1 Introduction

In the following picture we can see a typical dust jacket. Its parts are back flap, back, spine, front and front flap. Typographically, a book cover is a dust jacket without flaps, the only difference is that the book cover is a fixed part of the book, whereas the dust jacket is removable.

When we prepare a cover for printing, some marks are needed to know where to trim or fold the paper. These marks determine a special area of the sheet, which is called “bleed” (see the green area in the next figure). The background will be expanded onto the bleed, taking account of slight inaccuracy when trimming.

We get the following result after trimming:
2 Loading class

The class \texttt{bookcover} requires the services of the class \texttt{article} and the following packages: \texttt{kvoptions}, \texttt{textpos}, \texttt{geometry}, \texttt{graphicx}, \texttt{calc}, \texttt{ifthen}, \texttt{tikz}, \texttt{fgruler}.

Load the class as usual, with

\documentclass[⟨options⟩]{bookcover}

<table>
<thead>
<tr>
<th>option</th>
<th>description</th>
<th>default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>coverwidth=⟨length⟩</td>
<td></td>
<td>170mm</td>
</tr>
<tr>
<td>coverheight=⟨length⟩</td>
<td></td>
<td>240mm</td>
</tr>
<tr>
<td>spinewidth=⟨length⟩</td>
<td>See the next figure</td>
<td>5mm</td>
</tr>
<tr>
<td>flapwidth=⟨length⟩</td>
<td></td>
<td>0mm</td>
</tr>
<tr>
<td>marklength=⟨length⟩</td>
<td>Thickness of marks</td>
<td>10mm</td>
</tr>
<tr>
<td>bleedwidth=⟨length⟩</td>
<td></td>
<td>5mm</td>
</tr>
<tr>
<td>markthick=⟨length⟩</td>
<td>Thickness of marks</td>
<td>0.4pt</td>
</tr>
<tr>
<td>markcolor=⟨color⟩</td>
<td>Color of marks</td>
<td>red</td>
</tr>
<tr>
<td>10pt</td>
<td>Normal font size (default: 10pt)</td>
<td></td>
</tr>
<tr>
<td>11pt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12pt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>trimmed</td>
<td>It shows trimmed version</td>
<td>false</td>
</tr>
</tbody>
</table>

\documentclass[flapwidth=50mm,spinewidth=15mm]{bookcover}

3 Creating book cover

3.1 Commands

Use \texttt{bookcover} environment to make a new book cover. In this environment, you can create a component of the book cover by the following command:

\texttt{\bookcovercomponent{⟨component type⟩}{⟨part⟩}{⟨content⟩}}
(component type) See Subsection 3.3.

(part) See Subsection 3.2 or Section 4.

(content) It depends on the (component type). See Subsection 3.3.

Every \bookcovercomponent generates a layer on the sheet. The first one generates the bottom layer and the last one generates the top layer.

\begin{bookcover}
  \bookcovercomponent{color}{bg whole}{color=blue}
  \bookcovercomponent{normal}{front}{
    \vspace{5cm}
    \begin{center}
      \bfseries\huge Book title
    \end{center}
  }
\end{bookcover}

3.2 Parts

Important: The background parts are expanded onto the bleed, taking account of slight inaccuracy when trimming!

3.2.1 One-piece background parts

bg back flap, bg back, bg spine, bg front, bg front flap

With flaps

Without flaps

3.2.2 One-piece foreground parts

back flap, back, spine, front, front flap, above back, above front, below back, below front
### 3.2.3 Combined parts

The following combined parts are defined. You can see illustrations in the Section 4.

<table>
<thead>
<tr>
<th>background</th>
<th>foreground</th>
</tr>
</thead>
<tbody>
<tr>
<td>bg back and flap</td>
<td>back and flap</td>
</tr>
<tr>
<td>bg back and spine</td>
<td>back and spine</td>
</tr>
<tr>
<td>bg front and spine</td>
<td>front and spine</td>
</tr>
<tr>
<td>bg front and flap</td>
<td>front and flap</td>
</tr>
<tr>
<td>bg back and flap and spine</td>
<td>back and flap and spine</td>
</tr>
<tr>
<td>bg front and flap and spine</td>
<td>front and flap and spine</td>
</tr>
<tr>
<td>bg whole without front flap</td>
<td>whole without front flap</td>
</tr>
<tr>
<td>bg whole without back flap</td>
<td>whole without back flap</td>
</tr>
<tr>
<td>bg whole without flaps</td>
<td>whole without flaps</td>
</tr>
<tr>
<td>bg whole</td>
<td>whole</td>
</tr>
<tr>
<td>whole page</td>
<td></td>
</tr>
</tbody>
</table>

### 3.3 Component types

The following component types are defined: color, picture, tikz, tikz clip, normal, center, ruler.

