wordle

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Version 0.3.0

This package provides a stupidly feature-rich way of creating `Wordle` puzzles in LaTeX, which Wikipedia describes as a hugely popular web-based word game created and developed by Welsh software engineer Josh Wardle. This package is an enhanced version of one of the solutions to a question asked by valerio_new on tex.stackexchange.com.

This package provides the `wordle` environment, which uses the syntax:

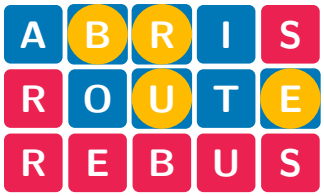
```
% \usepackage{wordle}
\begin{wordle}[wordle settings]{solution}[optional tikz commands]
  guess1 guess2 ...
\end{wordle}
```

and the `GrilleSutom` environment, for `Sutom`, the French version of the games:

```
% \usepackage{wordle}
\begin{GrilleSutom}[sutom settings]{solution}[optional TikZ commands]
  guess1 guess2 ...
\end{GrilleSutom}
```

The words in the puzzle can be entered on a single lines, or on separate lines. Here are some examples:

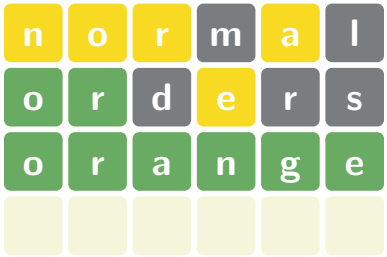

```
\begin{wordle}{ANVIL}
  % English version of sutom (wordle)
  CRANE
  NATAL
  ANVIL
\end{wordle}
```




```
% French version of wordle (sutom)
\begin{GrilleSutom}{REBUS}
  ABRIS
  ROUTE
  REBUS
\end{GrilleSutom}
```

As in the online puzzles, the `wordle` environment automatically colours the letter tiles `green` when the letter is in the same position as the solution, and as `gold` when the letter is in the solution but it is not in the correct position. Similarly, `GrilleSutom` colours the correct letters `red` and the present letters `gold`. As described below, these colours can be changed to suit your tastes.

The number of letters in the puzzle is determined by the solution, being constrained only by the page width.




```
\begin{wordle}[rows=4]{orange}
   normal
   orders
   orange
\end{wordle}
```

The letters in the puzzle can be entered in upper case, lower case, or mixed case. By default, the case of the letters is ignored when determining the colours of the letter tiles.

As described below, the `wordle` and `GrilleSutom` environments accept an array of different options that change the colours, fonts, and shapes of the tile. In addition, you can the case sensitivity of the environments, add extra rows to the puzzle, disable special formatting of the *letter tiles*. These options are given as a comma separated list key-value pairs. They can be set locally, using the optional argument of the `wordle` environment, or they

can be set globally (more accurately, in the current LaTeX group) using the `\WordleSetup` command , or as global package options, via `\usepackage[options]{wordle}`. The order of the options does not matter, except that later options take precedence over earlier ones, with the exception of tikz and tile style keys which are always applied last.

The `wordle` puzzles are drawn using TikZ, with each letter in the puzzle sitting inside a TikZ node. Many of the options control the settings of these nodes.

The descriptions of the options below are grouped according to their function.

Wordle styles

The style key can be used to change many characteristics of the tiles in a `wordle` puzzle, including their colours, the fonts and so on. The more common settings can be setting using the style keyword. *The style should always be set first because, otherwise, the style settings may override earlier settings.*

The following styles are supported:

sutom


```
\begin{wordle}[style=sutom]{ANVIL}
  CRANE
  NATAL
  ANVIL
\end{wordle}
```

The sutom style is the default style for the `GrilleSutom` environment.

standard


```
\begin{wordle}[style=standard]{ANVIL}
  CRANE
  NATAL
  ANVIL
\end{wordle}
```

The standard style is the default style for the `wordle` environment.

hard


```
\begin{wordle}[style=hard]{ANVIL}
  CRANE
  NATAL
  ANVIL
\end{wordle}
```

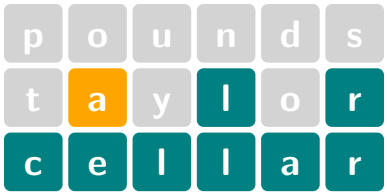
Options for the individual styles of the letter tiles

There are four types of letter tiles in `wordle` : absent, present, correct and empty, corresponding to letters not in the solution, incorrectly placed letters, correctly placed letters, and empty tiles, respectively. The options in this section can be used to set the text, tile and border colours, shapes, and frames of these tiles.

