# Interface graphique QtDesigner


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Zaghouan & Mannouba

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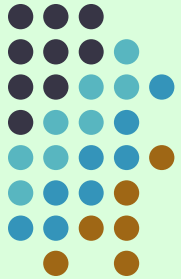
# Plan

- Installation Qt designer
- Un nombre donné est-il premier?
- Les nombres premiers dans un intervalle
- Les nombres premiers dans un intervalle (liste)
- Somme des chiffres de chaque élément d'un tableau

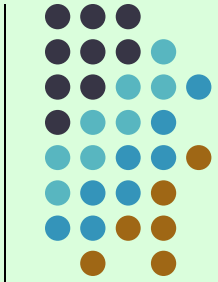
# Installation : Qt designer



1. Installer l'Editeur Qt Designer :

https://build-system.fman.io/qt-designer-download

# Installation : PyQt5 plugins



1. Editeur Idle : Installer la bibliothèque PyQt5

   * pip install PyQt5
   * pip install PyQt5-tools

2. Editeur Thonny : Télécharger les plugins suivants :

   * PyQt5_Qt5-5.15.2-py3-none-win32.whl
   * PyQt5_sip-12.9.0-cp37-cp37m-win32.whl
   * PyQt5-5.15.4-cp36.cp37.cp38.cp39-none-win32.whl

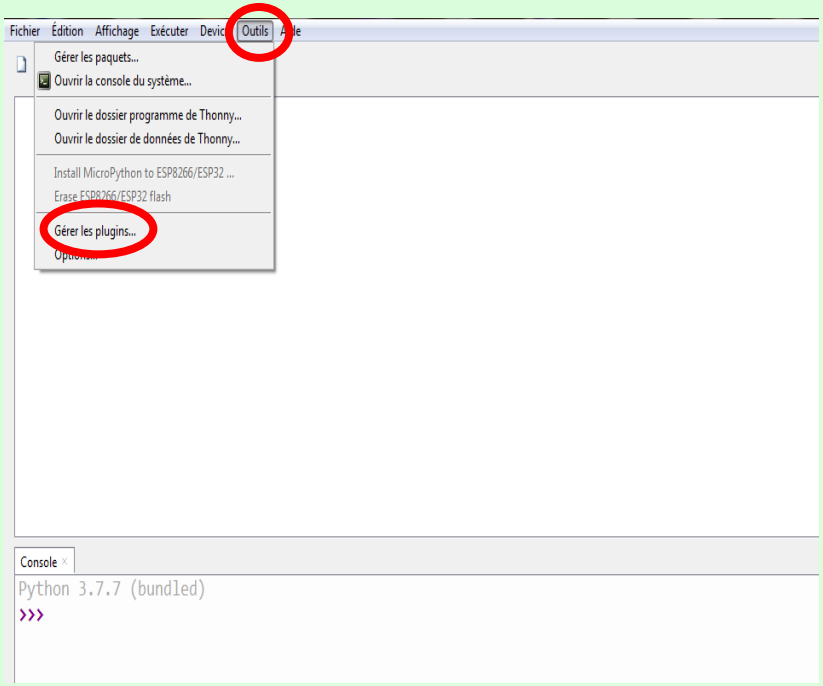
# Installation : PyQt5 plugins

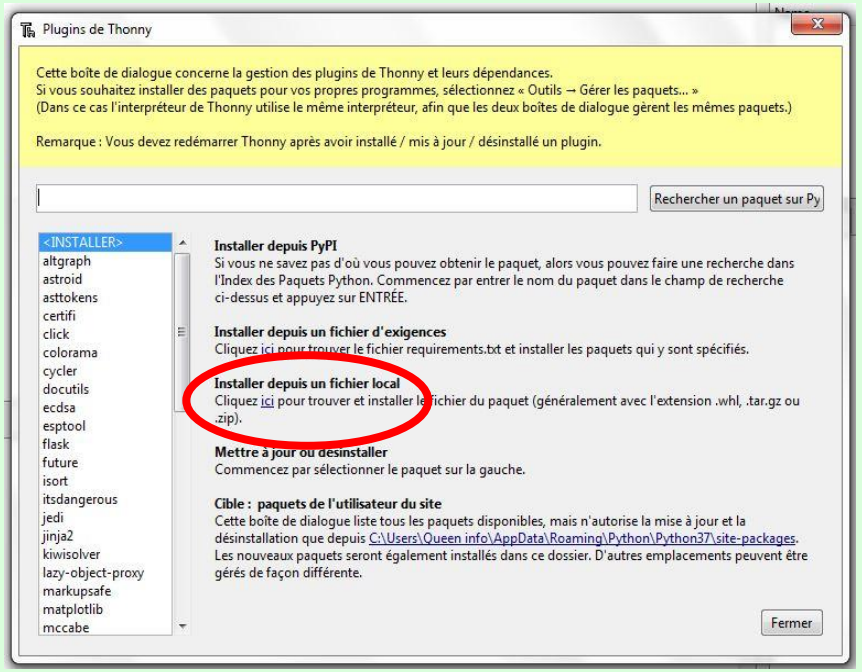
2. Editeur Thonny :

