

PYQTGRAPH

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PYQTGRAPH

WHAT IS PYQTGRAPH?

- PyQtGraph is a graphics and user interface library for Python that provides functionality commonly required in engineering and science applications.
- Its primary goals are 1) to provide fast, interactive graphics for displaying data (plots, video, etc.) and 2) to provide tools to aid in rapid application development.
- PyQtGraph makes heavy use of the Qt GUI platform (via PyQt or PySide) for its high-performance graphics and numpy for heavy number crunching.
- Bring optimized and simplified primitives to this framework to allow data visualization with minimal effort.

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WHAT IS PYQTGRAPH?

Anaconda Prompt - pip install pyqtgraph

```
(base) C:\Users\john.ochoa>designer

(base) C:\Users\john.ochoa>pip install pyqtgraph
Collecting pyqtgraph
  Downloading https://files.pythonhosted.org/packages/cd/ad/307e0280df5c19986c4206d138ec3a8954afc722cea991f4adb4a16337d9/pyqtgraph-0.10.0.tar.gz (1.5MB)
    100% |#####| 1.6MB 697kB/s
Requirement already satisfied: numpy in c:\users\john.ochoa\appdata\local\continuum\anaconda3\lib\site-packages (from pyqtgraph) (1.16.2)
Building wheels for collected packages: pyqtgraph
  Building wheel for pyqtgraph (setup.py) ... done
  Stored in directory: C:\Users\john.ochoa\AppData\Local\pip\Cache\wheels\93\2\de\184ecdefdb91d760706d02389015dfa3b96e927eb1c42ace37
Successfully built pyqtgraph
Installing collected packages: pyqtgraph
Successfully installed pyqtgraph-0.10.0
```

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BASIC EXAMPLE

- Create/show a plot widget, display three data curves:

```
import pyqtgraph as pg
import numpy as np
import numpy as np
from PyQt5.QtWidgets import QApplication
import sys

x = np.arange(1000)
y = np.random.normal(3, 2.5, size=(3, 1000))

app = QApplication(sys.argv)
plotWidget = pg.plot(title="Curves")
for i in range(3):
    plotWidget.plot(x,y[i], pen=(i,3))
plotWidget.plot(x)
```

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PYQTGRAPH AND QT

- In Designer, create a QGraphicsView widget (“Graphics View” under the “Display Widgets” category).
- Right-click on the QGraphicsView and select “Promote To...”.
- Under “Promoted class name”, enter the class name you wish to use (“PlotWidget”, “GraphicsLayoutWidget”, etc).
- Under “Header file”, enter “pyqtgraph”.
- Click “Add”, then click “Promote”.

