Laboratorium **Programowanie w języku Python 2** Wydział Elektrotechniki Automatyki I Informatyki Politechnika Świętokrzyska	
Studia: **Stacionarne I stopnia**	Kierunek: **Informatyka**
Data wykonania: **15.04.2021**	Grupa: **3ID16B**
Imię I nazwisko: **Arkadiusz Więcław**	Temat ćwiczenia: **Programowanie GUI** **Biblioteka Tkinter**

Zad 1:

```
import future
from tkinter import *
import tkinter as tk
import tkinter

#example 1
def ex_1():
    """
    Przykład wyswietla proste okno o podanym tytule.
    """
    window = Tk()
    window.title("Welcome to Hell")
    window.mainloop()
#example 2
def ex_2():
    """
    Przykład wyswietla proste okno z etykietami
    """
    window = Tk()
    window.title("Welcome to LikeGeeks.app")
    lbl = Label(window, text="Hello")
    lbl2 = Label(window, text="Boss")
    lbl3 = Label(window, text="Python")
    lbl.grid(column=0 , row=0)
    lbl2.grid(column=0, row=1)
    lbl3.grid(column=0, row=2)
    window.mainloop()

def ex_3():
    """
    Przykład tworzy proste okno z etykieta i polem tekstowym
    """
    window = tk.Tk()
    label = tk.Label(text="Name")
    label2 = tk.Label(text="Surname")
    entry = tk.Entry()
    entry2 = tk.Entry()
    label.pack()
```

```
    entry.pack()
    label2.pack()
    entry2.pack()
    name = entry.get()
    surname = entry2.get()
    window.mainloop()

def ex_4():
    """
    Przykład tworzy okno do którego są przypisywane ramki.
    """
    window = tk.Tk()
    frame = tk.Frame()
    frame2 = tk.Frame()
    frame.pack()
    frame2.pack()
    window.mainloop()

def ex_5():
    """
    Przykład tworzy okno z dwa ramkami. W każdej ramce znajdują się
etykiety.
    """
    window = tk.Tk()
    frame_a = tk.Frame()
    frame_b = tk.Frame()
    frame_c = tk.Frame()
    label_a = tk.Label(master=frame_a, text="I'm in Frame A")
    label_a.pack()
    label_b = tk.Label(master=frame_b, text="I'm in Frame B")
    label_c = tk.Label(master=frame_c, text="I'm in Frame C")
    label_b.pack()
    label_c.pack()
    window.mainloop()

def ex_6():
    """
    Przykład tworzy okno wraz z ramka które jest modifikowane przez
atrybut relief.
    """
    border_effects = {
            "flat": tk.FLAT,
```

```
            "sunken": tk.SUNKEN,
            "raised": tk.RAISED,
            "groove": tk.GROOVE,
            "ridge": tk.RIDGE,
    }
    window = tk.Tk()
    for relief_name, relief in border_effects.items():
        frame = tk.Frame(master=window, relief=relief, borderwidth=5)
        frame.pack(side=tk.LEFT)
        label = tk.Label(master=frame, text=relief_name)