#### 3.3.1 Component type: color

\texttt{\textbackslash bookcovercomponent\{color\}\{(part)\}\{(colors)\}}

It determines the color of the part.

\textit{colors} The options of the \texttt{fill} in the \texttt{tikz} package:

- color=\texttt{(color name)} See (color name) in the \texttt{xcolor} package.
- top color=\texttt{(color name)}
- bottom color=\texttt{(color name)}
- middle color=\texttt{(color name)}
- inner color=\texttt{(color name)}
- outer color=\texttt{(color name)}
- ball color=\texttt{(color name)}
- shading angle=\texttt{(degree)} It rotates the shading by the given angle.
### 3.3.2 Component type: picture

\begin{bookcover}
\bookcovercomponent{picture}{(part)}{(picture file)}
\end{bookcover}

The picture will be rescaled according to the sizes of the (part).

### 3.3.3 Component type: tikz

\begin{bookcover}
\bookcovercomponent{tikz}{(part)}{(tikz code)}
\end{bookcover}

The origin of the TikZ figure is the lower left corner of the (part). Two rectangle nodes come into being: part and trimmed part. (Thank Zunbeltz Izaola for the idea.)

### 3.3.4 Component type: tikz clip

\begin{bookcover}
\bookcovercomponent{tikz clip}{(part)}{(tikz code)}
\end{bookcover}

It works the same as the tikz component type, but it clips the (part).
3.3.5 Component type: normal

\bookcovercomponent{normal}{⟨part⟩}{⟨content⟩}

In this case, the ⟨content⟩ is not specific. You can choose it as text or picture etc.

EXAMPLE
\begin{bookcover}
\bookcovercomponent{normal}{front}{
space{5cm}
\begin{center}
  ⟨\textbf{huge Book title}\⟩\[5mm]
  \includegraphics[width=6cm]{fig.png}
\end{center}
\end{bookcover}

3.3.6 Component type: center

\bookcovercomponent{center}{⟨part⟩}{⟨content⟩}

It works the same as the normal component type, but the position of the content is the center of the part (horizontally and vertically).

EXAMPLE
\begin{bookcover}
\bookcovercomponent{center}{above front}{
  \textcolor{blue}{Remark above front}
\bookcovercomponent{center}{spine}{
  \rotatebox[origin=c]{90}{⟨\textbf{Large Book title}\⟩}
\end{bookcover}

3.3.7 Component type: ruler

Use the ruler component type to check the sizes of the part.

\bookcovercomponent{ruler}{⟨part⟩}{\setruler[⟨unit⟩]{⟨coordsys⟩}{⟨shift x⟩}{⟨shift y⟩}{⟨color⟩}}

⟨unit⟩ The ruler unit:
  \texttt{cm} Metric ruler (centimeter). Default value.
  \texttt{in} English ruler (inch).

⟨coordsys⟩ The type of the coordinate system:
  \texttt{upper left} The origin is the upper left corner of the part.
  \texttt{upper right} The origin is the upper right corner of the part.
  \texttt{lower left} The origin is the lower left corner of the part.
  \texttt{lower right} The origin is the lower right corner of the part.

⟨shift x⟩,⟨shift y⟩ Moving the origin of the ruler to the vector (⟨shift x⟩,⟨shift y⟩).

⟨color⟩ The color of the ruler.
3.4 Defining component type

You can define a new component type, redefine or rename a defined component type with the following commands:

\newbookcovercomponenttype{⟨new component type name⟩}{⟨formatting⟩}
\renewbookcovercomponenttype{⟨defined component type name⟩}{⟨formatting⟩}
\newnamebookcovercomponenttype{⟨new component type name⟩}{⟨defined component type name⟩}

You can use the following length commands in ⟨formatting⟩:

\partwidth \hspace{1cm} Width of the part.
\partheight \hspace{1cm} Height of the part.

