PyQt Day 1 230306

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/5cbb31b8-5bd9-4c0b-90b3-51da48cbf650/pyqt5tutorial.pdf

```
#!pip install pymysql
#!pip install requests
#!pip install PyQt5


import pymysql
import requests

conn = pymysql.connect(host='yoonkeunsoo.cafe24.com', user='yoonkeunsoo', password='guest0505', db='yoonkeunsoo', charset='utf8')

cur = conn.cursor()

cur.execute("SELECT * FROM user")
result=cur.fetchall()

import pprint
pprint.pprint(result)
```

PyQt ?

파이큐티 는 파이썬 기반의 GUI graphic user interface 라이브러리

　　TKinter - 파이썬 기본 gui , 기본 설치, 디자인이 떨어진다.

　　wxPython - ?

　　PyQt - 애나콘다가 기본설치, 디자인 Good

riverbankcomputing 이라는 회사에서 개발 원래는 C 언어용으로 개발되었으나 파이썬 용으로 전환되었다. 현재 버전 6도 출시되었다.

윈도우 기본 창 띄우

```
# 윈도우 기본창 띄우기


# 필요한 모듈 읽어오기 기본적인 창 구성요소를 제공하는 모든 것은 PyQt5.QtWidgets 에
# 만들어져 있다.
import sys
from PyQt5.QtWidgets import QApplication, QWidget


class MyApp(QWidget):
    # 생성자 설정
    def __init__(self):
        super().__init__()
        self.initUI()

    # 창 기본 설정, 여기서는 제목만 설정하였다.
    def initUI(self):
        self.setWindowTitle("Hello World!!!")
        self.show()

# 파이썬은 기본적으로 인터프리터 이기 때문에 한줄한줄 코드를 실행하고 마치게 된다.
```

```
# 열려진 윈도우 창을 계속 유지시켜야 한다.
app = QApplication(sys.argv)
ex = MyApp()
sys.exit(app.exec_())
```

정지 단추

```
import sys
from PyQt5.QtWidgets import QApplication, QWidget, QPushButton
from PyQt5.QtCore import QCoreApplication


class MyApp(QWidget):
    # 생성자 설정
    def __init__(self):
        super().__init__()
        self.initUI()

    # 창 기본 설정, 여기서는 제목만 설정하였다.
    def initUI(self):
        self.setWindowTitle("Hello World!!!")
        btn = QPushButton('Quit', self)
        btn.clicked.connect(QCoreApplication.instance().quit)

        self.show()

# 파이썬은 기본적으로 인터프리터 이기 때문에 한줄한줄 코드를 실행하고 마치게 된다.
# 열려진 윈도우 창을 계속 유지시켜야 한다.
app = QApplication(sys.argv)
ex = MyApp()
sys.exit(app.exec_())
```

메뉴 생성 및 메뉴 동

```
import sys
from PyQt5.QtWidgets import QApplication, QMainWindow, QAction, qApp
from PyQt5.QtGui import QIcon


class MyApp(QMainWindow):

    def __init__(self):
        super().__init__()
        self.initUI()

    def initUI(self):
        exitAction = QAction(QIcon('exit.png'), 'Exit', self)
        exitAction.setShortcut('Ctrl+Q')
        exitAction.setStatusTip('Exit application')
        exitAction.triggered.connect(qApp.quit)

        self.statusBar()

        menubar = self.menuBar()
        menubar.setNativeMenuBar(False)
        filemenu = menubar.addMenu('&File')
        filemenu.addAction(exitAction)

        self.setWindowTitle('Menubar')
        self.setGeometry(300, 300, 300, 200)
        self.show()


if __name__ == '__main__':
    app = QApplication(sys.argv)
    ex = MyApp()
    sys.exit(app.exec_())
```

QT Designer : anaconda 가 미리 설치

UI Connect

```
# QT Designer 로 생성한 기본 윈도우 창을 여는 방법


# 윈도우 기본창 띄우기

import sys
from PyQt5.QtWidgets import *
from PyQt5 import uic

form_class = uic.loadUiType("mywindow.ui")[0]

class MyWindow(QMainWindow, form_class):

    def __init__(self):
        super().__init__()
        self.setupUi(self)

app = QApplication(sys.argv)
window = MyWindow()
window.show()
app.exec_()
```

