Customizing lists with the enumitem package

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Version 3.5.2
2011-09-28

1 Introduction

When I began to use LaTeX several year ago, two particular points annoyed me because I found customizing them was very complicated —headlines/footlines and lists. A new way to redefine the former is accomplished in my own titlesec package, but none was available to customize the latter except:

- enumerate, which just allows to change the label and it does it pretty well.
- mdwlist, which only "provides some vaguely useful list-related commands and environments," as its manual states, and not a coherent way of handling lists.
- paralist, which provides lists within a paragraph (the original purpose of this package), a few other hard-wired specific changes and the optional argument of enumerate.

One of the main drawbacks of the standard `list` is its weird parameters, whose meaning is not always obvious. In order to provide a cleaner interface two approaches were possible: either defining new lists, or introducing a new syntax making the standard lists easier to customize. For marks I took the first approach in titlesec, just because I did not manage to find a satisfactory solution with the LaTeX internal macros, but since lists are in some sense more "complete" than sections and marks, I have taken here the second approach.

In the interface a sort of "inheritance" is used. You can set globally the behaviour of lists and then override several parameters of, say, enumerate and then in turn override a few paremeters of a particular instance. The values will be searched in the hierarchy.

2 The package

This package is intended to ease customizing the three basic list environments: `enumerate`, `itemize` and `description`. It extends their syntax to allow an optional argument where a set of parameters in the form `key=value` are available:

- Vertical spacing:
  - `topsep`
  - `partopsep`
  - `parsep`
  - `itemsep`

*For bug reports, comments and suggestions go to `http://www.tex-tipografia.com/enumitem.html`. English is not my strong point, so contact me when you find mistakes in the manual. Other packages by the same author: gloss (with José Luis Díaz), accents, tensind, esindex, dotlessi, titlesec, titletoc.

- Horizontal spacing:
  - `leftmargin`
  - `rightmargin`
  - `listparindent`
  - `labelwidth`
  - `labelsep`
  - `itemindent`

  For example:

```
\begin{itemize}[itemsep=1ex,leftmargin=1cm]
```

The keys above are equivalent to the well known list parameters—see a LaTeX manual for a description of them. Next sections explains the extensions provided by `enumitem`.

3 Keys

This section describes the keys in displayed lists. Most of them are available in inline lists, where further keys are available (see 4).

3.1 Label and cross references format

`label=`⟨*commands*⟩

Sets the label to be used in the current level. A set of starred versions of `\alph`, `\Alph`, `\arabic`, `\roman` and `\Roman`, without argument stand for the current counter in `enumerate`.[1] Thus

```
\begin{enumerate}[label=\emph{\alph*})]
```

prints *a*), *b*), and so on (this is a standard style in Spanish, and formerly used by Chicago, too).

It works with `\value`, too (provided the widest label is not to be computed or `widest*` is used, see below). A fancier example (which looks ugly, but it is intended only to illustrate what is possible; requires color and pifont):

```
\begin{enumerate}[label=\protect\fcolorbox{blue}{yellow}{\protect\ding{\value*}},
                  start=172]
```

The value of `label` is a moving argument, and fragile commands must be protected *except* the counters. Because of that, use of `\value` is somewhat tricky, because `\the` or `\ifnum` expects an actual value, which is not the case when `label` is being processed to replace internally the `*` by the form with the counter argument. The best solution is usually encapsulating the logic inside a new "counter" with the help of `\AddEnumerateCounter`.[2]

If you prefer setting labels like the enumerate package, use "short labels" (see section 6).

`label*=`⟨*commands*⟩

Like `label` but its value is appended to the parent label. For example, the follollowing defines a `legal` list (1., 1.1., 1.1.1., and so on):

```
\newlist{legal}{enumerate}{10}
\setlist[legal]{label*=\arabic*.}
```

[1] Actually, the asterisk is currently the argument but things may change. Consider them as starred variants and follow the corresponding syntax.

[2] Which is admittedly somewhat convoluted. A better way to accomplish this is on the way.

`ref=`⟨*commands*⟩

By default, `label` sets also the form of cross references and `\the...` (overriding the settings in previous hierarchical levels), but you can define a different format with this key. For example, to remove the right parethesis:

```
\begin{enumerate}[label=\emph{\alph*}),ref=\emph{\alph*}]
```

In both `label` and `ref`, the counters can be used as usual:

```
\begin{enumerate}[label=\theenumi.\arabic*.]
```

or

```
\begin{enumerate}[label=\arabic{enumi}.\arabic*.]
```

(provided the current level is the second one).

Note the `label`s are *not* accumulated to form the reference. If you want, say, something like 1.*a* from 1) as first level and *a*) as second level, you must set it with `ref`. You may use `\ref{level1}.\ref{level2}` with appropiate `ref` settings, but as Robin Fairbairns points out in the TEX FAQ

> ... [that] would be both tedious and error-prone. What is more, it would be undesirable, since you would be constructing a visual representation which is inflexible (you could not change all the references to elements of a list at one fell swoop).

This is sensible and I recommend to follow the advice, but sometimes you might want something like:

```
... subitem \ref{level2} of item \ref{level1} ...
```

The value of `ref` is a moving argument, and fragile commands must be protected *except* the counters.

