

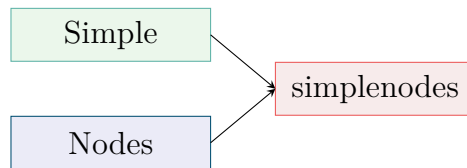
# Simplenodes

Bob Vergauwen

2022/03/31

## Contents

<b>1</b>	<b>Introduction</b>	<b>2</b>
<b>2</b>	<b>Usage</b>	<b>2</b>
2.1	Creating a node . . . . .	3
2.2	Linking nodes . . . . .	3
2.3	Positioning nodes . . . . .	3
<b>3</b>	<b>Package options</b>	<b>3</b>
<b>4</b>	<b>Examples</b>	<b>4</b>
4.1	Hello world . . . . .	4
4.2	More color . . . . .	4
4.3	Order of the arrows and double arrows . . . . .	5
4.4	Overly complex . . . . .	5
<b>5</b>	<b>Implementation</b>	<b>6</b>
<b>6</b>	<b>Read me</b>	<b>9</b>



## 1 Introduction

Creating tikz figures may be fun but after a while it becomes repetitive and you find yourself implementing the same repetitive patterns over and over again. This has a few negative effects on your daily productivity;

- bad coding style by copy-pasting old solutions,
- un-maintainable code,
- repeating yourself over and over again,
- inconsistent styles in a single document and over multiple documents.

This package tries to solve these issues by providing two simple commands;

- one command to create simple nodes,
- one command to link these nodes. Some simple styling options can be changed upon loading the package.

## 2 Usage

After including the package via the command

```
\usepackage{simplenodes}
```

all package commands are available.

## 2.1 Creating a node

Four different nodes are supported at the moment;

Command	Result
<code>\simplenode{name}{Normal}</code>	Normal
<code>\examplenode{name}{Example}</code>	Example
<code>\warnnode{name}{Warning}</code>	Warning
<code>\alertnode{name}{Alert}</code>	Alert

The first parameter is the `name` used to link two nodes together. The third parameter is the `text` displayed inside the node.

## 2.2 Linking nodes

Linking nodes is done via the command `\link{name1}{name2}`, where the name is defined upon creating the node.

## 2.3 Positioning nodes

The intended use of this package is to position the nodes using the tabular environment. Nodes can be placed in cells of tables to create an easy and even layout. This usage is demonstrated in the examples. The usage of this package is not restricted to this usecase.

## 3 Package options

A few packaged options are provided by using

```
\usepackage[name1=value1,name2=value2,...]{simplenodes}
```

The name, default value and description is provided in the following table

Name	Default	Description
align	center	Specifies the alignment of the text in the nodes.
width	25mm	The width of the nodes.
minheight	7mm	The minimum width of the nodes.
innersep	2pt	The inner separation between the text and the node.
outersep	0pt	The outer separation between the nodes.
thickness	0.4pt	The line thickness of the nodes and links.

## 4 Examples

### 4.1 Hello world



```

\begin{tabular}{ll}
\simplenode{hello}{hello} & \simplenode{world}{world} \\
\end{tabular}
\link{hello}{world}

```

### 4.2 More color



```

\begin{tabular}{llll}
\simplenode{1}{simple} & & & \\
\exampleneode{2}{example} & & & \\
\warnnode{3}{warn} & & & \\
\alertnode{4}{alert} & & & \\
\end{tabular}
\link{1}{2}
\link{2}{3}
\link{3}{4}

```

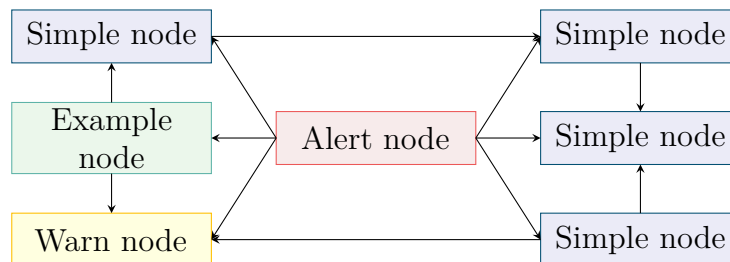
### 4.3 Order of the arrows and double arrows



```

\begin{tabular}{lll}
\simplesnode{1}{node 1} & \examplensode{2}{node 2} & \warnnsode{3}{node 3} \\
\end{tabular}
\end{center}
\link{1}{2}
\link{2}{3}
\link{3}{2}
  
```

### 4.4 Overly complex



```

\begin{tabular}{lllll}
\simplesnode{11}{ Simple node} & & & & \simplesnode{13}{ Simple node} \\
& & & & \\
\examplensode{21}{ Example node} & & \alernode{22}{Alert node} & & \simplesnode{23}{ Simple node} \\
& & & & \\
\warnnsode{31}{ Warn node} & & & & \simplesnode{33}{ Simple node} \\
& & & & \\
\end{tabular}
\link{22}{23} \link{22}{21} \link{22}{33}
  