PushButton

```
# QT Designer 로 생성한 윈도우 창을 여는 방법


# 윈도우 기본창 띄우기

import sys
from PyQt5.QtWidgets import *
from PyQt5 import uic

form_class = uic.loadUiType("mywindow1.ui")[0]

class MyWindow(QMainWindow, form_class):

    def __init__(self):
        super().__init__()
        self.setupUi(self)
        self.pushButton.clicked.connect(self.btn_clicked)

    def btn_clicked(self):
        print("클릭 확인")

app = QApplication(sys.argv)
window = MyWindow()
window.show()
app.exec_()
```

RadioButton

```
# Radio button 은 여러개 중 하나 선택만 가능하므로 처리가 쉽다.

import sys
from PyQt5.QtWidgets import *
from PyQt5 import uic

form_class = uic.loadUiType("mywindow3.ui")[0]

class MyWindow(QMainWindow, form_class):
```

```python
    def __init__(self):
        super().__init__()
        self.setupUi(self)

        self.radioButton_1.clicked.connect(self.radioFunction)
        self.radioButton_2.clicked.connect(self.radioFunction)
        self.radioButton_3.clicked.connect(self.radioFunction)


    def radioFunction(self):
        if self.radioButton_1.isChecked() :
            print("radio button 1 Checked")
        elif self.radioButton_2.isChecked() :
            print("radio button 2 Checked")
        elif self.radioButton_3.isChecked() :
            print("radio button 3 Checked")


app = QApplication(sys.argv)
window = MyWindow()
window.show()
app.exec_()
```

CheckBox

```python
# Check Box 체크 박스는 중복 선택이 가능함에 따라 코드가 조금 복잡해진다.

import sys
from PyQt5.QtWidgets import *
from PyQt5 import uic

form_class = uic.loadUiType("mywindow4.ui")[0]

class MyWindow(QMainWindow, form_class):

    def __init__(self):
        super().__init__()
        self.setupUi(self)

        self.check1.stateChanged.connect(self.chkFunction)
        self.check2.stateChanged.connect(self.chkFunction)
        self.check3.stateChanged.connect(self.chkFunction)

        self.checkBox1.stateChanged.connect(self.chkBoxFunction)
        self.checkBox2.stateChanged.connect(self.chkBoxFunction)
        self.checkBox3.stateChanged.connect(self.chkBoxFunction)

    # 여러개가 동시 선택될수 있기 때문에 elif 를 사용하지 않는다.
    def chkFunction(self):
        if self.check1.isChecked() :
            print("check 1 Checked")
        if self.check2.isChecked() :
            print("check 2 Checked")
        if self.check3.isChecked() :
            print("check 3 Checked")
        print()


    def chkBoxFunction(self):
        if self.checkBox1.isChecked() :
            print("checkbox 1 Checked")
        if self.checkBox2.isChecked() :
            print("checkbox 2 Checked")
        if self.checkBox3.isChecked() :
            print("checkbox 3 Checked")
        print()

app = QApplication(sys.argv)
window = MyWindow()
window.show()
app.exec_()
```

Label

```
# 라벨 처리

import sys
from PyQt5.QtWidgets import *
from PyQt5 import uic

form_class = uic.loadUiType("mywindow5.ui")[0]

class MyWindow(QMainWindow, form_class):

    def __init__(self):
        super().__init__()
        self.setupUi(self)

        self.melonButton.clicked.connect(self.melonFunction)
        self.genieButton.clicked.connect(self.genieFunction)
        self.deleteButton.clicked.connect(self.deleteFunction)
        self.printButton.clicked.connect(self.printFunction)

    def melonFunction(self) :
        self.label.setText("멜론 차트 조회")

    def genieFunction(self) :
        self.label.setText("지니 차트 조회")

    def deleteFunction(self) :
        self.label.clear()

    def printFunction(self) :
        print(self.label.text())

app = QApplication(sys.argv)
window = MyWindow()
window.show()
app.exec_()
```

TextBrowser

라벨은 화면상에서는 수정할수 없는 한줄 글자를 보여주는 위젯이었다.

그런데 라벨은 크기를 넘어가면 글자가 잘려서 보이지 않게 되는 것이 특징이다.