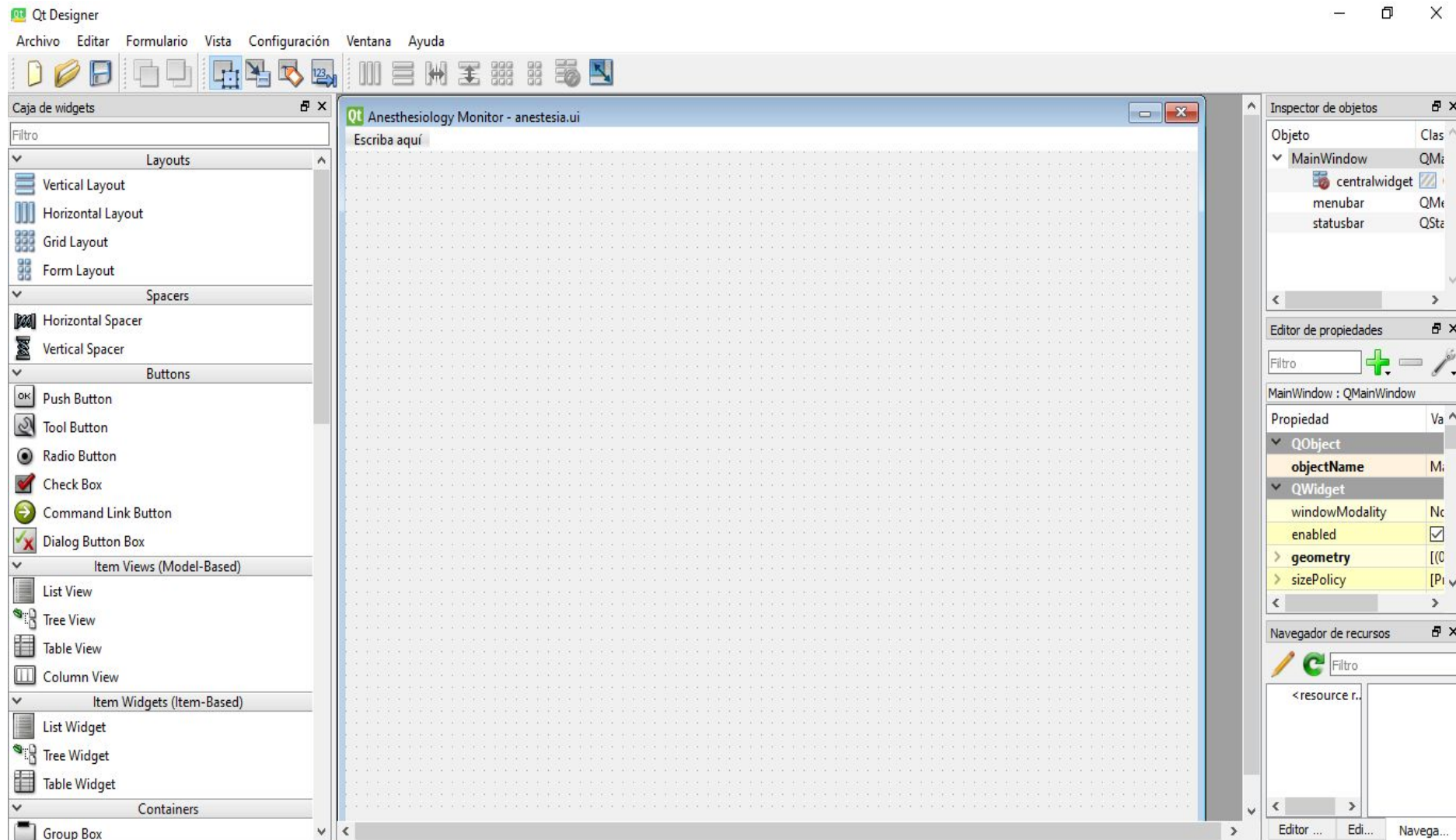
PYQTGRAPH

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