`font=`⟨*commands*⟩ `format=`⟨*commands*⟩

Sets the label font. Useful when the label is changed with the optional argument of `\item` and in `description`. The last command in ⟨*commands*⟩ can take an argument with the item label. In `description` class setting are in force, so you may want begin with `\normalfont`. A synonymous is `format`.

`align=left` `align=right` `align=parleft` NEW 3.0

How the label is aligned (with relation to the label box edges). Three values are possible: `left`, the default `right` and `parleft` (a parbox of width `\labelwidth` with flush left text). The parameters controlling the label spacing should be properly set, either by hand or more conveniently with the `*` settings (see below):

```
\begin{enumerate}[label=\Roman*., align=left, leftmargin=*]
```

(When the label box is supposed to have its natural width, use `left`.)

`\SetLabelAlign{`⟨*value*⟩`}{`⟨*commands*⟩`}` NEW 3.0

New align types can be defined (or the existing ones redefined) with `\SetLabelAlign`; the predefined values are equivalent to:[3]

[3]Prior to version 3.0 the left alignments was incorrectly defined and the label and the text could overlap.

```
\SetLabelAlign{right}{\hss\llap{#1}}
\SetLabelAlign{left}{#1\hfil}
\SetLabelAlign{parleft}{\strut\smash{\parbox[t]\labelwidth{\raggedright##1}}}
```

If the last thing in the definition is a skip (typically `\hfil`), it is removed sometimes by description. If for some reason you want to avoid this, just add `\null` at the end.

Although primarily intended for the alignment, this commands has other uses (as in the provided `parleft`). For example, with the following all labels with `align=right` are set as superscripts:

```
\SetLabelAlign{right}{\hss\llap{\textsuperscript{#1}}}
```

(A new name is also possible, of course.)

If you want the internal settings for `align` and `font` be ignored, you can override the enumitem definition of `\makelabel` in `before`:

```
\begin{description}[before={\renewcommand\makelabel[1]{\ref{##1}}}]
```

(Alternatively, define a macro and use `\let`.)

3.2 Horizontal spacing of labels

`labelindent=`⟨*length*⟩
`\labelindent`

This parameter is added in enumitem for the blank space from the margin of the enclosing list/text to the left edge of the label box. This means there is a redundancy because one of the parameters depends on the others, i.e., it has to be computed from the other values, as described below. There is a new counter length `\labelindent` which defaults to 0 pt. The five parameteres are related in the following way:

$$\texttt{\leftmargin} + \texttt{\itemindent} = \texttt{\labelindent} + \texttt{\labelwidth} + \texttt{\labelsep}$$

`leftmargin=!` `itemindent=!` `labelsep=!` `labelwidth=!` `labelindent=!` NEW 3.0

Sets which value is to be computed from the others. This is done after *all* keys has been read. Explicit values are not lost, and so with the following hierarchical settings:

```
leftmargin=2em
labelindent=1em,leftmargin=!
labelindent=!
```

`leftmargin` is again 2em and `labelindent` is the computed parameter. The default is `labelindent=!`, but note some keys sets another value (`wide` and description `style`s).

With `align=right` (the default), `labelindent=!` and `labelwidth=!` behave similarly in practice.

`leftmargin=*` `itemindent=*` `labelsep=*` `labelwidth=*` `labelindent=*`

Like before, but `labelwidth` is set to the width of the current label, using the default value of *0* in `\arabic*`, *viii* in `\roman*`, *m* in `\alph*` and similarly in uppercase forms (these values can be changed with `widest`, see below). Examples are:

```
\begin{itemize}[label=\textbullet, leftmargin=*]
\begin{enumerate}[label=\roman*), leftmargin=*, widest=iii]
\begin{itemize}[label=\textbullet,
                leftmargin=2pc, labelsep=*]
\begin{enumerate}[label=\arabic*., leftmargin=2\parindent,
                  labelindent=\parindent, labelsep=*]
```

The most useful are `labelsep=*` and `leftmargin=*`. With the former the item body begins at a fixed place (namely, `leftmargin`), while with the latter begins at a variable place depending on the label (but always the same within a list, of course). Most of times, what you would want is `leftmargin=*`.

Unfortunately, LaTeX does not define a default `labelsep` to be applied to all lists—simply the current value is used. With enumitem you can set default values for every list, as described below, and so, if you want to make sure `labelsep` is under your control, all you need is something like:

```
\setlist{itemsep=.5em}
```

`labelwidth=*` and `labelwidth=!` are synonymous.

`widest=`⟨*string*⟩ `widest*=`⟨*integer*⟩ NEW 3.0 `widest`

To be used in conjunction with the `*`-values, if desired. It overrides the default value for the widest printed counter. Sometimes, if lists are not very long, a value of `a` for `\alph` is more sensible than the default `m`:

```
\begin{enumerate}[leftmargin=*,widest=a] % Assume standard 2nd level
```

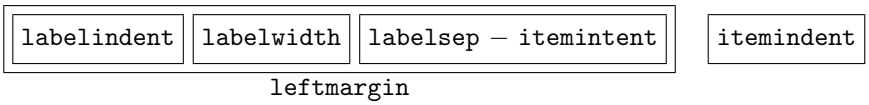
With no value, the default is restored. With `widest*`, the string is built using ⟨*integer*⟩ as the value of the counter (e.g., with `\roman`, `widest=viii` and `widest*=8` are the same).