```

```
\link{22}{31} \link{22}{11} \link{22}{13}
\link{11}{13} \link{33}{31} \link{21}{11}
\link{21}{31} \link{13}{23} \link{33}{23}
```

## 5 Implementation

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%% simplenodes.sty
%% <https://github.com/user9856749/simplenodes>
%%
%% MIT License
%%
%% Copyright (c) 2022 Bob Vergauwen
%%
%% Permission is hereby granted, free of charge, to any person obtaining a copy
%% of this software and associated documentation files (the "Software"), to deal
%% in the Software without restriction, including without limitation the rights
%% to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
%% copies of the Software, and to permit persons to whom the Software is
%% furnished to do so, subject to the following conditions:
%%
%% The above copyright notice and this permission notice shall be included in all
%% copies or substantial portions of the Software.
%%
%% THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
%% IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
%% FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
%% AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
%% LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
%% OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
%% SOFTWARE.
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

```
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{simplenodes}[2022/03/31 A package that provides simple nodes in four
\RequirePackage{kvoptions}
```

```

\DeclareStringOption[25mm]{width}
\DeclareStringOption[7mm]{minheight}
\DeclareStringOption[center]{align}
\DeclareStringOption[2pt]{innersep}
\DeclareStringOption[0pt]{outersep}
\DeclareStringOption[0.4pt]{thickness}
\ProcessKeyvalOptions*

\RequirePackage{kvoptions}
\RequirePackage{tikz}
\RequirePackage{color}
\usetikzlibrary{math}

% Coordinate manipulations

\newcommand{\gettikzxy}[3]{%
  \tikz@scan@one@point\pgfutil@firstofone#1\relax
  \edef#2{\the\pgf@x}%
  \edef#3{\the\pgf@y}%
}

% Define the main color
\definecolor{InvisibleRed}{rgb}{0.97, 0.92, 0.92}
\definecolor{InvisibleGreen}{rgb}{0.92, 0.97, 0.92}
\definecolor{InvisibleBlue}{rgb}{0.92, 0.92, 0.97}
\definecolor{InvisibleYellow}{rgb}{1.0, 1.0, 0.88}

\definecolor{MediumRed}{rgb}{0.925, 0.345, 0.345}
\definecolor{MediumGreen}{rgb}{0.37, 0.7, 0.66}
\definecolor{MediumBlue}{rgb}{0.015, 0.315, 0.45}
\definecolor{MediumYellow}{rgb}{1.0, 0.75, 0.0}

% Define the node
\newcommand\mynode[2]{
  \tikz[remember picture,baseline]
  \node[

```

```

draw=#1,fill=#2,
rectangle,
line width = \simplenodes@thickness,
align=\simplenodes@align,
text width=\simplenodes@width,
inner sep=\simplenodes@innersep,
outer sep=\simplenodes@outersep,
minimum height=\simplenodes@minheight,
]
}

% Define the line
\newcommand\myline[2]{
  \draw[
    ->,
    line width = \simplenodes@thickness
  ] (#1) to (#2);
}

\newcommand\link[2]{
  \begin{tikzpicture}[remember picture, overlay, >=stealth, shift={(0,0)}]
    \gettikzxy{#1}{\ax}{\ay}
    \gettikzxy{#2}{\bx}{\by}
    \tikzmath{
      if \ax == \bx then {
        if \ay < \by then {
          {\myline{#1.north}{#2.south}};
        };
        if \ay > \by then {
          {\myline{#1.south}{#2.north}};
        };
      };
      if \ax < \bx then {
        {\myline{#1.east}{#2.west}};
      };
      if \ax > \bx then {
        {\myline{#1.west}{#2.east}};
      };
    };
  \end{tikzpicture}
}

```



```

    };
  \end{tikzpicture}
}

% Provide the commands
\newcommand\simplenode[2]{\mynode{MediumBlue}{InvisibleBlue} (#1){#2};}
\newcommand\examplenode[2]{\mynode{MediumGreen}{InvisibleGreen} (#1){#2};}
\newcommand\alertnode[2]{\mynode{MediumRed}{InvisibleRed} (#1){#2};}
\newcommand\warnnode[2]{\mynode{MediumYellow}{InvisibleYellow} (#1){#2};}

```

## 6 Read me

**# simplenodes - Version 2022/03/31**

simplenodes is a TeX macro package for generating simple node base flow graphs or diagrams, build upon the Ti\*k\*Z package.

The package provides two basic commands, one to generate a node and one command to create links between them.

The positioning of the nodes is not handled by the package itself but is preferably done in the tabular environment.

In total, 4 simple node types are defined, loosely based on the nomenclature and color patterns of the popular java script bootstrap (<https://getbootstrap.com/>).

See the file ``simplenodes.pdf`` for more information on the possibilities and best use case of this package.

See the file ``LICENSE`` for license details.

### ## Development

This package is currently maintained by Bob Vergauwen, (bob@vergauwen.me). Please go to the official repository at <https://github.com/user9856749/simplenodes> to submit bug reports, request new features, etc.

## 7 Licence

### Licenses for the simplenode package

=====

MIT License

Copyright (c) 2022 Bob Vergauwen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.