

# Tableau périodique



: programme à convertir de Python 2 à Python 3, + importation de la librairie Tkinter à unifier !

[tableau\\_periodique.py](#)

```
#!/usr/bin/env python
# -*- coding: utf-8 -*-
# Programme sur le tableau périodique
# MJ, Ba2 chimie 2010-2011

from Tkinter import *
from element_liste import * #sert à importer la liste présente dans
l'autre fichier

#création de la commande générale du bouton
def elem(x):
    element=Tk()
    element.title("Proprietes")
    listbox=Listbox(element,height=10,width=40,fg="#070942")
    listbox.pack() #sert à ajuster la fenêtre
    listbox.insert(END)
    for item in tableau[x]:
        listbox.insert(END,item)
    quitter = Button(element,text='Quitter',command=element.destroy)
    quitter.pack(side=BOTTOM)
    mainloop()

fen1=Tk()
fen1.title("Tableau periodique")

#création de la légende (site www.jchr.be/python/tkinter.htm)
import Tkinter
sysdemenu=Tkinter.Menu(fen1)
def legende():
    legend1= Tk()
    legend1.title("Légende")
    frame= Frame(legend1, height=200, width= 300) #frame ouvre une
nouvelle fenêtre dans laquelle on peut insérer plusieurs widgets (ici
des messages)
    autre = Message(legend1, text="Autres", width=300, font="Arial 15",
bg="white") #font = taille et police
    autre.pack()
    metauxtransition= Message(legend1, text="Metaux de transition",
width=300, font="Arial 15", bg="#FFCCCC")
    metauxtransition.pack()
    gazrare = Message(legend1, text="Gaz rares", width=300, font="Arial
```

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15", bg="#00CCFF")
    gazrare.pack()
    nonmetaux= Message(legend1, text="Non metaux", width=300,
font="Arial 15", bg="#00FF66")
    nonmetaux.pack()
    metauxalcalins= Message(legend1, text="Metaux alcalins", width=300,
font="Arial 15", bg="#FF9900")
    metauxalcalins.pack()
    metauxalcalinoterreux= Message(legend1, text="Metaux alcalino
terreux", width=300, font="Arial 15", bg="#FFFF33")
    metauxalcalinoterreux.pack()
    lanthanides= Message(legend1, text="Lanthanides", width=300,
font="Arial 15", bg="#CCCC66")
    lanthanides.pack()
    actinides= Message(legend1, text="Actinides", width=300,
font="Arial 15", bg="#FF3300")
    actinides.pack()
    metaux= Message(legend1, text="Metaux", width=300, font="Arial 15",
bg="#9999FF")
    metaux.pack()

    frame.pack()
    mainloop()

Menu=Tkinter.Menu(sysdemenu)
sysdemenu.add_cascade(label="Menu", menu=Menu)
Menu.add_command(label="Legende", command = legende)
Menu.add_command(label="Quitter", command=fen1.quit)

#création des boutons du tableau
bou_list=[]
for item in tableau[1:]:
    bou=Button(fen1,text=item[1],command=lambda
x=item[2]:elem(x),height=2,width=3,bg=item[6])
    bou.grid(row=item[4],column=item[5]) #grid est utilisé pour classer
les boutons par rangée et colonne
    bou_list.append(bou)

fen1.config(menu=sysdemenu)

#création de la listbox au sommet
(source:http://www.tkdocs.com/tutorial/grid.html)
centre=Listbox(fen1)
centre.grid(row=0,column=3,rowspan= 1,columnspan=8)
centre.insert(END)
for item in ["Nom:","Symbole:", "Numero atomique:","Masse
molaire:","Ligne:","Colonne:","Couleur:"]:
    centre.insert(END,item)
mainloop()
```

```
fen1.destroy()  
fen1.mainloop()
```

## Nécessite ce fichier de données :

[element\\_liste.py](#)