Since `\value` does not return a string but a number, `widest` and the `*` values cannot be used with it. However, with `widest*`, being a number, it is allowed.

3.3 More on horizontal spacing

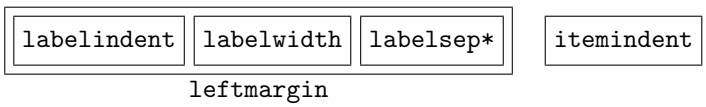
Since `\parindent` is not used as such inside lists, but instead is set internally to either `\itemindent` or `\listparindent`, when used as the value of a parameter enumitem returns the global value, i. e., the value it has outside the outermost list.

The horizontal space in the left margin of the current level is distributed in the following way:[4]



`labelsep*=`⟨*length*⟩ NEW 3.0

Remember `labelsep` spans part of `leftmargin` and `itemindent` if the latter is not zero. This is often somewhat confusing, so a new key is provided—with `labelsep*` the value is reckoned from the left margin (it just sets `\labelsep` and then adds `\itemindent` to it, but in addition later changes to `itemindent` are taken into account):



`labelindent*=`⟨*length*⟩ NEW 3.0

Like `labelindent`, but it is reckoned from the left margin in the current list and not from that in the enclosing list/text.

[4] Admittedly, these figures are not exactly the clearest possible, and I intend to improve them in a future release

3.4 Numbering, stopping, and resuming

`start=`⟨*integer*⟩

Sets the number of the first item.

`resume`

The counter continues from the previous `enumerate`, instead of being reset to 1.

```
\begin{enumerate}
\item First item.
\item Second item.
\end{enumerate}
Text.
\begin{enumerate}[resume]
\item Third item
\end{enumerate}
```

This is done locally. If you want global resuming, see next section on series.

`resume*`

Like `resume` but the options from the previous list are used, too. This option must be restricted to the optional argument in a environment (this is the only place where it makes sense). It should be used sparingly—if you are using it often, then very likely you want to define a new list (see 7). Further keys are allowed, and in this case the saved options are overriden by those in the current list (i.e., the position of `resume*` does not matters). For example:

```
\begin{enumerate}[resume*,start=1] % or [start=1,resume*]
```

uses the keys in the previuos `enumerate`, but restarts the counter. If there is a series of a certain list with `resume*`, options are taken from the list previous to the first one, except for `start`.

3.5 Series

`series=`⟨*series-name*⟩ NEW 3.0
⟨*series-name*⟩ `resume*=`⟨*series-name*⟩ `resume=`⟨*series-name*⟩ NEW 3.0

A new method (3.0) of continuing lists is by means of the key `series`, so that they behave like a unit. A list with key `series` is considered the starting list and its settings are stored *globally*, so that they can be used later with `resume`/`resume*`. All these keys take a value with the series name (which must be different from existing keys):

- `resume=`⟨*series-name*⟩ just continue numbering items in the series,
- `resume*=`⟨*series*⟩ also applies the settings of the starting list,
- ⟨*series*⟩, i.e., the series name used as a key, is an alternative to `resume*=`⟨*series*⟩.

For example:

```
\begin{enumerate}[label=\arabic*(a),leftmargin=1cm,series=lafter]
\item A
\item B
\end{enumerate}
```

You get: 1(a) 2(a). You can continue with:

```
\begin{enumerate}[label=\arabic*(b),resume*=lafter]
                 % or [label=\arabic*(b),lafter]
\item A
\item B
\end{enumerate}
```

You get: 3(b) 4(b). (But you can use `start=1`, if you like.)

Note you can add further arguments, which are executed after those saved at the starting list and therefore take precedence over them – in particular, `resume*` itself takes precedence over a `start` (e.g., `start=1`) in the the starting list.

Every time a series is started, several commands are defined internally, so to avoid wasting resources and use the same name for non-overlapping series.

3.6 Penalties

`beginpenalty=`⟨*integer*⟩ `midpenalty=`⟨*integer*⟩ `endpenalty=`⟨*integer*⟩

Set the penalty at the beginning of a list, between items and at the end of the list, respectively. Please, refer to your LaTeX or TeX manual about how penalties control page breaks. Unlike other parameters, when a list starts their values are not reset to the default, thus they apply to the child lists.

`before=`⟨*code*⟩ `before*=`⟨*code*⟩

Execute code before the list starts (more precisely, in the second argument of the `list` environment used to define them). The unstarred form sets the code to be executed, overriding any previous value, while the starred one adds the code to the existing one (in the setting hierarchy, see below, *not* with relation to the enclosing list/text). It can contain, say, rules and text, but this has not been extensively tested. All calculations have been finished, and you can access and manipulate the list parameters. For example, to have both margins (left and right) set to the widest label:

```
\setlist{leftmargin=*,before=\setlength{\rightmargin}{\leftmargin}}
```

`after=`⟨*code*⟩ `after*=`⟨*code*⟩

Same, but just before the list ends.

3.7 Description styles

A key available in `description`.