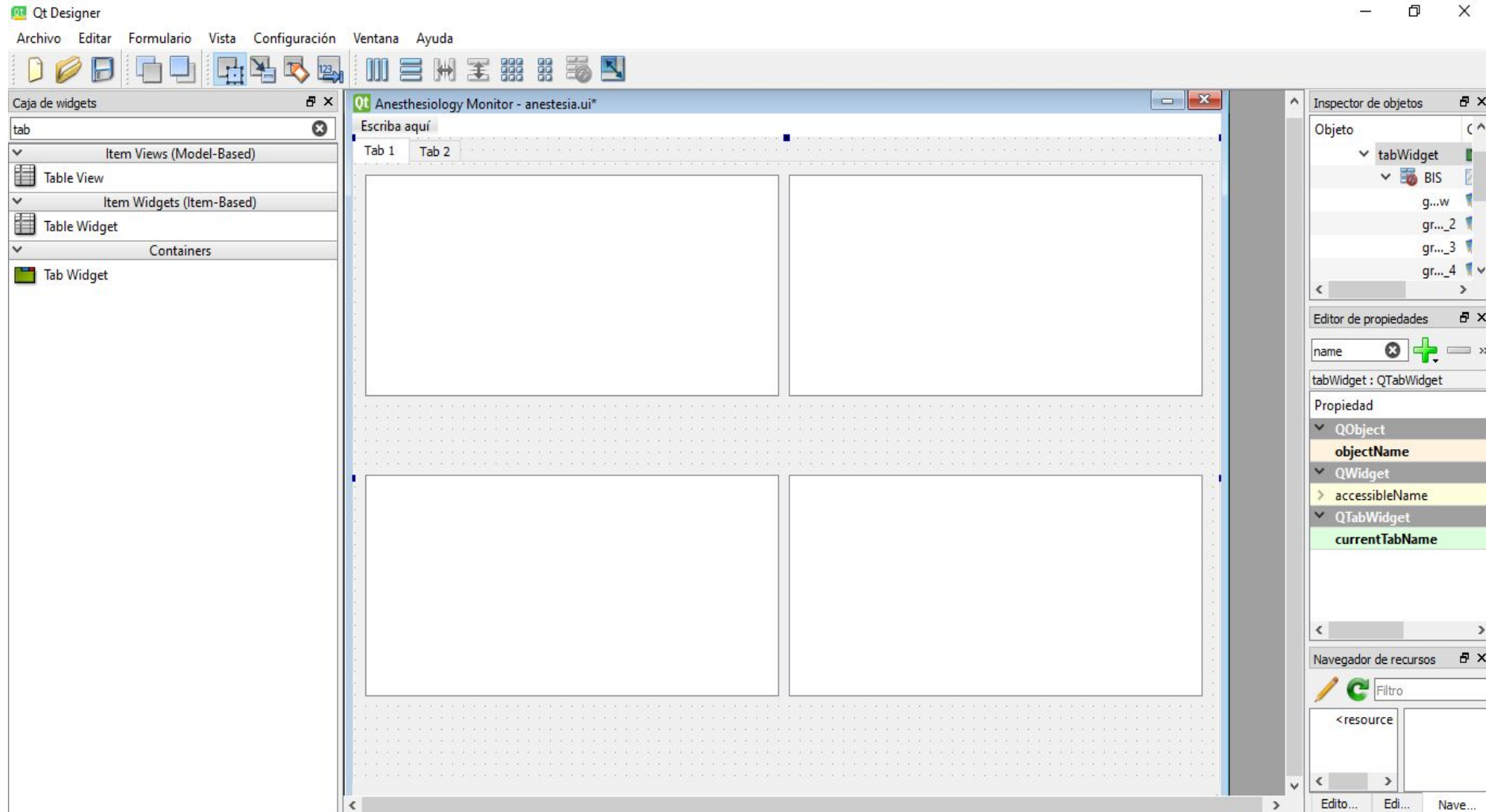
