Chapter 11 – Groupbox

groupbx application

Step 1 Open Qt Designer

- Open the QtDesigner by selecting the Qt Designer program icon

Step 2 Open the Tab Widget application

- Click on the "Dialog without buttons"
- Click the Create button
- A new form with the caption "untitled" is created with no widgets

Step 3 Save the application as

- Click File > Save As
- Save the file as `groupbx.ui`

Step 4 Add widgets to the form

- Add the following widgets to the form (Note the case!)

Widget	Property	Value
QGroupBox (Containers section)	objectName title	IceCreamBox Ice Creams
QGroupBox (Containers section)	objectName title checkable	DrinksBox Drinks True
QLabel (Display widget section)	objectName text	label
QSpacer (Space section)	objectName	verticalSpacer
QSpacer (Space section)	objectName	verticalSpacer_2
QPushButton (Buttons section)	objectName text	CalculateButton Calculate Bill

- Add the following widgets to the IceCreamBox (Note the case!)

Widget	Property	Value
QRadioButton (Buttons section)	objectName	vanila
	text	Plain Vanilla $5
QRadioButton (Buttons section)	objectName	blacksunday
	text	Black Sunday $10
QRadioButton (Buttons section)	objectName	chocolatechips
	text	Chocolate Chips $20
QRadioButton (Buttons section)	objectName	strawberry
	text	Strawberry $15

- Add the following widgets to the DrinksBox (Note the case!)

Widget	Property	Value
QRadioButton (Buttons section)	objectName	coffee
	text	Coffee $5
QRadioButton (Buttons section)	objectName	colddrink
	text	Cold Drink $10
QRadioButton (Buttons section)	objectName	juice
	text	Juice $15

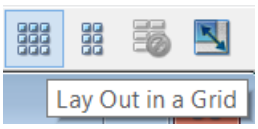
- Lay the groupboxes vertically. Click on the Ice Creams groupbox press and hold Ctrl and click on the Drinks groupbox.

- Right click and select Layout > Layout Vertically

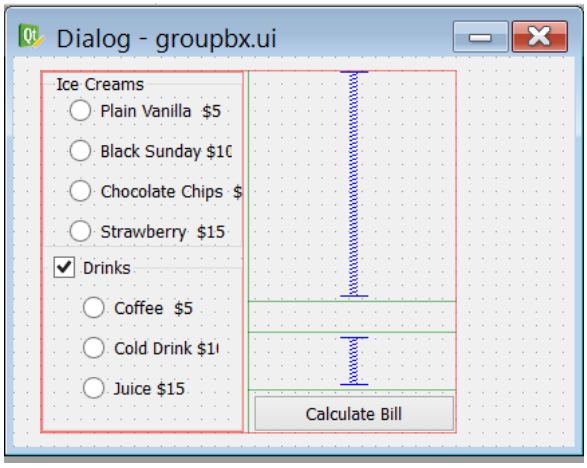
- We want to arrange the widgets according to the grid (notice the dots on the form)

- Use the Ctrl-click method to select the groupbox vertical layout, the vertical spacers, the label and the pushbutton all together

- Click the Grid layout icon on the toolbar



- All the widgets will be laid in a grid layout and will have a red border



Step 5 Save the form

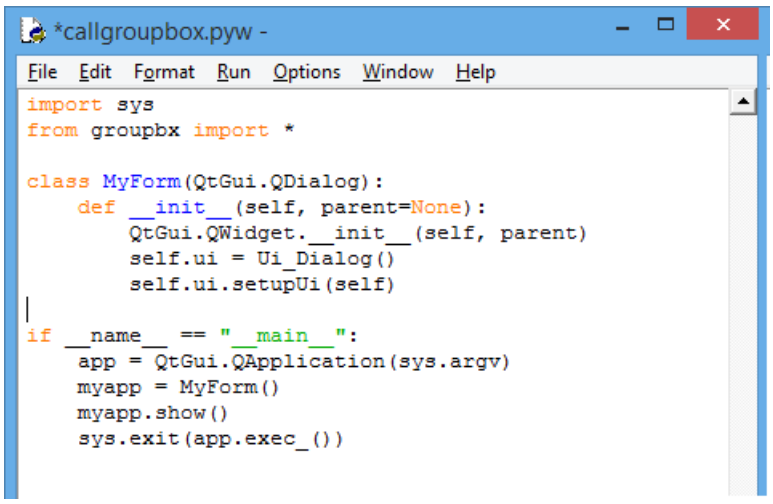
- Save the file as `groupbx.ui` **(note the case!! Python is case sensitive)**

Step 6 Convert the .ui file to a .py file

- Convert the `groupbx.ui` file to `groupbx.py` using `pyuic4`. **(note the case!! Python is case sensitive, so even on file names the case must be the same throughout)**

Step 7 Create a source file (.pyw) that imports the .py file

- Create a source file that will import the .py file created in step above and from which we will invoke the user interface
- Use the following code (note the indentation and case!!)



