입력을 위한 Tkinter widgets

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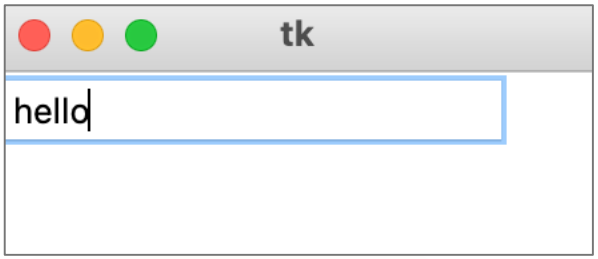
학습목표

- 입력을 위한 Tkinter widgets 이해하기

입력을 위한 Tkinter widgets

widget	Description
Entry	가장 기본적인 text box이다 보통 User가 한 줄의 text를 입력하도록 한다 다양한 서식 설정을 허용하지 않는다
Text	User에게 여러 줄의 text를 입력하도록 한다 입력 된 그 text를 저장한다 서식 설정 옵션을 제공한다(style, attributes)
Button	User가 GUI에 명령을 수행하도록 하는 기본방법, e.g. “OK” or “Cancel” in a dialog
Radiobutton	User에게 목록으로부터 하나의 옵션을 선택하도록 한다
Checkbutton	User에게 목록으로부터 여러 개의 옵션을 선택하도록 한다

entry 예제 I




```
from tkinter import *
from tkinter import ttk

root = Tk()

entry = Entry(root)
entry.grid()
```

entry 예제 2


```
from tkinter import *
from math import *

root = Tk()
root.geometry("300x200+100+100")

def press():
    label2.configure(text = "입력 값 = " + str(entry.get()))

label1 = Label(root, text='이름이 무엇입니까?')
label1.pack()

entry = Entry(root)
entry.pack()

button = Button(root, text = "클릭", command = press)
button.pack()

label2 = Label(root)
label2.pack()

root.mainloop()
```

버튼의 종류

- Button
  - 눌러서 뭔가 다른 기능을 시행하게 하는 역할
  - 원하는 문자가 들어가는 버튼을 만들 수 있다
- Radiobutton
  - 선택 가능한 리스트를 나열하고
  - 그 중에서 한 개만 선택하게 한다
- Checkbox
  - 선택 가능한 리스트를 나열하고
  - 그 중에서 원하는 경우 여러 개를 선택하게 한다

button 예제 1


```
from tkinter import *
from tkinter import ttk

root = Tk()

btn1 = Button(root, text='버튼1')
btn2 = Button(root, text='버튼2')
btn1.grid()
btn2.grid()
```

button 예제 2

- 버튼 누르면 시간 나타나기

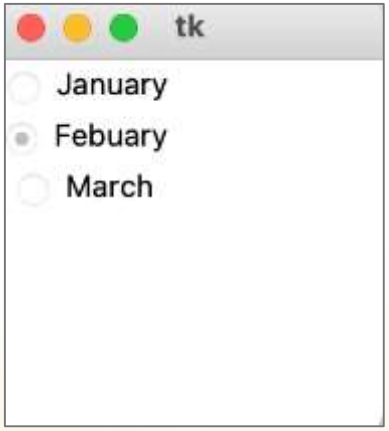
```
>>>
Day: 04 Jul 2017
Time: 09 : 57 : 35 AM
```

```
from tkinter import Tk, Button
from time import strftime, localtime

def clicked():
    time = strftime('Day: %d %b %Y \nTime: %H : %M : %S %p\n', localtime())
    print(time)

root =Tk()

#create button
but = Button( root, text='click it', command=clicked)
but.pack()
root.mainloop()
```

button 예제 3


```
from tkinter import *
from tkinter import ttk

root = Tk()
root1 = Tk()
root2 = Tk()

def press1():
  label1.grid()

def press2():
  label2.grid()

label1 = Label(root1, text='치킨버튼을 눌렀습니다!')
label2  = Label(root2, text='피자버튼을 눌렀습니다!')

btn1 = Button(root, text='치킨버튼', command=press1)
btn2 = Button(root, text='피자버튼', command=press2)

btn1.grid()
btn2.grid()
```

