The **myTCB-V1** Package

Tables

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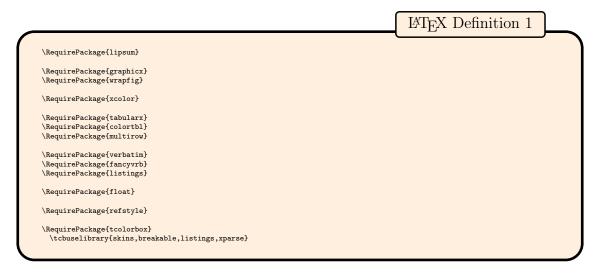LATEX is mainly used in scientific fields such as electrical engineering, mechanical engineering and computer science. Especially in these fields it is sometimes necessary to create tables.

	one	two	three	four
red	1000.00	2000.00	3000.00	4000.00
green	2000.00	3000.00	4000.00	5000.00
blue	3000.00	4000.00	5000.00	6000.00
sum	**6000.00**	**9000.00**	**12000.00**	**15000.00**

Table 1

The *myTCB-V1* package provides an environment for this.

The *myTCB-V1* package loads automatically the packages shown in LATEX Definition 1.

LATEX Definition 1

```
\RequirePackage{lipsum}

\RequirePackage{graphicx}
\RequirePackage{wrapfig}

\RequirePackage{xcolor}

\RequirePackage{tabularx}
\RequirePackage{colortbl}
\RequirePackage{multirow}

\RequirePackage{verbatim}
\RequirePackage{fancyvrb}
\RequirePackage{listings}

\RequirePackage{float}

\RequirePackage{refstyle}

\RequirePackage{tcolorbox}
  \tcbuselibrary{skins,breakable,listings,xparse}
```
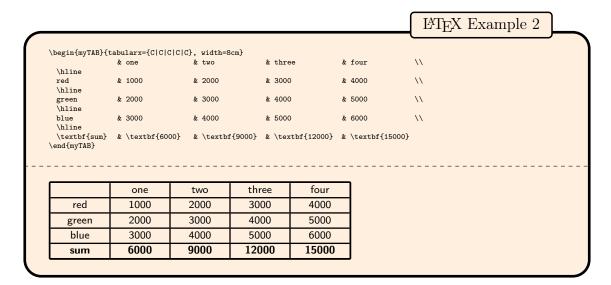
To load the package, write `\usepackage{myTCB-V1}` in the preamble of your document. To use this package, it is highly recommended to have the complete LATEX distribution installed. This will avoid problems with dependencies.
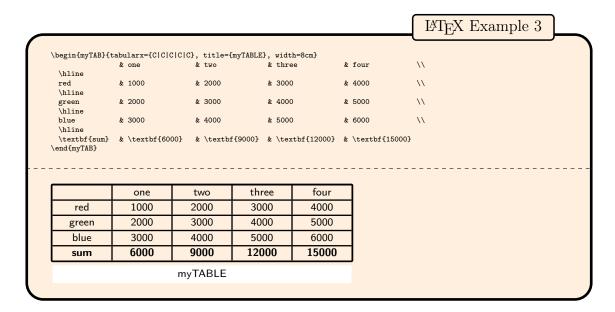
LATEX Example 1

```
\usepackage{myTCB-V1}
```

The *myTCB-V1* package has a predefined environment, which is called `myTAB`. In this environment there is no list index available and only tables are created

LaTeX Example 2

```
\begin{myTAB}{tabularx={C|C|C|C}, width=8cm}
               & one          & two          & three        & four         \\
   \hline
   red         & 1000         & 2000         & 3000         & 4000         \\
   \hline
   green       & 2000         & 3000         & 4000         & 5000         \\
   \hline
   blue        & 3000         & 4000         & 5000         & 6000         \\
   \hline
   \textbf{sum} & \textbf{6000} & \textbf{9000} & \textbf{12000} & \textbf{15000}
\end{myTAB}
```

	one	two	three	four
red	1000	2000	3000	4000
green	2000	3000	4000	5000
blue	3000	4000	5000	6000
sum	**6000**	**9000**	**12000**	**15000**

A title can be submitted as an optional argument, which appears on the bottom of the table.

