Object Oriented Programming using Python (II)

Python GUI Programming

Prepared by: Ahmed Eskander Mezher

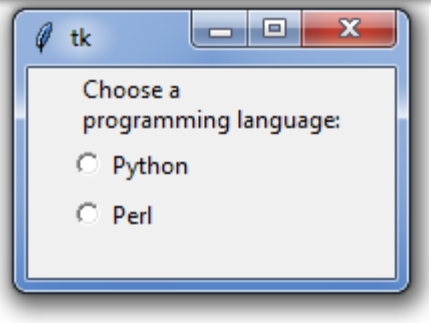
University of Information Technology and Communications

College of Business Informatics

Radio Buttons

A radio button, sometimes called option button, is a graphical user interface element of Tkinter, which allows the user to choose (exactly) one of a predefined set of options.

```
from tkinter import *

root = Tk()



Label(root, text="""Choose a programming language:""",justify = LEFT,padx = 20).pack()
Radiobutton(root, text="Python",padx = 20,value=1).pack(anchor=W)
Radiobutton(root,text="Perl",padx = 20,value=2).pack(anchor=W)

mainloop()
```



Anchors are used to define where text is positioned relative to a reference point.

Here is list of possible constants, which can be used for Anchor attribute.

- NW
- N
- NE
- W
- CENTER
- E
- SW
- S
- SE

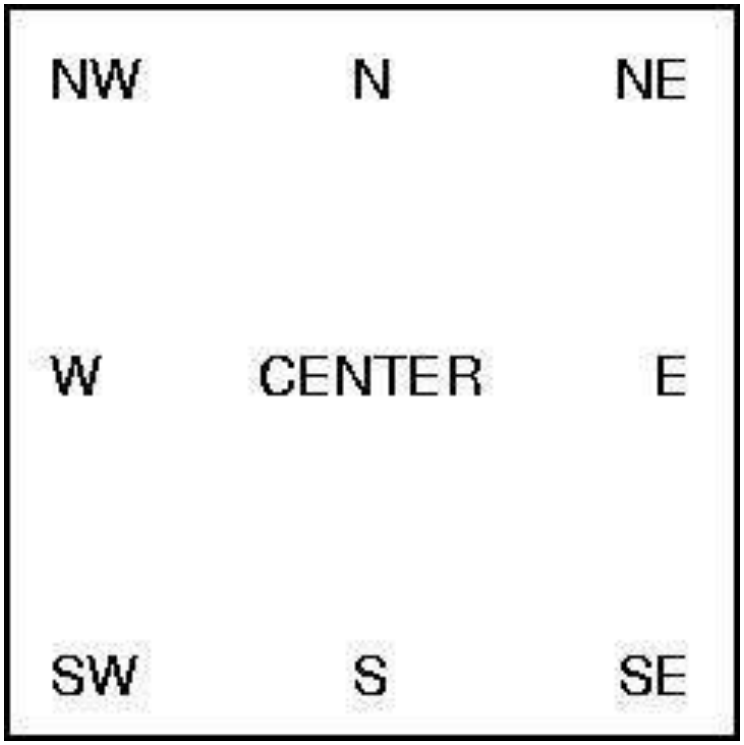
For example, if you use CENTER as a text anchor, the text will be centered horizontally and vertically around the reference point.

Anchor NW will position the text so that the reference point coincides with the northwest (top left) corner of the box containing the text.

Anchor W will center the text vertically around the reference point, with the left edge of the text box passing through that point, and so on.

Example

The anchor constants are shown in this diagram −



Checkboxes

Checkboxes, also known as tickboxes or tick boxes or check boxes, are widgets that permit the user to make multiple selections from a number of different options. This is different to a radio button, where the user can make only one choice.

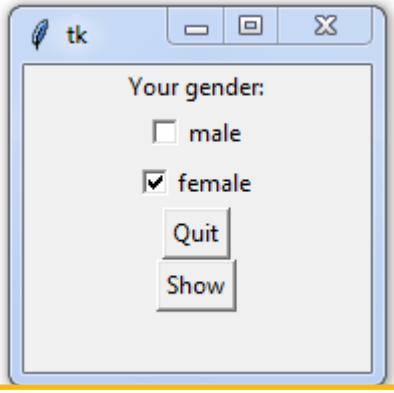
Usually, checkboxes are shown on the screen as square boxes that can contain white spaces (for false, i.e not checked) or a tick mark or X (for true, i.e. checked).

A caption describing the meaning of the checkbox is usually shown adjacent to the checkbox. The state of a checkbox is changed by clicking the mouse on the box. Alternatively it can be done by clicking on the caption, or by using a keyboard shortcut, for example the space bar.

A Checkbox has two states: on or off.

