The `outlines` package

Charles Pecheur

Version 1.1 – January 23, 2012

Abstract

The `outlines` package defines the `outline` environment, that allows outline-style indented lists with freely mixed levels up to four levels deep. It replaces the nested `begin`/`end` pairs by different item tags `\1` to `\4` for each nesting level. This is very convenient in cases where nested lists are used a lot, such as for to-do lists or presentation slides.

1 Examples

1.1 Basics

```
\begin{outline}
  \1 This is a first item.
  \1[!!!] This is a second, with a custom label.
    \2 A level-2 item.
      \3 A level 3.
        \4 Deepest is level 4.
    \2 Back to level 2.
\0 A normal paragraph in the middle.
  \1 A couple more
    \2 items.
\end{outline}
```

Produces:

- This is a first item.

!!! This is a second, with a custom label.

  - A level-2 item.
    - A level 3.
      - Deepest is level 4.

- Back to level 2.

A normal paragraph in the middle.

- A couple more
  - items.

1.2 Changing List Styles at Each Level

```
\renewcommand{\outlineiii}{enumerate}
\begin{outline}
  \1 This is a first item.
    \2 A level-2 item in enumerate style.
    \2 And another.
\0 A normal paragraph in the middle.
\renewcommand{\outlineiii}{description}
  \1 More level-1.
    \2[Descr] Level-2 in description style.
\end{outline}
```

Produces:

- This is a first item.
  1. A level-2 item in enumerate style.
  2. And another.

A normal paragraph in the middle.

- More level-1.

  Descr Level-2 in description style.

1.3 Changing List Styles for the Whole Outline

```
\begin{outline}[enumerate]
\0 All in enumerate style.
  \1 A level-1 enum.
    \2 A level-2 enum.
      \3 A level-3 enum.
        \4 A level-4 enum.
\end{outline}
```

Produces:

All in enumerate style.

1. A level-1 enum.

(a) A level-2 enum.

i. A level-3 enum.

A. A level-4 enum.

1.4 With Custom List Styles

For example, the following list environment provides a variant of `enumerate` that keeps increasing item numbers across different enumerations:

```
\newcounter{cenum}
\newcounter{cenumsaved}
\setcounter{cenumsaved}{0}
\newcommand{\labelcenum}{\arabic{cenum}.}
\newenvironment{cenumerate}%
{\begin{list}{\labelcenum}{\usecounter{cenum}}%
 \setcounter{cenum}{\value{cenumsaved}}}%
{\setcounter{cenumsaved}{\value{cenum}}%
 \end{list}}
```

This can be used as a list style in an outline as follows:

```
\renewcommand{\outlineii}{cenumerate}
\begin{outline}
  \1 This is a first item.
    \2 A level-2 item in cenumerate style.
    \2 And another.
\0 A normal paragraph in the middle.
  \1 More level-1.
    \2 Level-2 with continued numbering.
\end{outline}
```

Which produces:

- This is a first item.
    1. A level-2 item in cenumerate style.
    2. And another.

A normal paragraph in the middle.

- More level-1.
    3. Level-2 with continued numbering.

2 Usage

In the preamble:

- `\usepackage{outlines}`

  loads this package (no options supported).

In the document:

- `\begin{outline}[`*style*`]` *body* `\end{outline}`

  produces an *outline* region, with a hierarchy of items up to four levels deep. The outline is formatted according to *style*, which must be the name of a LaTeX list environment. The default is `itemize`. All levels use the same style.

- `\renewcommand{\outlinei}{`*style*`}`
  `\renewcommand{\outlineii}{`*style*`}`
  `\renewcommand{\outlineiii}{`*style*`}`
  `\renewcommand{\outlineiiii}{`*style*`}`

  change the list style to *style* for levels 1, 2, 3 and 4.

Inside *body*:

- `\1[`*lbl*`]`, `\2[`*lbl*`]`, `\3[`*lbl*`]`, `\4[`*lbl*`]`

  introduce outline items at the four nesting levels. They are used the same way as `\item[`*lbl*`]` in list environments, where *lbl* is an optional custom item label.

- `\0`

  introduces a normal, non-itemized paragraph.

3 Remarks

LaTeX list environments cannot begin with a nested list. In outlines, that means that a level-n item may only follow an item of level $n-1$ or higher. For example, the following produces two "`missing \item`" errors:

```
\begin{outline}
    \2 Missing level 1,
        \4 missing level 3.
\end{outline}
```

Do not use outlines inside other outlines or other list environments. Nested lists in outlines should work and be consistent with the current level of the outline (e.g. a nested list following a level-2 outline item will look as a level-3 list). The four-level limit applies overall.

Outside an outline, re-defining outline styles (by changing `\outlinei` etc.) will apply to all posterior outlines; inside an outline, it will apply only according to usual LaTeX list scoping rules: for example, re-defining `\outlineii` at level 1 will apply to posterior level-2 sub-lists within this level-1 sublist only; re-defining `\outlineii` inside a level-2 sub-list will have no effect. Note that the *style* parameter of the `outline` environment applies to non-redefined styles only.

4 Implementation Notes

The package is implemented in LaTeX (no plain TeX); it should be easy to understand and customize even to a non-TeX-pert. The main programming trick is a set of commands `\ol@toz`, ..., `\ol@toiiii` which are dynamically modified to contain the necessary list openings or closings to reach outline levels 0 to 4 from the current level.

Outlines expand to the corresponding hierarchy of nested lists of the selected style. All custom list formatting and user-provided list styles should be compatible with `outline` environments, as long as they keep the `\item` syntax.

History

v 1.1 (Jan 2012) Added re-definition of individual list styles.

(no version) (Mar 2005) Initial release.

5 Credits

This package was developed by Charles Pecheur at Université catholique de Louvain, Belgium. Charles Pecheur can be contacted at `charles.pecheur@uclouvain.be`.

This package is independent from similar packages `outline.sty` and `outliner.sty`, available on the CTAN archive.