        label.pack()
    for relief_name, relief in border_effects.items():
        frame2 = tk.Frame(master=window, relief=relief, borderwidth=5)
        frame2.pack(side=tk.LEFT)
        label2 = tk.Label(master=frame2, text=relief_name)
        label2.pack()
    window.mainloop()

def ex_7():
    """
    Przykład tworzy okno z przyciskami. Kazdy przycisk ma inny kolor
napis.
    """
    window = tkinter.Tk()
    window.title("GUI")
    top_frame = tkinter.Frame(window).pack()
    bottom_frame = tkinter.Frame(window).pack(side = "bottom")
    btn1 = tkinter.Button(top_frame, text = "Button1", fg =
"red").pack()
    btn2 = tkinter.Button(top_frame, text = "Button2", fg =
"green").pack()
    btn3 = tkinter.Button(bottom_frame, text = "Button3", fg =
"purple").pack(side ="left")
    btn4 = tkinter.Button(bottom_frame, text = "Button4", fg =
"orange").pack(side ="left")
    btn5 = tkinter.Button(bottom_frame, text = "Button5", fg =
"yellow").pack(side ="right")
    btn6 = tkinter.Button(bottom_frame, text = "Button6", fg =
"brown").pack(side ="right")
    window.mainloop()

def ex_8():
```

```
    """
    Przykład tworzy okno potem tworzy ramki o roznych rozmiarach a na
koncu wypelnia poszczegolne ramki
    podanym kolorem.
    """
    window = tk.Tk()
    frame1 = tk.Frame(master=window, width=200, height=100, bg="red")
    frame1.pack(fill=tk.BOTH, side=tk.LEFT, expand=True)
    frame2 = tk.Frame(master=window, width=100, bg="yellow")
    frame2.pack(fill=tk.BOTH, side=tk.LEFT, expand=True)
    frame3 = tk.Frame(master=window, width=50, bg="blue")
    frame3.pack(fill=tk.BOTH, side=tk.LEFT, expand=True)
    frame4 = tk.Frame(master=window, width=150, bg="brown")
    frame4.pack(fill=tk.BOTH, side=tk.RIGHT, expand=True)
    frame5 = tk.Frame(master=window, width=250, bg="orange")
    frame5.pack(fill=tk.BOTH, side=tk.BOTTOM, expand=True)
    window.mainloop()

def ex_9():
    """
    Przyklad tworzy okno z checkbox.
    """
    top = tkinter.Tk()
    CheckVar1 = IntVar()
    CheckVar2 = IntVar()
    tkinter.Checkbutton(top, text = "JPG",variable = CheckVar1,onvalue
= 1, offvalue=0).grid(
            row=0,sticky=W)
    tkinter.Checkbutton(top, text = "PNG", variable = CheckVar2,
onvalue =0, offvalue =1).grid(
            row=1,sticky=W)
    tkinter.Checkbutton(top, text = "BMP", variable = CheckVar2,
onvalue =0, offvalue =1).grid(
            row=2,sticky=W)
    top.mainloop()

def ex_10():
    """
    Przykład tworzy okno wraz z etykietami. Tekst etykiet okresla
numer rzedu i kolumny gdzie jest
    rozmieszczona etykieta.
    """
```

