

2022년 IoT기반 스마트 솔루션 개발자 양성과정



Programming : Python

3-Python GUI

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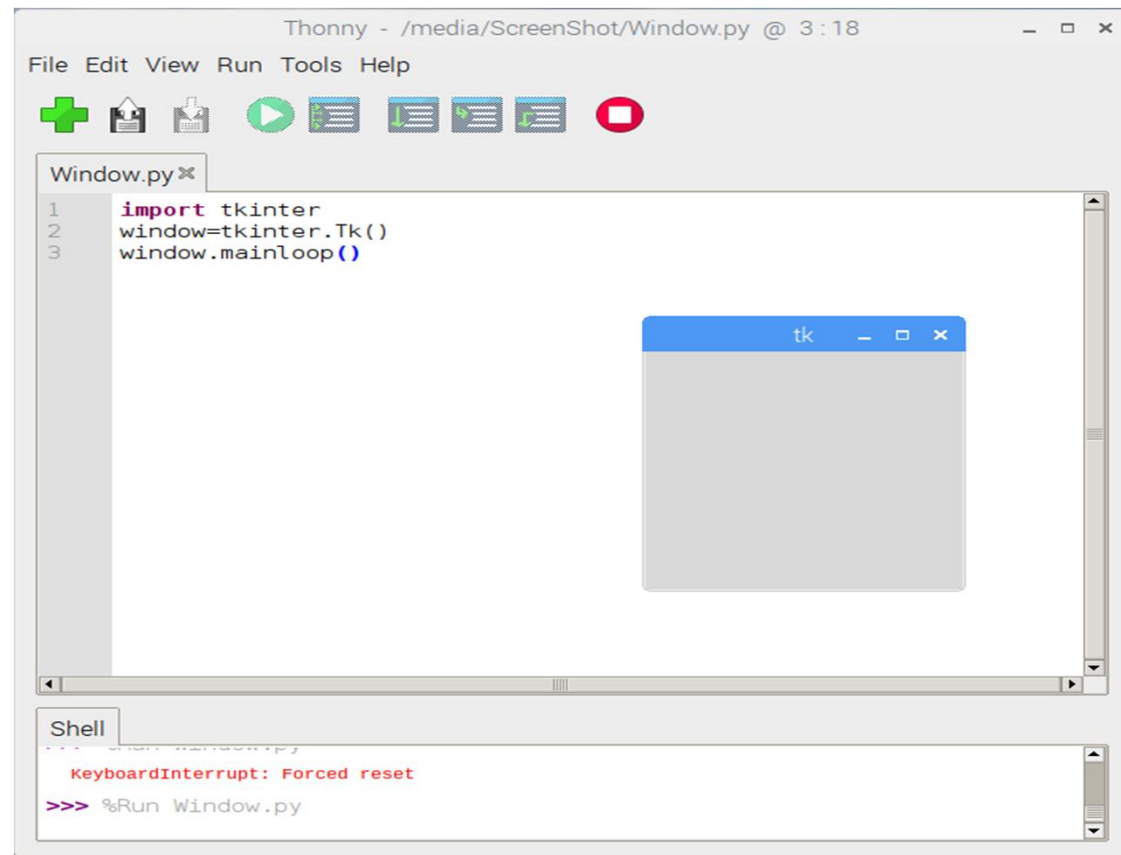
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Python tkinter

- tkinter는 GUI에 대한 표준 Python 인터페이스이며 Window 창을 생성할 수 있습니다.