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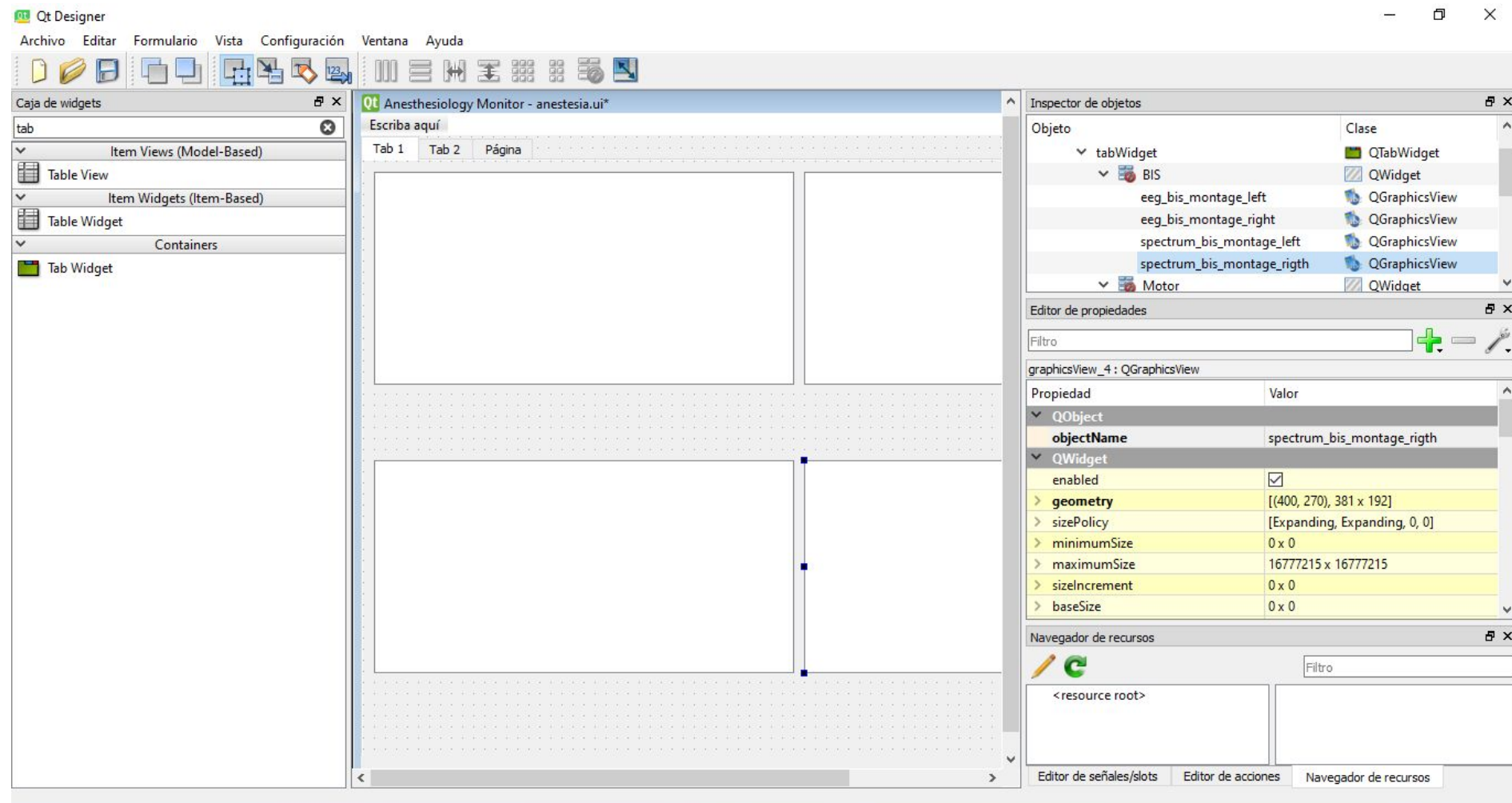
PYQTGRAPH

