

Tableau périodique

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#!/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
systemenu=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 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,
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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 :

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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"],

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["Indium", "In", 49, 114.818, 5, 12, "#9999FF"],
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["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"],
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["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"],
["Gadolinium", "Gd", 64, 157.25, 8, 10, "#CCCC66"],
["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"],
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["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"],
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["Radium", "Ra", 88, 226, 7, 1, "#FFFF33"],
["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"],
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["Plutonium", "Pu", 94, 244, 9, 8, "#FF3300"],
["Americium", "Am", 95, 243, 9, 9, "#FF3300"],
["Curium", "Cm", 96, 247, 9, 10, "#FF3300"],
["Berkelium", "Bk", 97, 247, 9, 11, "#FF3300"],
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[ "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" ],
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[ "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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