

The `lastpage` package

H.-Martin Münch

<Martin.Muench at Uni-Bonn.de>

invented by Jeffrey P. Goldberg

<jeffrey+news at goldmark.org>

2021/09/03 v1.2n

Abstract

This L^AT_EX package puts the label `LastPage` (`\AtEndDocument`) into the `.aux` file, allowing the user to refer to the last page of a document. This might be particularly useful in places like headers or footers. –

When more than one page numbering scheme is used, or the `fnsymbol` page numbering scheme is used, or another package has output after this package, or the number of pages instead of the last page's name is needed, or the page numbers exceed a certain range, there might be problems, which can be solved by using the `pageslts` package instead.

Disclaimer for web links: The author is not responsible for any contents referred to in this work unless he has full knowledge of illegal contents. If any damage occurs by the use of information presented there, only the author of the respective pages might be liable, not the one who has referred to these pages.

Save per page about 200 ml water, 2 g CO₂ and 2 g wood:
Therefore please print only if this is really necessary.

Contents

1	Introduction	3
2	Usage	3
3	A lot of WARNINGS	4
3.1	<code>\AtEndDocument</code>	4
3.2	Interaction with very old versions of the <code>endfloat</code> package	5
3.3	Page name instead of page number	5
3.4	No write access to the <code>aux</code> file	5
3.5	Wrong last page number with more than one page numbering scheme	5
3.6	<code>\addtocounter{page}{...}</code> and <code>\setcounter{page}{...}</code>	6
3.7	Page number reset by <code>\pagenumbering{...}</code>	6
3.8	Last pages of different page numbering schemes	6
3.9	Current page	6
3.10	First page	6
3.11	Using the <code>fnsymbol</code> page numbering scheme	6
3.12	Page counter overflow	7
3.13	Other packages manipulating <code>\lastpage@putlabel</code>	7
4	Alternatives	8
5	Example	12
6	The implementation	15
7	Installation	22
7.1	Downloads	22
7.2	Package, unpacking TDS	24
7.3	Refresh file name databases	25
7.4	Some details for the interested	25
7.5	Compiling the example	25
8	Acknowledgements	26
9	History	27
	[1994/06/17 v0.99a]	27
	[1994/06/25 v0.1b]	27
	[1994/07/20 v0.1b (again)]	27
	[2010/02/18 v1.1]	27
	[2010/07/29 v1.2a]	27
	[2010/08/12 v1.2b]	28
	[2010/08/23 v1.2c]	28
	[2010/08/25 v1.2d]	28
	[2010/09/12 v1.2e]	28
	[2010/09/24 v1.2f]	29
	[2011/02/01 v1.2g]	29
	[2011/07/03 v1.2h]	29
	[2011/08/08 v1.2i]	29
	[2011/08/31 v1.2j]	29
	[2011/09/01 v1.2k]	29
	[2013/01/28 v1.2l]	30
	[2015/03/29 v1.2m]	30
	[2021/09/03 v1.2n]	30

1 Introduction

This L^AT_EX package puts the label `LastPage` (`\AtEndDocument`) into the aux file, allowing the user to refer to the last page of a document via `\pageref{LastPage}`. This might be particularly useful in places like headers or footers.

This package was invented by **Jeffrey P. Goldberg**, and is now maintained by H.-MARTIN MÜNCH. A big “Thank you!” to JEFFREY P. GOLDBERG for granting this.

If you are more ambitious in respect to your aims with this package, you might want to have a look at the `pageslts` package (see section 4: Alternatives).

2 Usage

Just load the package placing

```
\usepackage{lastpage}
```

in the preamble of your L^AT_EX 2_ε source file or

```
\usepackage{lastpage209}
```

in the preamble of your L^AT_EX 2.09 source file.

For example for various draft forms it is desirable to have a page reference to the last page, so that e.g. page footers can contain something like “page *N* of *K*”, where *N* is the current page and *K* is the last page. Once the package is loaded, anywhere in the text references can be made to the label `LastPage`. In particular one can use the `fancyhdr` or `nccfancyhdr` package, or redefinitions of the page headings and footings to get a reference to the last page.

In your document the code

```
\makeatletter
\renewcommand{\@evenfoot}{%
\normalsize\slshape DRAFT \today\hfil \upshape %
page \thepage{} of \pageref{LastPage}}
\renewcommand{\@oddfoot}{\@evenfoot}
\makeatother
```

creates footers like

“DRAFT September 3, 2021 page 7 of 9”

in the compiled document (cf. the `lastpage-example` file).

If the `hyperref` package is used, the references are hyperlinked to their aims. If these hyperlinks shall be suppressed, `\pageref*{...}` instead of `\pageref{...}` can be used.

The `lastpage` package does not provide the words “page” or “of”, but e.g. the `handout` class uses “of” in the definition of the footer. (In the `lastpage-example` also `\@evenfoot` is redefined, but it is not the `lastpage` package redefining this.)

If you want to change “page” or “of” (e.g. to another language), you therefore have got to look in the used class/package(s)/preamble instead of in the `lastpage` package.

If the number of the last page is needed, this can be extracted from the reference with the `refcount` package (<https://www.ctan.org/pkg/refcount>, since version 2.0 of it):

```
\newcounter{lastpagenumber}%
\setcounter{lastpagenumber}{\getrefbykeydefault{LastPage}{page}{1}}%
```

but this only works if the last page has an arabic number (and it is not necessarily the total number of pages). For example it would not work in the example file because of the `Roman` pagenumbers scheme:

```
\getrefbykeydefault{LastPage}{page}{1}
```

would result in IV instead of 4. When using the `pageslts` package, the counter `pagesLTS.pagenr` holds the value of the total number of pages (after a compilation run with writing access to the `.aux` file).

3 A lot of WARNINGS

(Short: try using the `pageslts` package instead, if you have room for some more `\counters`.¹)

3.1 `\AtEndDocument`

The output of a $\text{\LaTeX} 2_{\epsilon}$ run is not independent of the order in which the packages are loaded. It is often the case that the same formats for which one must put tables and figure at the end, are the ones in which endnotes are also required. If one wants to use `\AtEndDocument` here as well (as done for `\pageref{LastPage}`), then it is easy to get to three separate uses of `\AtEndDocument` (assuming one uses this for the endnotes as well). Clearly it is not safe for any package writer or user to assume that no material will follow what they put into `\AtEndDocument`. Therefore a message, which begins with `AED`, is included in every usage of `\AtEndDocument`. –

(The `pageslts` package solves this problem by using `\AfterLastShipout` from HEIKO OBERDIEK’S `atveryend` package for the references

```
\lastpageref{VeryLastPage} and \lastpageref{LastPages}.)
```

`lastpage` uses `\AtEndDocument{... \clearpage...}`, thus

```
\usepackage{lastpage}... \AtEndDocument{something}
```

will place *something* after the `\clearpage`. To place it earlier, use

```
\AtEndDocument{something}... \usepackage{lastpage}.
```

If the *something* is not known before `\usepackage{lastpage}`, you can use for example

```
...
\def\beforeLastpageClearpage{\relax}
\AtEndDocument{\beforeLastpageClearpage}
\usepackage{lastpage}
\begin{document}
...
\def\beforeLastpageClearpage{\textit{something}}%
...
\end{document}
```

¹To determine the number of used and available counters and other registers, the `regstats` package might be helpful.

(might need a protected and/or expanded `\def`). When `\cleapage` leads to some output, `\cleapage\textit{something}` instead of `\textit{something}` might be wanted.

3.2 Interaction with very old versions of the `endfloat` package

The very old version 2.0 (and earlier) of the `endfloat` package actually redefined the `\enddocument` command, and so interfered drastically with the $\LaTeX 2_\epsilon$ commands which make use of `\AtEndDocument`. Newer versions of `endfloat` exist (at the time of writing this documentation: v2.5d as of 2011/12/25) in modern documentation form, which should be available from the same source where you received this file, see subsection 7.1. (“Note that versions 2.1 and beyond will no longer work with $\LaTeX 209$. Get your administrator to upgrade your site to the new standard, $\LaTeX 2_\epsilon$. Although version 2.0 (a $\LaTeX 209$ version) will usually work with $\LaTeX 2_\epsilon$, it will not do so in combination with certain other packages.” (`endfloat` v2.5d, 2011/12/25))

A note is placed in the style file.

