

## 1. helloworld.py (ch5/tkinter, 교재 p. 228. tkinter 기본 탑재)

```
pi@raspberrypi: ~/RaspberrypiwithIoT/ch5/tkinter
파일(F) 편집(E) 탭(T) 도움말(H)
GNU nano 5.4 helloworld.py
from tkinter import *

tk = Tk()
Label(tk, text='Hello TK').pack()
tk.mainloop()
```



```
pi@raspberrypi: ~/R... tk
Hello TK
휴지통

pi@raspberrypi: ~/RaspberrypiwithIoT/ch5/tkinter
파일(F) 편집(E) 탭(T) 도움말(H)
pi@raspberrypi:~ $ cd RaspberrypiwithIoT/ch6
pi@raspberrypi:~/RaspberrypiwithIoT/ch6 $ cd ../ch5
pi@raspberrypi:~/RaspberrypiwithIoT/ch5 $ ls
buttonwindow.py dialogwindow.py layoutwindow.py quick tkinter
clickwindow.py eventwindow.py listwindow.py sqlitewindow.py
designer helloside.py menuwindow.py test.db
pi@raspberrypi:~/RaspberrypiwithIoT/ch5 $ cd tkinter
pi@raspberrypi:~/RaspberrypiwithIoT/ch5/tkinter $ ls
helloworld.py soundplayer.py tkevent.py weather.py
pi@raspberrypi:~/RaspberrypiwithIoT/ch5/tkinter $ nano helloworld.py
pi@raspberrypi:~/RaspberrypiwithIoT/ch5/tkinter $ python3 helloworld.py
```

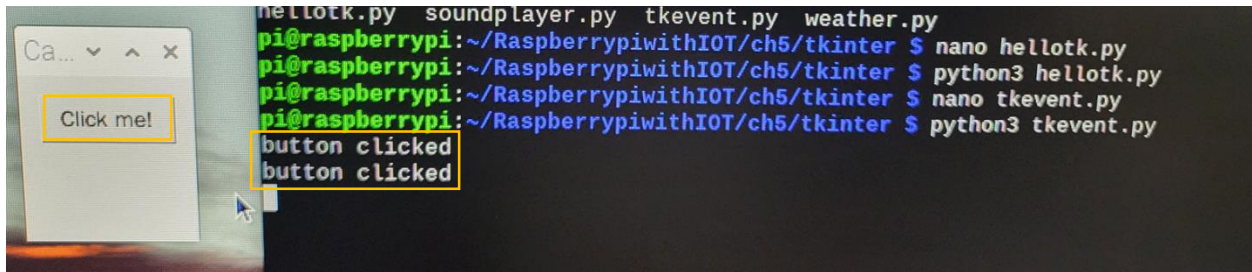
## 2. tkevent.py (ch5/tkinter, 교재 p. 229)

```
pi@raspberrypi: ~/RaspberrypiwithIoT/ch5/tkinter
파일(F) 편집(E) 탭(T) 도움말(H)
GNU nano 5.4 tkevent.py
from tkinter import *

root = Tk()
root.title("Callback and Event Test")
root.geometry("100x100+300+300")

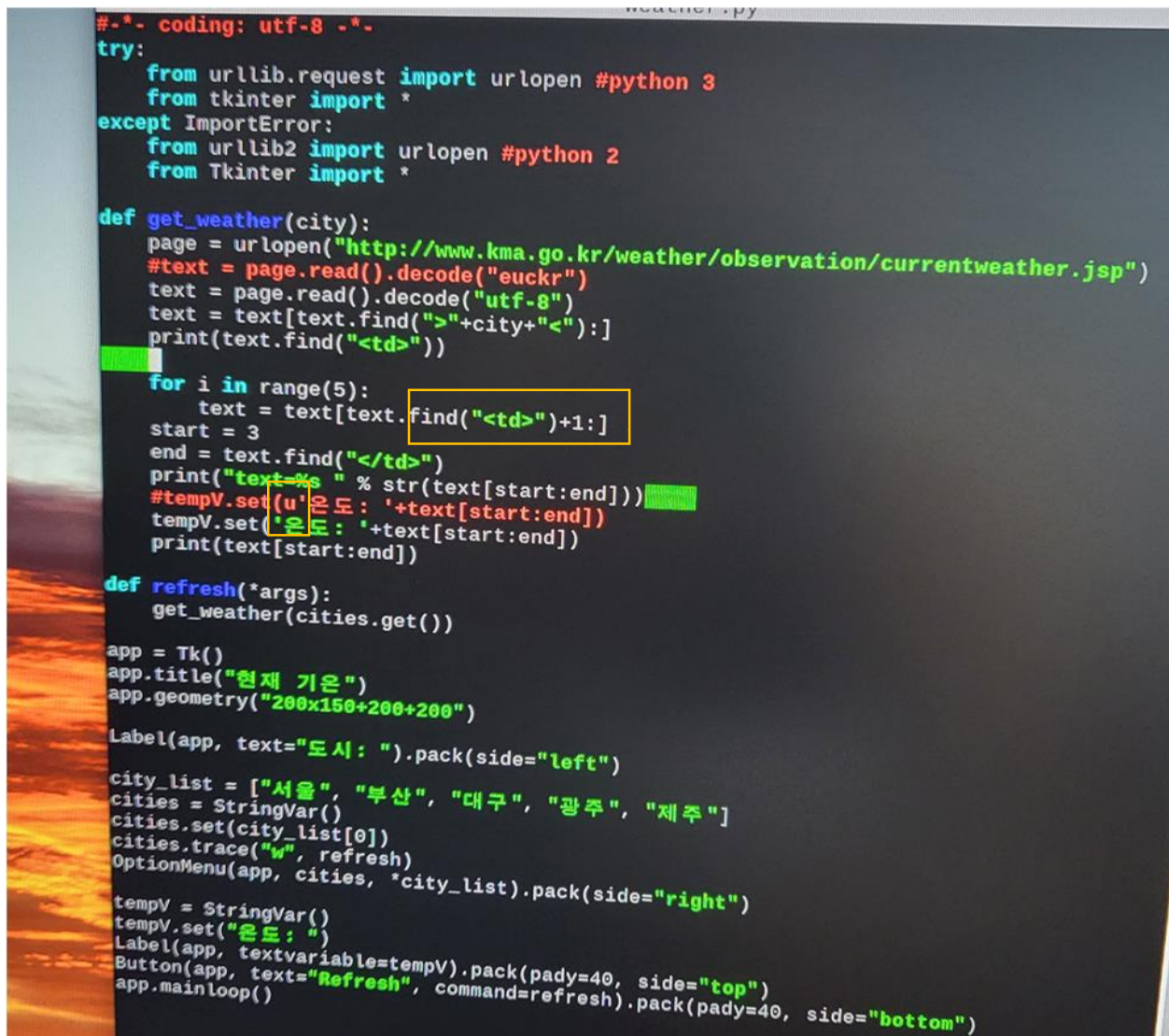
def callback():
    print("button clicked")

button = Button(root, text="Click me!", width=10, command=callback)
button.pack(padx=10, pady=10)
root.mainloop()
```




