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# **tkcalendar Documentation**

***Release 1.3.0***

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tkcalendar is a python module that provides the Calendar and DateEntry widgets for Tkinter. The DateEntry widget is similar to a Combobox, but the drop-down is not a list but a Calendar to select a date. Events can be displayed in the Calendar with custom colors and a tooltip displays the event list for a given day. tkcalendar is compatible with both Python 2 and Python 3. It supports many locale settings (e.g. 'fr\_FR', 'en\_US', ..) and the colors are customizable.

Project page: <https://github.com/j4321/tkcalendar>



# CHAPTER 1

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## Installation

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### Requirements:

- Linux, Windows, OSX
- Python 2 or 3 with tkinter + ttk (default for Windows but not for Linux) and babel

### Install:

- Ubuntu: use the PPA [ppa:j-4321-i/ppa](#)

```
$ sudo add-apt-repository ppa:j-4321-i/ppa
$ sudo apt-get update
$ sudo apt-get install python(3)-tkcalendar
```

- Archlinux:

The package is available on [AUR](#)

- With pip:

```
$ pip install tkcalendar
```





## CHAPTER 2

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### Example

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```
try:
    import tkinter as tk
    from tkinter import ttk
except ImportError:
    import Tkinter as tk
    import ttk

from tkcalendar import Calendar, DateEntry

def example1():
    def print_sel():
        print(cal.selection_get())

    top = tk.Toplevel(root)

    cal = Calendar(top, font="Arial 14", selectmode='day', locale='en_US',
                    cursor="hand1", year=2018, month=2, day=5)

    cal.pack(fill="both", expand=True)
    ttk.Button(top, text="ok", command=print_sel).pack()

def example2():

    top = tk.Toplevel(root)

    cal = Calendar(top, selectmode='none')
    date = cal.datetime.today() + cal.timedelta(days=2)
    cal.calevent_create(date, 'Hello World', 'message')
    cal.calevent_create(date, 'Reminder 2', 'reminder')
    cal.calevent_create(date + cal.timedelta(days=-2), 'Reminder 1', 'reminder')
    cal.calevent_create(date + cal.timedelta(days=3), 'Message', 'message')

    cal.tag_config('reminder', background='red', foreground='yellow')
```

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```
cal.pack(fill="both", expand=True)
ttk.Label(top, text="Hover over the events.").pack()

def example3():
    top = tk.Toplevel(root)

    ttk.Label(top, text='Choose date').pack(padx=10, pady=10)

    cal = DateEntry(top, width=12, background='darkblue',
                    foreground='white', borderwidth=2, year=2010)
    cal.pack(padx=10, pady=10)

root = tk.Tk()
ttk.Button(root, text='Calendar', command=example1).pack(padx=10, pady=10)
ttk.Button(root, text='Calendar with events', command=example2).pack(padx=10, pady=10)
ttk.Button(root, text='DateEntry', command=example3).pack(padx=10, pady=10)

root.mainloop()
```

## 3.1 Calendar widget

### 3.1.1 Syntax

```
Calendar(master=None, **kw)
```

### 3.1.2 Widget keyword options

#### 3.1.2.1 Standard options

**cursor** [str] cursor to display when the pointer is in the widget

**font** [str such as “Arial 20 bold” or a Tkinter Font instance] font of the calendar

**borderwidth** [int] width of the border around the calendar

**state** [str] “normal” or “disabled” (unresponsive widget)

#### 3.1.2.2 Widget-specific options

**year** [int] initially displayed year, default is current year.

**month** [int] initially displayed month, default is current month.

**day** [int] initially selected day, if month or year is given but not day, no initial selection, otherwise, default is today.

