The tikzcalendarnotes Package Version 1.1

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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{lmodern}

\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, viz-à-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:

\LaTeX Result:

A	Su	Mo	Tu	We	Th	Fr	Sa	Su	Мо	Tu	We	Th	Fr	Sa
1				01	02	03	04	5						01
2 (05	06	07	08	09	10	11	6 02	03	04	05	06	07	08
з]	12	13	short some long tex used as a note	15	16	17	18	⁷ 09	10	11	12	13	14	15
4]	19	20	21	22	23	24	25	s 16	17	18	19	20	21	22
5 2	26	27	28	29	30	31		923	24	25	26	27	28	

3 Package Commands

\defnewdataset

 $\define wdataset {\langle new-dataset \rangle}$

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 exist.

\setdates

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

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".

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

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 exist.

\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:

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.

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

round 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 The remark, if any, will be positioned at the to day's north east 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.

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 \(\dataset \rangle \) doesn't exist.

\sethighlightdates

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

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.

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

used

 ${\it Note:}$ One can define/set as many dates as one wishes in a single \sethighlightdates

call.

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

\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 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.

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 $\langle dataset \rangle$ doesn't exist.

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 <code>dataset</code> (for instance, Christmas and New Year's recess in a semester calendar). If missing, the "default" <code>dataset</code> 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 $\langle dataset \rangle$ s won't be affected. **Note:** An error is raised if $\langle dataset \rangle$ doesn't exist.

\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 (see [1], specially section Calendar Library, under Libraries).

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 for "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 exist.

3.1 Advanced Use

 $\label{lem:calendarnotesprepare } $$ \calendarnotesprepare [$\langle pgfkeys \rangle] {\langle key-value list \rangle} $$ \calendarnotessetifs $$ \calendarnotesdraw $$ \calendarnotesdraw $$$

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.

 $\label{lem:calendarnotes} $$ \calendarnotes all $$ \end{calendarnotes} $$ and $$ \end{calendarnotes} $$ as $$ \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", 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. See the pgfmanual [1] for a complete list of possible keys, under section Calendar Library.

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 the 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 a week per line. The 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 } }

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" (Sunday).

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

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).

 ${\it Note:}$ 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, % standard key from the Calendar Library (see pgfmanual)
    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 01	9 01				
205 06 07 08 09 10 11	02 03 04 05 06 07 08	$_{_{10}}$ 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 W. Birthday	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				
		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	9 01 02 03 04 05 06 07				
$_{15}^{106}$ 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				
² 13 14 15 16 17 18 19	6 11 12 13 14 15 16 17	$\frac{11}{25}$ 16 17 18 19 20 21				
³ 20 21 22 23 24 25 26	⁷ 18 19 20 21 22 23 24	12 22 23 24 25 26 27 28				
4 ₁₈ 27 28 29 30	§ 25 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				
13 14 15 16 17 18 19	15 10 11 12 13 14 15 16	14 15 16 17 18 19 20				
$_{30}$ 20 21 22 23 24 25 26	16 17 18 19 20 21 22 23 Exams We	$^{1}_{^{39}}$ 21 22 23 24 25 26 27				
$_{_{31}}$ 27 28 29 30 31	17 24 25 26 27 28 29 30	$_{40}^{2}$ 28 29 30				
	₃₆ 31					
October	November	December				
	Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa				
$01 \ 02 \ 03 \ 04$	6 44	$\frac{11}{49}$ 01 02 03 04 05 06				
	$_{45}^{7}$ 02 03 04 05 06 07 08	12 07 08 09 10 11 12 13				
4 12 13 14 15 16 17 18	8 09 10 11 12 13 14 15	13 14 15 16 17 18 19 20				
5 19 20 21 22 23 24 25	• 16 17 18 19 20 21 22	14 21 22 23 24 25 26 27				
$_{_{44}}^{6}$ 26 27 28 29 30 31	10 23 24 25 26 27 28 29	15 28 29 30 31				
	11 30 49					

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

ĿŦĘX Code:

```
\begin{tikzpicture}
  \calendarnotes
    [
      calendar notes ,
       \  \  \, \text{month label above centered , \% standard key from the Calendar Library (see pgfmanual)} \\
      %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 , % standard key from the Calendar Library (see pgfmanual)
      %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 , % standard key from the Calendar Library (see pgfmanual)
      %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	9 01				
₂ 05 06 07 08 09 10 11	02 03 04 05 06 07 08	$_{10}$ 02 03 04 05 06 07 08				
₃ 12 13 14 15 16 17 18	09 10 11 12 13 14 15	<mark>09</mark> 10 11 12 13 14 15				
	₈ 16 17 18 19 20 21 22	16 17 18 19 20 21 22 C. Birthday				
W. Birthday 26 27 28 29 30 31	23 24 25 26 27 28	23 24 25 26 27 28 29				
5		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				
106 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	611 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	$\frac{12}{20}$ $\frac{22}{20}$ $\frac{23}{24}$ $\frac{25}{20}$ $\frac{26}{26}$ $\frac{27}{28}$				
427 28 29 30	§ 25 26 27 28 29 30 31	18 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	14 03 04 05 06 07 08 09	₃₇ 07 08 09 10 11 12 13				
23 13 14 15 16 17 18 19	¹⁵ 10 11 12 13 14 15 16	14 15 16 17 18 19 20				
20 21 22 23 24 25 26	16 17 18 19 20 21 22 23	$\frac{1}{30}$ 21 22 23 24 25 26 27				
27 28 29 30 31	17 24 25 26 27 28 29 30 Exams W	veek! 28 29 30				
	31					

Lastly, in case ones wants an expanded view of a single, out of order, month you can use the *starting at* from \setcountingweeks. (NB.: since the *from* and to keys are the same, it won't create a new one, but just redefine the existing one.)

I₄T_FX Code:

```
\verb|\setcountingweeks[dataset A]{from=2025-04-07, to=2025-08-29, color=red, starting at=9}| \\
\begin{tikzpicture}
  \calendarnotes
      calendar notes ,
      \begin{tabular}{ll} month label above centered , \% standard key from the Calendar Library (see pgfmanual) \\ \end{tabular}
      %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

Su	Mo	Tu	We	Th	Fr	Sa	
9 01	02	03	04	05	06	07	
10 08	09	10	11	12	13	14	
11 15	16	17	18	19	20	21	
12 22	FIS101 cinema		25 MAT10		27	28	
13 29	30						

References

[1] Till Tantau, Mark Wibrow, and Christian Feuersänger. The TikZ and PGF Packages. Institut für Theoretische Informatik / Universität zu Lübeck. 2023, p. 1321. URL: http://mirrors.ctan.org/graphics/pgf/base/doc/pgfmanual.pdf (visited on 03/10/2025).