Pour installer, en hors ligne, des plugins sur les pc des apprenants :

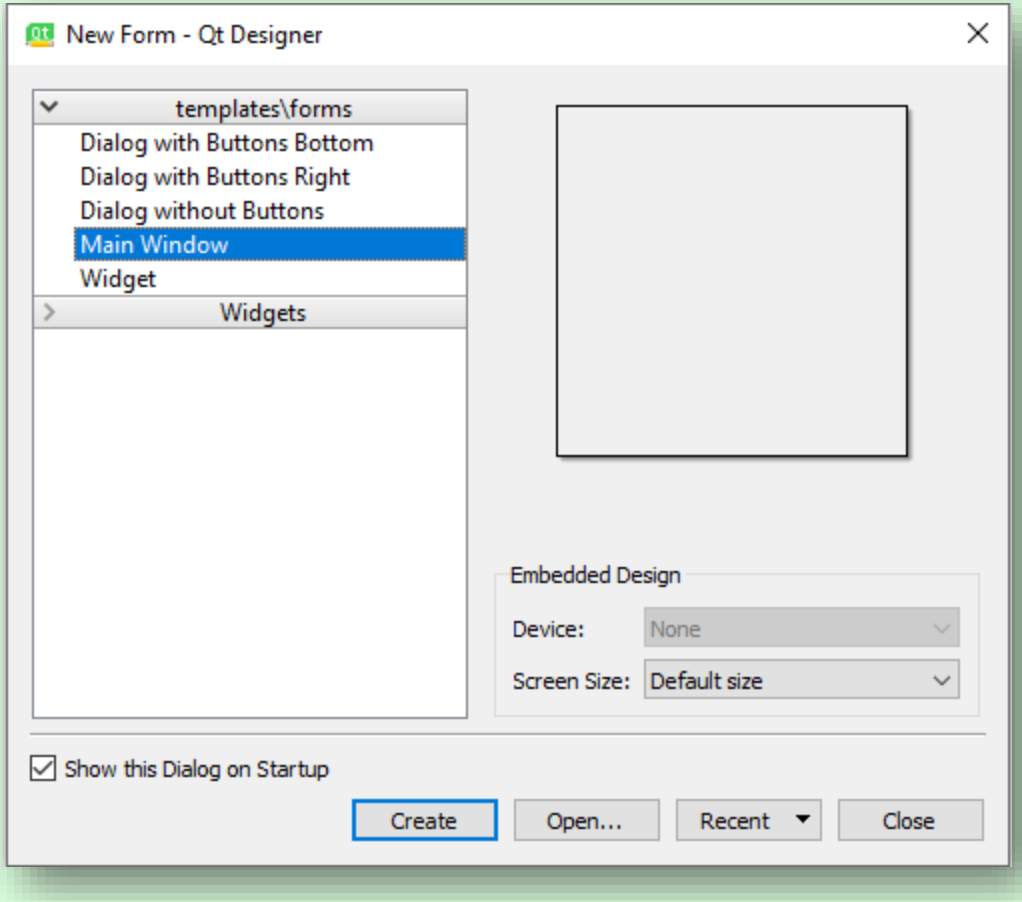
1- récupérer les plugins depuis https://pypi.org/

2- installer ces plugins comme suit :



