lineno.sty
Users Manual

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Version 3.1, 2001/08/03

Contents

1 When to use `lineno.sty`

The primary use of `lineno.sty` is to get line numbers in your LaTeX document. `lineno.sty` directly supports line numbers in various modes, and if you have any wishes that are not directly supported, chances are good that `lineno.sty` can be adapted to do it. And if it turns out to be difficult with `lineno.sty`, then it will be even more difficult without.

There is one class of cases however, where `lineno.sty` is not the most appropriate tool. When your text already comes in lines, like source listings, tables, poetry, then `lineno.sty` will propably do the job, but other tools could do it much more efficiently.

`lineno.sty` can only number lines in the main text. Lines in any kind of boxes cannot be numbered. But see section 7.4 below.

`lineno.sty` is especially useful when the text is broken into lines by TeX itself. In this case, the task to attach line numbers is not easy, and a tool like `lineno.sty` has good chances to break when used together with other packages.

On the other hand, `lineno.sty` proved to be quite stable, and I did not get any reports of complete failure yet.

With `lineno.sty`, you can refer to the line numbers via LaTeXs \ref and \pageref macros.

There are other applications, not directly related to line numbering. Whenever you want to attach something to your text, after a paragraph was broken into lines, across pagebreaks, lineno may do the job.

> Say, you need a frame around some text, but the text should be able to break across pages, `lineno.sty` can be used to draw rules on both margins, which can be completed at the top and bottom by some special environment, see section 7.6.

There may be cases, where other packages do a better job, e.g., `CTAN: macros/latex/contrib/supported/numline`.

2 Where to get `lineno.sty`

`lineno.sty` is available on the *Comprehensive TeX Archive Network* (CTAN), e.g, `ftp://ftp.tex.ac.uk/tex-archive/macros/latex/contrib/supported/lineno/lineno.sty`.

The home of `lineno.sty` is `http://www.nevis.columbia.edu/~stephan/tex/#lineno`. Here you can get the latest version.

3   How to use `lineno.sty`

As any other LaTeX 2_ε package, you need to load it with

> `\usepackage[`⟨*options*⟩`]{lineno}`

3.1   Package options

The available ⟨*options*⟩ are:

`[left]:` Put the line numbers into the left margin (default).

`[right]:` Put the line numbers into the right margin.

`[switch]:` Put the line numbers into the outer margin (left on even numbered pager, right on odd numbered pages).

`[switch*]:` Put the line numbers into the inner margin.

`[pagewise]:` Number the lines from 1 on each page.

`[running]:` Continuously number the lines (default).

`[modulo]:` Print line numbers only if they are multiples of five.

`[mathlines]:` When using the `{linenomath}` environment for display math, put line numbers also on the lines of the display.

`[displaymath]:` Automatically wrap the standard LaTeX display math environments in `{linenomath}`.

> *Change from v2 to v3:* `[mathlines]` *was called* `[displaymath]` *before, and* `[displaymath]` *was* `\usepacke{mlineno}`.

All effects of these option can also be obtained by calling certain macros later in the document, except for `[displaymath]`.

3.2   How to turn on line numbering

The line numbering is not activated by default. If you want line numbers, you have to turn it on. The simplest way is to say

> `\linenumbers`

This will turn on line numbers within the current group, according to the currently selected mode. If you do it right at the beginning, the whole document will be numbered.

`\linenumbers` takes effect only when a paragraph is finished. This is important if you use `\linenumbers` for a single paragraph only. This will *not* work:

```
\begingroup
\linenumbers
```

Text of your paragraph.

```
\endgroup
```

because the `\endgroup` terminates the effect of `\linenumbers` before the paragraph is finished. The solution is to insert an empty line, or an explicit `\par` before the `\endgroup`.

The prefered solution is to use an enviroment:

```
\begin{linenumbers}
```

Text of your paragraph.

```
\end{linenumbers}
```

`\end{linenumbers}` terminates the paragraph for you. It will also make sure that the next paragraph is not indented, if there is no empty line in between.

