Auteur: karim NASR Date: 23/11/2025

Objet du document:
A pour but d'expliquer quelques programmes pour approfondir QT.
Historique:

18/09/024 KNA ajout de QtThreeWidgetTutorial.Exemple sur les checkbox.
18/09/024 KNA, évolution de la première version, ajout de LCD et de la somme de la commande. 20/09/024 KNA, ajout de nouveaux projet DisplayWindows et ReadingWritingTextFile. 12/10/2024 KNA ajout exemple sur FontDialog-utilisateur change la police de caractere dans fenêtre, InputDialogMultiline, ToolBar.
Debut de manipulations avec les exemples du cours dans documentation « Qt-Widgets-
Layouts »: QvBoxLayout.Ajout de QtWidgetGroupBox/ QtWidgetSliderGroup/ QtCheckedListWidget/QtLCDnumber.
11/11/2024 KNA ajout exemple sur la gestion d'une base de donnees contacts par SQLite (nom du projet GestionContacts)
13/11/2024 KNA Modification de la GestionContact par ajout de la gestion categorie avec une comboBox.
28/10/2025 KNA ajout TP horloge digitale compte a rebours
15/11/2025 KNA ajout Qt-QsqlRelationalModel (projet Pychart),QDataWidgetMapper extrait livre Qt framework,Qt-CreationFormulaire, utilisation QFONT avec formulaire,Qt-GestionFeuilleStyle,Qt-GestionSignalSlot.
21/11/2025 KNA ajout Qt_StateMachine utilisation de QtTimer pour afficher des fenetres temporises. Ajout de projet Qt-timer (scheduler de fenetre avec Qtimer).
23/11/2025 Ajout de LedIndicatorWidget simulant des feux R/V pendant 1 minute.

14/12/2025 ajout de script1 pour utiliser la librairie matloblib pour tracer des courbes

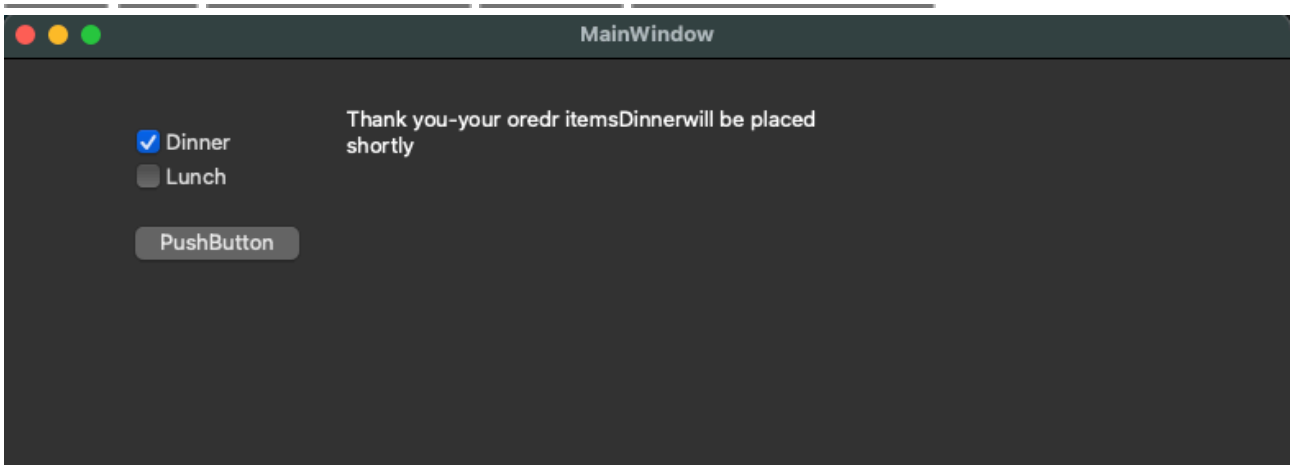
QtThreeWidgetTutorial:

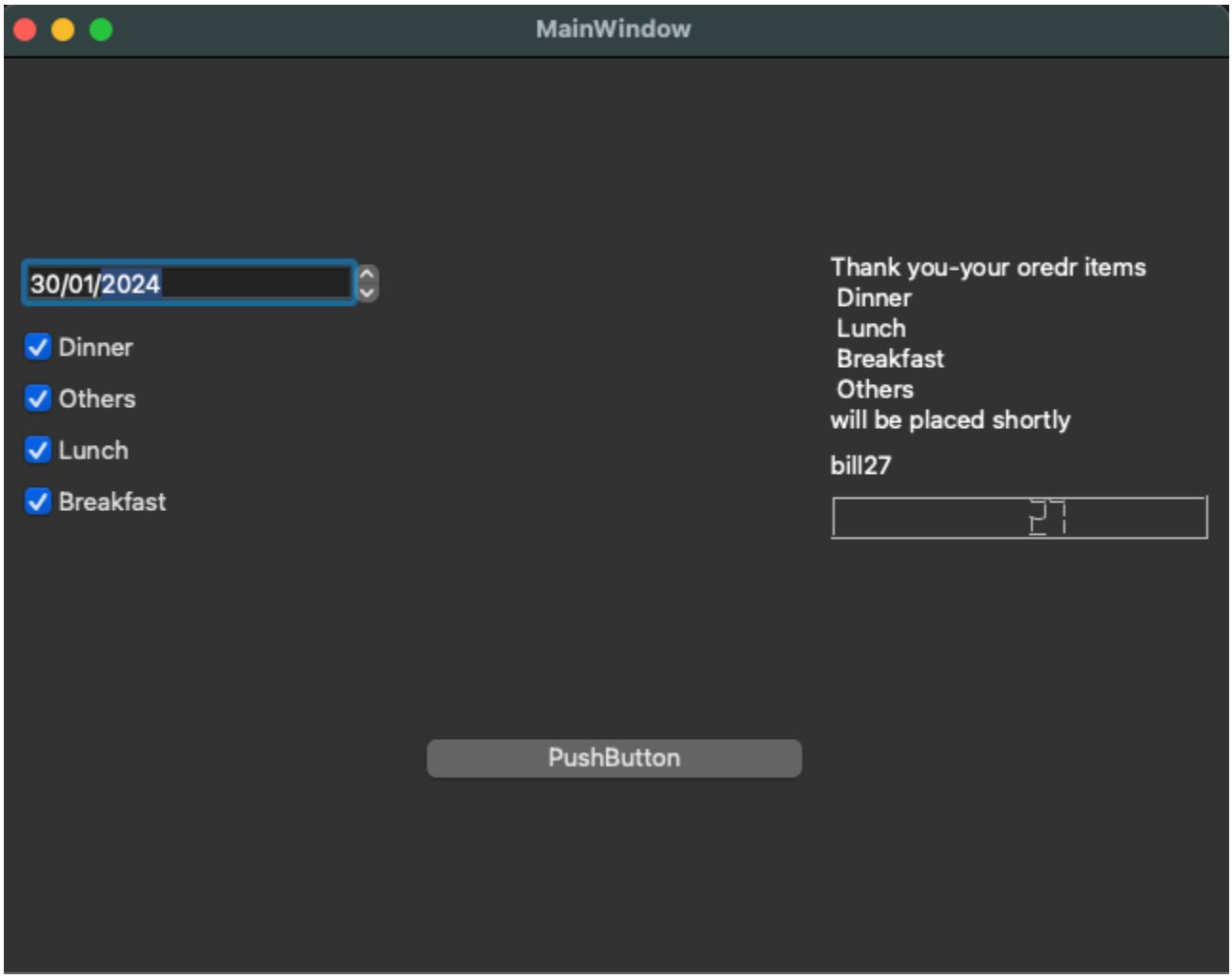
Contient un exemple basique sur les checkbox dans QtCreator.
Ici le choix est fait entre Dinner et lunch et qhand appui sur « Push button » on affiche dans le label les differents choix faits.

Extrait youtube

QCheckBox | How to use QCheckBox in Qt5 | (Qt C++ Tutorial #16) MacDigia

Ajout dans la deuxième version d’un label d ‘affichage de la somme ainsi d’un LCD d’affichage de la valeur entière de la somme.



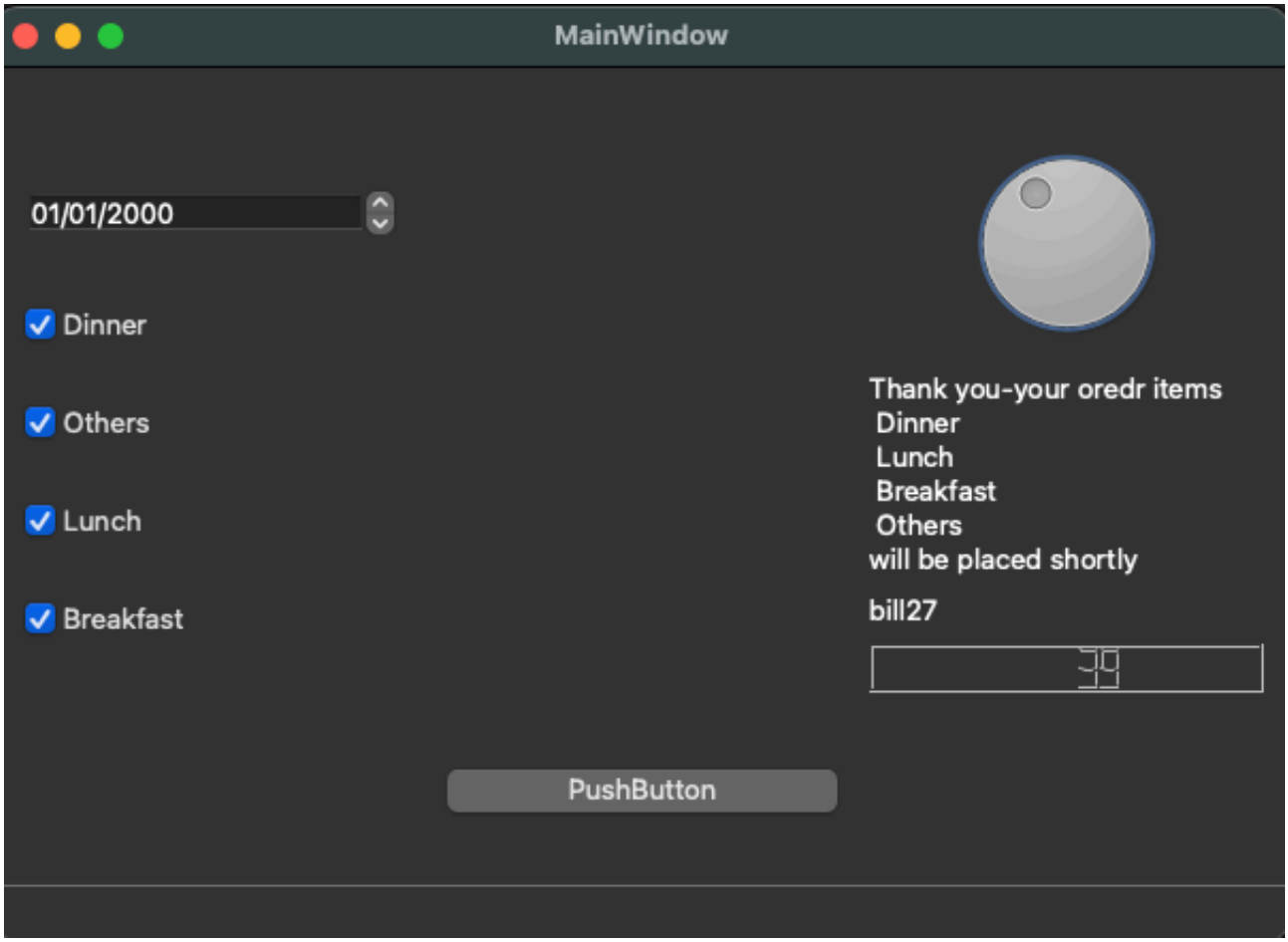


Ajout

On
somme de la commande sur le LCD.

d’un curseur circulaire dont la valeur est affichée sur le LCD lorsque celui change.