If you want your `LastPage` to label the last page of these end floats, you need to load `lastpage` after loading `endfloat` (or use `VeryLastPage` from the `pageslts` package instead). If, on the other hand, you want `LastPage` to refer to the (not so) last page, exclusive of the floats at the end, then load in the reverse order. Independent from the order of `lastpage` and `endfloat`, you will still need the modified² version of `endfloat`.

Other $\LaTeX 2.09$ (!) packages also seem to like to redefine `\enddocument`. In addition to the old `endfloat`, `harvard` comes to mind. All of these will need to be modified swiftly. **If possible, update to $\LaTeX 2_\epsilon$!**

3.3 Page name instead of page number

When any page numbering scheme other than `arabic` is used at the page, which `\pageref{LastPage}` refers to, the *name* and not the *number* of the page is given. For example, `Alph` page numbering scheme and 10 pages will give J instead of 10, `Roman` page numbering scheme and 10 pages will give X instead of 10, and so on.

(The `pageslts` package puts `\lastpageref{LastPages}` (with `s` at the end) at your disposal for remediation.)

3.4 No write access to the aux file

Some packages (e.g. `tikz` and `selectp`) sometimes prevent the output to the aux file. In that case a warning is issued. This is no problem as long as there is another compilation run where the label to the last page can be placed via the aux file.

3.5 Wrong last page number with more than one page numbering scheme

When more than one page numbering scheme is used, `LastPage` does not give the total **number** of pages (even if `arabic` is the page numbering scheme of that page). For example, for a document with VI+36 pages, it gives “36” as reference to the last page. While this is correct, the total number of pages is 42.

²New versions are available since more than 15 years, so it really might be time to update, if you did not do it already.

(The `pageslts` package puts `\lastpageref{LastPages}` (with `s` at the end) at your disposal for remediation.)

3.6 `\addtocounter{page}{...}` and `\setcounter{page}{...}`

When the page number was manipulated by `\addtocounter{page}{...}` or `\setcounter{page}{...}`, `LastPage` does not give the total **number** of pages (even if `arabic` is the page numbering scheme of that page).

(The `pageslts` package puts `\lastpageref{LastPages}` (with `s` at the end) at your disposal for remediation: `LastPages` ignores page number manipulation.)

3.7 Page number reset by `\pagenumbering{...}`

At a page numbering change the page number is reset to one. Therefore `LastPage` does not give the total **number** of pages (even if `arabic` is the page numbering scheme of that page). Furthermore, now two pages have the same name.

(The `pageslts` package does not only put `\lastpageref{LastPages}` (with `s` at the end) at your disposal for remediation: `LastPages` also ignores page number manipulation. It furthermore offers the option `pagecontinue` to continue the page numbering, when `\pagenumbering{...}` is used.)

3.8 Last pages of different page numbering schemes

`\pageref{LastPage}` refers to the (maybe not so) last page of the last page numbering scheme. References to the respective last page of the other page numbering schemes are not provided.

(The `pageslts` package does this with labels `pagesLTS.<numbering scheme>`, where `<numbering scheme>` is e.g. `arabic`, `roman`, `Roman`, `alph`, or `Alph`. For `fnsymbol` please use `\lastpageref{pagesLTS.fnsymbol}` instead of `\pageref{pagesLTS.fnsymbol}`.)

3.9 Current page

The command `\thepage` gives the **name** of the current page in the current page numbering scheme, which is different from the current total/absolute page number e.g. with a second page numbering scheme, `\addtocounter{page}{...}`, or `\setcounter{page}{...}`, and it will not be an arabic number at all, if the current page numbering scheme is not arabic.

(The `pageslts` package provides the command `\theCurrentPage` and for the current number of pages in the current page numbering scheme `\theCurrentPageLocal`.)

3.10 First page

There is no special label at the first page. (This is the `lastpage` package, after all.)

(The `pageslts` package creates a label `pagesLTS.0` at the first page of the document.)

3.11 Using the `fnsymbol` page numbering scheme

Using the `fnsymbol` page numbering scheme can result in problems!

When the page, where `\pageref{lastpage}` points at, is in `fnsymbol` page numbering scheme, this package might screw up – and quite totally for that, especially when used together with old versions of the `hyperref` package (e.g. `hyperref v6.80x`

as of 2010/04/17). When testing with version v6.83m as of 2012/11/06 everything seemed to worked fine, but this might not always be the case.

(The `pageslts` package with `\lastpageref{lastpage}` and appropriate package options should cope even with this case.)

3.12 Page counter overflow

“The ranges of supported counter values are more or less restricted. Only `\arabic` can be used with any counter value \TeX supports.

Presentation command	Supported domain	Ignored values	Error message ‘Counter too large’
<code>\arabic</code>	<code>-MAX..MAX</code>		
<code>\roman, \Roman</code>	<code>1..MAX</code>	<code>-MAX..0</code>	
<code>\alph, \Alph</code>	<code>1..26</code>	<code>0</code>	<code>-MAX..-1, 27..MAX</code>
<code>\fnsymbol</code>	<code>1..9</code>	<code>0</code>	<code>-MAX..-1, 10..MAX</code>

`MAX = 2147483647`

” (HEIKO OBERDIEK: The `alphalph` package, 2010/04/18, v2.3, first table, p. 2).

When *any* page is out of that range, there will be a counter overflow.

(`lastpage` probably is not the right package to be asked to correct this anyway, but the `pageslts` package (with appropriate options) can do this.)

3.13 Other packages manipulating `\lastpage@putlabel`

The `hyperref` package redefines the `\lastpage@putlabel` command, and the `revtex4` class redefines the `\lastpage@putlabel` command, and the `hyperref` package redefines the `\lastpage@putlabel` command, if the `revtex4` class is used, and the `pageslts` package “kills” the `\lastpage@putlabel` command, because that package uses more advanced labels.

In my humble opinion it would be preferably if one package (the original one, i. e. `lastpage`) would do the job right, all others packages would check for the version of that package, and if an old version is found, an error (or at least a warning) message about the use of an outdated package is given, and *then* as “last aid” the command of the outdated package is redefined.

Therefore here none of the definitions or commands of the other packages is altered, but `\lastpage@putlabel` was replaced by `\lastpage@putl@bel`. Because `\lastpage@putlabel` is no longer called, now there should not be any double definitions of the `lastpage` label.

4 Alternatives

There are similar packages, which do (or do not) similar things (or even more). As I neither know what exactly you want to accomplish when using this package (e. g. page number vs. page name, hyperlinks or not), nor what resources you have (e. g. ε -TeX), here is a list of some possible alternatives:

lastpage209.sty

- If L^AT_EX 2.09 is still used, and if you are unable to switch to L^AT_EX 2_ε, the L^AT_EX 2.09 compatible lastpage209.sty can be used, which is defined as follows:

(It is also generated automatically from lastpage.dtx when compiling it.)

```
1 <*/lastpage209>
2 % FOR LaTeX 2.09 ONLY - FOR LaTeX 2e USE lastpage.sty OR pageslts.sty!
3 % This is lastpage209.sty invented by Jeffrey P. Goldberg
4 % (jeffrey+news at goldmark dot org), maintained by
5 % H.-Martin M{"u}ench (Martin dot Muench at Uni-Bonn dot de).
6 \let\origenddocument=\enddocument%
7 \def\enddocument{\clearpage%
8   {\addtocounter{page}{-1}%
9     \immediate\write\@mainaux{\string\newlabel{LastPage}{{}\{\thepage}}}%
10    \addtocounter{page}{+1}%
11    \origenddocument%
12   }%
13 </lastpage209>
```

(after PIET VAN OOSTRUM: Page layout in L^AT_EX, March 2, 2004, section 16; fancyhdr.pdf). Because `\enddocument` is redefined, similar problems as with the old version of the endfloat package (see subsection 3.2) will arise.