\* geometry("W(너비)xH(높이)+X+Y"). (X,Y)는 뜨는 창의 좌측 상단 모서리 위치

### 3. weather.py (ch5/tkinter, 교재 p. 230)








```
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ cd tkinter
pi@raspberrypi:~/RaspberrypiwithIOT/ch5/tkinter $ ls
hellotk.py soundplayer.py tkevent.py weather.py
pi@raspberrypi:~/RaspberrypiwithIOT/ch5/tkinter $ nano hellotk.py
pi@raspberrypi:~/RaspberrypiwithIOT/ch5/tkinter $ python3 hellotk.py
pi@raspberrypi:~/RaspberrypiwithIOT/ch5/tkinter $ nano tkevent.py
pi@raspberrypi:~/RaspberrypiwithIOT/ch5/tkinter $ python3 tkevent.py
button clicked
button clicked
pi@raspberrypi:~/RaspberrypiwithIOT/ch5/tkinter $ python3 tkevent.py
^
pi@raspberrypi:~/RaspberrypiwithIOT/ch5/tkinter $ nano tkevent.py
pi@raspberrypi:~/RaspberrypiwithIOT/ch5/tkinter $ python3 tkevent.py
pi@raspberrypi:~/RaspberrypiwithIOT/ch5/tkinter $ ls
hellotk.py soundplayer.py tkevent.py weather.py
pi@raspberrypi:~/RaspberrypiwithIOT/ch5/tkinter $ nano weather.py
pi@raspberrypi:~/RaspberrypiwithIOT/ch5/tkinter $ python3 weather.py
22
text=23.0
23.0
```

The image shows a Tkinter application window on the left with the title "현재 기온" (Current Temperature). It displays "온도: 23.0" (Temperature: 23.0) and a dropdown menu for "도시:" (City) with "부산" (Busan) selected. There is a "Refresh" button. On the right, a terminal window shows the command-line process of creating and running these Tkinter scripts. A yellow box highlights the output of the weather script, showing the temperature value 23.0 being assigned to a text widget.

\* find 함수: char 의 문자열내 위치(index)를 알려줌

```
GNU nano 5.4
a="Hello"
print(a)
print("Index for 'H': %d" % a.find('H'))
print("Index for 'o': %d" % a.find('o'))
```

The image shows a terminal window with the GNU nano 5.4 editor. The code defines a string 'a' as "Hello", prints it, and then uses the find() method to find the index of 'H' (0) and 'o' (4).



```
pi@raspberrypi:~/RaspberrypiwithIOT/ch5/tkinter $ nano fun3.py
pi@raspberrypi:~/RaspberrypiwithIOT/ch5/tkinter $ python3 fun3.py
Hello
Index for 'H': 0
Index for 'o': 4
```

The image shows a terminal window where a script named fun3.py is created and executed. The script's output matches the output of the previous code block, displaying the string "Hello" and the indices for 'H' and 'o'.

\* prefix 'u': 문자열 앞에 붙는 알파벳 (예: r, b, u, f)

```
name="Lee"
string=f"Hi, my name is {name}" # f: format
print(string)

print(u"Hi, everyone!"=="Hi, everyone!") # u: unicode
```

The image shows a terminal window with two lines of Python code. The first line uses an f-string to format a name into a sentence. The second line compares a Unicode string (prefixed with 'u') with a regular string, demonstrating that they are equal.

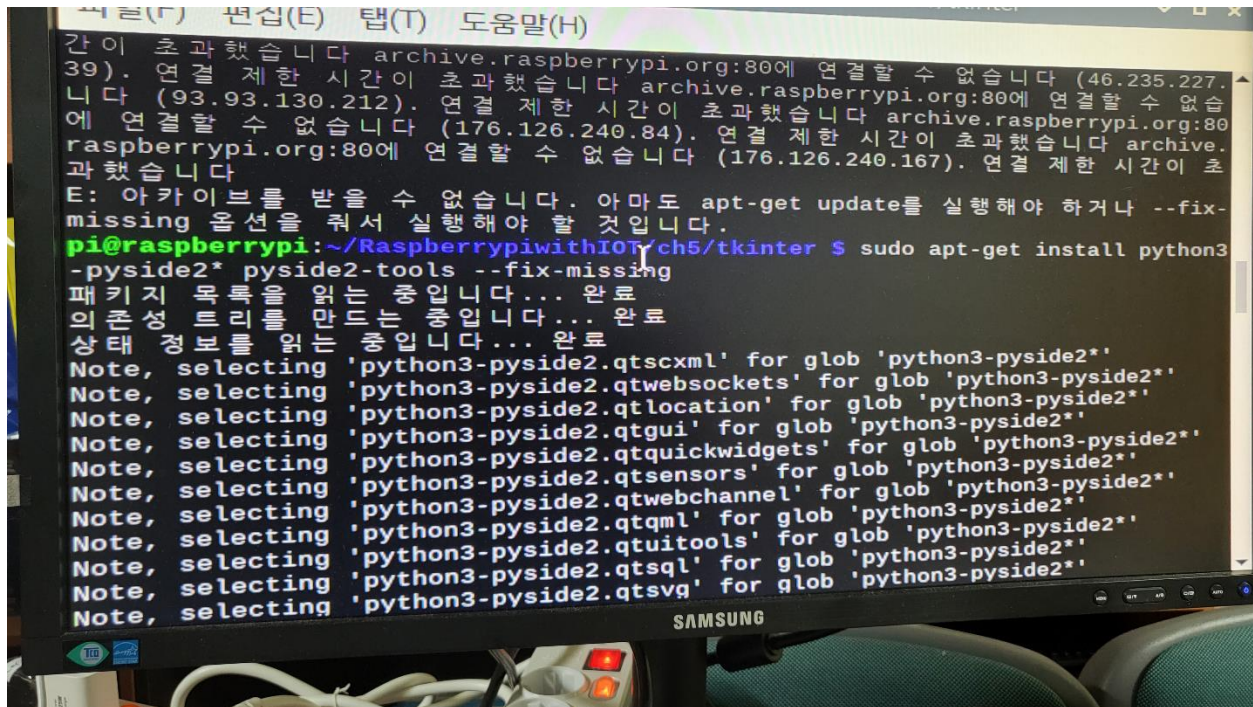


```
pi@raspberrypi:~/RaspberrypiwithIOT/ch5/tkinter $ python3 fun3.py
Hi, my name is Lee
True
```