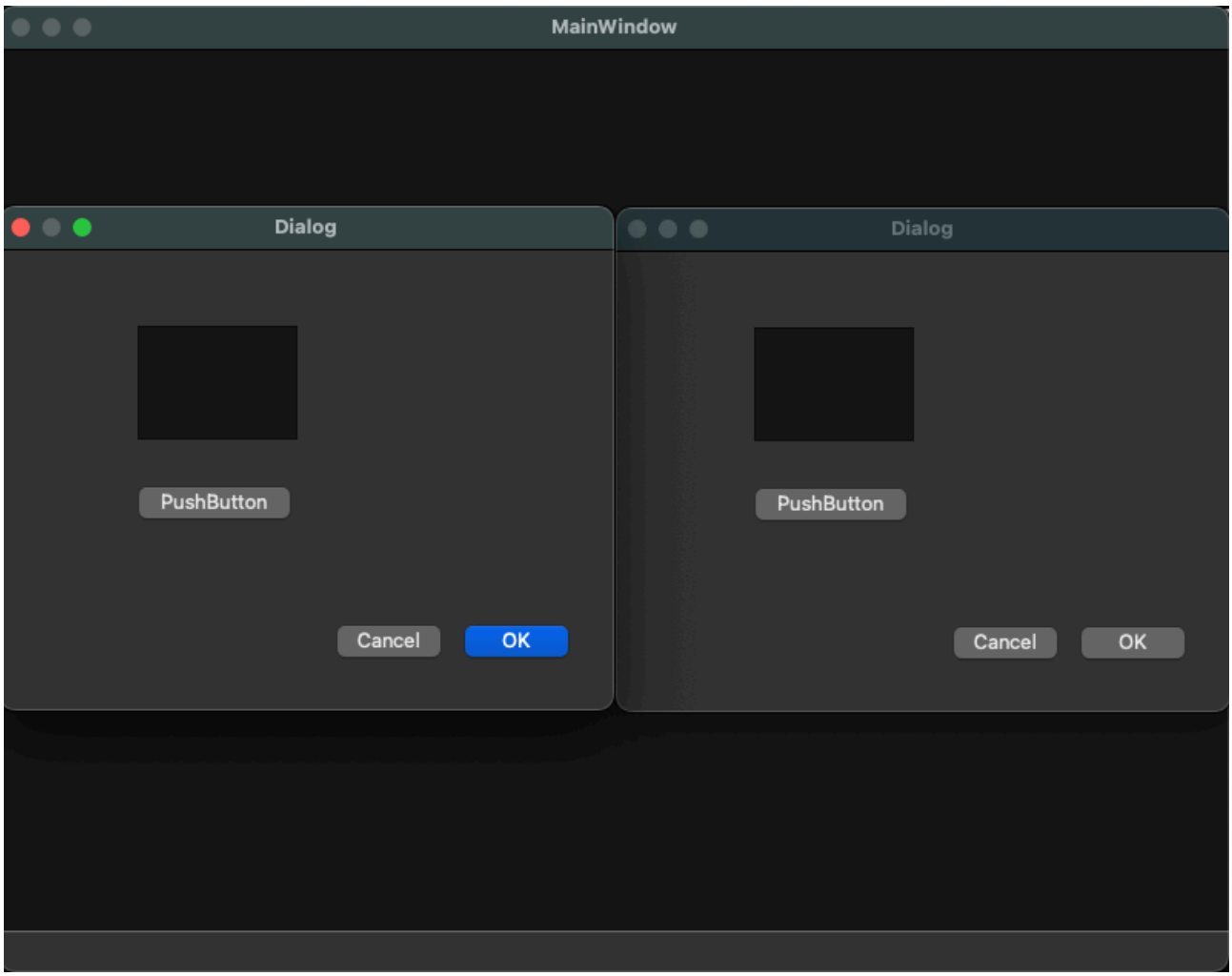
affiche également toujours la



Le dossier displayingWindows est extrait de youtibe VoidRealms Creation d'un projet nommé DisplayingWindows sous Qt

pour la création de boites de dialogues extrait de youtube VoidRealms
// creation d'un nouveau formulaire de dialog dans formulaire et le fichier //dialog.h

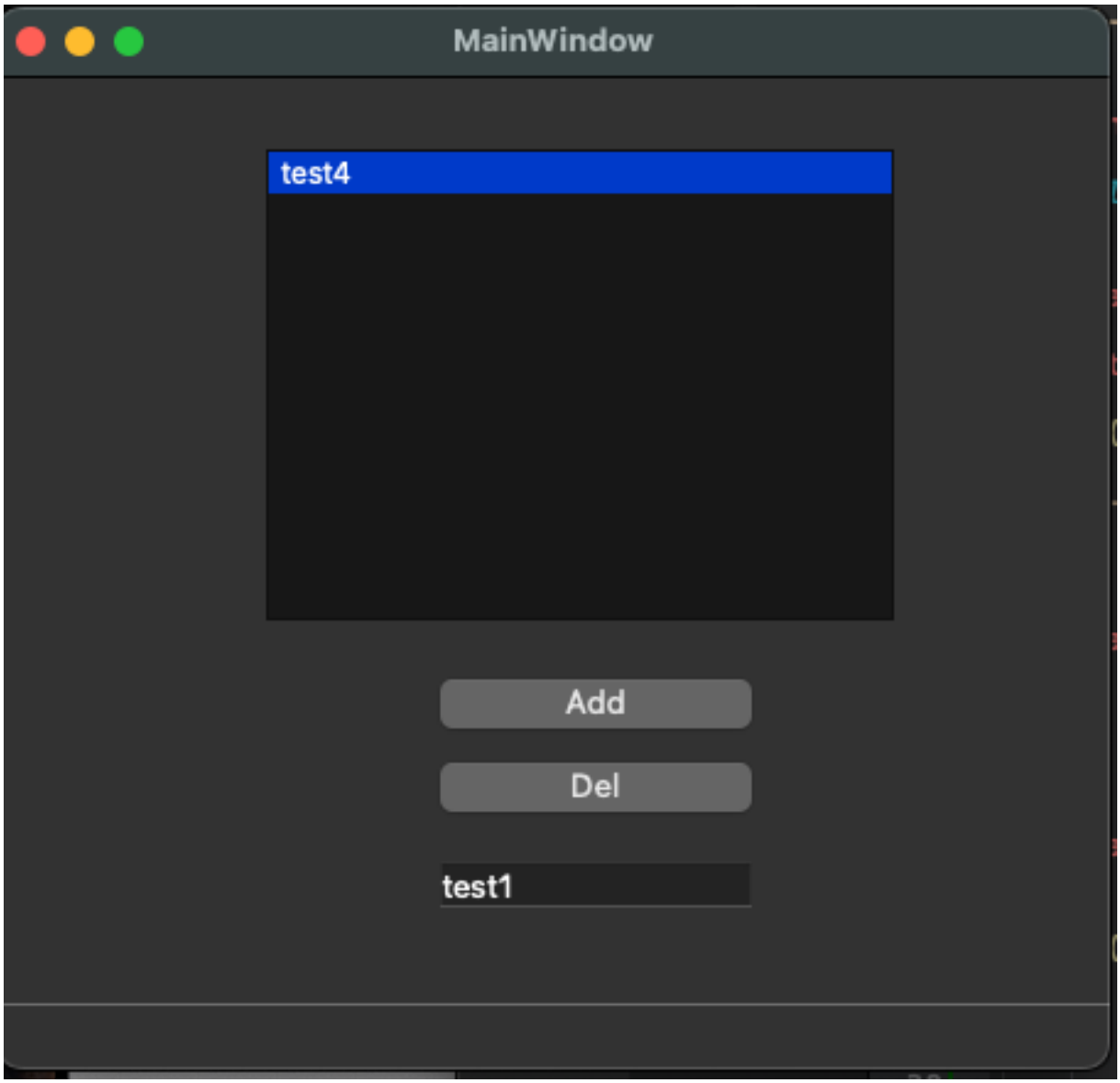
// modification de mainwindow.h pour intégrer Dialog *mDialog;

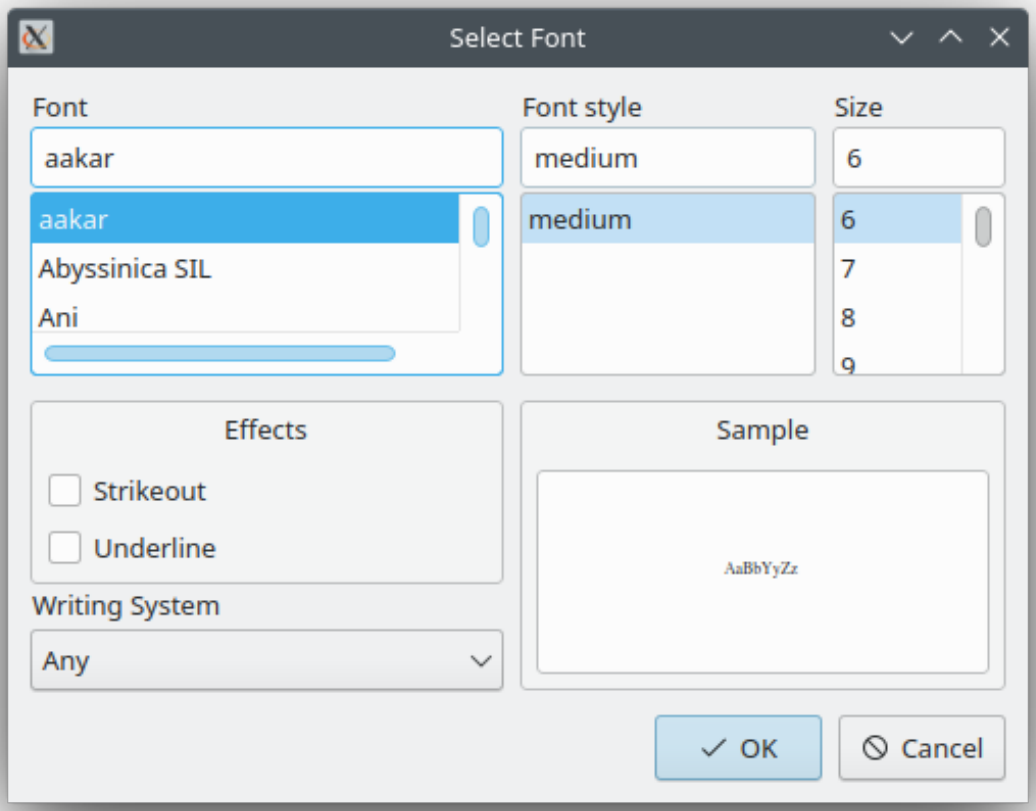


Le dossier ReadingWritingTextFile est extrait de YouTube
On ecrit et lit dans un fichier « test.txt » avec OStream, si on change le nom du fichier alors message « file not found »

Le dossier QlistWidgetExemple est extrait de YouTube de LearnQT (How to add items and delete selected items with QListWidget)
Montre les fonctions de list widget , on peut ajouter ou supprimer
Des items saisies dans lineEdit avec boutons Add/Del

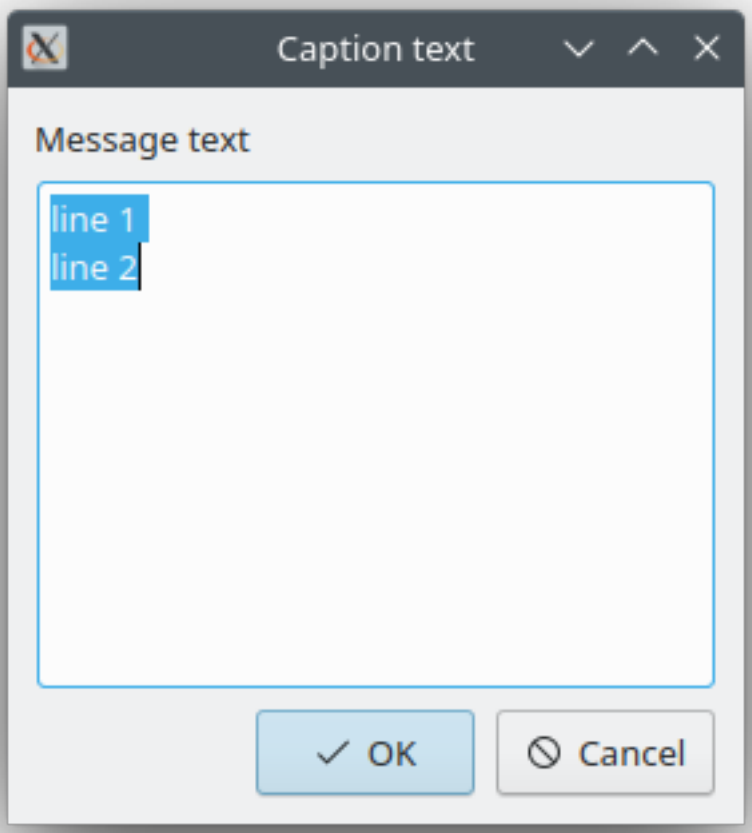
Le dossier QtFontdialog est extrait du site https://github.com/gammasoft71/Examples_Qt/tree/ master
Montre une fenêtre ou utilisateur change au choix la police
Output

