The tikzcalendarnotes Package
Version 1.0a

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Abstract

The *calendar* library from Ti*k*Z 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.

Contents

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 *lmoderm* or use packages like *anyfontsize* and *relsize*.

*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

Ti*k*Z'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:

```
\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:

3 Package Commands

\defnewdataset `\defnewdataset {⟨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 ⟨new-dataset⟩ already exists. When selecting a dataset, an error is raised if ⟨dataset⟩ doesn't exists.

\setdates `\setdates [⟨dataset⟩] {⟨key-value list⟩}`

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.
`north west`	The remark, if any, will be positioned at the day's *north west* anchor.
`south east`	The remark, if any, will be positioned at the day's *south east* anchor.
`south west`	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`	the 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 ⟨dataset⟩ doesn't exists.

\setranges `\setranges [⟨dataset⟩] {⟨key-value list⟩}`

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

`south west` 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.

`\sethighlightdates` `\sethighlightdates [⟨dataset⟩] {⟨key-value list⟩}`

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 used

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 exists.

`\setcountingweeks` `\setcountingweeks [⟨dataset⟩] {⟨key-value list⟩}`

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 ⟨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 [⟨dataset⟩] {⟨key-value list⟩}`

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` `\calendarnotes [⟨pgfkeys⟩] {⟨key-value list⟩}`

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 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

\calendarnotesprepare `\calendarnotesprepare [⟨pgfkeys⟩] {⟨key-value list⟩}`
\calendarnotessetifs `\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.
\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", 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^o

> ***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^o

> ***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".

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 ⟨data sets⟩ 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 ⟨data sets⟩ (⟨default⟩, ⟨dataset A⟩ and ⟨dataset B⟩), 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}
```

LaTeX Result:

2025

January

Su	Mo	Tu	We	Th	Fr	Sa
1			01	02	03	04
2	05	06	07	08	09	10	11
3	12	13	14	15	16	17	18
4	19	20	21	22	23	24	25
5	26 W. Birthday	27	28	29	30	31	

February

Su	Mo	Tu	We	Th	Fr	Sa
5						01
6	02	03	04	05	06	07	08
7	09	10	11	12	13	14	15
8	16	17	18	19	20	21	22
9	23	24	25	26	27	28	

March

Su	Mo	Tu	We	Th	Fr	Sa
9						01
10	02	03	04	05	06	07	08
11	09	10	11	12	13	14	15
12	16	17	18	19	20	21	22 C. Birthday
13	23	24	25	26	27	28	29
14	30	31					

April

Su	Mo	Tu	We	Th	Fr	Sa
14			01	02	03	04	05
15	06	07	08	09	10	11	12
16	13	14	15	16	17	18	19
17	20	21	22	23	24	25	26
18	27	28	29	30			

May

Su	Mo	Tu	We	Th	Fr	Sa
18				01	02	03
19	04	05	06	07	08	09	10
20	11	12	13	14	15	16	17
21	18	19	20	21	22	23	24
22	25	26	27	28	29	30	31

June

Su	Mo	Tu	We	Th	Fr	Sa
23	01	02	03	04	05	06	07
24	08	09	10	11	12	13	14
25	15	16	17	18	19	20	21
26	22	23 L1	24	25 L1	26	27	28
27	29	30					

July

Su	Mo	Tu	We	Th	Fr	Sa
27			01	02	03	04	05
28	06	07	08	09	10	11	12
29	13	14	15	16	17	18	19
30	20	21	22	23	24	25	26
31	27	28	29	30	31		

August

Su	Mo	Tu	We	Th	Fr	Sa
31					01	02
32	03	04	05	06	07	08	09
33	10	11	12	13	14	15	16
34	17	18	19	20	21	22	23
35	24	25	26	27	28	29 Exams Week!	30
36	31						

September

Su	Mo	Tu	We	Th	Fr	Sa
36		01	02	03	04	05	06
37	07	08	09	10	11	12	13
38	14	15	16	17	18	19	20
39	21	22	23	24	25	26	27
40	28	29	30				

October

Su	Mo	Tu	We	Th	Fr	Sa
40			01	02	03	04
41	05	06	07	08	09	10	11
42	12	13	14	15	16	17	18
43	19	20	21	22	23	24	25
44	26	27	28	29	30	31	

November

Su	Mo	Tu	We	Th	Fr	Sa
44						01
45	02	03	04	05	06	07	08
46	09	10	11	12	13	14	15
47	16	17	18	19	20	21	22
48	23	24	25	26	27	28	29
49	30						

December

Su	Mo	Tu	We	Th	Fr	Sa
49		01	02	03	04	05	06
50	07	08	09	10	11	12	13
51	14	15	16	17	18	19	20
52	21	22	23	24	25	26	27
53	28	29	30	31			

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

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
    ]
    {
      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}
```

LaTeX Result:

January

Su	Mo	Tu	We	Th	Fr	Sa
			01	02	03	04
05	06	07	08	09	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26 W. Birthday	27	28	29	30	31	

February

Su	Mo	Tu	We	Th	Fr	Sa
						01
02	03	04	05	06	07	08
09	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

March

Su	Mo	Tu	We	Th	Fr	Sa
						01
02	03	04	05	06	07	08
09	10	11	12	13	14	15
16	17	18	19	20	21	22 C. Birthday
23	24	25	26	27	28	29
30	31					

Some text.

April

Su	Mo	Tu	We	Th	Fr	Sa
		01	02	03	04	05
06	07	08	09	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

May

Su	Mo	Tu	We	Th	Fr	Sa
				01	02	03
04	05	06	07	08	09	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

June

Su	Mo	Tu	We	Th	Fr	Sa
01	02	03	04	05	06	07
08	09	10	11	12	13	14
15	16	17	18	19	20	21
22	23 L1	24	25 L1	26	27	28
29	30					

Some text.

July

Su	Mo	Tu	We	Th	Fr	Sa
		01	02	03	04	05
06	07	08	09	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

August

Su	Mo	Tu	We	Th	Fr	Sa
					01	02
03	04	05	06	07	08	09
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29 Exams Week!	30
31						

September

Su	Mo	Tu	We	Th	Fr	Sa
	01	02	03	04	05	06
07	08	09	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

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.)

LaTeX 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 , % standard key from the Calendar Library (see pgfmanual)
      %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	23 L1 FIS101 - cinematics	24	25 L1 MAT101 - integrals	26	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).