tikzbrickfigurines

Drawing brick-figurines
with TikZ.

Version 0.1.1 – 18/08/2025

Cédric Pierquet
cpierquet – at – outlook . fr
https://github.com/cpierquet/latex-packages/tikzbrickfigurines
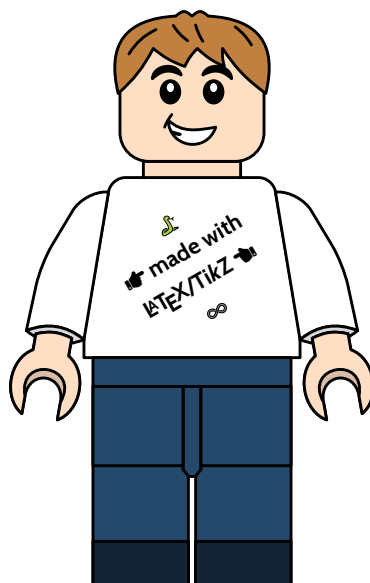
1 Introduction

The package allows to draw *brick*-figurines with TikZ.
The user can modify their colour, shape and elements.

The package is included in both T_EXLive and MiKT_EX and available from CTAN (https://ctan.org/pkg/tikzbrickfigurines).

The development version of this package is located on github at https://github.com/cpierquet/latex-packages/tikzbrickfigurines. If you have any problems, ideas or other feedback, please make constructive use of its bug tracker.

The style of this documentation is inspired by samcarter's doc for their great TikZbricks package (https://ctan.org/pkg/tikzbricks).

Copyright © Cédric Pierquet.
- Inspired by LEGO™, but all graphics are made from scratch.
- Permission is granted to copy, distribute and/or modify this software under the terms of the LaTeX project public licence, version 1.3c or later.

Contents

2 History

```
0.1.1: Enhancements for adjusted logo
0.1.0: Initial version
```

3 Loading, developments

3.1 Loading, useful packages

To use `tikzbrickfigurines`, simply use `\usepackage{tikzbrickfigurines}`.

```
\usepackage{tikzbrickfigurines}
```

Loaded packages are `tikz`, `simplekv`, `xstring`, `ifthen`, `listofitems`, `graphicx`, `etoolbox` and `calc`. Loaded libraries are `shapes.geometric,bbox,decorations,decorations.pathmorphing,calc`.

3.2 Developments

For the moment, the package uses internal macros for creating/manipulating pieces and elements, but eventually, the future plan is:

- to manipulate these elements with a `pic` code;

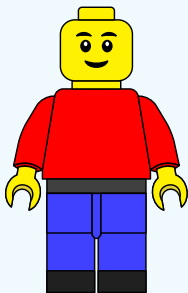- to improve the code for the logo (work in progress).

4 Global usage

4.1 Version 1

An individual Ti*k*Zbrickfigurines can be drawn with:

```
\tikzbrickfigurine%
  [keys]%
  <tikz options>%
  {height}
```

```
%default output
\tikzbrickfigurine{1.5in}
```
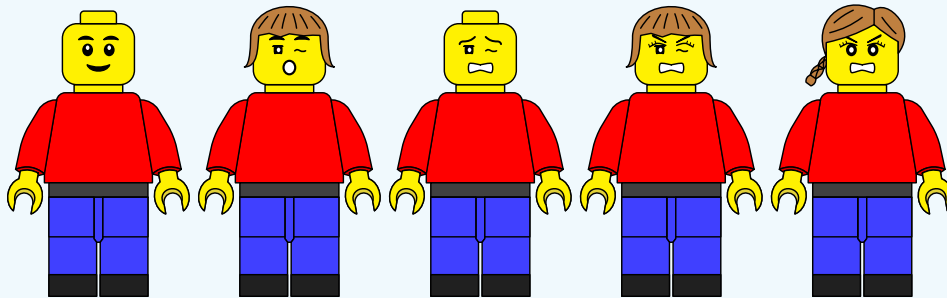

4.2 Version 2

An individual Ti*k*Zbrickfigurines can be drawn with:

```
\minitikzbrickfigurine%
  [keys]%
  <tikz options>%
  {height}%
  {list of styles, within M/E/Eb/H}
```

```
\minitikzbrickfigurine{1.5in}{1/1/1/0}%default style
\minitikzbrickfigurine{1.5in}{4/7/1/2}%with choosen styles
\minitikzbrickfigurine{1.5in}{3/*/9/*}%with choosen and random styles
\minitikzbrickfigurine{1.5in}{*}%with full random styles
\minitikzbrickfigurine{1.5in}{*}%with other full random styles
```