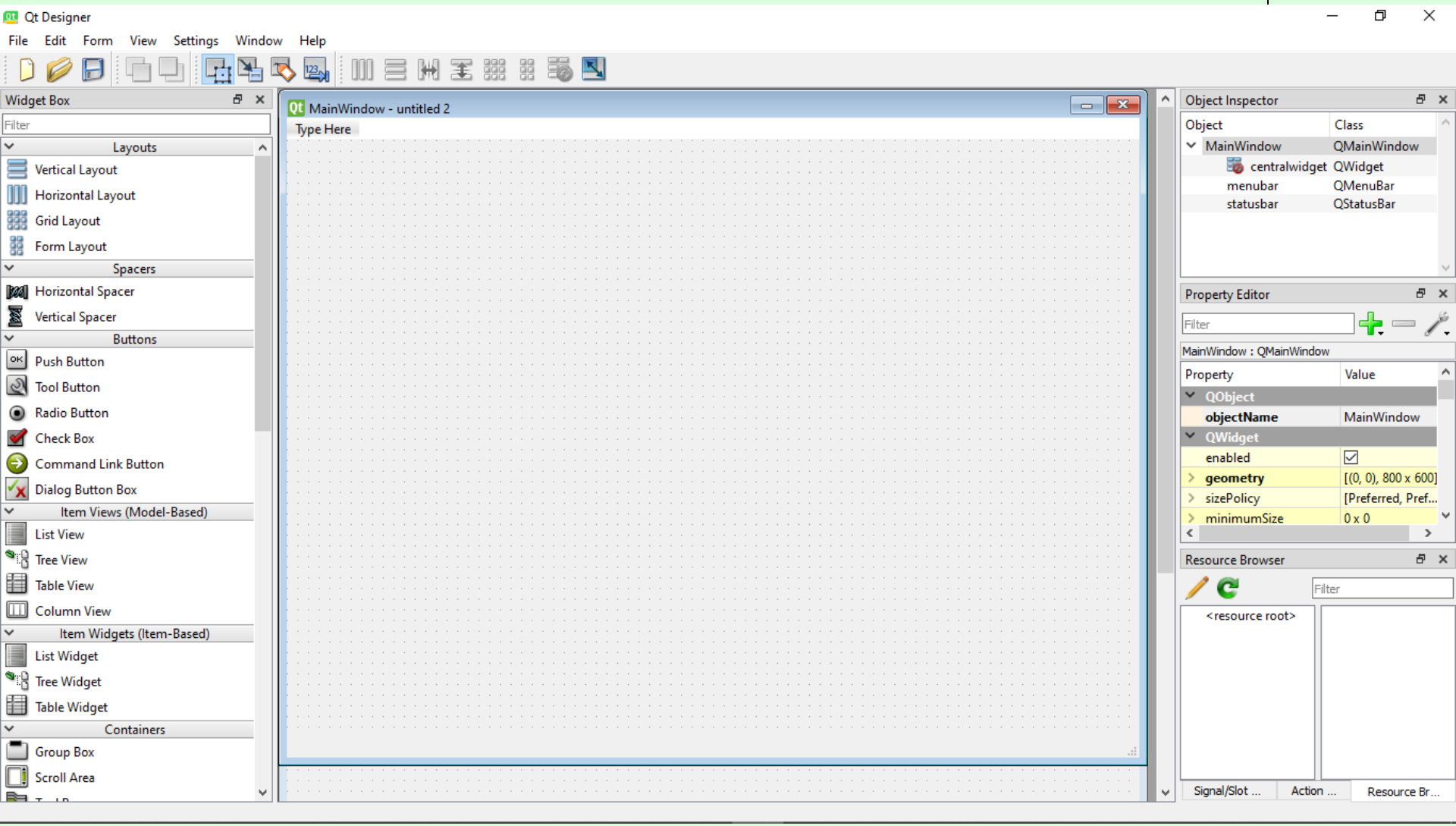



# Interface : Qt designer

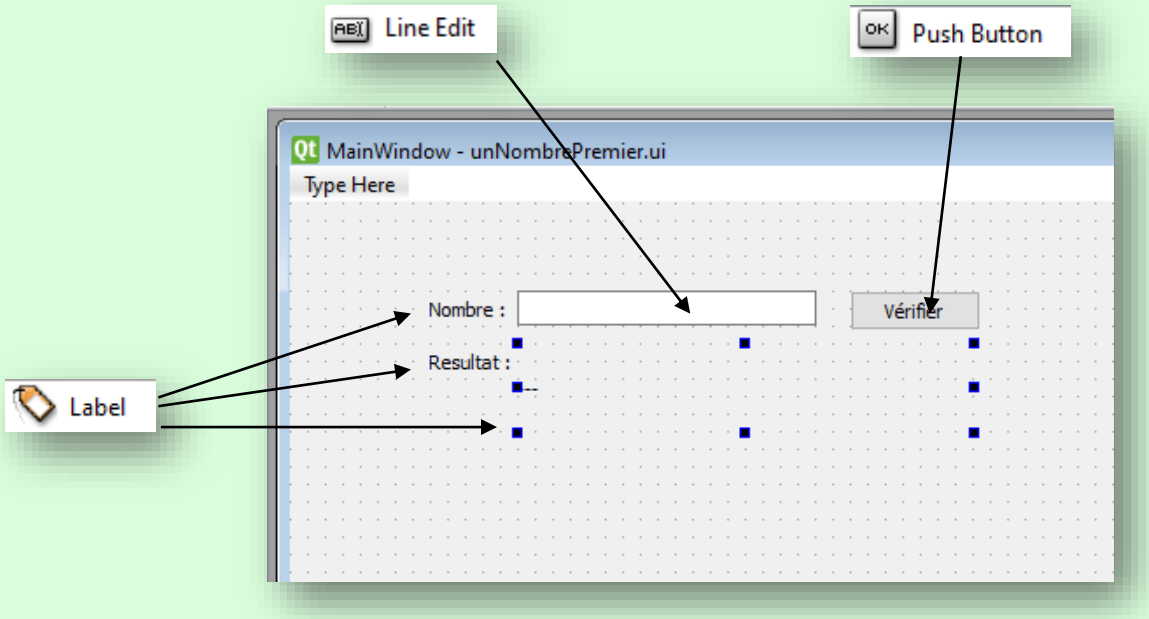


# Activité 1 :

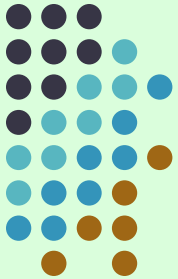
Vérifier si nombre donné est premier ou non ?