```
tableau=[  
    ["Nom","symbole","Numero atomique","Masse atomique",  
"ligne","colonne","couleur"],  
    ["Hydrogene","H",1,1.00794,1,0,"white"],  
    ["Helium","He",2,4.0026,1,17,"#00CCFF"],  
    ["Lithium","Li",3,6.9412,2,0,"#FF9900"],  
    ["Beryllium","Be",4,9.012182,2,1,"#FFFF33"],  
    ["Bore","B",5,10.811,2,12,"#00FF66"],  
    ["Carbone","C",6,12.0107,2,13,"#00FF66"],  
    ["Azote","N",7,14.00674,2,14,"#00FF66"],  
    ["Oxygene","O",8,15.9994,2,15,"#00FF66"],  
    ["Fluor","F",9,18.9984,2,16,"#00FF66"],  
    ["Neon","Ne",10,20.1797,2,17,"#00CCFF"],  
    ["Sodium","Na",11,22.9897,3,0,"#FF9900"],  
    ["Magnesium","Mg",12,24.3050,3,1,"#FFFF33"],  
    ["Aluminium","Al",13,26.9815,3,12,"#9999FF"],  
    ["Silicium","Si",14,28.0855,3,13,"#00FF66"],  
    ["Phosphore","P",15,30.973761,3,14,"#00FF66"],  
    ["Soufre","S",16,32.066,3,15,"#00FF66"],  
    ["Chlore","Cl",17,35.453,3,16,"#00FF66"],  
    ["Argon","Ar",18,39.948,3,17,"#00CCFF"],  
    ["Potassium","K",19,39.0963,4,0,"#FF9900"],  
    ["Calcium","Ca",20,40.078,4,1,"#FFFF33"],  
    ["Scandium","Sc",21,44.9559,4,2,"#FFCCCC"],  
    ["Titane","Ti",22,47.867,4,3,"#FFCCCC"],  
    ["Vanadium","V",23,50.9415,4,4,"#FFCCCC"],  
    ["Chrome","Cr",24,51.9961,4,5,"#FFCCCC"],  
    ["Manganese","Mn",25,54.9380,4,6,"#FFCCCC"],  
    ["Fer","Fe",26,55.8457,4,7,"#FFCCCC"],  
    ["Cobalt","Co",27,58.9332,4,8,"#FFCCCC"],  
    ["Nickel","Ni",28,58.6934,4,9,"#FFCCCC"],  
    ["Cuivre","Cu",29,63.546,4,10,"#FFCCCC"],  
    ["Zinc","Zn",30,65.409,4,11,"#FFCCCC"],  
    ["Gallium","Ga",31,69.723,4,12,"#9999FF"],  
    ["Germanium","Ge",32,72.64,4,13,"#9999FF"],  
    ["Arsenic","As",33,74.9216,4,14,"#00FF66"],  
    ["Selenium","Se",34,78.96,4,15,"#00FF66"],  
    ["Brome","Br",35,79.904,4,16,"#00FF66"],  
    ["Krypton","Kr",36,83.798,4,17,"#00CCFF"],  
    ["Rubidium","Rb",37,85.4678,5,0,"#FF9900"],  
    ["Strontium","Sr",38,87.62,5,1,"#FFFF33"],  
    ["Yttrium","Y",39,88.9059,5,2,"#FFCCCC"],
```

