# customenvs [en]

Some custom environments, with spacing enhancements.

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https://github.com/cpierquet/customenvs

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## 1 History

v0.1.1 : 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 classics 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 globa idea is to propose user-friendly environments, with explicit customizations, without using verbose syntax; but there’s other solutions, using for example \texttt{\vspace} ou \texttt{\setlength} or \texttt{spacingtricks} package.

2.2 Loading

The package loads within the preamble with \texttt{\usepackage{customenvs}}. Loaded packages are

- \texttt{xstring}, \texttt{simplekv}, \texttt{listofitems}, \texttt{randomlist} and \texttt{xintexpr} ;
- \texttt{enumitem} ;
- \texttt{multicol} ;
- \texttt{tabularay} ;
- \texttt{fontawesome5} ;

Due to limitations, \texttt{enumitem/multicol/tabularayfontawesome5} can be unloaded by \texttt{customenvs} (user must load them manually) via options :

- \texttt{⟨noenum⟩} ;
- \texttt{⟨nomulticol⟩} ;
- \texttt{⟨notblr⟩} ;
- \texttt{⟨nofa⟩} ;

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

%with option to no load some packages
\texttt{\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 tabulararray (and not multicol). It’s possible to use 2, 3 or 4 answers (and with 4 answers it’s possible to use 2 columns.)

\texttt{\textbackslash{}AnswersMCQ\{options\}\{list of answers\}\{tblr options\}}

The available options are:

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

The list of answers must be given within \texttt{answA § answB § ...}.
Specific options for \texttt{tblr} are given between last optional argument, between <...>.

3.2 Examples

%default output
\texttt{\textbackslash{}AnswersMCQ\{Answer A § Answer B § Answer C § Answer D\}}

\begin{tabular}{l}
  a. Answer A \\
  b. Answer B \\
  c. Answer C \\
  d. Answer D \\
\end{tabular}

\texttt{\textbackslash{}AnswersMCQ\{Lines\}\{Answer A § Answer B § Answer C § Answer D\}}

\begin{tabular}{l}
  a. Answer A \\
  b. Answer B \\
  c. Answer C \\
  d. Answer D \\
\end{tabular}

\texttt{\textbackslash{}AnswersMCQ\{Lines,Labels=(1.\,),SpaceLabels=\{~~~\}\}\{Answer A § Answer B § Answer C\}}

\begin{tabular}{ll}
  (1.) Answer A \\
  (2.) Answer B \\
  (3.) Answer C \\
\end{tabular}

\texttt{\textbackslash{}AnswersMCQ\{Labels={A.},FontLabels=\{\textcolor{red}\texttt{bfseries}\}\}\%\{Answer A § Answer B § Answer C § Answer D\}}

\begin{tabular}{llll}
  A. Answer A \\
  B. Answer B \\
  C. Answer C \\
  D. Answer D \\
\end{tabular}

\texttt{\textbackslash{}AnswersMCQ\{Labels=\{1.\},FontLabels=\{\textcolor{red}\texttt{bfseries}\}\}\%\{Answer A § Answer B § Answer C § Answer D\}}

\begin{tabular}{llll}
  1. Answer A \\
  2. Answer B \\
  3. Answer C \\
  4. Answer D \\
\end{tabular}
| A. Answer A | C. Answer C |
| B. Answer B | D. Answer D |

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

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

| 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 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)
```

|-------------|-------------|-------------|-------------|-------------|

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

\%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\}, \ldots\}\%
\mylistofitemsb\{ListItemsB\}

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

-- $\int_0^1 x^2 \, dx$
-- $\int_0^1 x^3 \, dx$
-- $\int_0^1 x^2 \, dx$
-- $\int_0^1 x^6 \, dx$
-- $\int_0^1 x^4 \, dx$
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
  
  \texttt{BgCateg1/FgCateg1,BgCateg1/FgCateg1,...}
  
  (if \texttt{FgCateg1} est missing, \texttt{black} is used)
- **BlockWidth**: width of skill’s block;
- **Scale**: global scale
- **BlackWhite**: boolean for B&W.

The second argument, optional and between \texttt{<...>}, gives specific options to \texttt{enumerate} environment.

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

5.3 Examples

\begin{verbatim}
\PencilSkills{Search/Skill 1\ Skill 2,Model/{Skill 1\ Skill 2}}
\end{verbatim}
\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}}

\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}}