOTE Every \Cmd{global} inside the examples is necessary to work with the package \Pack{showexpl}.}
3040
3041 \section{Examples}
3042 All examples have the following settings:
3043
3044 \begin{tltxmdfexample}
3045 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
3046 \newrobustcmd\ExampleText{%
3047 An \textit{inhomogeneous linear} differential equation
3048 has the form
3049 \begin{align}
3050 L[v] = f,
3051 \end{align}
3052 where  $L$  is a linear differential operator,  $v$  is
3053 the dependent variable, and  $f$  is a given non-zero
3054 function of the independent variables alone.
3055 }
3056 \end{tltxmdfexample}
3057 \clearpage
3058 \ExampleText{round corner}
3059 \begin{LTExample}
3060 \global\mdfdefinestyle{exampledefault}{%
3061     outerlinewidth=5pt,innerlinewidth=0pt,
3062     outerlinecolor=red,roundcorner=5pt
3063 }
3064 \begin{mdframed}[style=exampledefault]
3065 \ExampleText
3066 \end{mdframed}
3067 \end{LTExample}

```

```

3068
3069 \Examplesec{hidden line + frame title}
3070 \begin{LTExample}
3071 \global\mdfapptodefinesstyle{exampledefault}{%
3072   topline=false,leftline=false,}
3073 \begin{mdfamed}[style=exampledefault,frametitle={Inhomogeneous linear}]
3074 \ExampleText
3075 \end{mdfamed}
3076 \end{LTExample}
3077 \clearpage
3078 \Examplesec{framed picture which is centered}
3079 \begin{LTExample}
3080 \begin{mdfamed}[userdefinedwidth=6cm,align=center,
3081               linecolor=blue,middlelinewidth=4pt,roundcorner=5pt]
3082 \includegraphics[width=\linewidth]{donald-duck}
3083 \end{mdfamed}
3084 \end{LTExample}
3085
3086 \Examplesec{Gimmick}
3087 \begin{LTExample}
3088 \mdfsetup{splitbottomskip=0.8cm,splittopskip=0cm,
3089           innerrightmargin=2cm,innertopmargin=1cm,%
3090           innerlinewidth=2pt,outerlinewidth=2pt,
3091           middlelinewidth=10pt,backgroundcolor=red,
3092           linecolor=blue,middlelinecolor=gray,
3093           tikzsetting={draw=yellow,line width=3pt,%
3094                       dashed,%
3095                       dash pattern= on 10pt off 3pt},
3096           rightline=false,bottomline=false}
3097 \begin{mdfamed}
3098 \ExampleText
3099 \end{mdfamed}
3100 \end{LTExample}
3101
3102 \Examplesec{complex example with TikZ}
3103
3104 \begin{tltxmdfexample}
3105 \tikzstyle{titregris} =
3106   [draw=gray, thick, fill=white, shading = exersicetitle, %
3107   text=gray, rectangle, rounded corners,
3108   right,minimum height=.7cm]
3109
3110 \pgfdeclarehorizontalshading{exersicebackground}{100bp}
3111 {color(0bp)=(green!40);
3112 color(100bp)=(black!5)}
3113
3114 \pgfdeclarehorizontalshading{exersicetitle}{100bp}
3115 {color(0bp)=(red!40);
3116 color(100bp)=(black!5)}
3117
3118 \newcounter{exercise}
3119 \renewcommand\theexercise{Exercise~\n\arabic{exercise}}
3120 \makeatletter
3121 \def\mdf@@exercisepoints{}
3122 \define@key{mdf}{exercisepoints}{%
3123   \def\mdf@@exercisepoints{#1}

```

