

The hexboard package

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1 Basic usage

1.1 Loading the hexboard macros

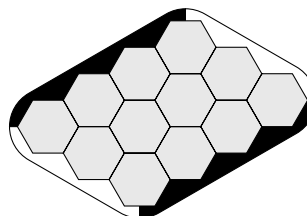
The hexboard macros can be loaded with the following command:

```
\input{hexboard.sty}
```

1.2 Basic drawing commands

To make a board of size 4×3 :

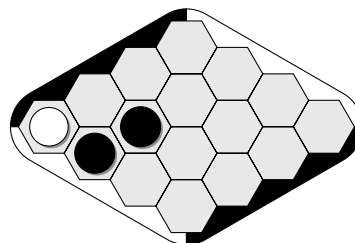
```
\begin{hexboard}  
  \board(4,3)  
\end{hexboard}
```



Note that files (columns) are specified before ranks (rows). This is for consistency with the usual notation a1, a2, a3, etc. For example, the cell that is usually called a1 is (1,1), the cell that is usually called a2 is (1,2), and c5 is (3,5).

Some stones can be placed on the board with the commands `\black` and `\white`:

```
\begin{hexboard}  
  \board(4,4)  
  \white(1,1)  
  \black(1,2)  
  \black(2,2)  
\end{hexboard}
```

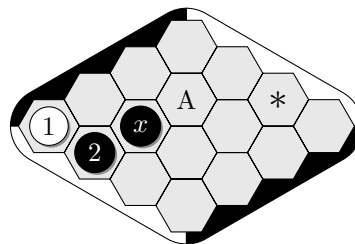


Stones or empty cells can be labelled. Note that the `\cell` command does not draw anything; it simply specifies which cell the next label goes on.

```

\begin{hexboard}
  \board(4,4)
  \white(1,1)\label{1}
  \black(1,2)\label{2}
  \black(2,2)\label{$x$}
  \cell(3,2)\label{A}
  \cell(4,3)\label{\Large $\ast$}
\end{hexboard}

```



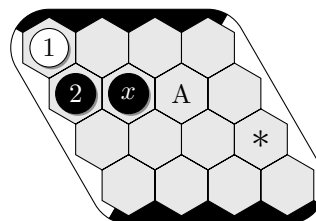
1.3 Rotation

To rotate the board, use the `\rotation` command. Note that this must come before any drawing command.

```

\begin{hexboard}
  \rotation{-30}
  \board(4,4)
  \white(1,1)\label{1}
  \black(1,2)\label{2}
  \black(2,2)\label{$x$}
  \cell(3,2)\label{A}
  \cell(4,3)\label{\Large $\ast$}
\end{hexboard}

```



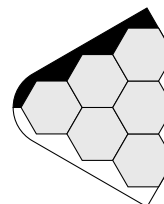
2 Partial boards

To create partial boards, hexes and edges need to be created individually. The `\edge` is used to paint a single edge. It takes an optional argument that specifies which kind of each is being created: `\nw` for north-west, `\sw` for south-west, and so on. When this argument is missing, the package tries to guess it, but it does not always get it correctly. The arguments `\noacutecorner` and `\noobtusecorner` can be used to turn off the rounding of the corresponding corner. The `\edge` command takes two Hex coordinates, which specify the cells along which the edge runs. No error checking is currently done, and an ill-formed `\edge` command will probably just produce misshapen output.

```

\begin{hexboard}
  \hex(1,1)
  \hex(1,2)
  \hex(1,3)
  \hex(2,1)
  \hex(2,2)
  \hex(3,1)
  \edge[\nw\noobtusecorner](1,1)(3,1)
  \edge[\sw\noobtusecorner](1,1)(1,3)
\end{hexboard}

```

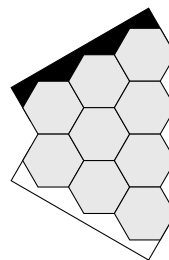


`\foreach` loops can also be used to help specify the set of visible hexes.