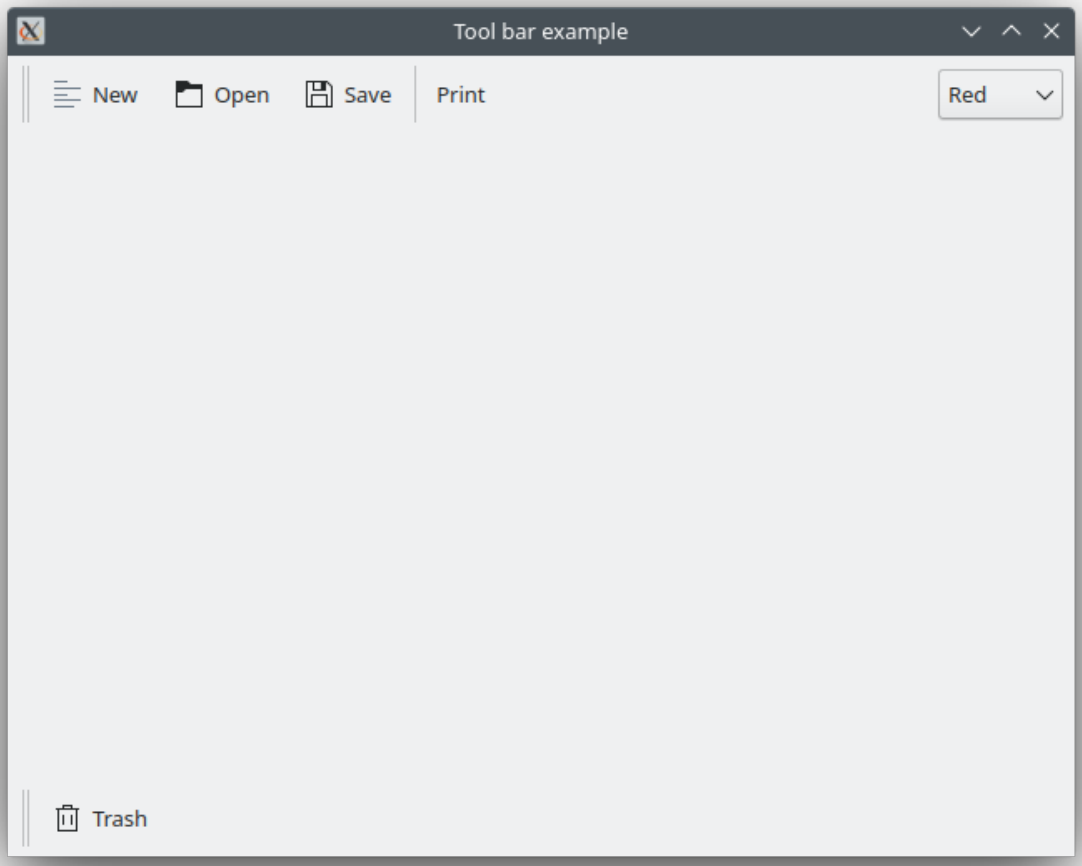

MainWindow
test4
Add
Del
test1



Le dossier Qt-InputDialogMultiline est extrait du même site

Le dossier Qt-ToolBar est extrait du même site


Caption text
Message text
line 1
line 2
OK
Cancel

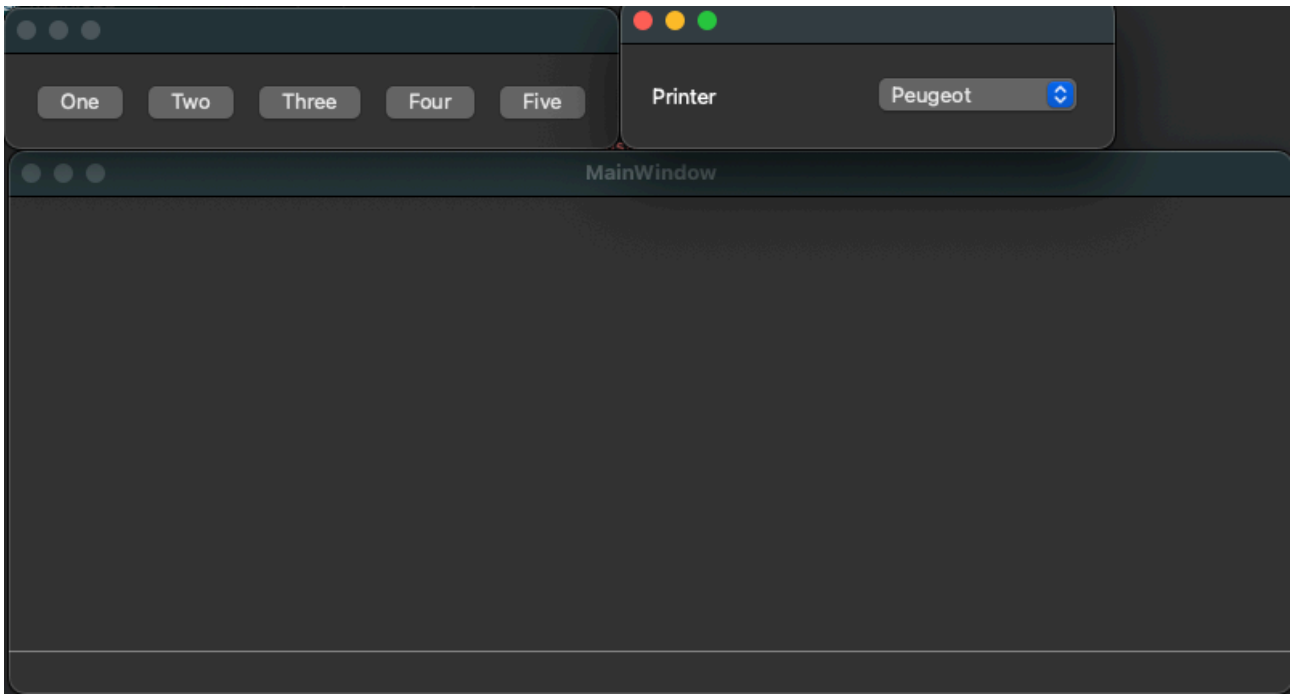


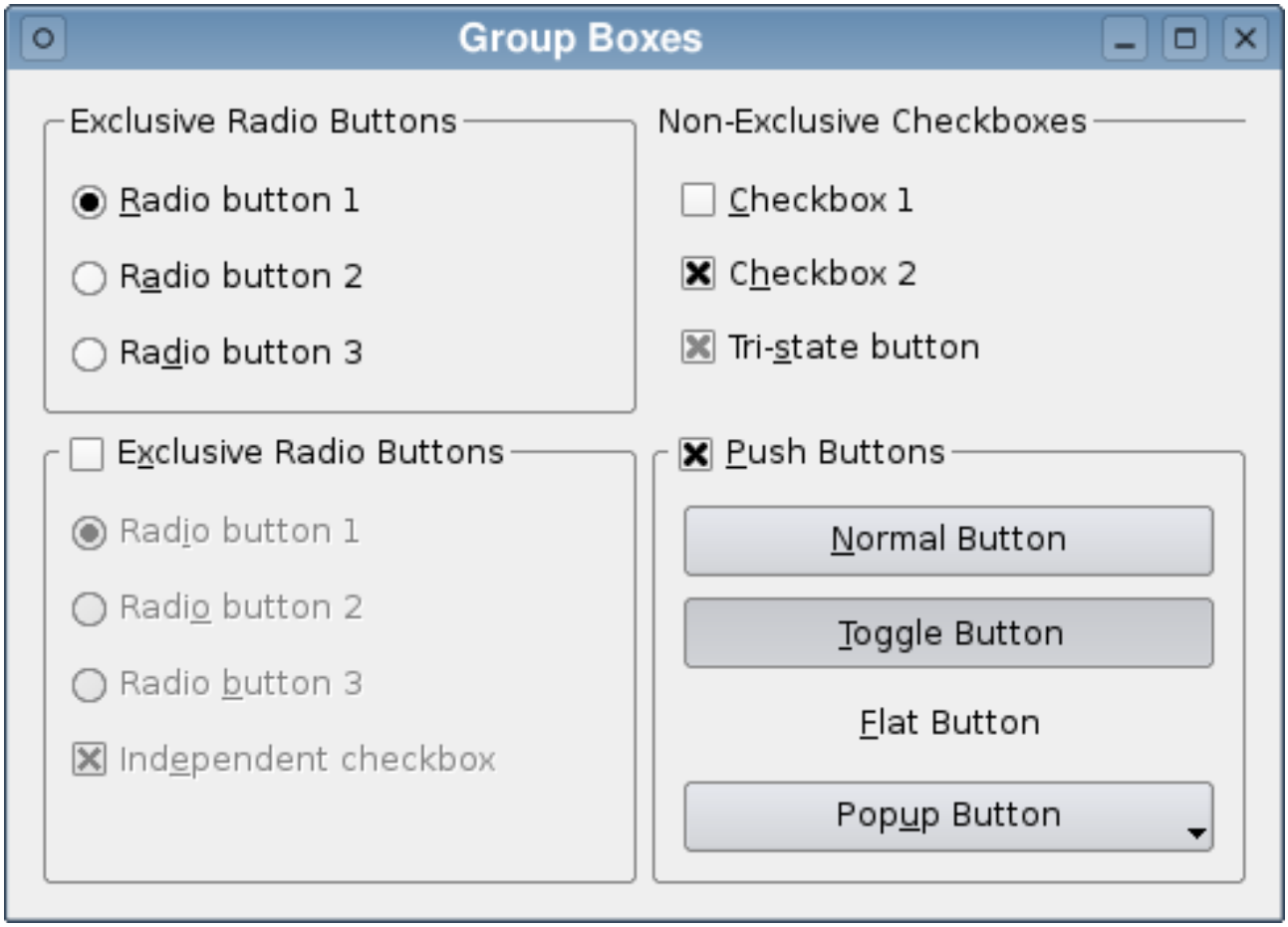
Les exemples suivants sont extrait du document Qt-Widgets-Layouts.dans repertoire documentation.

-QtVboxLayout (contient une ComboBox) , le tout configuré dans le main du programme principal.

Exemple sur Widget Group boxes (extrait de https://stuff.mit.edu/afs/athena/software/ texmaker_v5.0.2/qt57/doc/qtwidgets/qtwidgets-widgets-groupbox-example.html)

Group boxes are usually used to organize check boxes and radio buttons into exclusive groups.



