

hakyuu.sty

v1.0

A style file for typesetting Hakyuu logic puzzles

2		6	5	
			4	
3				
	2			5
			1	

2	3	6	5	4
1	7	3	4	2
3	1	2	1	3
1	2	1	3	5
2	3	4	1	2

March 15, 2013

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1 The puzzle

Fill the cells of an area with numbers from 1 to SIZE of the area. If there are two cells with the same number N in a row or a column, there must be at least N cells between those two cells. Here's a little self-explanatory example:

2		6	5	
			4	
3				
	2			5
			1	

2	3	6	5	4
1	7	3	4	2
3	1	2	1	3
1	2	1	3	5
2	3	4	1	2

```

1 \begin{center}
2   \begin{hakyuu}
3     \hakyuucell{1}{5}{2}
4     \hakyuucell{3}{5}{6}
5     \hakyuucell{4}{5}{5}
6     \hakyuucell{4}{4}{4}
7     \hakyuucell{1}{3}{3}
8     \hakyuucell{2}{2}{2}
9     \hakyuucell{5}{2}{5}
10    \hakyuucell{4}{1}{1}
11    \begin{puzzlebackground}
12      \fillarea{Wheat}{(1,1)--(1,4)--(2,4)--(2,1)--(1,1)}
13      \fillarea{HotPink!30}{(1,4)--(1,6)--(6,6)--(6,5)--(3,5)--(3,4)--(1,4)}
14      \fillarea{GreenYellow}{(2,4)--(3,4)--(3,5)--(5,5)--(5,4)--(4,4)--(4,3)--(2,3)--(2,4)}
15      \fillarea{LightBlue}{(5,5)--(6,5)--(6,3)--(4,3)--(4,4)--(5,4)--(5,5)}
16      \fillarea{LightSalmon!50}{(2,2)--(2,3)--(5,3)--(5,2)--(2,2)}
17      \fillarea{LightYellow}{(2,1)--(2,2)--(5,2)--(5,3)--(6,3)--(6,1)--(2,1)}
18    \end{puzzlebackground}
19  \end{hakyuu}
20  \hspace{1,5cm}
21  \begin{hakyuu}
22    \setrow{5}{2,3,6,5,4}
23    \setrow{4}{1,7,3,4,2}
24    \setrow{3}{3,1,2,1,3}
25    \setrow{2}{1,2,1,3,5}
26    \setrow{1}{2,3,4,1,2}
27    \begin{puzzlebackground}
28      \fillarea{Wheat}{(1,1)--(1,4)--(2,4)--(2,1)--(1,1)}
29      \fillarea{HotPink!30}{(1,4)--(1,6)--(6,6)--(6,5)--(3,5)--(3,4)--(1,4)}
30      \fillarea{GreenYellow}{(2,4)--(3,4)--(3,5)--(5,5)--(5,4)--(4,4)--(4,3)--(2,3)--(2,4)}
31      \fillarea{LightBlue}{(5,5)--(6,5)--(6,3)--(4,3)--(4,4)--(5,4)--(5,5)}
32      \fillarea{LightSalmon!50}{(2,2)--(2,3)--(5,3)--(5,2)--(2,2)}
33      \fillarea{LightYellow}{(2,1)--(2,2)--(5,2)--(5,3)--(6,3)--(6,1)--(2,1)}
34    \end{puzzlebackground}
35  \end{hakyuu}
36 \end{center}

```

2 Options

rows [5] defines the number of rows in the grid.

columns [5] specifies the number of columns in the grid

width [5.1cm] sets the width of the minipage, in which the grid is typeset.

scale [1] scales the size of the grid in the minipage.

fontsize [Large] specifies the size of the numbers next to the grid. Here, the usual L^AT_EX sizes are used. Possible values: tiny, scriptsize, footnotesize, small, normalsize, large, Large, LARGE, huge, Huge

title [] sets the title of a puzzle.

titleindent [0cm] defines the indent of the title.

titlewidth [5.1cm] specifies the width of the box the title is set in.

bgcolor [] sets the background color of the grid.

counterstyle [none] defines the counter style. Predefined styles: none, left, right

cvoffset [-22pt] sets the vertical offset of the counters in the margin.

3 Environments

3.1 hakyuu

```
\begin{hakyuu}[\langle options \rangle]
...
\end{hakyuu}
```

The hakyuu environment is the central core of the style file. With the optional argument of the environment, you can reset the options with local scope. Here, a blank grid is created.

3.2 puzzlebackground

```
\begin{puzzlebackground}
...
\end{puzzlebackground}
```

The puzzlebackground environment allows you to place elements behind the main layer. This is for example usefull for the \fillarea command.

3.3 puzzleforeground

```
\begin{puzzleforeground}
...
\end{puzzleforeground}
```

The puzzleforeground environment allows you to place elements in front of the main layer. This is for example usefull for the \framearea command.

4 Commands

4.1 In the grid and around

4.1.1 hakyuucell

`\hakyuucell{<column>}{<row>}`
`{<number>}` The command `\hakyuucell` sets the *<number>* of the grid cell *<column>**<row>*.

4.1.2 setrow

`\setrow{<row>}{<csv list>}` The command `\setrow` sets the contents of *<row>*. It expects a comma-separated list.

4.1.3 setcolumn

`\setcolumn{<column>}{<csv list>}` The command `\setcolumn` sets the contents of *<column>*.

4.1.4 framearea

`\framearea{<color>}{<tikz path>}` The command `\framearea` frames the area given by *<tikz path>* with color *<color>*. The reference for coordinates is the bottom left corner of the cell.

```
1 \framearea{green}{(2,2)--(2,3)--(3,3)--(3,2)--(2,2)}
```

This command will color the frame of the grid cell (2,2) green. You should consider using this command in the `puzzleforeground` environment.

4.1.5 fillarea

`\fillarea{<color>}{<tikz path>}` The command `\fillarea` fills the area given by *<tikz path>* with color *<color>*. The reference for coordinates is the bottom left corner of the cell. You should consider using this command in the `puzzlebackground` environment.

4.2 Presentation

4.2.1 definecounterstyle

`\definecounterstyle{<name>}`
`{<definition>}` The command `\definecounterstyle` allows you to define your own styles. For example, the style `left` is defined as follows:

```
1 \definecounterstyle{left}{
2   \begingroup\reversemarginpar\marginnote{
3     \tikz\node[shape=rectangle,fill=yellow!40,inner sep=7pt,
4       draw,rounded corners=3pt,thick]
5     {\Huge\puzzlecounter};}[\LP@coffset]\endgroup
6 }
```

To typeset the counter into the margin we use the command `\marginnote`. We need to use the command `\reversemarginpar` to set the counter into the left margin. Of course, we must use this command in a group for local scope. Finally we use `\puzzlecounter` in a `\tikz` node with a vertical offset set with the option `cvoffset`.

4.2.2 puzzlecounter

`\puzzlecounter` The command `\puzzlecounter` provides the counter in textual form to use it for example in `\definecounterstyle`.

4.2.3 titleformat

`\titleformat{<format>}` With the command `\titleformat`, you can define the format of the title. By default, the definition is as follows:

```
1 \titleformat{\centering\Large\color{blue}}
```

4.3 Miscellaneous

4.3.1 hakyuusetup

`\hakyuusetup{<options>}` With the command `\hakyuusetup` you can reset the options with global scope.

4.3.2 setpuzzlecounter

`\setpuzzlecounter{<number>}` With the command `\setpuzzlecounter`, you can reset the puzzle counter, for example before the solutions.

5 Examples & Solutions



You can download application examples and their solutions from the [project page](#). The puzzles are originally licensed under .