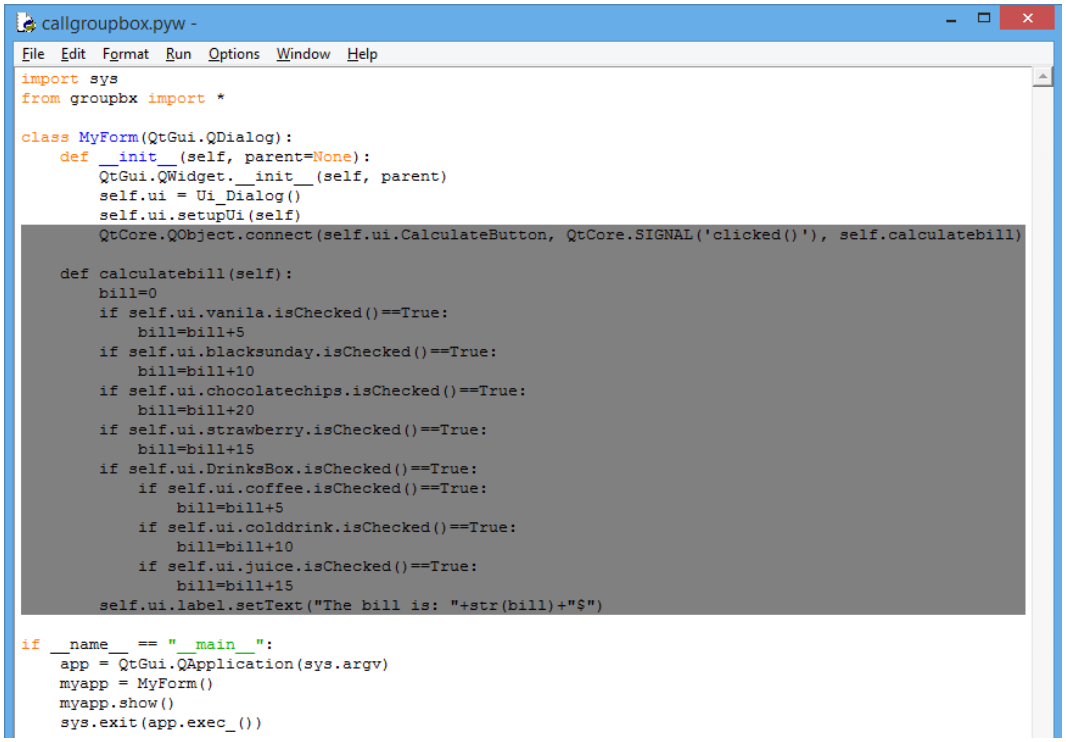
- Save the file as `callgroupbox.pyw`
- Run and test the application upto this point.

Step 7 Add code to create the combobox items and signal/slots

- Add the following code to create a function to calculate the bill and link the buttons click signal to this function. (Note the case and indentation)

```
        QtCore.QObject.connect(self.ui.CalculateButton,
QtCore.SIGNAL('clicked()'), self.calculatebill)

    def calculatebill(self):
        bill=0
        if self.ui.vanila.isChecked()==True:
            bill=bill+5
        if self.ui.blacksunday.isChecked()==True:
            bill=bill+10
        if self.ui.chocolatechips.isChecked()==True:
            bill=bill+20
        if self.ui.strawberry.isChecked()==True:
            bill=bill+15
        if self.ui.DrinksBox.isChecked()==True:
            if self.ui.coffee.isChecked()==True:
                bill=bill+5
            if self.ui.colddrink.isChecked()==True:
                bill=bill+10
            if self.ui.juice.isChecked()==True:
                bill=bill+15
        self.ui.label.setText("The bill is: "+str(bill)+"$")
```



- Note that we only test if the coffee, colddrink or juice buttons are checked if the drinksbox is checked
- Save the file as `callgroupbox.pyw`

- Run and test the application.
- If you uncheck the checkbox for the drinksbox the widgets in the groupbox are disabled and the user cannot select it. Was it really necessary to text if the drinksbox was checked in our code above?