If possible, update to L^AT_EX 2_ε (and maybe to the pageslts package)!

pageslts

- The `pageslts` package first started as a revision of this `lastpage` package, but it became obvious that a replacement was needed to accomplish what the `pageslts` package does. For backward compatibility, a label named `LastPage` is provided. Thus `\usepackage{lastpage}` can be replaced by `\usepackage[pagecontinue=false,alphMult=0,AlphMulti=0,fnSymbolmult=false,romanMult=false,RomanMulti=false]{pageslts}`, if the behaviour of the `lastpage` package should be simulated. The default options are `\usepackage[pagecontinue=true,alphMult=ab,AlphMulti=AB,fnSymbolmult=true,romanMult=true,RomanMulti=true]{pageslts}`. Benefits of `pageslts` package (with appropriate options) are:
 - + Labels `LastPage` (`\AtEndDocument`) and `VeryLastPage` (`\AfterLastShipout`), allowing the user to refer to the (very) last page of a document.
 - + For example, when more than one page numbering scheme is used, the label `LastPages` gives the total *number* of pages.
 - + At the last page of each page numbering scheme a label `pagesLTS.<numbering scheme>` is placed, where `<numbering scheme>` is e.g. `arabic`, `roman`, `Roman`, `alph`, or `Alph`. For `fnSymbol` please use `\lastpageref{pagesLTS.fnSymbol}` instead of `\pageref{pagesLTS.fnSymbol}`.
 - + When the same numbering scheme is used twice, the page numbers are either reset to one or continued automatically, depending on the option given when the package is called.
 - + The command `\theCurrentPage` prints the current total/absolute page number – in contrast to `\thepage`, which gives only the page *name* in the current page numbering scheme. `\theCurrentPageLocal` gives the current number of pages in the current page numbering scheme. `\thepage` and `\theCurrentPageLocal` are different e.g. when `\addtocounter{page}{...}` or `\setcounter{page}{...}` were used.
 - + At the first page of the document a label `pagesLTS.0` is created.
 - + The `alphalph` package is supported, i.e. page numbers `alph` or `Alph` > 26 and `fnSymbol` > 9 can be used (with according options set). Even zero and negative page numbers can be used with `arabic`, `alph`, `Alph`, `roman`, `Roman`, and `fnSymbol` page numbering (with `alphalph` package and according options).
 - + It is checked whether a (very) old `endfloat` package is in use. If it is, a warning or even an error message is given, depending on `endfloat` version.
 - + A rerun warning is given, when labels have changed.

Further labels are provided for special cases.

totpages

- The `totpages` package provides a `totpages` label similar to `LastPages` `\AtEndDocument` (instead of `\AfterLastShipout`, as done by `pageslts`). The `totpages` package additionally computes the number of paper sheets needed to (double) print the document (with one, two, three, ... pages on one sheet of paper) (which can be achieved also with the `papermas` package, an extension of the `pageslts` package, which further allows to compute the mass of that printed version of the document, useful e. g. when sending it by mail to determine the postage).

nofm.sty

- “There is a package `nofm.sty` available, but some versions of it are defective, and most don’t work with `fancyhdr` because they take over the complete page layout.” (PIET VAN OOSTRUM: Page layout in L^AT_EX, March 2, 2004, section 16; `fancyhdr.pdf`)
`nofm` as of 1991/02/25 (without version number), available at <https://mirrors.ctan.org/obsolete/macros/latex209/contrib/misc/nofm.sty>, does not work with e.g. `hyperref`, redefines `\enddocument` as well as `\@oddhead`, `\@evenhead`, `\@oddfloor`, and `\@evenfoot`.
If you know the (CTAN) location of a **working** (!) version, please send an e-mail to the `lastpage` maintainer, thanks!

countlto

- You may want to have a look at the `countlto` package.

totalcount

- The `totalcount` package provides `\totalpages`. If there are only arabic page numbers consecutively running from 1 to the last page, this works. But for example

```
\documentclass{article}
\usepackage[page]{totalcount}
\pagenumbering{Roman}
\begin{document}
\addtocounter{page}{49}
Page \thepage{} of \totalpages
\end{document}
```

prints “Page L of 50”, where the number of pages is one (and no hyperlink is provided to the last page even if `hyperref` is used).

zref

- The `zref` package of HEIKO OBERDIEK requires ϵ -T_EX. `lastpage` does not require ϵ -T_EX, but if you already have ϵ -T_EX, you may have a look at the extensive `zref` package, whether it suits your needs better (or additionally or whatsoever).

memoir

- The `memoir` class provides `\thelastpage` (page number printed on last page) and `\thelastsheet` (number of pages).

(You programmed or found another alternative, which is available at CTAN.org? OK, send an e-mail to me with the name, location at CTAN.org, and a short notice, and I will probably include it in the list above.)

About how to get those packages, please see subsection [7.1](#).

5 Example

```
14 (*example)
15 \documentclass[british]{article}[2014/09/29]% v1.4h
16 \AtEndDocument{\message{^^JLaTeX Info: Executing hook 'AtEndDocument'.}}
17 \usepackage[draft]{showkeys}[2014/10/28]% v3.17
18 %% Use final instead of draft to hide the keys. %%
19 \usepackage{hyperref}[2012/11/06]% v6.83m
20 \hypersetup{%
21 extension=pdf,%
22 plainpages=false,%
23 pdfpagelabels=true,%
24 hyperindex=false,%
25 pdflang={en},%
26 pdftitle={lastpage package example},%
27 pdfauthor={H.-Martin Muench},%
28 pdfsubject={Example for the lastpage package},%
29 pdfkeywords={LaTeX, lastpage, H.-Martin Muench},%
30 pdfview=Fit,%
31 pdfstartview=Fit,%
32 pdfpagelayout=SinglePage%
33 }
34 %% If hyperref is not used, the url package
35 %% https://www.ctan.org/pkg/url
36 %% must be loaded for the \url used in this example:
37 %% \usepackage{url}
38 %% or just use \let\url\texttt for the one used url.
39 \usepackage{lastpage}[2021/09/03]% v1.2n
40 \makeatletter
41 \renewcommand{\@evenfoot}{%
42 \normalsize\slshape \today\hfil \upshape %
43 page \thepage{} of \pageref{LastPage}}
44 \renewcommand{\@oddfoot}{\@evenfoot}
45 \makeatother
46 \gdef\unit#1{\mathord{\thinspace\mathrm{#1}}}%
47 \listfiles
48 \begin{document}
49 \pagenumbering{Roman}
50
51 \section*{Example for lastpage}
52 \markboth{Example for lastpage}{Example for lastpage}
53
54 This example demonstrates the use of package\newline
55 \textsf{lastpage}, v1.2n as of 2021/09/03 (HMM; JPG).\newline
56 The package takes no options.\newline
57 For more details please see the documentation!\newline
58
59 \noindent \label{keys} To hide the \pageref{keys}{\quad } use option
60 \texttt{final} instead of \texttt{draft} with the \textsf{showkeys}
61 package (or remove the package call from the preamble of
62 this document).\newline
63
64 \textbf{Hyperlinks or not:} If the \textsf{hyperref} package is loaded,
65 the references are also hyperlinked:\newline
66 \smallskip
67 Last page's name (LastPage): \pageref{LastPage}\newline
68 \noindent If the \textsf{hyperref} package is loaded, but the hyperlinks
69 of the references shall be suppressed, \verb|\pageref*{...}|
```

```

70 can be used:\newline
71 \smallskip
72 Last page's name (LastPage): \pageref*{LastPage}\newline
73
74 \textbf{Trademarks} appear throughout this example without any
75 trademark symbol; they are the property of their respective
76 trademark owner. There is no intention of infringement; the
77 usage is to the benefit of the trademark owner.\newline
78
79 \textbf{Tip}: Use \textit{logical page numbers}
80 for the display of the pdf (in Adobe Reader DC 2021.005.20060:
81 Edit $$ Preferences $$ Categories: Page Display $$
82 Page Content and Information: Use logical page numbers)!\newline
83
84 If you are more ambitious in respect to your aims with this package,
85 you might want to have a look at the \textsf{pageslts} package:\newline
86 \url{https://www.ctan.org/pkg/pageslts}.
87
88 \bigskip
89
90 Save per page about $200\unit{ml}$~water, $2\unit{g}$~CO$_{2}$
91 and $2\unit{g}$~wood:\newline
92 Therefore please print only if this is really necessary.\newline
93 I do NOT think, that it is necessary to print THIS file, really\newline
94 (at least not after this page)!
95
96 \bigskip
97
98 \noindent The page (\verb|\thepage|): \thepage \newline
99
100 \noindent Last page's name (LastPage): \pageref{LastPage}
101
102 \newpage
103
104 \noindent The page (\verb|\thepage|): \thepage \newline
105
106 \noindent Last page's name (LastPage): \pageref{LastPage}
107
108 \newpage
109
110 \noindent The page (\verb|\thepage|): \thepage \newline
111
112 \noindent Last page's name (LastPage): \pageref{LastPage}
113
114 \newpage
115
116 \section*{The End}
117
118 \noindent The page (\verb|\thepage|): \thepage \newline
119
120 \noindent Last page's name (LastPage): \pageref{LastPage}
121
122 \bigskip
123
124 \noindent There was the question:
125
126 \begin{quote}
127 \begin{verbatim}