4.3 Individual part

An individual Ti*k*Zbrickfigurines piece can be drawn with:

```
\tikzbrickfigurinepiece%
  [keys]%
  <tikz options>%
  {piece / style}%
  {height}
```

```
\tikzbrickfigurinepiece[head=true]{hair=3}{1in}%
\tikzbrickfigurinepiece[head=true]{eyes=7}{1in}%
\tikzbrickfigurinepiece[head=true]{mouth=2}{1in}%
\tikzbrickfigurinepiece{head=2/3/*/5}{1in}%
```

5 Keys and styles

5.1 Keys

Available **keys** are:

- `color lines`: eventual color for borders

- `color skin`: global color for skin (override individual colors if given)

- `color sweat`: global color for body and arms (override individual colors if given)

- `color pant`: global color for pant (override individual colors if given)

- `color belt`: color for the belt (`darkgray`)

- `color bottom belt`: color for the belt (`blue!75`)

- `color body`: simple color for the body (`red`)

- `color arm`: simple color for the arms (`red`)

- `color arm shadow`: simple color for the arms shadow (`red!85!black`)

- `color hand`: simple color for the hand (`yellow`)

- `color hand shadow`: simple color for the hand shadow (`yellow!85!black`)

- `color neck`: simple color for the neck (`yellow`)

- `color head`: simple color for the head (`yellow`)

- `color hair`: color for the hair (`brown`)

- `color top pant`: simple color for top pant (`blue!75`)

- `color middle pant`: simple color for mid pant (`blue!75`)

- `color foot`: simple color for shoes (`darkgray!50!black`)

- `adjusted logo`: the logo will be adjusted to sweat

- `display logo`: boolean for logo (`false`)

- `custom logo`: boolean for custom logo (`false`)

- `logo`: code for the optional logo

- `scale logo`: custom scale for `display logo` (`0.667`)

- `empty`: boolean for empty figurine (`false`)

- `hairstyle`: style of hair, from 0 to 10 (`0`)

- `eyestyle`: style of eyes, from 1 to 10(`1`)

- `eyebrowstyle`: style of eyebrows, from 1 to 10(`1`)

- `mouthstyle`: style of mouth, from 1 to 10(`1`)

- `seed`: random seed for some hair code (`365479`)

- `bbox` boolean for using `bbox` library (`false`)

- `vcenter` boolean for centering vertically, with `tikz` baseline (`false`)

- `head`: boolean for showing head with individual element (`false`)

5.2 Elements

5.2.1 Body / legs / head / arms / hands / heads

```
\tikzbrickfigurinepiece[keys]<tizk options>{piece}{height}
```

piece	body	legs	head	left arm	right arm	left arm wo hand	right arm wo hand	left hand	righ hand

### 5.2.2 Mouth

```
\tikzbrickfigurinepiece[keys]<tizk options>{mouth=...}{height}
```

mouth=	1	2	3	4	5	6	7	8	9	10

5.2.3 Eyes

```
\tikzbrickfigurinepiece[keys,head=true]<tizk options>{eyes=...}{height}
```

eyes=	1	2	3	4	5	6	7	8	9	10

5.2.4 Eyebrows

```
\tikzbrickfigurinepiece[keys,head=true]<tizk options>{eyebrows=...}{height}
```

eyebrows=	1	2	3	4	5	6	7	8	9	10
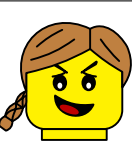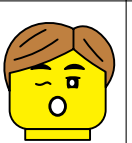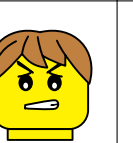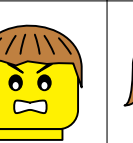
5.2.5 Hair

```
\tikzbrickfigurinepiece[keys,head=true]<tizk options>{hair=...}{height}
```

hair=	0	1	2	3	4	5	6	7	8	9	10

5.2.6 Head(s)

```
\tikzbrickfigurinepiece[keys]<tizk options>{head=...}{height}
```

head=	*	4/8/1/6	2/*/*/9	3/3/3/3	10/10/10/2

5.3 The optional logo

Due to scaling process, a global scale is applied to whole figure (with the Ti*k*Z option `transform shape`). So every node is scaled too.

The special key `scale logo=...` can adjust most precisely the logo!

