tikz-truchet v1.0

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\texttt{tikz-truchet} is a package for \LaTeX{} that draws Truchet tiles, as features in the article \textit{Too good to be Truchet} by Colin Beveridge.¹

Before starting, I recommend setting the following \texttt{tikz} options to make your pictures look nicer:

\begin{verbatim}
\tikzset{x=2cm,y=2cm, line cap=round, line join=round, every picture}
\end{verbatim}

1 Squares

You can draw square Truchet tiles using the command \texttt{truchetsquare}. The following code will produce the output below.

\begin{verbatim}
\begin{tikzpicture}
  \truchetsquare{b}{w}{b}{w}{b}
\end{tikzpicture}
\end{verbatim}

The five inputs of the command are the colour (\texttt{b} or \texttt{w}) at the centre, the North East, North West, South West, and South East corners (in that order).

You can a square bracketed input to move the tiles. The tiles are 1 unit wide.

\begin{verbatim}
\begin{tikzpicture}
  \truchetsquare{b}{w}{b}{w}{b}
  \truchetsquare{(1.2,0)}{w}{b}{w}{b}
  \truchetsquare{(0,1.2)}{b}{w}{b}{w}
  \truchetsquare{(-1.2,0)}{b}{w}{b}{w}
  \truchetsquare{(-1.2,-1.2)}{w}{b}{w}{b}
\end{tikzpicture}
\end{verbatim}

¹Chalkdust Magazine issue 08, Autumn 2018, \url{http://chalkdustmagazine.com/features/too-good-to-be-truchet/}
The command \texttt{\textbackslash diagonalsquare} can be used to draw a square tile that is half white and half black along a diagonal.

\begin{tikzpicture}
\texttt{\textbackslash diagonalsquare\{x\}\{w\}\{x\}\{b\}}
\end{tikzpicture}

The four inputs are the color (\texttt{b} or \texttt{w}), or \texttt{x} if the colour changes at that corner, of the North East, North West, South West, and South East corners (in that order).

There are only five such tiles. They can be created using the convenience functions \texttt{\textbackslash tileA}, \texttt{\textbackslash tileB}, \texttt{\textbackslash tileC}, and \texttt{\textbackslash tileD}.

\begin{tikzpicture}
\texttt{\textbackslash tileA}
\texttt{\textbackslash tileB\{\{1.2,0\}\}}
\texttt{\textbackslash tileC\{\{2.4,0\}\}}
\texttt{\textbackslash tileD\{\{3.6,0\}\}}
\end{tikzpicture}

\section{Hexagons}

To draw hexagonal Truchet tiles, you can use the commands \texttt{\textbackslash truchethex} and \texttt{\textbackslash truchetsplithex}.
\texttt{\texttt{\texttt{\textbackslash truchethex}}} \hspace{2em} The command \texttt{\texttt{\texttt{\textbackslash truchethex}}} takes 7 inputs: the colour (b or w) at the centre, then all the corners starting at the top left and going clockwise. Again an argument can be passed in square brackets to move the tile.

\begin{tikzpicture}
\truchethex{b}{w}{b}{w}{b}{w}{b}
\truchethex{[2.2,0]}{w}{w}{b}{w}{b}{w}{b}
\end{tikzpicture}

\texttt{\texttt{\texttt{\textbackslash truchetsplitheX}}} \hspace{2em} The command \texttt{\texttt{\texttt{\textbackslash truchetsplitheX}}} draws a Truchet tile split in half like the following.

\begin{tikzpicture}
\truchetsplitheX
\end{tikzpicture}

\texttt{\texttt{\texttt{\textbackslash rotatehex}}} \hspace{2em} The environment \texttt{\texttt{\texttt{\textbackslash rotatehex}}} can be used to rotate a hexagonal tile about its centre. The angle should be given in degrees.

\begin{tikzpicture}
\begin{rotatehex}{30}
\truchetsplitheX
\end{rotatehex}
\end{tikzpicture}
3 Cubes

The command `\truchetcube` can be used to draw Cubes with differently coloured faces. The six inputs of the command are the colour (b or w) of the bottom, front, right, back, left, and top faces of the cube (in that order).

```latex
\begin{tikzpicture}[x=1.2 cm ,y =1.2 cm]
\truchetcube{w}{w}{w}{w}{w}{w}
\truchetcube[(0 , -3 cm )]{ b}{b}{b}{b}{b}{b}
\truchetcube[(2.4 cm ,0)]{ w}{w}{w}{w}{w}{b}
\truchetcube[(2.4 cm , -3 cm )]{ b}{b}{b}{b}{b}{w}
\end{tikzpicture}
```