```

```

128 \documentclass{article}
129 \usepackage{hyperref}
130 \usepackage{lastpage}
131 \begin{document}
132 \ifnum\thepage=\pageref{LastPage} foo \else bar \fi
133 \end{document}
134 \end{verbatim}
135
136 producing the error
137 \textquotedblleft missing number, treated as zero\textquotedblright.
138 \end{quote}
139
140 \noindent \verb|\pageref| inserts a hyperlink, \verb|\pageref{LastPage}|
141 is not expandable and the code breaks.\newline
142 The code does not generally work even without hyperref.
143
144 \begin{quote}
145 \begin{verbatim}
146 \documentclass{article}
147 \usepackage{hyperref}
148 \usepackage{lastpage}
149 \pagenumbering{Roman}
150 \begin{document}
151 \addtocounter{page}{8}
152 \edef\here{\thepage}
153 \makeatletter
154 \ifx\here\lastpage@lastpage\relax foo \else bar \fi
155 \makeatother
156 \end{document}
157 \end{verbatim}
158 \end{quote}
159
160 \noindent does work, because \verb|\lastpage@lastpage| contains the name
161 of the page, example:\newline
162 \verb|Page \thepage{} is page \makeatletter\lastpage@lastpage\makeatother.|%
163 \newline
164 prints:\newline
165 Page \thepage{} is page \makeatletter\lastpage@lastpage\makeatother.%
166 \newline
167 This can be broken for example by \verb|\pagenumbering{fnsymbol}|.
168 \end{document}
169 \end{example}

```

6 The implementation

We start off by checking that we are loading into L^AT_EX 2_ε and announcing the name and version of this package.

```
170 \*package)
171 \NeedsTeXFormat{LaTeX2e}[2014/05/01]
172 \ProvidesPackage{lastpage}%
173 [2021/09/03 v1.2n Refers to last page's name (HMM; JPG)]%
174
175 %% lastpage may work with earlier versions of LaTeX,
176 %% but this was not tested. Please consider updating
177 %% your LaTeX (and packages) to the most recent version
178 %% (if it is/they are not already the most recent version).
179
```

A short description of the lastpage package:

```
180 %% Allows for things like
181 %% Page \thepage{} of \pageref{LastPage}
182 %% to get
183 %% 'Page 7 of 9'.
```

A last information for the user(s):

```
184 %% For LaTeX 2.09 use lastpage209.sty.
185 %% For LaTeX 2e maybe consider upgrading to the pageslts package.
186 %% lastpage may work with earlier versions of LaTeX2e,
187 %% but this was not tested. Please consider updating your LaTeX
188 %% contribution to the most recent version (if it is not already
189 %% the most recent version).
190
```

The very old version 2.0 (and earlier) of the endfloat package actually redefined the `\enddocument` command, and so interfered drastically with the L^AT_EX 2_ε commands which make use of `\AtEndDocument`. Newer versions of endfloat exists (at the time of writing this documentation: v2.5d as of 2011/12/25) in modern documentation form, which are available from CTAN.org (see subsection 7.1). A note is placed here. (The pageslts package even checks whether a (very) old endfloat package is in use. If it is, a warning or even an error message is given, depending on endfloat version.)

```
191 %% The recent version of the endfloat package is v2.5d as of 2011/12/25.
192 %% The lastpage package is not fully compatible with version 2.0
193 %% (and earlier) of the endfloat package, because those versions
194 %% redefined the \enddocument command.
195
```

There are no options to be introduced.

For comparisons, “one” is defined (`\@one` does not work for this).

```
196 \def\lastpage@one{1}
```

We define `\lastpage@hyper`, `\lastpage@nameref`, `\lastpage@french`, and `\lastpage@LTS` to be “0”.

```
197 \gdef\lastpage@hyper{0}
198 \gdef\lastpage@nameref{0}
199 \gdef\lastpage@french{0}
200 \gdef\lastpage@LTS{0}
```

We define `\lastpage@firstpage` to be “1”.

```
201 \def\lastpage@firstpage{1}
202
```

`\AtBeginDocument` `\AtBeginDocument` it is checked whether various packages are loaded. (`\@ifpackageloaded` cannot be used later than `\AtBeginDocument`.) If this is the case, `\lastpage@<package abbreviation>` is defined as 1 (otherwise it stays 0). The `ltxcmds` package provides `\ltx@ifpackageloaded`, which can be used also after `\AtBeginDocument`, but `lastpage` tries to not load other packages.

```

203 \AtBeginDocument{%
204   \@ifpackageloaded{tikz}{\gdef\lastpage@tikz{1}}{}}%
205   \@ifpackageloaded{hyperref}{\gdef\lastpage@hyper{1}}{}}%
206   \@ifpackageloaded{nameref}{\gdef\lastpage@nameref{1}}{}}%
207   \@ifpackageloaded{french}{\gdef\lastpage@french{1}}{}}%
208   \@ifpackageloaded{frenchle}{\gdef\lastpage@french{1}}{}}%
209   \@ifpackageloaded{pageslts}{%
210     \PackageWarning{lastpage}{Package pageslts found.\MessageBreak%
211       Therefore the lastpage package is no longer\MessageBreak%
212       necessary.%
213     }%
214     \gdef\lastpage@LTS{1}%
215   }{\PackageInfo{lastpage}{%
216     Please have a look at the pageslts package at\MessageBreak%
217     https://www.ctan.org/pkg/pageslts\MessageBreak%
218     !}}%
219   }%
220   \@ifpackageloaded{pagesLTS}{%
221     \PackageWarning{lastpage}{%
222       Outdated pagesLTS package found.\MessageBreak%
223       Please replace by a recent version of\MessageBreak%
224       pageslts package, see e.g. at\MessageBreak%
225       https://www.ctan.org/pkg/pageslts\MessageBreak%
226       !\MessageBreak%
227       With pagesLTS as well as pageslts package\MessageBreak%
228       the lastpage package is no longer necessary.\MessageBreak%
229     }%
230     \gdef\lastpage@LTS{1}%
231   }{}}%

```

`\lastpage@putlabel`, used by older versions of this package, is redefined e. g. by `revtex`, `hyperref`, `frenchle`, and `PPRCorners`. While now `\lastpage@putlabel` is used instead, `revtex` or `hyperref` could also define a label `LastPage`, which then would be multiply defined. (Which is no big issue, if it is associated with the same page.) Therefore we define

```

232   \gdef\lastpage@putlabel{\relax}%

```

Because `\lastpage@putlabel` might be (re)defined later, depending on the order in which the packages are loaded, we will do this again `\AtEndDocument`.

```

233   }
234

