The regstats package

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Abstract

This LaTeX package allows to count the number of used registers (counter, dimen, skip, muskip, box, token, input, output, math families, languages, insertions) and compare these to the maximum available number of such registers. The time needed for a compilation run can be announced.

Contents

1 Introduction

This LaTeX package allows to count the number of used registers (counter, dimen, skip, muskip, box, token, input, output, math families, languages, insertions). Therefore the according `\count` is read. While `\count10` should be the number of the counters, `\count11` the one of the dimens, and so on, it is possible to use option `proof`, in which case a new one of each register is used and looked at `\the\allocationnumber`, and this is compared to the number determined by reading the `\count`. The result for each register is compared to the maximum available number of the respective register (comparison independent of usage of option `proof`). With option `left` additionally the number of remaining registers of each type is given, and with option `timer` the time needed for the compilation run (when either `pdf(la)tex` or `lua(la)tex` with `\directlua{starttime = os.clock()}` before `\documentclass` is used).

2 Usage

Just load the package placing

```
\usepackage[<options>]{regstats}
```

at the end of the preamble of your LaTeX 2$_\varepsilon$ source file. When you load packages `\AtBeginDocument`, regstats should be the last one of those packages. The resulting message will be presented at the end of the compilation messages at the screen and in the `log` file.

2.1 Options

`options` The regstats package takes the following options:

2.1.1 proof

`proof` When option `proof` (or `proof=true`) is chosen, a new one of each register is used and looked at `\the\allocationnumber`, and this is compared to the number determined by reading the `\count`. The default is `proof=false`.

2.1.2 left

`left` When option `left` (or `left=true`) is chosen, also the number of remaining registers of each type is given. The default is `left=false`.

2.1.3 timer

`timer` When option `timer` (or `timer=true`) is chosen, also the time needed for the compilation run is given. The default is `timer=false`. The used `\pdfelapsedtime` is not available, when `lua(la)tex` is used instead of `pdf(la)tex` to compile the document. In that case at the very beginning of your `tex` file say
`\directlua{starttime = os.clock()}`
(even before `\documentclass`!), and the `timer` option can also be used with `lua(la)tex`. When neither `lua(la)tex` nor `pdf(la)tex` is used to compile the document, the `timer`(-option) does not work.

3 Alternatives

- regcount, 1999/08/03, v1.0, by Jean-Pierre F. Drucbert, provides the command `\rgcounts`, which can write the numbers of used registers into the `log` file anywhere (not only at the end) and does this automatically `\AtBeginDocument` and `\AtEndDocument` (but not `\AtVeryVeryEnd`). The number of allocated insertions is *wrong* in my opinion, because these are not numbered $1, 2, \ldots$, but start at a high number, which is then decreased. The package is compatible with the regstats package (i. e. you can use both packages at the same time in one document) and available at http://www.ctan.org/pkg/regcount.

- One can manually search for the last appearance of `\count`, `\dimen`, `\skip`, `\muskip`, `\box`, `\toks`, `\read` (input), `\write` (output), `\mathgroup` (math family), `\language`, and `\insert`, and find the according number there. (This does not provide any information about the number of remaining registers, of course.)