Make Window



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window

- Title("Tile")
- Geometry("WxH+Xpos+Ypos")
- Resizable(상하,좌우)



Widget class

- A `Frame` is a container widget which is placed inside a window, which can have its own border and background – it is used to group related widgets together in an application's layout.
- `Toplevel` is a container widget which is displayed as a separate window.
- `Canvas` is a widget for drawing graphics. In advanced usage, it can also be used to create custom widgets – because we can draw anything we like inside it, and make it interactive.
- `Text` displays formatted text, which can be editable and can have embedded images.
- A `Button` usually maps directly onto a user action – when the user clicks on a button, something should happen.
- A `Label` is a simple widget which displays a short piece of text or an image, but usually isn't interactive.
- A `Message` is similar to a `Label`, but is designed for longer bodies of text which need to be wrapped.
- A `Scrollbar` allows the user to scroll through content which is too large to be visible all at once.
- `Checkbutton`, `Radiobutton`, `Listbox`, `Entry` and `Scale` are different kinds of input widgets – they allow the user to enter information into the program.
- `Menu` and `Menubutton` are used to create pull-down menus.



Ex3-1 : Window

```
Window2.py ✕
1  import tkinter
2  window=tkinter.Tk()
3
4  window.title("Window Monitor")
5  window.geometry("640x200+100+100")
6  window.resizable(False,False)
7
8  label=tkinter.Label(window,text="Hello",font=("Arial Bold",50))
9  label.pack()
10
11 window.mainloop()
12
```



Ex3-1 : Run

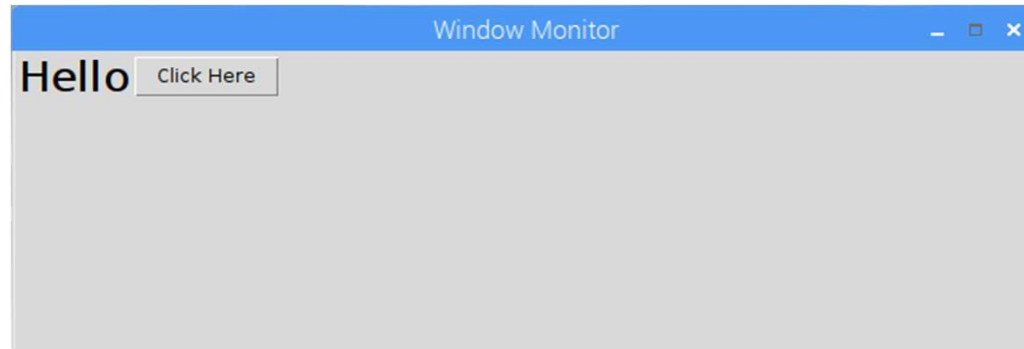


Ex3-2 : Adding a button widget

```
Window2.py ✕
1  import tkinter
2  window=tkinter.Tk()
3
4  window.title("Window Monitor")
5  window.geometry("640x200+100+100")
6  window.resizable(False,False)
7
8  label=tkinter.Label(window,text="Hello",font=("Arial Bold",20))
9  label.grid(column=0,row=0)
10
11  btn=tkinter.Button(window, text="Click Here")
12  btn.grid(column=1,row=0)
13
14  window.mainloop()
15
```



Ex3-2 : run

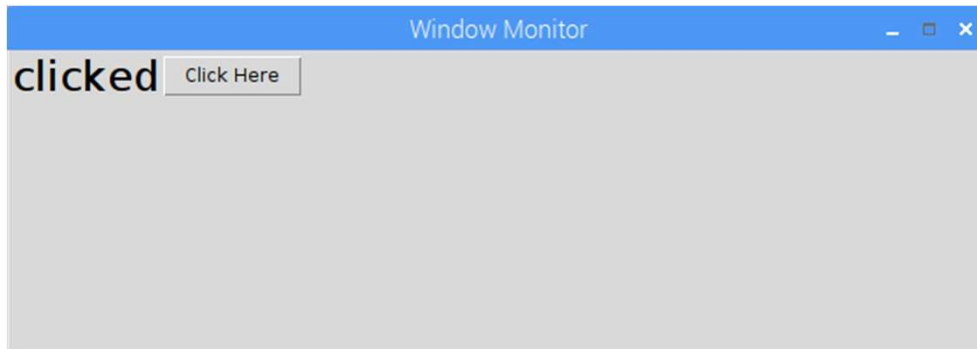


Ex3-3 : Handle button click event

```
Window2.py ✕
1  import tkinter
2  window=tkinter.Tk()
3
4  window.title("Window Monitor")
5  window.geometry("640x200+100+100")
6  window.resizable(False,False)
7
8  label=tkinter.Label(window,text="Hello",font=("Arial Bold",20))
9  label.grid(column=0,row=0)
10
11  def clicked():
12      label.configure(text="clicked")
13
14  btn=tkinter.Button(window, text="Click Here", command=clicked)
15  btn.grid(column=1,row=0)
16
17  window.mainloop()
18
```



Ex3-3 : run

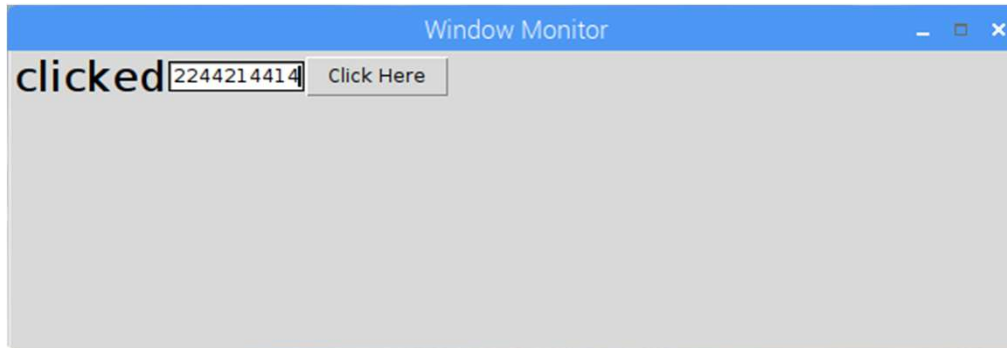


Ex3-4 : Tkinter textbox

```
Window2.py x
1  import tkinter
2  window=tkinter.Tk()
3
4  window.title("Window Monitor")
5  window.geometry("640x200+100+100")
6  window.resizable(False,False)
7
8  label=tkinter.Label(window,text="Hello",font=("Arial Bold",20))
9  label.grid(column=0,row=0)
10
11  def clicked():
12      label.configure(text="clicked")
13
14  txt=tkinter.Entry(window,width=10)
15  txt.grid(column=1,row=0)
16
17  btn=tkinter.Button(window, text="Click Here", command=clicked)
18  btn.grid(column=2,row=0)
19
20  window.mainloop()
21
```



Ex3-5 : run



Ex3-6 : Get input using Entry

```
Window2.py ✕
1  import tkinter
2  window=tkinter.Tk()
3
4  window.title("Window Monitor")
5  window.geometry("640x200+100+100")
6  window.resizable(False,False)
7
8  label=tkinter.Label(window,text="Hello",font=("Arial Bold",20))
9  label.grid(column=0,row=0)
10
11  def clicked():
12      res="Welcom to" + txt.get()
13      label.configure(text=res)
14
15  txt=tkinter.Entry(window,width=10)
16  txt.grid(column=1,row=0)
17
18  btn=tkinter.Button(window, text="Click Here", command=clicked)
19  btn.grid(column=2,row=0)
20
21  window.mainloop()
22
```



Ex3-6 : run

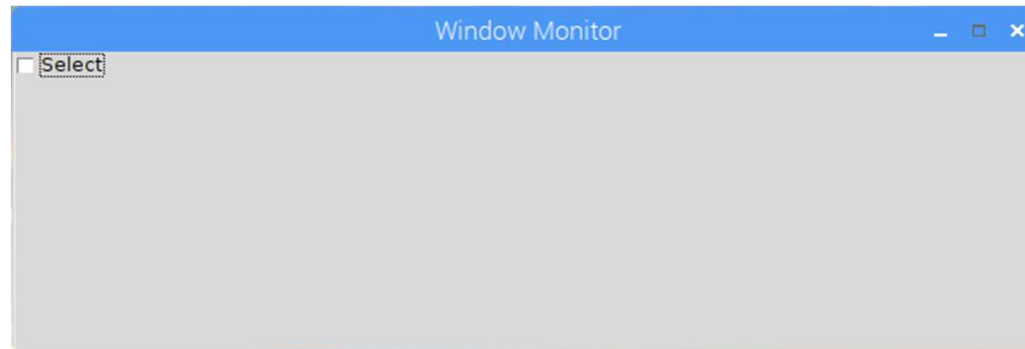


Ex3-7 : Add a Checkbutton

```
Window4.py
1  from tkinter import *
2  from tkinter.ttk import *
3
4  window=Tk()
5
6  window.title("Window Monitor")
7  window.geometry("640x200+100+100")
8  window.resizable(False,False)
9
10  chk_state=BooleanVar()
11  chk_state.set(True)
12  chk=Checkbutton(window,text='Select',var=chk_state)
13  chk.grid(column=0,row=0)
14
15  window.mainloop()
16
```



Ex3-7 : run



Ex3-8 : Add radio buttons

```
Window4.py
1  from tkinter import *
2  from tkinter.ttk import *
3
4  window=Tk()
5
6  window.title("Window Monitor")
7  window.geometry("640x200+100+100")
8  window.resizable(False,False)
9
10  chk_state=BooleanVar()
11  chk_state.set(True)
12  chk=Checkbutton(window,text='Select',var=chk_state)
13  chk.grid(column=0,row=0)
14
15  rdo1=Radiobutton(window,text='1',value=1)
16  rdo2=Radiobutton(window,text='2',value=2)
17  rdo3=Radiobutton(window,text='3',value=3)
18  rdo1.grid(column=1,row=0)
19  rdo2.grid(column=2,row=0)
20  rdo3.grid(column=3,row=0)
21
22  window.mainloop()
```



Ex3-8 : Run

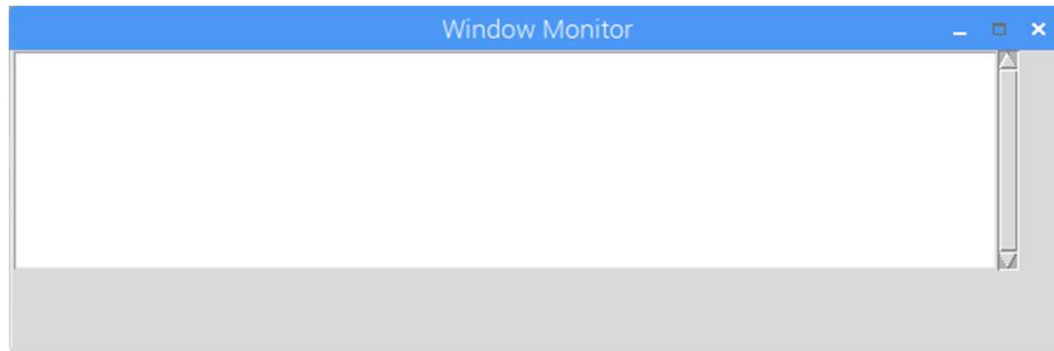


Ex3-9 : Add a ScrolledText

```
Window5.py ✕
1  from tkinter import *
2  from tkinter import scrolledtext
3
4  window=Tk()
5
6  window.title("Window Monitor")
7  window.geometry("640x200+100+100")
8  window.resizable(False,False)
9
10 txt=scrolledtext.ScrolledText(window,width=85,height=10)
11 txt.grid(column=0,row=0)
12
13 window.mainloop()
14 |
```



Ex3-9 : run



Ex3-10 : Create a MessageBox

```
Window5.py ✕
1  from tkinter import *
2  from tkinter import messagebox
3
4  window=Tk()
5
6  window.title("Window Monitor")
7  window.geometry("640x200+100+100")
8  window.resizable(False,False)
9
10 def Clicked():
11     messagebox.showinfo('Button','Clicked')
12
13 btn=Button(window,text='Click Here', command=Clicked)
14 btn.grid(column=0,row=0)
15
16 window.mainloop()
17 |
```



Ex3-10 : run