This form will not finish any preceeding paragraph. If you do not leave an empty line before `\begin{linenumbers}`, the previous paragraph may also get line numbers (this is not true after a list environment).

A quite esoteric form to number a single paragraph is:

Text of your paragraph.

```
{\linenumbers\par}
```

Here, the `\linenumbers` is turned on in a group that just executes the `\par` to terminate the previous paragraph. Only this paragraph will have line numbers. (`\par` is exactly equivalent to an empty line).

3.3 How to turn off line numbering

You do not usualy turn of line numbering explicitly, but rather restrict line numbering to a group or an environment. However, you can turn it off with the command

```
\nolinenumbers
```

This macro can also be used as an environment. The same restrictions apply as for `\linenumbers`.

4 Numbering modes

Attaching line numbers after TeX has broken the paragraph into lines is already quite a difficult job for TeX. Why? Because TeX does not normally give you any control after line breaking. `lineno.sty` does it by pretending that the current page ends after each and every line. This keeps TeX quite busy, but works.

Often, you want the line numbers to depend on the page they finally end up. E.g., you want the numbers to start with 1 one each new page, or you want them to appear on the outer margins in twoside mode. This is an almost impossible demand, but `lineno.sty` can do it, at some cost, in terms of computing time, memory, and disk space. `lineno.sty` needs to write a note into the auxiliary file for each line in the numbered part of the text, and TeX keeps some memory for each page, and all that takes some computation time to figure out on which page the line was in the last LaTeX run.

Thus, there are two basic numbering modes

1. *Running* line numbers. The numbers run continuously along the document, without considering page breaks.

   The line numbers can be reset, or preset at any point in the document (except within a paragraph). Margin switching (or any other dependence on the page breaks) is not possible.

2. *Pagewise* line numbers. The lines on each page are numbered from one. Automatic margin switching is possible.

   Running mode can be simulated in pagewise mode, to get automatic margin switching with continuous line numbers, but without the ability to reset/preset the line numbers anywhere in the document.

   Any feature that depends on the page breaks must use this mode.

4.1 *Running* line numbers

This is the default mode of operation. The lines of your text are numbered continuously across page breaks.

You cannot get automatic margin switching in this mode, because at the time when the line numbers are attached, it is not yet decided on which page the line will end up. However, you can simulate continuous line numbers in *pagewise* mode (see below), where margin switching becomes possible.

You get this mode by

- *not* specifying any of the package options [`switch,pagewise`],

- specifying the package option [running],

- give the command \setrunninglinenumbers in the document, or

- turn on line numbering with \runninglinenumbers or
  \begin{runninglinenumbers}.

4.1.1   Reseting or setting the line number

You can reset the line number with

    \resetlinenumber[⟨number⟩]

where the default is to reset the line number to one.
    Alternatively, you can give the line number in an optional argument to
any command that turns on the line numbering in this mode:

    \linenumbers[⟨number⟩]

    \runninglinenumbers[⟨number⟩]

    \begin{linenumbers}[⟨number⟩]

    \begin{runninglinenumbers}[⟨number⟩]

or reset the line number to 1 with any of the following:

    \linenumbers*

    \runninglinenumbers*

    \begin{linenumbers*}

    \begin{linenumbers}*

    \begin{runninglinenumbers*}

    \begin{runninglinenumbers}*

This section of the manual is enclosed in

    \begin{runninglinenumbers*}

    \end{runninglinenumbers*}

4.2 *Pagewise* line numbers

Basically, this mode prints line numbers starting with 1 on top of each page, counting only lines where this mode is active. If you turn on this mode in the middle of a page, the numbers start with 1 at that point.

The *pagewise* mode of operation is quite a bit more work for TeX. When the line numbers are printed, TeX does not know on which page the current line will go. To get *pagewise* mode working, LaTeX has to remember on which page the line went in a previous run. This information is written into the `.aux` file, and like a table of contents, you will not see the numbers until you run LaTeX at least twice on the document. Sometimes the information in the `.aux` file becomes invalid in a way that causes `lineno.sty` to hang. In such a case you'll have to delete all `.aux` files of the document to get it going again.