There's three methods in order to place a logo:

- boolean `custom logo` and key `logo=...` with the same global scale;

- boolean `display logo` and key `logo=...` with a *cancel* scale;

- key `adjusted logo=...` to adjust in the sweat.

```
\def\mylogo{\sffamily\rotatebox{30}{%
  \begin{tabular}{@{}c@{}}%
    \faPython\ I'm a \\ Python \\ user \faPython
  \end{tabular}}%
}

\mylogo
```

```
\tikzbrickfigurine[custom logo,logo=\mylogo]{4cm}%with 'global' scale
\tikzbrickfigurine[display logo,logo=\mylogo]{4cm}%with 'cancel' scale
\tikzbrickfigurine[adjusted logo=\mylogo]{4cm}%adjusted
```
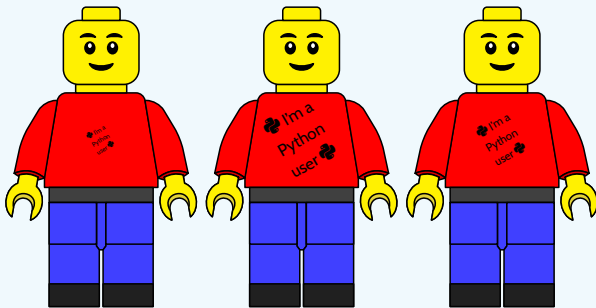
```
\tikzbrickfigurine[custom logo,logo=\mylogo,scale logo=1]{4cm}%with 'global' scale
\tikzbrickfigurine[display logo,logo=\mylogo,scale logo=1]{4cm}%with 'cancel' scale
\tikzbrickfigurine[adjusted logo=\mylogo,scale logo=1]{4cm}%adjusted
```
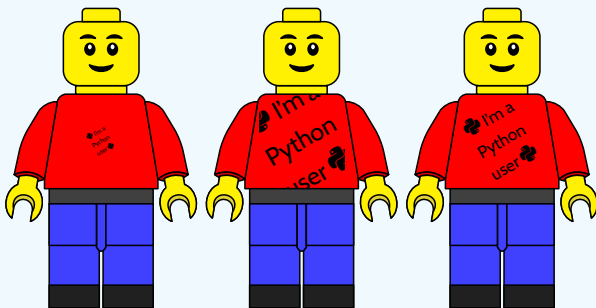
6 Samples

6.1 Influence of options

```
\definecolor{brickskin}{HTML}{FFDFC4}

\def\mylogo{\rotatebox{30}{\sffamily\begin{tabular}{@{}c@{}}\faFastForward\ I'm a\\\LaTeX\\user
    \faFastBackward\end{tabular}}}

\tikzbrickfigurine%
  [%
    color lines=darkgray,
    color belt=lightgray,
    color bottom belt=blue!75,
    color body=red,
    color arm=violet,
    color arm shadow=lime,
    color hand=yellow,
    color hand shadow=orange,
    color neck=teal,
    color head=brickskin,
    color hair=cyan,
    color top pant=pink,
    color middle pant=pink!50!black,
    color foot=white,
    adjusted logo=\mylogo,
    scale logo=1,
    hairstyle=6,%
    eyestyle=5,%
    eyebrowstyle=10,%
    mouthstyle=2
  ]%
  <rotate=15>
  {2.75in}%
```

6.2 Random usage

```
\newcommand\randomcolor[1]{%
  \pgfmathsetmacro{\R}{random(0,10000)/10000}%
  \pgfmathsetmacro{\G}{random(0,10000)/10000}%
  \pgfmathsetmacro{\B}{random(0,10000)/10000}%
  \definecolor{#1}{rgb}{\R,\G,\B}%
}

\pgfmathdeclarerandomlist{listsksintones}%
  {{brickskin}{yellow}{pink}{brown}{brown!50!white}}
\pgfmathdeclarerandomlist{listhairtones}%
  {{lightgray!15}{yellow}{orange}{brown}{gray}{black}}
\pgfmathdeclarerandomlist{listlogos}%
  {{unicorn}{alien}{snake}{adhesive bandage}{desert island}{videocassette}{alien monster}}

%five 'random' clothes + face + skin + hair + logo brickfigurines
\foreach \i in {1,...,5}{%
  \randomcolor{randomsweatcolor}%
  \randomcolor{randompantcolor}%
  \randomcolor{randomshoecolor}%
  \pgfmathrandomitem{\skinrandom}{listsksintones}%
  \pgfmathrandomitem{\hairrandom}{listhairtones}%
  \pgfmathrandomitem{\logorandom}{listlogos}%
  \minitikzbrickfigurine%
    [%
      color skin=\skinrandom,%
      color hair=\hairrandom,%
      color sweat=randomsweatcolor,%
      color pant=randompantcolor,%
      color foot=randomshoecolor,%
      display logo,scale logo=0.8,%
      logo={\openmoji{\logorandom}},%
      vcenter
    ]%
    <rotate=\fpeval{randint(-20,20)}>%
    {1.75in}{*}
}
```
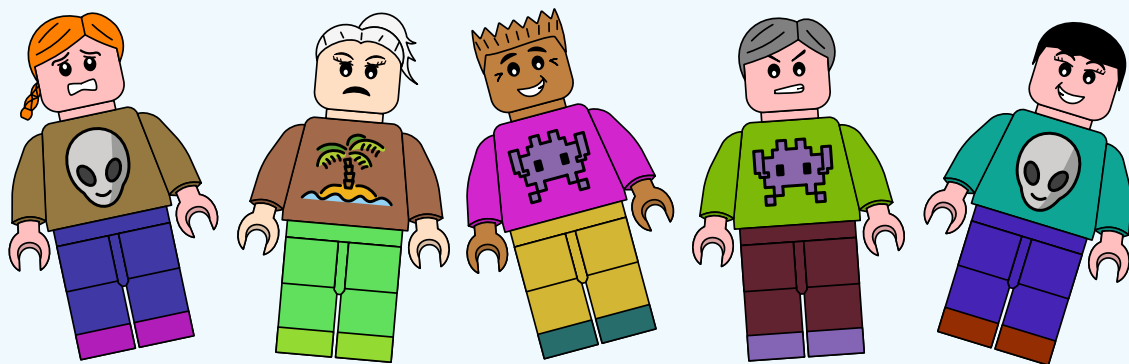
6.3 Overlay usage