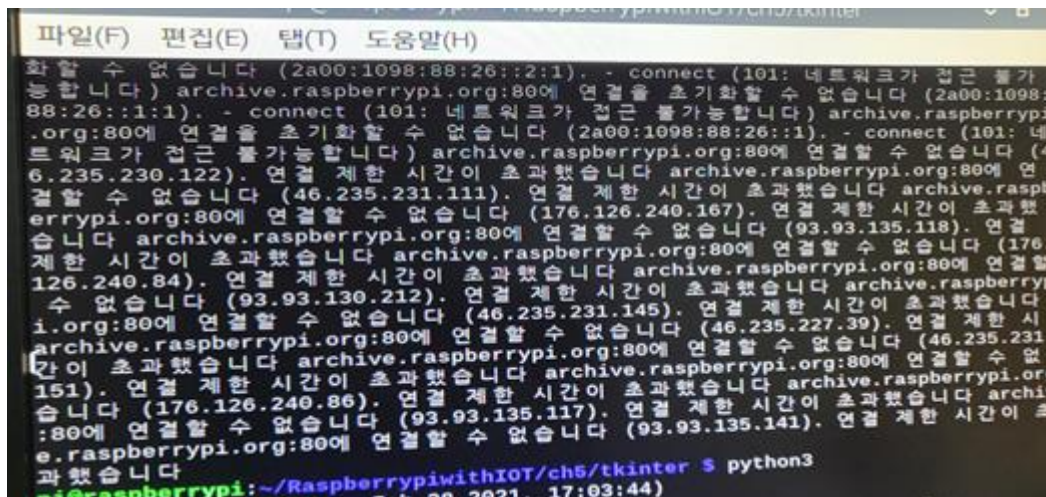
\* python3 에서는 default encoding 이 unicode 라서 'u'를 안 붙여도 됨

\* PySide2 패키지 설치 (ch5, 교재 p. 237 관련 (교재방법은 불가))

\$ sudo apt-get install python3-pyside2\* pyside2-tools --fix-missing

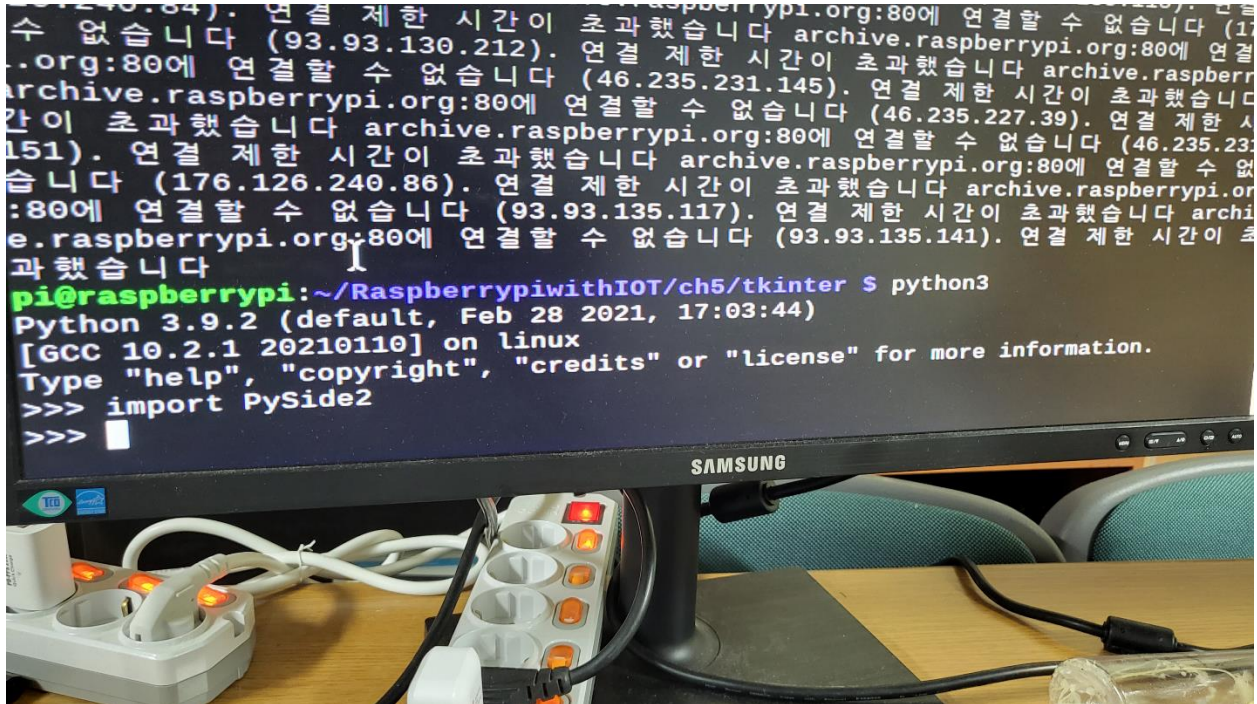


(중략)





- 설치 확인 (교재 p236, ch5)