You get this mode by

- specifying the package option [pagewise], but not [running],

- give the command \setpagewiselinenumbers in the document, or

- turn on line numbering with \pagewiselinenumbers or \begin{pagewiselinenumbers}.

You cannot reset or preset the line numbers in *pagewise* mode. This mode uses a different counter than *running* mode. You can switch between the mode, and the *running* numbers will continue where they left of, unless you reset the counter.

4.2.1 Margin switching

As a side effect of all the business to find out on which page the lines end up, margin switching becomes possible. It is now possible to print the line number differently on odd and even pages. The command

\switchlinenumbers

will cause the line numbers to be printed on the outer margins, on the right side for odd pages, and on the left side for even numbered pages. If you add a star, the numbers go on the inner margins

\switchlinenumbers*

You can achieve the same effect by specifying the package option [switch] or [switch*] together with [pagewise].

Margin switching is independent of any [twoside] option of the document class.

4.2.2 *Running* mode with margin switching

Margin switching is not possible in *running* mode, but you can abuse the pagewise mode to produce continuous line numbers. This mode is activated with the command

```
\runningpagewiselinenumbers
```

It is not possible to reset the line number counter for this mode, the lines will be numbered starting from one at the beginning of the document, and continue. You can switch back to real pagewise mode with

```
\realpagewiselinenumbers
```

but when you resume *running-pagewise*, the numbers will not continue where they left off, but jump by the number of lines that were numbered *real-pagewise*.

The package options [switch] and [switch*] will turn on *running page-wise* mode with margin switching, unless you also specify [pagewise].

Finally, if you give these options together with [running], like

```
\usepackage[switch,pagewise,running]{lineno}
```

the mode is set to plain *running* line numbers, but later in your document, if you say \pagewiselinenumbers, the setings of the [switch] and [pagewise] options will take effect.

4.2.3 Page numbers

Any pages that contain *pagewise* numbered lines must have a different page number. This may cause trouble with titlepages or simmilar fudging with the page number counter in the document. (I am talking about \c@page or \count 0 here, not \thepage).

If you get strange errors, like *"the use of* \nextLN *does not match its definition"*, you should first delete all .aux files, and rerun LaTeX several times. If the error does not reappear, fine, else check your page numbers, including those that are not printed. You may use *running* line numbers on your titlepages, since the page boundaries are predefined, usually.

4.3 Margin selection

In any mode you can select a fixed margin on which the numbers shall be printed. You can either give a package option [left] or [right], or change the margin within the document with

```
\leftlinenumbers
```
5

```
\rightlinenumbers
```
6

Neither of these commands actually turns on line numbering. The margin setting is changed for the currently selected mode *running* or *pagewise*. If you want to set the margin for both modes, append a star

7
8
9

```
\leftlinenumbers*
```
10

```
\rightlinenumbers*
```
11

The default is `\leftlinenumbers*`.

12

4.4   Summary of mode selection commands

The following commands change the major line numbering mode.

```
\setrunninglinenumbers
\setpagewiselinenumbers
```
   set the current mode, without activating or deactivating line numbering.
```
\runninglinenumbers*[⟨number⟩]
\pagewiselinenumbers
```
   set the current mode and activate line numbering, optionally reset (*), or set the line number for *running* mode.

The following commands do not change the major mode, but modify the the behaviour of *pagewise* mode

```
\realpagewiselinenumbers
\runningpagewiselinenumbers
```
   select if *pagewise* mode should number continuously, or really pagewise.

4.5   Summary of margin selection commands

The following command select into which margin the numbers should be printed

```
\leftlinenumbers*
\rightlinenumbers*
```
   put the line numbers in the left/right margin in both modes.
```
\leftlinenumbers
```

```
\rightlinenumbers
```
> put the line number into the left/right margin in the currently selected
> mode.
```
\switchlinenumbers
```
> put the line numbers into the outer margin, when using *pagewise* mode.
```
\switchlinenumbers*
```
> put the line numbers into the inner margin, when using *pagewise* mode.