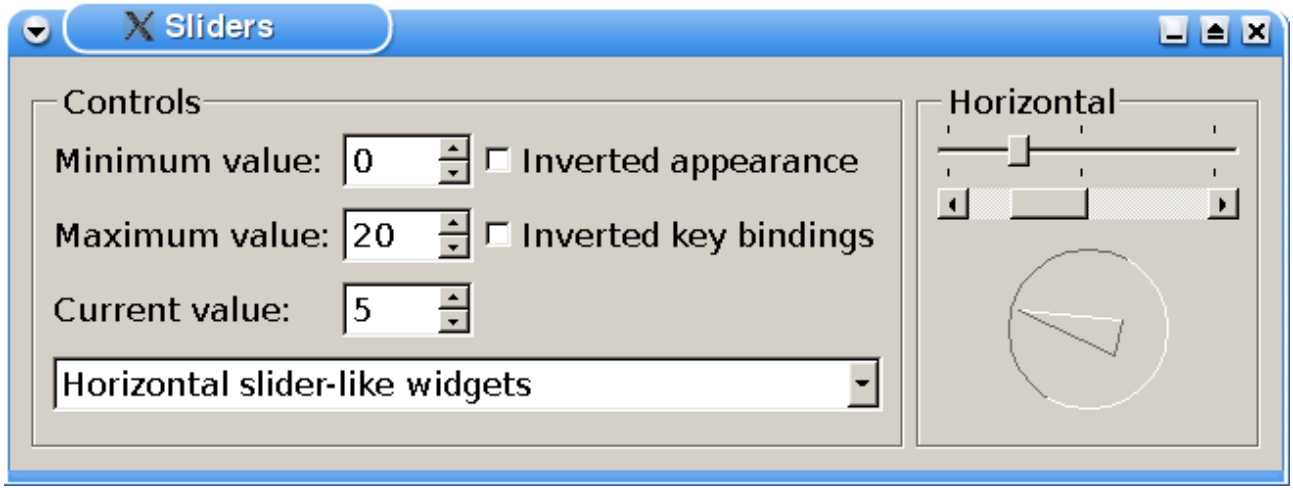


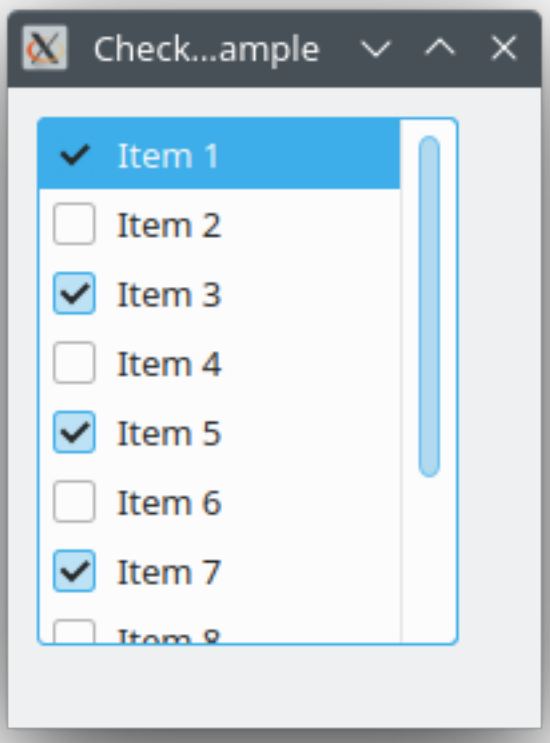
The Group Boxes example consists of a single `Window` class that is used to show four group boxes: an exclusive radio button group, a non-exclusive checkbox group, an exclusive radio button group with an enabling checkbox, and a group box with normal push buttons.

Exemple de Qt-sliderGroup

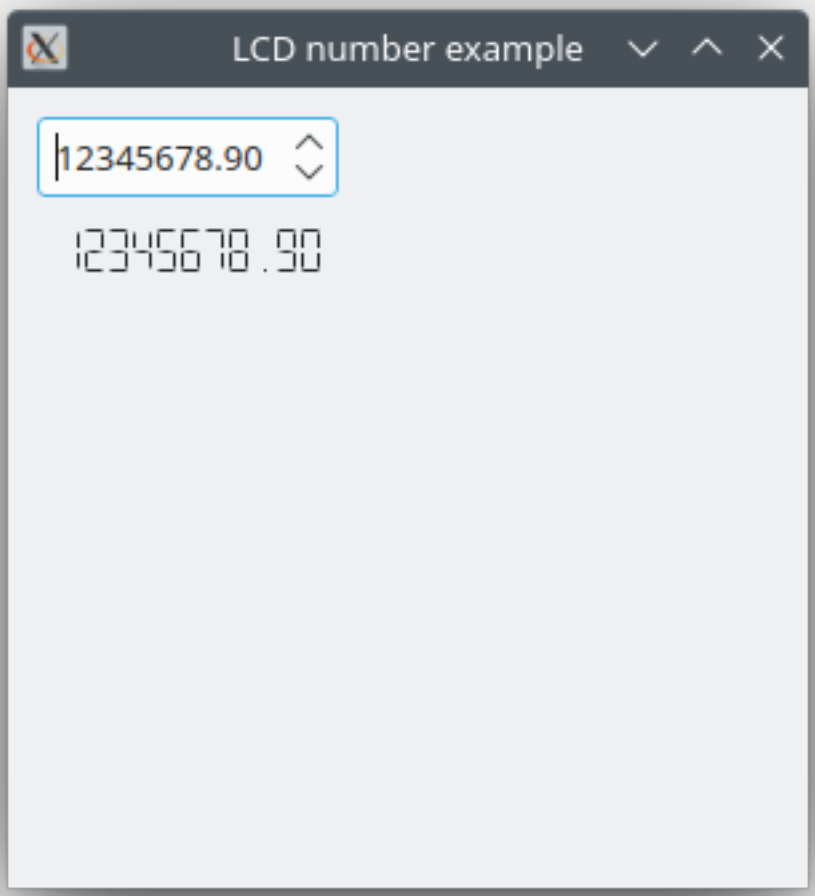
The example also demonstrates how signals and slots can be used to synchronize the behavior of two or more widgets.

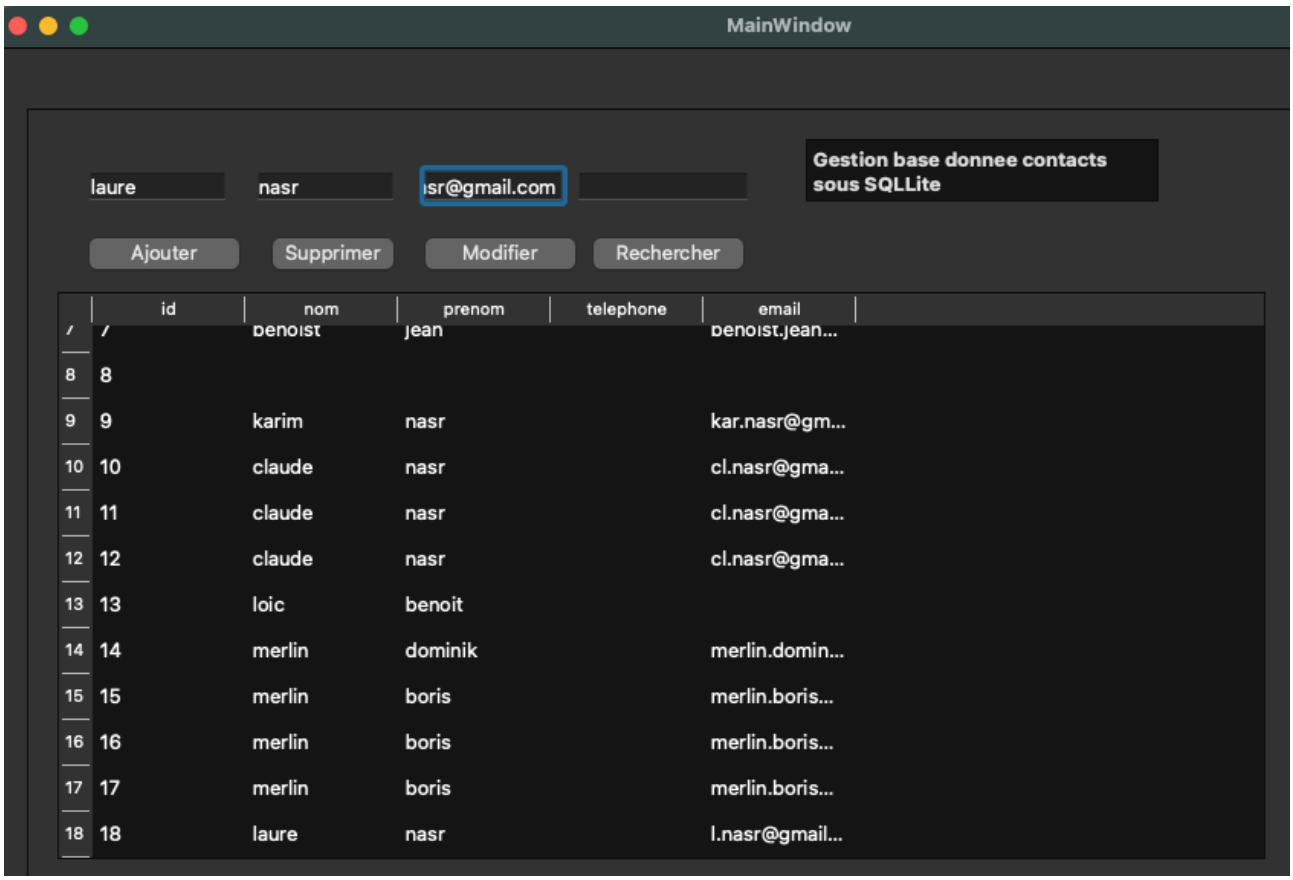
QtChecked List Wiget est extrait de https://github.com/gammasoft71/Examples_Qt/blob/master/Qt.Widgets/ Controls/CheckedListWidget/README.md