TextBrowser는 여러줄의 긴 데이터를 보여주기에 적합하다.

```
# text browser

import sys
from PyQt5.QtWidgets import *
from PyQt5 import uic

form_class = uic.loadUiType("mywindow6.ui")[0]

class MyWindow(QMainWindow, form_class):

    def __init__(self):
        super().__init__()
        self.setupUi(self)

        self.printbrowserButton.clicked.connect(self.printFunction)
        self.settextButton.clicked.connect(self.setFunction)
        self.appendtextButton.clicked.connect(self.appendFunction)
        self.clearButton.clicked.connect(self.clearFunction)

    def printFunction(self) :
        print(self.textBrowser.toPlainText())

    def setFunction(self) :
        self.textBrowser.setPlainText("텍스트 브라우저 글자 변경 테스트")

    def appendFunction(self) :
        self.textBrowser.append("텍스트 추가 테스트")

    def clearFunction(self) :
```

```python
        self.textBrowser.clear()

app = QApplication(sys.argv)
window = MyWindow()
window.show()
app.exec_()
```

LineEdit

한줄 짜리 글자를 입력 받을 수 있는 입력 위젯이다.

```python
# text browser

import sys
from PyQt5.QtWidgets import *
from PyQt5 import uic

form_class = uic.loadUiType("mywindow6.ui")[0]

class MyWindow(QMainWindow, form_class):

    def __init__(self):
        super().__init__()
        self.setupUi(self)

        self.lineEdit.textChanged.connect(self.lineeditFunction)
        self.lineEdit.returnPressed.connect(self.returnFunction)
        self.lineeditchangeButton.clicked.connect(self.changeFunction)


    def lineeditFunction(self) :
        self.label_text.setText(self.lineEdit.text())

    def returnFunction(self) :
        print(self.lineEdit.text())

    def changeFunction(self) :
        self.lineEdit.setText("글자 변경")


app = QApplication(sys.argv)
window = MyWindow()
window.show()
app.exec_()
```