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

4 Example

```
⟨*example⟩
%% When compiling with lua(la)tex (and wanting to use option timer=true,
%% the following line must be uncommented (i.e. remove the "%% ").
%% \directlua{starttime = os.clock()}
\documentclass[british]{article}[2007/10/19]% v1.4h
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%% \usepackage{etex}[1998/03/26]% v2.0
%% Uncomment the preceding line, if you want to use the eTeX-package
%% (which requires eTeX, of course).
\usepackage[%
 extension=pdf,%
 plainpages=false,%
 pdfpagelabels=true,%
 hyperindex=false,%
 pdflang={en},%
 pdftitle={regstats package example},%
 pdfauthor={H.-Martin Muench},%
 pdfsubject={Example for the regstats package},%
 pdfkeywords={LaTeX, registers, read, write, language, box, dimen,%
 count, toks, muskip, skip, counter, regstats, H.-Martin Muench},%
 pdfview=Fit,%
 pdfstartview=Fit,%
 pdfpagelayout=SinglePage%
]{hyperref}[2011/12/04]% v6.82m
\usepackage[proof=false,left=true,timer=true]{regstats}[2012/01/07]%
%%                                                                  v1.0h
\gdef\unit#1{\mathord{\thinspace\mathrm{#1}}}%
\makeatletter
\@ifundefined{eTeX}{\gdef\eTeX{$\m@th \varepsilon $-\TeX }}{%
%% else \relax
}
\makeatother
\listfiles
\begin{document}
\pagenumbering{arabic}
\section*{Example for regstats}

This example demonstrates the use of package\newline
\textsf{regstats}, v1.0h as of 2012/01/07 (HMM).\newline
The used options were \texttt{proof=false,left=true,timer=true}.\newline
\texttt{proof=false} is the default, but neither \texttt{left=true}
nor \texttt{timer=true} are defaults (\texttt{left=false,timer=false}
would be the defaults).\newline

If \eTeX{} is available with your \LaTeX{}-distribution
and you want to use it, uncomment the\newline
\verb|%% \usepackage{etex}[1998/03/26]% v2.0|\newline
line in the preamble of this document.\newline

For more details please see the documentation!\newline

\noindent Save per page about $200\unit{ml}$ water,
$2\unit{g}$ CO$_{2}$ and $2\unit{g}$ wood:\newline
Therefore please print only if this is really necessary.\newline

For the resulting message, please compile regstats-example.tex and
```

```
have a look at the end of the log-file.

Because the compilation time for this example is usually quite short,
option \texttt{timer} is not demonstrated very spectacular.

\end{document}
⟨/example⟩
```

5 The implementation

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

```
⟨*package⟩
\NeedsTeXFormat{LaTeX2e}[2011/06/27]
\ProvidesPackage{regstats}[2012/01/07 v1.0h
              Counting used registers (HMM)]

```

A short description of the regstats package:

```
%% Allows to count the number of used registers
%% (counter, dimen, skip, muskip, box, token, input, output,
%%  math families, languages, insertions)
%% and compare these to the maximum available number of such registers.

```

We need the kvoptions, atveryend, and ltxcmds packages by Heiko Oberdiek:

```
\RequirePackage{kvoptions}[2010/12/23]% v3.10
\RequirePackage{atveryend}[2011/06/30]% v1.8
\RequirePackage{ltxcmds}[2011/04/18]%   v1.20

```

A last information for the user:

```
%% regstats may work with earlier versions of LaTeX and these
%% packages, but this was not tested. Please consider updating
%% your LaTeX and packages to the most recent version
%% (if they are not already the most recent version).

```

See subsection 6.1 about how to get them.

We process the options:

```
\SetupKeyvalOptions{family=regstats,prefix=regstats@}
\DeclareBoolOption{proof}% \regstats@proof
\DeclareBoolOption{left}
\DeclareBoolOption{timer}

\ProcessKeyvalOptions*

\ifregstats@proof
  \PackageInfo{regstats}{%
    This package will use one of each kind of register itself!%
    \MessageBreak%
    (And other packages used by this package\MessageBreak%
    probably use additional resources,\MessageBreak%
    if those packages are not used anyway.)\MessageBreak%
   }
\else
  \PackageInfo{regstats}{%
    This package will not use registers itself,\MessageBreak%
    but packages used by this package\MessageBreak%
    (and packages loaded by those packages)\MessageBreak%
    use additional resources,\MessageBreak%
    if those packages are not used anyway.\MessageBreak%
   }
\fi