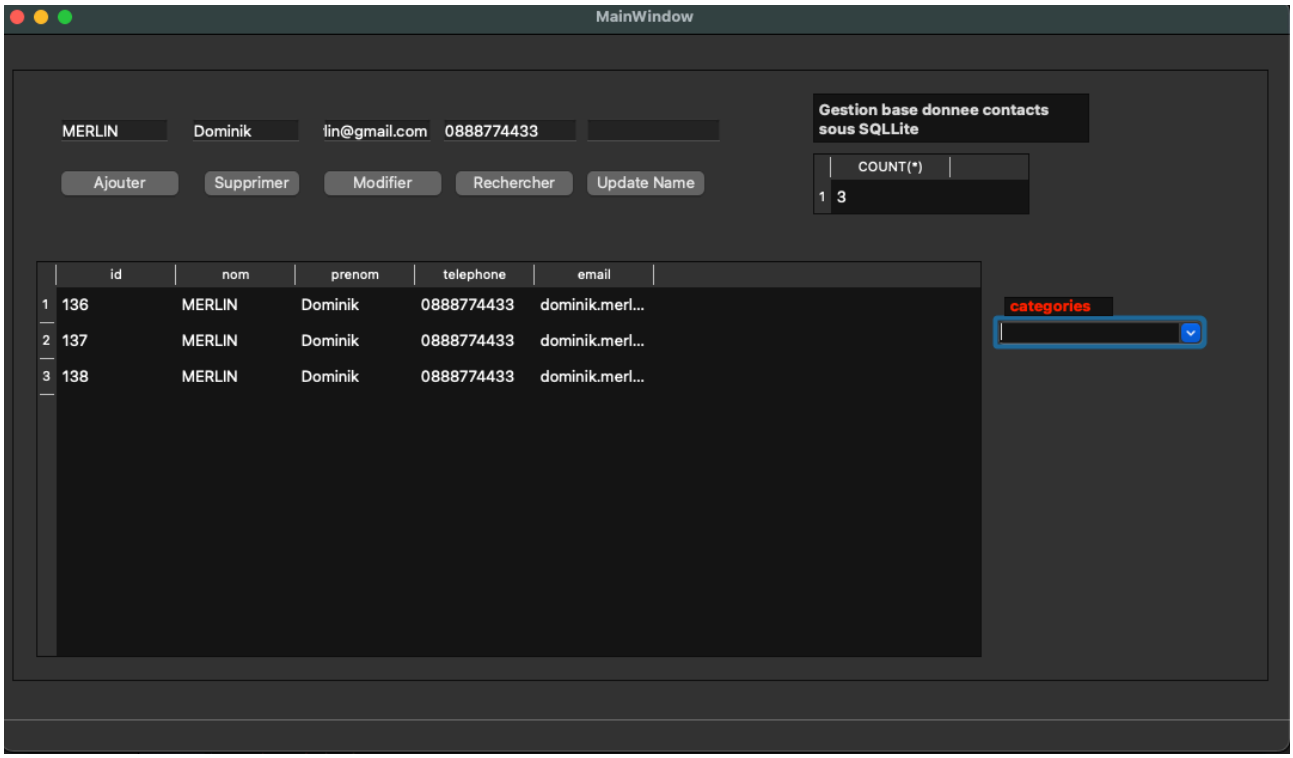


QtLCDnumber


LCD number example
12345678.90
12345678.90



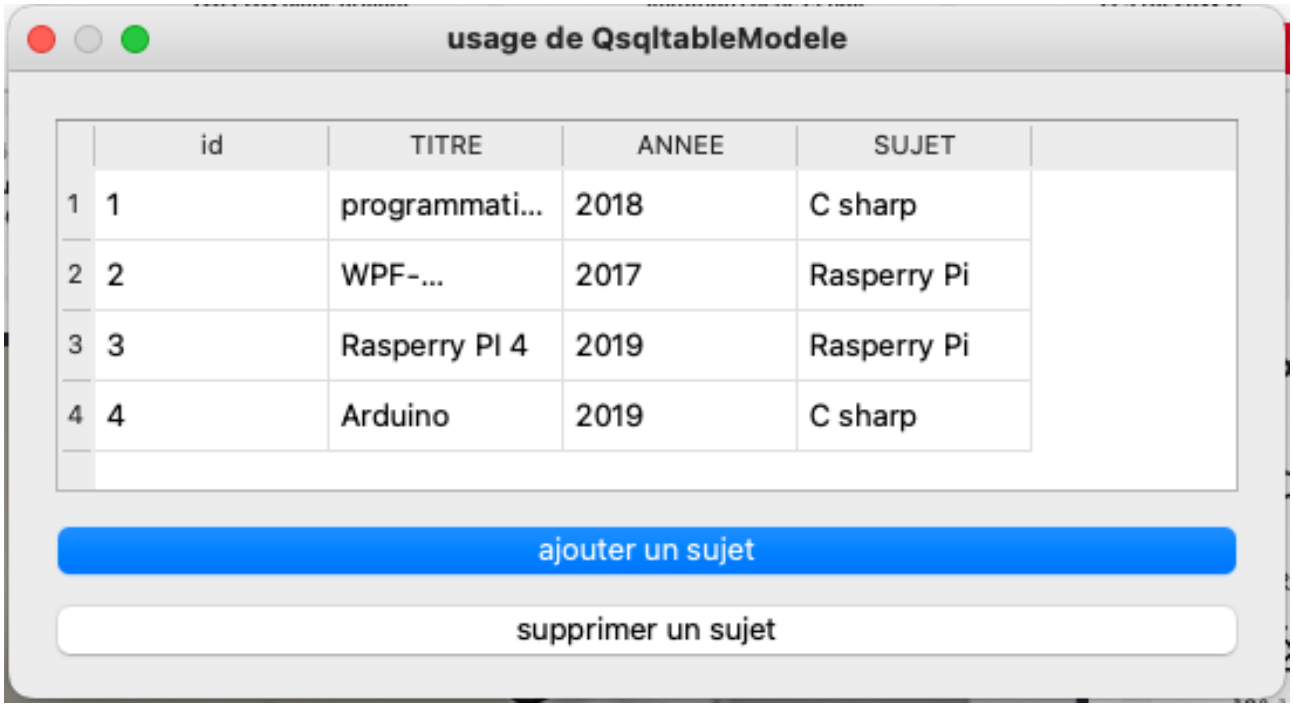
Le projet GestionContact est une IHM pour afficher une base de donnee de type SQLite utilisation de widget SQLite, utilisation à l'aide de GEMINI.



La deuxieme version integre la rubrique categorie intégrée à l aide d'une comboBox.

Exemple de Qt-horloge digitale (fichier PDF de TP joint)

Exemple QsqlTableModele , fait avec pychart , extrait cours Qt sur livre Framework PyQt (benoit prieur)



Usage de la classe QsqlRelationaltablemodel (chapitre 8) /Users/nasr/PycharmProjects/PySide/main.py-Qt-QsqlRelationalModel

```
import os
import PyQt6
from PyQt6 import QtSql
from PyQt6 import QtCore
```

```
[redacted]
from PyQt6 import QtGui
from PyQt6.QtSql import *
from PyQt6.QtCore import *
from PyQt6.QtGui import *
from PyQt6 import QtWidgets
from PyQt6.QtWidgets import *
#from PyQt6 import QtWidget
from PySide6.QtWidgets import
QApplication,QLabel, QWidget,
QBoxLayout,QVBoxLayout,QTableView,QDialog,
QPushButton
from PySide6.QtGui import QGuiApplication
from PySide6.QtCore import QCoreApplication,Qt
from PySide6.QtSql import
QSqlDatabase,QSqlRelationalTableModel,QSqlRela
tion,QSqlRelati
onalDelegate
from PySide6.QtSql import QSqlTableModel
[redacted]
class FenetreSimple(QWidget):
[redacted]
def __init__(self):
[redacted]
super().__init__()
self.disposition = QVBoxLayout()
self.clickbouton = QPushButton("Click",
clicked=self.creationDB)
self.disposition.addWidget(self.clickbouton)
self.setLayout(self.disposition)
self.execute()
#QtGui.QWindow.__init__(self,parent)
self.resize(30, 30)
#self.setFont(QtGui.QFont("Verdana"))
```

```
self.setWindowTitle("Bases de données")
#       self.clickbouton =
QPushButton("Click",clicked=self.creationDB)
#
self.disposition.addWidget(self.clickbouton)
self.setLayout(self.disposition)
#       self.execute()
def creationDB(self):
self.db =
QtSql.QSqlDatabase.addDatabase('QSQLITE')
self.db.setDatabaseName('Baselivres.db')
print ("Creation base ok")
if not self.db.open():
print ("la Db ne peut pas s'ouvrir.")
return False

query = QtSql.QSqlQuery()
print(query.exec("
SELECT COUNT(*) FROM PERSONNE
while query.next():
print(query.value(0))
query.exec("
INSERT INTO PERSONNE('NOM','PRENOM')
VALUES('Prieur','Benoit')
query.exec("
VALUES('Mocq','François')
INSERT INTO PERSONNE('NOM','PRENOM')
query.exec("
INSERT INTO PERSONNE('NOM','PRENOM')
VALUES('Lacaze','Sarah')
")

") ")

"))

PERSONNE
```

```
print(query.exec("
SELECT COUNT(*) FROM
while query.next():
print(query.value(0))
"))

print(query.exec("
SELECT COUNT(*) FROM SUJET
while query.next():
print(query.value(0))
query.exec("
INSERT INTO SUJET('SUJET')
VALUES('Csharp')
VALUES('Rasperry pi')
query.exec("
INSERT INTO SUJET('SUJET')
query.exec("
INSERT INTO SUJET('SUJET')
VALUES('Scratch')
")
")

")

"))

print(query.exec("
SELECT COUNT(*) FROM SUJET
while query.next():
print(query.value(0))
"))

"))

print(query.exec("
SELECT COUNT(*) FROM LIVRE
while query.next():
print(query.value(0))
```

```
query.exec("
INSERT INTO

LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('programmation
en C-preparation aux certifications MCSA-
examen
70-483',2018,1,1)
")

query.exec("
INSERT INTO

LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('WPF-developper
des applications structurees',2017,1,2)
query.exec("
INSERT INTO

LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('Rasperry PI
4',2019,2,3)
query.exec("
INSERT INTO

LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('Arduino',2019,1,4)
")

")

")

print(query.exec("
SELECT COUNT(*) FROM LIVRE
while query.next():
print(query.value(0))
"))

query = QtSql.QSqlQuery()
```

```
query.exec("
UPDATE SUJET SET SUJET = 'MICROSOFT C#'
WHERE id =2

")

query.exec("
SELECT COUNT(*) FROM SUJET
while query.next():
print(query.value(0))
self.db.commit()
")

query.exec("
SELECT SUJET FROM SUJET WHERE id = 2
while query.next():
print(query.value(0))
")



self.db.close()
#Creation des requêtes SQL
creationTableLivre = """
create table LIVRE(
id INTEGER PRIMARY KEY AUTOINCREMENT,
TITRE TEXT NOT NULL,
ANNEE int,

sujet_id INTEGER REFERENCES SUJET(id)
);

"""

"""

"""

creationTableSujet = """
id INTEGER PRIMARY KEY AUTOINCREMENT,
```

```
create table SUJET(
SUJET TEXT NOT NULL
);

creationTablePersonne = """
create table PERSONNE(
id INTEGER PRIMARY KEY AUTOINCREMENT,
NOM TEXT NOT NULL,
PRENOM TEXT NOT NULL
);

#Execution des requetes SQL
self.db.open()
query = QtSql.QSqlQuery()
#self.db.close()


if query.exec(creationTableLivre):


print("creation table LIVRE ok")
if query.exec(creationTableSujet):
print("creation table SUJET ok")
                                    
if query.exec(creationTablePersonne):
                                                
def joinDB():
print("creation table Personne ok")
self.db.close()
def execute (self):
self.resize(250, 300)
self.move(50, 500)
donnees")

self.setWindowTitle("chapitre 8 - insertion de
self.show()
```

```
app = QtCore.QCoreApplication(sys.argv)
db = QtSql.QSqlDatabase.addDatabase('QSQLITE')
db.setDatabaseName('Baselivres.db')
print("connexion base ok")
if not db.open():
print("la db ne peut s'ouvrir.")
return False

query = QtSql.QSqlQuery()
#query.exec(
#    "INSERT INTO
LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('programmation
en C-preparation aux certifications MCSA-
examen
70-483',2018,1,1)")
#query.exec(
#    "INSERT INTO
LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('WPF-developper
des applications structurees',2017,1,2)")
#query.exec("INSERT INTO
LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('Rasperry PI
4',2019,2,3)")
#query.exec("INSERT INTO
LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('Arduino',2019,1,4)")
#query.exec("""
#    SELECT PERSONNE.PRENOM, PERSONNE.NOM
```

```
#    FROM PERSONNE, LIVRE, SUJET
#    WHERE PERSONNE.id = LIVRE.id
#    AND SUJET.id = LIVRE.id
#    AND SUJET.SUJET = 'Arduino'
#    AND LIVRE.ANNEE = 2019
#""")

[redacted]
#affiche jointure
[redacted]
#connexion

[redacted]
#base ok

[redacted]


#Benoit Prieur
#François Mocq
[redacted]
#Sarah Lacaze
[redacted]
sujet = 'Scratch'
[redacted]
annee = 2019

requete="""

SELECT PERSONNE.PRENOM, PERSONNE.NOM
FROM PERSONNE, LIVRE, SUJET
WHERE PERSONNE.id = LIVRE.id
AND SUJET.id = LIVRE.id
"""

query.prepare(requete)
```

```
query.bindValue(":sujet",sujet)
query.bindValue(":annee",annee)
if query.exec():
while query.next():
print(query.value(0),query.value(1))
else:

print("erreur dans l execution de la
requete:",query.lastError().text())


query.exec("""


SELECT PERSONNE.PRENOM, PERSONNE.NOM
FROM PERSONNE, LIVRE, SUJET
WHERE PERSONNE.id = LIVRE.id
AND SUJET.id = LIVRE.id
""")

[redacted]
while query.next():
[redacted]
print(query.value(0),query.value(1))
def print_hi(name):
script.

# Use a breakpoint in the code line below to
debug your
print(f'Hi, {name}') # Press ⌘F8 to toggle the

breakpoint.

# Press the green button in the gutter to run
the script.
if __name__ == '__main__':
# affiche jointure
# connexion
```

```
# base ok

# Benoit Prieur
# François Mocq
# Sarah Lacaze
#joinDB()

#Application.instance()
app = QApplication(sys.argv)
[redacted]
base =
QtSql.QSqlDatabase.addDatabase('QSQLITE')
[redacted]
base.setDatabaseName('Baselivres.db')
#definition du modele
#modele = QtCore.QAbstractItemModel
modele = QSqlRelationalTableModel()
modele.setTable('LIVRE')
[redacted]
modele.setEditStrategy(QSqlRelationalTableMode
l.EditStrategy.
[redacted]
OnFieldChange)
modele.setRelation(3,QSqlRelation("SUJET","id"
,"SUJET"))
modele.setRelation(4, QSqlRelation("PERSONNE",
"id",
"PRENOM"))

#modification immediate
#modele.select()
modele.setHeaderData(3,Qt.Horizontal,"SUJET")
modele.setHeaderData(3, Qt.Horizontal,
"PRENOM")
#modele.setHeaderData(3,
QtCore.Qt.Orientation.Horizontal, "SUJET")
```

```
#modele.setHeaderData(4,QtCore.Qt.Orientation.
Horizontal,"PRE
NOM")

modele.select()

#creation de la vue et association au modele

vue = QTableView()

vue.setModel(modele)

vue.setItemDelegate(QSqlRelationalDelegate(vue
))

#dialogue = QDialog()

#disposition = QVBoxLayout()

#disposition.addWidget(vue)
#fenetre = QtWidgets.QWidget()
#fenetre.QTableView().setModel(QtSql.QSqlTable
Model())
#vue.setItemDelegate(QSqlRelationalDelegate(vu
e))
#creation de la boite de dialogue
dialogue = QDialog()
disposition = QVBoxLayout()
disposition.addWidget(vue)
```

```
#bouton d ajout
bouton_ajout = QPushButton("ajouter un livre")
bouton_ajout.clicked.connect(lambda :modele.in
sertRows(modele
.rowCount(),1))
disposition.addWidget(bouton_ajout)
#bouton de suppression
bouton_suppression = QPushButton("supprimer un
livre")
bouton_suppression.clicked.connect(lambda :
modele.removeRow(vue.currentIndex().row()))
disposition.addWidget(bouton_suppression)
#finalisation de l interface
dialogue.setLayout(disposition)
dialogue.setWindowTitle("usage de
QsqRelationalModele")
dialogue.show()
#app = QtCore.QCoreApplication(sys.argv)
#app = QtCore.QCoreApplication(sys.argv)
#app = QtGui.QGuiApplication(sys.argv)
#app = QtCore.QCoreApplication(sys.argv)
#app= QtCore.QCoreApplication.arguments()
# ...
sys.exit(app.exec())
```

```
import sys
[redacted]
import os
[redacted]
import PyQt6
from PyQt6 import QtSql
[redacted]
from PyQt6 import QtCore
[redacted]
from PyQt6 import QtGui
from PyQt6.QtSql import *
from PyQt6.QtCore import *
from PyQt6.QtGui import *
from PyQt6 import QtWidgets
from PyQt6.QtWidgets import *
#from PyQt6 import QtWidget
from PySide6.QtWidgets import
QApplication,QLabel, QWidget,
QBoxLayout,QVBoxLayout,QTableView,QDialog,
QPushButton
from PySide6.QtGui import QGuiApplication
from PySide6.QtCore import QCoreApplication,Qt
from PySide6.QtSql import
QSqlDatabase,QSqlRelationalTableModel,QSqlRela
tion,QSqlRelati
onalDelegate
from PySide6.QtSql import QSqlTableModel
[redacted]
class FenetreSimple(QWidget):
[redacted]
def __init__(self):
```

```
super().__init__()
self.disposition = QVBoxLayout()
self.clickbouton = QPushButton("Click",
clicked=self.creationDB)
self.disposition.addWidget(self.clickbouton)
self.setLayout(self.disposition)
self.execute()
#QtGui.QWindow.__init__(self,parent)
self.resize(30, 30)
#self.setFont(QtGui.QFont("Verdana"))
self.setWindowTitle("Bases de données")
#       self.clickbouton =
QPushButton("Click",clicked=self.creationDB)
#
self.disposition.addWidget(self.clickbouton)
self.setLayout(self.disposition)
#       self.execute()
def creationDB(self):
self.db =
QtSql.QSqlDatabase.addDatabase('QSQLITE')
self.db.setDatabaseName('Baselivres.db')
print ("Creation base ok")
if not self.db.open():
print ("la Db ne peut pas s'ouvrir.")
return False

query = QtSql.QSqlQuery()
print(query.exec("
SELECT COUNT(*) FROM PERSONNE
while query.next():
print(query.value(0))
query.exec("
INSERT INTO PERSONNE('NOM','PRENOM')
VALUES('Prieur','Benoit')
query.exec("
```

```
VALUES('Mocq','François')
INSERT INTO PERSONNE('NOM','PRENOM')
query.exec("
INSERT INTO PERSONNE('NOM','PRENOM')
VALUES('Lacaze','Sarah')
")

") ")

"))

PERSONNE

print(query.exec("
SELECT COUNT(*) FROM
while query.next():
print(query.value(0))
"))

print(query.exec("
SELECT COUNT(*) FROM SUJET
while query.next():
print(query.value(0))
query.exec("
INSERT INTO SUJET('SUJET')
VALUES('Csharp')
VALUES('Rasperry pi')
query.exec("
INSERT INTO SUJET('SUJET')
query.exec("
INSERT INTO SUJET('SUJET')
VALUES('Scratch')
")
")

")

"))
```

```
print(query.exec("
SELECT COUNT(*) FROM SUJET
"))


while query.next():
print(query.value(0))
print(query.exec("
while query.next():
query.exec("
SELECT COUNT(*) FROM LIVRE
print(query.value(0))
query.exec("
INSERT INTO

LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('programmation
en C-preparation aux certifications MCSA-
examen
70-483',2018,1,1)
INSERT INTO

LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('WPF-developper
des applications structurees',2017,1,2)
query.exec("
INSERT INTO

LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('Rasperry PI
4',2019,2,3)
query.exec("
INSERT INTO

LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('Arduino',2019,1,4)
```

```
")

")

")

")

"))

print(query.exec("
SELECT COUNT(*) FROM LIVRE
while query.next():
print(query.value(0))
"))

query = QtSql.QSqlQuery()
query.exec("
UPDATE SUJET SET SUJET = 'MICROSOFT C#'
WHERE id =2

")

query.exec("
SELECT COUNT(*) FROM SUJET
while query.next():
print(query.value(0))
")

query.exec("
SELECT SUJET FROM SUJET WHERE id = 2
while query.next():
print(query.value(0))
"""

"""

"""

")
```

```
self.db.commit()
self.db.close()
#Creation des requêtes SQL
creationTableLivre = """
create table LIVRE(
id INTEGER PRIMARY KEY AUTOINCREMENT,
TITRE TEXT NOT NULL,
ANNEE int,

sujet_id INTEGER REFERENCES SUJET(id)
);

creationTableSujet = """
id INTEGER PRIMARY KEY AUTOINCREMENT,
create table SUJET(
SUJET TEXT NOT NULL
);

creationTablePersonne = """
create table PERSONNE(
id INTEGER PRIMARY KEY AUTOINCREMENT,
NOM TEXT NOT NULL,
PRENOM TEXT NOT NULL
);

#Execution des requetes SQL
[redacted]
self.db.open()
[redacted]
query = QtSql.QSqlQuery()
[redacted]
#self.db.close()
[redacted]
if query.exec(creationTableLivre):
[redacted]
```

```
print("creation table LIVRE ok")
if query.exec(creationTableSujet):
print("creation table SUJET ok")
if query.exec(creationTablePersonne):
print("creation table Personne ok")
self.db.close()
def execute (self):
self.resize(250, 300)
self.move(50, 500)
donnees")

self.setWindowTitle("chapitre 8 - insertion de
self.show()

def joinDB():
app = QtCore.QCoreApplication(sys.argv)
db = QtSql.QSqlDatabase.addDatabase('QSQLITE')
db.setDatabaseName('Baselivres.db')
print("connexion base ok")
if not db.open():
print("la db ne peut s'ouvrir.")
```

```
return False

query = QtSql.QSqlQuery()
#query.exec(
#    "INSERT INTO
LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('programmation
en C-preparation aux certifications MCSA-
examen
70-483',2018,1,1)")
#query.exec(
#    "INSERT INTO
LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('WPF-developper
des applications structurees',2017,1,2)")
#query.exec("INSERT INTO
LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('Rasperry PI
4',2019,2,3)")
#query.exec("INSERT INTO
LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('Arduino',2019,1,4)")
#query.exec("""
#    SELECT PERSONNE.PRENOM, PERSONNE.NOM
#    FROM PERSONNE, LIVRE, SUJET
#    WHERE PERSONNE.id = LIVRE.id
#    AND SUJET.id = LIVRE.id
#    AND SUJET.SUJET = 'Arduino'
#    AND LIVRE.ANNEE = 2019
#""")

#affiche jointure
#connexion

#base ok
```

```
#Benoit Prieur
#François Mocq
#Sarah Lacaze
[redacted]
sujet = 'Scratch'
[redacted]
annee = 2019

requete="""

SELECT PERSONNE.PRENOM, PERSONNE.NOM
FROM PERSONNE, LIVRE, SUJET
WHERE PERSONNE.id = LIVRE.id
AND SUJET.id = LIVRE.id
"""

query.prepare(requete)
query.bindValue(":sujet",sujet)
query.bindValue(":annee",annee)
if query.exec():
else:

while query.next():
print(query.value(0),query.value(1))
print("erreur dans l execution de la
requete:",query.lastError().text())
query.exec("""
SELECT PERSONNE.PRENOM, PERSONNE.NOM
FROM PERSONNE, LIVRE, SUJET
WHERE PERSONNE.id = LIVRE.id
AND SUJET.id = LIVRE.id
""")

[redacted]
while query.next():
[redacted]
```

