The tikzcalendarnotes Package Version 1.0

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Abstract

The calendar library from TikZ is extremely flexible, but can be daunting when someone just wants a calendar with some markings. This package offers a pre-set calendar arrangement, whereas months are constructed as a block, one week per line, and layout as a matrix.

Furthermore, a set of commands is offered which aim to easy the task of adding marks, highlighting some dates.

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1 Package Requirements

Basically, besides a fairly recent LaTeX kernel (as recent as 2022/06/01), one needs to load at least

\usepackage{tikz} \usetikzlibrary{calendar}

Note that, not all fonts support any font size, which will affect a calendar rendering. That for, one is advised to use a font like <code>lmoderm</code> or use packages like <code>anyfontsize</code> and <code>relsize</code>.

^{*}https://github.com/alceu-frigeri/tikzcalendarnotes

Lastly, given the possible uses of a calendar, a nice package setup would be (using the preview package)

```
\usepackage{tikz}
\usetikzlibrary{calendar}

%\RequirePackage{anyfontsize}
%\RequirePackage{relsize}
\RequirePackage{Imodern}

\usepackage{tikzcalendarnotes}

\usepackage[active , tightpage]{preview}
\PreviewEnvironment{tikzpicture}
\setlength\PreviewBorder{5pt}
```

2 Introduction

TikZ's calendar's library is extremely flexible, allowing all sort of arrangements, formatting and marking of a calendar, though one has to provide (programm) the desired arrangement and set the markings/fomating using the related keys (as *if=*), and that's where it can get complicate.

This package provides a set of commands (\setcountingweeks, \suppresscouting, \setdates, \setranges and \sethighlightdates) aimed at highlighting/marking dates. And a command, \calendarnotes to typeset such annotated calendar.

Those markings/annotations can be organized as separate "data sets", so that, when producing the final calendar, one can choose/select which "data sets" will be active, vià-viz, taken in account.

In the following commands, a certain "jargon" is used, taking the following example (which is scaled down to the size of this doc). The text over the 14 is called a "remark", whilst the red circle (could be a square) is called a "mark". The text below the same date is just called a "note". Finally, those small numbers, to the left, are "week counters".

LATEX Code:

4 19

5 26

8 16

9 23

\defnewdataset{example}

```
\setdates[example]{date=2025-01-14,color=brown,remark=short one,notes=some\break long text
      used as a note, round, mark style=red}
\setcountingweeks[example]{from=2025-01-01,to=2025-02-28}
  \begin{tikzpicture}
    \calendarnotes[calendar notes, day names on top, every sunday=blue]{with notes,year=2025,
      number of months=2, data set={example}}
  \end{tikzpicture}
LATEX Result:
                   Tu
                        We
                               Th
                                     Fr
                                           Sa
                                                           Mo
                                                                 Tu
                                                                       We
                                                                             Th
            Mo
                                                                                          Sa
                              02
                                     03
                                                                                          01
                         01
                                           04
                  07
                         08
                              09
                                                           03
                                                                 04
                                                                             06
                                                                                   07
                                                                                          08
     205
            06
                                     10
                                           11
                                                    602
                                                                       05
     з12
                               16
                                     17
                                                           10
                                                                       12
                                                                             13
            13
                         15
                                           18
                                                    709
                                                                 11
                                                                                   14
                                                                                          15
```

3 Package Commands

\defnewdataset

 $\define wdataset \{(new-dataset)\}\$

This defines/create a \(\dataset \) for later reference. A dataset is just a "repository" of dates/ranges/etc. (see below)

Note: About dataset's names: It can be almost anything, the name can contain strings normally not allowed in a macro name, like spaces, dots, two-dots and so on, including backslashes, meaning that if someone typesets \XYZ as a dataset, \XYZ will be it's name: a backslash isn't an active character anymore and one can't use macros when defining a dataset's name.

Note: When creating a new dataset, a warning is raised in case $\langle new-dataset \rangle$ already exists. When selecting a dataset, an error is raised if $\langle dataset \rangle$ doesn't exists.