```


`\lastpage@putl@bel` This command does the writing of the label:

```
235 \newcommand{\lastpage@putl@bel}{%
```

```
    \AtBeginDocument it is checked whether the hyperref package is loaded,  
    \@ifpackageloaded{hyperref}{\gdef\lastpage@hyper{1}}{  
    \@ifpackageloaded cannot be used later than \AtBeginDocument.  
    User SEBASTIAN BANK found and reported (Thanks!) a case, when this check is  
    not sufficient. Using a class with  
    \usepackage{lastpage}  
    \AtBeginDocument{\usepackage{hyperref}}  
leads to failed detection of the hyperref package, because \AtBeginDocument first  
the check for hyperref is performed, and then hyperref is loaded. As mentioned  
above, \@ifpackageloaded cannot be used later, so here we do not check for  
the hyperref package again, but for its \Hy@Warning command. In version 1.2c  
of the lastpage package, it was checked for the \hyperref command, but as it  
turned out, tclatex is defining that. If some other package or user is defining  
\Hy@Warning, lastpage will falsely assume, that hyperref has been loaded, but in  
my humble opinion, defining \Hy@Warning does not make sense and is bad style  
(except definition by the hyperref package itself, of course).
```

```
236   \@ifundefined{Hy@Warning}{% hyperref not loaded  
237     }\gdef\lastpage@hyper{1}% hyperref loaded  
238     }%
```

If the `pageslts` package is used, this `lastpage` package is not needed at all. The `LastPage` label would even be defined twice. Thus, if `pageslts` is used, here nothing is done:

```
239   \ifx\lastpage@LTS\lastpage@one%  
240     \else%
```

Otherwise the label is set:

We have got to distinguish whether `hyperref` has been loaded or not:

```
241   \ifx\lastpage@hyper\lastpage@one%  
242     \lastpage@putlabelhyper%  
243   \else%
```

and also need to treat documents with `nameref` differently:

```
244   \ifx\lastpage@nameref\lastpage@one%  
245     \lastpage@putlabelNR%  
246   \else%
```

When those packages have not been loaded, we just write the simple label into the `aux` file (and store the value of the page):

```
247     \begingroup%  
248       \addtocounter{page}{-1}%  
249       \immediate\write\auxout{\string\newlabel{LastPage}{\the page}}%  
250       \immediate\write\auxout{\string\xdef\string\lastpage@lastpage{\the page}}%  
251       \immediate\write\auxout{\string\gdef\string\lastpage@lastpageHy{}%  
252       \addtocounter{page}{+1}%  
253     \endgroup%  
254   \fi%  
255 \fi%  
256 \fi%  
257 }  
258
```

`\lastpage@putlabelhyper` When `hyperref` has been loaded, the label is set with the `\lastpage@putlabelhyper` command. If the `hyperref` package is used, but `pageanchors` are disabled, the hyperlinking will not work.

```

259 \newcommand{\lastpage@putlabelhyper}{%
260   \ifHy@pageanchor%
261   \else%
262     \PackageError{lastpage}{hyperref option pageanchor disabled}{%
263       The \string\pageref{LastPage} link doesn't work\MessageBreak%
264       using hyperref with disabled option 'pageanchor'.\MessageBreak%
265     }%
266   \fi%

```

Since the page has been put out, we are on the page *after* that page. We therefore subtract one from the page counter. (For the compiler, this is equal to `\advance\c@page\m@ne`, but for human readers of the code it is probably easier to understand.)

```

267   \begingroup%
268   \addtocounter{page}{-1}%

```

Simply using `\label` for `LastPage` would not work, because labels wait for the output routines to work, and there may be no more invocations of the output routines. To force the write out, we need to do an `\immediate` write into the aux file.

```

269 %% The following code is from the hyperref package           %%
270 %% [2010/04/17 v6.80x; newer versions are available]         %%
271 %% by Heiko Oberdiek (Big Thanks!).                          %%
272   \let\@number\@firstofone
273   \ifHy@pageanchor
274     \ifHy@hypertextnames
275     \ifHy@plainpages
276     \def\Hy@temp{\arabic{page}}%
277     \else
278     \Hy@unicodedefalse
279 %% Code not from hyperref package:                             %%
280 %% The following lines are taken from the pageslts package,  %%
281 %% which in turn got them from the hyperref package and    %%
282 %% modified them.                                           %%
283 %% Without the modification, after the first shipout "PD1" %%
284 %% is inserted each time |\pdfstringdef\Hy@temp{\thepage}| %%
285 %% is executed.                                             %%
286     \ifnum \value{page}=1%

```

We do not count the pages ourselves, and so they could have been changed by e.g. `\pagenumbering{...}`, `\addtocounter{page}{...}`, `\setcounter{page}{...}`. Thus the page might have the number one while not being the first page at all. Using the `everyshi` package would help, but this package should not require other packages. The `pageslts` package does a better handling, but requires some other packages.

We will make a mistake here at most once:

```

287     \ifx \lastpage@firstpage\lastpage@one
288     \def\Hy@temp{\thepage}%
289     \gdef\lastpage@firstpage{0}%
290     \else%
291 %% Code from hyperref package again:                             %%
292     \pdfstringdef\Hy@temp{\thepage}%
293 %% End of code from the hyperref package.                       %%
294     \fi%

```

```

295 %% The pageslts package would even check for fnsymbol page %%
296 %% numbering scheme and adapt the code correspondingly. %%
297     \else%
298 %% Code from hyperref package again: %%
299     \pdfstringdef\Hy@temp{\thepage}%
300 %% Code from pageslts package again: %%
301     \fi%
302 %% Code from hyperref package again: %%
303     \fi
304     \else
305     \def\Hy@temp{\the\Hy@pagecounter}%
306     \fi
307     \fi
308     \immediate\write\@auxout{%
309     \string\newlabel
310     {LastPage}{}{\thepage}{}{}%
311     \ifHy@pageanchor page.\Hy@temp\fi}{}%
312 }%
313 %% End of code from the hyperref package. %%

```

We also save the values, so that we can later (next rerun) check, whether they have been saved in the aux file.

```

314     \immediate\write\@auxout{%
315     \string\xdef\string\lastpage@lastpage{\thepage}}%
316     \ifHy@pageanchor%
317     \immediate\write\@auxout{%
318     \string\xdef\string\lastpage@lastpageHy{\Hy@temp}}%
319     \else%
320     \immediate\write\@auxout{%
321     \string\gdef\string\lastpage@lastpageHy{}}%
322     \fi%

```

After the writeout we restore the page number again, since there might be other things still to be done.

```

323     \addtocounter{page}{+1}%
324     \endgroup%
325 }
326

```

`\lastpage@putlabelNR` The nameref package redefines `\label` to have five arguments instead of two, therefore

`\newlabel{LastPage}{}{\thepage}{}{}{}` instead of `\newlabel{LastPage}{}{\thepage}` must be used:

```

327 \newcommand{\lastpage@putlabelNR}{%
328     \begingroup%
329     \addtocounter{page}{-1}%
330     \immediate\write\@auxout{\string\newlabel{LastPage}{}{\thepage}{}{}{}}%
331     \immediate\write\@auxout{\string\xdef\string\lastpage@lastpage{\thepage}}%
332     \immediate\write\@auxout{\string\gdef\string\lastpage@lastpageHy{}}%
333     \addtocounter{page}{+1}%
334     \endgroup%
335 }
336

```

`\lastpage@fileswtest` Later it will be determined whether it is allowed to write to the `aux` file. If it was not allowed, it is checked whether the label was already set via the `aux` file in some earlier compilation run. (There are packages where the document is compiled with access to the `aux` file, and then there is an additional compiler run, where the `aux` file cannot be changed, but in that run there is also no need to change it.) The `tikz` package is somewhat different, therefore we only give a warning instead of an error (and hope that there is another compiler run where the `aux` file can be written).

```

337 \newcommand{\lastpage@fileswtest}[2]{%
338   \edef\lastpage@testa{#1}%
339   \edef\lastpage@testb{#2}%
340   \ifx\lastpage@testa\lastpage@testb% OK
341   \else%
342     \ifx\lastpage@tikz\lastpage@one%
343       \PackageWarning{lastpage}%
344         {The lastpage package was not allowed to write to an\MessageBreak%
345           .aux file. This package does not work without access\MessageBreak%
346           to an .aux file.\MessageBreak%
347           It is OK if the .aux file was already updated\MessageBreak%
348           by a previous compiler run\MessageBreak%
349           and would not have changed anyway.\MessageBreak%
350         }%
351     \else%
352       \PackageError{lastpage}{No auxiliary file allowed}%
353       {The lastpage package was not allowed to write to an .aux file.\MessageBreak%
354         This package does not work without access to an .aux file.\MessageBreak%
355         Press Ctrl+Z to exit.\MessageBreak%
356         But it is OK if the .aux file was already updated\MessageBreak%
357         by a previous compiler run\MessageBreak%
358         and would not have changed anyway.\MessageBreak%
359       }%
360     \fi%
361   \fi%
362 }