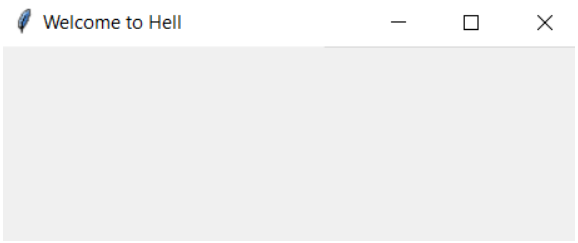
```
    window = tk.Tk()
    for i in range(5):
        for j in range(5):
            frame = tk.Frame(
                    master=window,
                    relief=tk.RAISED,
                    borderwidth=1
            )
            frame.grid(row=i, column=j, padx=6, pady=6)
            label = tk.Label(master=frame, text="Row {i}\nColumn {j}")
            label.pack(padx=6, pady=6)
    window.mainloop()

def ex_11():
    """
    PrzykLad tworzy okno wraz z ramka .Wewnatrz ramki znajduja się
etykiety które są rozmieszczone
    w roznych miejscach. Każda z etykiety ma inny kolor.
    """
    window = tk.Tk()
    frame = tk.Frame(master=window, width=150, height=150)
    frame.pack()
    label1 = tk.Label(master=frame, text="I'm at (0, 0)", bg="red")
    label1.place(x=0, y=0)
    label2 = tk.Label(master=frame, text="I'm at (75, 75)",
bg="yellow")
    label2.place(x=75, y=75)
    label3 = tk.Label(master=frame , text="I'm at (50, 50)",
bg="purple")
    label3.place(x=50, y=50)
    label4 = tk.Label(master=frame, text="I'm at (20, 20)", bg="blue")
    label4.place(x=20, y=20)
    window.mainloop()

def ex_12():
    """
    Przykład tworzy okno o nazwie GUI wraz z przyciskiem . Przycisk po
kliknieciu tworzy etykiete z napisem.
    """
    window = tkinter.Tk()
    window.title("GUI")
    def Tutorial():
```

```
        tkinter.Label(window, text = "GUI with Tkinter!").pack()
    tkinter.Button(window, text = "Click Me!", command =
Tutorial).pack()
    window.mainloop()
    def Tutorial2():
        tkinter.Label(window, text= "No").pack()
    tkinter.Button(window, text= "Click Me too!",
command=Tutorial2).pack()

def ex_13():
    """
    PrzykLad tworzy okno które po kliknieciu dowolnego przycisku myszy
tworzy etykiete o tekscie
    mowiacym jakim przyciskiem myszy kliknieto  okno.
    """
    window = tkinter.Tk()
    window.title("GUI")
    def left_click(event):
        tkinter.Label(window, text = "Left Click!").pack()
    def middle_click(event):
        tkinter.Label(window, text = "Middle Click!").pack()
    def right_click(event):
        tkinter.Label(window, text = "Right Click!").pack()
    def control(event):
        tkinter.Label(window, text= "Click Ctrl+A!").pack()
    window.bind("<Button-1>", left_click)
    window.bind("<Button-2>", middle_click)
    window.bind("<Button-3>", right_click)
    window.bind("<Control-a>", control)
    window.mainloop()

if __name__ == "__main__":
    ex_1()
    ex_2()
    ex_3()
    ex_4()
    ex_5()
    ex_6()
    ex_7()
    ex_8()
    ex_9()
```