LaTeX Example 3

```
\begin{myTAB}{tabularx={C|C|C|C}, title={myTABLE}, width=8cm}
               & one          & two          & three        & four         \\
   \hline
   red         & 1000         & 2000         & 3000         & 4000         \\
   \hline
   green       & 2000         & 3000         & 4000         & 5000         \\
   \hline
   blue        & 3000         & 4000         & 5000         & 6000         \\
   \hline
   \textbf{sum} & \textbf{6000} & \textbf{9000} & \textbf{12000} & \textbf{15000}
\end{myTAB}
```

	one	two	three	four
red	1000	2000	3000	4000
green	2000	3000	4000	5000
blue	3000	4000	5000	6000
sum	**6000**	**9000**	**12000**	**15000**

myTABLE

You can even put a table into a box.

LaTeX Example 4

```
\begin{myFIG}{}
   \begin{myTAB}{tabularx={C|C|C|C}, title={myTABLE}, width=8cm}
               & one          & two          & three        & four         \\
   \hline
   red         & 1000         & 2000         & 3000         & 4000         \\
   \hline
   green       & 2000         & 3000         & 4000         & 5000         \\
   \hline
   blue        & 3000         & 4000         & 5000         & 6000         \\
   \hline
```
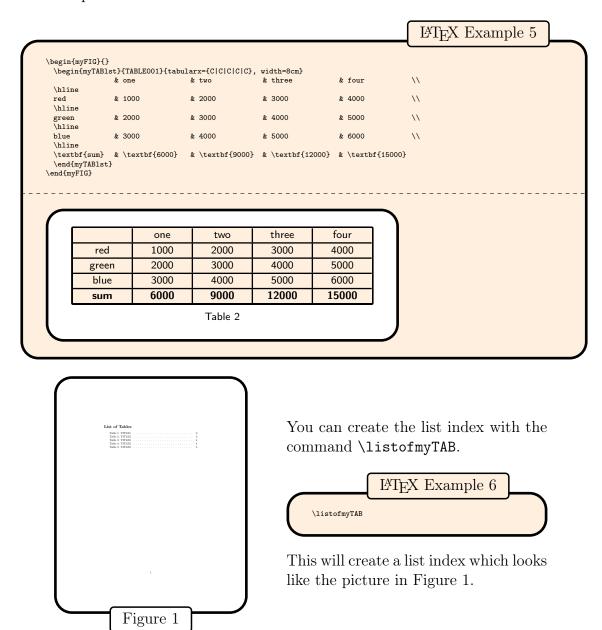
```
    \textbf{sum}  & \textbf{6000}  & \textbf{9000}  & \textbf{12000}  & \textbf{15000}
  \end{myTAB}
\end{myFIG}
```

	one	two	three	four
red	1000	2000	3000	4000
green	2000	3000	4000	5000
blue	3000	4000	5000	6000
sum	**6000**	**9000**	**12000**	**15000**

myTABLE

The *myTCB-V1* package has a predefined environment, which is called `myTABlst`. In this environment there is a list index available and only tables are created. A title (`TITLE1`) must be passed as a mandatory argument. This title does not appear on the box, instead it is found in the list index. The box itself is titled with *Table* and a sequential number.

LaTeX Example 5

```
\begin{myFIG}{}
  \begin{myTABlst}{TABLE001}{tabularx={C|C|C|C|C}, width=8cm}
                & one          & two          & three        & four         \\
    \hline
    red         & 1000         & 2000         & 3000         & 4000         \\
    \hline
    green       & 2000         & 3000         & 4000         & 5000         \\
    \hline
    blue        & 3000         & 4000         & 5000         & 6000         \\
    \hline
    \textbf{sum}  & \textbf{6000}  & \textbf{9000}  & \textbf{12000}  & \textbf{15000}
  \end{myTABlst}
\end{myFIG}
```

	one	two	three	four
red	1000	2000	3000	4000
green	2000	3000	4000	5000
blue	3000	4000	5000	6000
sum	**6000**	**9000**	**12000**	**15000**

Table 2

Figure 1

You can create the list index with the command `\listofmyTAB`.