```
[ "Zirconium", "Zr", 40, 91.224, 5, 3, "#FFCCCC" ],
[ "Niobium", "Nb", 41, 92.9063, 5, 4, "#FFCCCC" ],
[ "Molybdene", "Mo", 42, 95.94, 5, 5, "#FFCCCC" ],
[ "Technetium", "Tc", 43, 98, 5, 6, "#FFCCCC" ],
[ "Ruthenium", "Ru", 44, 101.07, 5, 7, "#FFCCCC" ],
[ "Rhodium", "Rh", 45, 102.9055, 5, 8, "#FFCCCC" ],
[ "Palladium", "Pd", 46, 106.42, 5, 9, "#FFCCCC" ],
[ "Argent", "Ag", 47, 107.8682, 5, 10, "#FFCCCC" ],
[ "Cadmium", "Cd", 48, 112.411, 5, 11, "#FFCCCC" ],
[ "Indium", "In", 49, 114.818, 5, 12, "#9999FF" ],
[ "Etain", "Sn", 50, 118.710, 5, 13, "#9999FF" ],
[ "Antimoine", "Sb", 51, 121.760, 5, 14, "#9999FF" ],
[ "Tellure", "Te", 52, 127.60, 5, 15, "#00FF66" ],
[ "Iode", "I", 53, 126.9045, 5, 16, "#00FF66" ],
[ "Xenon", "Xe", 54, 131.293, 5, 17, "#00CCFF" ],
[ "Cesium", "Cs", 55, 132.9054, 6, 0, "#FF9900" ],
[ "Baryum", "Ba", 56, 137.327, 6, 1, "#FFFF33" ],
[ "Lanthane", "La", 57, 138.9055, 6, 2, "#FFCCCC" ],
[ "Cerium", "Ce", 58, 140.116, 8, 4, "#CCCC66" ],
[ "Praseodyme", "Pr", 59, 140.9076, 8, 5, "#CCCC66" ],
[ "Neodyme", "Nd", 60, 144.24, 8, 6, "#CCCC66" ],
[ "Promethium", "Pm", 61, 145, 8, 7, "#CCCC66" ],
[ "Samarium", "Sm", 62, 150.36, 8, 8, "#CCCC66" ],
[ "Europium", "Eu", 63, 151.964, 8, 9, "#CCCC66" ],
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[ "Terbium", "Tb", 65, 158.9253, 8, 11, "#CCCC66" ],
[ "Dysprosium", "Dy", 66, 162.500, 8, 12, "#CCCC66" ],
[ "Holmium", "Ho", 67, 164.9303, 8, 13, "#CCCC66" ],
[ "Erbium", "Er", 68, 167.259, 8, 14, "#CCCC66" ],
[ "Thulium", "Tm", 69, 168.9342, 8, 15, "#CCCC66" ],
[ "Ytterbium", "Yb", 70, 173.04, 8, 16, "#CCCC66" ],
[ "Lutecium", "Lu", 71, 174.967, 8, 17, "#CCCC66" ],
[ "Hafnium", "Hf", 72, 178.49, 6, 3, "#FFCCCC" ],
[ "Tantale", "Ta", 73, 180.9479, 6, 4, "#FFCCCC" ],
[ "Tungstene", "W", 74, 183.84, 6, 5, "#FFCCCC" ],
[ "Rhenium", "Re", 75, 186.207, 6, 6, "#FFCCCC" ],
[ "Osmium", "Os", 76, 190.23, 6, 7, "#FFCCCC" ],
[ "Iridium", "Ir", 77, 192.217, 6, 8, "#FFCCCC" ],
[ "Platine", "Pt", 78, 195.078, 6, 9, "#FFCCCC" ],
[ "Or", "Au", 79, 166.9665, 6, 10, "#FFCCCC" ],
[ "Mercure", "Hg", 80, 200.59, 6, 11, "#FFCCCC" ],
[ "Thallium", "Tl", 81, 204.3833, 6, 12, "#9999FF" ],
[ "Plomb", "Pb", 82, 207.2, 6, 13, "#9999FF" ],
[ "Bismuth", "Bi", 83, 208.9803, 6, 14, "#9999FF" ],
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[ "Radon", "Rd", 86, 222, 6, 17, "#00CCFF" ],
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[ "Radium", "Ra", 88, 226, 7, 1, "#FFFF33" ],
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[ "Actinium", "Ac", 89, 227, 7, 2, "#FFCCCC" ],
[ "Thorium", "Th", 90, 232.0381, 9, 4, "#FF3300" ],
[ "Protactinium", "Pa", 91, 231.0359, 9, 5, "#FF3300" ],
[ "Uranium", "U", 92, 238.02891, 9, 6, "#FF3300" ],
[ "Neptunium", "Np", 93, 237, 9, 7, "#FF3300" ],
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[ "Curium", "Cm", 96, 247, 9, 10, "#FF3300" ],
[ "Berkelium", "Bk", 97, 247, 9, 11, "#FF3300" ],
[ "Californium", "Cf", 98, 251, 9, 12, "#FF3300" ],
[ "Einsteinium", "Es", 99, 252, 9, 13, "#FF3300" ],
[ "Fermium", "Fm", 100, 257, 9, 14, "#FF3300" ],
[ "Mendelevium", "Md", 101, 258, 9, 15, "#FF3300" ],
[ "Nobelium", "No", 102, 259, 9, 16, "#FF3300" ],
[ "Lawrencium", "Lr", 103, 262, 9, 17, "#FF3300" ],
[ "Rutherfordium", "Rf", 104, 261, 7, 3, "#FFCCCC" ],
[ "Dubnium", "Db", 105, 262, 7, 4, "#FFCCCC" ],
[ "Seaborgium", "Sg", 106, 266, 7, 5, "#FFCCCC" ],
[ "Bohrium", "Bh", 107, 264, 7, 6, "#FFCCCC" ],
[ "Hassium", "Hs", 108, 269, 7, 7, "#FFCCCC" ],
[ "Meitneium", "Mt", 109, 268, 7, 8, "#FFCCCC" ],
[ "Darmstadtium", "Ds", 110, 271, 7, 9, "#FFCCCC" ],
[ "Roentgenium", "Rg", 111, 272, 7, 10, "#FFCCCC" ],
[ "Copernicium", "Cn", 112, 285, 7, 11, "#FFCCCC" ],
[ "Ununtrium", "Uut", 113, 184, 7, 12, "#9999FF" ],
[ "Ununquadium", "Uuq", 114, 289, 7, 13, "#9999FF" ],
[ "Ununpentium", "Uup", 115, 288, 7, 14, "#9999FF" ],
[ "Ununhexium", "Uuh", 116, 292, 7, 15, "#9999FF" ],
[ "Ununseptium", "Uus", 117, "-", 7, 16, "white" ],
[ "Ununoctium", "Uuo", 118, "-", 7, 17, "white" ]
]
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