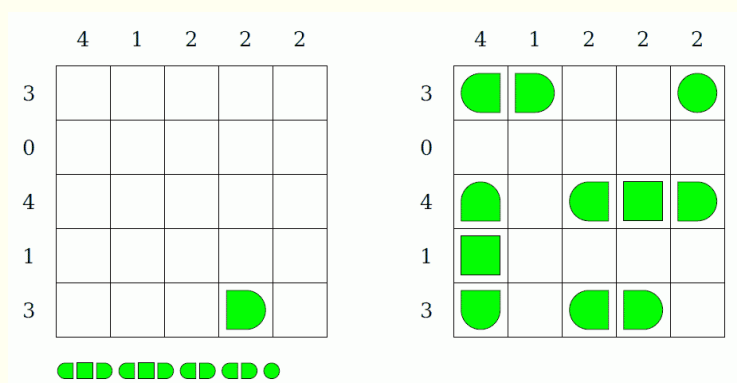


# battleship.sty

v1.2

A style file for typesetting Battleship logic puzzles



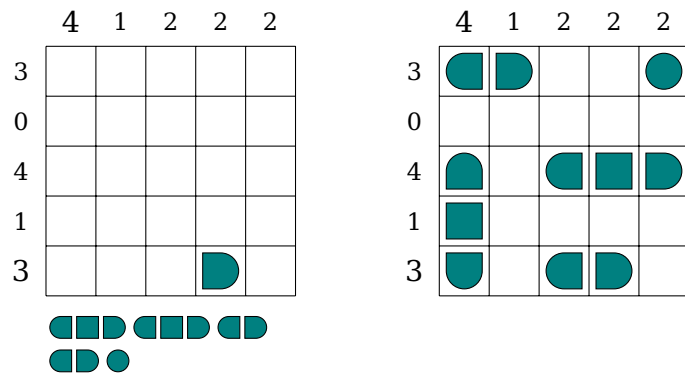
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Package author:  
**Josef Kleber**

|          |                                 |          |
|----------|---------------------------------|----------|
| <b>1</b> | <b>The puzzle</b>               | <b>2</b> |
| <b>2</b> | <b>Options</b>                  | <b>3</b> |
| 2.1      | rows                            | 3        |
| 2.2      | columns                         | 3        |
| 2.3      | shipcolor                       | 3        |
| 2.4      | width                           | 3        |
| 2.5      | scale                           | 3        |
| 2.6      | fontsize                        | 3        |
| 2.7      | title                           | 3        |
| 2.8      | counterstyle                    | 3        |
| 2.9      | bgcolor                         | 3        |
| 2.10     | sbindent                        | 3        |
| 2.11     | sbwidth                         | 4        |
| 2.12     | sbshipscale                     | 4        |
| <b>3</b> | <b>Environments</b>             | <b>4</b> |
| 3.1      | battleship                      | 4        |
| <b>4</b> | <b>Commands</b>                 | <b>4</b> |
| 4.1      | Ships, water, islands, ...      | 4        |
| 4.1.1    | placeship                       | 4        |
| 4.1.2    | placesegment                    | 4        |
| 4.1.3    | ship                            | 4        |
| 4.1.4    | placewater                      | 4        |
| 4.1.5    | placeisland                     | 5        |
| 4.2      | Presentation                    | 5        |
| 4.2.1    | shipH                           | 5        |
| 4.2.2    | shipV                           | 5        |
| 4.2.3    | shipbox                         | 5        |
| 4.2.4    | definecounterstyle              | 5        |
| 4.2.5    | puzzlecounter                   | 5        |
| 4.2.6    | titleformat                     | 5        |
| 4.3      | Miscellaneous                   | 6        |
| 4.3.1    | battleshipsetup                 | 6        |
| 4.3.2    | classicgame                     | 6        |
| 4.3.3    | setpuzzlecounter                | 6        |
| <b>5</b> | <b>Examples &amp; Solutions</b> | <b>6</b> |