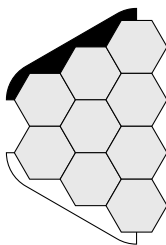
```

\begin{hexboard}
  \foreach \i in {2,...,4} {
    \foreach \j in {1,...,\i} {
      \hex(\i-\j+1,\j)
    }
  }
  \edge[\nw\noacutecorner\noobtusecorner] (2,1)(4,1)
  \edge[\sw\noacutecorner\noobtusecorner] (1,2)(1,4)
\end{hexboard}

```



To better understand what the options `\noacutecorner` and `\noobtusecorner` do, consider what the above diagram would look like without them:

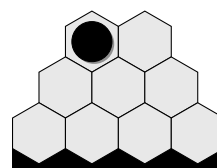


As another example, here is an edge template:

```

\begin{hexboard}
  \rotation{-30}
  \hex(3,1) \hex(4,1)
  \hex(2,2) \hex(3,2) \hex(4,2)
  \hex(1,3) \hex(2,3) \hex(3,3) \hex(4,3)
  \edge[\se\noacutecorner\noobtusecorner] (4,3)(1,3)
  \black(3,1)
\end{hexboard}

```



3 Customization

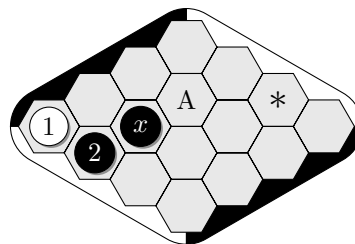
3.1 Changing the board style

To change the board style: `\flatstones`, `\glossstones`, `\flatboard`, `\woodboard`, `\shadows`, `\noshadows`. These options can be given inside the `hexboard` environment, in which case they only apply to subsequent drawing commands in the current board. They can also be given outside the `hexboard` environment, in which case they apply to all subsequent boards.

```

\begin{hexboard}
  \board(4,4)
  \white(1,1)\label{1}
  \black(1,2)\label{2}
  \black(2,2)\label{$x$}
  \cell(3,2)\label{A}
  \cell(4,3)\label{\Large$ast$}
\end{hexboard}

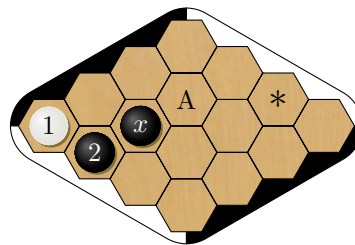
```



```

\begin{hexboard}
  \woodboard
  \glossystones
  \board(4,4)
  \white(1,1)\label{1}
  \black(1,2)\label{2}
  \black(2,2)\label{$x$}
  \cell(3,2)\label{A}
  \cell(4,3)\label{\Large$\ast$}
\end{hexboard}

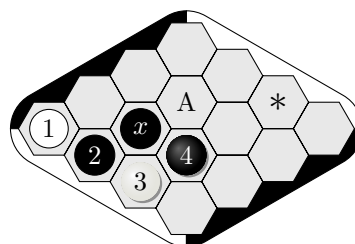
```



```

\begin{hexboard}
  \noshadows
  \board(4,4)
  \white(1,1)\label{1}
  \black(1,2)\label{2}
  \black(2,2)\label{$x$}
  \cell(3,2)\label{A}
  \cell(4,3)\label{\Large$\ast$}
  \glossystones
  \shadows
  \white(1,3)\label{3}
  \black(2,3)\label{4}
\end{hexboard}

```



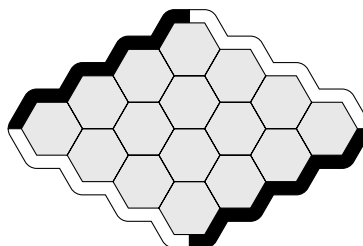
3.2 Changing the edge shape

The style of the board edges can be changed with the commands `\roundededges` (default), `\zigzagedges`, and `\insetedges`.

```

\begin{hexboard}
  \zigzagedges
  \board(4,4)
\end{hexboard}

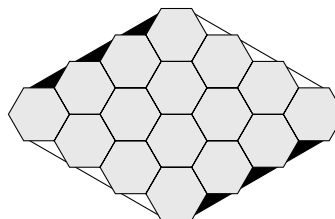
```



```

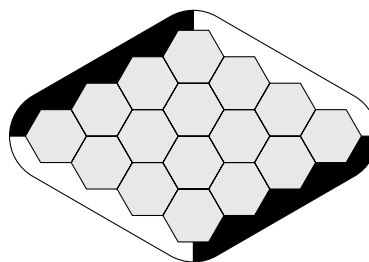
\begin{hexboard}
  \insetedges
  \board(4,4)
\end{hexboard}

```

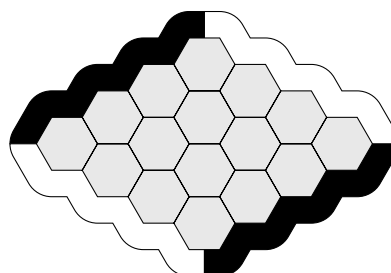


The width of the edges can be adjusted (within reason) using the `\edgewidth` command. Default is 1.