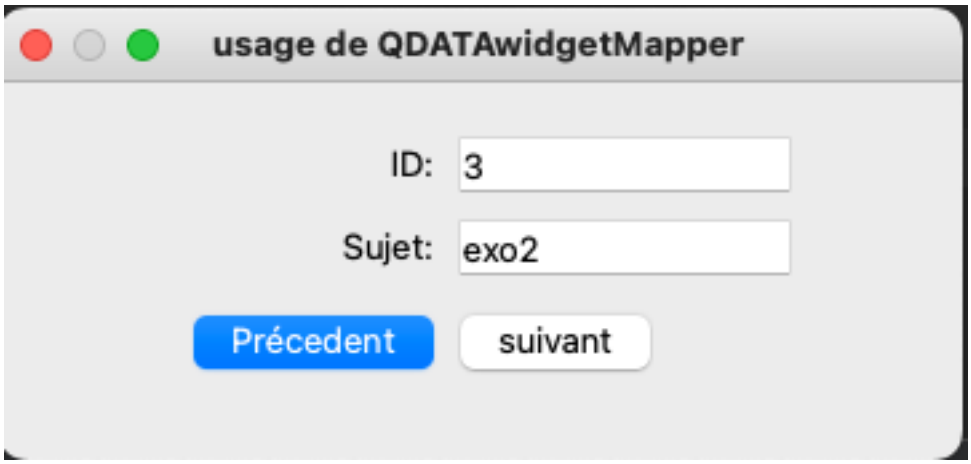
```
print(query.value(0),query.value(1))
def print_hi(name):
script.

# Use a breakpoint in the code line below to
debug your
print(f'Hi, {name}') # Press ⌘F8 to toggle the

breakpoint.

# Press the green button in the gutter to run
the script.
if __name__ == '__main__':
# affiche jointure
# connexion

# base ok

# Benoit Prieur
# François Mocq
# Sarah Lacaze
#joinDB()

#Application.instance()
app = QApplication(sys.argv)
[redacted]
base =
QtSql.QSqlDatabase.addDatabase('QSQLITE')
[redacted]
base.setDatabaseName('Baselivres.db')
#definition du modele
#modele = QtCore.QAbstractItemModel
modele = QSqlRelationalTableModel()
modele.setTable('LIVRE')
[redacted]
modele.setEditStrategy(QSqlRelationalTableMode
l.EditStrategy.
```

```
[redacted]
OnFieldChange)
modele.setRelation(3,QSqlRelation("SUJET","id"
,"SUJET"))
modele.setRelation(4, QSqlRelation("PERSONNE",
"id",
"PRENOM"))

#modification immediate
#modele.select()
modele.setHeaderData(3,Qt.Horizontal,"SUJET")
modele.setHeaderData(3, Qt.Horizontal,
"PRENOM")
#modele.setHeaderData(3,
QtCore.Qt.Orientation.Horizontal, "SUJET")
[redacted]
#modele.setHeaderData(4,QtCore.Qt.Orientation.
Horizontal,"PRE
[redacted]
NOM")

[redacted]
modele.select()
#creation de la vue et association au modele
vue = QTableView()
vue.setModel(modele)
vue.setItemDelegate(QSqlRelationalDelegate(vue
))
[redacted]
#dialogue = QDialog()
[redacted]
#disposition = QVBoxLayout()
[redacted]
#disposition.addWidget(vue)
```

```
#fenetre = QtWidgets.QWidget()
#fenetre.QTableView().setModel(QtSql.QSqlTable
Model())
#vue.setItemDelegate(QSqlRelationalDelegate(vu
e))
#creation de la boite de dialogue
dialogue = QDialog()
disposition = QVBoxLayout()
disposition.addWidget(vue)
[redacted]
#bouton d ajout
[redacted]
bouton_ajout = QPushButton("ajouter un livre")
[redacted]
bouton_ajout.clicked.connect(lambda :modele.in
sertRows(modele
[redacted]
.rowCount(),1))
[redacted]
disposition.addWidget(bouton_ajout)
#bouton de suppression
bouton_suppression = QPushButton("supprimer un
livre")
bouton_suppression.clicked.connect(lambda :
modele.removeRow(vue.currentIndex().row()))
disposition.addWidget(bouton_suppression)
#finalisation de l interface
dialogue.setLayout(disposition)
dialogue.setWindowTitle("usage de
QsqRelationalModele")
dialogue.show()
#app = QtCore.QCoreApplication(sys.argv)
#app = QtCore.QCoreApplication(sys.argv)
#app = QtGui.QGuiApplication(sys.argv)
```

```
#app = QtCore.QCoreApplication(sys.argv)
#app= QtCore.QCoreApplication.arguments()
[redacted]
# ...
[redacted]
sys.exit(app.exec())
```