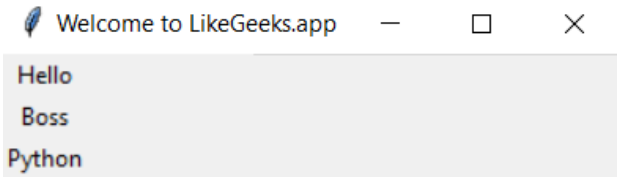
```
ex_10()
    ex_11()
    ex_12()
    ex_13()
```

Wyniki:

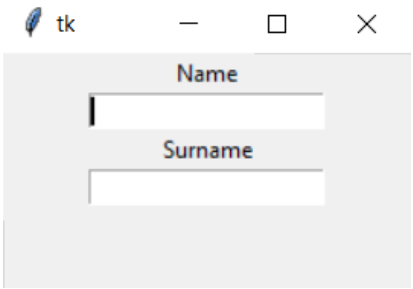
Przyklad 1 =



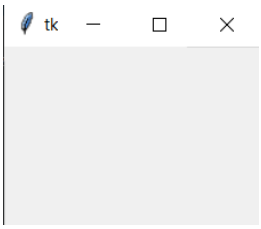
Przyklad 2 =



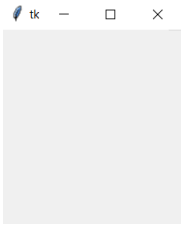
Przyklad 3 =



Przyklad 4 =

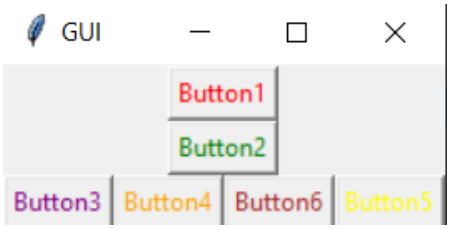


Przyklad 5 =



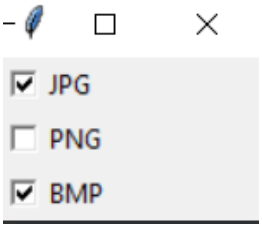
Przyklad 6 =

Przyklad 7 =

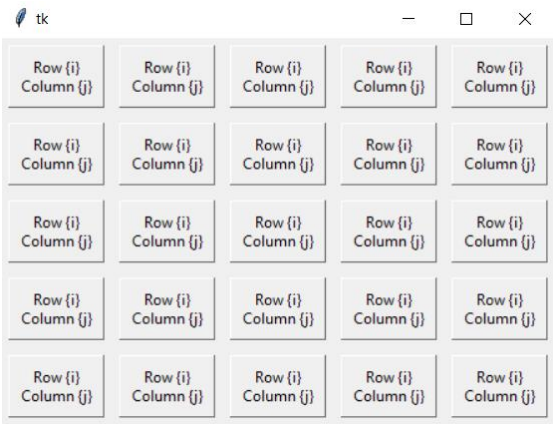


Przyklad 8 =

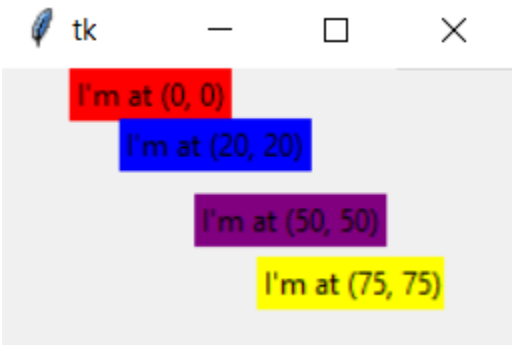
Przyklad 9 =



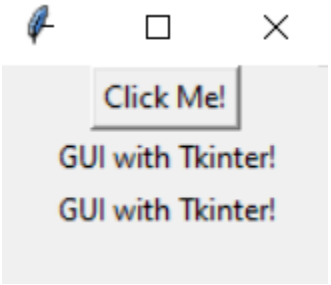
Przyklad 10 =



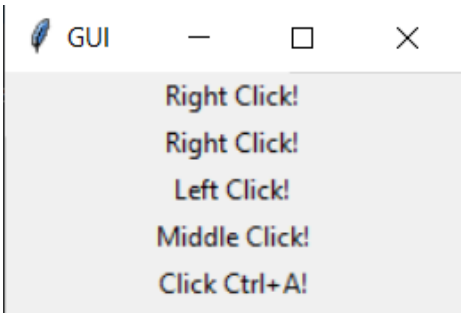
Przyklad 11 =



Przyklad 12 =



Przyklad 13 =



Zad 2:

```
import tkinter as tk
from tkinter import *
"""
Za pomoca biblioteki tkinter stworzylem aplikacje ktora jest sklepem
spożywczym.
Program zlicza ile produktów zostało kupionych. Wybor produktów jest
dokonowany za pomoca checkbox a liczba
sztuk jest okreslana za pomoca elementu spinbox.
"""

def configure_window():
    window.title("Maly sklep spwzywczy")
    width = 720
    height= 240
    ws = window.winfo_screenwidth()
    hs = window.winfo_screenheight()
    x = (ws/2) - (width/2)
    y = (hs/2) - (height/2)
    window.geometry('%dx%d+%d+%d' % (width, height, x, y))
    window.resizable(False, False)

def look_shop():
    lb1_number = tk.Label(window, text="amount:")
    lb1_number.grid(row=0, column=1, sticky=W)
    lb2_number = tk.Label(window, text="amount:")
    lb2_number.grid(row=1, column=1, sticky=N)
    lb3_number = tk.Label(window, text="amount:")
    lb3_number.grid(row=2, column=1, sticky=N)
    lb4_number = tk.Label(window, text="amount:")
    lb4_number.grid(row=3, column=1, sticky=N)
    lb5_number = tk.Label(window, text="amount:")
    lb5_number.grid(row=4, column=1, sticky=N)
    lb6_number = tk.Label(window, text="amount:")
    lb6_number.grid(row=5, column=1, sticky=N)
    lb7_number = tk.Label(window, text="amount:")
    lb7_number.grid(row=6, column=1, sticky=N)
    lb8_number = tk.Label(window, text="amount:")
    lb8_number.grid(row=7, column=1, sticky=N)
```

```
    number1 = IntVar()
    number2 = IntVar()
    number3 = IntVar()
    number4 = IntVar()
    number5 = IntVar()
    number6 = IntVar()
    number7 = IntVar()
    number8 = IntVar()

    field_number1 = tk.Spinbox(window, from_=number1.get(), to=10,
width=5, textvariable = number1 ).grid(
            row=0, column=2, sticky=W)
    field_number2 = tk.Spinbox(window, from_=number2.get(), to=10,
width=5, textvariable = number2 ).grid(
            row=1, column=2, sticky=W)
   field_number3 = tk.Spinbox(window, from_=number3.get(), to=10,
width=5, textvariable = number3 ).grid(
            row=2, column=2, sticky=W)
