

customenvs [en]

Some custom environments,
with spacing enhancements.

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1 History

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 :

- `<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 `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 ;
- `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}
```

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

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

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

```
\AnswersMCQ[Labels={A.},FontLabels={\color{red}\bfseries}]%  
{Answer A $ Answer B $ Answer C $ Answer D}
```

A. Answer A	B. Answer B	C. Answer C	D. Answer D
-------------	-------------	-------------	-------------

```
\AnswersMCQ[Labels={1.},FontLabels={\color{red}\bfseries}]%  
{Answer A $ Answer B $ Answer C $ Answer D}
```

1. Answer A	2. Answer B	3. Answer C	4. Answer D
-------------	-------------	-------------	-------------

```
\AnswersMCQ[NumCols=2,Labels={A.},FontLabels={\color{red}\bfseries}]%
{Answer A § Answer B § Answer C § Answer D}
```

- | | |
|--------------------|--------------------|
| A. Answer A | C. Answer C |
| B. Answer B | D. Answer D |

```
\AnswersMCQ[NumCols=2,Swap,Labels={A.},FontLabels={\color{red}\bfseries}]%
{Answer A § Answer B § Answer C § Answer D}
```

- | | |
|--------------------|--------------------|
| A. Answer A | B. Answer B |
| C. Answer C | D. Answer D |

```
\AnswersMCQ[Lines,NumCols=2,SpaceCR=6pt/10pt]%
{Answer A § Answer B § Answer C § Answer D}
```

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

```
\AnswersMCQ[Width=10cm,NumCols=2,Lines]%
{${\displaystyle\frac{1}{x}} § $1+{\displaystyle\frac{1}{x}} § $-2x^2+5 § $-\infty$}
<rows={1.5cm}>
```

a. $\frac{1}{x}$	c. $-2x^2 + 5$
b. $1 + \frac{1}{x}$	d. $-\infty$

4 List avec 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>
```

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 last argument, optional and between `<...>` gives specific options to **enumitem** environment.

Controls are done :

- to verify that the liste 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 D
2. Answer B
3. Answer H
4. Answer A
5. Answer C

```
%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.

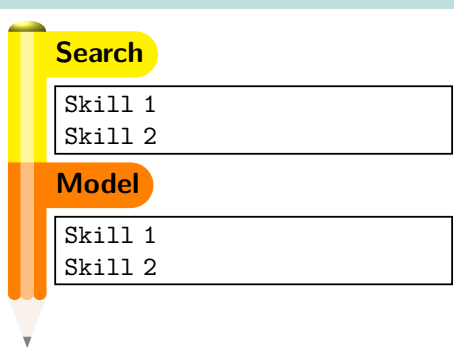
The second argument, optional and between `<...>` gives specific options to `enumitem` environment.

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}}
```



```
\PencilSkills[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}}
```

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

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