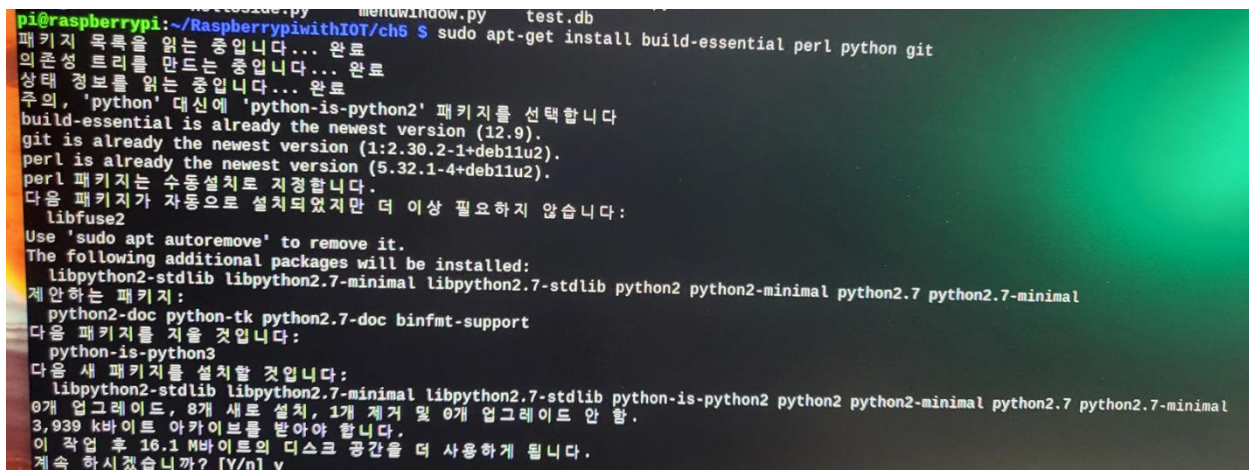


>>> quit()

(이렇게 해서 shell 에서 빠져 나오기)

**\* Qt 설치** (참고. <https://makeutil.tistory.com/138>. 교재 p.236 방법으로는 설치 불가)

\$ sudo apt-get install build-essential perl python git





(중간에 [y/n]는 'y'로 타이핑. 중략)

```
Unpacking python-is-python2 (2.7.18-9) ...
libpython2.7-stdlib:arm64 (2.7.18-8) 설정하는 중입니다 ...
python2.7 (2.7.18-8) 설정하는 중입니다 ...
libpython2-stdlib:arm64 (2.7.18-3) 설정하는 중입니다 ...
python2 (2.7.18-3) 설정하는 중입니다 ...
python-is-python2 (2.7.18-9) 설정하는 중입니다 ...
Processing triggers for gnome-menus (3.36.0-1) ...
Processing triggers for man-db (2.9.4-2) ...
Processing triggers for mailcap (3.69) ...
Processing triggers for desktop-file-utils (0.26-1) ...
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $
```

\$ sudo apt install qtbase5-dev qtchooser qt5-qmake qtbase5-dev-tools

```
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ sudo apt install qtbase5-dev qtchooser qt5-qmake qtbase5-dev-tools
패키지 목록을 읽는 중입니다... 완료
의존성 트리를 만드는 중입니다... 완료
상태 정보를 읽는 중입니다... 완료
다음 패키지가 자동으로 설치되었지만 더 이상 필요하지 않습니다:
libfuse2
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
libegl-dev libgl-dev libglu1-mesa-dev libglx-dev libpthread-stubs0-dev libqt5opengl5-dev libvulkan-dev libx11-dev libxau-dev
qt5-qmake-bin x11proto-dev x11proto-xext-dev xorg-sgml-doctools xtrans-dev
제안하는 패키지:
libx11-doc libxcb-doc libxext-doc default-libmysqlclient-dev firebird-dev libpq-dev libsqlite3-dev unixodbc-dev
다음 새 패키지를 설치할 것입니다:
libegl-dev libgl-dev libglu1-mesa-dev libglx-dev libpthread-stubs0-dev libqt5opengl5-dev libvulkan-dev libx11-dev libxau-dev
qt5-qmake qt5-qmake-bin qtbase5-dev qtbase5-dev-tools qtchooser x11proto-dev x11proto-xext-dev xorg-sgml-doctools xtrans-dev
0개 업그레이드, 21개 새로 설치, 0개 제거 및 0개 업그레이드 안 함.
5,937 k바이트 아카이브를 받아야 합니다.
이 작업 후 42.9 M바이트의 디스크 공간을 더 사용하게 됩니다.
계속 하시겠습니까? [Y/n] y
```

(중략)

```
Processing triggers for man-db (2.9.4-2) ...
libxdmcp-dev:arm64 (1:1.1.2-3) 설정하는 중입니다 ...
x11proto-xext-dev (2020.1-1) 설정하는 중입니다 ...
libxcb1-dev:arm64 (1.14-3) 설정하는 중입니다 ...
libx11-dev:arm64 (2:1.7.2-1+deb11u1) 설정하는 중입니다 ...
libxext-dev:arm64 (2:1.3.3-1.1) 설정하는 중입니다 ...
libglx-dev:arm64 (1.3.2-1) 설정하는 중입니다 ...
libgl-dev:arm64 (1.3.2-1) 설정하는 중입니다 ...
libegl-dev:arm64 (1.3.2-1) 설정하는 중입니다 ...
libglu1-mesa-dev:arm64 (9.0.1-1) 설정하는 중입니다 ...
qtbase5-dev:arm64 (5.15.2+dfsg-9) 설정하는 중입니다 ...
libqt5opengl5-dev:arm64 (5.15.2+dfsg-9) 설정하는 중입니다 ...
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $
```

\$ sudo reboot

#### 4. helloside.py (교재, p.237, ch5)

```
GNU nano 5.4 helloside.py
#!/usr/bin/python3

import sys
from PySide2 import QtCore, QtGui, QtWidgets

app = QtWidgets.QApplication(sys.argv)
#label = QtWidgets.QLabel("Hello World")
label = QtWidgets.QLabel("<h2>Hello World</h2>")
#label = QtWidgets.QLabel("<font color=blue size=40>Hello World</font>")
label.show()
app.exec_()
sys.exit()
```



```
pi@raspberrypi: ~/RaspberrypiwithIOT/ch5
파일(F) 편집(E) 탭(T) 도움말(H)
pi@raspberrypi:~ $ cd RaspberrypiwithIOT/ch5
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ ls
buttonwindow.py  dialogwindow.py  layoutwindow.py  quick  tk
clickwindow.py  eventwindow.py  listwindow.py   sqlitewindow.py
designer          helloside.py    menuwindow.py   test.db
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ ls
buttonwindow.py  dialogwindow.py  layoutwindow.py  quick  tk
clickwindow.py  eventwindow.py  listwindow.py   sqlitewindow.py
designer          helloside.py    menuwindow.py   test.db
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ python3 helloside.py
```