    field_number4 = tk.Spinbox(window, from_=number4.get(), to=10,
width=5, textvariable = number4 ).grid(
            row=3, column=2, sticky=W)
    field_number5 = tk.Spinbox(window, from_=number5.get(), to=10,
width=5, textvariable = number5  ).grid(
            row=4, column=2, sticky=W)
    field_number6 = tk.Spinbox(window, from_=number6.get(), to=10,
width=5, textvariable = number6  ).grid(
            row=5, column=2, sticky=W)
    field_number7 = tk.Spinbox(window, from_=number7.get(), to=10,
width=5, textvariable = number7  ).grid(
            row=6, column=2, sticky=W)
    field_number8 = tk.Spinbox(window, from_=number8.get(), to=10,
width=5, textvariable = number8  ).grid(
            row=7, column=2, sticky=W)

   lbl_cena1 = tk.Label(window, text="price: 7zł ")
    lbl_cena1.grid(row=0, column=4, sticky=W)
    lbl_cena2 = tk.Label(window, text="price: 9zł ")
    lbl_cena2.grid(row=1, column=4, sticky=W)
    lbl_cena3 = tk.Label(window, text="price: 1zł ")
    lbl_cena3.grid(row=2, column=4, sticky=W)
    lbl_cena4 = tk.Label(window, text="price: 8zł ")
    lbl_cena4.grid(row=3, column=4, sticky=W)
```

```
lbl_cena5 = tk.Label(window, text="price: 5zł ")
lbl_cena5.grid(row=4, column=4, sticky=W)
lbl_cena6 = tk.Label(window, text="price: 3zł ")
lbl_cena6.grid(row=5, column=4, sticky=W)
lbl_cena7 = tk.Label(window, text="price: 10zł ")
lbl_cena7.grid(row=6, column=4, sticky=W)
lbl_cena8 = tk.Label(window, text="price: 12zł ")
lbl_cena8.grid(row=7, column=4, sticky=W)

def choose_1():
    if CheckVar1.get() == 1:
        number1.set(1)
    else:
        number1.set(0)
def choose_2():
    if CheckVar2.get() == 1:
        number2.set(1)
    else:
        number2.set(0)
def choose_3():
    if CheckVar3.get() == 1:
        number3.set(1)
    else:
        number3.set(0)
def choose_4():
    if CheckVar4.get() == 1:
        number4.set(1)
    else:
        number4.set(0)
def choose_5():
    if CheckVar5.get() == 1:
        number5.set(1)
    else:
        number5.set(0)
def choose_6():
    if CheckVar6.get() == 1:
        number6.set(1)
    else:
        number6.set(0)
def choose_7():
    if CheckVar7.get() == 1:
        number7.set(1)
```

```
        else:
            number7.set(0)
    def choose_8():
        if CheckVar8.get() == 1:
            number8.set(1)
        else:
            number8.set(0)

    CheckVar1 = IntVar()
    CheckVar2 = IntVar()
    CheckVar3 = IntVar()
    CheckVar4 = IntVar()
    CheckVar5 = IntVar()
    CheckVar6 = IntVar()
    CheckVar7 = IntVar()
    CheckVar8 = IntVar()
    c1 = tk.Checkbutton(window, text="Ser kozi", variable=CheckVar1,
            onvalue=1, offvalue=0, command=choose_1 ).grid(row=0,
column=0, sticky=W)