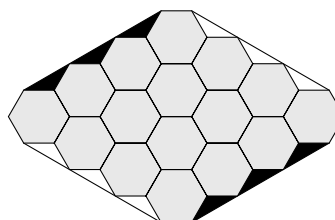
```
\begin{hexboard}
  \roundedges
  \edgewidth{2}
  \board(4,4)
\end{hexboard}
```



```
\begin{hexboard}
  \zigzagedges
  \edgewidth{2}
  \board(4,4)
\end{hexboard}
```



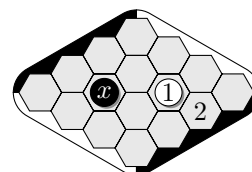
```
\begin{hexboard}
  \insetedges
  \edgewidth{1.25}
  \board(4,4)
\end{hexboard}
```



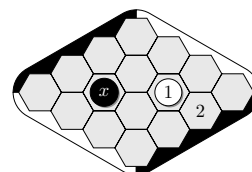
3.3 Scaling

Hex boards can be scaled in two different ways: by giving a `scale` optional argument, which does not change the line width and font sizes, and by using `\scalebox`, which scales everything including lines and fonts.

```
\begin{hexboard}[scale=0.7]
  \board(4,4)
  \black(2,2)\label{$x$}
  \white(3,3)\label{1}
  \cell(3,4)\label{2}
\end{hexboard}
```



```
\scalebox{0.7}{
  \begin{hexboard}
    \board(4,4)
    \black(2,2)\label{$x$}
    \white(3,3)\label{1}
    \cell(3,4)\label{2}
  \end{hexboard}
}
```

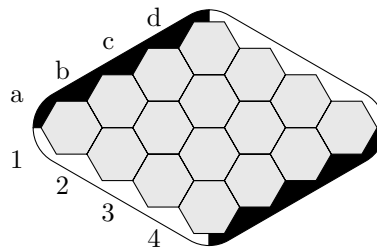


4 Miscellaneous markup

4.1 Showing coordinates

To show a coordinate system, note that labels can be placed in any cell, even outside the board. The cell's coordinates don't need to be integers. This process could probably be automated, but this hasn't yet been done.

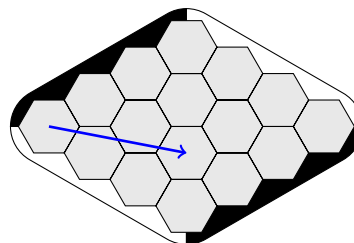
```
\begin{hexboard}
  \board(4,4)
  \cell(1,-0.2)\label{a}
  \cell(2,-0.2)\label{b}
  \cell(3,-0.2)\label{c}
  \cell(4,-0.2)\label{d}
  \cell(-0.2,1)\label{1}
  \cell(-0.2,2)\label{2}
  \cell(-0.2,3)\label{3}
  \cell(-0.2,4)\label{4}
\end{hexboard}
```



4.2 TikZ markup with Hex coordinates

To use Hex coordinates with arbitrary TikZ commands, use the `\coord(x,y)` syntax. Note that if x and y are integers, they refer to the center of the respective cell. However, they do not need to be integers.

```
\begin{hexboard}
  \board(4,4)
  \draw[->,line width=1,color=blue]
    \coord(1,1) -- \coord(2,3);
\end{hexboard}
```



5 Mentioning stones and cells in text

Sometimes, it is useful to refer to stones or cells in the text. For this, you can use the commands `\blackstone`, `\whitestone`, and `\inlinehex`:

After `$$\blackstone{1}$$`, `$$\whitestone{2}$$`,
`$$\blackstone{3}$$`, White can play at
`$$\inlinehex{a}$$`.

After ❶, ❷, ❸, White can play at Ⓐ.

By default, the labels are centered. This can look bad when mentioning multiple stones or cells whose labels have different heights: Ⓐ, ❷, ❸. In that case, use the “starred” version of these commands, i.e., `\blackstone*`, `\whitestone*`, and `\inlinehex*`, which try to align the label with the baseline of the surrounding text: Ⓐ, ❷, ❸.