

# GUI

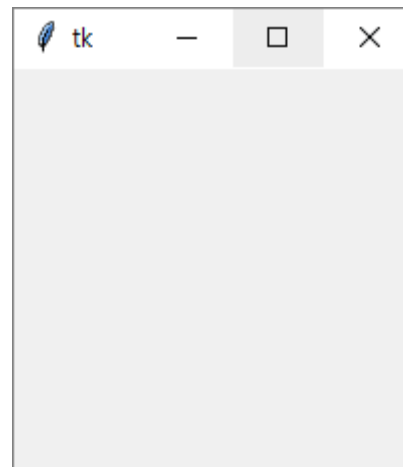


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- 위젯
  - 윈도우 창에 나올 수 있는 레이블, 버튼, 체크버튼, 라디오 버튼
- tkinter
  - 파이썬에서 GUI 관련 모듈을 제공하는 표준 윈도우 라이브러리
  - 파이썬을 설치할 때 기본으로 포함되는 그래픽 모듈
  - `from tkinter import *`
    - tkinter 모듈에 있는 모든 함수를 포함시킨다.
- 기본 윈도우 창 구성
  - `from tkinter import *`
  - `w=Tk()` #윈도우 생성

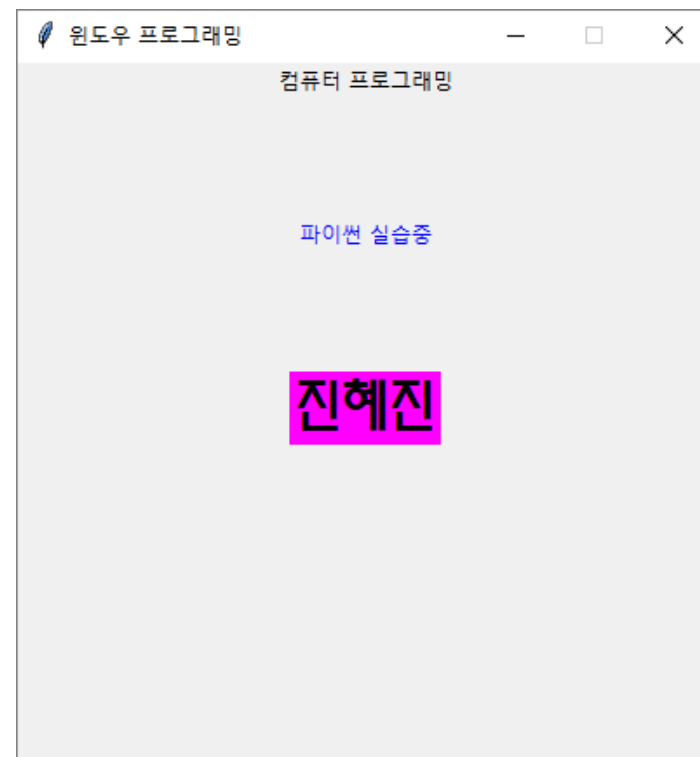


```
import tkinter  
w=tkinter.Tk()
```