# 1 The puzzle

Try to find the positions of the ships listed below the puzzle. The numbers on the side of the puzzle reveals how many ship segments can be found in the rows and columns. All remaining fields indicate 'water'. Consider the following rules: The ships are arranged horizontally and vertically. No ship touches another ship at any point, not even diagonally. Here's a little self-explanatory example:



```

1 \begin{center}
2   \begin{battleship}
3     \placesegment{4}{1}{\ShipR}
4     \shipH{4,1,2,2,2}
5     \shipV{3,1,4,0,3}
6     \shipbox{3,3,2,2,1}
7   \end{battleship}
8   \hspace{1cm}
9   \begin{battleship}
10    \placeship{V}{1}{1}{3}
11    \placeship{H}{1}{5}{2}
12    \placeship{H}{3}{1}{2}
13    \placeship{H}{3}{3}{3}
14    \placeship{H}{5}{5}{1}
15    \shipH{4,1,2,2,2}
16    \shipV{3,1,4,0,3}
17  \end{battleship}
18 \end{center}

```

## 2 Options

### 2.1 rows (5)

With the option `rows`, you can define the number of rows in the grid.

### 2.2 columns (5)

With the option `columns`, you can specify the number of columns in the grid

### 2.3 shipcolor (green)

With the option `shipcolor`, you can set the color of the ship segments.

### 2.4 width (6cm)

With the option `width`, you can set the width of the minipage, in which the grid is typeset.

### 2.5 scale (1)

With the option `scale`, you can scale the size of the grid in the minipage.

### 2.6 fontsize (Large)

With the option `fontsize`, you can specify the size of the numbers next to the grid. Here, the usual  $\text{\LaTeX}$  sizes are used. Possible values: `tiny`, `scriptsize`, `footnotesize`, `small`, `normalsize`, `large`, `Large`, `LARGE`, `huge`, `Huge`)

### 2.7 title ({})

With the option `title`, you can specify the title of a puzzle.

### 2.8 counterstyle (none),left,right

With the option `counterstyle`, you can define the counter style.

### 2.9 bgcolor ({})

With the option `bgcolor`, you can set the background color of the grid.

### 2.10 sbindent (0.75cm)

With the option `sbindent`, you can define the indent of the ship box below the grid.

### 2.11 sbwidth (5.15cm)

With the option `sbwidth`, you can specify the width of the minipage, in which the ships are typeset.

### 2.12 sbshipscale (1)

With the option `sbshipscale`, you can scale the size of the ships in the ship box.

## 3 Environments

### 3.1 battleship

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

The `battleship` 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 that you can fill with ships using other commands.

## 4 Commands

### 4.1 Ships, water, islands, ...

#### 4.1.1 placeship

```
\placeship{\langle direction \rangle}
{\langle column \rangle}{\langle row \rangle}{\langle length \rangle}
```

With the command `\placeship` you can place complete ships in the grid. It expects the specification of the direction as horizontal (H) or vertical (V). Furthermore, it requires the starting coordinates and the length of the ship.

#### 4.1.2 placesegment

```
\placesegment{\langle column \rangle}{\langle row \rangle}
{\langle ship segment \rangle}
```

The command `\placesegment` is used for the placement of ship segments in the grid. In the mandatory argument `\langle ship segment \rangle`, you can use the following commands:

```
\Ship ● ■ \ShipC
\ShipL ◀ ▶ \ShipR
\ShipB ▾ ▹ \ShipT
```

#### 4.1.3 ship





The command `\ship` was replaced by the `\placesegment` command. The command `\ship` is deprecated and should not be used longer. It may still be used, but it is not recommended.

#### 4.1.4 placewater

```
\placewater{\langle column \rangle}{\langle row \rangle}
```

With the command `\placewater` you can place water markers (•) in the grid.

### 4.1.5 placeisland

`\placeisland{<column>}{<row>}` With the command `\placeisland` you can place islands (  ) in the grid. The island outlines are created randomly: , , , ...

## 4.2 Presentation

### 4.2.1 shipH

`\shipH{<csv list>}` The command `\shipH` typesets the horizontal numbers above the grid. It expects a comma-separated list as an argument.

### 4.2.2 shipV

`\shipV{<csv list>}` The command `\shipV` typesets the vertical numbers beside the grid. It also expects a comma separated list.

### 4.2.3 shipbox

`\shipbox{<csv list>}` The command `\shipbox` defines the number and size of the ships, which are typeset under the grid.

### 4.2.4 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};}[-23pt]\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 of 23 points.

### 4.2.5 puzzlecounter

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

### 4.2.6 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 battleshipsetup

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

### 4.3.2 classicgame


`\classicgame{<csv list>}` The command `\classicgame` typesets a game sheet for playing classic Battleship. It expects a comma separated list with the number and sizes of the ships.

### 4.3.3 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 .

You can also download a [game sheet](#) for playing the classic Battleship.