#### 5. clickwindow.py (교재, p.241, ch5, buttonwindow.py 는 오타)



```

GNU nano 5.4 clickwindow.py
#!/usr/bin/python3

import sys
from PySide2 import QtCore, QtWidgets

class ButtonWindow(QtWidgets.QWidget):
    def __init__(self, msg):
        QtWidgets.QWidget.__init__(self)
        self.setWindowTitle("Click Window")
        self.setGeometry(300, 200, 200, 200)
        self.button = QtWidgets.QPushButton(msg, self)
        self.button.setGeometry(50, 30, 100, 30)
        self.button.clicked.connect(self.hello)
        #QtCore.QObject.connect(self.button, QtCore.SIGNAL('clicked()'), self.h>

    def hello(self):
        print('Hello World')

if __name__ == "__main__":
    app = QtWidgets.QApplication(sys.argv)
    #button = QtWidgets.QPushButton('Hello')
    #button.clicked.connect(hello)
    #button.show()
    bw = ButtonWindow("Click me!")
    bw.show()
    sys.exit(app.exec_())

```

pi@raspberrypi: ~/RaspberrypiwithIOT/ch5

파일(F) 편집(E) 탭(T) 도움말(H)

Click Window ▾ ^ x

Click me!

```

pi@raspberrypi:~ $ cd RaspberrypiwithIOT/ch5/tkinter
pi@raspberrypi:~/RaspberrypiwithIOT/ch5/tkinter $ cd ..
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ python3
Python 3.9.2 (default, Feb 28 2021, 17:03:44)
[GCC 10.2.1 20210110] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> import PySide2
>>> exit()
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ python3 helloside.py
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ python3 buttonwindow.py
check is checked
radio1 is checked
radio2 is not checked
combo is Banana
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ python3 clickwindow.py
Hello World
Hello World
Hello World

```



## 6. layoutwindow1.py (교재, p.242, ch5. 실행에러. 인터넷 다운)

```
GNU nano 5.4 layoutwindow1.py
# Ref: https://wikidocs.net/21945
import sys
from PyQt5.QtWidgets import QApplication, QWidget, QPushButton, QHBoxLayout, QVBoxLayout

class MyApp(QWidget):

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

    def initUI(self):
        okButton = QPushButton('OK')
        cancelButton = QPushButton('Cancel')

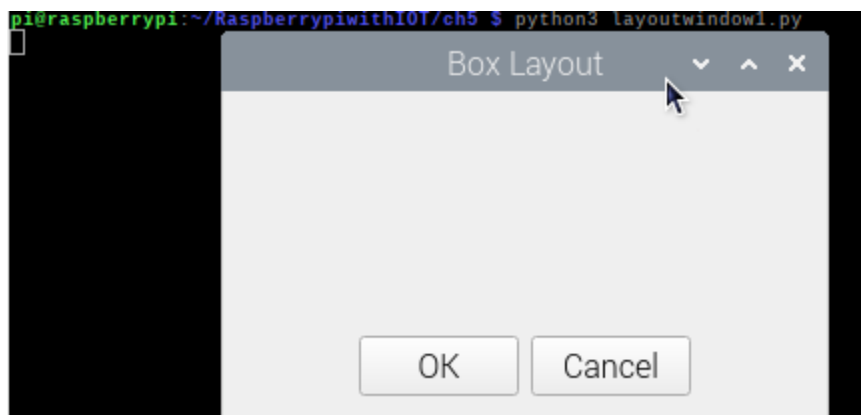
        hbox = QHBoxLayout()
        hbox.addStretch(1)
        hbox.addWidget(okButton)
        hbox.addWidget(cancelButton)
        hbox.addStretch(1)

        vbox = QVBoxLayout()
        vbox.addStretch(3)
        vbox.addLayout(hbox)
        vbox.addStretch(1)

        self.setLayout(vbox)

        self.setWindowTitle('Box Layout')
        self.setGeometry(300, 300, 300, 200)

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



## 7. eventwindow.py (교재, p.244, ch5)

```
GNU nano 5.4 eventwindow.py
#!/usr/bin/python3

import sys
from PySide2 import QtCore, QtGui, QtWidgets

class EventWindow(QtWidgets.QWidget):
    def __init__(self):
        QtWidgets.QWidget.__init__(self)
        self.setWindowTitle("Event Window")
        self.setGeometry(300, 300, 300, 300)

    def keyPressEvent(self, event):
        if event.key() == QtCore.Qt.Key_Escape:
            self.close()

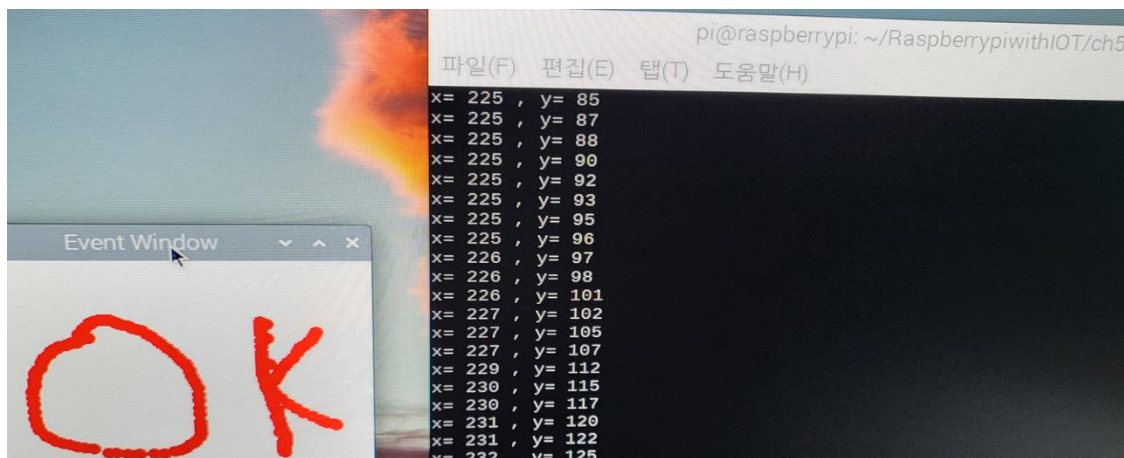
    def mouseDoubleClickEvent(self, event):
        self.close()

    points = []