**firstweekday** [“monday” or “sunday”] first day of the week

**showweeknumbers** [boolean (default is True)] whether to display week numbers.

**locale** [str] locale to use, e.g. ‘en\_US’

**selectmode** ["none" or "day" (default)] whether the user can change the selected day with a mouse click.

**textvariable** [StringVar] connect the currently selected date to the variable.

### 3.1.2.3 Style options

**background** : background color of calendar border and month/year name

**foreground** : foreground color of month/year name

**bordercolor** : day border color

**headersbackground** : background color of day names and week numbers

**headersforeground** : foreground color of day names and week numbers

**selectbackground** : background color of selected day

**selectforeground** : foreground color of selected day

**disabledselectbackground** : background color of selected day in disabled state

**disabledselectforeground** : foreground color of selected day in disabled state

**normalbackground** : background color of normal week days

**normalforeground** : foreground color of normal week days

**weekendbackground** : background color of week-end days

**weekendforeground** : foreground color of week-end days

**othermonthforeground** : foreground color of normal week days belonging to the previous/next month

**othermonthbackground** : background color of normal week days belonging to the previous/next month

**othermonthweforeground** : foreground color of week-end days belonging to the previous/next month

**othermonthwebackground** : background color of week-end days belonging to the previous/next month

**disableddaybackground** : background color of days in disabled state

**disableddayforeground** : foreground color of days in disabled state

### 3.1.2.4 Tooltip options (for calevents)

**tooltipforeground** : tooltip text color

**tooltipbackground** : tooltip background color

**tooltipalpha** [float] tooltip opacity between 0 and 1

**tooltipdelay** [int] delay in ms before displaying the tooltip

## 3.1.3 Virtual Events

A <<CalendarSelected>> event is generated each time the user selects a day with the mouse.

### 3.1.4 Widget methods

#### 3.1.4.1 Standard methods

- methods common to all tkinter widgets (more details [here](#))
- methods common to all ttk widgets (more details [here](#))

#### 3.1.4.2 Widget-Specific methods

**calevent\_cget(ev\_id, option)** : Return value of given option for the event *ev\_id*.

**calevent\_configure(ev\_id, \*\*kw)** : Return value of given option for the event *ev\_id*.

**calevent\_create(date, text, tags=[])** : Add new event in calendar and return event id.

Options:

*date*: datetime.date or datetime.datetime instance.

*text*: text to put in the tooltip associated to date.

*tags*: list of tags to apply to the event. The last tag determines the way the event is displayed. If there are several events on the same day, the lowest one (on the tooltip list) which has tags determines the colors of the day.

**calevent\_lower(ev\_id, below=None)** : Lower event *ev\_id* in tooltip event list.

*below*: put event below given one, if below is None, put it at the bottom of tooltip event list.

The day's colors are determined by the last tag of the lowest event which has tags.

**calevent\_raise(ev\_id, above=None)** : Raise event *ev\_id* in tooltip event list.

*above*: put *ev\_id* above given one, if above is None, put it on top of tooltip event list.

The day's colors are determined by the last tag of the lowest event which has tags.

**calevent\_remove(\*ev\_ids, \*\*kw)** : Remove events from calendar.

Arguments: event ids to remove or 'all' to remove them all.

Keyword arguments: *tag*, *date*. They are taken into account only if no id is given. Remove all events with given tag on given date. If only date is given, remove all events on date and if only tag is given, remove all events with tag.

**get\_date()** : If selectmode is 'day', return the string corresponding to the selected date in the Calendar locale, otherwise return "".

**get\_calevents(date=None, tag=None)** : Return event ids of events with given tag and on given date.

If only *date* is given, return event ids of all events on date.

If only *tag* is given, return event ids of all events with tag.

If both options are None, return all event ids.

**selection\_get()** : If selectmode is 'day', return the selected date as a `datetime.date` instance, otherwise return None.

**selection\_set(self, date)** :

If `selectmode` is 'day', set the selection to *date* where *date* can be either a `datetime.date` instance or a string corresponding to the date format "%x" in the `Calendar` locale. Does nothing if `selectmode` is "none".