```

`\lastpage@fileswtestHy` When the `hyperref` package has been loaded, `\lastpage@lastpageHy` must be tested additionally. (And a `\newcommand` is needed, because `\ifHy@pageanchor` is not even defined when `hyperref` has not been loaded.)

```

363 \newcommand{\lastpage@fileswtestHy}{%
364   \ifHy@pageanchor%
365     \lastpage@fileswtest{\Hy@temp}{\lastpage@lastpageHy}%
366   \else%
367     \lastpage@fileswtest{\empty}{\lastpage@lastpageHy}%
368   \fi%
369 }
370

```

`\AtEndDocument` `\AtEndDocument` we again (re)define `\lastpage@putlabel` to do nothing and check `\lastpage@lastpage` and `\lastpage@lastpageHy`, whether they are still unchanged, which is OK for the first run only.

```

371 \gdef\lastpage@lastpage{\relax}%
372 \gdef\lastpage@lastpageHy{\relax}%
373
374 \AtEndDocument{%
375   \gdef\lastpage@putlabel{\relax}%
376   \ifx\lastpage@LTS\lastpage@one%
377     \else%
378       \ifx\lastpage@lastpage\relax%
379         \PackageWarning{lastpage}{Rerun to get the references right}%
380       \fi%
381       \ifx\lastpage@lastpageHy\relax%
382         \PackageWarning{lastpage}{Rerun to get the references right}%
383       \fi%
384     \fi%

```

It is checked whether writing to files is allowed (otherwise, only an error message is issued and nothing is done).

```

385 \if@filesw%

```

We put in a `\message` to show, in what order things (which were called) are done (see subsection 3.1).

```

386 \message{^^JAED: lastpage setting LastPage^^J}%

```

After this we issue a `\clearpage` to put out all floats, which are still floating, and place the `LastPage` label. Sometimes `\clearpage` might be undefined.

```

387 \@ifundefined{clearpage}{\relax}{\clearpage}%
388 \ifx\lastpage@french\lastpage@one% french or frenchle loaded
389   \addtocounter{page}{+1}\lastpage@putl@bel\addtocounter{page}{-1}%
390 \else% neither one loaded
391   \lastpage@putl@bel%
392 \fi%

```

When writing to files is not allowed, nothing can be done. But when the label was already set via the `aux` file, nothing needs to be done. We check for this with `\lastpage@fileswtest` and (if `hyperref` has been loaded) `\lastpage@fileswtestHy`.

```

393 \else%
394   \ifx\lastpage@LTS\lastpage@one%
395   \else%
396     \lastpage@fileswtest{\thepage}{\lastpage@lastpage}%
397     \ifx\lastpage@hyper\lastpage@one%
398       \lastpage@fileswtestHy%
399     \fi%
400   \fi%
401 \fi%
402 }
403

```

```

404 \end{package}

```

7 Installation

First, please make sure that there is no old version of lastpage at some obsolete place in your system!

7.1 Downloads

Everything is available at <https://www.ctan.org>, but may need additional packages themselves.

`lastpage.dtx` For unpacking the `lastpage.dtx` file and constructing the documentation it is required:

- T_EXFormat L^AT_EX 2_ε: <https://www.CTAN.org>
- document class `ltxdoc`, 2015/03/26, v2.0w, <https://www.ctan.org/pkg/ltxdoc>
- package `holtxdoc`, 2012/03/21, v0.24, <https://www.ctan.org/pkg/holtxdoc>
- package `hypdoc`, 2011/08/19, v1.11, <https://www.ctan.org/pkg/hypdoc>

`lastpage.sty` The `lastpage.sty` for L^AT_EX 2_ε (i. e. each document using the `lastpage` package) requires:

- T_EXFormat L^AT_EX 2_ε, <https://www.CTAN.org>
- package `lastpage`, 2021/09/03, v1.2n, <https://www.ctan.org/pkg/lastpage>

and can use

- package `hyperref`, 2012/11/06, v6.83m, <https://www.ctan.org/pkg/hyperref>

`lastpage209.sty` The `lastpage209.sty` for L^AT_EX 2.09 (i. e. each document using the `lastpage209` package) requires:

- T_EXFormat L^AT_EX, v2.09
- package `lastpage209`, 2021/09/03, v1.2n, included in <http://mirrors.ctan.org/install/macros/latex/contrib/lastpage.tds.zip>

and does not work with `hyperref`, which needs L^AT_EX 2_ε.

`lastpage-example.tex` The `lastpage-example.tex` requires the same file as all documents using the `lastpage` package, i. e.

- package `lastpage`, 2021/09/03, v1.2n, <https://www.ctan.org/pkg/lastpage>
(Well, it is the example file for this package, and because you are reading the documentation for the `lastpage` package, it can be assumed that you already have some version of it – is it the current one?)

and additionally:

- class `article`, 2014/09/29, v1.4h, <https://www.ctan.org/pkg/article>

- package `showkeys`, 2014/10/28, v3.17,
<https://www.ctan.org/pkg/showkeys>
 - package `hyperref`, 2012/11/06, 6.83m,
<https://www.ctan.org/pkg/hyperref>
- `endfloat` The `endfloat` package is not required, but because the `lastpage` package is incompatible with *very* old versions of the `endfloat` package (see subsection 3.2), here the recent one is listed:
- package `endfloat`, v2.5d, 2011/12/25,
<https://www.ctan.org/pkg/endfloat>
- `fancyhdr`
`nccfancyhdr` Neither the `fancyhdr` nor the `nccfancyhdr` package is required (older versions of the `lastpage` package used its predecessor `fancyheadings`), but because they were mentioned, also they are listed here:
- package `fancyhdr`, 2005/03/22, v3.2,
<https://www.ctan.org/pkg/fancyhdr>
 - package `nccfancyhdr`, 2004/12/07, v1.1,
<https://www.ctan.org/pkg/nccfancyhdr>
- `regstats` For counting the used counters (and other registers), the `regstats` package was mentioned (it is not required). It can be found at:
- package `regstats`, 2012/01/07, v1.0h,
<https://www.ctan.org/pkg/regstats>
- `count1to`
`nofm` As possible alternatives in section 4, Alternatives, there are listed (newer versions might be available):
- `totpages`
`lastpage`
`totalcount`
`zref`
`memoir`
- package `pageslts`, 2014/01/19, v1.2c,
<https://www.ctan.org/pkg/pageslts>
 - package `papermas`, 2011/08/22, v1.0h; the `papermas` package can be considered as kind of add-on to the `pageslts` package.
<https://www.ctan.org/pkg/papermas>
 - package `count1to`, 2009/05/24, v2.1,
<https://www.ctan.org/pkg/count1to>
 - package `nofm`, 1991/02/25, v??.?,
<https://mirrors.ctan.org/obsolete/macros/latex209/contrib/misc/nofm.sty>, does not work with e.g. `hyperref`
 - package `totpages`, 2005/09/19, v2.00,
<https://www.ctan.org/pkg/totpages>
 - package `totalcount`, 2018/01/21, v1.0a,
<https://www.ctan.org/pkg/totalcount>.
 - package `zref`, 2012/04/04, v2.24,
<https://www.ctan.org/pkg/zref>, requires ϵ - \TeX .
 - class `memoir`, 2021/06/16, v3.7p,
<https://ctan.org/tex-archive/macros/latex/contrib/memoir/>.