```

The different kinds of registers used with option `proof=true` are used not before `\AtVeryVeryEnd`, therefore even if it is the one used register too much, it should not interfere with the creation of the document.

```
\ifregstats@timer
  \RequirePackage{intcalc}[2007/09/27]%  v1.1
  \RequirePackage{ifluatex}[2010/03/01]% v1.3
  \RequirePackage{ifpdf}[2011/01/30]%    v2.3
\fi

\newcommand{\regst@ts@timer}{%
  \message{^^J}
  \ifluatex
    \@tempcnta=%
      \directlua{
        if starttime then
          tex.sprint((os.clock()-starttime)*65536)
        else
          tex.sprint(0)
        end
       }\relax
    \ifnum \the\@tempcnta = 0
      \PackageError{regstats}{Did you forget to start the timer?}{%
        Before \string\documentclass\space you need to say%
        \MessageBreak%
        \string\directlua{starttime = os.clock()} \MessageBreak%
       }
    \fi
  \else
    \ifpdf
      \@tempcnta=\the\pdfelapsedtime\relax
    \else
      \PackageError{regstats}{Option timer only works with pdf(la)tex%
        \MessageBreak%
        and with lua(la)tex}{%
        Neither appear to be used here. Announced compilation time %
        will be zero.
       }
      \@tempcnta=0\relax
    \fi
  \fi
  \edef\regstatselapsedtime{\the\@tempcnta}
  \divide \@tempcnta by 65536% scaledseconds -> seconds
  \edef\regstatsseconds{\the\@tempcnta}
  \ifnum \regstatsseconds > 59
    \edef\regstatsseconds{\intcalcMod{\the\@tempcnta}{60}}
    \divide \@tempcnta by 60% seconds -> minutes
  \else
    \@tempcnta=0\relax% minutes = 0
  \fi
  \ifnum \regstatsseconds < 10
    \message{Time elapsed for the last compiler run:^^J%
      about \the\@tempcnta:0\regstatsseconds\space%
      (m:ss; \regstatselapsedtime /65536 s).^^J}
  \else
```

```
    \message{Time elapsed for the last compiler run:^^J%
      about \the\@tempcnta:\regstatsseconds \space%
      (m:ss; \regstatselapsedtime /65536 s).^^J}
  \fi
  }

\ifregstats@timer
\else
\renewcommand{\regst@ts@timer}{\relax}
\fi

\let\regst@ts@statistics\AtVeryVeryEnd%

```

LaTeX 2$_\varepsilon$ 2011/06/27 changed the `\enddocument` command and thus broke the atveryend package, which was then fixed. If new LaTeX 2$_\varepsilon$ and old atveryend are combined, `\AtVeryVeryEnd` will never be called. `\@ifl@t@r\fmtversion` is from `\@needsf@rmat` as in
`File L: ltclass.dtx Date:  2007/08/05 Version v1.1h`, line 259,
of The LaTeX 2$_\varepsilon$ Sources
by Johannes Braams, David Carlisle, Alan Jeffrey, Leslie Lamport, Frank Mittelbach, Chris Rowley, and Rainer Schöpf,
as of 2011/06/27, p. 464.

```
\@ifl@t@r\fmtversion{2011/06/27}% or possibly even newer
{\@ifpackagelater{atveryend}{2011/06/29}%
 {% 2011/06/30, v1.8, or even more recent: OK
 }{% else: older package version, no \AtVeryVeryEnd
   \let\regst@ts@statistics\ltx@firstofone%
 }
}{% else: older fmtversion: OK
```

In this case the used TeX format is outdated, but when
`\NeedsTeXFormat{LaTeX2e}[2011/06/27]`
is executed at the beginning of regstats package, the appropriate warning message is issued automatically. (And regstats should also work with older versions, I used it with a 2003/12/01 version myself.)

```
}

\AtBeginDocument{%
 \AtEndDocument{%
  \BeforeClearDocument{%
   \AfterLastShipout{%
    \AtVeryEndDocument{%
     \AtEndAfterFileList{%
```