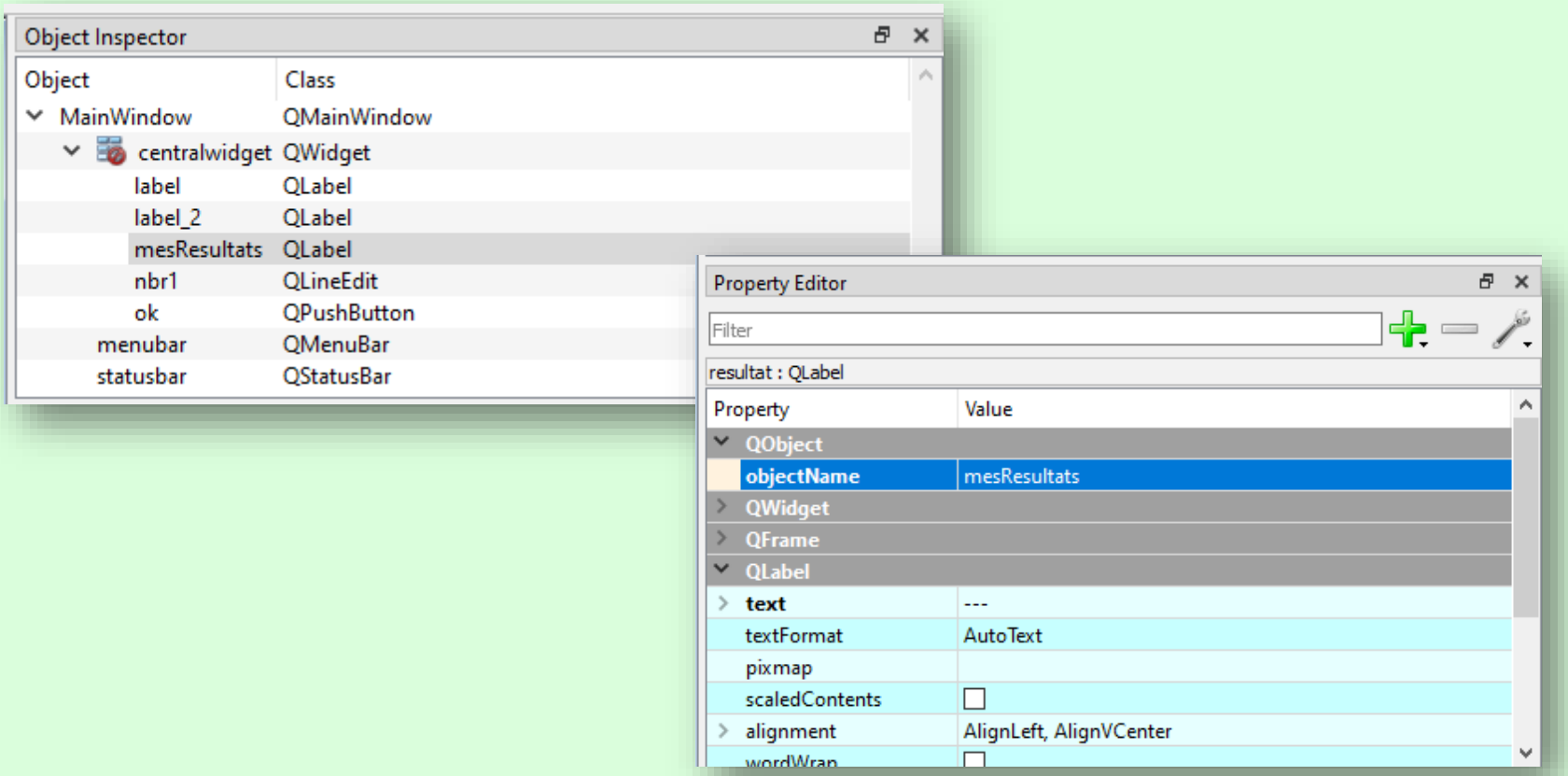


# Activité 1 : Conception de l'interface

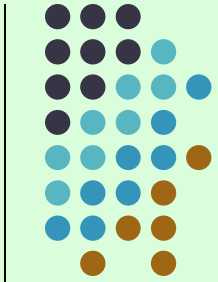


# Modifier les propriétés des objets





# Activité 1 : Code python



## Bibliothèques

```
from PyQt5 import uic
from PyQt5.QtWidgets import QApplication
```

## Initialisation et assignation du formulaire

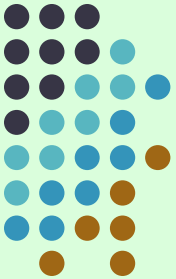
```
Form, Window = uic.loadUiType("unNombrePremier.ui")
app = QApplication([])
win = Window()
ff = Form()

ff.setupUi(win)

ff.ok.clicked.connect(afficher)

win.show()
app.exec_()
```

# Activité 1 : Code python



```
from PyQt5 import uic
from PyQt5.QtWidgets import QApplication


Form, Window = uic.loadUiType("unNombrePremier.ui")

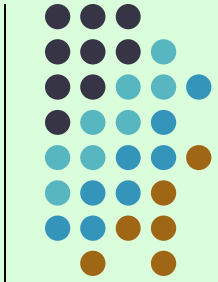
app = QApplication([])
win = Window()
ff = Form()

ff.setupUi(win)
win.setWindowTitle("Nombre premier")

ff.ok.clicked.connect(afficher)

win.show()
app.exec_()
```

# Activité 1 : Code python



```
def afficher():
    x = ff.nbr1.text()
    if nombrePremier( int (x ) ) :
        res = " Premier "
    else :
        res = " Non premier "
    ff.mesResultats.setText(res)
```

```
def nombrePremier(xx):
    i=2
    while (xx % i != 0 ) and (i<(xx/2)):
        i = i+1
    return (i > (xx/2))
```

Ou bien :

```
res = ' Premier ' if nombrePremier(int(x)) else ' Non premier '
```