Checkboxes

```
from tkinter import *
master = Tk()

def var_states():
   print("male: %d,\nfemale: %d" % (var1.get(), var2.get()))

Label(master, text="Your gender:").pack()
var1 = IntVar()
Checkbutton(master, text="male", variable=var1).pack()
var2 = IntVar()
Checkbutton(master, text="female", variable=var2).pack()
Button(master, text='Quit', command=master.quit).pack()
Button(master, text='Show', command=var_states).pack()
mainloop()
```



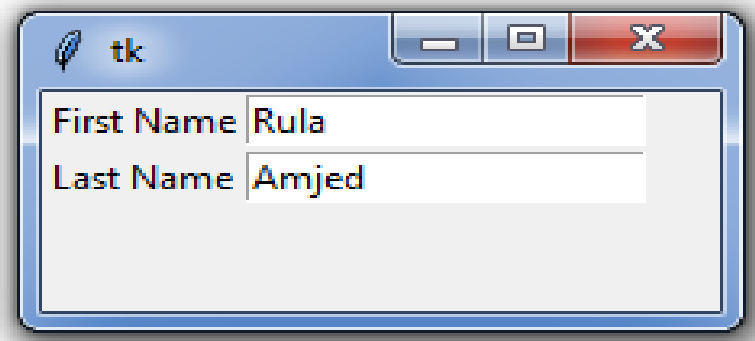

```
>>>
male: 0,
female: 1
```

The **%d** operator is **used** as a placeholder to specify integer values, decimals or numbers. It allows us to print numbers within strings or other values. The **%d** operator is **put** where the integer is to be specified.

Entry Widgets

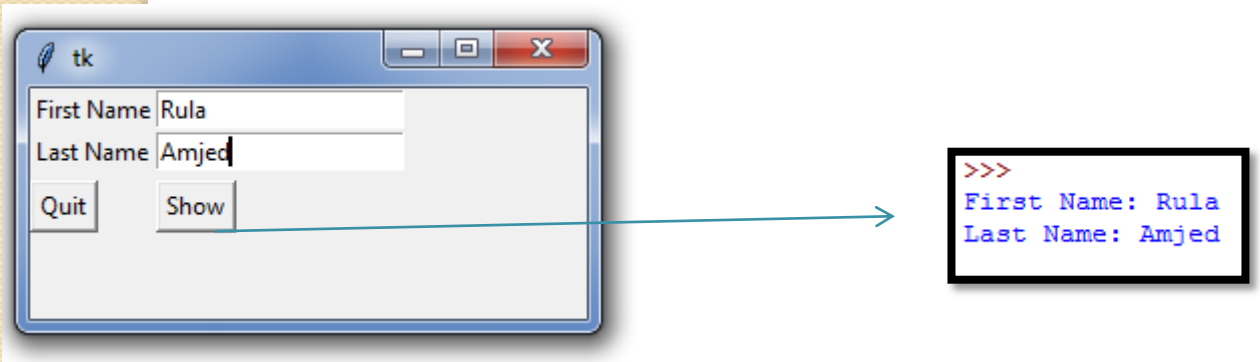
Entry widgets are the basic widgets of Tkinter used to get input, i.e. text strings, from the user of an application. This widget allows the user to enter a single line of text.

```
from tkinter import *

master = Tk()
Label(master, text="First Name").grid(row=0)
Label(master, text="Last Name").grid(row=1)

e1 = Entry(master)
e2 = Entry(master)

e1.grid(row=0, column=1)
e2.grid(row=1, column=1)

mainloop( )
```



Entry Widgets

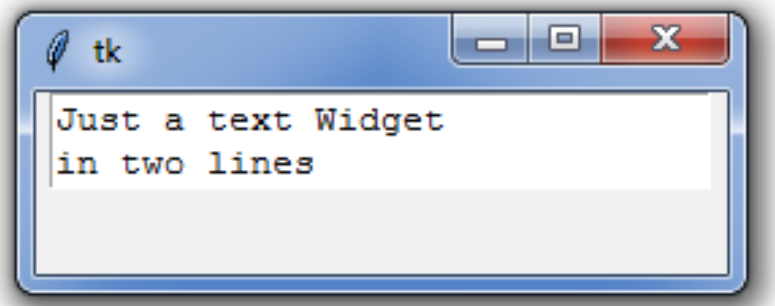
```
from tkinter import *

def show_entry_fields():
   print("First Name: %s\nLast Name: %s" % (e1.get(), e2.get()))

master = Tk()
Label(master, text="First Name").grid(row=0)
Label(master, text="Last Name").grid(row=1)

e1 = Entry(master)
e2 = Entry(master)

e1.grid(row=0, column=1)
e2.grid(row=1, column=1)

Button(master, text='Quit', command=master.quit).grid(row=3, column=0, sticky=W, pady=4)
Button(master, text='Show', command=show_entry_fields).grid(row=3, column=1, sticky=W, pady=4)

mainloop( )
```



Text Widgets

A text widget is used for multi-line text area. The Tkinter text widget is very powerful and flexible and can be used for a wide range of tasks. Though one of the main purposes is to provide simple multi-line areas, as they are often used in forms, text widgets can also be used as simple text editors or even web browsers.

```
from tkinter import *

root = Tk()
T = Text(root, height=2, width=30)
T.pack()
T.insert(END, "Just a text Widget\nin two lines\n")
mainloop()
```



Practical program

Design graphical form using python that contained the following information

- Student ID
- First name
- Middle name,Last name
- Gender(2 options)
- Univ.,Collage,Dept.
- Stage
- DOB
- Hobbies(3check box)
- Other notes(text)
- Show information, Quit(2 commands)