    #def mousePressEvent(self, event):
    def mouseMoveEvent(self, event):
        print("x=", event.x(), ", y=", event.y())
        self.points.append((event.x(), event.y()))
        self.update()

    def paintEvent(self, event):
        painter = QtGui.QPainter()
        painter.begin(self)
        painter.setPen(QtGui.QPen(QtCore.Qt.red, 10, QtCore.Qt.SolidLine))
        for p in self.points:
            painter.drawPoint(p[0], p[1])
        painter.end()

if __name__ == "__main__":
    app = QtWidgets.QApplication(sys.argv)
    #button = QtWidgets.QPushButton('Hello')
    #button.clicked.connect(hello)
    #button.show()
    ew = EventWindow()
    ew.show()
    sys.exit(app.exec_())
```

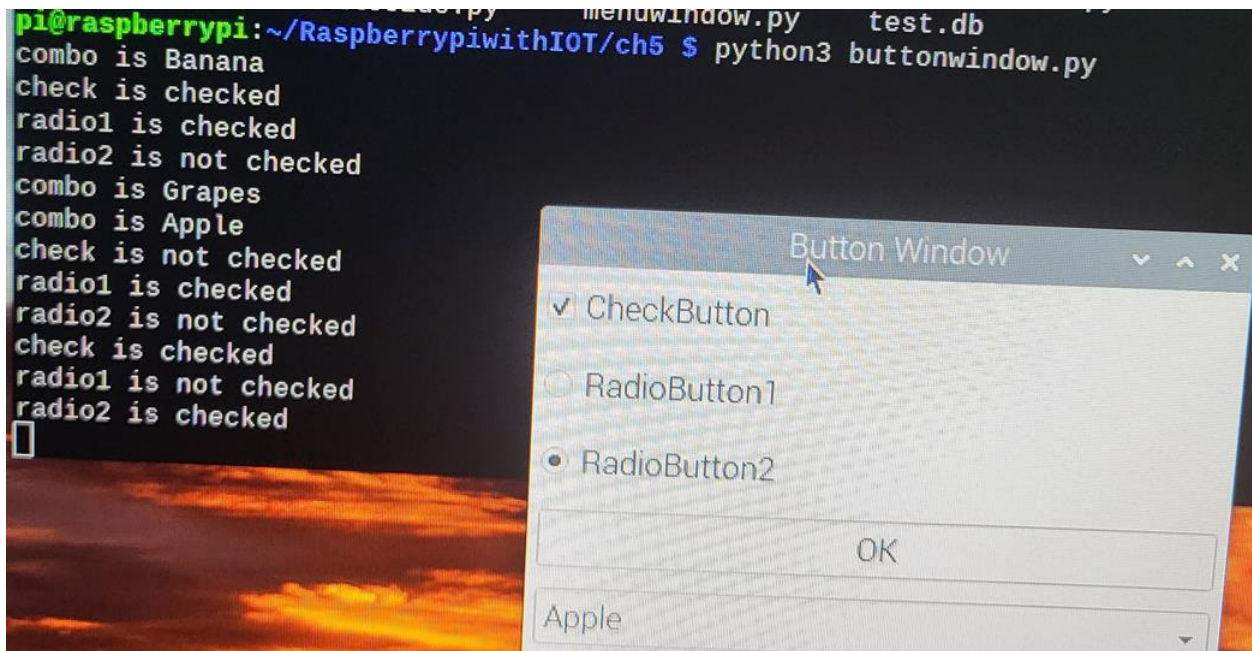




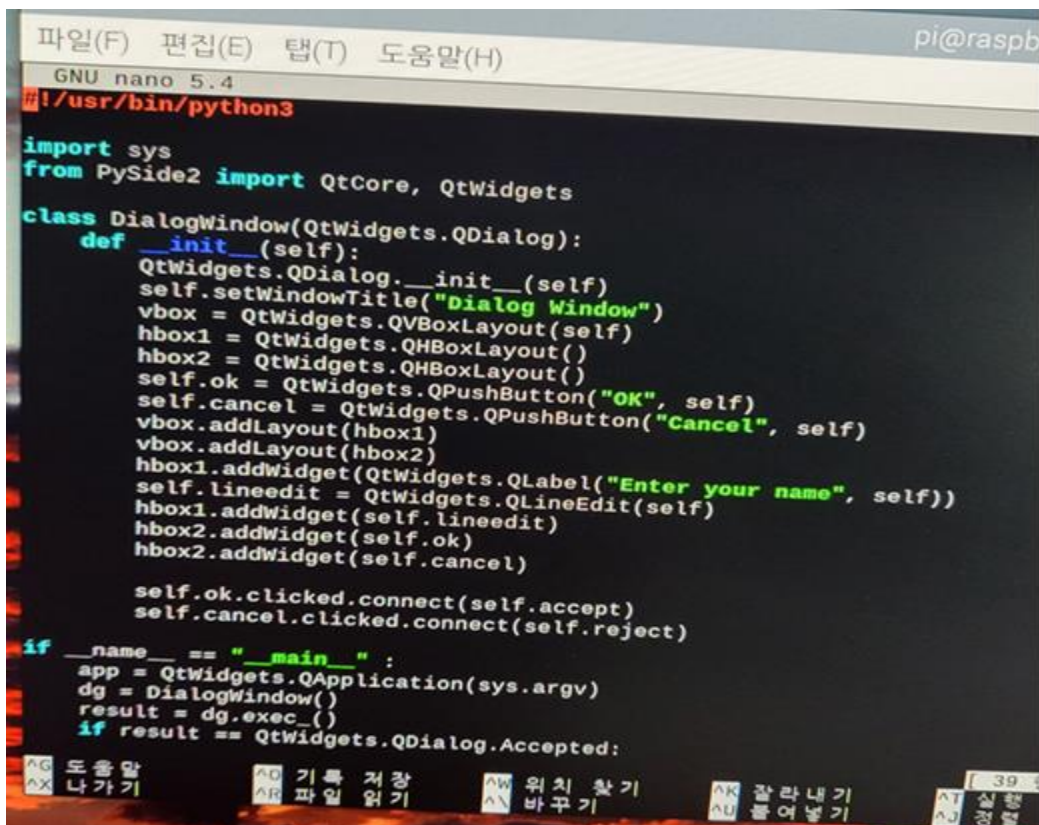
## 8. buttonwindow.py (교재, p.247, ch5)