```

3124 }
3125 \renewrobustcmd\mdfcreateextratikz{%
3126     \node[titregris,xshift=1cm] at (P-|0) %
3127         {\~\mdf@frametitlefont{\theexercise}\~};
3128     \ifdefempty{\mdf@@exercisepoints}%
3129         {}%
3130     {\node[titregris,left,xshift=-1cm] at (P)%
3131         {\~\mdf@frametitlefont{\mdf@@exercisepoints points}\~};}%
3132 }
3133 \makeatother
3134
3135 \mdfdefinestyle{exercisestyle}{%
3136     outerlinewidth=1pt,
3137     innerlinewidth=0pt,
3138     roundcorner=2pt,
3139     linecolor=gray,
3140     tikzsetting={shading = exersicebackground},
3141     innertopmargin=1.2\baselineskip,
3142     skipabove={\dimexpr0.5\baselineskip+\topskip\relax},
3143     needspace=3\baselineskip,
3144     frametitlefont=\sffamily\bfseries,
3145     settings={\global\stepcounter{exercise}},
3146 }
3147
3148 \begin{mdframed}[style=exercisestyle,]
3149 \ExampleText
3150 \end{mdframed}
3151
3152 \begin{mdframed}[style=exercisestyle,exercisepoints=10]
3153 \ExampleText
3154 \end{mdframed}
3155 \end{tltxmdfexample}
3156
3157 \tikzstyle{titregris} =
3158     [draw=gray, thick, fill=white, shading = exersicetitle, %
3159     text=gray, rectangle, rounded corners,
3160     right,minimum height=.7cm]
3161
3162 \pgfdeclarehorizontalshading{exersicebackground}{100bp}
3163 {color(0bp)=(green!40);
3164 color(100bp)=(black!5)}
3165
3166 \pgfdeclarehorizontalshading{exersicetitle}{100bp}
3167 {color(0bp)=(red!40);
3168 color(100bp)=(black!5)}
3169
3170 \newcounter{exercise}
3171 \renewcommand\theexercise{Exercise~\n\arabic{exercise}}
3172 \makeatletter
3173 \def\mdf@@exercisepoints{}
3174 \define@key{mdf}{exercisepoints}{%
3175     \def\mdf@@exercisepoints{\#1}
3176 }
3177 \newrobustcmd\mdfcreateextratikzlocal{%
3178     \node[titregris,xshift=1cm] at (P-|0) {\~\textbf{\theexercise}\~};
3179     \ifdefempty{\mdf@@exercisepoints}%

```

```

3180     {}%
3181     {\node[titregris,left,xshift=-1cm] at (P)%
3182       {\mdf@frametitlefont{\mdf@@exercisepoints points}~};}%
3183 }
3184 \makeatother
3185
3186 \mdfdefinestyle{exercisestyle}{%
3187   outerlinewidth=1pt,
3188   innerlinewidth=0pt,
3189   roundcorner=2pt,
3190   linecolor=gray,
3191   tikzsetting={shading = exersicebackground},
3192   innertopmargin=1.2\baselineskip,
3193   skipabove={\dimexpr0.5\baselineskip+\topskip\relax},
3194   needspace=3\baselineskip,
3195   frametitlefont=\sffamily\bfseries,
3196   settings={\global\stepcounter{exercise}\let\mdfcreateextratikz\mdfcreateextratikzlocal},
3197 }
3198
3199 \begin{mdframed}[style=exercisestyle,]
3200 \ExampleText
3201 \end{mdframed}
3202
3203 \begin{mdframed}[style=exercisestyle,exercisepoints=10]
3204 \ExampleText
3205 \end{mdframed}
3206
3207 \clearpage
3208 \Examplesec{Theorem environments}
3209 \begin{LTXexample}
3210 \mdfdefinestyle{theoremstyle}{%
3211   linecolor=red,linewidth=2pt,%
3212   frametitlerule=true,%
3213   apptotikzsetting={\tikzset{mdfframetitlebackground/.append style={%
3214     shade,left color=white, right color=blue!20}}},
3215   frametitlerulecolor=green!60,
3216   frametitlerulewidth=1pt,
3217   innertopmargin=\topskip,
3218 }
3219 \mdtheorem[style=theoremstyle]{definition}{Definition}
3220 \begin{definition}[Inhomogeneous linear]
3221 \ExampleText
3222 \end{definition}
3223 \begin{definition*}[Inhomogeneous linear]
3224 \ExampleText
3225 \end{definition*}
3226 \end{LTXexample}
3227
3228 \end{document}
3229 \endinput

```

E. The file *mdframed-example-pstricks*

```

3230 %Documenation of the package mdframed
3231 %$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $
3232 \setcounter{errorcontextlines}{999}

```