The regstats package uses the atveryend package, which is not compatible with the seminar class nor the slidesec package. `\AtVeryVeryEnd` cannot be used with that class or package.
`\ltx@ifclassloaded` and `\ltx@ifpackageloaded` from the ltxcmds package can be used after `\AtBeginDocument` (in contrast to `\@ifclassloaded` and `\@ifpackageloaded`).

```
      \ltx@ifclassloaded{seminar}{% no \AtVeryVeryEnd
        \let\regst@ts@statistics\ltx@firstofone%
       }{% else
         \ltx@ifpackageloaded{slidesec}{% no \AtVeryVeryEnd
           \let\regst@ts@statistics\ltx@firstofone%
          }{% else: OK
```

```
193         }%
194       }%
```

`\AtEndAfterFileList` we write to `\AtVeryVeryEnd` (if available) via `\regst@ts@statistics`, thus the code will be executed quite late during the compilation. (Please load regstats as very last package!)

```
195     \regst@ts@statistics{%
```

We try to determine, whether the etex-package was loaded by the user (which requires ε-TEX being available in the LATEX distribution used to compile the document).

```
196       \ltx@ifpackageloaded{etex}{%
197         \PackageInfo{regstats}{e-TeX-package found.}
198       }{% else
199         \PackageWarning{regstats}{Could not find the e-TeX-package.%
200           \MessageBreak%
201           That can mean that e-TeX was disabled or\MessageBreak%
202           that your distribution of TeX does not contain e-TeX%
203           \MessageBreak%
204           or that you simply forgot to say \string\usepackage{etex}%
205           \MessageBreak%
206           in the preamble of \jobname.tex.\MessageBreak%
207           The number of available counter, dimen, skip,\MessageBreak%
208           muskip, box, and toks registers as well as the\MessageBreak%
209           number of insertions would be larger when using%
210           \MessageBreak%
211           the e-TeX-package.%
212          }
213       }
```

We define a new command to determine the singular/plural form, maximum of available registers, and (if option `left` was chosen) the number of remaining registers of that type.

```
214       \def\regstats@lft{}%
215       \newcommand{\regstats@regstat}[5]{%
```

The five parameters are: number of used registers of that type, singular ending, plural ending, number of available registers without ε-TEX, number of available registers with ε-TEX (in this order).

```
216         \@tempcnta=#1 \relax
217         \ifnum \the\@tempcnta = 0
218           \@tempcnta=2 \relax
219         \fi
220         \ifnum \the\@tempcnta > 1
221           \gdef\regstats@pl{#3}
222         \else
223           \gdef\regstats@pl{#2}
224         \fi
225         \ltx@ifpackageloaded{etex}{\edef\regstats@max{#5}}{%
226           \edef\regstats@max{#4}}
227         \ifregstats@left
228           \@tempcnta=\regstats@max \relax
229           \advance\@tempcnta by -#1%
230           \ifnum \the\@tempcnta > 0
231             \edef\regstats@lft{, left: \the\@tempcnta}
232           \else
233             \ifnum \the\@tempcnta = 0
```

```
234               \edef\regstats@lft{, left: \the\@tempcnta !!!}
235             \else% \the\@tempcnta < 0
236               \edef\regstats@lft{, left: \the\@tempcnta **********}
237             \fi
238           \fi
```

