The jigsaw package
Drawing jigsaw pieces in Ti\kZ

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https://github.com/samcarter/jigsaw
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1 Introduction

The jigsaw package allows to draw adjustable jigsaw pieces in Ti\kZ, to combine them and even to automatically create complete jigsaws. It is based on the TeX.Stackexchange answers https://tex.stackexchange.com/a/446296/36296.

The package is included in both \TeXLive and MiKTeX and available from CTAN (https://ctan.org/pkg/jigsaw). The development version of this package is located at github.com/samcarter/jigsaw. If you have any problems, ideas or other feedback, please make constructive use of its bug tracker.

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2 Usage

An individual jigsaw piece can be drawn with

\begin{tikzpicture}
\piece{bottom}{right}{top}{left}
\end{tikzpicture}

wherein arguments specify for each side if it should be a tab (-1), a straight line (0) or a slot (1). The following example will produce a jigsaw piece with one tab sticking out, one straight boarder and one slot:

\begin{tikzpicture}
\piece{1}{-1}{0}{1}
\end{tikzpicture}
With an optional argument, a fill colour can be passed to the piece:

**Filled piece**

\begin{tikzpicture}
\piece[teal]{-1}{1}{-1}{1}
\end{tikzpicture}

Or to change the line colour:

**Coloured piece**

\begin{tikzpicture}
\color{teal}\piece{-1}{-1}{1}{1}
\end{tikzpicture}

The shapes of the jigsaw pieces are designed to seamlessly fit into each other which allows to produce tile patterns.

**Manual tile pattern**

\begin{tikzpicture}
\begin{scope}
\piece[teal]{1}{1}{0}{0}
\end{scope}
\begin{scope}[xshift=1cm]
\piece[lightgray]{1}{0}{0}{-1}
\end{scope}
\begin{scope}[yshift=-1cm]
\piece[lightgray]{0}{-1}{-1}{0}
\end{scope}
\begin{scope}[xshift=1cm,yshift=-1cm]
\piece[teal]{0}{0}{-1}{1}
\end{scope}
\end{tikzpicture}

Manually position each jigsaw piece at the correct position can be tedious, therefore the command \texttt{\tile[<colour>]{<bottom>}{<right>}{<top>}{<left>}} was added. It can be used outside of the \texttt{tikzpicture} environment to place the pieces besides each other like normal letters in a text. Line breaks have to be added at the appropriate positions and one has to be careful not to introduce additional spaces between the jigsaw pieces from unprotected line endings.

**The tile command**

\begin{align*}
\texttt{\tile[violet]{1}{1}{0}{0}} \\
\texttt{\tile[lightgray]{1}{-1}{0}{-1}} \\
\texttt{\tile[teal]{1}{1}{0}{1}} \\
\texttt{\tile[teal]{1}{-1}{-1}{0}} \\
\texttt{\tile[violet]{1}{-1}{-1}{1}} \\
\texttt{\tile[lightgray]{-1}{0}{-1}{1}} \\
\texttt{\tile[lightgray]{0}{-1}{-1}{0}} \\
\texttt{\tile[teal]{0}{-1}{-1}{1}} \\
\texttt{\tile[violet]{0}{0}{1}{1}}
\end{align*}
Finally there is also the possibility to automatically generate complete jigsaw puzzles using the command \texttt{\jigsaw{<x>}{<y>}}, with \texttt{<x>} and \texttt{<y>} the number of rows and columns, respectively.

\begin{tikzpicture}
\jigsaw{6}{4}
\end{tikzpicture}

This automatically generated jigsaw can also be overlaid on a picture:

\begin{tikzpicture}
\clip (0,0) rectangle (6,4);
\node at (3,2) {\includegraphics[width=6cm]{example-image-duck}};
\jigsaw{6}{4}
\end{tikzpicture}