**tag\_cget(tag, option)** : Return the value of the tag's option.

**tag\_config(self, tag, \*\*kw)** : Configure *tag*.

Keyword options: *foreground*, *background* (of the day in the calendar)

**tag\_delete(tag)** : Delete given tag and remove it from all events.

**tag\_names()** : Return tuple of existing tags.

## 3.2 DateEntry widget

Date selection entry with drop-down calendar.

### 3.2.1 Syntax

`DateEntry(master=None, **kw)`

### 3.2.2 Widget keyword options

Keyword options of `Calendar` to configure the drop-down calendar

Keyword options of `ttk.Entry`

By default, 'validate' is set to 'focusout' and 'validatecommand' is configured so that each time the widget loses focus, if the content is not a valid date (in locale format "%x"), it is reset to the previous valid date.

The widget style is set to 'DateEntry'. A custom style inheriting from 'DateEntry' can be created by naming it '<style name>.DateEntry'

### 3.2.3 Virtual Events

A <<DateEntrySelected>> event is generated each time the user selects a date.

### 3.2.4 Widget methods

#### 3.2.4.1 Standard methods

- methods common to all tkinter widgets (more details [here](#))
- methods common to all ttk widgets (more details [here](#))
- methods of the `Entry` widget (more details [here](#))

### 3.2.4.2 Widget-Specific methods

**drop\_down()** : Display or withdraw the drop-down calendar depending on its current state.

**get\_date()** : Return the selected date as a `datetime.date` instance.

**set\_date(self, date)** : Set the value of the `DateEntry` to *date* where *date* can be either a `datetime.date` instance or a string corresponding to the date format “%x” in the *Calendar* locale.





### 4.1 tkcalendar 1.3.1

- Fix bug in day selection when firstweekday is sunday

### 4.2 tkcalendar 1.3.0

- No longer set locale globally to avoid conflicts between several instances, use babel module instead
- Add option showwekknumbers to show/hide week numbers
- Add option firstweekday to choose first week day between ‘monday’ and ‘sunday’
- Make DateEntry compatible with more ttk themes, especially OSX default theme
- Add possibility to display special events (like birthdays, ..) in the calendar. The events are displayed with colors defined by tags and the event description is displayed in a tooltip (see documentation).

### 4.3 tkcalendar 1.2.1

- Fix `ValueError` in `DateEntry` with Python 3.6.5

### 4.4 tkcalendar 1.2.0

- Add `textvariable` option to `Calendar`
- Add state (‘normal’ or ‘disabled’) option to `Calendar`
- Add options `disabledselectbackground`, `disabledselectforeground`, `disableddaybackground` and `disableddayforeground` to configure colors when `Calendar` is disabled

- Fix DateEntry behavior in readonly mode
- Make Calendar.selection\_get always return a `datetime.date`

## 4.5 tkcalendar 1.1.5

- Fix endless triggering of <<ThemeChanged>> event in DateEntry

## 4.6 tkcalendar 1.1.4

- Fix error in january due to week 53
- Fix DateEntry for ttk themes other than 'clam'

## 4.7 tkcalendar 1.1.3

- Make DateEntry support initialisation with partial dates (e.g. just year=2010)
- Improve handling of wrong year-month-day combinations

## 4.8 tkcalendar 1.1.2

- Fix bug after destroying a DateEntry
- Fix bug in style and font

## 4.9 tkcalendar 1.1.1

- Fix bug when content of DateEntry is not a valid date

## 4.10 tkcalendar 1.1.0

- Bug fix:
  - Fix display of the first days of the next month
  - Increment year when going from december to january
- New widget:
  - DateEntry, date selection entry with drop-down calendar
- New options in Calendar:
  - borderwidth: width of the border around the calendar (integer)
  - othermonthbackground: background color for normal week days belonging to the previous/next month
  - othermonthweforeground: foreground color for week-end days belonging to the previous/next month
  - othermonthwebackground: background color for week-end days belonging to the previous/next month

## 4.11 tkcalendar 1.0.0

- Initial version