```

3233 \documentclass[parskip=false,english,11pt]{ltxmdf}
3234 \ltxmdfsetifoot$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $
3235
3236 \lstDeleteShortInline{[]}
3237 \newcommand\Loadedframemethod{PSTricks}
3238 \usepackage[framemethod=\Loadedframemethod]{mdframed}
3239
3240 \usepackage{showexpl}
3241 \lstset{style=lstltxmdf,explpreset={pos=b,rframe={}},}
3242
3243 \title{The \Pack{mdframed} package}
3244 \subtitle{Examples for \Opt{framemethod=\Loadedframemethod}}
3245 \author{\href{mailto:marco.daniel@mada-nada.de}{Marco Daniel}}
3246 \date{\mdfdateID$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $}
3247 \version{\mdversion}
3248 \introduction{In this document I collect various examples for \Opt{framemethod=\Loadedframemethod}.
3249 Some presented examples are more or less exorbitant.}
3250
3251 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
3252 \newrobustcmd\ExampleText{%
3253     An \textit{inhomogeneous linear} differential equation has the form
3254     \begin{align}
3255         L[v] = f,
3256     \end{align}
3257     where  $L$  is a linear differential operator,  $v$  is
3258     the dependent variable, and  $f$  is a given non-zero
3259     function of the independent variables alone.
3260 }
3261
3262 \newcounter{examplecount}
3263 \setcounter{examplecount}{0}
3264 \renewcommand\thesubsection{}
3265 \newcommand\Examplesec[1]{%
3266 \stepcounter{examplecount}%
3267 \subsection{Example~\arabic{examplecount}~---~\#1\relax}%
3268 }
3269
3270 \begin{document}
3271 \maketitle
3272 \section{Loading}
3273 In the preamble only the package \Pack{mdframed} with the option \Opt{framemethod=\Loadedframemethod}
3274
3275 {\large\color{red!50!black}
3276 \NOTE Every \Cmd{global} inside the examples is necessary to work with the package \Pack{showexpl}.}
3277 X
3278 \section{Examples}
3279 All examples have the following settings:
3280
3281 \begin{tltxmdfexample}
3282 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
3283 \newrobustcmd\ExampleText{%
3284 An \textit{inhomogeneous linear} differential equation
3285 has the form
3286 \begin{align}
3287 L[v] = f,
3288 \end{align}

```

```

3289 where  $L$  is a linear differential operator,  $v$  is
3290 the dependent variable, and  $f$  is a given non-zero
3291 function of the independent variables alone.
3292 }
3293 \end{tltxmdfexample}
3294 \clearpage
3295
3296 \Examplesec{very simple}
3297 \begin{LTExample}
3298 \global\mdfdefinestyle{exampledefault}{%
3299     linecolor=red,middlelinewidth=3pt,%
3300     leftmargin=1cm,rightmargin=1cm
3301 }
3302 \begin{mdframed}[style=exampledefault,roundcorner=5]
3303 \ExampleText
3304 \end{mdframed}
3305 \end{LTExample}
3306
3307 \Examplesec{hidden line + frame title}
3308 \begin{LTExample}
3309 \global\mdfapptodefinestyle{exampledefault}{%
3310     topline=false,rightline=false,bottomline=false,
3311     frametitlerule=true,innertopmargin=6pt,
3312     outerlinewidth=6pt,outerlinecolor=blue,
3313     pstricksappsetting={\addtopsstyle{mdfouterlinestyle}{linestyle=dashed}},
3314     innerlinecolor=yellow,innerlinewidth=5pt}%
3315 \begin{mdframed}[style=exampledefault,frametitle={Inhomogeneous linear}]
3316 \ExampleText
3317 \end{mdframed}
3318 \end{LTExample}
3319
3320 \clearpage
3321
3322 \Examplesec{Dash Lines}
3323 \begin{LTExample}
3324 \global\mdfdefinestyle{exampledefault}{%
3325     pstrickssetting={linestyle=dashed,},linecolor=red,linewidth=5pt}
3326 \begin{mdframed}[style=exampledefault,]
3327 \ExampleText
3328 \end{mdframed}
3329 \end{LTExample}
3330
3331 \Examplesec{Double Lines}
3332 \begin{LTExample}
3333 \global\mdfdefinestyle{exampledefault}{%
3334     pstrickssetting={doubleline=true,doublesep=6pt},
3335     linecolor=red,linewidth=5pt,middlelinewidth=4pt}
3336 \begin{mdframed}[style=exampledefault,]
3337 \ExampleText
3338 \end{mdframed}
3339 \end{LTExample}
3340 \end{document}
3341 \endinput

```

F. The file *mdframed-example-texsx*