\setdates

 $\verb|\setdates| [\langle \texttt{dataset} \rangle] \{ \langle \texttt{key-value list} \rangle \}$

This adds a set of dates, (key-value list), to be annotated (see list below). If missing, the "default" (dataset) will be used.

Valid Keys when annotating a date:

date The date in ISO format (as used by the calendar library.

color The color of the day. No default

round A circle will be drawn around the date. Well, in fact a square with "rounded

corners".

A square will be drawn around the date.

mark style The style to be applied after the every mark style.

remark A remark to be added to a date.

remark style The style to be applied after the every remark style.

north east
north west
south east
The remark, if any, will be positioned at the day's north west anchor.
The remark, if any, will be positioned at the day's north west anchor.
The remark, if any, will be positioned at the day's south east anchor.
The remark, if any, will be positioned at the day's south west anchor.

notes A note to be added bellow a date.

note style to be applied after the every note style.

Note: date must be the first key, all other (optional) keys refers the previous date. One can define/set as many dates as one wishes in a single \setdates call.

Note: If not giving, the default position is north east.

Note: An error is raised if $\langle dataset \rangle$ doesn't exists.

\setranges

\setranges $[\langle dataset \rangle] \{\langle key-value list \rangle\}$

This adds a set of date's ranges, (key-value list), to be annotated (see list below). If missing, the "default" (dataset) will be used.

Valid Keys when annotating a range:

The starting date in ISO format (as used by the calendar library.

to The final date in ISO format (as used by the calendar library.

The color of the day on the range from and to. No default

A rounded rectangle will be drawn around the range.

square A rectangle will be drawn around the range.

mark style The style to be applied after the every mark style.

remark A remark to be added to the range.

remark style The style to be applied after the every remark style.

north east
north west
north west
south east
The remark, if any, will be positioned at the to day's north west anchor.
The remark, if any, will be positioned at the from day's north west anchor.
The remark, if any, will be positioned at the to day's south east anchor.
The remark, if any, will be positioned at the from day's south west anchor.
The remark, if any, will be positioned at the from day's south west anchor.

Note: from and to must be the first keys, all other (optional) keys refers the last from / to pair. One can define/set as many from / to ranges as one wishes in a single \setranges call.

Note: If not giving, the default position is north east.

Note: An error is raised if (dataset) doesn't exists.

```
\strut \
```

This adds a set of dates, (key-value list), to be highlighted (see list below). If missing, the "default" (dataset) will be used.

Valid Keys when highlighting dates:

color The color applied to every date in the dates list.

dates This key assumes a (csv-list) of dates in ISO format. Each date will be highlighted with color. If no previous color got defined, lightgray will be

One can define/set as many dates as one wishes in a single Note:\sethighlightdates call.

Note: An error is raised if (dataset) doesn't exists.

\setcountingweeks

\setcountingweeks $[\langle dataset \rangle] \{\langle key-value list \rangle\}$

A counter (of the weeks in the given range) will be added to the left of every week. If missing, the "default" (dataset) will be used.

Valid Kevs:

from The starting date in ISO format (as used by the calendar library. t.o The final date in ISO format (as used by the calendar library.

color The color to be used. No default

up The counter will be drawn to the left, upwards. down The counter will be drawn to the left, downwards.

center The counter will be just drawn to the left. That's the default positioning. starting at Sets the counters initial value. Useful in the cases when the "counting period"

starts before the actual calendar.

Note: An error is raised if (dataset) doesn't exists.

Note: The starting at key is active only if the keep counters style is in use (see 4.4)

\suppresscounting

\suppresscounting [$\langle dataset \rangle$] { $\langle key-value list \rangle$ }

This will suppress/step over a few weeks when counting weeks on a dataset) (for instance, Christmas and New Year's recess in a semester calendar). If missing, the "default" (dataset) will be used.

Valid Keys:

from The starting date in ISO format (as used by the calendar library. to The final date in ISO format (as used by the calendar library.