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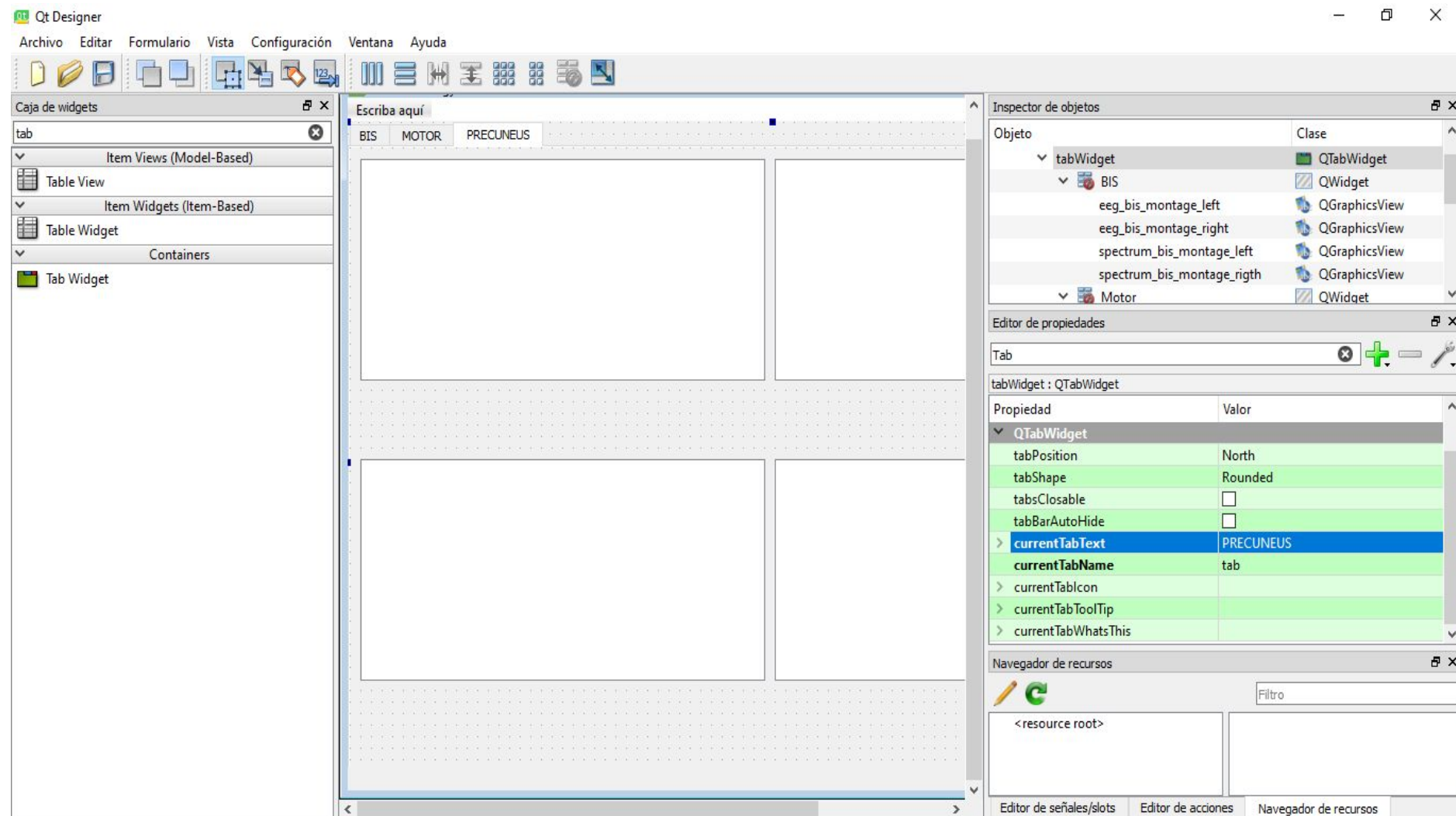
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