

Récupérer le fichier : « TS_ISN_TP13.zip » et le décompresser dans un dossier.

Tester et modifier les différents exemples de widgets du module tkinter...

Exemple de boutons

```
from tkinter import *
# -----
# Clic Bouton n°1
# -----
def bouton_1() :
    zone.move(rect, -10, 0)
# -----
# Clic Bouton n°2
# -----
def bouton_2() :
    zone.move(rect, 10, 0)
# -----
fenetre=Tk()
fenetre.wm_attributes("-topmost", 1)
fenetre.title("Test boutons")
zone = Canvas(fenetre, width=300, height=150,
bg="white")
zone.pack()
rect = zone.create_rectangle(150, 50, 100, 100,
fill="red", activefill="green")
b_1 = Button(fenetre, text = "<-", command=bouton_1)
b_1.pack(side=LEFT, padx=5)
b_2 = Button(fenetre, text = "->", command=bouton_2)
b_2.pack(side=LEFT, padx=5)
b_3 = Button(fenetre, text = "Sortir",
command=fenetre.destroy)
b_3.pack(side=RIGHT)
fenetre.mainloop()
```

Exemple de cases à cocher

```
from tkinter import *
# -----
# Etat des cases
# -----
def case_1() :
    print("1er :", v_1.get())
def case_2() :
    print("2ème :", v_2.get())
def case_3() :
    print("3ème :", v_3.get())
# -----
fenetre=Tk()
v_1 = IntVar()
v_2 = IntVar()
v_3 = IntVar()
fenetre.wm_attributes("-topmost", 1)
fenetre.title("Test cases à cocher")
zone = Canvas(fenetre, width=200, height=100, bg="white")
zone.pack(side=LEFT)
c_1 = Checkbutton(fenetre, text = "1er", variable=v_1, command=case_1)
c_1.pack()
c_2 = Checkbutton(fenetre, text = "2ème", variable=v_2, command=case_2)
c_2.pack()
c_3 = Checkbutton(fenetre, text = "3ème", variable=v_3, command=case_3)
c_3.pack()
fenetre.mainloop()
```

Exemple de cases à choisir

```
from tkinter import *
# -----
fenetre=Tk()
fenetre.wm_attributes("-topmost", 1)
fenetre.title("Test cases à choisir")
zone = Canvas(fenetre, width=300, height=100,
bg="white")
zone.pack()
choix = IntVar()
choix_1 = Radiobutton(fenetre, text="100",
variable=choix, value=100)
choix_2 = Radiobutton(fenetre, text="200",
variable=choix, value=200)
choix_3 = Radiobutton(fenetre, text="300",
variable=choix, value=300)
choix_3.pack(side=RIGHT)
choix_2.pack(side=RIGHT)
choix_1.pack(side=RIGHT)
fenetre.mainloop()
print(choix.get())
```

Exemple de listes de choix

```
from tkinter import *
# -----
fenetre=Tk()
fenetre.wm_attributes("-topmost", 1)
fenetre.title("Test bouton")
zone = Canvas(fenetre, width=300, height=200, bg="white")
zone.pack()
s_1 = StringVar()
s_1.set("Matière")
spin_1 = Spinbox(fenetre, value=["Maths", "Sc. Phys.", "S.V.T.", "Philo."], width=10)
spin_1.config(textvariable=s_1)
spin_1.pack(side=LEFT)
s_2 = IntVar()
s_2.set(10)
spin_2 = Spinbox(fenetre, from_=0, to=20, increment=1, width=4)
spin_2.config(textvariable=s_2)
spin_2.pack(side=RIGHT)
fenetre.mainloop()
print(s_1.get())
print(s_2.get())
```