The letter tiles in a `wordle` environment are typeset inside a TikZ `\node`. The options below control the different style settings of these nodes.

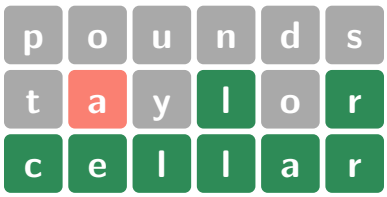
colours (default: –) [accepts: comma separated list of valid colours]

The colours option is a short-hand for specifying the colours of the absent, present, correct and empty tiles, in that order. Later colours can be omitted but the colours should be given in this order, from left to right. If only one colour is given then this colour is applied to all tiles.




```
\begin{wordle}[colours={LightGray,Orange,Teal}]{cellar}
  pounds
  taylor
  cellar
\end{wordle}
```

The colours can also be set individually using absent colour, present colour, correct colour and empty colour. To support north American dialects, is also possible to use colors, absent color, present color, correct color and empty color.




```
\begin{wordle}[absent colour=DarkGray,present color=Salmon,
               correct color=SeaGreen]{cellar}
  pounds
  taylor
  cellar
\end{wordle}
```

borders (default: white) [accepts: comma separated list of valid colours]

Similar to the colours option, this is a short-hand for the setting border colour of the absent, present, correct and empty tiles, in that order. If only one colour is given then this colour is applied to all tiles.


```
\begin{wordle}[borders={red, orange,blue}]{ANVIL}
  CRANE
  NATAL
  ANVIL
\end{wordle}
```

You can set the border borders of the individual tiles using absent border, present border, correct border and empty border

frames (default: false) [accepts: comma separated list of true/false]

This is a short-hand for adding a rectangular frame around the absent, present, correct and empty tiles, in that order, with the same background colour as the absent file. This is only useful for non-square tiles.


```
\begin{wordle}[frames={false,true,true}, shapes=circle]{ANVIL}
  CRANE
  NATAL
  ANVIL
\end{wordle}
```

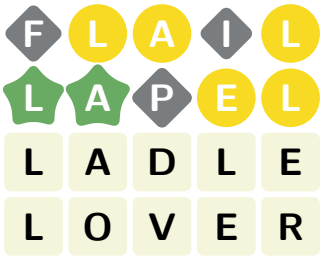
You can set the frames of the individual tiles using absent frame, present frame, correct frame and empty frame.

shapes (default: rectangle) [accepts: comma separated list of TikZ shapes]

Similar to the colours option, this is a short-hand for the setting shape colour of the absent, present, correct and empty tiles, in that order.


```
\begin{wordle}[shapes={circle, rectangle, circle}]{ANVIL}
  CRANE
  NATAL
  ANVIL
\end{wordle}
```

You can set the shape shapes of the individual tiles using absent shape, present shape, correct shape and empty shape You can use the shapes provided by the TikZ `shapes.geometric` package, including `diamond`, `ellipse`, `trapezium` and `star`; see section 71.2 of the TikZ manual.



```
% \usepackage{shapes.geometric}
\begin{wordle}[shapes={diamond, ellipse, star}]{LADLE}
   FLAIL
   LAPEL
   *
   LADLE
   LOVER
\end{wordle}
```

text (default: white) [accepts: comma separated list of valid colours]

This is a short-hand for the setting the text colours of the absent, present, correct and empty tiles, in that order.

```
\begin{wordle}[text={red, orange,blue}]{ANVIL}
  CRANE
  NATAL
  ANVIL
\end{wordle}
```