4.6   Numbering only one in five lines

2 You can ask lineno to print the line numbers only if they devide by $\langle n \rangle$, by
saying

4   `\modulolinenumbers[`$\langle n \rangle$`]`

If you omit the optional argument, it will be every fifth line, or whatever you
6 used last (the current value of the counter `linenumbermodulo`). You get the
same effect by giving the package option `[modulo]`.

8   If you set $\langle n \rangle$ to 1, the modulo value is not changed, but modulo num-
bering is turned off.

10   Changing the counter `linenumbermodulo` does not turn on modulo num-
bering, it just changes the modulo, if it is turned on without the optional
12 argument.

This section of the manual is enclosed in

14   `\begin{linenumbers*}`
        `\modulolinenumbers[2]`

16   `\end{linenumbers*}`

4.7   How the line numbers look like   1

This section of the manual is enclosed in   2

        `\begin{pagewiselinenumbers}`   3
        `\switchlinenumbers`   4

        `\end{pagewiselinenumbers}`   5

By default, the line numbers are set in   6

        `\normalfont\tiny\sffamily`   7

9

1 right justified to 10 pt left of the nominal left edge of the text. If the number
2 is to appear on the right margin, it is right justified to 20 pt right of the
3 nominal right edge of the text.
4   You can easily change that, of course. The font is defined by the macro

5   `\linenumberfont`

6 You can redefine it to make the numbers appear in a differnt font (with
7 `\renewcommand`). I'll say right here in this manual

8   `\renewcommand\linenumberfont{\normalfont\bfseries\small}`

9 The distance on the left margin can be changed with

10   `\setlength\linenumbersep{`$\langle distance \rangle$`}`

11 The distance on the right margin is `\linenumbersep` plus `\linenumberwidth`,
12 both are set to 10 pt by default. Let's do right here

13   `\setlength\linenumbersep{1cm}`

14 I put the command at the end of the paragraph, but it effects the whole
15 paragraph, because that is where everything happens: at the end of the
16 paragraphs.
17   The line numbers are printed as arabic numerals, as defined in the macro

18   `\thelinenumber`

xix for the LATEX counter `{linenumber}`. You can redefine that, as for any other
xx LATEX counter. E.g.,

xxi   `\renewcommand\thelinenumber{\roman{linenumber}}`

xxii (For heavy duty line numbering, you should use LATEXs internal format, e.g.,
xxiii `\@roman\c@linenumber`.)

4.7.1 Deeper customization

xxv The line number is attached to the line by the macro

xxvi   `\makeLineNumber`

→ which is expanded inside a zero width `\hbox` alligned to the origin of the ←
→ current line (left edge, baselines alligned). You can do anything in this macro. ←
→ Let's assume you do not want line numbers at all, but just attach something ←
→ else to each line of text: this is the macro to modify. You can refer to the ←

→ line number by the macro \LineNumber, which prints the current value of the ←
→ counter {linenumber}, or nothing if *modulo* mode is active, and the number ←
→ does not divide by {linenumbermodulo}. You should not modify this macro ←
→ when using any form of *pagewise* mode. At the end of this paragraph I put ←
→ the following ←

```
\begin{runninglinenumbers}                                        i
\renewcommand\makeLineNumber                                      ii
 {\hss$\rightarrow$\ \rlap{\hskip\textwidth\ $\leftarrow$}}        iii
\end{runninglinenumbers}                                          iv
```

Redefining \makeLineNumber cuts deep into the linenumber mode setting.   **v**
If you still want to use the basic modes *running* and *pagewise* you should   **vi**
go one level up and modify one of the following macros, which are called by   **vii**
(or assigned to) \makeLineNumber depending on the current mode, and with   **viii**
the counter {linenumber} allready adjusted for the current page when using   **ix**
pagewise mode.   **x**

```
\makeLineNumberRunning                                            xi

\makeLineNumberOdd                                                xii

\makeLineNumberEven                                               xiii
```

