University of Bourgogne

Computer Science: Python

TD3

Exercise 1

Create a graphical interface that asks the user to enter his name, first name and date of birth, and display "last name first name was born on date of birth"

Exercise 2

Create a graphical interface that displays the current time after clicking on the button 'current time'

Exercise 3

Build with tkinter a window containing a canvas and four buttons:

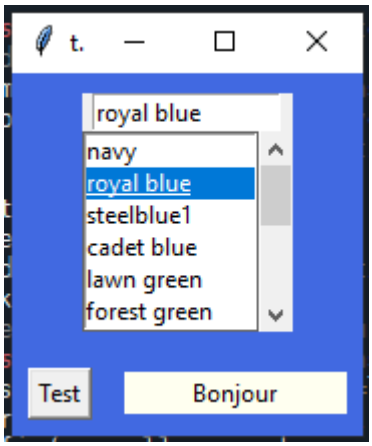
- the button " Draw a circle " : displays in the canvas a circle of thickness 2 pixels whose coordinates (between 50 and 250) of the center and the radius (between 10 and 40) are random;

- the button " Change color " should randomly change the color of the paths. The different possible colors are defined in the list: ['purple', 'cyan', 'green', 'red', 'blue', 'orange', 'black'] ;

- the [Clear] button should clear all circles already drawn. It should reset the color of the next trace to 'blue'.

Exercise 4

We want to build the graphical window below:



To do this, we will use a combox widget which associates an input field with a list box:

- the user of this widget can enter into the system either one of the items in the proposed list (by clicking on its name) or an unlisted item (by entering a new name in the entry field.

- Our combo widget will therefore combine three basic tkinter widgets into one entity: an entry field, a listbox and a scrollbar. The listbox and its scrollbar will be closely associated, since the

scrollbar allows you to scroll through the list in its box. It is important to ensure that the scrollbar is always the same height as the box, regardless of the size of the box.

- When the user chooses a color from the list (he can also enter a color name directly in the input field), this color automatically becomes the background color for the master window.

- The master window contains a label and a button, to show you how you can access the previously made selection in the ComboBox itself (the button causes the name of the last chosen color to be displayed).

Create this interface with tkinter.

Exercise 5

a) Create a short program that will draw the 10 Olympic rings in a white rectangle. A "Quit" button should close the window.

b) Modify the above program by adding 5 buttons. Each of these buttons will cause each of the 5 rings to be drawn.

Exercise 6

Write a program that makes a window with a canvas appear. In this canvas, we will see two circles (of different size and color), which are supposed to represent two stars. Buttons should allow you to move both of them at will in any direction. Below the canvas, the program should display permanently:

a) the distance between the two stars ;

b) the gravitational force they exert on each other (remember to display the masses chosen for each of them at the top of the window, as well as the distance scale).

In this exercise, you will obviously use Newton's law of universal gravitation

Exercise 7

Program a simple calculator in python with tkinter.

This calculator will be able to perform the following operations: addition, subtraction, multiplication, division and square root.

Include a clear button