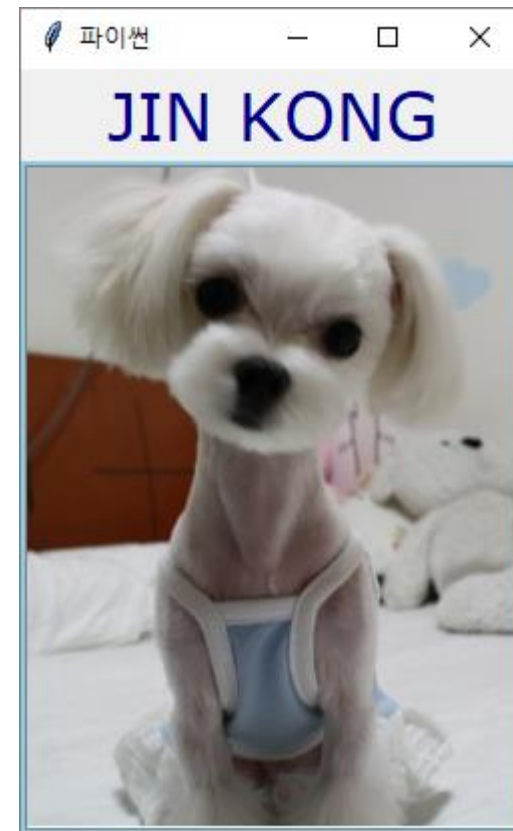
### ■ 레이블

- 텍스트나 이미지를 표현할 수 있는 위젯
- Label(윈도우, 옵션)

```
from tkinter import *  
w=Tk()  
w.title("윈도우 프로그래밍")  
w.geometry("400x400")  
w.resizable(width=FALSE,height=FALSE)  
  
lb1=Label(w,text="컴퓨터 프로그래밍")  
lb1.pack()  
lb2=Label(w,text="파이썬 실습중",fg="blue",width=20,height=10)  
lb2.pack()  
lb3=Label(w,text="진혜진", font=("휴먼모음T",25),bg="magenta")  
lb3.pack()
```



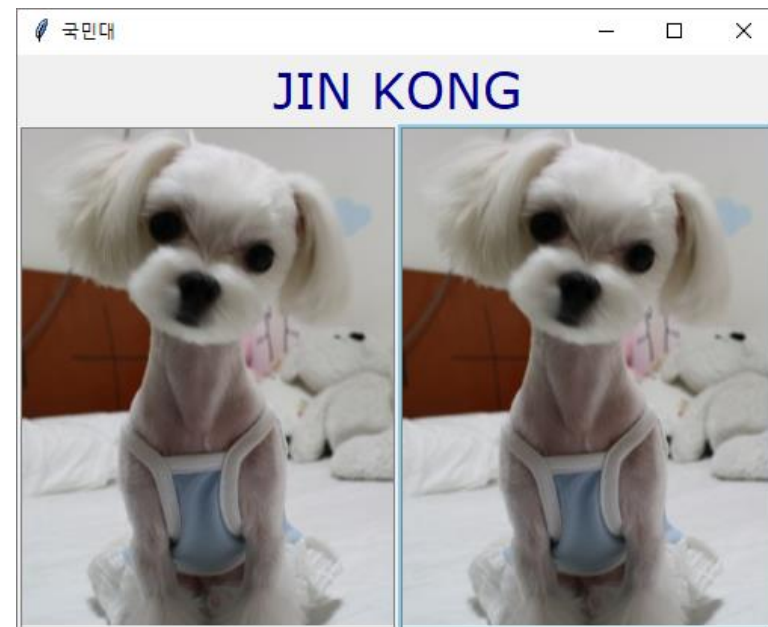
```
from tkinter import *  
w=Tk()  
w.title("파이썬")  
  
lb=Label(w,text="JIN KONG", font=("verdana",25), fg="darkblue")  
lb.pack()  
  
img=PhotoImage(file="kong2.png")  
lb1=Label(w,image=img,bg="skyblue")  
  
lb1.pack()
```



```
from tkinter import *  
w=Tk()  
w.title("국민대")
```

```
lb=Label(w,text="JIN KONG", font=("verdana",25), fg="darkblue")  
lb.pack()
```

```
img1=PhotoImage(file="kong2.png")  
lb1=Label(w,image=img1)  
img2=PhotoImage(file="kong2.png")  
lb2=Label(w,image=img2,bg="skyblue")  
#lb1.pack()  
#lb2.pack()  
lb1.pack(side=LEFT)  
lb2.pack()
```



#### ■ 버튼

- 마우스로 클릭하면 지정한 작업이 실행되도록 하는 위젯
- Button(윈도우, 옵션)
- command 옵션
  - 버튼을 클릭했을 때 지정한 작업을 처리

```
from tkinter import *
```

