

# The mdframed package<sup>1</sup>

auto-split frame environment

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## Abstract

Working with the command `\fbox` or `\fcolorbox`, one has to handle page breaks by hand, meaning that you have to split up the `\fbox` into two. The present package defines the environment `mdframed` which automatically deals with page breaks, whence the name „breakable“.

By using `\newenvironment` the user may choose between several individual designs.

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## 1 Motivation

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

The following example gives an idea of how to use `mdframed`. (For the theorem environment we use the package `amsthm`.)

```
\usepackage{mdframed,amsthm}
\newtheorem{mdtheorem}{Theorem}[section]
\newenvironment{theorem}{%
  \begin{mdframed}%
    [linewidth=2;margin=40,backgroundcolor=yellow,linecolor=blue]%
  \begin{mdtheorem}}{\end{mdtheorem}\end{mdframed}}
...
\begin{theorem}[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.
  \begin{equation}
    a^2+b^2=c^2
  \end{equation}
\end{theorem}
```

**Theorem 1.1** (Pythagorean theorem). *In any right triangle, the area of the square whose side is the hypotenuse (the side opposite the right angle) is equal to the sum of the areas of the*

<sup>1</sup>Extending the package `framed.sty`.

<sup>2</sup>With thanks to Heiko Oberdiek, Rolf Niepraschk and Herbert Voss.

*squares whose sides are the two legs (the two sides that meet at a right angle).*

$$a^2 + b^2 = c^2 \quad (1)$$

## 2 Syntax

Load the package as usual:

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

The package defines only one environment with the following syntax

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

## 3 Options

The package allows to set global and local options which are explained below.

<b>linecolor</b> =<COLOR>	Sets the color of the line around the environment to <COLOR>.	default=black
<b>backgroundcolor</b> =<COLOR>	Sets the color of the background of the environment to <COLOR>.	default=white
<b>fontcolor</b> =<COLOR>	Sets the color of the contents of the environment to <COLOR>.	default=black
<b>margin</b> =<LENGTH>	Sets the length of the margin text frame of the environment. The basic unit of the length is pt. So it is possible to set length to 6 which is equal to 6pt.	default=2pt
<b>linewidth</b> =<LENGTH>	Sets the width of the line around the environment. The basic unit of the length is pt. So it is possible to set length to 6 which is equal to 6pt.	default=20pt
<b>skipabove</b> =<LENGTH>	Sets an additional skip above the frame. This is <b>only a global option</b> .	default=0pt
<b>skipbelow</b> =<LENGTH>	Sets an additional skip below the frame. This is <b>only a global option</b> .	default=0pt
<b>xcolor</b> =<VALUE(S)>	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. This is <b>only a global option</b> .	default=none

## 4 Example

```
\documentclass[10pt]{article}
\usepackage[linewidth=10,%
            margin=40,%
            backgroundcolor=yellow,
            linecolor=blue,
            skipbelow=0,
            skipabove=0]{mdframed}
\usepackage{amsmath,amsthm}
\newtheorem{mdlemma}{Lemma}[section]
\newenvironment{lemma}{%
  \begin{mdframed}[linewidth=2,margin=40,%
                  backgroundcolor=red,linecolor=black]%
  \begin{mdlemma}%
  }{%
  \end{mdlemma}%
  \end{mdframed}%
}
\usepackage{lipsum}
\usepackage{hyperref}
\begin{document}
\section{foo}
\lipsum[1]
\begin{mdframed}
\lipsum[5]
\end{mdframed}

\lipsum[1]

\begin{lemma}\label{lem:testA}\mbox{ }
\begin{itemize}
\item Some Text
\item  $x^2+y^2=1$ 
\item \lipsum[1]
\end{itemize}
\end{lemma}
\end{document}
```

## 5 Known problems

In this section I will collect known problems. In case you encounter any further problems, please drop me an email, [marco.daniel@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 it is not possible to extend a frame to more than two pages
2. So far there is no implementation that allows to set the left or right margin