`style=`⟨*name*⟩

Sets the description *style*. ⟨*name*⟩ can be any of the following:

- `standard`: like `description` in standard classes, although with other classes it could be somewhat different. The label is boxed. Sets `itemindent=!`.
- `unboxed`: much like the standard `description`, but the label is not boxed to avoid uneven spacing and unbroken labels if they are long. Sets `itemindent=!`.
- `nextline`: if the label does not fit in the margin, the text continues in the next line, otherwise it is placed in a box of width `\leftmargin` − `\labelsep`, i.e., the item body never sticks into the left margin. Sets `labelwidth=!`.
- `sameline`: like `nextline` but if the label does not fit in the margin the text continues in the same line. Same as `style=unboxed,labelwidth=!`.

- `multiline`: the label is placed in a parbox whose width is `leftmargin`, with several lines if necessary. Same as `style=standard,align=parleft,labelwidth=!`.

  Three caveats: (1) mixing boxed and unboxed labels has not a well-defined behaviour, (2) when nesting list all combinations are allowed but not all make sense, and (3) nesting `nextline` lists is not supported (it works, but its behaviour might change in the future, because the current one is not what one could expect).

3.8 Compact lists

`noitemsep` `nosep`

The key `noitemsep` kills the space between items and paragraphs (i.e., `itemsep=0pt` and `parsep=0pt`), while `nosep` kills all vertical spacing.[5]

3.9 "Wide" lists

`wide` NEW 3.0
`wide=`⟨*parindent*⟩

With this convenience key, the leftmargin is null and the label is part of the text—in other word, the items look like ordinary paragraphs.[6] Here `labelsep` sets the separation between the label and the first word. It is equivalent to

```
align=left, leftmargin=0pt, labelindent=\parindent,
listparindent=\parindent, labelwidth=0pt, itemindent=!
```

With `wide=`⟨*parindent*⟩ you may set at once another value instead of `\parindent`. Of course, these keys can be overriden after `wide`, too; for example, remembering that with left-aligned labels the text is pushed if the they are wider than `labelwidth`, you can set `labelwidth=1.5em` for a minimal width, or instead of `itemindent=!` you may prefer `itemindent=*`, which sets the minimal width to that of widest label. In level 2 you may prefer `labelindent=2\parindent`, and so on. You may also want to combine it with `noitemsep` or `nolistsep`.

4 Inline lists

NEW 3.0

Inline lists are "horizontal" lists set as ordinary text inside a paragraph. With this package you can create inline lists, as explained below, with `\newlist`, which have their own labels and counters. However, in most cases inline versions of standard lists, with the same labelling schema, will be enough – the package option `inline` does that.

`inline` (package option)
`enumerate*` `itemize*` `description*` (environments)

With the package option `inline`, three environments for inline lists are defined: `enumerate*`, `itemize*`, and `description*`. They emulate the behaviour of paralist and shortlst in that labels and settings are shared with the displayed (ie, "normal") lists `enumerate`, `itemize` and `description`, respectively (however, remember resuming is based on environment names, not on list types). This applies only to those created with `inline` – inline lists created with `\newlist` as described below are independent and use their own labels and settings. Note as well `inline` is not required if you needn't inline versions of standard lists.

`itemjoin=`⟨*string*⟩ `itemjoin*=`⟨*string*⟩ `afterlabel=`⟨*string*⟩

Format is set with keys `itemjoin` (default is a space), and `afterlabel` (default is

[5] The key `nolistsep`, now deprecated, introduced a thin stretch, which was not the intended behaviour.
[6] `fullwidth` is deprecated.

`\nobreakspace`, ie, `~`). An additional key is `itemjoin*`, which, if set, is used instead of `itemjoin` before the last item. So, with

```
before=\unskip{: }, itemjoin={{; }}, itemjoin*={{, and }}
```

the following punctuation between items is used:

Blah blah: (a) one; (b) two; (c) three, and (d) four. Blah blah

`itemjoin` is ignored in vertical mode (i.e., in mode unboxed and just after a quote, a displayed list and the like).

`mode=unboxed` `mode=boxed`

Items are boxed, so floats are lost and nested lists are not allowed (remember many displayed elements are defined as lists). If using floats or lists inside inline lists is important, use an alternative "mode", which you can activate with `mode=unboxed` (the default is `mode=boxes`). With it floats may be used freely, but misplaced `\item`s are not catched and `itemjoin*` is ignored (a warning is written to the log about this fact).

5 Global settings

Global changes, to be applied to all of these list, are also possible:

`\setlist[enumerate,`⟨*levels*⟩`]{`⟨*format*⟩`}`
`\setlist[itemize,`⟨*levels*⟩`]{`⟨*format*⟩`}`
`\setlist[description,`⟨*levels*⟩`]{`⟨*format*⟩`}`
`\setlist[`⟨*levels*⟩`]{`⟨*format*⟩`}`

Where ⟨*level*⟩ is the list level (one or more) in `list`, and the corresponding levels in `enumerate` and `itemize`.[7] With no ⟨*levels*⟩, the format applies to all of them. Here list does not mean any list but only the three ones handled by this package and those redefined by this package or defined with `\newlist` (see below). For example:

```
\setlist{noitemsep}
\setlist[1]{\labelindent=\parindent} % < Usually a good idea
\setlist[itemize]{leftmargin=*}
\setlist[itemize,1]{label=$\triangleleft$}
\setlist[enumerate]{labelsep=*, leftmargin=1.5pc}
\setlist[enumerate,1]{label=\arabic*., ref=\arabic*}
\setlist[enumerate,2]{label=\emph{\alph*}),
                      ref=\theenumi.\emph{\alph*}}
\setlist[enumerate,3]{label=\roman*), ref=\theenumii.\roman*}
\setlist[description]{font=\sffamily\bfseries}
```

These setting are read in the following order: list, list at the current level, enumerate/itemize/description, and enumerate/itemize/description at the current level; if a key appears several times with different values, the last one, i.e., the most specific one, is applied. If we are resuming a series or a list with `resume*`, the saved keys are then applied. Finally, the optional argument (except `resume*`), if any, is applied.