# Activité 1 : Code python

```
from PyQt5 import uic
from PyQt5.QtWidgets import QApplication

def nombrePremier(xx):
    i=2
    while (xx % i != 0 ) and (i<(xx/2)):
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    return (i > (xx/2))


def afficher():
    x = ff.nbr1.text()
    res = ' Premier ' if nombrePremier(int(x)) else ' Non premier '
    ff.mesResultats.setText(res)


Form, Window = uic.loadUiType("unNombrePremier.ui")

app = QApplication([])
win = Window()
ff = Form()

ff.setupUi(win)
win.setWindowTitle("Nombre premier")

ff.ok.clicked.connect(afficher)

win.show()
app.exec_()
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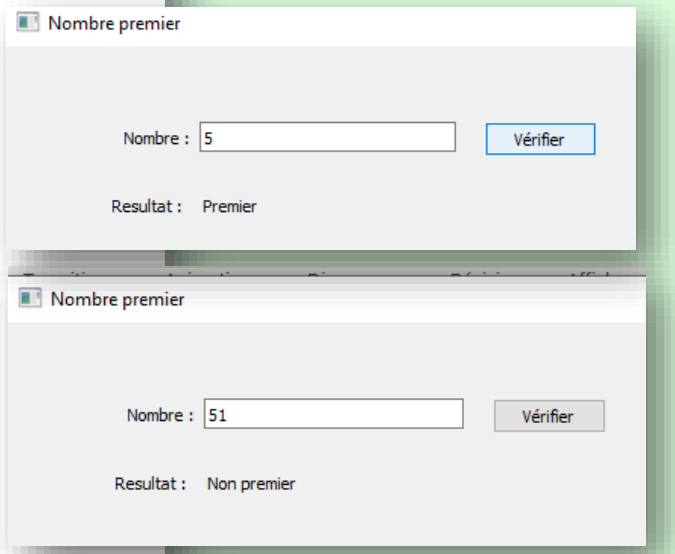
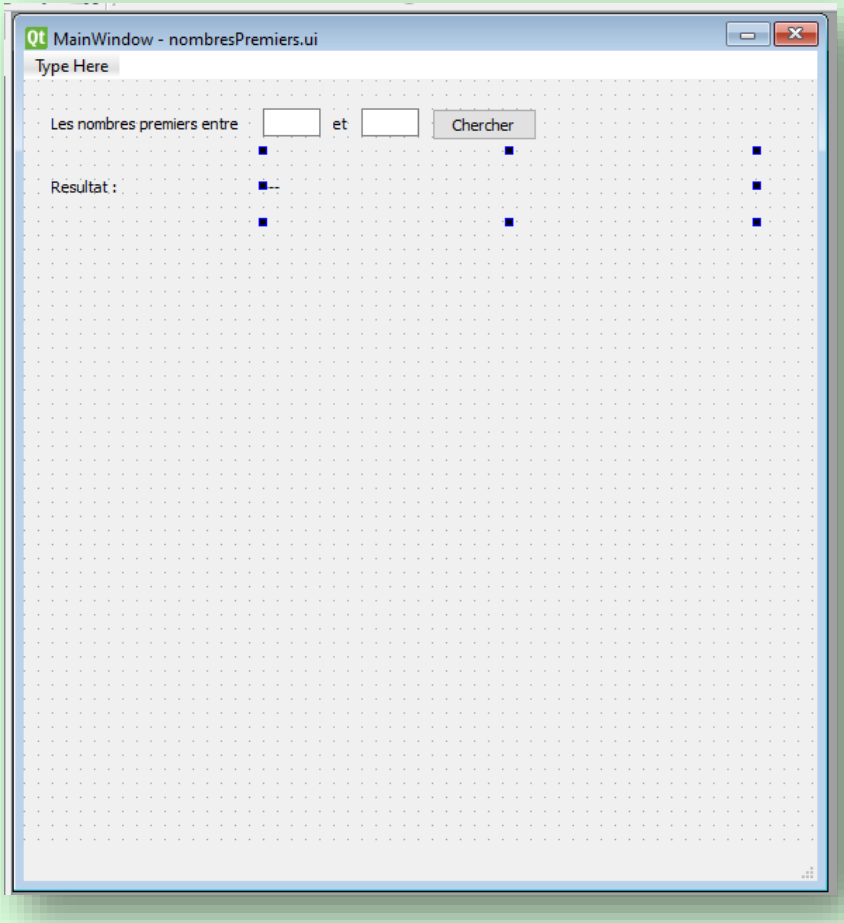
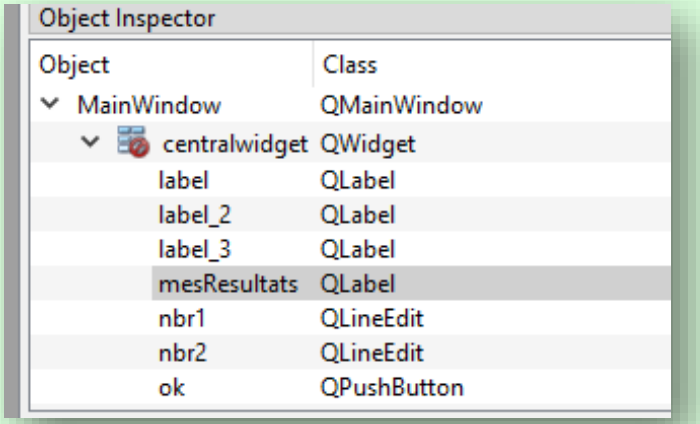


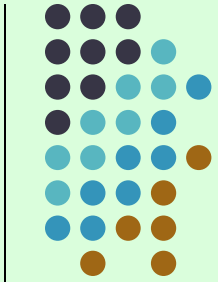
