Tkinter LabelFrame

Summary: in this tutorial, you'll how to use the Tkinter `LabelFrame` widget that contains other widgets.

Introduction to the Tkinter LabelFrame

Tkinter `LabelFrame` widget is a container that contains other related widgets. For example, you can group Radiobutton widgets and place the group on a `LabelFrame` .

To create a `LabelFrame` widget, you use the `ttk.LabelFrame` :

```
lf = ttk.LabelFrame(container, **option)
```

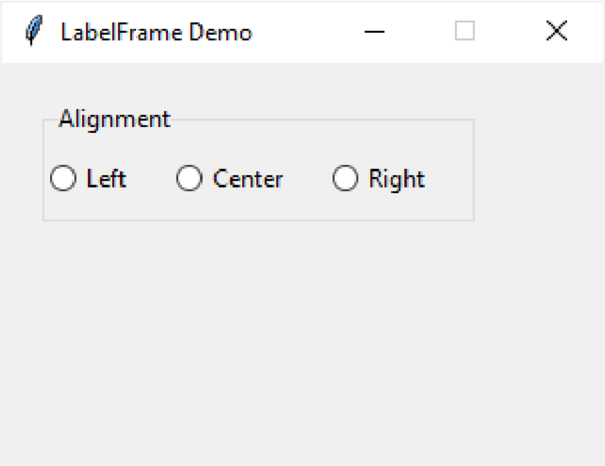
In this syntax, you specify the parent component (`container`) of the `LabelFrame` and one or more options. A notable option is `text` which specifies a label for the `LabelFrame` .

Tkinter LabelFrame widget example

The following program illustrates how to create a `LabelFrame` widget that groups three radio buttons:

```
import tkinter as tk
from tkinter import ttk

# root window
root = tk.Tk()

# configure the root window
root.geometry('300x200')
root.resizable(False, False)
root.title('LabelFrame Demo')

# label frame
lf = ttk.LabelFrame(root, text='Alignment')
lf.grid(column=0, row=0, padx=20, pady=20)

alignment_var = tk.StringVar()
alignments = ('Left', 'Center', 'Right')

# create radio buttons and place them on the label frame

grid_column = 0
for alignment in alignments:
    # create a radio button
    radio = ttk.Radiobutton(lf, text=alignment, value=alignment, variable=alig
    radio.grid(column=grid_column, row=0, ipadx=10, ipady=10)
    # grid column
    grid_column += 1

root.mainloop()
```

Output:



How it works.

First, create a `LabelFrame` widget and use the grid geometry manager to manage its layout:

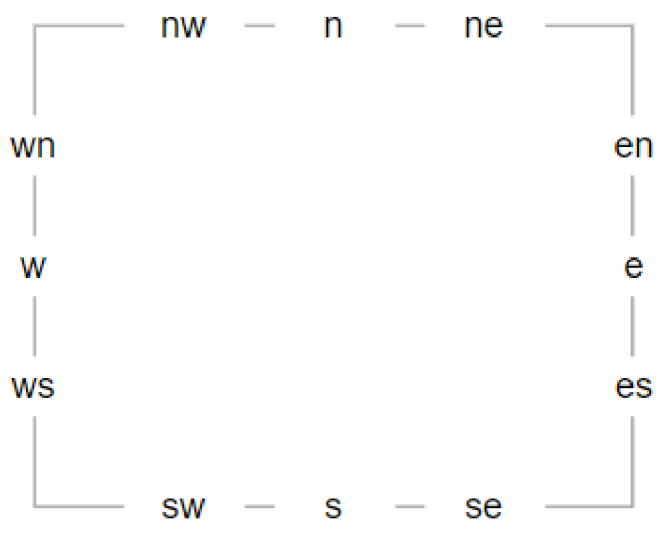
```
lf = ttk.LabelFrame(root, text='Alignment')
lf.grid(column=0, row=0, padx=20, pady=20)
```

Second, create the three radio button (https://www.pythontutorial.net/tkinter/tkinter-radio-button/) widgets based on the alignments list and place them on the label frame widget:

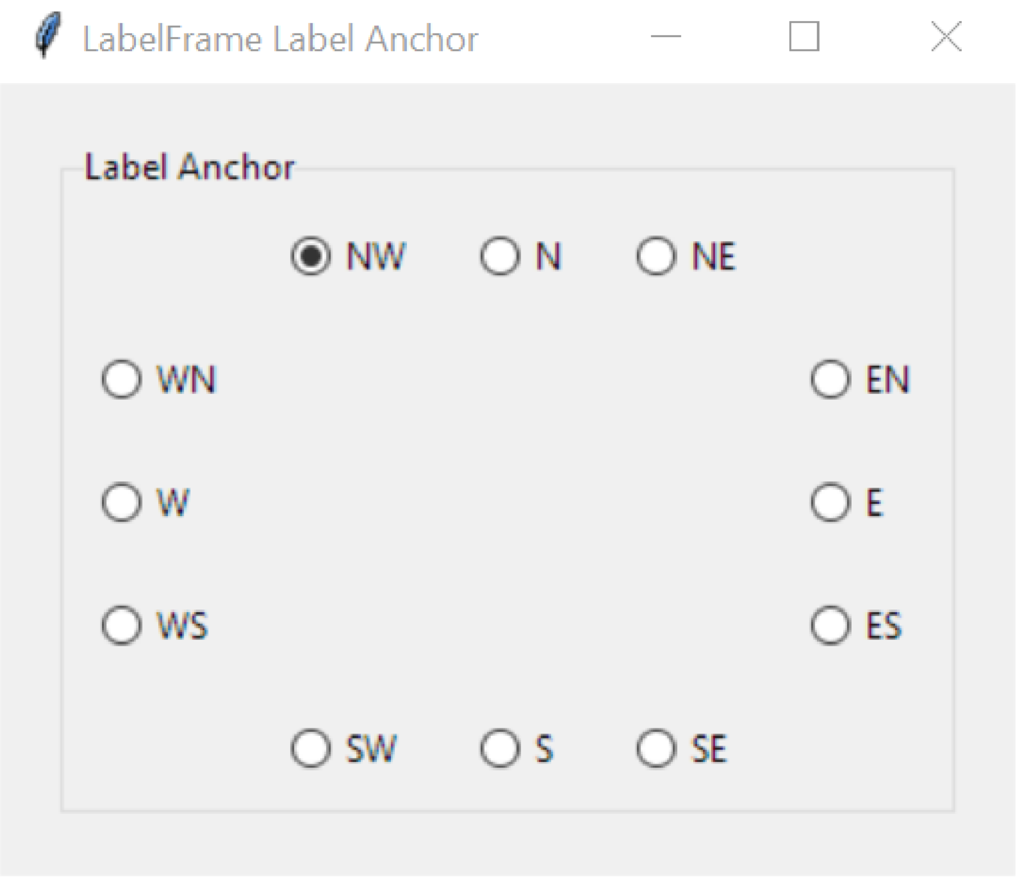
```
grid_column = 0

for alignment in alignments:
    # create a radio button
    radio = ttk.Radiobutton(lf, text=alignment, value=alignment, variable=alig
    radio.grid(column=grid_column, row=0, ipadx=10, ipady=10)
    # grid column
    grid_column += 1
```

Specify the label position

To specify the position of the label on the widget, you use the `labelanchor` option. The `labelanchor` defaults to `'nw'`, which places the label at the left end of the top border:



The following program illustrates the label anchor options. When you select a label option, the label of the LabelFrame widget change accordingly:



```
import tkinter as tk
from tkinter import ttk


# root window
root = tk.Tk()
```

```
root.title('LabelFrame Label Anchor')

# label frame
lf = ttk.LabelFrame(root, text='Label Anchor')
lf.grid(column=0, row=0, padx=20, pady=20, sticky=tk.NSEW)

anchor_var = tk.StringVar()
anchors = {
    'nw': {'row': 0, 'column': 1},
    'n': {'row': 0, 'column': 2},
    'ne': {'row': 0, 'column': 3},
    'en': {'row': 1, 'column': 4},
    'e': {'row': 2, 'column': 4},
    'es': {'row': 3, 'column': 4},
    'se': {'row': 4, 'column': 3},
    's': {'row': 4, 'column': 2},
    'sw': {'row': 4, 'column': 1},
    'ws': {'row': 3, 'column': 0},
    'w': {'row': 2, 'column': 0},
    'wn': {'row': 1, 'column': 0}
}


def change_label_anchor():
    lf['labelanchor'] = anchor_var.get()


# create radio buttons and place them on the label frame
for key, value in anchors.items():
    # create a radio button
    radio = ttk.Radiobutton(
        lf,
        text=key.upper(),
        value=key,
        command=change_label_anchor,
        variable=anchor_var
    ).grid(**value, padx=10, pady=10, sticky=tk.NSEW)

# set the radio button selected
anchor_var.set(lf['labelanchor'])

# show the root window
root.mainloop()
```

How it works.

First, create a LabelFrame widget and place it on the root window:

```
lf = ttk.LabelFrame(root, text='Label Anchor')
lf.grid(column=0, row=0, padx=20, pady=20, sticky=tk.NSEW)
```

Next, define a StringVar object that will associate with the radio buttons:

```
anchor_var = tk.StringVar()
```

Then, define a dictionary with the key stores the label options and value stores the cell (row, column) of the grid:

```
anchors = {
    'nw': {'row': 0, 'column': 1},
    'n': {'row': 0, 'column': 2},
    'ne': {'row': 0, 'column': 3},
    'en': {'row': 1, 'column': 4},
    'e': {'row': 2, 'column': 4},
    'es': {'row': 3, 'column': 4},
    'se': {'row': 4, 'column': 3},
    's': {'row': 4, 'column': 2},
    'sw': {'row': 4, 'column': 1},
    'ws': {'row': 3, 'column': 0},
    'w': {'row': 2, 'column': 0},
    'wn': {'row': 1, 'column': 0}
}
```

After that, define a function that handles the radio button change event. The function changes the `labelanchor` option of the `LabelFrame` widget to the value of the selected radio button:

```
def change_label_anchor():
    lf['labelanchor'] = anchor_var.get()
```

Finally, create the radio buttons from the `anchors` dictionary and place them on the LabelFrame widget:

```
for key, value in anchors.items():
    # create a radio button
    radio = ttk.Radiobutton(
        lf,
        text=key.upper(),
        value=key,
        command=change_label_anchor,
        variable=anchor_var
    ).grid(**value, padx=10, pady=10, sticky=tk.NSEW)
```

Summary

- Use `LabelFrame` widget to group related widgets into one group.
- Use `ttk.LabelFrame(container, **option)` to create a `LabelFrame` widget.