`\else \regstats@lft` will stay `\empty`.

```
239         \fi
240        }
```

When option `proof` was chosen, one new register of each named type is used and its number compared with the according `count` number. We give a warning about the use of additional registers.

```
241       \ifregstats@proof
242         \PackageWarning{regstats}{%
243           Package regstats loaded with option 'proof'.\MessageBreak%
244           This package itself will now use\MessageBreak%
245            one of each register for testing!\MessageBreak%
246           }%
247         \def\regstats@proof{1}
248         \newcounter{regstatscount}
249         \edef\regstats@counter{\the\allocationnumber}
250         \edef\regstats@test{\the\count10}
251         \ifx\regstats@counter\regstats@test
252         \else
253           \message{Discrepancy when counting count registers.^^J}
254           \def\regstats@proof{0}
255         \fi
256         \newdimen{\regstatsdimen}
257         \edef\regstats@dimen{\the\allocationnumber}
258         \edef\regstats@test{\the\count11}
259         \ifx\regstats@dimen\regstats@test
260         \else
261           \message{Discrepancy when counting dimen registers.^^J}
262           \def\regstats@proof{0}
263         \fi
264         \newskip\regstatsskip
265         \edef\regstats@skip{\the\allocationnumber}
266         \edef\regstats@test{\the\count12}
267         \ifx\regstats@skip\regstats@test
268         \else
269           \message{Discrepancy when counting skip registers.^^J}
270           \def\regstats@proof{0}
271         \fi
272         \newmuskip\regstatsmuskip
273         \edef\regstats@muskip{\the\allocationnumber}
274         \edef\regstats@test{\the\count13}
275         \ifx\regstats@muskip\regstats@test
276         \else
277           \message{Discrepancy when counting muskip registers.^^J}
278           \def\regstats@proof{0}
279         \fi
280         \newbox\regstatsbox
281         \edef\regstats@box{\the\allocationnumber}
282         \edef\regstats@test{\the\count14}
283         \ifx\regstats@box\regstats@test
284         \else
285           \message{Discrepancy when counting box registers.^^J}
```

```
      \def\regstats@proof{0}
    \fi
    \newtoks\regstatstoks
    \edef\regstats@toks{\the\allocationnumber}
    \edef\regstats@test{\the\count15}
    \ifx\regstats@toks\regstats@test
    \else
      \message{Discrepancy when counting toks registers.^^J}
      \def\regstats@proof{0}
    \fi
    \newread\regstatsread
    \edef\regstats@read{\the\allocationnumber}
    \edef\regstats@test{\the\count16}
    \ifx\regstats@read\regstats@test
    \else
      \message{Discrepancy when counting read registers.^^J}
      \def\regstats@proof{0}
    \fi
    \newwrite\regstatswrite
    \edef\regstats@write{\the\allocationnumber}
    \edef\regstats@test{\the\count17}
    \ifx\regstats@write\regstats@test
    \else
      \message{Discrepancy when counting write registers.^^J}
      \def\regstats@proof{0}
    \fi
    \newfam\regstatsfam
    \edef\regstats@fam{\the\allocationnumber}
    \edef\regstats@test{\the\count18}
    \ifx\regstats@fam\regstats@test
    \else
      \message{Discrepancy when counting fam registers.^^J}
      \def\regstats@proof{0}
    \fi
    \newlanguage\regstatslanguage
    \edef\regstats@language{\the\allocationnumber}
    \edef\regstats@test{\the\count19}
    \ifx\regstats@language\regstats@test
    \else
      \message{Discrepancy when counting language registers.^^J}
      \def\regstats@proof{0}
    \fi
    \newinsert\regstatsinsert
    \edef\regstats@insert{\the\allocationnumber}
    \edef\regstats@test{\the\count20}
    \ifx\regstats@insert\regstats@test
    \else
      \message{Discrepancy when counting insert registers.^^J}
      \def\regstats@proof{0}
    \fi
```

When there was a discrepancy somewhere, we give the according message.

```
    \edef\regstats@test{0}
    \ifx\regstats@proof\regstats@test
      \message{Regstats test for register numbers failed.^^J}
      \message{Therefore option 'proof' is necessary to get the %
               right numbers.^^J}
    \fi
```

```
342       \else
```

Without option `proof`, we just take the values of the various `count`s.

```
        \edef\regstats@counter{\the\count10}
        \edef\regstats@dimen{\the\count11}
        \edef\regstats@skip{\the\count12}
        \edef\regstats@muskip{\the\count13}
        \edef\regstats@box{\the\count14}
        \edef\regstats@toks{\the\count15}
        \edef\regstats@read{\the\count16}
        \edef\regstats@write{\the\count17}
        \edef\regstats@fam{\the\count18}
        \edef\regstats@language{\the\count19}
        \edef\regstats@insert{\the\count20}
      \fi
```