You have to reference the content as #1.
3.5 Defining part

You can define a new part, redefine or rename a defined part with the following commands:

\newbookcoverpart{(new part name)}{(setting)}
\renewbookcoverpart{(defined part name)}{(setting)}
\newnamebookcoverpart{(new part name)}{(defined part name)}

In \textit{(setting)} you have to set the new part sizes, the coordinates of its upper left corner (the origin is the upper left corner of the printed box), and the parameters of the \textit{trimmed part} rectangle node in \textit{tikz} and \textit{tikz clip} component types. For this purpose, use the following commands:

\setpartposx{(coord x)}
\setpartposy{(coord y)}
\setpartwidth{(width)}
\setpartheight{(height)}
\settrimmedpart{(width minus)}{(height minus)}{(shift x)}{(shift y)}

\example
\documentclass[flapwidth=3cm]{bookcover}
\newbookcoverpart{bg half front}{}
\setpartposx{\marklength+\bleedwidth+\flapwidth+\spinewidth+1.5\coverwidth}
\setpartposy{\marklength}
\setpartheight{\coverheight+2\bleedwidth}
\ifdim\flapwidth>0mm
\setpartwidth{.5\coverwidth}
\settrimmedpart{0pt}{2\bleedwidth}{0pt}{\bleedwidth}
\else
\setpartwidth{.5\coverwidth+\bleedwidth}
\settrimmedpart{\bleedwidth}{2\bleedwidth}{0pt}{\bleedwidth}\fi
\begin{document}
\begin{bookcover}
\bookcovercomponent{tikz}{bg half front}{}
\quad \fill[blue] (part.south west) rectangle (part.north east);
\quad \fill[green] (trimmed part.south west) rectangle (trimmed part.north east);
\end{bookcover}
\end{document}
4 Illustration of the predefined parts

4.1 Background parts (cover width flaps)
4.2 Background parts (cover without flaps)
4.3 Foreground parts (cover width flaps)
4.4 Foreground parts (cover without flaps)
5 Full examples

5.1 A dust jacket

\documentclass[spinewidth=25mm,coverwidth=15cm,coverheight=20cm,flapwidth=6cm]{bookcover}
\newbookcovercomponenttype{center rotate}{
  \parbox[t][\partheight][c]{\partwidth}{
    \begin{center}
      \rotatebox[origin=c]{90}{#1}
    \end{center}}}
\usepackage[outline]{contour}
\usepackage{lipsum}
\contourlength{1pt}
\definecolor{lightbrown}{RGB}{176,88,0}
\colorlet{title}{yellow!60!black}
\begin{document}
\begin{bookcover}
% Black background color on the whole cover
\bookcovercomponent{color}{bg whole}{color=black}

% Brown background picture on the whole cover, without the flaps
\bookcovercomponent{picture}{bg whole without flaps}{./figures/bg.jpg}

% Vertical light brown transparent trails on the back cover by a tikz code
\bookcovercomponent{tikz}{bg back}{
  \fill[opacity=0.3,color=lightbrown]
  (0mm,0mm) rectangle (20mm,210mm)
  (100mm,0mm) rectangle (150mm,210mm);}

% Vertical light brown transparent trails on the front cover by a tikz code
\bookcovercomponent{tikz}{bg front}{
  \fill[opacity=0.3,color=lightbrown]
  (0mm,0mm) rectangle (50mm,210mm)
  (130mm,0mm) rectangle (150mm,210mm);}

% Remark
\bookcovercomponent{center}{above front}{
  \color{blue}A DUST JACKET}

% Picture (cards.png) on the front, behind the title
\bookcovercomponent{normal}{front}{
  \vspace{70mm}
  \centering
  \includegraphics[width=8cm]{./figures/cards.png}}

% Text on the front cover
\bookcovercomponent{normal}{front}{
  \vspace{60mm}
  \color{title}\sffamily\bfseries
  \resizebox*{50mm}{8mm}{\contour{black}{Rose Taylor}}
  \vspace{20mm}
  \resizebox*{90mm}{40mm}{\parbox{35mm}{
    \centering
    \contour{black}{PROBABILITY}\\
    \contour{black}{THEORY}}}\}

% Text on the spine
\bookcovercomponent{center rotate}{spine}{%
  \contour{black}{%}
  \color{title}\huge\sffamily\bfseries%
  Rose Taylor -- Probability Theory}}
5.2 A two-sided book cover

\documentclass[markcolor=black,spine=width=15mm]{bookcover}
\usepackage[utf8]{inputenc}
\usepackage[T1]{fontenc}
\usepackage[english]{babel}
\usepackage[url,lipsum]
\definecolor{amiyellow}{cmyk}{0,0,.5,0}
\begin{document}

% The outside of the book cover
\begin{bookcover}

% Yellow triangle on the back cover by tikz code
\bookcovercomponent{tikz}{bg back}{
    \fill[color=amiyellow](.5,.5)--(17.5,24.5)--(17.5,0)--(.5,0)--cycle;
}
Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus.


Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.
5.3 Barcode

\documentclass{bookcover}
\usepackage{pst-barcode}
\begin{document}
\begin{bookcover}
\bookcovercomponent{normal}{back}{
\vfill
\centering
\begin{pspicture}(1.5in,1in)
\psbarcode{1787-6117}{includetext height=1 width=1.5}{issn}
\end{pspicture}
\vspace{5mm}}
\end{bookcover}
\end{document}

You can compile this file with latex.exe or xelatex.exe. Using pdflatex.exe or lualatex.exe, write the following code into the preamble:
\usepackage[pdfcrop={-hires}]{auto-pst-pdf}

In this case, the command to compile this file is the following:

pdflatex -shell-escape filename
or
lualatex -shell-escape filename
6 Obsolete method

The goal of the obsolete method is to be compatible with the early versions of the book cover. It is not recommended to use it in the future, because the method described in the Section 3 is much more flexible!

6.1 Commands

Background colors
\setbookcover{bgcolor}{(background part)}{(colors)}

See the (background part) in Subsubsection 6.2.1 and the (colors) in the page 4.

Background pictures
\setbookcover{bgpic}{(background part)}{(picture file)}

See the (background part) in Subsubsection 6.2.1. The picture will be rescaled according to the sizes of the current background part.

Background Ti\k Z figures
\setbookcover{bgtikz}{(background part)}{(tikz code)}

See the (background part) in Subsubsection 6.2.1. The Ti\k Z figure will be placed to the upper left corner of the current background part, without resizing. Using the option bgtikznodes of the document class:

- the origin moves to the lower left corner of the current background part;
- two rectangle nodes come into being: part and trimmed part.

The option bgtikzclip of the document class works the same as bgtikznodes, but it clips the current part.

First foreground
\setbookcover{fgfirst}{(foreground part)}{(content)}

See the (foreground part) in Subsection 6.2.2. The first foreground is the top layer of the book cover (see Subsection 6.3).

Second foreground
\setbookcover{fgsecond}{(foreground part)}{(content)}

See the (foreground part) in Subsubsection 6.2.2. The second foreground is under the first foreground (see Subsection 6.3).

Making book cover
\makebookcover

This command makes the book cover by using the contents of the background and foreground.

6.2 Parts in the obsolete method

6.2.1 Background parts

With flaps

<table>
<thead>
<tr>
<th>back flap</th>
<th>back</th>
<th>spine</th>
<th>front</th>
<th>front flap</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


6.2.2 Foreground parts
Without flaps

The other name of above front is remark.

6.3 Layers

In the following table we can see the hierarchy of the layers:

<table>
<thead>
<tr>
<th></th>
<th>above front, below front, above back, below back</th>
<th>top layer</th>
</tr>
</thead>
<tbody>
<tr>
<td>fgfirst</td>
<td>back, front, spine, front flap, back flap</td>
<td>↑</td>
</tr>
<tr>
<td>fgsecond</td>
<td>back, front, spine, front flap, back flap</td>
<td>↑</td>
</tr>
<tr>
<td>bgtikz</td>
<td>whole without flaps, back, front, spine, front flap, back flap</td>
<td>↑</td>
</tr>
<tr>
<td>bgpic</td>
<td>whole without flaps, whole</td>
<td>↑</td>
</tr>
<tr>
<td>bgcolor</td>
<td>whole without flaps, back, front, spine, front flap, back flap</td>
<td>↑</td>
</tr>
<tr>
<td></td>
<td>whole</td>
<td>bottom layer</td>
</tr>
</tbody>
</table>

6.4 Example

See the figure in the page 16.

```latex
\documentclass[spinewidth=25mm,coverwidth=15cm,coverheight=20cm,flapwidth=6cm]{bookcover}
\usepackage[outline]{contour}
\usepackage{lipsum}
\contourlength{1pt}
\definecolor{lightbrown}{RGB}{176,88,0}
\colorlet{title}{yellow!60!black}

\begin{document}

% Black background color on the whole cover
\setbookcover{bgcolor}{whole}{color=black}
% Brown background picture on the whole cover, without the flaps
\setbookcover{bgpic}{whole without flaps}{./figures/bg.jpg}
% Vertical light brown transparent trails on the back cover by a tikz code
\setbookcover{bgtikz}{back}{
  \fill[opacity=0.3,color=lightbrown]
  (0mm,0mm) rectangle (20mm,210mm) (100mm,0mm) rectangle (150mm,210mm);}
% Vertical light brown transparent trails on the front cover by a tikz code
\setbookcover{bgtikz}{front}{
  \fill[opacity=0.3,color=lightbrown]
  (0mm,0mm) rectangle (50mm,210mm) (130mm,0mm) rectangle (150mm,210mm);}
% Remark
\setbookcover{fgfirst}{above front}{
```