```
파일(F) 편집(E) 탭(T) 도움말(H)  
GNU nano 5.4 buttonwindow.py  
#!/usr/bin/python3  
  
import sys  
from PySide2 import QtCore, QtWidgets  
  
class ButtonWindow(QtWidgets.QWidget):  
    def __init__(self):  
        QtWidgets.QWidget.__init__(self)  
        self.setWindowTitle("Button Window")  
        self.setGeometry(300, 200, 200, 200)  
        vbox = QtWidgets.QVBoxLayout(self)  
        vbox.setContentsMargins(QtCore.QMargins(5, 5, 5, 5))  
        vbox.setSpacing(10)  
        self.checkbox = QtWidgets.QCheckBox("CheckButton", self)  
        self.checkbox.setObjectName("check")  
        vbox.addWidget(self.checkbox)  
  
        buttongroup = QtWidgets.QButtonGroup()  
        self.radiobutton1 = QtWidgets.QRadioButton("RadioButton1", self)  
        self.radiobutton1.setObjectName("radio1")  
        buttongroup.addButton(self.radiobutton1)  
        vbox.addWidget(self.radiobutton1)  
        self.radiobutton2 = QtWidgets.QRadioButton("RadioButton2", self)  
        self.radiobutton2.setObjectName("radio2")  
        buttongroup.addButton(self.radiobutton2)  
        vbox.addWidget(self.radiobutton2)  
  
        self.button = QtWidgets.QPushButton("OK", self)  
        self.button.setObjectName("button")  
        vbox.addWidget(self.button)  
        self.button.clicked.connect(self.clicked)  
  
        self.combo = QtWidgets.QComboBox(self)  
        self.combo.setObjectName("combo")  
        self.combo.addItem("Apple")  
        self.combo.addItem("Banana")  
        self.combo.addItem("Grapes")  
        vbox.addWidget(self.combo)  
        self.combo.activated[str].connect(self.activated)  
  
        self.resize(350, 200)  
  
    def printState(self, button):  
        if button.isChecked():  
            print(button.objectName(), "is checked")  
        else :  
            print(button.objectName(), "is not checked")  
  
    def clicked(self):
```

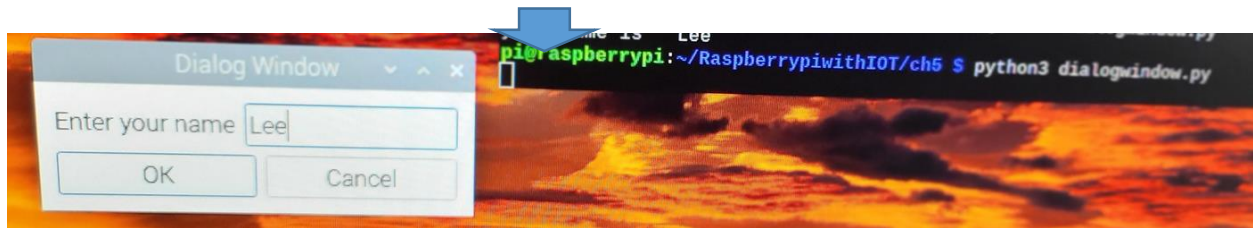
AG 도움말 AG 기록 저장 AW 위치 찾기 AK 잘라내기 AT 실행  
AX 나가기 AX 파일 읽기 AX 바꾸기 AX 붙여넣기 AX 정렬 AX 위치 지령 행으로



## 9. dialogwindow.py (교재, p.250, ch5)







pi@raspberrypi:~/RaspberrypiwithIOT/ch5 \$ python3 dialogwindow.py  
your name is Lee  
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 \$

## 10. menuwindow.py (교재, p.253, ch5)

```
GNU nano 5.4 menuwindow.py
#!/usr/bin/python3

import sys
from PySide2 import QtCore, QtGui, QtWidgets

class MenuWindow(QtWidgets.QMainWindow):
    def __init__(self):
        QtWidgets.QMainWindow.__init__(self)
        self.setWindowTitle("Menu Window")
        self.setGeometry(300, 200, 300, 300)

    def setMenus(self):
        self.statusBar = QtWidgets.QStatusBar()
        self.setStatusBar(self.statusBar)
        self.fileMenu = self.menuBar().addMenu("&File")
        self.editMenu = self.menuBar().addMenu("&Edit")
        self.helpMenu = self.menuBar().addMenu("&Help")
        self.newAction = QtWidgets.QAction(QtGui.QIcon('filenew.png'), "&New", self,
            shortcut=QtGui.QKeySequence.New, statusTip="Create New File",
            triggered=self.newFile)
        self.openAction = QtWidgets.QAction("&Open", self,
            shortcut=QtGui.QKeySequence.Open, statusTip="Open File",
            triggered=self.openFile)
        self.saveAction = QtWidgets.QAction("&Save", self,
            shortcut=QtGui.QKeySequence.Save, statusTip="Save File")
        self.exitAction = QtWidgets.QAction(QtGui.QIcon('application-exit.png'), "&Exit", self,
            shortcut="Ctrl+Q", statusTip="Exit Application",
            triggered=self.close)
        self.fileMenu.addAction(self.newAction)
        self.fileMenu.addAction(self.openAction)
        self.fileMenu.addAction(self.saveAction)
        self.fileMenu.addSeparator()
        self.fileMenu.addAction(self.exitAction)
        self.aboutAction = QtWidgets.QAction("&About", self,
            statusTip="About Program",
            triggered=self.aboutProgram)
        self.helpMenu.addAction(self.aboutProgram)
        self.toolbar = self.addToolBar('Exit')
        self.toolbar.addAction(self.exitAction)
        self.textedit = QtWidgets.QTextEdit(self)
        self.setCentralWidget(self.textedit)

    def newFile(self):
        self.textedit.setText('')

    def openFile(self):
        self.filename, self.filtername = QtWidgets.QFileDialog.getOpenFileName(self)
        self.textedit.setText(open(self.filename).read())

    def aboutProgram(self):
        QtWidgets.QMessageBox.about(self, "About This Program",
            "This program tests menus and file dialog")
```



## 11. listwindow.py (교재, p.257, ch5)