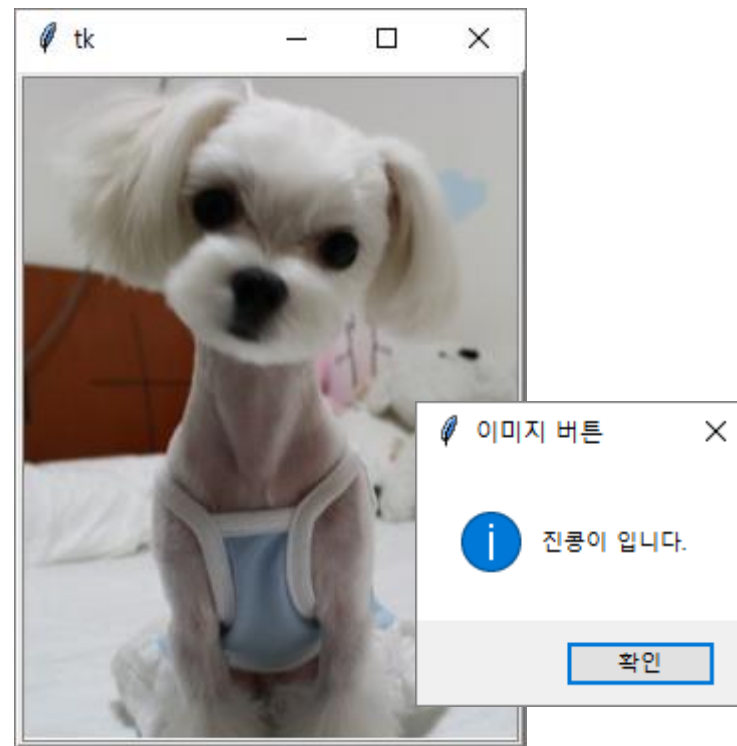
```
w=Tk()
```

```
bu=Button(w,text="QUIT",fg="blue",bg="yellow",command=quit)
```

```
bu.pack()
```



```
from tkinter import *  
from tkinter import messagebox  
  
def myimg():  
    messagebox.showinfo("이미지 버튼","진콩이 입니다.")  
  
w=Tk()  
img=PhotoImage(file="kong2.png")  
bu=Button(w,image=img,command=myimg)  
bu.pack()
```





### ■ 체크 버튼

- 켜고 끄는데 사용하는 위젯
- Checkbutton(윈도우, 옵션)

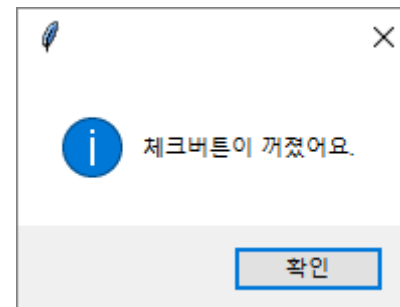
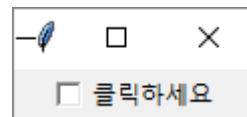
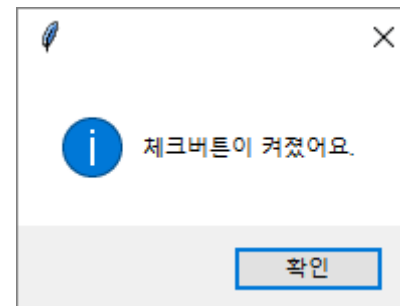
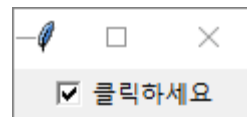
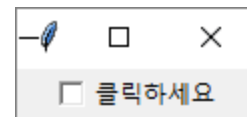
```
from tkinter import *  
from tkinter import messagebox  
window = Tk()
```

```
def myFunc() :  
    if chk.get() == 1 :  
        messagebox.showinfo("", "체크버튼이 켜졌어요.")  
    else :  
        messagebox.showinfo("", "체크버튼이 꺼졌어요.")
```

```
chk = IntVar() #정수형 변수 생성
```

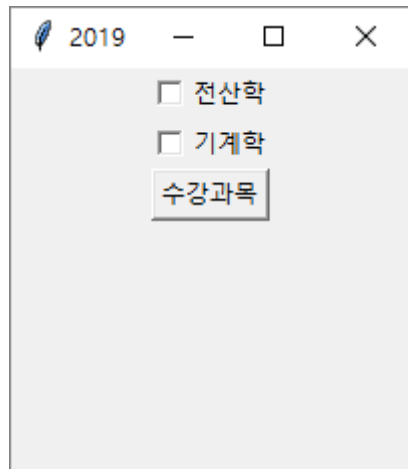
```
cb1 = Checkbutton(window, text = "클릭하세요", variable = chk, command = myFunc)
```

```
cb1.pack()
```

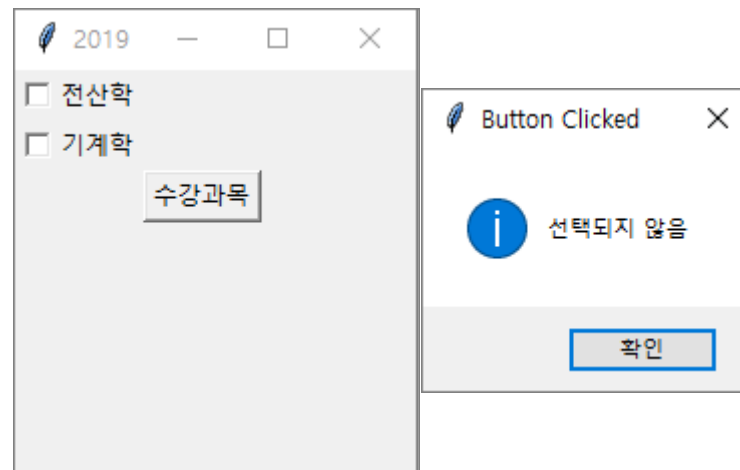


```
from tkinter import*
from tkinter import messagebox
```

```
w=Tk()
w.title("2019")
w.geometry("200x200")
def click():
    str=""
    if Var1.get()==1:
        str=str+"전산학!!"
    if Var2.get()==1:
        str=str+"기계학!!"
    if str=="":
        str="선택되지 않음"
    messagebox.showinfo("Button Clicked",str)
```



```
Var1=IntVar()
Var2=IntVar()
cb1=Checkbutton(w,text="전산학",variable=Var1)
cb2=Checkbutton(w,text="기계학",variable=Var2)
bu=Button(w,text="수강과목",command=click)
cb1.grid(row=1,column=1)
cb2.grid(row=2,column=1)
bu.grid(row=3,column=2)
```



```

from tkinter import*
from tkinter import messagebox

w=Tk()

def lecture():
    str=""
    if va1.get()==1:
        str=str+"전산학"+"\\n"
    if va2.get()==1:
        str=str+"기계학"+"\\n"
    if va3.get()==1:
        str=str+"CAD"+"\\n"
    label3.configure(text=str)

label=Label(w,text="계절학기 수강과목",
fg="navy",font=("맑은 고딕",15))

```

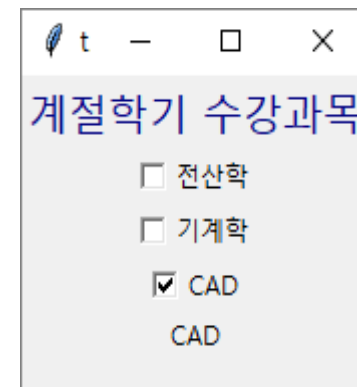
```

va1=IntVar()
va2=IntVar()
va3=IntVar()

ch1=Checkbutton(w,text="전산학",variable=va1,command=lecture)
ch2=Checkbutton(w,text="기계학",variable=va2,command=lecture)
ch3=Checkbutton(w,text="CAD",variable=va3,command=lecture)
label3=Label(w,text="선택한 언어")

label.pack()
ch1.pack()
ch2.pack()
ch3.pack()
label3.pack()

```



위젯명.configure(옵션=값)  
해당 위젯의 옵션값을 변경시켜 주는 함수

### ■ 라디오 버튼

- 여러 개 중에 하나를 선택할 때 사용하는 위젯
- Radiobutton(윈도우, 옵션)