Note: Counters of other (dataset)'s wont be affected.

Note: An error is raised if (dataset) doesn't exists.

\calendarnotes

$\verb|\calendarnotes| [\langle pgfkeys \rangle] \{\langle key-value | list \rangle\}|$

This will create a calendar as a (tikz) matrix, one month per cell. (pgfkeys) are any valid pgfkey (not just the ones added by this package).

The calendar range, starting date, arrangement are set by the (key-value list), as below.

year The year. If not given \year will be used.

starting at The calendar initial month. If not given 1 (January) will be assumed.

number of months The number of months for the calendar. Defaults to 12.

per line How many months shall be arranged per "line".

with notes The notes will be typeset. Note that this will also adjust day/week spacing, accordingly.

```
without notes Notes won't be typeset, resulting in a more compact calendar.

compact An alias to "without notes".

day spacing Inter day spacing to be used (in pt). It defaults to 25 (with notes) and 15 (without notes).

week spacing Inter week spacing to be used (in pt). It defaults to 36 (with notes) and 17 (without notes).

month spacing Inter month spacing to be used (in pt). It defaults to 20 (with notes) and 5 (without notes).

data set A comma separated list of (data set) to be used. Defaults to "default".

name The prefix name to be used by the calendar library. Defaults to "cal".
```

Note: An error is raised if (dataset) doesn't exists.

3.1 Advanced Use

Those are provided for the case one wants to use a different calendar arrangement, but still wants to use the underlying marking provided by this package.

\calendarnotesprepare will process all \(\pgfkeys \)\) and \(\key-value list \)\) as \calendarnotes does, but nothing else.

\calendarnotessetifs will then append the many if='s (to every calendar).

Finally, \calendarnotesdraw will add the marks/remarks (and notes if the with notes key was used in \calendarnotesprepare).

Note that, the user is supposed to construct/draw the calendar between the \calendarnotessetifs and \calendarnotesdraw commands.

4 TikZ Styles

A few TikZ styles are defined, to work together with the ones from the calendar library. A few of them are about "calendar arrangement" (see the pgfmanual), like calendar notes and week starts on x, others are about adding year/week list labels, like year label and day names on top. And others are for formatting/styling.

Note: all keys are defined under the /tikz/ "family". For instance \pgfkeys {tikz,...} if using the \pgfkeys directly.

calendar notes

This is the *main style* to be used with the \calendarnotes command. Months are arranged one week per line (using the week starts on x style, see below). Day coordinates are "remembered" (tikz style remember picture) for later reference.

Defaults: Besides the remember picture, day text is set to \%d0, month text is set to \%mt and every month/.style is set to { font = \bfseries \itshape }.

4.1 Year related ones

year label by january and start

This will add the calendar's year to every January, AND, to the very first month draw.

Note: Please note that "the first month drawn", depends on an internal flag set by this style key. Changing the scope or repeatedly calling to this style key will reset said flag, resulting in the year label being added in the following month being draw.

Note: If the label's position isn't already set, the style year label left will be applied.

Note: this is the default when using one of the year label left/left vertical/corner.

year label by january only

This will add the calendar's year label to every January only.

Note: If the label's position isn't already set, the style year label left will be applied.

year label every month

This will add a calendar's year label to every month draw.

Note: If the label's position isn't already set, the style year label left will be applied.

year label left

The calendar's year label will added to the left of a month.

Note: If a year's label policy (if every month, just january or ...) hasn't been set, the style year label by january and start will be applied.

year label left vertical

The calendar's year will be at the left of a month, rotated 90°

Note: If a year's label policy (if every month, just january or ...) hasn't been set, the style year label by january and start will be applied.

year label left corner

The calendar's year will be at the corner left of a month, rotated 45°

Note: If a year's label policy (if every month, just january or ...) hasn't been set, the style year label by january and start will be applied.

every year/.style every year/.append style

To change the year style.