# Activité 2 :

Afficher les nombres premiers dans un intervalle donné



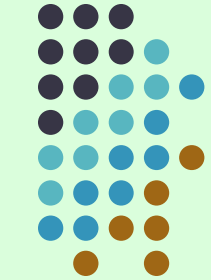
# Activité 2 : Code python



```
def afficher():
    res = "  "
    a = int(ff.nbr1.text())
    b = int(ff.nbr2.text())+1
    for i in range(a , b) :
        if nombrePremier(i) :
            res = res+" "+str(i)

    ff.mesResultats.setText(res)
```

# Activité 2 : Code python



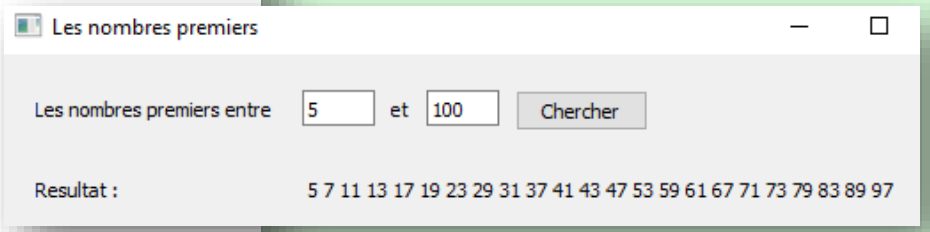
```
from PyQt5 import uic
from PyQt5.QtWidgets import QApplication

def nombrePremier(xx):
    i=2;
    while (xx % i != 0 ) and (i<(xx/2)):
        i = i+1
    return (i > (xx/2))

def afficher():
    a = int(ff.nbr1.text())
    b=int(ff.nbr2.text())+1
    res = ""
    for xx in range(a,b):
        if nombrePremier(xx):
            res = res+" "+str(xx)

