customenvs [en]

Some custom environments,
with spacing enhancements.

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Contents

1 History

v0.1.0 : Initial version

2 The package customenvs

2.1 Idea

The idea is to propose some classics environments with customizations :

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

The globa idea is ti 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`.

Due to limitations, `enumitem` or `multicol` or `tabularray` can be *un*loaded by `customenvs` (user must load them manually) via options :

- ⟨`noenum`⟩ ;
- ⟨`nomulticol`⟩ ;
- ⟨`notblr`⟩.

```
%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 MQC 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 avalailable `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]%
    {$\displaystyle\frac1x$ § $1+\displaystyle\frac1x$ § $-2x^2+5$ § $-\infty$}
    <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 itemps, 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 A
3. Answer H
4. Answer B
5. Answer F

```
%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=$--$>
```

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

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

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

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

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