The default being { font = \Large \sffamily \bfseries , green!50!black }

4.2 Marks related ones

every mark/.style every mark/.append style

To change the style of the calendar "marks" (square or round ones). The default being { thin, gray }.

4.3 Remarks related ones

```
every remark/.style
every remark/.append style
```

To change the style of every "remark" (the remark text).

The default being { font = { \fontsize {5}{6} \selectfont } }

remarks fontsize

In case one just wants to change the remarks fontsize (in pt) used and nothing else.

4.4 Counter related ones

keep counters

The counters won't be reset between calls, allowing to piecewise construction of a calendar, one or more months at time.

Note: This is needed, for instance, also when using the starting at key (\setcountingweeks).

every counter/.style
every counter/.append style

To change the style of every "counter" (if using the \setcntweek).

The default being every remark, meaning it will use the same style set for "remarks".

4.5 Notes related ones

every note/.style
every note/.append style

To change the style of every "note" (the text below a date).

The default being { font = { \fontsize {7}{7.2} \selectfont } }

notes fontsize

In case one just wants to change the notes fontsize (in pt) used and nothing else.

4.6 Calendar arrangement

weeklist starts on x

This sets a month arrangement to be one week per line. A week might start at Sunday or Monday, the default being Sunday.

Note: This is the default arrangement if one uses the calendar notes key.

week starts monday

If the key weeklist starts on x is active, the week will start by Mondays.

week starts sunday

If the key weeklist starts on x is active, the week will start by Sundays.

day names on top

This will add the weekday's name list (Su, Mo, Tu ... Sa) on top of each month (and below it's label, if drawn).

4.7 Other styling keys

every day name/.style every day name/.append style

This will set the style used when drawing the "day's name" list. The default being { font = { \scriptsize \itshape } }

 ${\it Note:}$ Observe that, for each day name, first the every day style will be applied, than this every day name, and finally every sunday or every weekend if Sunday or Saturday, accordingly .

every sunday

This will set a styling for "Sundays". No default is set.

Note: This will append an "if = (Sunday)" associated with the every calendar. Besides that, this will also be appended / applied to the corresponding "day name".

every weekend

This will set a styling for "Saturdays" and "Sundays". No default is set.

Note: This will append an "if = (weekend)" associated with the every calendar. Besides that, this will also be appended / applied to the corresponding "day names" (Saturday and Sunday).

4.8 Remarks/counters positioning fine tunning

Xshift adjust

A "remark" (or counter) position will be adjusted by shifting it along the X axis. The default is 0 (in pt).

Note: A negative adjust will bring the remark closer to the reference point.

Yshift adjust

A "remark" (or counter) position will be adjusted by shifting it along the Y axis. The default is 0 (in pt).

Note: A negative adjust will bring the remark closer to the reference point.

radius adjust

The "mark" size will be adjusted. The default is 0 (in pt).

Note: A negative adjust will reduce the size of the marks, whilst a positive number will increase it.

5 An Example

First, 3 $\langle data sets \rangle$ are created, highlighting a few dates.

\LaTeX Code:

```
\defnewdataset{dataset A}
\defnewdataset{dataset B}
\defnewdataset{dataset C}
\setcountingweeks{from=2025-01-01,to=2025-12-31,down,color=gray!40!white} % deafault dataset
\setcountingweeks[dataset A]{from=2025-04-07,to=2025-08-29,color=red}
\setcountingweeks[dataset A]{from=2025-09-22,to=2026-03-23,color=brown}
\suppresscounting[dataset A]{from=2025-07-07,to=2025-08-01} % like, summer break
\setranges[dataset A]
   from=2025-08-25,to=2025-08-29,round,remark=Exams Week!
\sethighlightdates[dataset A]
   dates = {01-01, 01-02, 03-01, 04-01, 2025-06-05} %some holidays,
 }
\setdates[dataset A]
 {
    date=2025-06-23, round, remark = L1 , notes= {FIS101 - cinematics} ,
   date=2025-06-25, round, remark = L1 , notes= {MAT101 - integrals} ,
 }
\setdates[dataset B]
 {
   date=2025-03-22, round, color=brown, remark=C. Birthday,
   date=2025-01-26, round, color=brown, remark=W. Birthday,
\setranges[dataset C]
 {
    from=2025-06-06,to=2025-06-26,round,remark=Valencia!
}
```

Then, for instance, one can create a calendar (\calendarnotes) with only 3 \langle data sets \rangle (\langle default \rangle , \langle dataset A \rangle and \langle dataset B \rangle), without notes.