You can set the text borders of the individual tiles using absent text, present border, correct text and empty border

Common tile characteristics

The following options apply to all tiles.

noalign (default) **align**

The options tweak the vertical alignment of the letters in each row of the puzzle. This is only likely to be useful if you have lower case letters in your puzzle.

```
\begin{wordle}[align]{agony}
   groan
   angry
   agony
\end{wordle}
```

```
\begin{wordle}[noalign]{agony} % the default
  groan
  angry
  agony
\end{wordle}
```

font (default: \Large\bfseries\sffamily) [accepts: LaTeX font specification]

Sets the font used by all `wordle` letters. Any valid sequence of LaTeX font commands can be used.

```
\begin{wordle}[font=\large\sffamily]{ANVIL}
  CRANE
  NATAL
  ANVIL
\end{wordle}
```

rounded (default: 1mm) [accepts: a length]

Set TikZ `rounded corners` key for the `wordle` letter tiles.

```
\begin{wordle}[rounded=2mm]{ANVIL}
  CRANE
  NATAL
  ANVIL
\end{wordle}
```

separation (default: 0.5mm) [accepts: a length]

Sets the separation distance between the `wordle` letter tiles.


```
\begin{wordle}[separation=2mm, borders=black]{ANVIL}
  CRANE
  NATAL
  ANVIL
\end{wordle}
```

scale (default: 1) [accepts: a number]

The scale option rescales the `wordle` environment. The scale alters the dimensions sets by the rounded, separation size and thickness options. If you change the scale, then you will almost certainly want to change font size font as well, which you can do using the font option:


```
\begin{wordle}[scale=1.5, font=\huge\bfseries]{SIZE}
   HELP
   WISE
   SIZE
\end{wordle}
```

size (default: 8mm) [accepts: a length]

The size option sets the size of the `wordle` letter tiles. Unlike the scale option, size only changes the dimensions of the letter tiles.


```
\begin{wordle}[size=10mm, font=\huge\bfseries]{LADLE}
   FLAIL LAPEL * LADLE
\end{wordle}
```

thickness (default: 0.25mm) [accepts: a length]

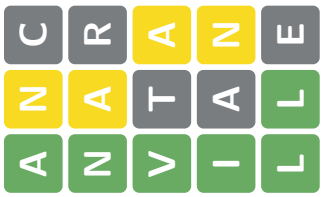
Sets the border thickness of the `wordle` letter tiles. By default, the borders of the tiles are white, which makes this setting hard to see, so the following example changes the border to red.


```
\begin{wordle}[thickness=1mm, borders=red]{LADLE}
   FLAIL
   LAPEL
   LADLE
\end{wordle}
```

tile style (default: –) [accepts: comma separated list of TikZ style keys]

A comma-separated list of Tikz node keys that are appended to the style of the TikZ node that contains each of the `wordle` letters. Some of the options given above can be set directly using the tile style option. When using the tile style, be careful not to break the special formatting of letters provided by the `wordle` environment.

With most of the `wordle` options, the latter options take precedence, however, the tile style option is applied last, so it overrides any competing options.




```
\begin{wordle}[tile style={rotate=45}]{ANVIL}
  CRANE
  NATAL
  ANVIL
\end{wordle}
```

Extra rows and columns

By default, all of the words in a `wordle` puzzle are assumed to have the same number of letters as the solution, and the number of rows in the puzzle is number of words given in the environment. The options below give more control over the number of rows and columns in the puzzle.

letters (default) **noletters**

By default, the letters in the puzzle are printed. You can hide the letters from the puzzle, while still keeping the `wordle` tile colouring, using noletters.