The first is used in *running* mode, the other two in *pagewise* mode. If you   **xiv**
modify those, you cut into the margin selection mechanism as advertised   **xv**
above. You will have to call a mode selection command after changing these   **xvi**
macros, to make them take effect (at least for \makeLineNumberRunning).   **xvii**
You can go up one more step. The margin selection commands redefine   **xviii**
the above macros by making them equivalent (\let) to one of the following   **xix**
macros   **xx**

```
\makeLineNumberLeft                                               xxi

\makeLineNumberRight                                              xxii
```

You may redefine these, and afterwards issue a margin selection command   **xxiii**
followed by a mode selection command. The default definitions are   **xxiv**

```
\def\makeLineNumberLeft                                           xxv
  {\hss\linenumberfont\LineNumber\hskip\linenumbersep}            xxvi
```

and   **xxvii**

```
\def\makeLineNumberRight                                          xxviii
  {\linenumberfont\hskip\linenumbersep\hskip\textwidth            xxix
    \hbox to\linenumberwidth{\hss\LineNumber}\hss}                xxx
```

i) Whatever you do, use `\LineNumber` to print the digits. This ensures that the modulo mode setting is acknowledged. If you want to customize that

iii) as well, this is the macro to change. `\LineNumber` eventually refers to `\thelinenumber`, which is the place to customize the numerals themselves.

v) At the end of this paragraph I said

```
\renewcommand\LineNumber
```
vii)
```
        {\ifodd\value{linenumber} \thelinenumber)\fi}
```

Line number references are not affected by `\LineNumber`, but you should

ix) keep track of `\thelinenumber`. Look at the following reference

The setion title of the next section is on page 12, line xiii.

xi) There is a mismatch in the definition of `\thelinenumber`, from the point of the refered line to the reference here.

₁₃ 5 Line number references

₁₄ `lineno.sty` allows to refer to a line number with `\ref{`⟨*label*⟩`}`. The label is
₁₅ set by `\linelabel{`⟨*label*⟩`}`, anywhere in a paragraph that gets line numbers.
₁₆ If you put a `\linelabel` somewhere else, the line number it refers to is pretty
₁₇ meaningless, but no error message is issued. (This section begins on line 13,
₁₈ page 12 and ends on line 16, page 13.)

₁₉ References work both in *running* and *pagewise* modes. However, you
₂₀ have to be very careful when using both *real pagewise* mode and *running*
₂₁ *pagewise* mode: The mode setting must be the same during reference as
₂₂ during labeling.

₂₃ The restrictions on placing a `\linelabel` are the same as for a `\marginpar`.
₂₄ (In fact, they are implemented as fake `\marginpar`s.) E.g., the linelabel on
₂₅ the section header of this chapter could not be placed in the straight forward
₂₆ way, because it would cause an error in the table of contents. (It should be
₂₇ disabled during *toc* processing.) Instead, I typed

₂₈ `\section[Line number references]`
₂₉ `        {Line number references\linelabel{ll1}}`

₃₀ This works fine, with the standard LaTeX `{article}` document style. If more
₃₁ generic markup is required, you should avoid things like this (you should
₃₂ avoid `lineno.sty` altogether, in that case).

₃₃ `\linelabel` does not work in display math. (Why, you do not use equa-
₃₄ tion numbers?)

The `\linelabel` command starts a new paragraph if it is issued after an empty line. It will properly ignore further whitespace before the first word of text. Thus you can easily get a label to the first line of a paragraph.

Furthermore, `\linelabel` uses LaTeXs standart tricks to avoid unnecessary spaces if you place is between two words with spaces around, but you should not do that anyway, if you want to make sure that the label applies to a certain word in the text. You should attach the line label to the word in question without intervening spaces, either before of after the word. If you leave spaces both before and after the `\linelabel` command, the current implemenation attaches the line label to the following word (by ignoring the trailing space).

Special care should be taken at the end of a paragraph. You better put the line label without intervening spaces behind the period, like this

```
This is the end of this section.%
\linelabel{ll2}
```

This is the end of this section.

6   Known incompatibilities

This section will expand whenever somebody discovers problems when using *lineno.sty* together with LaTeX packages.

6.1   wrapfig.sty

lineno.sty used to have problems with `wrapfig.sty`, but this is solved but *lineno.sty*, version 2.05.