`insert`s are used starting with a high number and moving downward.

```
      \@tempcnta = 233 \relax
      \advance\@tempcnta by -\regstats@insert%
      \advance\@tempcnta by +1%
      \edef\regstats@insert{\the\@tempcnta}
```

The number of used registers of each type and the number of available ones (estimated, probably dependent on distribution and its version, here just distinguished according to availability of ε-TEX) is written to screen and `log` file. (Additional spaces are just for increased ease of readability of the code and will appear neither at the scree output nor in the `log` file.)

```
\message{^^J}
\message{Here is how much of TeX's registers you used^^J}%
\message{\space (numbers of available registers are estimated!):^^J}%
\regstats@regstat{\regstats@counter}{}{s}{233}{32767}
\message{ \regstats@counter\space  counter register\regstats@pl\space      out of \regstats@max \regstats@lft ^^J}
\regstats@regstat{\regstats@dimen}{}{s}{233}{32767}
\message{ \regstats@dimen\space    dimen   register\regstats@pl\space      out of \regstats@max \regstats@lft ^^J}
\regstats@regstat{\regstats@skip}{}{s}{233}{32767}
\message{ \regstats@skip\space     skip    register\regstats@pl\space      out of \regstats@max \regstats@lft ^^J}
\regstats@regstat{\regstats@muskip}{}{s}{255}{32767}
\message{ \regstats@muskip\space   muskip  register\regstats@pl\space      out of \regstats@max \regstats@lft ^^J}
\regstats@regstat{\regstats@box}{}{s}{233}{32767}
\message{ \regstats@box\space      box     register\regstats@pl\space      out of \regstats@max \regstats@lft ^^J}
\regstats@regstat{\regstats@toks}{}{s}{255}{32767}
\message{ \regstats@toks\space     toks    register\regstats@pl\space      out of \regstats@max \regstats@lft ^^J}
\regstats@regstat{\regstats@read}{}{s}{15}{15}
\message{ \regstats@read\space     input stream\regstats@pl\space (read)   out of \regstats@max \regstats@lft ^^J}
\regstats@regstat{\regstats@write}{}{s}{15}{15}
\message{ \regstats@write\space    output stream\regstats@pl\space (write) out of \regstats@max \regstats@lft ^^J}
\regstats@regstat{\regstats@fam}{y}{ies}{15}{15}
\message{ \regstats@fam\space      math famil\regstats@pl\space (fam)      out of \regstats@max \regstats@lft ^^J}
\regstats@regstat{\regstats@language}{}{s}{255}{255}
\message{ \regstats@language\space language code\regstats@pl\space         out of \regstats@max \regstats@lft ^^J}
\regstats@regstat{\regstats@insert}{}{s}{101}{124}
\message{ \regstats@insert\space   insertion\regstats@pl\space             out of \regstats@max \regstats@lft ^^J}
```

When option `timer` (or `timer=true`) was used, the regstats package additionally gives the time, which was needed for the (last) compilation (run). When more than one compilation run is necessary to compile the document, the individual times have to be added up manually. If `\pdfelapsedtime` was reset by another package, the result is not correct, of course, but unfortunately it is not possible to check for this. You could say `\def\pdfresettimer{\relax}` immediately after `\documentclass[...]{...}` to prevent this. Better use

```
\long\def\pdfresettimer{%
\PackageError{regstats}{\string\pdfresettimer\space used}}
```

to be notified thereof. This redefinition could be implemented in this regstats package, but this would have no effect for the use of `\pdfresettimer` before this package is called. Because this package should be called as late as immediately before `\begin{document}`, this would mean that resetting would be possible during the whole loading of all packages.