LaTeX provides a set of macros to change many of these parameters, but setting them with the package is more consistent and sometimes more flexible at the cost of being more "explicit" (and verbose).

The list specification can contain variables and counters, provided they are expandable, and counters are calc-savvy, so that if you load this package you can write things like:

[7] `\setenumerate`, `\setitemize` and `\setdescription` are deprecated.

```
\newcount{toplist}
\setcount{toplist}{1}
\newcommand{\mylistname}{enumerate}
\setlist[\mylistname,\value{toplist}+1]{labelsep=\itemindent+2em]
```

This allows defining lists within loops.

Currently, a way to discriminate the font size is not provided (`\normalsize`, `\small`...).

6 enumerate-like labels

`shortlabels` (package option)

With the package option `shortlabels` you can use an enumerate-like syntax, where `A`, `a`, `I`, `i` and `1` stand for `\Alph*`, `\alph*`, `\Roman*`, `\roman*` and `\arabic*`. This is intended mainly as a sort of compatibility mode with the enumerate package, and therefore the following special rule applies: if the very first option (at any level) is not recognized as a valid key, then it will be considered a label with the enumerate-like syntax. For example:

```
\begin{enumerate}[i), labelindent=\parindent]
...
\end{enumerate}
```

Although perhaps not so useful, you can omit `label=` in the itemize environment under similar conditions, too:

```
\begin{itemize}[\textbullet]
...
\end{itemize}
```

`\SetEnumerateShortLabel{`⟨*key*⟩`}{`⟨*replacement*⟩`}`

With this command, you can define new keys (or redefine them), which is particularly useful for enumerate to be adapted to especific typographical rules or to extend it for non-Latin scrips. Here ⟨*replacement*⟩ contains one of the starred versions of counters. For example:

```
\SetEnumerateShortLabel{i}{\textsc{\roman*}}
```

redefines `i` so that items using this key are numbered with small caps roman numerals. The key has to be a single letter.

7 Cloning the basic lists

`\newlist{`⟨*name*⟩`}{`⟨*type*⟩`}{`⟨*max-depth*⟩`}`
`\renewlist{`⟨*name*⟩`}{`⟨*type*⟩`}{`⟨*max-depth*⟩`}`

The three lists can be cloned so that you can define "logical" environments behaving like them. To define a new lists (or redefine a existing one), use `\newlist` (or `\renewlist`), where ⟨*type*⟩ is `enumerate`, `itemize` or `description`.

If ¡type¿ is `enumerate`, a set of counters with names ⟨*name*⟩`i`, ⟨*name*⟩`ii`, ⟨*name*⟩`iii`, ⟨*name*⟩`iv`, etc. (depending on ¡max-depth¿) is defined. Don't use an arbitrarily large number for ¡max-depth¿, to avoid creating too many counters. Then you can use those counters in labels; e. g., if you have defined a list named `steps`, you can define a label with:

```
label=\arabic{stepsii}.\arabic{stepsi}
```

`\setlist[`⟨*names*⟩`,`⟨*levels*⟩`]{`⟨*keys/values*⟩`}`
`\setlist*[`⟨*names*⟩`,`⟨*levels*⟩`]{`⟨*keys/values*⟩`}`

After creating a list, you can (in fact you must, at least the label) set the new list with `\setlist`:

```
\newlist{ingredients}{itemize}{1}
\setlist[ingredients]{label=\textbullet}
\newlist{steps}{enumerate}{2}
\setlist[steps,1,2]{label=(\arabic*)}
```

Names in the optional argument of `\setlist` say which lists applies the settings to, and numbers say the level (it is calc-savvy). Several lists and/or several levels can be given, and all combinations are set; e.g.:

```
\setlist[enumerate,itemize,2,3]{...}
```

sets enumerate/2, enumerate/3, itemize/2 and itemize/3. No number (or 0) means "all levels" and no name means "all lists"; no optional argument means "all lists at all levels".

The three inline lists have types `enumerate*`, `itemize*`, and `description*`, which are available always, even without the package option `inline` (which just defines three environments with these names).

The starred form `\setlist*` adds the settings to previous ones.

`\setlistdepth{`⟨*integer*⟩ NEW 3.0

By default, LaTeX has a limit of 5 nesting levels, but when cloning list this value may be too short, and therefore you may want to set a new value. In levels below the 5th (or the deepest defined by a class), the settings of the last are used (i.e., `\@listvi`).