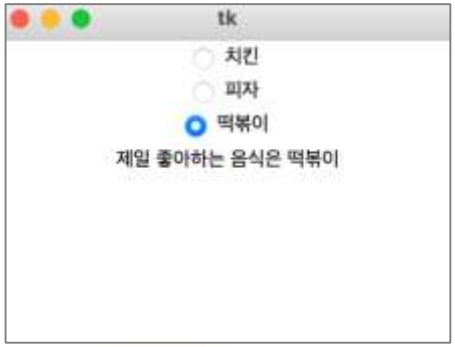
radiobutton 예제 1



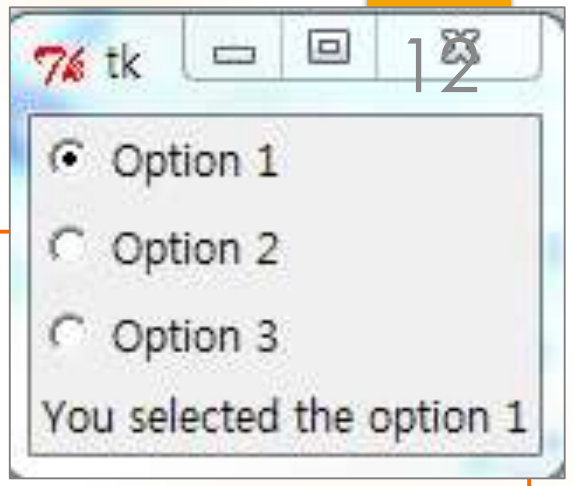

```
from tkinter import *
from tkinter import ttk

root = Tk()
month = StringVar()

radio1 = Radiobutton(root, text='January', variable=month, value=1)
radio2 = Radiobutton(root, text='Febuary', variable=month, value=2)
radio3 = Radiobutton(root, text='March', variable=month, value=3)
radio1.grid(column=0, row=0)
radio2.grid(column=0, row=1)
radio3.grid(column=0, row=2)
```

radiobutton 예제 2


```
from tkinter import *
from tkinter import ttk

root = Tk()

food = StringVar()

def check():
    label2.configure(text = "제일 좋아하는 음식은 " + str(food.get()))

radio1=Radiobutton(root, text="치킨", value='치킨', variable=food, command=check)
radio2=Radiobutton(root, text="피자", value='피자', variable=food, command=check)
radio3=Radiobutton(root, text="떡볶이", value='떡볶이', variable=food, command=check)
radio1.pack()
radio2.pack()
radio3.pack()

label2 = Label(root)
label2.pack()

root.mainloop()
```

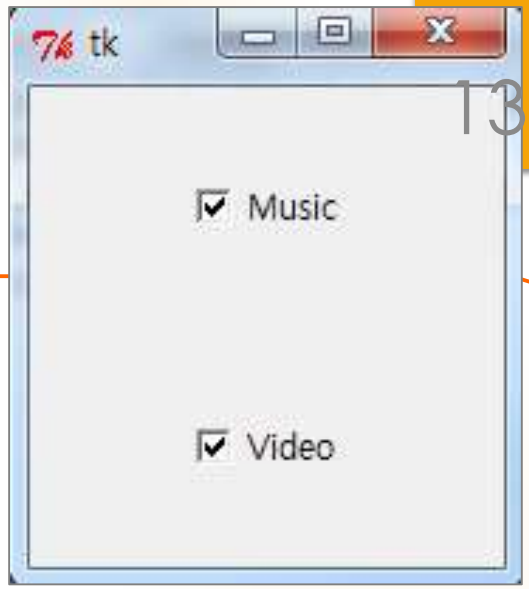


radiobutton 예제 3



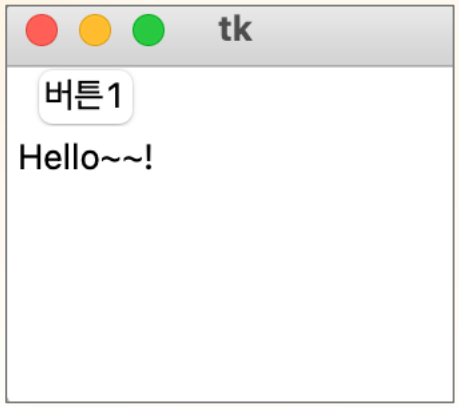

```
from tkinter import *

def sel():
   selection = "You selected the option " + str(var.get())
   label.config(text = selection)

root = Tk()
var = IntVar()

R1 = Radiobutton(root, text="Option 1", variable=var, value=1, command=sel)
R1.pack( anchor = W )

R2 = Radiobutton(root, text="Option 2", variable=var, value=2, command=sel)
R2.pack( anchor = W )

R3 = Radiobutton(root, text="Option 3", variable=var, value=3, command=sel)
R3.pack( anchor = W)

label = Label(root)
label.pack()

root.mainloop()
```