\LaTeX Code:

```
begin{tikzpicture}
  \calendarnotes
  [
    calendar notes,
    month label above centered,
    year label left corner,
    day names on top,
    every sunday=blue
  ]
  {
    without notes,
    data set={default, dataset A, dataset B}
  }
}end{tikzpicture}
```

January	February	March
Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa
01 02 03 04	5	9 01
₂ 05 06 07 08 09 10 11	02 03 04 05 06 07 08	02 03 04 05 06 07 08
₃ 12 13 14 15 16 17 18	09 10 11 12 13 14 15	09 10 11 12 13 14 15
19 20 21 22 23 24 25	₈ 16 17 18 19 20 21 22	16 17 18 19 20 21 22
26 27 28 29 30 31	23 24 25 26 27 28	23 24 25 26 27 28 29 ₁₃
		₁₄ 30 31
April	May	June
$Su\ Mo\ Tu\ We\ Th\ Fr\ Sa$	Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa
01 02 03 04 05	01 02 03	901 02 03 04 05 06 07
$^{1}_{15}$ 06 07 08 09 10 11 12	⁵ ₁₉ 04 05 06 07 08 09 10	$\frac{10}{24}$ 08 09 10 11 12 13 14
$\frac{2}{10}$ 13 14 15 16 17 18 19	⁶ 11 12 13 14 15 16 17	15 16 17 18 19 20 21
$\frac{3}{17}$ 20 21 22 23 24 25 26	⁷ 18 19 20 21 22 23 24	$\frac{12}{26}$ $\frac{22}{23}$ $\frac{23}{24}$ $\frac{25}{25}$ $\frac{26}{26}$ $\frac{27}{28}$
4 27 28 29 30	825 26 27 28 29 30 31	13 29 30
July	August	September
Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa
$01 \ 02 \ 03 \ 04 \ 05$	01 02	01 02 03 04 05 06
$_{28}$ 06 07 08 09 10 11 12	14 03 04 05 06 07 08 09	07 08 09 10 11 12 13
$_{20}$ 13 14 15 16 17 18 19	15 10 11 12 13 14 15 16	38 14 15 16 17 18 19 20
20 21 22 23 24 25 26 ₃₀	16 17 18 19 20 21 22 23 Exams We	1 21 22 23 24 25 26 27
₃₁ 27 28 29 30 31	17 24 25 26 27 28 29 30	$\frac{2}{40}$ 28 29 30
	31	
October	November	December
Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa
$\frac{2}{40}$ 01 02 03 04	6 44	01 02 03 04 05 06
${}_{41}^{3}$ 05 06 07 08 09 10 11	$^{7}_{45}$ 02 03 04 05 06 07 08	$\frac{12}{50}$ 07 08 09 10 11 12 13
$^{4}_{42}$ 13 14 15 16 17 18	809 10 11 12 13 14 15	13 14 15 16 17 18 19 20
$_{_{43}}^{5}$ 19 20 21 22 23 24 25	• 16 17 18 19 20 21 22	$^{14}_{52}$ 21 22 23 24 25 26 27
$_{_{44}}^{6}$ 26 27 28 29 30 31	$^{10}_{48}$ 23 24 25 26 27 28 29	15 28 29 30 31
	11 30	

Likewise, one can construct a calendar piecewise, note the keep counters key:

\LaTeX Code:

```
\begin{tikzpicture}
 \calendarnotes
    Ε
      calendar notes,
     month label above centered,
     %year label left corner,
     day names on top,
     every sunday=blue
     data set={default, dataset A, dataset B},
     number of months=3,
     per line=3
\end{tikzpicture}
Some text.
\begin{tikzpicture}
 \calendarnotes
      calendar notes,
      month label above centered,
     %year label left corner,
     day names on top,
     every sunday=blue,
     keep counters
     data set={default, dataset A, dataset B},
     starting at=4 ,
     number of months=3,
   per line=3
\end{tikzpicture}
Some text.
\begin{tikzpicture}
 \calendarnotes
     calendar notes,
     month label above centered,
     %year label left corner,
     day names on top,
     every sunday=blue,
     keep counters
     data set={default, dataset A, dataset B},
     starting at=7 ,
     number of months=3,
     per line=3
\end{tikzpicture}
```

January	February	March			
Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa			
01 02 03 04	5 01	9 01			
₂ 05 06 07 08 09 10 11	₀ 02 03 04 05 06 07 08	$_{10}$ 02 03 04 05 06 07 08			
12 13 14 15 16 17 18	09 10 11 12 13 14 15	09 10 11 12 13 14 15			
	16 17 18 19 20 21 22	16 17 18 19 20 21 22 C. Birthday			
26 27 28 29 30 31	23 24 25 26 27 28	23 24 25 26 27 28 29			
		30 31			
Some text.					
April	May	June			
Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa			
01 02 03 04 05	01 02 03	01 02 03 04 05 06 07			
$\frac{1}{15}$ 06 07 08 09 10 11 12	⁵ 04 05 06 07 08 09 10	10 08 09 10 11 12 13 14			
² 13 14 15 16 17 18 19	⁶ 11 12 13 14 15 16 17	11 15 16 17 18 19 20 21			
³ 20 21 22 23 24 25 26	⁷ 18 19 20 21 22 23 24	$\frac{12}{20}$ $\frac{22}{23}$ $\frac{23}{24}$ $\frac{25}{25}$ $\frac{26}{26}$ $\frac{27}{28}$			
4 ₁₈ 27 28 29 30	§ 25 26 27 28 29 30 31	13 29 30			
Some text.					
July	August	September			
Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa			
$01 \ 02 \ 03 \ 04 \ 05$	01 02	01 02 03 04 05 06			
$_{28}$ 06 07 08 09 10 11 12	$\frac{14}{32}$ 03 04 05 06 07 08 09	₃₇ 07 08 09 10 11 12 13			
₂₉ 13 14 15 16 17 18 19	15 10 11 12 13 14 15 16	₃₈ 14 15 16 17 18 19 20			
₃₀ 20 21 22 23 24 25 26	16 17 18 19 20 21 22 23	$^{1}_{39}$ 21 22 23 24 25 26 27			
₃₁ 27 28 29 30 31	17 24 25 26 27 28 29 30 Exams W	Veck! 2 28 29 30			
	₃₀ 31				

Lastly, in case ones wants an expanded view of a single month, out of order, you can use the *starting at* from \setcountingweeks (note that, if the *from* and *to* keys are the same, it will just redefine the already existent counter, and not create a new one.

LAT_EX Code:

```
\setcountingweeks[dataset A]{from=2025-04-07,to=2025-08-29,color=red,starting at=9}
\begin{tikzpicture}
  \calendarnotes
  [
    calendar notes,
    month label above centered,
    %year label left corner,
    day names on top,
    every sunday=blue,
    keep counters
  ]
  {
    data set={dataset A, dataset B},
    starting at = 6 ,
    number of months=1,
    per line=1,
    with notes
  }
\end{tikzpicture}
```

\LaTeX Result:

June

```
Tu
                          Th
 Su
       Mo
                    We
                                 Fr
                                       Sa
901
       02
             03
                    04
                                06
                                      07
10 08
       09
             10
                          12
                                13
                    11
                                      14
11 15
       16
             17
                    18
                          19
                                20
                                      21
             24
12 22
                                27
                                      28
13 29
       30
```