8 More about counters

8.1 New counter representation

`\AddEnumerateCounter{`⟨*LaTeX command*⟩`}{`⟨*internal command*⟩`}{`⟨*widest label*⟩`}`

"Registers" a counter representation so that enumitem recognizes it. Intended mainly for non Latin scripts, but also useful in Latin scripts. For example:

```
\makeatletter
\def\ctext#1{\expandafter\@ctext\csname c@#1\endcsname}
\def\@ctext#1{\ifcase#1\or First\or Second\or Third\or
Fourth\or Fifth\or Sixth\fi}
\makeatother
\AddEnumerateCounter{\ctext}{\@ctext}{Second}
```

A starred variant allows to give a number instead of a string as the widest label; for example, if the widest label is that corresponding to the value 2: NEW 3.0

```
\AddEnumerateCounter*{\ctext}{\@ctmoreext}{2}
```

This variant is to be preferred if the representation is not a plain string but it is styled, e.g., with small caps. (The counter names can contain `@` even if not a letter.)

8.2 Restarting enumerates

`\restartlist{`⟨*list-name*⟩`}` NEW 3.0

Currently, with

```
\setlist[enumerate]{resume}
```

you can get a continuous numbering through a document. A new command has been added for restarting the counter in the middle of the document:

`\restartlist{`⟨*list-name*⟩`}`

It is based solely in the list name, not the list type, which means `enumerate*` as defined with the package option `inline` is not the same as `enumerate`, because its name is different.

9 Generic keys and values

`\SetEnumitemKey{`⟨*key*⟩`}{`⟨*replacement*⟩`}` NEW 3.0

With this command you can create your own (valueless) keys. For example:

```
\SetEnumitemKey{midsep}{topsep=3pt,partopsep=0pt}
```

Keys so defined can then be used like the others. Another example is multicolumn lists, with multicol:

```
\SetEnumitemKey{twocol}{
  itemsep=1\itemsep,
  parsep=1\parsep,
  before=\raggedcolumns\begin{multicols}{2},
  after=\end{multicols}}
```

(The settings for `itemsep` and `parsep` kill the stretch and shrink parts. Of course, you may want to define a new list.)

Note the package may introduce new keys in the future, so `\SetEnumitemKey` is a potential source of forward incompatibilities. However, it's safe using a non-letter character other than hyphen or star in the key name (e.g., `:name` or `2_col`).

`\SetEnumitemValue{`⟨*key*⟩`}{`⟨*string-value*⟩`}{`⟨*replacement*⟩`}` NEW 3.0

This commands provides a further abstraction layer for the ⟨*key*⟩=⟨*value*⟩ pairs. With it you can define logical names which are translated to the actual value. For example, with:

```
\SetEnumitemValue{label}{numeric}{\arabic*.}
\SetEnumitemValue{leftmargin}{standard}{\parindent}
```

you might say:

```
\begin{enumerate}[label=numeric,leftmargin=standard]
```

So, you can left to the final design what `label=numeric` means.

10 Package options

Besides `inline`, `ignoredisplayed`, and `shortlabels`, the following option is available.

`loadonly`

With this package option the package is loaded but the three lists are not redefined. You can create your own lists, yet, or even redefine the existing ones.

11 Three patterns

Three list layouts could be considered very frequent. Let us apply the parameters above to define them. (Below are samples.)

The first pattern aligns the label with the surrounding `\parindent` while the item body is indented depending on the label and a fixed `labelsep`:

```
labelindent=\parindent,
leftmargin=*
```

A fairly frequent variant is aligning the label with the surrounding text (rememeber `labelindent` is `0pt` by default):

```
leftmargin=*
```

The former looks better in the first level while the latter seems preferable in subsequent ones. That can be easily set with

```
\setlist{leftmargin=*}
\setlist[1]{labelindent=\parindent} % Only the level 1
```

The second pattern aligns the item body with the surrounding `\parindent`. In this case:

```
leftmargin=\parindent
```

A third pattern would be to align the label with `\parindent` and the item body with `2\parindent`:

```
labelindent=\parindent,
leftmargin=2\parindent,
itemsep=*
```

Again, a variant would be to align the label with the surrounding text and the itembody with `\parindent`:

```
leftmargin=\parindent,
itemsep=*
```

Note here `\parindent` means the global value applied to normal paragraphs.

12 The trivlist issue

LaTeX uses a simplified version of `list` named `trivlist` to set displayed material, like `center`, `verbatim`, `tabbing`, `theorem`, etc., even if conceptually they are not lists. Unfortunately, `trivlist` uses the current list settings, which has the odd side effect that changing the vertical spacing of lists also changes sometimes the spacing in these environments.

This package modifies `trivlist` so that the default settings for the current level (ie, those set by the corresponding `clo` files) are set again. In standard LaTeX that is usually redundand, but if we want to fine tune lists, not resetting the default values could be a real issue (particularly if you use the `nolistsep` option).

A minimal control of vertical spacing has been made possible with[8]

- `\setlist[trivlist,`⟨*level*⟩`]{`⟨*keys/values*⟩`}`

but `trivlist` itself, which is not used directly very often, does not accept an optional argument. This feature is not intended as a full-fledge `trivlist` formatter.

If for some reason you do not want to change `trivlist` and preserve the original definition, you can use the package option `ignoredisplayed`.