checkbutton 예제 1



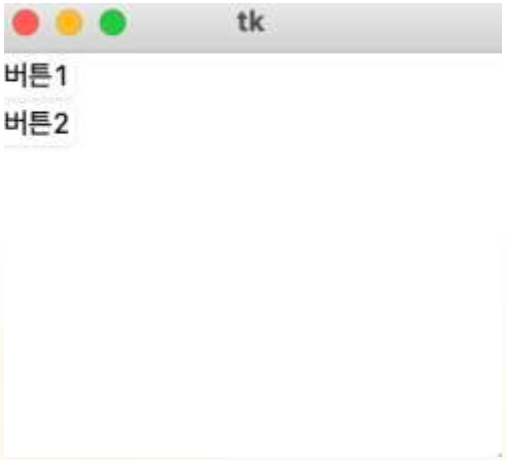

```
from tkinter import *

top = Tk()
CheckVar1 = IntVar()
CheckVar2 = IntVar()

C1 = Checkbutton(top, text = "Music", variable = CheckVar1, onvalue = 1,
offvalue = 0, height=5, width = 20)

C2 = Checkbutton(top, text = "Video", variable = CheckVar2, onvalue = 1,
offvalue = 0, height=5, width = 20)

C1.pack()
C2.pack()

top.mainloop()
```

Label, button 예제 I



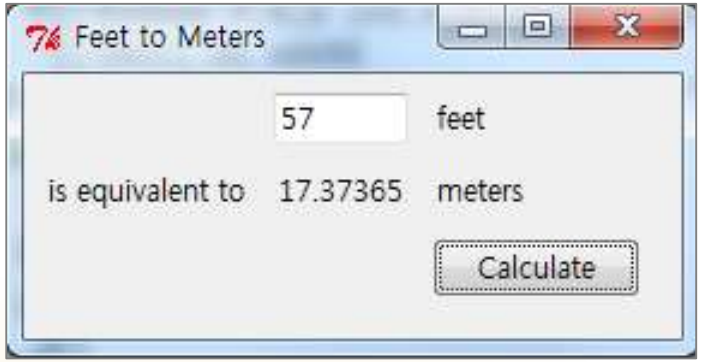

```
from tkinter import *
from tkinter import ttk

root = Tk()

def press():
   label.grid()
label = Label(root, text='Hello~~!')

btn1 = Button(root, text='버튼1', command=press)
btn1.grid()
```

Label, button 예제 2




```
from tkinter import *
from tkinter import ttk
root = Tk()

def press1():
  label1.grid()
def press2():
  label2.grid()

label1 = Label(root, text='버튼1을 눌렀습니다!')
label2  = Label(root, text='버튼2를 눌렀습니다!')
btn1 = Button(root, text='버튼1', command=press1)
btn2 = Button(root, text='버튼2', command=press2)
btn1.grid()
btn2.grid()
```

Label, button 예제 3-1




```
from tkinter import *
from tkinter import ttk
def calculate(*args):
    try:
        value = float(feet.get())
        meters.set((0.3048 * value * 10000.0 + 0.5)/10000.0)
    except ValueError:
        pass
root = Tk()
root.title("Feet to Meters")
```