Exemple QDATAWidgetMapper , fait avec pychart , extrait cours Qt sur livre Framework PyQt (benoit prieur)



[redacted]

```
import sys
[redacted]
import os
[redacted]
import PyQt6
[redacted]
from PyQt6 import QtSql
[redacted]
from PyQt6 import QtCore
[redacted]
from PyQt6 import QtGui
[redacted]
from PyQt6.QtSql import *
[redacted]
from PyQt6.QtCore import *
[redacted]
```

```
from PyQt6.QtGui import *
from PyQt6 import QtWidgets
from PyQt6.QtWidgets import *
#from PyQt6 import QtWidget
from PySide6.QtWidgets import QApplication,QLabel, QWidget,
QBoxLayout,QVBoxLayout,QTableView,QDialog,QLineEdit,
QPushButton,QFormLayout,QDataWidgetMapper
from PySide6.QtGui import QGuiApplication
from PySide6.QtCore import QCoreApplication,Qt
from PySide6.QtSql import
QSqlDatabase,QSqlRelationalTableModel,QSqlRelation,QSqlRelationalD
elegate
from PySide6.QtSql import QSqlTableModel
class FenetreSimple(QWidget):
def __init__(self):
super().__init__()
self.disposition = QVBoxLayout()
self.clickbouton = QPushButton("Click", clicked=self.creationDB)
self.disposition.addWidget(self.clickbouton)
self.setLayout(self.disposition)
self.execute()
#QtGui.QWindow.__init__(self,parent)
self.resize(30, 30)
#self.setFont(QtGui.QFont("Verdana"))
```

```
self.setWindowTitle("Bases de données")
#       self.clickbouton =
QPushButton("Click",clicked=self.creationDB)êêEE
#      self.disposition.addWidget(self.clickbouton)
self.setLayout(self.disposition)
#       self.execute()
def creationDB(self):
self.db = QtSql.QSqlDatabase.addDatabase('QSQLITE')
self.db.setDatabaseName('Baselivres.db')
print ("Creation base ok")
if not self.db.open():
print ("la Db ne peut pas s'ouvrir.")
return False

query = QtSql.QSqlQuery()
print(query.exec("
while query.next():
print(query.value(0))
SELECT COUNT(*) FROM PERSONNE
query.exec("
query.exec("
query.exec("
INSERT INTO PERSONNE('NOM','PRENOM') VALUES('Prieur','Benoit')
INSERT INTO PERSONNE('NOM','PRENOM') VALUES('Mocq','François')
INSERT INTO PERSONNE('NOM','PRENOM') VALUES('Lacaze','Sarah')
"))



print(query.exec("
SELECT COUNT(*) FROM PERSONNE
"))

")

") ")



while query.next():


print(query.value(0))
print(query.exec("
SELECT COUNT(*) FROM SUJET
while query.next():
print(query.value(0))
query.exec("
query.exec("
query.exec("
INSERT INTO SUJET('SUJET') VALUES('Csharp')
```

```
INSERT INTO SUJET('SUJET') VALUES('Rasperry pi')
INSERT INTO SUJET('SUJET') VALUES('Scratch')


print(query.exec("
") ")

SELECT COUNT(*) FROM SUJET
"))

"))

"))

")

")

")
")

")


while query.next():


print(query.value(0))
print(query.exec("
SELECT COUNT(*) FROM LIVRE
while query.next():
print(query.value(0))
query.exec("
INSERT INTO LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('programmation en C-preparation aux certifications MCSA-
examen 70-483',2018,1,1)
query.exec("
INSERT INTO LIVRE('TITRE','ANNEE','sujet_id','id') VALUES('WPF-
developper des applications structurees',2017,1,2)
query.exec("
INSERT INTO LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('Rasperry PI 4',2019,2,3)
query.exec("
INSERT INTO LIVRE('TITRE','ANNEE','sujet_id','id')
VALUES('Arduino',2019,1,4)
[redacted]
print(query.exec("


query.exec("
"""

"""
```

```
SELECT COUNT(*) FROM LIVRE

while query.next():

print(query.value(0))

query = QtSql.QSqlQuery()

UPDATE SUJET SET SUJET = 'MICROSOFT C#' WHERE id =2

query.exec("
SELECT COUNT(*) FROM SUJET
")

"))

while query.next():

print(query.value(0))

query.exec("
while query.next():
SELECT SUJET FROM SUJET WHERE id = 2
")

")

print(query.value(0))
self.db.commit()
self.db.close()
#Creation des requêtes SQL
creationTableLivre = """
create table LIVRE(
id INTEGER PRIMARY KEY AUTOINCREMENT,
TITRE TEXT NOT NULL,
ANNEE int,

sujet_id INTEGER REFERENCES SUJET(id)
);

creationTableSujet = """
id INTEGER PRIMARY KEY AUTOINCREMENT,
create table SUJET(
```

```
SUJET TEXT NOT NULL
);

creationTablePersonne = """
id INTEGER PRIMARY KEY AUTOINCREMENT,
create table PERSONNE(
NOM TEXT NOT NULL,
PRENOM TEXT NOT NULL
);"""


#Execution des requetes SQL

self.db.open()

query = QtSql.QSqlQuery()

#self.db.close()

if query.exec(creationTableLivre):

print("creation table LIVRE ok")

if query.exec(creationTableSujet):

print("creation table SUJET ok")

if query.exec(creationTablePersonne):

print("creation table Personne ok")
self.db.close()

def execute (self):

self.resize(250, 300)

self.move(50, 500)

def prec():

self.setWindowTitle("chapitre 8 - insertion de donnees")
```

```
self.show()

print("Bouton précédent")

mapping.toPrevious()

id.repaint()

sujet.repaint()

def suiv():

print("Bouton suivant")

mapping.toNext()
id.repaint()
sujet.repaint()
def joinDB():
app = QtCore.QCoreApplication(sys.argv)
db = QtSql.QSqlDatabase.addDatabase('QSQLITE')
db.setDatabaseName('Baselivres.db')
print("connexion base ok")
if not db.open():
print("la db ne peut s'ouvrir.")
return False
```

```
query = QtSql.QSqlQuery()
[redacted]
sujet = 'Scratch'
[redacted]
annee = 2019

requete="""

SELECT PERSONNE.PRENOM, PERSONNE.NOM
FROM PERSONNE, LIVRE, SUJET
WHERE PERSONNE.id = LIVRE.id
AND SUJET.id = LIVRE.id
"""



query.prepare(requete)



query.bindValue(":sujet",sujet)
query.bindValue(":annee",annee)


if query.exec():


while query.next():
[redacted]
print(query.value(0),query.value(1))
[redacted]
else:

[redacted]
print("erreur dans l execution de la
requete:",query.lastError().text())
query.exec("""
SELECT PERSONNE.PRENOM, PERSONNE.NOM
FROM PERSONNE, LIVRE, SUJET
WHERE PERSONNE.id = LIVRE.id
AND SUJET.id = LIVRE.id
""")


while query.next():


print(query.value(0),query.value(1))
```

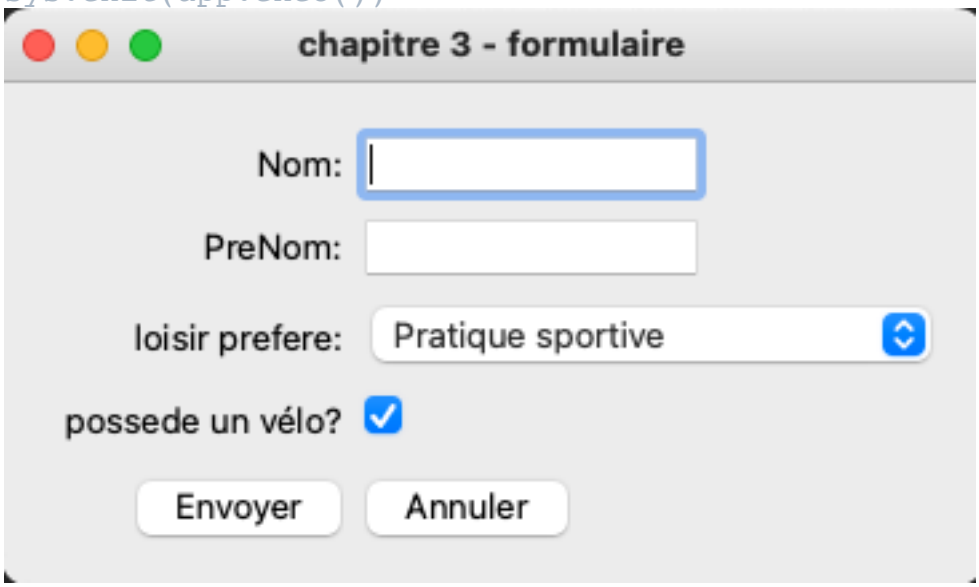
```
def print_hi(name):

# Use a breakpoint in the code line below to debug your script.

print(f'Hi, {name}') # Press ⌘F8 to toggle the breakpoint.

# Press the green button in the gutter to run the script.
if __name__ == '__main__':
# affiche jointure
# connexion

# base ok

# Benoit Prieur
# François Mocq
# Sarah Lacaze
#joinDB()

#Application.instance()
app = QApplication(sys.argv)


# creation de la boite de dialogue


dialogue = QDialog()


disposition = QFormLayout()
[redacted]


#champ d'édition
id = QLineEdit()
[redacted]
id.setReadOnly(True)
[redacted]
sujet = QLineEdit()
[redacted]
disposition.addRow("ID:",id)
[redacted]
disposition.addRow("Sujet:",sujet)
[redacted]
precedentBouton = QPushButton("Précedent")
```

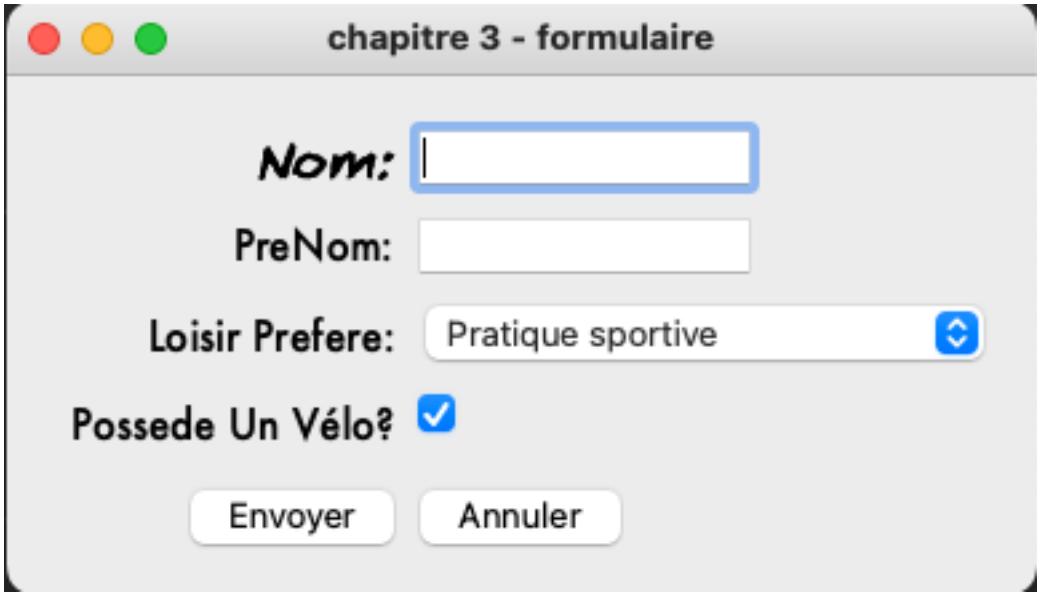
```
suivantBouton = QPushButton("suivant")
disposition.addRow(precedentBouton,suivantBouton)
dialogue.setLayout(disposition)
dialogue.setWindowTitle("usage de QDATAwidgetMapper")
base = QtSql.QSqlDatabase.addDatabase('QSQLITE')
base.setDatabaseName('Baselivres.db')
#definition du modele
#modele = QtCore.QAbstractItemModel
modele = QSqlTableModel()
modele.setTable('SUJET')
modele.setEditStrategy(QSqlTableModel.EditStrategy.OnFieldChange)
#modification immediate
modele.select()
mapping = QDataWidgetMapper()
mapping.setModel(modele)
mapping.addMapping(id, 0)
mapping.addMapping(sujet, 1)
mapping.toFirst()
precedentBouton.clicked.connect(prec)
suivantBouton.clicked.connect(suiv)
    modele.select()
    dialogue.show()
```