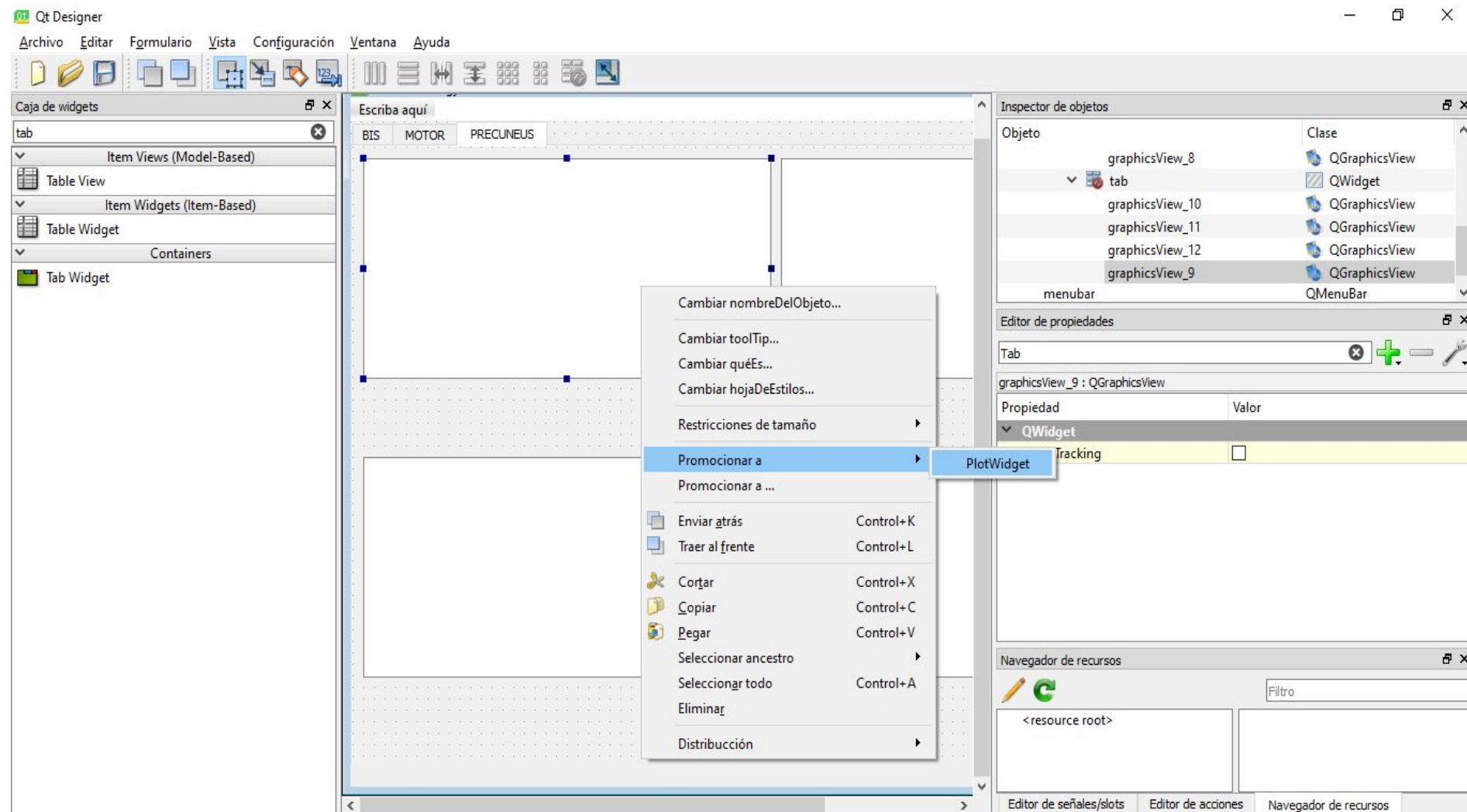
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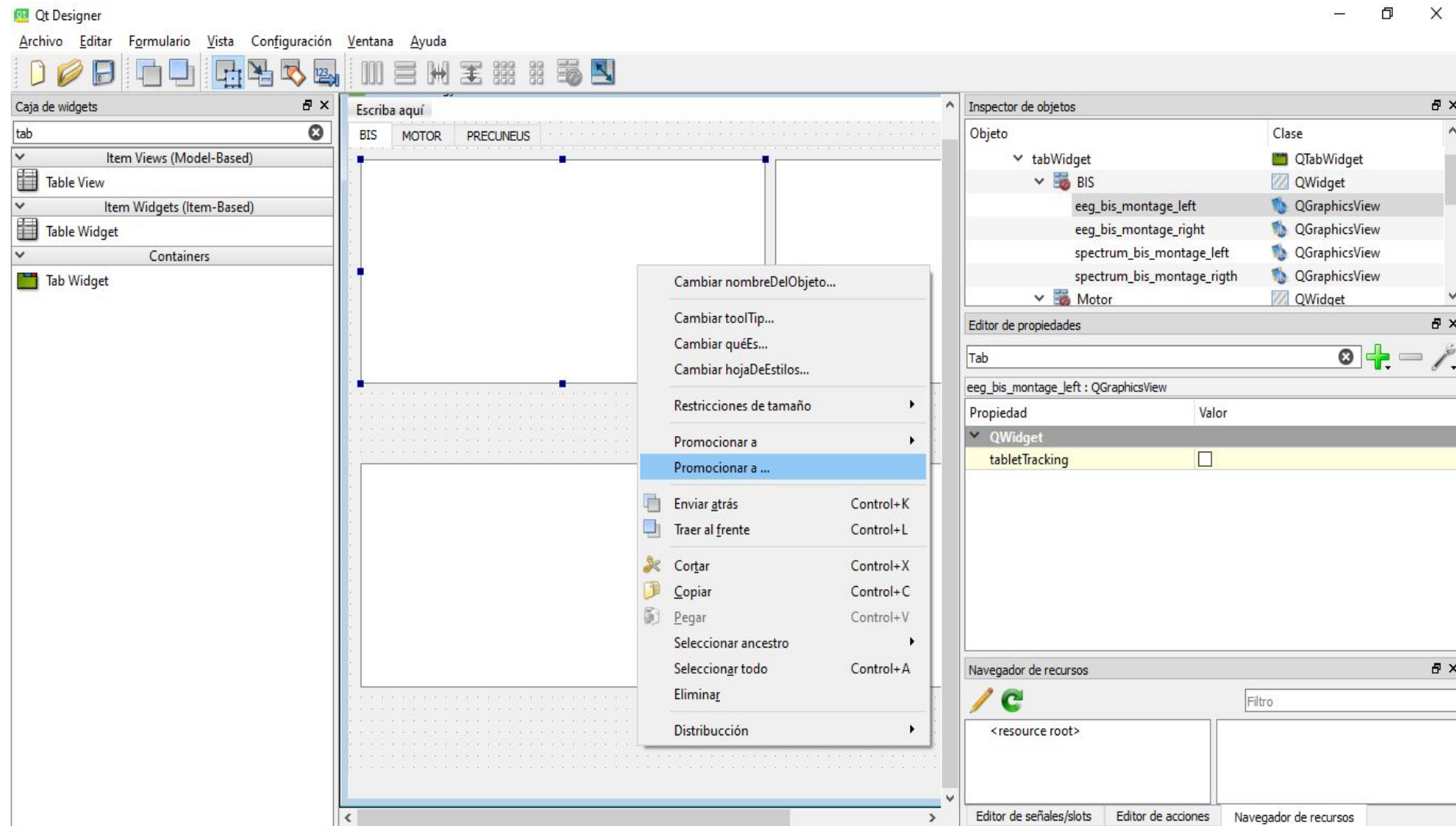