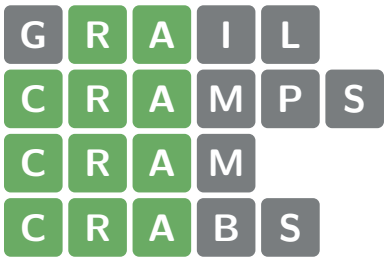

```
\begin{wordle}[letters]{CRAZE} % the default
  TRACE
  CREAM
  CRAZE
\end{wordle}
```



```
\begin{wordle}[noletters]{CRAZE}
  TRACE
  CREAM
  CRAZE
\end{wordle}
```

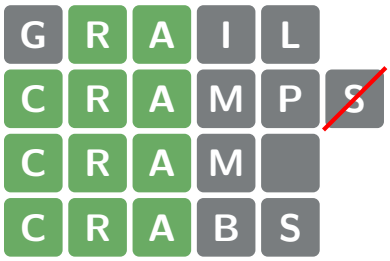
strict (default: false) [accepts: true/false/–]

By default, the `wordle` environment does not check that each word in the puzzle has the same length as the solution, so missing and extra letters receive no special processing.




```
\begin{wordle}[strict=false]{CRAZE} % the default
  GRAIL
  CRAMPS
  CRAM
  CRABS
\end{wordle}
```

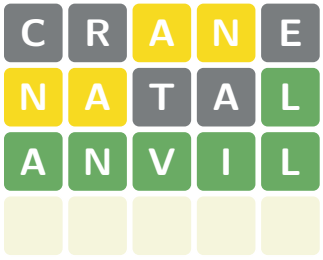
The strict option enforces the word length in the puzzle by marking missing letters as incorrect and striking out extra letters.




```
\begin{wordle}[strict]{CRAZE}
  GRAIL
  CRAMPS
  CRAM
  CRABS
\end{wordle}
```

rows (default: –)

By default, a `wordle` environment displays the words in the puzzle environment with one word per row. You can add extra (blank) rows to the puzzle with the rows option.



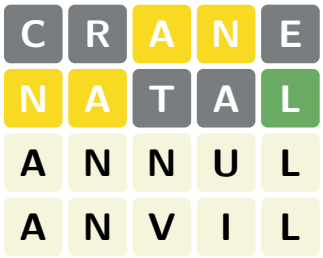

```
\begin{wordle}[rows=4]{ANVIL}
  CRANE
  NATAL
  ANVIL
\end{wordle}
```

The rows option only adds extra rows to the puzzle if they are needed. This option does not prevent "extra" rows from appearing.


```
\begin{wordle}[rows=2]{ANVIL}
  CRANE
  NATAL
  ANVIL
\end{wordle}
```

*

You can disable the special colouring of letter tiles in a `wordle` puzzle by adding an asterisk, *, as a *word*, into the puzzle.



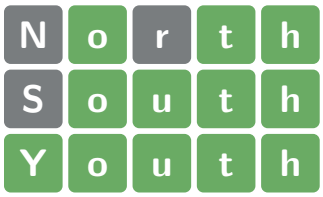

```
\begin{wordle}{ANVIL}
  CRANE
  NATAL
  *      % disable wordle colouring
  ANNUL
  ANVIL
\end{wordle}
```

Case sensitivity

By default, the letters are printed in upper and lower case, exactly as typed, and the letter comparisons are not case sensitive.

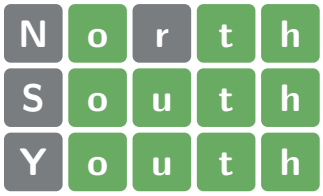
case sensitive (default: false)

By default the `wordle` puzzles are not case sensitive, but you can make them case sensitive using this option. Note that `case sensitive` is the same as `case sensitive=true` (and the default option is the same as `case sensitive=false`).




```
\begin{wordle}[case sensitive=false]{youth} % the default
  North
  South
  Youth
\end{wordle}
```

Here is a case sensitive version of this puzzle.