Label, button 예제 3-2

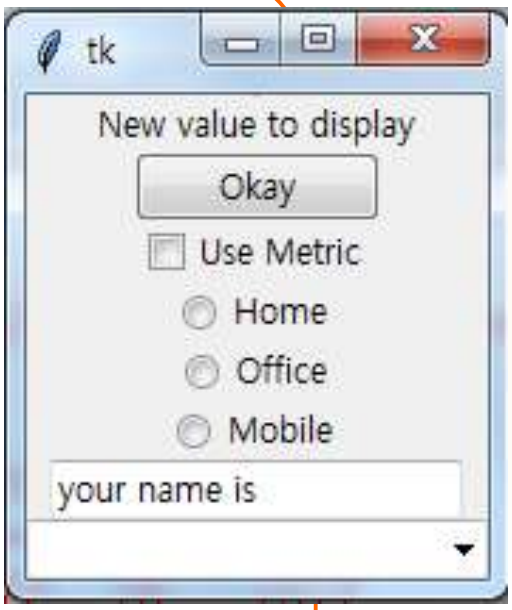

```
#ttk.Frame()
mainframe = ttk.Frame(root, padding="3 3 12 12")
mainframe.grid(column=0, row=0, sticky=(N, W, E, S))
mainframe.columnconfigure(0, weight=1)
mainframe.rowconfigure(0, weight=1)
feet = StringVar()
meters = StringVar()

#ttk.Entry
feet_entry = ttk.Entry(mainframe, width=7, textvariable=feet)
feet_entry.grid(column=2, row=1, sticky=(W, E))

ttk.Label(mainframe, textvariable=meters).grid(column=2, row=2, sticky=(W, E))
ttk.Button(mainframe, text="Calculate", command=calculate).grid(column=3, row=3, sticky=W)
```

Label, button 예제 3-3


```
ttk.Label(mainframe, text="feet").grid(column=3, row=1, sticky=W)
ttk.Label(mainframe, text="is equivalent to").grid(column=1, row=2, sticky=E)
ttk.Label(mainframe, text="meters").grid(column=3, row=2, sticky=W)

for child in mainframe.winfo_children():
    child.grid_configure(padx=5, pady=5)

#entry and run calculate
feet_entry.focus()
root.bind('<Return>', calculate)
```

다양한 button 예제 I-I


```
from tkinter import *
from tkinter import ttk

#Frame
frame = ttk.Frame()
frame['padding'] = (5,10)
frame['borderwidth'] = 2
frame['relief']='sunken'
frame.grid()

#Label
label = ttk.Label(text='Full name;')
resultsContents = StringVar()
label['textvariable'] = resultsContents
resultsContents.set('New value to display')
label.grid()
```



다양한 button 예제 1-2


```
#button
button = ttk.Button(text='Okay', command="buttonpressed")
button.grid()

#checkbutton
measureSystem = StringVar()
check = ttk.Checkbutton(text='Use Metric',command="buttonpressed",
variable=measureSystem, onvalue='metric', offvalue='imperial')
check.instate(['alternate'])
check.grid()
```

다양한 button 예제 I-3


```
#radiobutton
phone = StringVar()
home = ttk.Radiobutton(text='Home', variable=phone, value='home')
office = ttk.Radiobutton(text='Office', variable=phone, value='office')
cell = ttk.Radiobutton(text='Mobile', variable=phone, value='cell')
home.grid()
office.grid()
cell.grid()

#Entry
username = StringVar()
name = ttk.Entry(textvariable=username)
name.grid()
```

다양한 button 예제 I-4


```
print('current value is %s' % name.get())
name.delete(0,'end')
name.insert(0, 'your name is  ')

#combobox
countryvar = StringVar()
country = ttk.Combobox(textvariable=countryvar)
country.bind('<<ComboboxSelected>>')
country['values'] = ('USA', 'Canada', 'Australia')
country.grid()
```

연습문제 I

- http://effbot.org/tkinterbook/button.htm 을 참조하여 Button을 꾸민다.
- http://effbot.org/tkinterbook/label.htm 을 참조하여 Label을 꾸민다.
- 각 Button과 Label의 attribute 3개 이상을 조작해본다.

연습문제 I 코드


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

b = Button(master, text='Button', height = 3, width = 10, anchor = CENTER,
foreground = 'Blue', activebackground = 'Red')
b.pack()

l = Label(master, text='Label', fg='green', font=('Helvetica', 15) )
l.pack()


mainloop()
```

강의 요약

- 입력을 위한 Tkinter widgets 이해하기
  - label, button, radiobutton
  - Checkbutton, combobox
- 이미지를 화면에 띄우기
  - .pack() 등 메소드 사용

목표 달성 질문

- 다음 tkinter widget 기능을 설명하시오
  - .Label()
  - .Radiobutton()
  - .Entry()

감사합니다