LaTeX Example 6

```
\listofmyTAB
```

This will create a list index which looks like the picture in Figure 1.
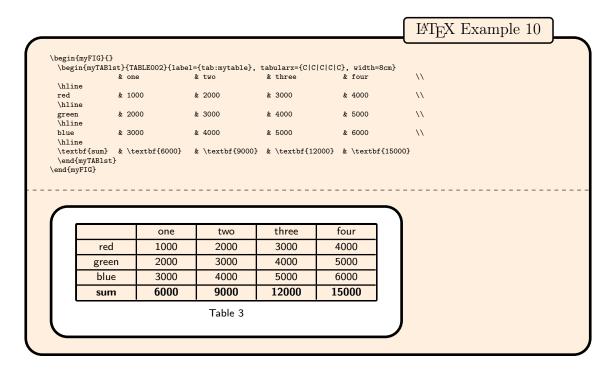
If you want to change the horizontal spacing of the list entries, you can do this quite simple with the following code in the preamble, which is illustrated in LaTeX Example 7.

```
\makeatletter
  \renewcommand{\l@myTAB}{\@dottedtocline{1}{0mm}{0mm}}
\makeatother
```

If you want to change the vertical spacing of the list entries, you can do this quite simple with the following code in the preamble, which is illustrated in LaTeX Example 8.

```
\makeatletter
  \addtocontents{myTAB}{\protect\vspace{12mm}}
\makeatother
```

If you want to get rid of the page numbers in the list index, you can do this quite simple with the following code in the preamble, which is illustrated in LaTeX Example 9.

```
% copy cmd \listofmyTAB into cmd \oldlistofmyTAB
\let\oldlistofmyTAB\listofmyTAB

% renew cmd \listofmyTAB
\renewcommand\listofmyTAB
{
  \pagestyle{empty} % .... % disable headers/footers
  \oldlistofmyTAB % ...... % call \oldlistofmyTAB
  \clearpage % .......... % create a new page
  \pagestyle{plain} % .... % enable headers/footers; use fancy if you use fancyhdr
}
```

A label can be specified as an optional argument. The table can then be referenced in the text with \tabref{}.

```
\begin{myFIG}{}
  \begin{myTABlst}{TABLE002}{label={tab:mytable}, tabularx={C|C|C|C|C}, width=8cm}
                 & one          & two          & three          & four           \\
  \hline
  red            & 1000         & 2000         & 3000           & 4000           \\
  \hline
  green          & 2000         & 3000         & 4000           & 5000           \\
  \hline
  blue           & 3000         & 4000         & 5000           & 6000           \\
  \hline
  \textbf{sum}   & \textbf{6000}  & \textbf{9000}  & \textbf{12000}  & \textbf{15000}
  \end{myTABlst}
\end{myFIG}
```

	one	two	three	four
red	1000	2000	3000	4000
green	2000	3000	4000	5000
blue	3000	4000	5000	6000
sum	**6000**	**9000**	**12000**	**15000**

Table 3

```
This example is shown in \tabref{mytable}
```

This example is shown in Table 3

It is notable that the label has to contain the `tab:` prefix in order to reference the label appropriately.

The option `tabularx={[..]}` determines the number of columns and their alignment. One letter stands for one column and a pipe (|) creates a vertical separator between the columns (if this is desired). Table 4 shows the definition of the different letters.

l	left-aligned column; Column width is content dependent
c	centered-aligned column; Column width is content dependent
r	right-aligned column; Column width is content dependent
X	left-aligned column; Column width is dynamically determined by the number of columns and the total width of the table
C	centered-aligned column; Column width is dynamically determined by the number of columns and the total width of the table

Table 4

Within the table itself, the control sequences are illustrated in Table 5 (source `https://www.flutterbys.com.au/stats/tut/tut17.1.html`)

&	Column separator
\\	End of line marker. Indicates that a line break should be inserted
\hline	A horizontal line spanning the full width of the table

Table 5

The option `width=[...]` defines the width of the whole table. The default value for this is `\linewidth`.

References

[Car03]   `http://users.ece.utexas.edu/~garg/dist/listings.pdf`.

[D P21]   `https://mirror.easyname.at/ctan/macros/latex/required/graphics/grfguide.pdf`.

[Dan22]   `https://ctan.math.illinois.edu/macros/latex/contrib/refstyle/refstyle.pdf`.

[Den23]   `https://texdoc.org/serve/fancyvrb/0`.

[Don03]   `https://mirror.easyname.at/ctan/macros/latex/contrib/wrapfig/wrapfig-doc.pdf`.

[Ove23]   `https://www.overleaf.com/learn`.

[Rai22]   `https://mirror.kumi.systems/ctan/macros/latex/required/tools/verbatim.pdf`.

[She95]   `http://webhome.phy.duke.edu/~rgb/General/latex/ltx-79.html`.

[Tho23]   `https://texdoc.org/serve/tcolorbox.pdf/0`.

[Uwe22]   `https://mirror.kumi.systems/ctan/macros/latex/contrib/xcolor/xcolor.pdf`.