13 Samples

In these samples we set `\setlist{noitemsep}`

```
En un lugar de la Mancha, de cuyo nombre no quiero acordarme,
no ha mucho tiempo que viv\'{\i}a un hidalgo de los de
\begin{enumerate}[labelindent=\parindent,leftmargin=*]
  \item lanza en astillero,
  \item adarna antigua,
  \item roc\'{\i}n flaco, y
  \item galgo corredor.
\end{enumerate}
Una olla de algo m\'{a}s vaca que carnero, salpic\'{o}n las m\'{a}s
noches, duelos y quebrantos los s\'{a}bados...
```

The rule shows `labelindent`.

[8] `\setdisplayed` is deprecated.

En un lugar de la Mancha, de cuyo nombre no quiero acordarme, no ha mucho tiempo que vivía un hidalgo de los de

1. lanza en astillero,
2. adarna antigua,
3. rocín flaco, y
4. galgo corredor.

Una olla de algo más vaca que carnero, salpicón las más noches, duelos y quebrantos los sábados...

With `\begin{enumerate}[leftmargin=*] % labelindent=0pt by default`.
The rule shows `labelindent`.

En un lugar de la Mancha, de cuyo nombre no quiero acordarme, no ha mucho tiempo que vivía un hidalgo de los de

1. lanza en astillero,
2. adarna antigua,
3. rocín flaco, y
4. galgo corredor.

Una olla de algo más vaca que carnero, salpicón las más noches, duelos y quebrantos los sábados...

With `\begin{enumerate}[leftmargin=\parindent]`.
The rule shows `leftmargin`.

En un lugar de la Mancha, de cuyo nombre no quiero acordarme, no ha mucho tiempo que vivía un hidalgo de los de

1. lanza en astillero,
2. adarna antigua,
3. rocín flaco, y
4. galgo corredor.

Una olla de algo más vaca que carnero, salpicón las más noches, duelos y quebrantos los sábados...

With `\begin{enumerate}[labelindent=\parindent, leftmargin=*, label=\Roman*., widest=IV, align=left]`.
The rule shows `labelindent`.

En un lugar de la Mancha, de cuyo nombre no quiero acordarme, no ha mucho tiempo que vivía un hidalgo de los de

I. lanza en astillero,
II. adarna antigua,
III. rocín flaco, y
IV. galgo corredor.

Una olla de algo más vaca que carnero, salpicón las más noches, duelos y quebrantos los sábados...

With `\begin{enumerate}[label=\fbox{\arabic*}]`. A reference to the first item is 1

En un lugar de la Mancha, de cuyo nombre no quiero acordarme, no ha mucho tiempo que vivía un hidalgo de los de

1 lanza en astillero,
2 adarna antigua,
3 rocín flaco, y
4 galgo corredor.

Una olla de algo más vaca que carnero, salpicón las más noches, duelos y quebrantos los sábados...

With nested lists.

```
En un lugar de la Mancha, de cuyo nombre no quiero acordarme,
no ha mucho tiempo que viv\'{\i}a un hidalgo de los de
\begin{enumerate}[label=(\alph*), labelindent=\parindent,
```

```
    leftmargin=*, start=12]
\item lanza en astillero,
\begin{enumerate}[label=(\alph{enumi}.\roman*), leftmargin=*, start=7]
\item adarna antigua,
\end{enumerate}
\item roc\'{\i}n flaco, y
\begin{enumerate}[label=(\alph{enumi}.\roman*), leftmargin=*, resume]
\item galgo corredor.
\end{enumerate}
\end{enumerate}
Una olla de algo m\'{a}s vaca que carnero, salpic\'{o}n las m\'{a}s
noches, duelos y quebrantos los s\'{a}bados...
```

En un lugar de la Mancha, de cuyo nombre no quiero acordarme, no ha mucho tiempo que vivía un hidalgo de los de

(l) lanza en astillero,

(l.vii) adarna antigua,

(m) rocín flaco, y

(m.viii) galgo corredor.

Una olla de algo más vaca que carnero, salpicón las más noches, duelos y quebrantos los sábados...

```
En un lugar de la Mancha, de cuyo nombre no quiero acordarme,
no ha mucho tiempo que viv\'{\i}a un hidalgo de los de
\begin{description}[font=\sffamily\bfseries, leftmargin=3cm,
    style=nextline]
  \item[Lo primero que ten\'{\i}a el Quijote] lanza en astillero,
  \item[Lo segundo] adarna antigua,
  \item[Lo tercero] roc\'{\i}n flaco, y
  \item[Y por \'{u}ltimo, lo cuarto] galgo corredor.
\end{description}
Una olla de algo m\'{a}s vaca que carnero, salpic\'{o}n las m\'{a}s
noches, duelos y quebrantos los s\'{a}bados...
```

En un lugar de la Mancha, de cuyo nombre no quiero acordarme, no ha mucho tiempo que vivía un hidalgo de los de

Lo primero que tenía el Quijote
lanza en astillero,
Lo segundo adarna antigua,
Lo tercero rocín flaco, y
Y por último, lo cuarto
galgo corredor.

Una olla de algo más vaca que carnero, salpicón las más noches, duelos y quebrantos los sábados...

Same, but with `sameline`.

En un lugar de la Mancha, de cuyo nombre no quiero acordarme, no ha mucho tiempo que vivía un hidalgo de los de

Lo primero que tenía el Quijote lanza en astillero,
Lo segundo adarna antigua,
Lo tercero rocín flaco, y
Y por último, lo cuarto galgo corredor.