Several nodes a created within internal code, and with TikZ options, overlays elements can be added.

```
\tikzbrickfigurine%
  [figure name=myfigurine]%
  <remember picture>
  {4.5in}%
```

node (myfigurine-HAIR)

node (myfigurine-EYEBROWS)

node (myfigurine-EYES)

node (myfigurine-MOUTH)

node (myfigurine-LOGO)

node (myfigurine-BELT)

node (myfigurine-LEFTHAND)

node (myfigurine-RIGHTHAND)

node (myfigurine-LEFTFOOT)

node (myfigurine-RIGHTFOOT)
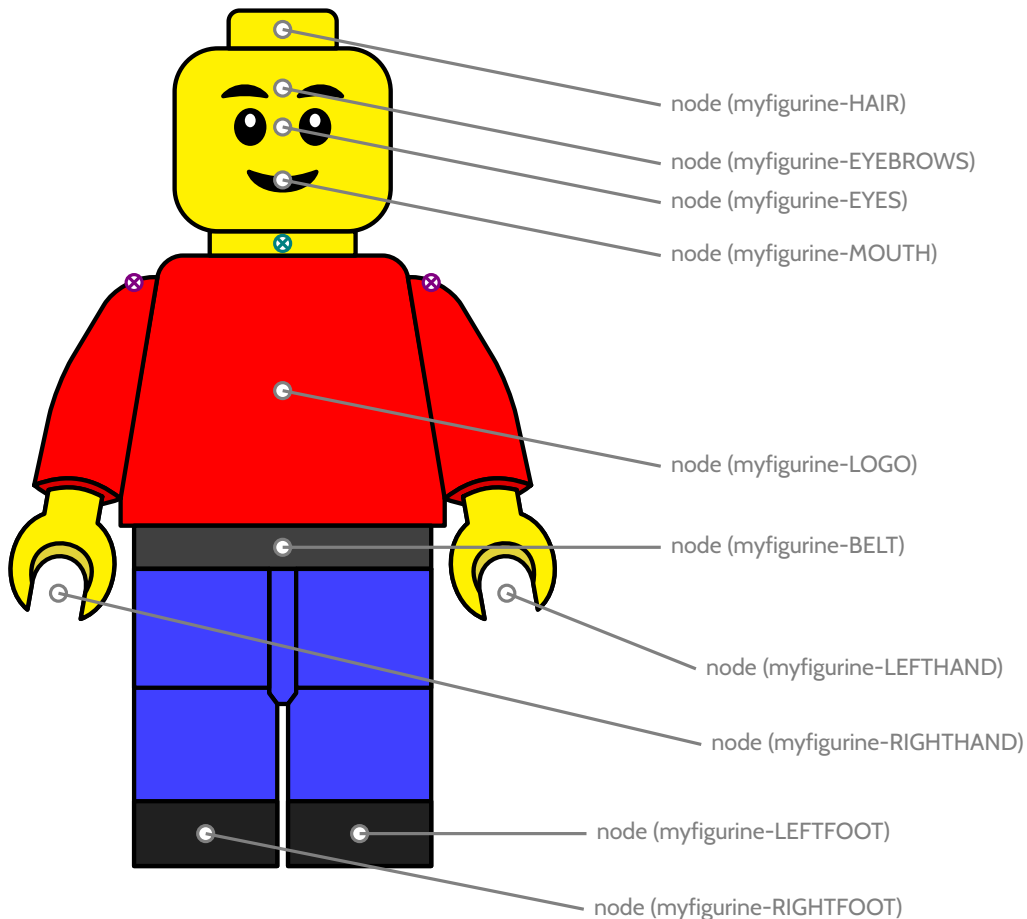
Other available nodes are:

- `(<mynode>-RIGHTSHOULDER)`, `(<mynode>-LEFTSHOULDER)`;

- `(<mynode>-NECK)`.