- Oberdiek** All packages of HEIKO OBERDIEK'S bundle 'oberdiek' (especially `holtxdoc` and `holtxdoc` `zref`) are also available in a TDS compliant ZIP archive:
<http://mirrors.ctan.org/install/macros/latex/contrib/oberdiek.tds.zip>.
 It is probably best to download and use this, because the packages in there are quite probably both recent and compatible among themselves.
- hyperref** `hyperref` is not included in that bundle and needs to be downloaded separately,
<http://mirrors.ctan.org/install/macros/latex/contrib/hyperref.tds.zip>.
- Münch** A hyperlinked list of my (other) packages can be found at
<https://www.ctan.org/author/muench-hm>.

7.2 Package, unpacking TDS

Package. This package is available on CTAN.org.

<http://mirrors.ctan.org/macros/latex/contrib/lastpage/lastpage.dtx>
 The source file.

<http://mirrors.ctan.org/macros/latex/contrib/lastpage/lastpage.pdf>
 The documentation.

<http://mirrors.ctan.org/macros/latex/contrib/lastpage/lastpage-example.pdf>

The compiled example file, as it should look like.

<http://mirrors.ctan.org/macros/latex/contrib/lastpage/README>
 The README file.

There is also a `lastpage.tds.zip` available:

<http://mirrors.ctan.org/install/macros/latex/contrib/lastpage.tds.zip>

Everything in TDS compliant, compiled format

which additionally contains

<code>lastpage.ins</code>	The installation file.
<code>lastpage.drv</code>	The driver to generate the documentation.
<code>lastpage.sty</code>	The <code>.sty</code> file.
<code>lastpage209.sty</code>	The <code>.sty</code> file for L ^A T _E X2.09 only .
<code>lastpage-example.tex</code>	The example file.

For required other packages see the preceding subsection.

Unpacking. The `.dtx` file is a self-extracting `docstrip` archive. The files are extracted by running the `.dtx` through plain T_EX:

```
tex lastpage.dtx
```

About generating the documentation see paragraph 7.4 below.

TDS. Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree), **but first you should delete the old `lastpage` files (which are probably located in other directories)**. You can make a backup of the old files before deleting them, of course.

```

lastpage.sty      → tex/latex/lastpage.sty
lastpage.pdf      → doc/latex/lastpage.pdf
lastpage-example.tex → doc/latex/lastpage-example.tex
lastpage-example.pdf → doc/latex/lastpage-example.pdf
lastpage.dtx      → source/latex/lastpage.dtx
lastpage209.sty   → tex/latex/lastpage209.sty for  $\LaTeX$ 2.09

```

If you have a `docstrip.cfg` that configures and enables `docstrip`'s TDS installing feature, then some files can already be in the right place, see the documentation of `docstrip`.

7.3 Refresh file name databases

If your \TeX distribution (\TeX live, `mik \TeX` , `te \TeX` , ...) relies on file name databases, you must refresh these. For example, `te \TeX` users run `texhash` or `mktexlsr`.

7.4 Some details for the interested

Unpacking with \LaTeX . The `.dtx` chooses its action depending on the format:

plain \TeX : Run `docstrip` and extract the files.

\LaTeX : Generate the documentation.

If you insist on using \LaTeX for `docstrip` (really, `docstrip` does not need \LaTeX), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{lastpage.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

Generating the documentation. You can use both the `.dtx` or the `.drv` to generate the documentation. The process can be configured by a configuration file `ltxdoc.cfg`. For instance, put the following line into this file, if you want to have A4 as paper format:

```
\PassOptionsToClass{a4paper}{article}
```

An example follows how to generate the documentation with `pdf \LaTeX` :

```

pdflatex lastpage.dtx
makeindex -s gind.ist lastpage.idx
pdflatex lastpage.dtx
makeindex -s gind.ist lastpage.idx
pdflatex lastpage.dtx

```

7.5 Compiling the example

The example file, `lastpage-example.tex`, can be compiled via

```
latex lastpage-example.tex
```

or (recommended)

```
pdflatex lastpage-example.tex
```

and will need at least two compiler runs to get all references right.

8 Acknowledgements

I (H.-MARTIN MÜNCH) would like to thank JEFFREY P. GOLDBERG (jefrey+news at goldmark dot org) for inventing the `lastpage` package as well as for granting me to update it. Further I would like to thank HEIKO OBERDIEK for providing a lot (!) of useful packages (from which I also got everything I know about creating a file in `dtx` format, OK, say it: copying), and the `news:comp.text.tex` and `news:de.comp.text.tex` newsgroups for their help in all things T_EX. Thanks for bug reports go to ULRIKE FISCHER, SEBASTIAN BANK, JAMES HEDGES, MIKHAIL TITOV, and MICHAL HERMAN. Thanks to SVEN SIEGMUND for pointing out a necessary further explanation in the documentation.

9 History

[1994/06/17 v0.99a]

- First shot by JEFFREY P. GOLDBERG.

[1994/06/25 v0.1b]

- Last version number created by JEFFREY P. GOLDBERG.

[1994/07/20 v0.1b (again)]

- Documentation updated by JEFFREY P. GOLDBERG.
The main source code of the `lastpage` package 1994/07/20, v0.1b, was:

```
\NeedsTeXFormat{LaTeX2e}[1994/06/01]
\ProvidesPackage{lastpage}[1994/07/20 v0.1b
  LaTeX2e package for refs to last page number (JPG)]
\def\lastpage@putlabel{\addtocounter{page}{-1}%
  \immediate\write\@auxout{\string
  \newlabel{LastPage}{\thepage}}%
  \addtocounter{page}{1}}
\AtEndDocument{%
  \message{AED: lastpage setting LastPage}%
  \clearpage\lastpage@putlabel}%
\endinput
```

and then the `hyperref` package and the `revtex4` class even redefine `\lastpage@putlabel` (at least `hyperref` version 2010/09/13, v6.81n 2012/11/06, v6.83m, and `REVTEX4` version 2010/07/25, v4.1r, still do this).

[2010/02/18 v1.1]

- Proposed `LastPages` label by H.-MARTIN MÜNCH on [news:comp.text.tex](http://groups.google.com/group/comp.text.tex/msg/4407493da9c747f0?dmode=source), see e. g. <http://groups.google.com/group/comp.text.tex/msg/4407493da9c747f0?dmode=source>; now available in the `pageslts` package.

[2010/07/29 v1.2a]

- Complete rewriting of the package; upgrade from `fancyheadings` to `fancyhdr` package, then removed the need for the `fancyhdr` package at all.
- Included `lastpage209.sty` for L^AT_EX 2.09.
- Replacement of `\filedate`, `-version`, `-name`,... because of L^AT_EX bug 2705:
Synopsis: Possible problem with `\fileversion` and `\filedate`
<http://www.latex-project.org/cgi-bin/ltxbugs2html?category=LaTeX&responsible=anyone&state=anything&keyword=lastpage&pr=latex%2F2705&search=>
- Example `lastpage-example.tex`.
- Alternatives listing (section 4).

- Listing of T_EX sources (subsection 7.1).
- A lot (!) of details.
- Complete rewriting of the documentation.
- Everything in DTX framework.
- Included a `\Checksum`.
- Complete rewriting of the README file.

[2010/08/12 v1.2b]

- Bug fix: `\@PackageInfoNoLine` is only available, if the `hyperref` package is loaded. (Bug reported by ULRIKE FISCHER, thanks!)
- Bug fix: `\ifHy@pageanchor` etc. do not work without `hyperref`, and `\else` related to `\ifHy@pageanchor` was wrongly associated with a preceding `\if`, and everything went wrong. Now everything should work again also without `hyperref`.
- Renamed `\lastpage@putlabel` to `\lastpage@putl@bel` to get rid of the conflicts with other classes and packages and resulting multiple definitions of the `lastpage` label.

[2010/08/23 v1.2c]

- Bug fix: Additionally to checking for the `hyperref` package `\AtBeginDocument`, when placing the `lastpage` label it is also checked for the `\hyperref` command, in case `hyperref` was not loaded at `\begin{document}` yet. (Bug reported by SEBASTIAN BANK, thanks!)
- Changed the `\unit` definition (got rid of an old `\rm`).
- Changed `\lastpage@puthyperlabel` to `\lastpage@putlabelhyper` analogous to `\pagesLTS@putlabelhyper` of the `pageslts` package.
- Updated version number and date of `pagesLTS` package (especially for the check for outdated versions).
- Removed wrong `%` from the driver file.