```
GNU nano 5.4
#!/usr/bin/python3
listwindow.py

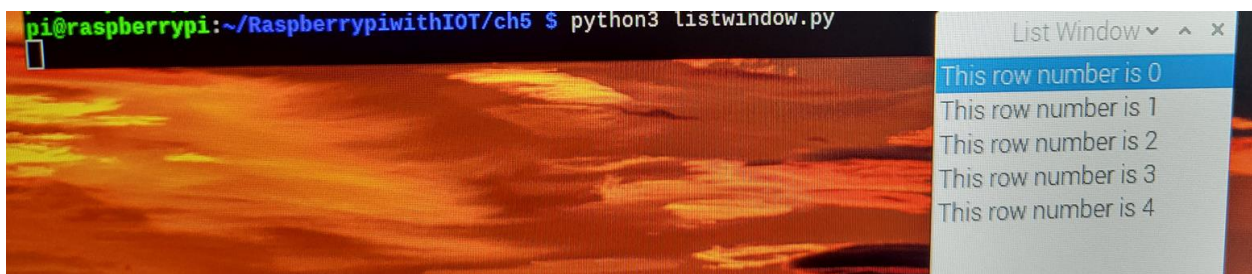
import sys
from PySide2 import QtCore, QtGui, QtWidgets

class ListWindow(QtWidgets.QWidget):
    def __init__(self, model):
        QtWidgets.QWidget.__init__(self)
        self.setWindowTitle("List Window")
        self.setGeometry(300, 200, 200, 200)
        listview = QtWidgets.QListView(self)
        self.model = model
        listview.setModel(model)

    def setList(self, model):
        for i in range(5):
            model.appendRow(QtGui.QStandardItem("This row number is {}".format(i)))

if __name__ == "__main__":
    app = QtWidgets.QApplication(sys.argv)
    model = QtGui.QStandardItemModel()
    #model.setFilter("name like 'Im%")

    lw = ListWindow(model)
    lw.setList(model)
    lw.show()
    sys.exit(app.exec_())
```





\*SQLITE 설치 (교재, p.258, ch5)

\$ sudo apt-get install libqt5sql5-sqlite

```
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ sudo apt-get install libqt5sql5-sqlite
패키지 목록을 읽는 중입니다... 완료
의존성 트리를 만드는 중입니다... 완료
상태 정보를 읽는 중입니다... 완료
libqt5sql5-sqlite is already the newest version (5.15.2+dfsg-9).
libqt5sql5-sqlite 패키지는 수동설치로 지정합니다.
다음 패키지가 자동으로 설치되었지만 더 이상 필요하지 않습니다:
libfuse2
Use 'sudo apt autoremove' to remove it.
0개 업그레이드, 0개 새로 설치, 0개 제거 및 1개 업그레이드 안 함.
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $
```

12. sqlitewindow.py (교재, p.258, ch5)

```
GNU nano 5.4
#!/usr/bin/python3

import sys
from PySide2 import QtCore, QtWidgets, QSql

def connectDB():
    db = QSql.QSqlDatabase.addDatabase('QSQLITE')
    db.setDatabaseName('test.db')

    if not db.open():
        return False

    return True

def initModel(model):
    model.setTable("student")
    model.setEditStrategy(QSql.QSqlTableModel.OnManualSubmit)
    model.select()

    model.setHeaderData(0, QtCore.Qt.Horizontal, "id")
    model.setHeaderData(1, QtCore.Qt.Horizontal, "name")
    model.setHeaderData(2, QtCore.Qt.Horizontal, "birth")
    model.setHeaderData(3, QtCore.Qt.Horizontal, "gender")

class SqliteWindow(QtWidgets.QWidget):
    def __init__(self, model):
        QtWidgets.QWidget.__init__(self)
        self.setWindowTitle("Sqlite Window")
        self.setGeometry(300, 200, 480, 200)
        vbox = QtWidgets.QVBoxLayout(self)
        hbox = QtWidgets.QHBoxLayout()
        label = QtWidgets.QLabel("Query Filter", self)
        self.queryedit = QtWidgets.QLineEdit(self)
        table = QtWidgets.QTableView(self)
        self.model = model
        table.setModel(model)
        #table.resize(460, 200)
        hbox.addWidget(label)
        hbox.addWidget(self.queryedit)
        vbox.addLayout(hbox)
        vbox.addWidget(table)
        self.queryedit.returnPressed.connect(self.sendQuery)

    def sendQuery(self):
        text = self.queryedit.text()
        self.model.setFilter(text)
        self.model.select()

도움말
나가기
기록 저장
파일 열기
위치 찾기
```



```
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ python3 sqlitewindow.py
```

Sqlite Window

Query Filter

	id	name	birth	gender
1	1	Hong ...	850101	M
2	2	Im ...	730505	M
3	3	Hwang ...	800515	F
4	4	Jang GilSan	771028	M

Sqlite Window

Query Filter name like '%Im%'

	id	name	birth	gender
1	2	Im ...	730505	M
2	5	Il JiMae	880429	M

파일(F) 편집(E) 탭

```
label1 = QtWidgets.  
TypeError: 'PySide2.  
PySide2.QtWidgets.  
Supported signatures  
PySide2.QtWidgets.  
Side2.QtCore.Qt.Wind  
PySide2.QtWidgets.  
e, PySide2.QtCore.Qt  
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ python3 dialogwindow.py  
your name is fdsf  
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ python3 menuwindow.py  
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ python3 listwindow.py  
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ sudo apt-get install libqt5sql5-sqlite  
패키지 목록을 읽는 중입니다... 완료  
의존성 트리를 만드는 중입니다... 완료  
상태 정보를 읽는 중입니다... 완료  
libqt5sql5-sqlite is already the newest version (5.15.2+dfsg-9).  
libqt5sql5-sqlite 패키지는 수동설치로 지정합니다.  
다음 패키지가 자동으로 설치되었지만 더 이상 필요하지 않습니다:  
libfuse2  
Use 'sudo apt autoremove' to remove it.  
0개 업그레이드, 0개 새로 설치, 0개 제거 및 0개 업그레이드 안 함.  
pi@raspberrypi:~/RaspberrypiwithIOT/ch5 $ python3 sqlitewindow.py
```