```

3342 %Documentation of the package mdframed
3343 %%$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $
3344 \setcounter{errorcontextlines}{999}
3345 \documentclass[parskip=false,english,11pt,ltxlipsum]{ltxmdf}
3346 \ltxmdfsetifoot $Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $
3347
3348
3349 \usepackage{showexpl}
3350 \lstset{style=lstltxmdf,explpreset={pos=b,rframe={}},}
3351
3352 \newcommand\Loadedframemethod{default}
3353 \usepackage[framemethod=\Loadedframemethod]{mdframed}
3354
3355 \title{The \Pack{mdframed} package}
3356 \subtitle{Examples for \Opt{framemethod=\Loadedframemethod}}
3357 \author{\href{mailto:marco.daniel@mada-nada.de}{Marco Daniel}}
3358 \date{\mdfdateID$Id: mdframed.dtx 339 2012-02-04 14:29:27Z marco $}
3359 \version{\mdversion}
3360 \introduction{In this document I collect various examples for \Opt{framemethod=\Loadedframemethod}.
3361 Some presented examples are more or less exorbitant.}
3362
3363 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
3364 \newrobustcmd\ExampleText{%
3365     An \textit{inhomogeneous linear} differential equation has the form
3366     \begin{align}
3367         L[v] &= f,
3368     \end{align}
3369     where  $L$  is a linear differential operator,  $v$  is
3370     the dependent variable, and  $f$  is a given non-zero
3371     function of the independent variables alone.
3372 }
3373
3374 \newcounter{examplecount}
3375 \setcounter{examplecount}{0}
3376 \renewcommand\thesubsection{}
3377 \newcommand\Examplesec[1]{%
3378 \stepcounter{examplecount}%
3379 \subsection{Example~\arabic{examplecount}~---\#1\relax}%
3380 }
3381
3382 \begin{document}
3383 \maketitle
3384 \section{Loading}
3385 In the preamble only the package \Pack{mdframed} with the option \Opt{framemethod=\Loadedframemethod}
3386
3387 {\large\color{red!50!black}
3388 \NOTE Every \Cmd{global} inside the examples is necessary to work with the package \Pack{showexpl}.}
3389
3390 \section{Examples}
3391 All examples have the following settings:
3392
3393 \begin{tltxmdfexample}
3394 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
3395 \newrobustcmd\ExampleText{%
3396 An \textit{inhomogeneous linear} differential equation
3397 has the form

```

```

3398 \begin{align}
3399 L[v] = f,
3400 \end{align}
3401 where  $L$  is a linear differential operator,  $v$  is
3402 the dependent variable, and  $f$  is a given non-zero
3403 function of the independent variables alone.
3404 }
3405 \end{tltxmdfexample}
3406 \clearpage
3407 \Examplesec{Package listings}
3408 The example below is inspired by the following post on StackExchange \href{http://tex.stackexchange.com}
3409
3410 Here the solution which can be decorate as usual.
3411
3412 \begin{tltxmdfexample}[moretexcs={BeforeBeginEnvironment,AfterEndEnvironment},morekeywords={lstlisting}]
3413 \BeforeBeginEnvironment{lstlisting}{%
3414     \begin{mdframed}[<modification>%
3415         \vspace{-0.7em}}
3416 \AfterEndEnvironment{lstlisting}{%
3417     \vspace{-0.5em}%
3418     \end{mdframed}}
3419 \end{tltxmdfexample}
3420
3421 With the new command \Cmd{surroundwithmdframed} you can use
3422 \begin{tltxmdfexample}[moretexcs={BeforeBeginEnvironment,AfterEndEnvironment},morekeywords={lstlisting}]
3423 \surroundwithmdframed{listings}
3424 \end{tltxmdfexample}
3425
3426 \Examplesec{Package multicol}
3427 How I wrote in \enquote{Known Problems} you can't combine \Pack{multicol} with \Pack{mdframed}. In a s
3428 \begin{LTXexample}
3429 \begin{multicols}{2}
3430 \lipsum[1]
3431 \begin{mdframed}
3432 \ExampleText
3433 \end{mdframed}
3434 \lipsum[2]
3435 \end{multicols}
3436 \end{LTXexample}
3437 \clearpage
3438 \twocolumn[\Examplesec{Working in twocolumn mode}]
3439 \begin{tltxmdfexample}
3440 \twocolumn[%
3441     \Examplesec{Working in
3442         twocolumn mode}]
3443 \lipsum[1]\lipsum[2]
3444 \begin{mdframed}[%
3445     leftmargin=10pt,%
3446     rightmargin=10pt,%
3447     linecolor=red,
3448     backgroundcolor=yellow]
3449 \ExampleText
3450 \end{mdframed}
3451 \lipsum[2]
3452 \end{tltxmdfexample}
3453 \lipsum[1]\lipsum[2]

```