Exemple QTCreationFormulaire , fait avec pychart , extrait cours Qt sur livre Framework PyQt (benoit prieur)

dentique au cas précédent avec QFONT et nouvelle police

```
# ...

sys.exit(app.exec())
```

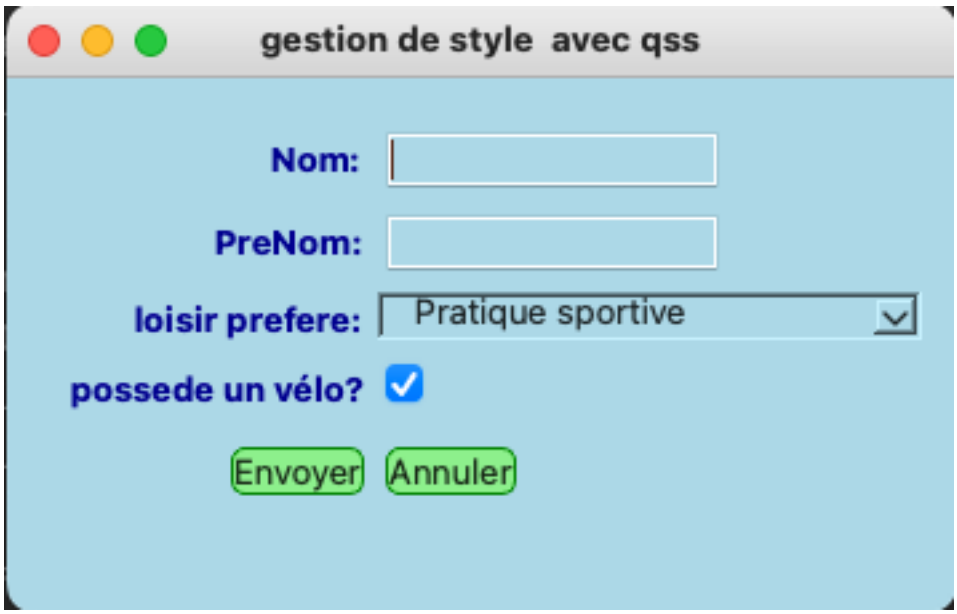


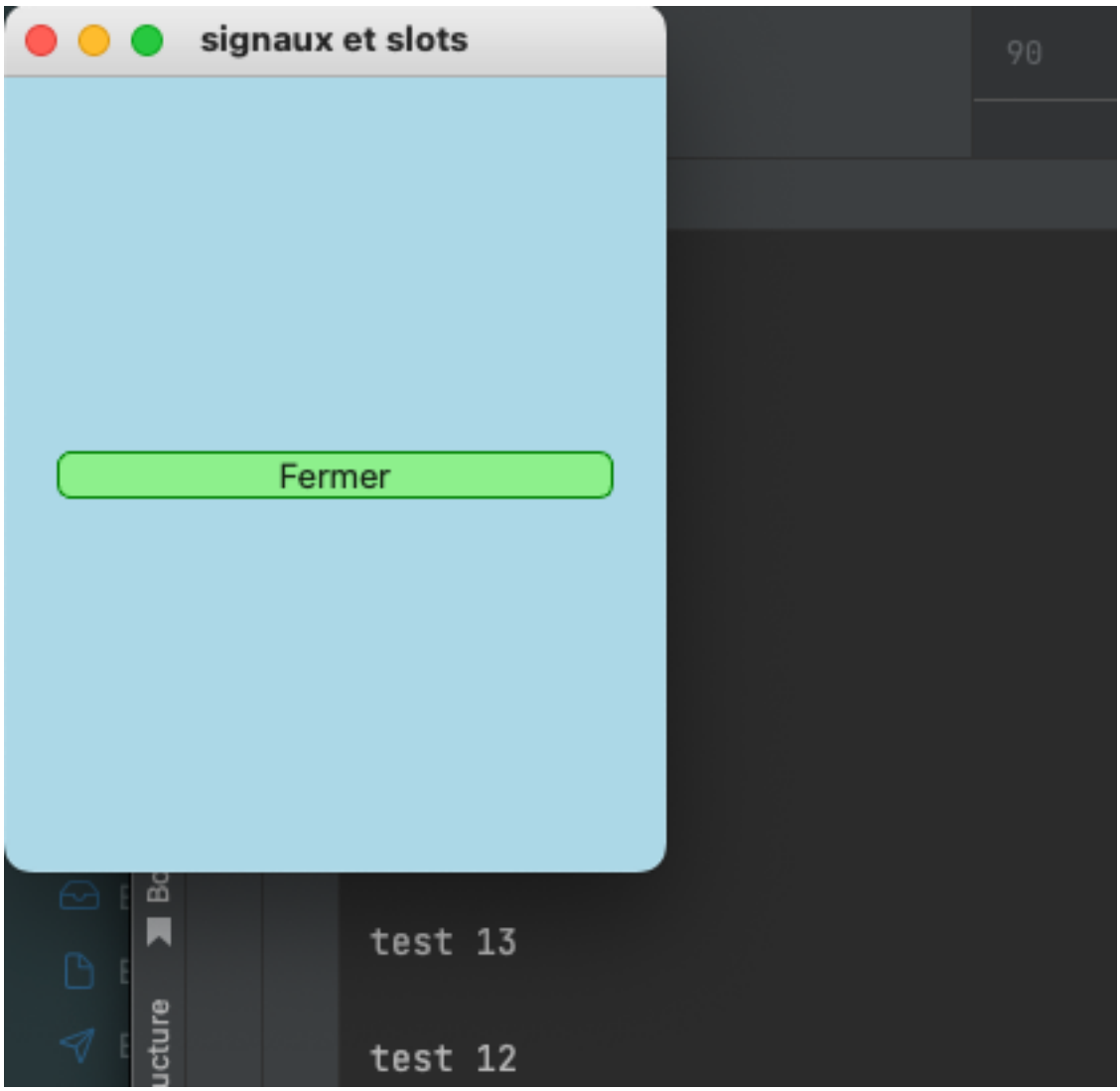


Exemple QT-Gestion Feuille Style (voir exemple avec QBRUSH) extrait cours Qt sur livre Framework PyQt (benoit prieur)

Exemple QT-Pyside-Signal&slot chapitre 4 du livre Framework PyQt gere la fermeture de la fenetre avec appel au slot quang clique sur bouton fermer.

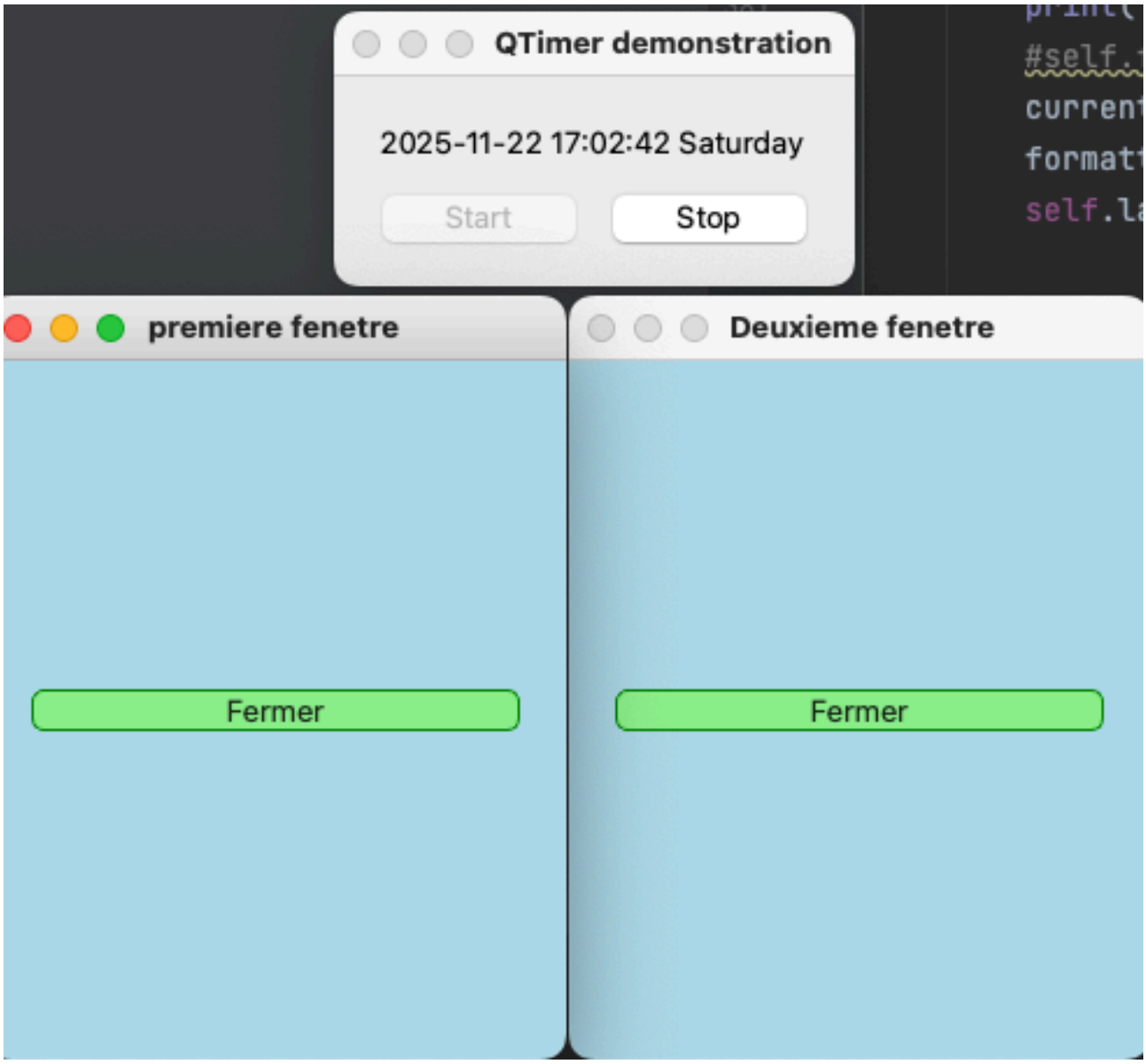
Qt-PythonStateMachine utilise un timer scheduler avec Qtimer pour afficher et fermer des fenetres.

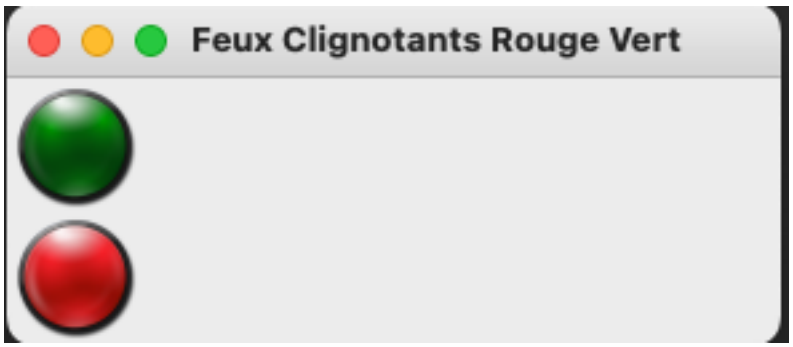




Qt-timer (sous pycharm) est un scheduler de fenetre, la premiere fenetre s affiche en premier et sur click du bouton fermer , la deuxieme fenetre est lancée. A noter sur le timeout du timer , il faut faire un show de la deuxieme fenetre sinon elle disparait (a investiguer davantage).

LedIndicatorWidget simule les feux rouge/vert pendant 1 minutes et affiche sur terminal l etat, projet complet extrait de https://taurus-scada.org/_modules/taurus/qt/qtgui/display/qled.html Se lance sous pycharm.





30/11 New token

New classic token on GitHub
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

- Script1.py utilise Matplotlib pour tracer des courbes (extrait de https://github.com/rougier/matplotlib-tutorial/blob/master/scripts/exercice_1.py)