

# customenvs [en]

Some custom environments,  
or small patches.

Version 0.3.1 -- 13/02/2025

Cédric Pierquet

c pierquet -- at -- outlook . fr

<https://forge.apps.education.fr/pierquetcedric/packages-latex>

---

## Contents

<b>1</b>	<b>History</b>	<b>2</b>
<b>2</b>	<b>The package customenvs</b>	<b>3</b>
2.1	Idea . . . . .	3
2.2	Loading . . . . .	3
<b>3</b>	<b>Answers for a MCQ</b>	<b>4</b>
3.1	Idea . . . . .	4
3.2	Examples . . . . .	4
<b>4</b>	<b>List with picked elements (random or not)</b>	<b>6</b>
4.1	Global use . . . . .	6
4.2	Examples . . . . .	6
<b>5</b>	<b>Pencil of skills</b>	<b>8</b>
5.1	Global use . . . . .	8
5.2	The macro . . . . .	8
5.3	Examples . . . . .	8
<b>6</b>	<b>Score banner</b>	<b>10</b>
6.1	Global use . . . . .	10
6.2	The macro . . . . .	10
<b>7</b>	<b>SMS conversation</b>	<b>11</b>
7.1	Global use . . . . .	11
7.2	The environment . . . . .	11
7.3	Macros for the bubbles . . . . .	11
7.4	Examples . . . . .	12
<b>8</b>	<b>Title banner</b>	<b>14</b>
8.1	Global usage . . . . .	14
8.2	Examples . . . . .	14
<b>9</b>	<b>Various commands</b>	<b>16</b>
9.1	Difficulty levels with stars (fontawesome5) . . . . .	16
9.2	Difficulty levels with stars (tikz) . . . . .	16
9.3	Flared arrow . . . . .	16
9.4	Small markerbox . . . . .	17
9.5	Wheel of skills / speedometer . . . . .	17

---

# 1 History

- v0.3.1 : Box for MCQ
- v0.3.0 : Bugfix with beamer
- v0.2.7 : Key for mixing answers in MCQ
- v0.2.6 : Whell of skills, speedometer
- v0.2.5 : Bugfix with exercices ([fr] macro)
- v0.2.4 : Small box *marker*
- v0.2.3 : Highway signs + sold banners (see [fr] doc)
- v0.2.2 : Flared arrow, with TikZ
- v0.2.1 : Enhancements for *stars skills* + AutoGrid for TikZ (see [fr] doc)
- v0.2.0 : Skills with stars (fontawesome5 or TikZ)
- v0.1.9 : Title banner
- v0.1.8 : Score banner
- v0.1.7 : Small patch for Vignette macro (see [fr] documentation)
- v0.1.6 : Small patches for displayskip + pas-tableur (see [fr] documentation)
- v0.1.5 : New macros for boxes with tcolorbox (see [fr] documentation)
- v0.1.4 : Create a SMS conversation
- v0.1.3 : Environment for exercise(s) (in french doc)
- v0.1.2 : Pencil of skills
- v0.1.1 : Skills table (only french for the moment...)
- v0.1.0 : Initial version

## 2 The package customenvs

### 2.1 Idea

The idea is to propose some classic environments with customizations (some are, for the moment, only in french) :

- write in *multicols*, with spacings enhancements ;
- present answers for a *MCQ* ;
- create a list with *chosen items* (randomly or by numbers) ;
- present a skill table.

The global idea is to propose *user-friendly* environments, with explicit customizations, without using verbose syntax ; but there's other solutions, using for example `\vspace` ou `\setlength` or `spacingtricks` package.

### 2.2 Loading

The package loads within the preamble with `\usepackage{customenvs}`.

Loaded packages are

- `xstring`, `simplekv`, `listofitems`, `randomlist` and `xintexpr` ;
- `enumitem` ;
- `multicol` ;
- `tabularray` ;
- `fontawesome5` ;

Due to limitations, `enumitem/multicol/tabularrayfontawesome5` can be *unloaded* by `customenvs` (user must load them manually) via options :

- `<beamer>` for using with beamer ;
- `<noenum>` ;
- `<nomulticol>` ;
- `<notblr>` ;
- `<nofa>` ;

```
%with all packages
\usepackage{customenvs}

%with option to no load some packages
\usepackage[option(s)]{customenvs}
```