7   Extension packages

The extension packages were abolished with version v3.00 of *lineno.sty*. One package, `itemrule.sty`, was dropped, the others were put directly into the the main *lineno.sty* package file.

7.1   Display math, *mlineno*

lineno.sty does not work well with display math. The parts of a paragraph preceeding a display math will not get line numbers. The reason is that the paragraph is not finished, but the part above the display is broken into lines anyway.

13

¹⁶ Let me demonstrate the effect. This paragraph contains a `{displaymath}`
¹⁷ environment. The part before the Formula does not get line numbers. Here
¹⁸ comes the Formula

$$6\,H_2O + 6\,CO_2 \;\rightarrow\; C_6H_{12}O_6 + 6\,O_2$$
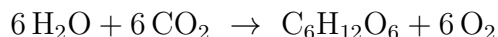
¹⁹ which makes the line numbers disappear. The trailing part of the paragraph
²⁰ does get line numbers.
²¹ There are several means to solve the problem, but none of them is fully
²² satisfactory. *lineno.sty* defines a `{linenomath}` environment, which can
²³ be wrapped around a display math to make the line numbering work. This
²⁴ will work with any kind of display math, even if you use explicit `$$` pairs.
²⁵ There is a *-form `{linenomath*}` which also numbers the lines of the display
²⁶ itself, as good as it can. Here comes an example use of `{linenomath*}`

$$
\begin{aligned}
b_1 &=& a_{11}x_1 + a_{12}x_2 \\
b_2 &=& a_{21}x_1 + a_{22}x_2
\end{aligned}
$$

²⁹ wrapping an `{egnarray*}` like this

```
\begin{linenomath*}
  \begin{eqnarray*}
    b_1 &=& a_{11}x_1 + a_{12}x_2 \\
    b_2 &=& a_{21}x_1 + a_{22}x_2
  \end{eqnarray*}
\end{linenomath*}
```

³⁶ Specifying the package option `[mathlines]`, causes the `{linenomath}` en-
³⁷ vironment to switch its function with its *-form. This allows you to later
³⁸ decide if you want the numbers on the formulas or not, without putting in
³⁹ stars everywhere (as long as you have been consistent).
⁴⁰ The `{linenomath}` wrapper does nothing if line numbering is not ac-
⁴¹ tivated. You do not need to remove them if you decide to omit the line
⁴² numbering later (although you still have to load *lineno.sty*).
⁴³ The *mlineno* extension redefines the standard LaTeX display math envi-
⁴⁴ ronments to wrap themselves automatically into `{linenomath}`:

⁴⁵ `\[ \]`

⁴⁶ `{displaymath}`

⁴⁷ `{equation}`

⁴⁸ `{eqnarray}`

⁴⁹ `{eqnarray*}`

14

50 As of version 3.00 you can activate this by the package option [`displaymath`].
51 You can keep existing explicit {`linenomath`} wrappers without harm.
52   This will probably not work with AMSmath.
53   Other solutions to make *lineno.sty* work with display math are either
54 ugly or less stable. The ugly possibility is to precede every display math with
55 an empty line, or better with

56   `{\par\nobreak\noindent}`

57 but this gains you nothing compared to using the {`linenomath`} environ-
58 ment, since you still have to modify your document.

7.2 *rlineno*

59 It is currently not possible to put a `\linelabel` into math mode. This should
60 not impose problems with inline math, since you can attach the label just
61 outside the math shift, like

62   `... \linelabel{`⟨*label*⟩`}$x=f(y)$ ...`

63 but to refer to a line in display math, you cannot label it directly.
1   The extension *rlineno* offers a solution, allowing to refer to a line number
2 with an offset.
3   This extension is now available with plain *lineno.sty* v3.00.
4   You put the `\linelabel` at the end of the preceeding line, and refer to
5 that number, plus 1 or, in case of multiline displays, by any other offset.