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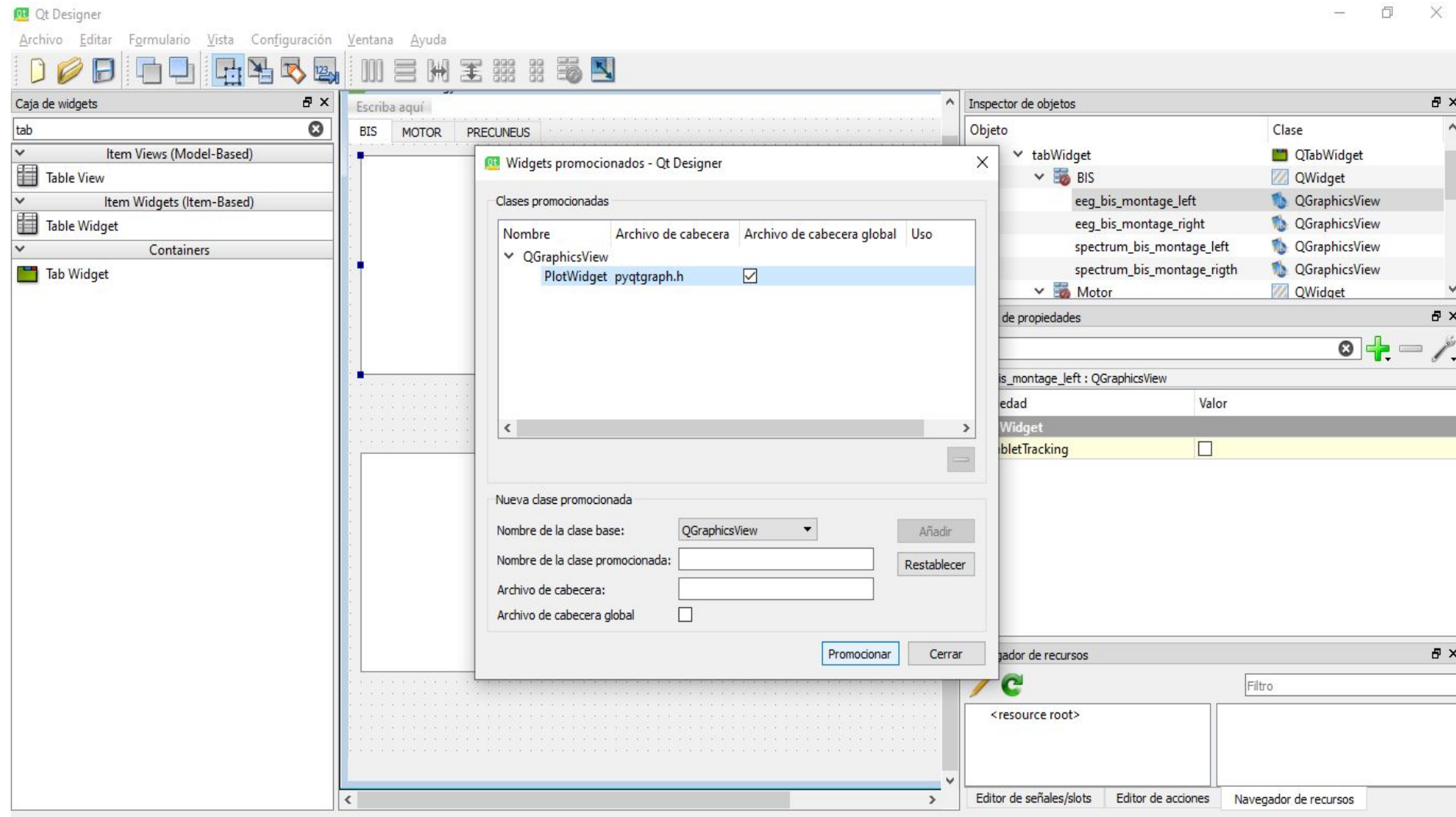
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PYQTGRAPH AND QT