Una olla de algo más vaca que carnero, salpicón las más noches, duelos y quebrantos los sábados...

Same, but with `multiline`. Note the text overlaps if the item body is too short.

En un lugar de la Mancha, de cuyo nombre no quiero acordarme, no ha mucho tiempo que vivía un hidalgo de los de

Lo primero que tenía el Quijote lanza en astillero,
Lo segundo adarna antigua,
Lo tercero rocín flaco, y
Y por último, lo cuarto galgo corredor.

Una olla de algo más vaca que carnero, salpicón las más noches, duelos y quebrantos los sábados...

14 Afterword

14.1 LaTeX lists

As it is well known, LaTeX predefines three lists: `enumerate`, `itemize` and `description`. This is a very frequent classification which can also be found in, say, HTML. However, there is a more general model based in three fields—namely, label, title, and body—, so that enumerate and itemize has label (numbered and unnumbered) but no title, while description has title but no label. In this model, one can have a description with entries marked with labels, as for example (of course, this simple solution is far from satistactory):

```
\newcommand\litem[1]{\item{\bfseries #1,\enspace}}
\begin{itemize}[label=\textbullet]
\litem{Lo primero que ten\'{\i}a el Quijote} lanza en astillero,
... etc.
```

En un lugar de la Mancha, de cuyo nombre no quiero acordarme, no ha mucho tiempo que vivía un hidalgo de los de

- **Lo primero que tenía el Quijote,** lanza en astillero,
- **Lo segundo,** adarna antigua,
- **Lo tercero,** rocín flaco, y
- **Y por último, lo cuarto,** galgo corredor.

This format in not infrequent at all and a tool for defining them is on the way and at a very advanced stage. It has not been include in version 3.0 because I'm not sure if the proper place is this package or titlesec and it is not stable enough yet.

14.2 Known issues

- List resuming is based on environment names, and when a `\newenvironment` contains a list you may want to use `\begin` and `\end`. Using the corresponding commands, however, is not an error, but it is your responsability to make sure the result is correct.
- It seems there is no way to catch a misspelled name in `\setlist` and a meaningless error "Missing number, treated as zero" is raised.
- The behaviour of mixed boxed labels (including enumerate and itemize) and unboxed labels is not well-defined. The same applies to boxed and unboxed inline lists (which could even raise an error). Similarly, resuming a series and a list at the same time is allowed, too, but again its behaviour is not well-defined.
- (3.5.2) An incompatibility with 2.x has popped up – if you were using the optional argument to pass a value to a `\ref` or other macro requiring expandable macros, an error is raised. A quick fix is letting `\makelabel` to `\descriptionlabel` in `before`.

14.3 What's new in 3.0

- Inline lists, with keys to set how items are joined (ie, the punctuation between items). Two modes are provided: `boxed` and `unboxed`.

- `\setlist` is calc-savvy (eg, for use in loops), and you can set diferent lists and levels at once.
- All lengths related to labels can take the value `*` (and not only `labelsep` and `leftmargin`). Its behaviour has been made consistent and there is new value `!` which does not compute the widest label.
- With `\restartlist{`⟨*list-name*⟩`}`, list counters can be restarted (in case you are using `resume`).
- `resume*` can be combined with other keys.
- Lists can be gathered globally using series, so that they are considered a single list. To start a series just use `series=`⟨*series-name*⟩ and then resume it with `resume=`⟨*series-name*⟩ or `resume*=`⟨*series-name*⟩.
- The "experimental" `fullwidth` has been replaced by a new key `wide`.
- `\SetLabelAlign` defines new align values.
- You can define "abstract" values (eg, `label=numeric`) and new keys.

- (3.2) `start` and `widest*` are calc-savvy.
- (3.2) `\value` can be used with `widest*`.
- (3.2) Some internal restrictions in `\arabic` and the like has been removed. It is more flexible at the cost of having a more "relaxed" error checking.

14.4 Bug fixes

- Star values (eg, `leftmargin=*`) could not be overriden and new values were ignored.
- `nolistsep` as the first of several keys was not always recognized and therefore treated like a short label (i.e., `nol\roman*stsep`).
- `labelwidth` did not always work (when there was a prior `widest` and `*`)
- With `align=right` the label and the following text could overlap.
- `description` did not get the correct list level.
- At some point (2.x?) `\value*` stopped working.
- (3.1) Unfortunately, xkeyval "kills" keyval, so the lattest has been replicated in enumitem.
- (3.3) Fixes a serious bug – with `*` neither `itemize` nor `description` worked.
- (3.4) Fixes bad spacing in mode boxed (misplaced `\unskip` before the first item and wrong spacefactor between items).
- (3.4) `nolistsep` did not work as intended, but since the error has been there for several years, a new key `nosep` is provided.
- (3.4) The issue with `nolistsep` with `shortlabels` (see above) was not fixed in all cases. Hopefully now it is.
- (3.5.0) Fixed the fix related to the spacefactor between items.
- (3.5.0) Fixed a problem with nested boxed inline lists.
- (3.5.1) `resume*` only worked once, and subsequent ones bahaved like `resume`.
- (3.5.2) Fixed `\setlist*`, which didn't work.

14.5 Acknowledgements

I wish to thank particularly the comments and suggestions from Lars Madsen, who has found some bugs, too.