```
3454 \begin{mdframed}[leftmargin=10pt,%
3455                      rightmargin=10pt,%
3456                      linecolor=red,
3457                      backgroundcolor=yellow]
3458 \ExampleText
3459 \end{mdframed}
3460 \lipsum[2]
3461 \clearpage
3462 \onecolumn
3463 \Examplesec{Working inside enumerate}
3464 \begin{LTXexample}
3465 Text Text Text Text Text Text Text Text
3466 \begin{enumerate}
3467 \item in the following \ldots
3468       \begin{mdframed}[linecolor=blue,linewidth=2]
3469       \ExampleText
3470       \end{mdframed}
3471 \item \lipsum[2]
3472 \end{enumerate}
3473 Text Text Text Text Text Text
3474 \end{LTXexample}
3475 \end{document}
3476 \endinput
```

G. Change History

v1.0a		Removing <code>\@arrayparboxrestore</code>	38
General: Created dtx and fixes bugs	1	Renamed some commands so that every command have the same prefix <code>\mdf@</code> ..	1
v1.0b			
General: added command <code>\@parboxrestore</code> to <code>\mdf@lrbox</code>	28		
removed <code>\setbox\mdf@splitbox@two</code> <code>\vbox\unvbox \mdf@splitbox@two</code> . . .	40		
v1.1beta			
General: added command to avoid overfull box warning by <code>vsplit</code>	28		
Added <code>frametitle</code> detection to <code>\detected@mdf@put@frame</code>	35		
added lost semicolons	54		
Added method frame title via <code>\savebox</code>	32		
Added option <code>frametitlerulecolor</code> , <code>frametitlebackgroundcolor</code> , <code>font</code> . . .	24		
Added option <code>titleaboveskip</code> , <code>titlebelowskip</code> , <code>frametitlerulewidth</code>	23		
Added option <code>usetwoside</code>	24		
Changed the definition of <code>\mdf@trivlist</code>	36		
Create new <code>\savebox</code> and renamed <code>\@tempboxa</code>	27		
Defining <code>mdframed</code> with <code>\newenvironment</code>	36		
Joining all new definitions	27		
Redefinition of <code>\newmdtheoremenv</code> . – Now check of theorem definition.	30		
		v1.1release	
		General: Added <code>\mbox</code> to the definition. <code>\item\mbox\relax</code> – Need for <code>amsthm</code>	29
		changed definition of <code>\mdf@lrbox</code> (Thanks Lars Madsen)	28
		Changed the enddefinition of <code>mdframed</code> . Uses now <code>\@doendpe</code> instead of <code>\endparyenv</code>	36
		Edit algorithm to combine the saveboxes <code>\mdf@frametitlebox</code> and <code>\mdf@splitboxone</code> by the predefined set- tings: <code>\parskip\z@</code> , <code>\parindent\z@</code> and <code>\offinterlineskip</code>	32
		expand definition of <code>\mdf@lrbox</code> by <code>\mdf@restoreparams</code>	28
		v1.2a	
		General: take account of <code>\parskip</code> for the vertical calculation	38
		v1.3	
		General: Added option <code>shadow</code>	24
		Use now <code>\item\mbox\relax</code>	29

H. Index

The index only collect package relevant words.

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