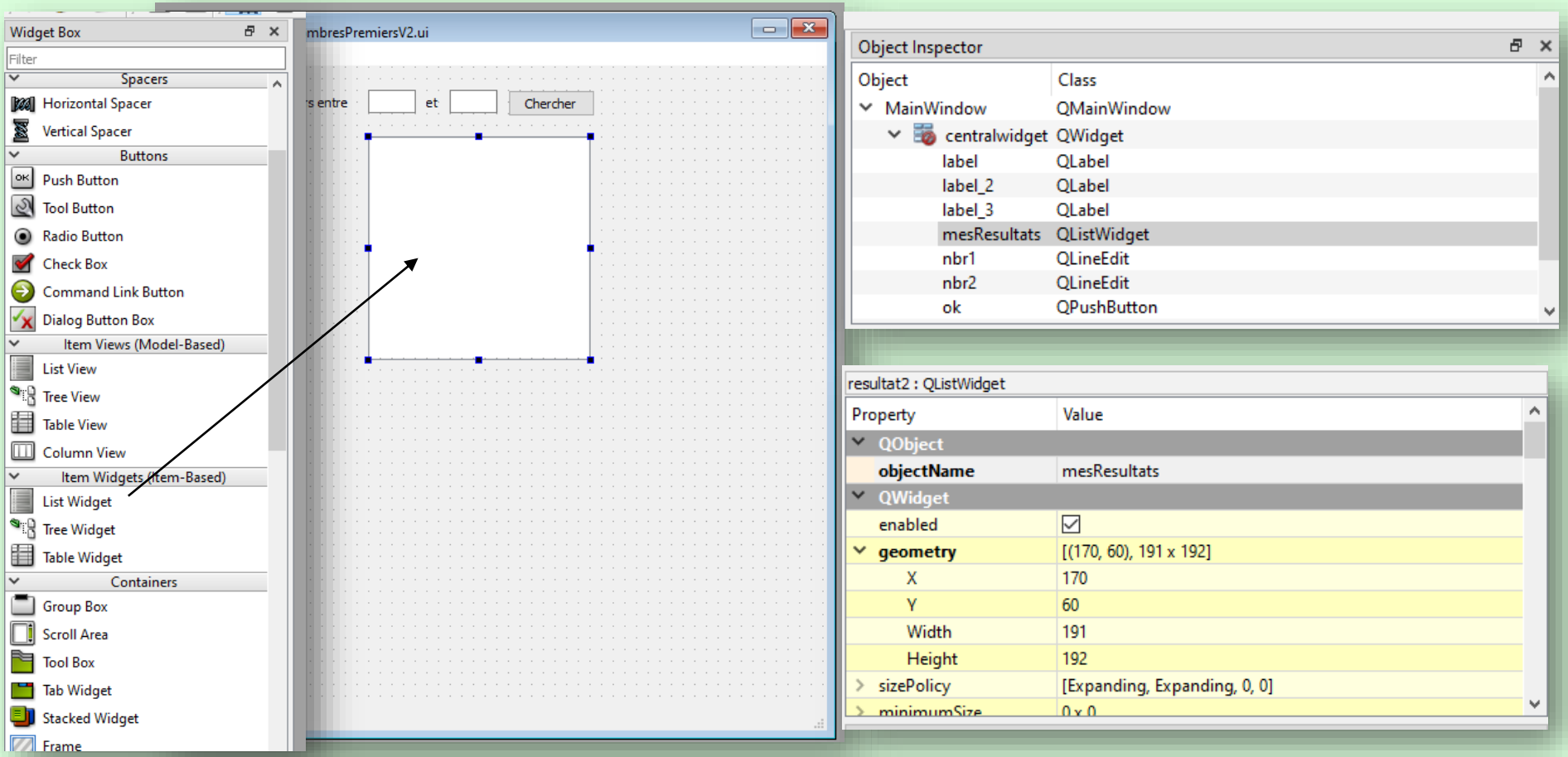

    ff.mesResultats.setText(res)

Form, Window = uic.loadUiType("nombresPremiers.ui")
app = QApplication([])
win = Window()
ff = Form()
ff.setupUi(win)
win.setWindowTitle("Les nombres premiers")
ff.ok.clicked.connect(afficher)
win.show()
app.exec_()
```

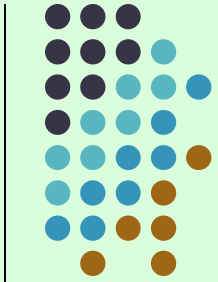


# Activité 3 :

Afficher, dans une liste déroulante, les nombres premiers dans un intervalle donné



# Activité 3 : Code python



```
def afficher():
    a = int(ff.nbr1.text())
     b = int(ff.nbr2.text())+1
     for i in range(a , b) :
           if nombrePremier(i) :
             ff.mesResultats.addItem(str(i))
```

# Activité 3 : Code python