6   `...\linelabel{`⟨*label*⟩`}`
7   `\begin{equation}`
8   `y=f'(x)`
9   `\end{equation}`
10   `... the formula in line \lineref[+1]{`⟨*label*⟩`}`

11 The offset calculation is different for pagewise or running line numbers, and
12 you will have to make sure the right method is used.
    The macro `\lineref[`⟨*offset*⟩`]{`⟨*label*⟩`}` uses the method of the currently
selected mode (line numbering need not be activated). To specify the mode
explicitly, use `\linerefr` or `\linerefp` for running or pagewise mode re-
spectively.
    For example, the manual sets a `\linelabel{rll1}` at the end of the line
preceeding the single line quote environment at line 62 in the first paragraph
of this chapter, and refered to it via

    `\linerefr[+1]{rll1}`

15

and another one preceeding the quote environment in the second paragraph of this chapter, with the central line numbered 8, which I just refered to via

> `\linerefp[+3]{rll2}`

64 If the correct mode is selected (e.g., `\setrunninglinenumbers`), you can use
65 `\lineref[+1]{rll1}` to refer to line 62.

7.3   *numquote*

This extension defines two environments, each of them with a *-form or alternatively an optional argument.

> `\begin{numquote}`
>
> `\end{numquote}`

is like `{quote}`,

> `\begin{numquotation}`
>
> `\end{numquotation}`

is like `{quotation}`, but with the lines numbered. Numbering restarts with 1 each time it is used, except you use the *-form, or specify the line number to start with in an optional argument.

1 The line numbers set to the left of the text, indented by the same
2 amount as the quote or quotation. This works as expected even
3 if the quote appears in a nested list.

To customize the distance from the text or the shape of the numbers, you can modify the macros `\quotelinenumbersep` and `\quotelinenumberfont` respectively.

As of version 3.00, this is available directly with *lineno.sty*.

16

7.4 *ilineno*

<div style="border:1px solid">

13 Sometimes you need line numbers within a `\parbox` or figure.
14 This extension can do that, if the text is simple enough. It
15 works by drawing a ladder of numbers next to the paragraph,
16 each number vertically separated by `\baselineskip` from the
17 other. This obviously dose not work nicely with anything but
18 straight text. Extra high lines (like this: $x = \dfrac{A}{B}$) will disturb
19 the alignment. The power of *lineno.sty* is not necessary to
20 achieve this, but you may need both in one document with
21 a somewhat coherent interface, and some of the necessary
22 infrastructure from *lineno.sty* is actually useful.

</div>

The preceding paragraph was set like this:

```
\begin{center}\fbox{\parbox{0.8\textwidth}{
\internallinenumbers
\resetlinenumber[13]
  Sometimes you need ...
}}\end{center}
```

7.5 *itemrule.sty*

Somebody asked me if he can get a rule next to an itemized item, from the bullet downwards. This style did that. It was unstable and of little interest, so it is gone from the *lineno.sty* distribution.

7.6 *bframe*

lineno.sty can be used for unexpected purposes. The environment

    `\begin{bframe}`

    `\end{bframe}`

draws boxes around some text, even across page breaks. At a page break, the box is open (it is difficult to fix that). There are two parameters:

`\bframesep`
   defines the separation of the box from the text.
`\bframerule`
   defines the thickness of the lines around the text.

It works by asking *lineno.sty* to draw small rules left and right to the lines. The total height of the rules is \baselineskip plus \bframesep. This leaves some extra space for extra high lines.

The current version is very preliminary. In a future version there may be a possibility to move the vertical lines inwards for indented text. The box may optionally be closed at page breaks. It will not likely be possible to have a colored background in the box, at least not with a graphics driver that cannot put a background behind existing foreground (Postscript cannot, I've been told). Tell me how to make a gray background, like block dots on transparent, and I can do shaded boxes.

8 How to print the documented source

lineno.sty is written in three programming languages: TeX, sh, and awk.

The file can be loaded as a LaTeX 2$_\varepsilon$ package as it is. However, if you feed it into a Unix shell, like

```
csh>  source ./lineno.sty
```

it will produce the files lineno.tex and lineno.dvi, which is the documented source of *lineno.sty*. If you want to learn how it works, or you need to adapt *lineno.sty* for some special requirements, you should read that document.