ui

```xml
<?xml version="1.0" encoding="UTF-8"?>
<ui version="4.0">
 <class>MainWindow</class>
 <widget class="QMainWindow" name="MainWindow">
  <property name="geometry">
   <rect>
    <x>0</x>
    <y>0</y>
    <width>800</width>
    <height>600</height>
   </rect>
  </property>
  <property name="windowTitle">
   <string>MainWindow</string>
  </property>
  <widget class="QWidget" name="centralwidget">
```

```xml
<widget class="QPushButton" name="pushButton_1">
 <property name="geometry">
  <rect>
   <x>40</x>
   <y>40</y>
   <width>75</width>
   <height>23</height>
  </rect>
 </property>
 <property name="text">
  <string>클릭 1</string>
 </property>
</widget>
<widget class="QPushButton" name="pushButton_2">
 <property name="geometry">
  <rect>
   <x>40</x>
   <y>80</y>
   <width>75</width>
   <height>23</height>
  </rect>
 </property>
 <property name="text">
  <string>클릭 2</string>
 </property>
</widget>
<widget class="QRadioButton" name="radioButton_1">
 <property name="geometry">
  <rect>
   <x>150</x>
   <y>40</y>
   <width>90</width>
   <height>16</height>
  </rect>
 </property>
 <property name="text">
  <string>RadioButton</string>
 </property>
</widget>
<widget class="QRadioButton" name="radioButton_2">
 <property name="geometry">
  <rect>
   <x>150</x>
   <y>80</y>
   <width>90</width>
   <height>16</height>
  </rect>
 </property>
 <property name="text">
  <string>RadioButton</string>
 </property>
</widget>
<widget class="QRadioButton" name="radioButton_3">
 <property name="geometry">
  <rect>
   <x>150</x>
   <y>120</y>
   <width>90</width>
   <height>16</height>
  </rect>
 </property>
 <property name="text">
  <string>RadioButton</string>
 </property>
</widget>
<widget class="QCheckBox" name="check1">
 <property name="geometry">
  <rect>
   <x>310</x>
   <y>40</y>
   <width>81</width>
   <height>16</height>
  </rect>
 </property>
 <property name="text">
  <string>check1</string>
 </property>
</widget>
<widget class="QCheckBox" name="check2">
 <property name="geometry">
  <rect>
   <x>310</x>
   <y>80</y>
   <width>81</width>
```

```xml
    <height>16</height>
   </rect>
  </property>
  <property name="text">
   <string>check2</string>
  </property>
 </widget>
 <widget class="QCheckBox" name="check3">
  <property name="geometry">
   <rect>
    <x>310</x>
    <y>120</y>
    <width>81</width>
    <height>16</height>
   </rect>
  </property>
  <property name="text">
   <string>check3</string>
  </property>
 </widget>
 <widget class="QCheckBox" name="checkBox1">
  <property name="geometry">
   <rect>
    <x>430</x>
    <y>40</y>
    <width>101</width>
    <height>16</height>
   </rect>
  </property>
  <property name="text">
   <string>CheckBox1</string>
  </property>
 </widget>
 <widget class="QCheckBox" name="checkBox2">
  <property name="geometry">
   <rect>
    <x>430</x>
    <y>80</y>
    <width>101</width>
    <height>16</height>
   </rect>
  </property>
  <property name="text">
   <string>CheckBox2</string>
  </property>
 </widget>
 <widget class="QCheckBox" name="checkBox3">
  <property name="geometry">
   <rect>
    <x>430</x>
    <y>120</y>
    <width>101</width>
    <height>16</height>
   </rect>
  </property>
  <property name="text">
   <string>CheckBox3</string>
  </property>
 </widget>
 <widget class="QLabel" name="label">
  <property name="geometry">
   <rect>
    <x>40</x>
    <y>200</y>
    <width>201</width>
    <height>31</height>
   </rect>
  </property>
  <property name="text">
   <string>차트 조회 프로그램</string>
  </property>
 </widget>
 <widget class="QPushButton" name="melonButton">
  <property name="geometry">
   <rect>
    <x>240</x>
    <y>200</y>
    <width>75</width>
    <height>23</height>
   </rect>
  </property>
  <property name="text">
   <string>Melon</string>
  </property>
```

```xml
    </widget>
    <widget class="QPushButton" name="genieButton">
     <property name="geometry">
      <rect>
       <x>330</x>
       <y>200</y>
       <width>75</width>
       <height>23</height>
      </rect>
     </property>
     <property name="text">
      <string>Genie</string>
     </property>
    </widget>
    <widget class="QPushButton" name="printButton">
     <property name="geometry">
      <rect>
       <x>520</x>
       <y>200</y>
       <width>75</width>
       <height>23</height>
      </rect>
     </property>
     <property name="text">
      <string>Print</string>
     </property>
    </widget>
    <widget class="QPushButton" name="deleteButton">
     <property name="geometry">
      <rect>
       <x>430</x>
       <y>200</y>
       <width>75</width>
       <height>23</height>
      </rect>
     </property>
     <property name="text">
      <string>Delete</string>
     </property>
    </widget>
    <widget class="QTextBrowser" name="textBrowser">
     <property name="geometry">
      <rect>
       <x>40</x>
       <y>270</y>
       <width>256</width>
       <height>91</height>
      </rect>
     </property>
    </widget>
    <widget class="QPushButton" name="settextButton">
     <property name="geometry">
      <rect>
       <x>420</x>
       <y>270</y>
       <width>75</width>
       <height>23</height>
      </rect>
     </property>
     <property name="text">
      <string>Set</string>
     </property>
    </widget>
    <widget class="QPushButton" name="appendtextButton">
     <property name="geometry">
      <rect>
       <x>520</x>
       <y>270</y>
       <width>75</width>
       <height>23</height>
      </rect>
     </property>
     <property name="text">
      <string>Append</string>
     </property>
    </widget>
    <widget class="QPushButton" name="printbrowserButton">
     <property name="geometry">
      <rect>
       <x>330</x>
       <y>270</y>
       <width>75</width>
       <height>23</height>
      </rect>
```

```
      </property>
      <property name="text">
       <string>Print</string>
      </property>
     </widget>
     <widget class="QPushButton" name="clearButton">
      <property name="geometry">
       <rect>
        <x>610</x>
        <y>270</y>
        <width>75</width>
        <height>23</height>
       </rect>
      </property>
      <property name="text">
       <string>Clear</string>
      </property>
     </widget>
     <widget class="QLineEdit" name="lineEdit">
      <property name="geometry">
       <rect>
        <x>40</x>
        <y>390</y>
        <width>251</width>
        <height>20</height>
       </rect>
      </property>
     </widget>
     <widget class="QPushButton" name="lineeditchangeButton">
      <property name="geometry">
       <rect>
        <x>520</x>
        <y>390</y>
        <width>141</width>
        <height>23</height>
       </rect>
      </property>
      <property name="text">
       <string>Change Text</string>
      </property>
     </widget>
     <widget class="QLabel" name="label_text">
      <property name="geometry">
       <rect>
        <x>330</x>
        <y>390</y>
        <width>161</width>
        <height>16</height>
       </rect>
      </property>
      <property name="text">
       <string>입력확인</string>
      </property>
     </widget>
    </widget>
    <widget class="QMenuBar" name="menubar">
     <property name="geometry">
      <rect>
       <x>0</x>
       <y>0</y>
       <width>800</width>
       <height>21</height>
      </rect>
     </property>
    </widget>
    <widget class="QStatusBar" name="statusbar"/>
   </widget>
   <resources/>
   <connections/>
  </ui>
```

TextEdit

PlainTextEdit

ComboBox

Spinbox

Slider

DateTimeEdit

DateEdit

TimeEdit