```
from PyQt5 import uic
from PyQt5.QtWidgets import QApplication

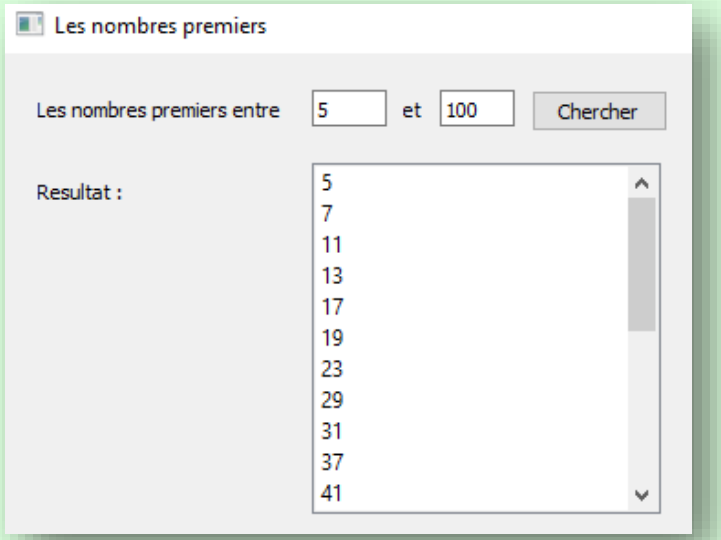
def nombrePremier(xx):
    i=2
    while (xx % i != 0 ) and (i<(xx/2)):
        i = i+1
    return (i > (xx/2))

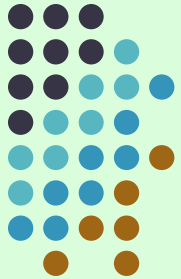
def afficher():
    a = int(ff.nbr1.text())
    b = int(ff.nbr2.text())+1
    for xx in range(a,b):
        if nombrePremier(xx):
            ff.mesResultats.addItem(str(xx))

Form, Window = uic.loadUiType("nombresPremiers.ui")
app = QApplication([])
win = Window()
ff = Form()
ff.setupUi(win)
win.setWindowTitle("Les nombres premiers")

ff.ok.clicked.connect(afficher)

win.show()
app.exec_()
```





# Activité 4 :

A vous …

Ecrire un programme python permettant, à travers une interface graphique, de remplir un tableau par 10 entiers puis afficher la somme des chiffres de chaque élément.

# Solution

```
from PyQt5 import uic
from PyQt5.QtWidgets import QApplication
from numpy import *

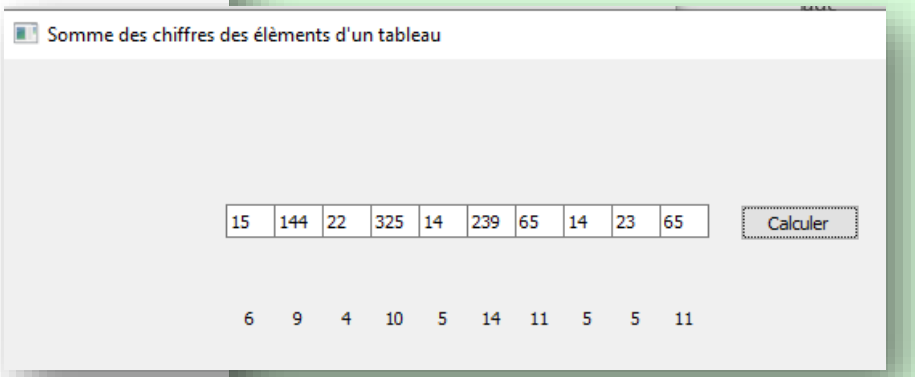
def sommeChiffres(xx):
    resultat = 0
    for i in range(len(xx)):
        resultat = resultat + int(xx[i])

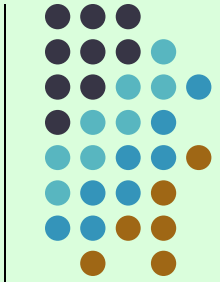
    return resultat

def afficher(L):
    for i in range(10):
        L[i]= sommeChiffres(str(L[i]))
        y = "ff.r" + str(i)+ ".setText('" + str(L[i]) + "')"
        eval(y)

def demarrer():
    L= array ( [0] * 10 )
    v=""
    for i in range(10):
        v ="v"+str(i)
        y ="ff."+v+".text()"
        L[i] =eval(y)
    afficher(L)

Form, Window = uic.loadUiType("sommeChiffres.ui")
app = QApplication([])
win = Window()
ff = Form()
ff.setupUi(win)
win.setWindowTitle("Somme des chiffres des élèments d'un tableau")
ff.ok.clicked.connect(demarrer)
win.show()
app.exec_()
```





# Merci pour votre attention…