Exemple de curseurs

```
from tkinter import *
# -----
fenetre=Tk()
fenetre.wm_attributes("-topmost", 1)
fenetre.title("Test curseurs")
zone = Canvas(fenetre, width=300, height=150, bg="white")
zone.grid(row=0, column=0)
c_1 = IntVar()
c_1.set(10)
 curseur_1 = Scale(fenetre, from_=0, to=20, length=200, orient="horizontal", variable=c_1)
 curseur_1.grid(row=1, column=0)
c_2 = DoubleVar()
c_2.set(0)
 curseur_2 = Scale(fenetre, from_=1, to=-1, resolution=-0.1, orient="vertical", variable=c_2)
 curseur_2.grid(row=0, column=1)
fenetre.mainloop()
print(c_1.get())
print(c_2.get())
```

Exemple de saisies

```
from tkinter import *
# -----
fenetre=Tk()
fenetre.wm_attributes("-topmost", 1)
fenetre.title("Test saisies")
zone = Canvas(fenetre, width=300, height=100, bg="green")
zone.grid(row=0, columnspan=3)
t = StringVar()
texte_1 = Label(text="Texte :")
texte_1.grid(row=1, column=0)
saisie_1 = Entry(textvariable=t, width=20)
saisie_1.grid(row=2, column=0)
n = IntVar()
texte_2 = Label(text="Entier :")
texte_2.grid(row=1, column=1)
saisie_2 = Entry(textvariable=n, width=5)
saisie_2.grid(row=2, column=1)
x = DoubleVar()
texte_3 = Label(text="R el :")
texte_3.grid(row=1, column=2)
saisie_3 = Entry(textvariable=x, width=10)
saisie_3.grid(row=2, column=2)
fenetre.mainloop()
print(t.get())
print(n.get())
print(x.get())
```

Exemple de menus

```
from tkinter import *
from random import randrange
# -----
# Couleurs
# -----
def color_yellow() :
    jaune = zone.create_line(randrange(300), 0, randrange(300), 200, fill="yellow")
def color_red() :
    rouge = zone.create_line(randrange(300), 0, randrange(300), 200, fill="red")
def color_blue() :
    bleu = zone.create_line(randrange(300), 0, randrange(300), 200, fill="blue")
def color_green() :
    vert = zone.create_line(randrange(300), 0, randrange(300), 200, fill="green")
# -----
fenetre=Tk()
fenetre.wm_attributes("-topmost", 1)
fenetre.title("Test menu")
zone = Canvas(fenetre, width=300, height=200, bg="black")
zone.pack()
menu_bar = Menu(fenetre)
menu_color = Menu(menu_bar, tearoff=0)
menu_color.add_command(label="jaune", command=color_yellow)
menu_color.add_command(label="rouge", command=color_red)
menu_color.add_command(label="bleu", command=color_blue)
menu_color.add_command(label="vert", command=color_green)
menu_bar.add_cascade(label="Couleurs", menu=menu_color)
fenetre.config(menu=menu_bar)
fenetre.mainloop()
```

Exemple de gestion de la souris

```
from tkinter import *
# -----
# Clic gauche
# -----
def clic_g(event) :
    x = event.x
    y = event.y
    print("Clic gauche en", x, y)
    rouge = zone.create_oval(x - 5, y - 5, x + 5, y + 5, fill="red")
# -----
# Clic droit
# -----
def clic_d(event) :
    x = event.x
    y = event.y
    print("Clic droit en", x, y)
    vert = zone.create_oval(x - 5, y - 5, x + 5, y + 5, fill="green")
# -----
fenetre = Tk()
fenetre.wm_attributes("-topmost", 1)
fenetre.title("Test souris")
zone = Canvas(fenetre, width=300, height=200, bg="white")
zone.pack()
zone.bind("<Button-1>", clic_g)
zone.bind("<Button-3>", clic_d)
fenetre.mainloop()
```

Exemple de gestion du clavier

```
from tkinter import *
# -----
# Clavier
# -----
def clavier(event) :
    touche = event.keysym
    print("Touche appuy e :", touche)
    x = event.x
    y = event.y
    zone.create_text(x, y, text=touche)
# -----
fenetre = Tk()
fenetre.wm_attributes("-topmost", 1)
fenetre.title("Test clavier")
zone = Canvas(fenetre, width=300, height=200, bg="white")
zone.pack()
zone.focus_set()
zone.bind("<Key>", clavier)
fenetre.mainloop()
```