## 3 Answers for a MCQ

### 3.1 Idea

The idea is to propose an environment to present answers for a MCQ with `tabularray` (and not `multicols`). It's possible to use 2, 3 or 4 answers (and with 4 answers it's possible to use 2 columns.)

```
\AnswersMCQ[options]{list of answers}<tblr options>
```

The available options are :

- `Width` : `0.99\linewidth` by default ;
- `Lines` : `false` by default ;
- `SpaceCR` for Columns/Rows spacing, within `col/row` or `global` : `6pt/2pt` by default ;
- `NumCols`, 2 or 4 : 4 by default ;
- `Labels` for the labels : `a.` by default ;
  - with `box` to use a *Box* ;
  - with `a` to *enumerate* `a b c d` ;
  - with `A` to *enumerate* `A B C D` ;
  - with `1` to *enumerate* `1 2 3 4` ;
- `FontLabels` : `\bfseries` by default ;
- `SpaceLabels` : `\kern5pt` by default ;
- `Shuffle`, for mixing answers : `false` by default ;
- `Swap`, for ACBD instead of ABCD : `false` by default.

The list of answers must be given within `answA § answB § ...`.

Specific options for `tblr` are given between last optionnal argument, between `<...>`.

### 3.2 Examples

```
%default output
```

```
\AnswersMCQ{Answer A § Answer B § Answer C § Answer D}
```

a. Answer A	b. Answer B	c. Answer C	d. Answer D
-------------	-------------	-------------	-------------

```
\AnswersMCQ[Lines]{Answer A § Answer B § Answer C § Answer D}
```

```
\AnswersMCQ[Lines,Shuffle]{Answer A1 § Answer B1 § Answer C1 § Answer D1}
```

```
\AnswersMCQ[Lines,Shuffle]{Answer A2 § Answer B2 § Answer C2 § Answer D2}
```

a. Answer A	b. Answer B	c. Answer C	d. Answer D
a. Answer D1	b. Answer B1	c. Answer A1	d. Answer C1
a. Answer D2	b. Answer C2	c. Answer B2	d. Answer A2

```
\AnswersMCQ[Lines,Labels=(1.),SpaceLabels={~~~}]{Answer A § Answer B § Answer C}
```

(1.) Answer A	(2.) Answer B	(3.) Answer C
---------------	---------------	---------------



## 4 List with picked elements (random or not)

### 4.1 Global use

The idea is to :

- create a list of items, the base for choices ;
- print the list with picked items.

```
\CreateItemsList{list}{macro}{listname}
```

```
\ListItemsChoice[keys]{macro}{listname}(numbers)<enumitem options>!beamer options!
```

The available `keys` are :

- `Type` : `enum` or `item` ;
- `Random` : `false` by default.

The second argument, mandatory and between `{...}` is the macro for the list.

The third argument, mandatory and between `{...}` is the name of the list.

The fourth argument, mandatory and between `(...)` give :

- the number of random items to display, with `Random=true` ;
- the numbers of picked items, within `num1,num2,...`.

The next argument, optional and between `<...>` gives specific options to `enumitem` environment.

The last argument, between `!..!` gives specific options to `enumitem` environment with `beamer`.

Controls are done :

- to verify that the list doesn't exist (for the creation) ;
- to verify that that the list still exist (for the display).

### 4.2 Examples

```
%creation of list ListItems, with macro \mylistofitems
\CreateItemsList%
  {Answer A,Answer B,Answer C,Answer D,Answer E,Answer F,Answer G,Answer H}%
  {\mylistofitems}{ListItems}
```

```
%items random
\ListItemsChoice[Random]{\mylistofitems}{ListItems}(5)
```

1. Answer B
2. Answer C
3. Answer H
4. Answer G
5. Answer D

```
%items picked
\ListItemsChoice{\mylistofitems}{ListItems}(1,4,3,8,2)
```

1. Answer A
2. Answer D
3. Answer C
4. Answer H
5. Answer B

```
%creation of list ListItemsB, with macro \mylistofitemsb
\CreateItemsList%
  { $\int_0^1 x^2 dx$ }, { $\int_0^1 x^3 dx$ }, { $\int_0^1 x^4 dx$ }, ...}%
  {\mylistofitemsb}{ListItemsB}
```

```
%items picked
\ListItemsChoice[Type=item]{\mylistofitemsb}{ListItemsB}(7,2,1,5,3)<label=$--$>
```

--  $\int_0^1 x^8 dx$

--  $\int_0^1 x^3 dx$

--  $\int_0^1 x^2 dx$

--  $\int_0^1 x^6 dx$

--  $\int_0^1 x^4 dx$

## 5 Pencil of skills

### 5.1 Global use

The idea is to :

- present of list of categories and skills ;
- presented like a pencil.

The code (within CC-BY-SA 4.0 license) is adapted from :

<https://tex.stackexchange.com/questions/504092/replicating-a-fancy-bordered-text-style-in-latex/504145#504145>

```
\PencilSkills[keys]<tikz options>{listofskills}
```

The style is globally fixed, but there's some customization available.

### 5.2 The macro

Available `keys` are :

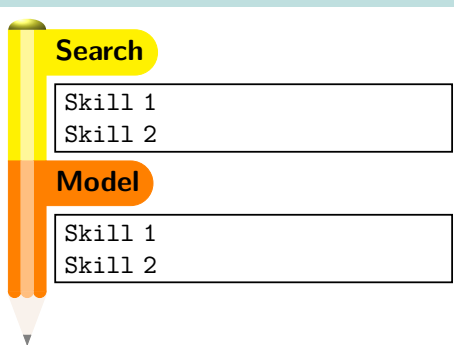
- `FontCateg` : font for the categories ;
- `FontBlock` : font for the skills ;
- `Colors` : list of category's colors  
`BgCateg1/FgCateg1,BgCateg1/FgCateg1,...`  
(if `FgCateg1` est missing, `black` is used)
- `BlockWidth` : width of skill's block ;
- `Scale` : global scale
- `BlackWhite` : boolean for B&W.

The second argument, optional and between `<...>` gives specific options to `enumitem` environment.

The last argument, mandatory and between `(...)` give the list of categories/skills, within `Categ1/ListSkills1,Categ2/ListSkills2,...`

### 5.3 Examples

```
%default output  
\PencilSkills{Search/Skill 1\\ Skill 2,Model/{Skill 1\\ Skill 2}}
```

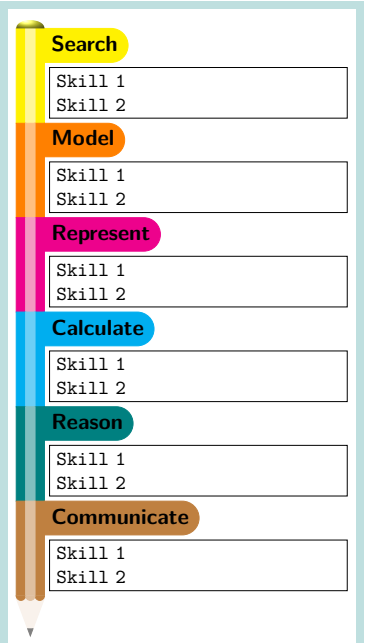




```

\-pencil-skills[Scale=0.75]%
  {Search/Skill 1\\Skill 2,Model/{Skill 1\\Skill 2},%
  Represent/{Skill 1\\Skill 2},Calculate/{Skill 1\\Skill 2},%
  Reason/{Skill 1\\Skill 2},Communicate/{Skill 1\\Skill 2}}

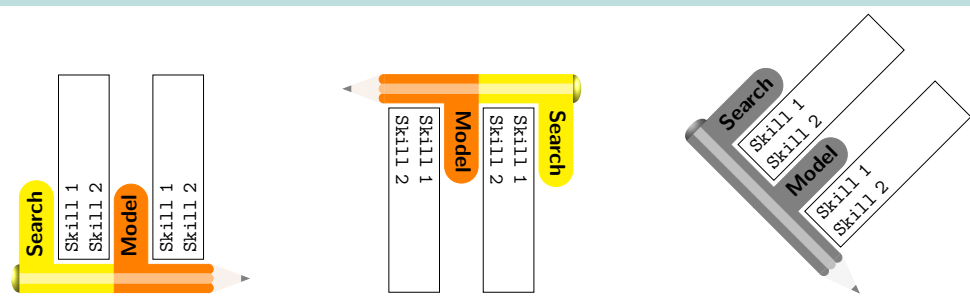
```



```

\-pencil-skills[Scale=0.75,BlockWidth=3cm]<rotate=90>{
  Search/Skill 1\\Skill 2,Model/{Skill 1\\Skill 2}}
\hspace{1cm}
\-pencil-skills[Scale=0.75,BlockWidth=3cm]<rotate=-90>{
  Search/Skill 1\\Skill 2,Model/{Skill 1\\Skill 2}}
\hspace{1cm}
\-pencil-skills[Scale=0.75,BlockWidth=3cm,BlackWhite]<rotate=45>{
  Search/Skill 1\\Skill 2,Model/{Skill 1\\Skill 2}}

```



## 6 Score banner

### 6.1 Global use

The idea is to insert a score banner, with customization.

```
ScoreBanner[keys]{number}
```

```
%default output  
\ScoreBanner{}
```



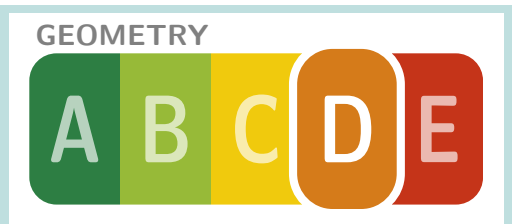
### 6.2 The macro

Available keys are :

- **Height** : height of the banner (without the legend) ; 1 by default
- **Ratio** : ratio of boxes ; 0.6 by default
- **Symbols** : labels ; A,B,C,D,E by default
- **Legend** : legend (uppercase) ; score by default ;
- **Font** : global font ; \bfseries\sffamily by default
- **ShowLegend** : boolean for the legend ; false by default ;
- **Colors** : colors for boxes ;  
colorNS1,colorNS2,colorNS3,colorNS4,colorNS5 by default ;
- **ScaleSymbols** : scale H/V of labels ; 1.25,1.65 by default ;
- **Colbg** : background color for select box ; white by default.

If the list of colors doesn't fill all the boxes, lightgray color is used.

```
\ScoreBanner[Legend=Geometry,Height=2]{4}
```



```
%bg of lower part is yellow!25  
\def\lstcouleurs{colorNS1,colorNS2,colorNS3,colorNS4,colorNS5,purple}  
\ScoreBanner%  
[ScaleSymbols={1.33,2},Height=3.25,ShowLegend=false,Ratio=0.75,  
Symbols={1,2,3,4,5,6},Colors=\lstcouleurs,  
Colbg=yellow!25]{1}
```



## 7 SMS conversation

### 7.1 Global use

The idea is to present a conversation of SMS.

```
\begin{ChatSMS}[keys]{name}  
  \InSMS(*){time}{msg}  
  \OutSMS*(*){time}{msg}  
\end{ChatSMS}
```

The style is globally fixed, but there's some customization available.

### 7.2 The environment

Available `keys` are :

- `height` : height of the window (auto or specific) ; `auto` by default
- `width` : width of the window ; `7cm` by default
- `margin` : margin (L or R) for the bubble `1.5cm` by default
- `color` : *main* color (banner) ; `teal!75!cyan!75!white` by default ;
- `colback` : color for background ; `lightgray!5` by default
- `colorin` : color for incoming SMS ; `lime!25` by default
- `colorout` : color for outgoing SMS ; `teal!25` by default
- `writetxt` : text of sending zone ; `Write` by default
- `fonttxt` : bubble's font ; `\normalfont` by default
- `avatar` : avatar of contact ; `\faAddressCard` by default
- `dispavatar` : boolean for displaying avatar near the bubbles ; `false` by default
- `blackwhite` : boolean pour black&white. `false` by default

The argument, mandatory and between `(...)` give the name of the contact.

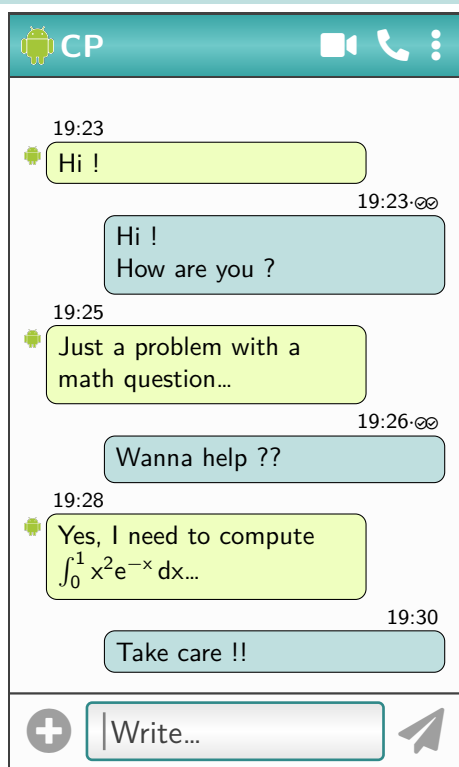
### 7.3 Macros for the bubbles

Regarding the bubble creation commands, `\InSMS` and `\OutSMS`:

- the *starred* version does not display the *checkmarks* of *good reception*;
- the first mandatory argument is the time to display ;
- the second mandatory argument is the message to display (including multi-lines).

## 7.4 Examples

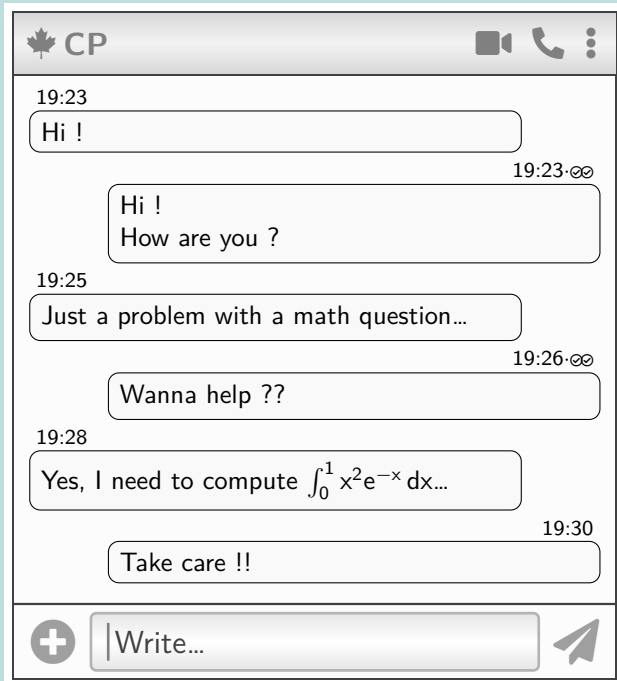
```
%with a personal image
\begin{ChatSMS}%
  [width=6cm,fonttxt=\sffamily,height=10cm,avatar=img/android,dispavatar]{CP}
  \InSMS{19:23}{Hi !}
  \OutSMS{19:23}{Hi !\ \ How are you ?}
  \InSMS{19:25}{Just a problem with a math question\ldots}
  \OutSMS{19:26}{Wanna help ??}
  \InSMS{19:28}{Yes, I need to compute  $\int_0^1 x^2 e^{-x} dx$ \ldots}
  \OutSMS*{19:30}{Take care !!}
\end{ChatSMS}
```



```

\begin{ChatSMS}%
  [width=8cm,fonttxt=\sffamily,avatar=\faCanadianMapleLeaf,blackwhite]{CP}
  \InSMS{19:23}{Hi !}
  \OutSMS{19:23}{Hi !\ How are you ?}
  \InSMS{19:25}{Just a problem with a math question\ldots}
  \OutSMS{19:26}{Wanna help ??}
  \InSMS{19:28}{Yes, I need to compute $\mathsf{\int_0^1 x^2e^{-x}\,dx}$\ldots}
  \OutSMS*{19:30}{Take care !!}
\end{ChatSMS}

```



## 8 Title banner

### 8.1 Global usage

The idea is to propose a banner, made with TikZ, to present for example a title. The global style is fixed, but few customization are possible.

```
\tkzBannerTri[keys]{number}{title}
```

```
\tkzBannerTri{01}{Titre du document}
```



Available keys are :

- `height` (2.5em by default)
- `width` (\linewidth by default)
- `blockwidth` (2.75em by default, but can be set to `auto`)
- `coltxt` (`white` by default)
- `fonttxt`
- `swap` (`false` by default, for an other style )
- `maincolor` (`darkgray` by default)
- `collight` (`darkgray!25` by default)
- `colmedium` (`darkgray!50` by default)
- `coldark` (`darkgray` by default)
- `logo`
- `type`
- `dispblock` (`true` by default)
- `num` (`true` by default)
- `customtype`

### 8.2 Examples

```
\tkzBannerTri  
[maincolor=red,type=EXERCISES,blockwidth=auto,logo=\faAddressBook]  
{7}{My doc}
```



```
\tkzBannerTri  
[maincolor=red,type=EXERCISES,blockwidth=5em,logo=\faAddressBook]  
{7}{My doc}
```



```
\tkzBannerTri
```

```
[maincolor=red,type=EXERCISES,blockwidth=auto,logo=\faAddressBook,swap]  
{07}{My doc}
```

EXERCISES

07

My doc



```
\tkzBannerTri
```

```
[dispblock=false,maincolor=teal,logo=\faSchool]  
{ }{My doc}
```

My doc



```
\tkzBannerTri
```

```
[maincolor=olive,customtype=TP,blockwidth=4em,logo=\faAddressBook,height=4em]  
{7}{My doc}
```

TP

My doc



It's possible to redefine `\part` (for example).

## 9 Various commands

### 9.1 Difficulty levels with stars (fontawesome5)

```
\DiffLevelStars[max level (3)]{level}
```

```
\DiffLevelStars{0}\par
\DiffLevelStars{2.5}\par
\textcolor{teal}{\LARGE\DiffLevelStars[5]{4}}\par
\DiffLevelStars[5]{1.5}\par
```



### 9.2 Difficulty levels with stars (tikz)

```
\tkzLevelStars[colframe=...,colback=...,offset=...,maxlevel=...,valign=...]{level}
```

```
\tkzLevelStars{2.5}\par
{\LARGE We ty inline \tkzLevelStars{2.25} with score 2.25}\par
{\LARGE We ty inline \tkzLevelStars[valign=false]{1.75} with score 1.75}\par
\tkzLevelStars[colframe=red,colback=yellow,maxlevel=5]{3}
```

★★★  
We ty inline ★★☆☆ with score 2.25  
We ty inline ★★☆☆ with score 1.75  
★★★★☆☆

### 9.3 Flared arrow

```
\tkzFlaredArrow[%
  color=...,           %color of arrow
  arrowsize=...,      %size (auto or H/W )
  bend=...,           %empty for straigth or left/... or right/...
  thickness=...,      %size for the beginning
  factor=...,         %factor for calculing size for ending
  arrowstyle=...,     %style (arrows.meta)
  move=...            %boolean for moving instead coordinates
]%
{begin}{end or move}
```

```
%arrow 0.5mm -> 1.25mm
\begin{tikzpicture}
\tkzFlaredArrow%
  [thickness=0.5mm,factor=2.5,bend=left/30,color=red,arrowstyle=Triangle]%
  {0,0}{5,1.5}
\end{tikzpicture}
```

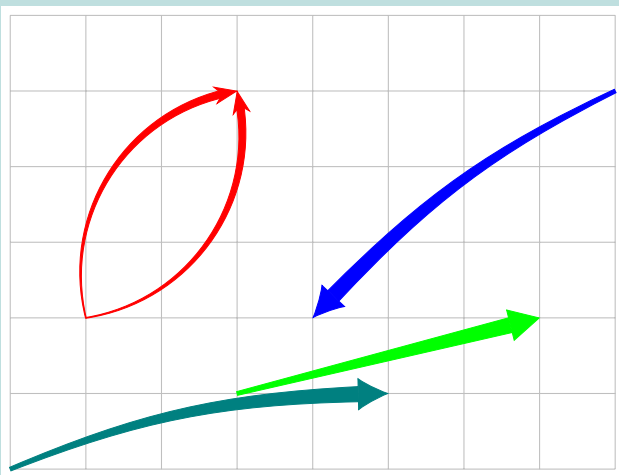




```

\begin{tikzpicture}
  \draw[thin,lightgray] (-3,-1) grid (5,5) ;
  \coordinate (A) at (0,0) ; \coordinate (B) at (4,1) ;
  \coordinate (C) at (1,1) ; \coordinate (D) at (5,4) ;
  \coordinate (E) at (0,1) ; \coordinate (F) at (0,5) ;
  \coordinate (G) at (-2,0) ;
  \tkzFlaredArrow[color=green,arrowstyle=Triangle]{A}{B}
  \tkzFlaredArrow[color=blue,bend=right/10]{D}{C}
  \tkzFlaredArrow%
    [color=red,bend=left/45,arrowstyle=Stealth,thickness=0.1mm,factor=10]%
    {-2,1}{0,4}
  \tkzFlaredArrow%
    [color=red,bend=right/45,thickness=0.1mm,factor=10,arrowstyle=Stealth]%
    {-2,1}{0,4}
  \tkzFlaredArrow[color=teal,move,bend=left/10]{-3,-1}{5,1}
\end{tikzpicture}

```



## 9.4 Small markerbox

```
\tbcmarker[color=...,width=...,font=...]{text}
```

```
\tbcmarker{my text}
```

```
\tbcmarker[color=olive,font=\normalfont\normalsize]{my text}
```

## 9.5 Wheel of skills / speedometer

```

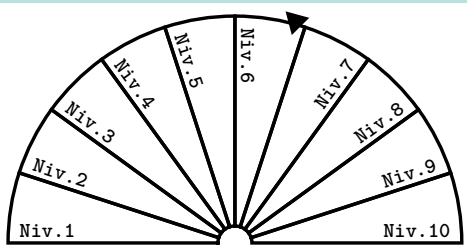
\WheelOfSkills[%
  Radius=...,          %radius of wheel
  Mark=...,            %absolute position of optional marker
  Font=...,            %font of optional labels
  SkillsList=...,      %list of optional skill labels
  ]%
  {number of skills or list of colors}

```

```

\WheelOfSkills[%
  Radius=3cm,%
  Mark=5.85,%
  Font=\scriptsize\bfseries\ttfamily,%
  SkillsList={Niv.1,Niv.2,Niv.3,Niv.4,Niv.5,Niv.6,Niv.7,Niv.8,Niv.9,Niv.10}]%
{10}%

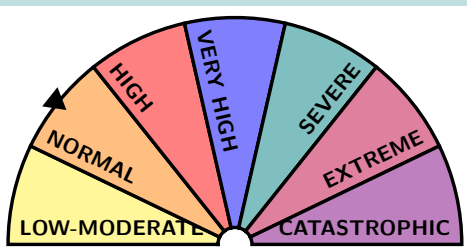
```



```

\WheelOfSkills[%
  Mark=1.5,%
  Font=\scriptsize\bfseries\sffamily,%
  SkillsList={LOW-MODERATE,NORMAL,HIGH,VERY HIGH,SEVERE,EXTREME,CATASTROPHIC}
]%
{yellow!50,orange!50,red!50,blue!50,teal!50,purple!50,violet!50}%

```



```

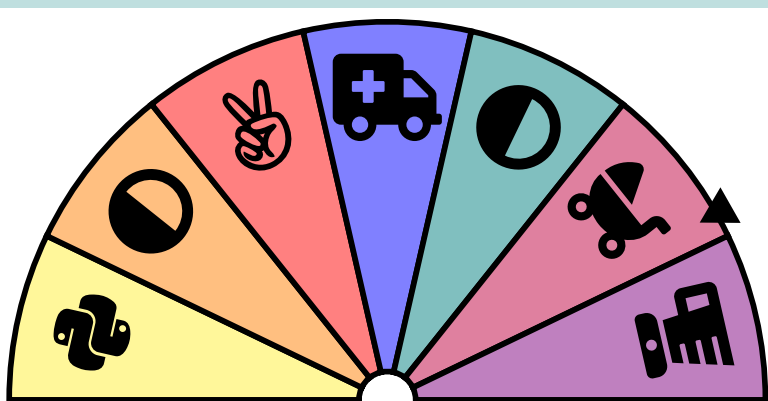
\begin{SkillsWheel}[%
  Radius=..., %radius of wheel
  Mark=..., %absolute position of optional marker
  Font=..., %font of optional labels
  SkillsList=..., %list of optional skill labels
]{number of skills or list of colors}
\PutIconsSkills[Pos=...,Scale=...]{list of icons}
\end{SkillsWheel}

```

```

\begin{SkillsWheel}[Radius=5cm,Mark=5.85]%
  {yellow!50,orange!50,red!50,blue!50,teal!50,purple!50,violet!50}
  \PutIconsSkills[Echelle=3]%
  {\faPython,\faAdjust,\faAngellist,\faAmbulance,\faAdjust,\faBabyCarriage,\faBlender}
\end{SkillsWheel}

```



```
%inline version, with automatic dimensions
\miniskillwheel[Colors=...,Mark=...]{nb of levels}
```

```
%normal version
\tkzspeedometer[Size=...,Mark=...,Colors=...]{nb levels}
```

```
%inline version, with automatic dimensions
\scalebox{2.25}[2.25]{\sffamily Small inline \textit{skillwheel}}
\miniskillwheel[Colors=red/blue,Mark=4.33]{7} for testing.
```

```
%normal version
\tkzspeedometer[Size=5cm,Mark=2.25,Colors=teal/magenta]{6}
```

Small inline *skillwheel*  for testing.