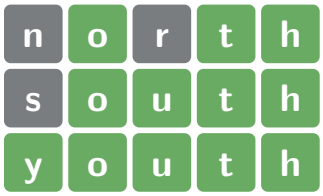



```
\begin{wordle}[case sensitive]{youth}
  North
  South
  Youth
\end{wordle}
```

As this puzzle is case sensitive, the `Y` on the last line is not marked as being correct because it does not match the `y` in the solution.

natural case (default) **lower case** **upper case**

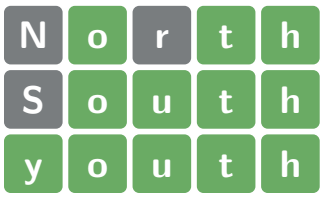
The lower case and upper case options force all letters in the puzzle to be in lower or upper case, respectively.




```
\begin{wordle}[lower case]{YOUTH}
  North
  South
  Youth
\end{wordle}
```


```
\begin{wordle}[upper case]{youth}
  North
  South
  Youth
\end{wordle}
```

As these examples show, both of these options disable the case sensitivity of the tests for colouring the `wordle` tiles; that is, they set case sensitive=false. To balance the lower case and upper case options, the natural case option makes the `wordle` environment restores the default behaviour, which respects the case of the letters as typed into the environment. The natural case option does not change the case sensitive setting.



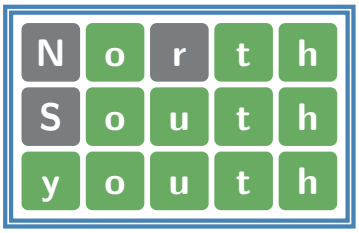

```
\begin{wordle}[natural case]{youth} % the default
  North
  South
  youth
\end{wordle}
```

Adding TikZ code

The `wordle` environment is a fancy wrapper around a `tikzpicture` environment, with some code under the hood that automatically colours the letter tiles according to how well they match the solution. The options in this section describe how to access the underlying TikZ layer.

tikz [accepts: TikZ commands]

The tikz option passes TikZ keys to the underlying `tikzpicture` environment. The tikz option is almost the same as using a `\tikzset{...}` command before the `wordle` environment except that it is applied to the `tikpicture` environment, which contains the `wordle` puzzle, such that the tikz keys are applied *after* all of options above and *before* tile style is applied.




```
% \usetikzlibrary{backgrounds}
\begin{wordle}[
    tikz={framed,
          background rectangle/.style={
            double,ultra thick, draw=SteelBlue
          }
    }]{youth}
  North South youth
\end{wordle}
```

As this example indicates, it is advisable to enclose complicated TikZ settings inside braces.

name (default: W)

All of the tiles in a `wordle` puzzle are given node names of the form ⟨name⟩-r-c, for the tile in row r and column c. By default, the prefix name is W. Within reason, the name prefix can be changed to anything you like using the name option.

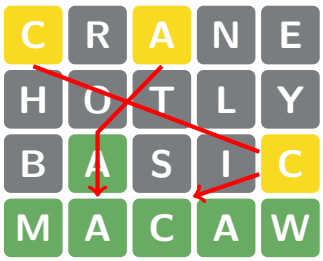
One way to use the named nodes for the letter tiles is with TikZ `overlay` and `remember picture` keys:


```
\begin{wordle}[tikz={remember picture}]{CRAZE}
  TRACE
  CREAM
  CRAZE
\end{wordle}
```

This makes it possible, for example, to draw arrows to tiles in a `wordle` puzzle:


```
\tikz[remember picture]\draw[overlay, very thick,
  opacity=0.5,->,red](0,0)node{No M!} to [out=90,
  in=180](W-2-5);
```

A second use of the tile node names is in conjunction with TikZ commands that can be added to a wordle puzzle using the second optional argument to the environment. As with the tikz option, it is advisable to enclose complicated TikZ commands inside braces.




```
\begin{wordle}[name=M,
      tikz={arr/.style={Red,ultra thick,->}}
    ]{MACAW}
    [{
      \draw[arr](M-1-3.south)--(M-3-2.north)--(M-4-2.north);
      \draw[arr](M-1-1.south)--(M-3-5)--(M-4-3.north east);
    }]
  CRANE HOTLY BASIC MACAW
\end{wordle}
```

In practice, we are not convinced that anyone will find a real use for this!

The package code

The wordle package is a LaTeX3 package. There are many comments in the code explaining how the code works. The automatic colouring of the letter tiles is a fun exercise in LaTeX3 programming, which was motivated by a tex.stackexchange.com post.

Bug reports and feature requests can be made on github.

Index