`\pdfelapsedtime` is not available when `lua(la)tex` is used instead of `pdf(la)tex` to compile the document. In that case at the very beginning of your `tex` file say

```
\directlua{starttime = os.clock()}
```

(even before `\documentclass`!), and the `timer` option can also be used with `lualatex`. When neither `lualatex` nor `pdflatex` is used to compile the document, the timer(-option) does not work.

```
      \regst@ts@timer
      }%
     }%
    }%
   }%
  }%
}
```

⟨/package⟩

6 Installation

6.1 Downloads

Everything is available at CTAN:, http://www.ctan.org/tex-archive/, but may need additional packages themselves.

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

- TEXFormat LATEX 2ε: http://www.CTAN.org/
- document class ltxdoc, 2007/11/11, v2.0u,
  CTAN:macros/latex/base/ltxdoc.dtx
- package pdflscape, 2008/08/11, v0.10, http://ctan.org/pkg/pdflscape
- package holtxdoc, 2011/02/04, v0.21, http://ctan.org/pkg/holtxdoc
- package hypdoc, 2010/03/26, v1.9, http://ctan.org/pkg/hypdoc

`regstats.sty` The `regstats.sty` for LATEX 2ε (i. e. each document using the regstats package) requires:

- TEXFormat LATEX 2ε, http://www.CTAN.org/
- package kvoptions, 2010/12/23, v3.10, http://ctan.org/pkg/kvoptions
- package atveryend, 2011/06/30, v1.8, http://ctan.org/pkg/atveryend

When option `timer` is used, additionally

- package intcalc, 2007/09/27, v1.1, http://ctan.org/pkg/intcalc
- package ifluatex, 2010/03/01, v1.3, http://ctan.org/pkg/ifluatex
- package ifpdf, 2011/01/30, v2.3, http://ctan.org/pkg/ifpdf

are needed.

`regstats-example.tex` The `regstats-example.tex` requires the same files as all documents using the regstats package, i. e. the ones named above and additionally:

- class article, 2007/10/19, v1.4h, from classes.dtx:
  CTAN:macros/latex/base/classes.dtx
- package regstats, 2012/01/07, v1.0h, http://ctan.org/pkg/regstats
  (Well, it is the example file for this package, and because you are reading the documentation for the regstats package, it can be assumed that you already have some version of it – is it the current one?)

`Alternative` As possible alternative in section 3 there is listed

- regcount, 1999/08/03, v1.0: http://www.ctan.org/pkg/regcount

Oberdiek
holtxdoc
kvoptions
atveryend
ifluatex
ifpdf
intcalc
ltxcmds
pdflscape

All packages of Heiko Oberdiek's bundle 'oberdiek' (especially holtxdoc, kvoptions, atveryend, ifluatex, ifpdf, intcalc, ltxcmds, and pdflscape) are also available in a TDS compliant ZIP archive:
CTAN: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://mirror.ctan.org/install/macros/latex/contrib/hyperref.tds.zip.

Münch

A hyperlinked list of my (other) packages can be found at http://www.Uni-Bonn.de/~uzs5pv/LaTeX.html.

6.2 Package, unpacking TDS

Package. This package is available on CTAN:

CTAN:macros/latex/contrib/regstats/regstats.dtx
: The source file.

CTAN:macros/latex/contrib/regstats/regstats.pdf
: The documentation.

CTAN:macros/latex/contrib/regstats/regstats-example.pdf
: The compiled example file, as it should look like.

CTAN:macros/latex/contrib/regstats/regstats-example.log
: A `log` file for the example.

CTAN:macros/latex/contrib/regstats/README
: The README file.

There is also a regstats.tds.zip available:

CTAN:install/macros/latex/contrib/regstats.tds.zip
: Everything in `TDS` compliant, compiled format.

which additionally contains

regstats.ins	The installation file.
regstats.drv	The driver to generate the documentation.
regstats.sty	The `.style` file.
regstats-example.tex	The example file.
regstats-example.log	A `log` file for the example.

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 TEX:

```
tex regstats.dtx
```

About generating the documentation see paragraph 6.4 below.

TDS. Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree):

```
regstats.sty         → tex/latex/regstats/regstats.sty
regstats.pdf         → doc/latex/regstats/regstats.pdf
regstats-example.tex → doc/latex/regstats/regstats-example.tex
regstats-example.pdf → doc/latex/regstats/regstats-example.pdf
regstats-example.log → doc/latex/regstats/regstats-example.log
regstats.dtx         → source/latex/regstats/regstats.dtx
```

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.

6.3 Refresh file name databases

If your TEX distribution (teTEX, mikTEX,...) relies on file name databases, you must refresh these. For example, teTEX users run `texhash` or `mktexlsr`.

6.4 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{regstats.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 pdfLATEX:

```
pdflatex regstats.dtx
makeindex -s gind.ist regstats.idx
pdflatex regstats.dtx
makeindex -s gind.ist regstats.idx
pdflatex regstats.dtx
```

6.5 Compiling the example

The example file, regstats-example.tex, can be compiled via
`(pdf)(la)tex regstats-example.tex`
or (after removing the `%%` before `\directlua{starttime = os.clock()}` in the line before `\documentclass...`) via
`lua(la)tex regstats-example.tex`.

7 Acknowledgements

I would like to thank Heiko Oberdiek for providing the hyperref, holtxdoc, kvoptions, atveryend, ifluatex, ifpdf, intcalc, ltxcmds, and pdflscape as well as a lot (!) of other useful packages (from which I also got everything I know about creating a file in `.dtx` format, ok, say it: copying), Jean-Pierre F. Drucbert for his regcount package, Robin Fairbairns for pointing me to the regcount package, and the news:comp.text.tex and news:de.comp.text.tex newsgroups as well as http://tex.stackexchange.com for their help in all things TEX.

8 History

[2011/05/14 v1.0a]

- Upload to CTAN:.

[2011/05/16 v1.0b]

- Name clash with `regcount` package, fixed.
- `regcount` package listed as possible alternative.
- Bug: skip and muskip mixed up, fixed.
- Counting of skips, math families, and insertions added.
- Bug fix: insertions are numbered high to low.
- Option `proof` added.
- Diverse details.

[2011/06/08 v1.0c]

- Bug Fix: Number of available `\skip` registers with ε-TEX.
- Change in ε-TEX-detection.
- New option `left`.
- Minor details.

[2011/06/18 v1.0d]

- Bug Fix: Information about used registers/counter fixed.
- New option `timer`.
- Some details.

[2011/08/22 v1.0e]

- The information about the used registers is now presented even later.
- Quite some details in the documentation.
- Updated to TeXlive2011.
- Hot fix: TeX 2011/06/27 has changed `\enddocument` and thus broken the `\AtVeryVeryEnd` command/hooking of atveryend package as of 2011/04/23, v1.7. Until it is fixed, `\AtEndAfterFileList` is used.

[2011/08/23 v1.0f]

- The atveryend package was fixed (2011/06/30, v.1.8). Now regstats differentiates according to TeX format and atveryend package version. 2011/06/30, v.1.8 should become available at CTAN soon. regstats also works with the old version, the information is just presented a little bit earlier during compilation, thus theoretically there could be missed some register use after that information, which would be obvious in the `log`-file.
- New hyperref package used for the documentation.

[2012/01/01 v1.0g]

- Now supports (but does not require) `lua(la)tex` for option `timer`.
- Bug fix: wrong path given in the documentation, fixed.
- Due to the use of temporary counters, no longer a new counter is used (except when option `proof=true` is chosen, of course).
- Circumvention of the incompatibility of the atveryend package with seminar class and slidesec package introduced.
- Quite some additional changes in the `dtx` and README files.

[2012/01/07 v1.0h]

- Bug fix: `\ifluatex` undefined without ifluatex leads to wrong association of `\else`...`\fi`. Fixed by moving `\ifregstats@timer`.

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.)

9 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.

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