[2010/08/25 v1.2d]

- Bug fix: also `tcilatex` defines the `\hyperref` command, therefore for `hyperref` package detection this had to be changed to `\Hy@Warning`.

[2010/09/12 v1.2e]

- JAMES HEDGES (Thanks!) pointed out, that there was no instruction in the documentation about suppressing hyperlinks: added (also to the example).
- Diverse small changes.

[2010/09/24 v1.2f]

- Updated to version 2010/09/13 v6.81n of the `hyperref` package.
- New version of `REVTEX4` 2010/07/25, v4.1r, old problem.
- New version of `pagesLTS` package, 2010/09/22, v1.1k.
- Moved the package from `.../latex/muench/lastpage/...` to `.../latex/lastpage/...`
(Please make sure that any old versions of the `lastpage` package are properly uninstalled from your system.)

[2011/02/01 v1.2g]

- Updated to version 2010/04/24 v0.19 of the `holtxdoc` package.
- New version of `pagesLTS` package, 2011/02/01, v1.1m.
- Updated to version 2010/12/16 v6.81z of the `hyperref` package.
- Minor details.

[2011/07/03 v1.2h]

- The `holtxdoc` package was fixed, therefore the warning in `drv` could be removed. – Adapted the style of this documentation to new OBERDIEK `dtx` style.
- New versions of `pagesLTS`, `ulem`, `hyperref`, `papermas` packages.
- Corrected references in the README and manual.

[2011/08/08 v1.2i]

- The `pagesLTS` package has been renamed to `pageslts`: 2011/08/08, v1.2a.
- Some details.

[2011/08/31 v1.2j]

- Updated to `TEX` live 2011 (for compiling the documentation and example).
- New version of `papermas` package, 2011/08/22, v1.0h.
- Adapted for the use together with packages, which sometimes prevent writing to the `aux` file. (Bug reported by MIKHAIL TITOV, thanks!)
- Minor details.

[2011/09/01 v1.2k]

- Fixed `\thepage{}` to `\thepage{ }`, where there should be a space.
- New version of the `hyperref` package, 2011/08/19, v6.82h, but still problem with links to pages with page-“number” in `fnsymbol` pagenummering scheme. Seems to be fixed since v6.83m as of 2012/11/06.
- Documentation update about “No write access to the `aux` file”.
- New version of `regstats` package available.
- Some small details.

[2013/01/28 v1.2l]

- Updated to T_EX live 2012 (for compiling the documentation and example).
- New versions of the packages endfloat, holtxdoc, hypdoc, hyperref, pageslts, regstats, ulem, and zref have become available.
- The nameref package redefines `\label` to have five arguments instead of two, therefore `\newlabel{LastPage}{\thepage}` instead of `\newlabel{LastPage}{\thepage}` must be used. (Bug reported at <http://tex.stackexchange.com/q/95541/6865>, thanks to Michał Herman!) Fixed.
- Updates to several details, also in the documentation.

[2015/03/29 v1.2m]

- Updated to T_EX live 2014 (for compiling the documentation and example) and installed the available updates. Therefore I can no longer test whether `lastpage` works with earlier versions of L^AT_EX. (It probably does, but there is no guarantee.)
- Updates to a lot (!) of details in the documentation (manual & README), very small changes in code.

[2021/09/03 v1.2n]

- Updates to the documentation (manual & README), to the example, and several small changes in code.

When you find a mistake or have a suggestion for an improvement of this package, please send an e-mail to the maintainer, thanks! (Please see BUG REPORTS in the README.)

10 Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; plain numbers refer to the code lines where the entry is used.

Symbols	
<code>\@auxout</code>	249, 250, 251, 308, 314, 317, 320, 330, 331, 332
<code>\@evenfoot</code>	41, 44
<code>\@firstofone</code>	272
<code>\ifpackageloaded</code>	204, 205, 206, 207, 208, 209, 220
<code>\ifundefined</code>	236, 387
<code>\@mainaux</code>	9
<code>\@number</code>	272
<code>\@oddfoot</code>	44
A	
<code>\addtocounter</code>	8, 10, 151, 248, 252, 268, 323, 329, 333, 389
<code>\AtBeginDocument</code>	<u>203</u>
<code>\AtEndDocument</code>	16, <u>371</u>
C	
<code>\clearpage</code>	7, 387
<code>\countto</code>	10, 23
E	
<code>\endfloat</code>	23
F	
<code>\fancyhdr</code>	23
H	
<code>\here</code>	152, 154
<code>\holtxdoc</code>	24
<code>\Hy@pagecounter</code>	305
<code>\Hy@temp</code>	276, 284, 288, 292, 299, 305, 311, 318, 365
<code>\Hy@unicodedefalse</code>	278
<code>\hyperref</code>	24
<code>\hypersetup</code>	20
I	
<code>\if@files</code>	385
<code>\ifHy@hypertexnames</code>	274
<code>\ifHy@pageanchor</code> 260, 273, 311, 316, 364	
<code>\ifHy@plainpages</code>	275
<code>\immediate</code>	9, 249, 250, 251, 308, 314, 317, 320, 330, 331, 332
L	
<code>\label</code>	59
<code>\lastpage</code>	23
<code>\lastpage-example.tex</code>	22
<code>\lastpage.dtx</code>	22
<code>\lastpage.sty</code>	22
<code>\lastpage209.sty</code>	8, 22
<code>\lastpage@files</code>	337, 365, 367, 396
<code>\lastpage@fileswtestHy</code>	<u>363</u> , 398
<code>\lastpage@firstpage</code>	201, 287, 289
<code>\lastpage@french</code>	199, 207, 208, 388
<code>\lastpage@hyper</code>	197, 205, 237, 241, 397
<code>\lastpage@lastpage</code>	154, 160, 162, 165, 250, 315, 331, 371, 378, 396
<code>\lastpage@lastpageHy</code>	251, 318, 321, 332, 365, 367, 372, 381
<code>\lastpage@LTS</code>	200, 214, 230, 239, 376, 394
<code>\lastpage@nameref</code>	198, 206, 244
<code>\lastpage@putl@bel</code>	<u>235</u> , 389, 391
<code>\lastpage@putlabel</code>	232, 375
<code>\lastpage@putlabelhyper</code>	242, <u>259</u>
<code>\lastpage@putlabelNR</code>	245, <u>327</u>
<code>\lastpage@tikz</code>	204, 342
M	
<code>\M{"{u}nch</code>	24
<code>\markboth</code>	52
<code>\memoir</code>	10, 23
<code>\message</code>	16, 386
N	
<code>\nccfancyhdr</code>	23
<code>\newcommand</code>	235, 259, 327, 337, 363
<code>\newlabel</code>	9, 249, 309, 330
<code>\nofm</code>	23
<code>\nofm.sty</code>	10
O	
<code>\Oberdiek</code>	24
<code>\origenddocument</code>	6, 11
P	
<code>\PackageError</code>	262, 352
<code>\PackageInfo</code>	215
<code>\PackageWarning</code> 210, 221, 343, 379, 382	
<code>\pagenumbering</code>	49, 149, 167
<code>\pageslts</code>	9
<code>\pdfstringdef</code>	284, 292, 299
R	
<code>\regstats</code>	23
<code>\renewcommand</code>	41, 44
S	
<code>\slshape</code>	42
T	
<code>\thepage</code>	9, 43, 98, 104, 110, 118, 132, 152, 162,

165, 181, 249, 250, 284, 288, 292, 299, 310, 315, 330, 331, 396		
<code>\totalcount</code>	10, 23	
<code>\totpages</code>	10, 23	
		U
<code>\unit</code>	46, 90, 91	
<code>\upshape</code>	42	
<code>\url</code>	36, 38, 86	
		V
<code>\value</code>	286	
		W
<code>\write</code>	9, 249, 250, 251, 308, 314, 317, 320, 330, 331, 332	
		Z
<code>\zref</code>	10, 23, 24	