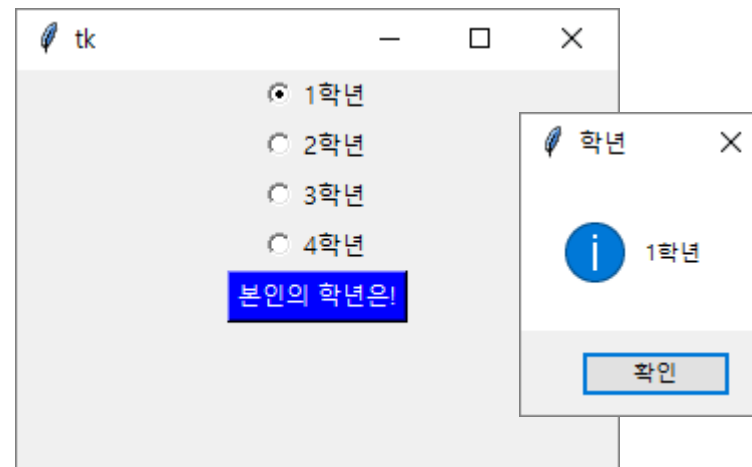
```
from tkinter import*
from tkinter import messagebox
w=Tk()
w.geometry("300x200")

def grade():
    if var1.get()==1:
        messagebox.showinfo("학년","1학년")
    elif var1.get()==2:
        messagebox.showinfo("학년","2학년")
    elif var1.get()==3:
        messagebox.showinfo("", "3학년")
    else:
        messagebox.showinfo("", "4학년")
```

var1=IntVar()

```
r1=Radiobutton(w,text="1학년",value=1,variable=var1)
r2=Radiobutton(w,text="2학년",value=2,variable=var1)
r3=Radiobutton(w,text="3학년",value=3,variable=var1)
r4=Radiobutton(w,text="4학년",value=4,variable=var1)
bu1=Button(w,text="본인의 학년은!", command=
grade,bg="blue",fg="white")
```

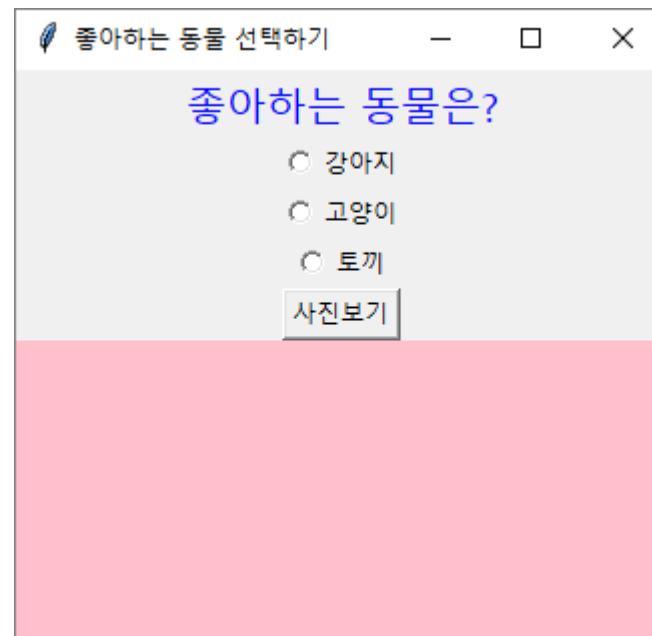
```
r1.pack()
r2.pack()
r3.pack()
r4.pack()
bu1.pack()
```



```
from tkinter import*
```

```
def jin():  
    if var.get()==1:  
        labeli.configure(image=ph1)  
    elif var.get()==2:  
        labeli.configure(image=ph2)  
    else:  
        labeli.configure(image=ph3)
```

```
win=Tk()  
win.geometry("400x400")  
win.title("좋아하는 동물 선택하기")  
label=Label(win,text="좋아하는 동물은?", fg="blue",font=("맑은 고딕",15))  
label.pack()
```



```
var=IntVar()  
rb1=Radiobutton(win,text="강아지", variable=var, value=1)  
rb2=Radiobutton(win,text="고양이", variable=var, value=2)  
rb3=Radiobutton(win,text="토끼", variable=var, value=3)  
bu = Button(win,text="사진보기", command=jin)  
rb1.pack()  
rb2.pack()  
rb3.pack()  
bu.pack()
```

```
ph1=PhotoImage(file="dog.gif")  
ph2=PhotoImage(file="cat.gif")  
ph3=PhotoImage(file="rabbit.gif")
```

```
labeli=Label(win,width=200, height=200, bg="pink")  
labeli.pack()
```