    c2 = tk.Checkbutton(window, text="Kiełbasa", variable=CheckVar2,
            onvalue=1, offvalue=0, command=choose_2).grid(row=1,
column=0, sticky=W)
    c3 = tk.Checkbutton(window, text="Jaja kurze", variable=CheckVar3,
            onvalue=1, offvalue=0, command=choose_3).grid(row=2,
column=0, sticky=W)
    c4 = tk.Checkbutton(window, text="Papryka", variable=CheckVar4,
            onvalue=1, offvalue=0, command=choose_4).grid(row=3,
column=0, sticky=W)
    c5 = tk.Checkbutton(window, text="Chleb", variable=CheckVar5,
            onvalue=1, offvalue=0, command=choose_5).grid(row=4,
column=0, sticky=W)
    c6 = tk.Checkbutton(window, text="Jabłko", variable=CheckVar6,
            onvalue=1, offvalue=0, command=choose_6).grid(row=5,
column=0, sticky=W)
    c7 = tk.Checkbutton(window, text="Mango", variable=CheckVar7,
            onvalue=1, offvalue=0, command=choose_7).grid(row=6,
column=0, sticky=W)
    c8 = tk.Checkbutton(window, text="Pierogi mrożone",
variable=CheckVar8,
            onvalue=1, offvalue=0, command=choose_8).grid(row=7,
column=0, sticky=W)
```

```
    def paid():
        suma = 0
       val1, val2, val3, val4, val5, val6, val7, val8 = 0, 0, 0, 0, 0,
0, 0, 0
        if CheckVar1.get() == 1:
            val1 = number1.get() * 10
        if CheckVar2.get() == 1:
            val2 = number2.get() * 20
        if CheckVar3.get() == 1:
            val3 = number3.get() * 15
        if CheckVar4.get() == 1:
            val4 = number4.get() * 22
        if CheckVar5.get() == 1:
            val5 = number5.get() * 15
        if CheckVar6.get() == 1:
            val6 = number6.get() * 20
        if CheckVar7.get() == 1:
            val7 = number7.get() * 10
        if CheckVar8.get() == 1:
            val8 = number8.get() * 12
        suma+= val1 + val2 + val3 + val4 + val5 + val6 + val7 + val8
        second_win = tk.Toplevel(window)
        def config_second_win():
            second_win.resizable(False, False)
            width = 180
            height= 20
            ws = second_win.winfo_screenwidth()
            hs = second_win.winfo_screenheight()
            x = (ws/2) - (width/2)
            y = (hs/2) - (height/2)
            second_win.geometry('%dx%d+%d+%d' % (width, height, x, y))
        config_second_win()
        if suma > 0:
           lbl_spc = tk.Label(second_win, text="Twoja zakupy wynosa
{}".format(suma) + "zł" , bg="green" )
            lbl_spc.pack()
        else:
           lbl_spc = tk.Label(second_win, text="Nic nie wybrales" ,
bg="red")
            lbl_spc.pack()

    btn1 = tk.Button(text="Kup", comm=paid)
```

```
    btn1.grid(row=8, column=0, sticky=W)

window = tk.Tk()
configure_window()
look_shop()
window.mainloop()
```

Wynik: