The \texttt{datenumber.sty} package v0.02

Jörg-Michael Schröder
schrj020@mail.uni-mainz.de
2001/08/06

Abstract
This package provides commands to convert a date into a number. Turned around a date can be calculated also by a number. Additionally there are commands for incrementing and decrementing a date. Leap years and the Gregorian calendar reform are considered.

Contents

1 Start year 1
2 Counters 1
3 Macros 1
   3.1 Macros which operate with defined counters 1
   3.2 Macros which operate with your own counters 2
   3.3 Month 2
   3.4 Weekday 2
4 Language 2
5 Examples 3
6 Other 4

1 Start year

The start of the counting is determined with \texttt{\setstartyear{year}} (standard 1800). The first day of the start year gets the number 1. The value of \texttt{startyear} must be greater 0. It may not be larger than the year of a date to be calculated. If the difference of date and \texttt{startyear} is large, the calculation can last for a long time. The correct setting of the weekdays is guaranteed only if the value of \texttt{startyear} is 1800, 1900 or 2000.

2 Counters

There are five counters defined
\texttt{datenumber}: number of the day
\texttt{dateyear}: year
\texttt{datemonth}: month
\texttt{dateday}: day
\texttt{datedayname}: weekday: 1–7 (Monday–Sunday)
3 Macros

3.1 Macros which operate with defined counters
All counters specified above are updated by these macros. \texttt{\textbackslash datedayname} and \texttt{\textbackslash datemonthname} are also updated.

\texttt{\textbackslash setdatenumber\{year\}\{month\}\{day\}}: Sets the counter \texttt{datenumber} to a value, which corresponds to the date.

\texttt{\textbackslash setdatebynumber\{number\}}: Sets the counters \texttt{dateyear}, \texttt{datemonth}, and \texttt{dateday} to values, which corresponds to the number.

\texttt{\textbackslash nextdate}: Sets the counters \texttt{dateyear}, \texttt{datemonth}, and \texttt{dateday} to the next date.

\texttt{\textbackslash prevdate}: Sets the counters \texttt{dateyear}, \texttt{datemonth}, and \texttt{dateday} to the previous date.

\texttt{\textbackslash setdate\{year\}\{month\}\{day\}}: Sets the counters \texttt{dateyear}, \texttt{datemonth}, and \texttt{dateday} to \texttt{year}, \texttt{month}, and \texttt{day}.

\texttt{\textbackslash setdatetoday}: Sets the counters \texttt{dateyear}, \texttt{datemonth}, and \texttt{dateday} to the current date.

\texttt{\textbackslash datemonthname}: typesets the month (see section 3.3).

\texttt{\textbackslash datedayname}: typesets the weekday (see section 3.4).

\texttt{\textbackslash datedate}: typesets the date, corresponding to the counters \texttt{dateyear}, \texttt{datemonth}, \texttt{dateday}.

3.2 Macros which operate with your own counters
Only the counters you specified are updated by these macros. \texttt{\textbackslash datedayname} and \texttt{\textbackslash datemonthname} are not updated.

\texttt{\textbackslash setmydatenumber\{numbercount\}\{year\}\{month\}\{day\}}: Sets the counter \texttt{numbercount} to a value, which corresponds to the date.

\texttt{\textbackslash setmydatebynumber\{number\}\{yearcount\}\{monthcount\}\{daycount\}}: Sets the counters \texttt{yearcount}, \texttt{monthcount}, and \texttt{daycount} to values, which corresponds to the number.

\texttt{\textbackslash mynextdate\{yearcount\}\{monthcount\}\{daycount\}}: Sets the counters \texttt{yearcount}, \texttt{monthcount}, and \texttt{daycount} to the next date.

\texttt{\textbackslash mynextdate\{yearcount\}\{monthcount\}\{daycount\}}: Sets the counters \texttt{yearcount}, \texttt{monthcount}, and \texttt{daycount} to the previous date.

3.3 Month
The command \texttt{\textbackslash datemonthname} typesets the month. It is updated by macros described in section 3.1. You can do this by your own saying \texttt{\setmonthname\{number\}}.

3.4 Weekday
To typeset the weekday say \texttt{\textbackslash datedayname}. This command is updated by macros described in section 3.1. You can do this by your own saying \texttt{\setmonthname\{number\}} (1 for Monday and 7 for Sunday). You can also write \texttt{\textbackslash setdaynamebynumber\{number\}}; were \texttt{number} is the number of a date. If \texttt{startyear} is set to 1800, 1900 or 2000 the calculation of the weekday will work.
4 Language

The language options \texttt{english}, \texttt{USenglish} (standard), \texttt{french}, \texttt{spanish}, \texttt{german}, and \texttt{ngerman} are supported. Say \texttt{\dateselectlanguage{language}} to select a language. For other languages: Create a file \texttt{datenumbermylanguage.1df}. Copy the text from \texttt{datenumberdummy.1df}. Replace every “dummy” with “mylanguage” and change the months and weekdays. Say \texttt{\usepackage{datenumber} \input{datenumbermylanguage.1df}} in your document.

5 Examples

\begin{verbatim}
\setdate{2002}{1}{1} \thedatenumber
Result: 73780

\setdatetoday \setdatebynumber{\thedatenumber}
In 10 days is \datedate
Result: In 10 days is August 18, 2001

\newcounter{dateone}\newcounter{datetwo}
\newcommand{\daydifftoday}[3]{%\setmydatenumber{dateone}{\the\year}{\the\month}{\the\day} % \setmydatenumber{datetwo}{#1}{#2}{#3} % \addtocounter{datetwo}{-\thedateone}% \thedatetwo% }
\setmydatenumber{dateone}{2001}{12}{25}% \addtocounter{datetwo}{-\thedateone}%
\thedatetwo
\end{verbatim}

There is still \daydifftoday{2001}{12}{25} days to Christmas.

Result: There is still 139 days to Christmas.
6 Other

- leap year test

  The \the\year is
  \ifleapyear{\the\year} a \else no \fi leap year.
  Result: The 2001 is no leap year.

- date test

  The 29.2.1900 is
  \ifvaliddate{1900}{2}{29} a \else no \fi valid date.
  Result: The 29.2.1900 is no valid date.\footnote{There are programs, which have another opinion about that. Search for "Gregorian calendar" in order to get more information about leap years and October 5, 1582}