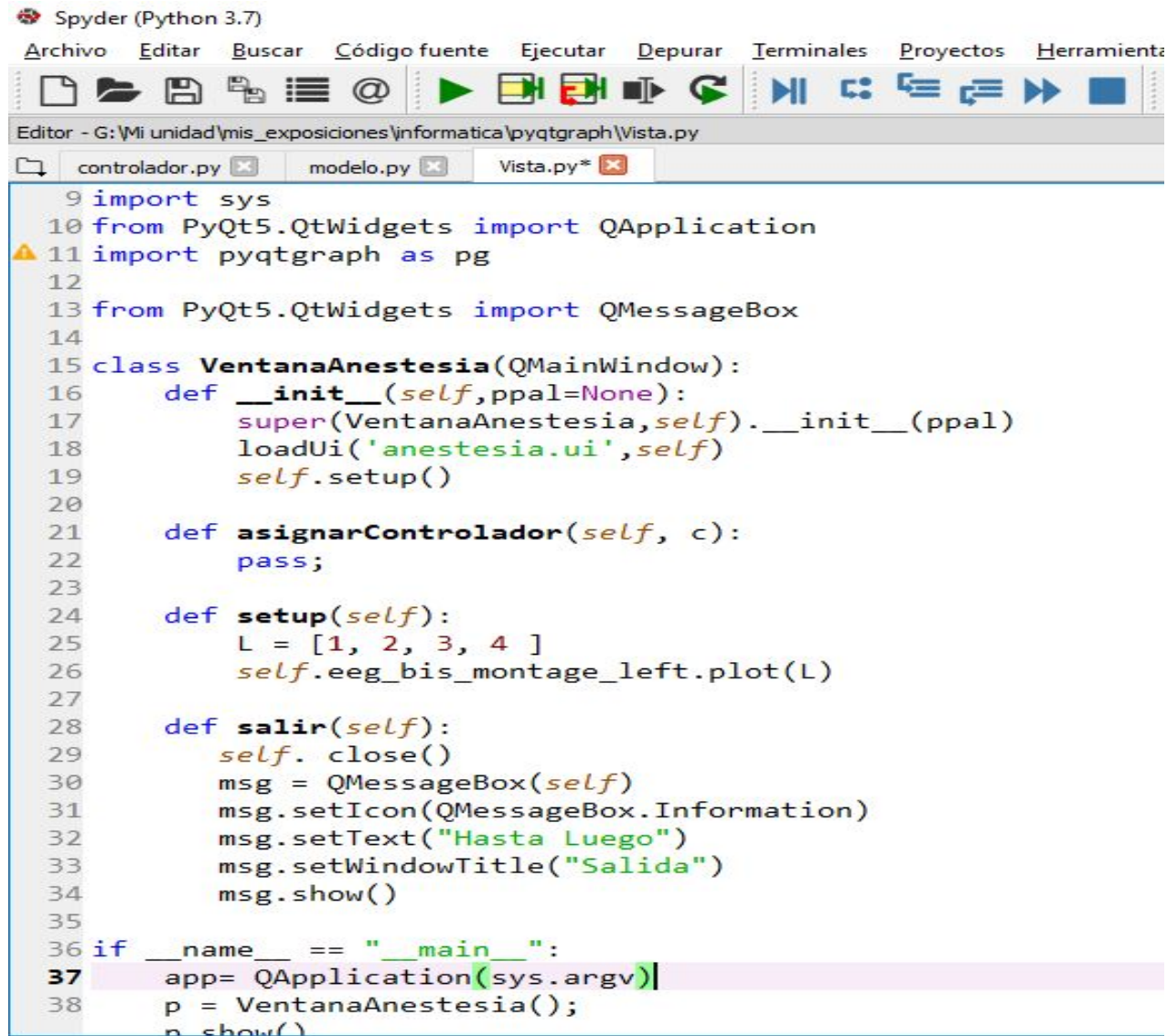
PYQTGRAPH

PYQTGRAPH AND QT



PYQTGRAPH

PYQTGRAPH AND QT



```
Spyder (Python 3.7)
Archivo  Editar  Buscar  Código fuente  Ejecutar  Depurar  Terminales  Proyectos  Herramientas

Editor - G:\Mi unidad\mis_exposiciones\informatica\pyqtgraph\Vista.py
controlador.py x  modelo.py x  Vista.py* x

9 import sys
10 from PyQt5.QtWidgets import QApplication
11 import pyqtgraph as pg
12
13 from PyQt5.QtWidgets import QMessageBox
14
15 class VentanaAnestesia(QMainWindow):
16     def __init__(self, ppal=None):
17         super(VentanaAnestesia, self).__init__(ppal)
18         loadUi('anestesia.ui', self)
19         self.setup()
20
21     def asignarControlador(self, c):
22         pass;
23
24     def setup(self):
25         L = [1, 2, 3, 4]
26         self.eeg_bis_montage_left.plot(L)
27
28     def salir(self):
29         self.close()
30         msg = QMessageBox(self)
31         msg.setIcon(QMessageBox.Information)
32         msg.setText("Hasta Luego")
33         msg.setWindowTitle("Salida")
34         msg.show()
35
36 if __name__ == "__main__":
37     app= QApplication(sys.argv)
38     p = VentanaAnestesia()
39     p.show()
```

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The image shows the Spyder Python IDE (Python 3.7) with a project titled 'Anesthesiology Monitor'. The main window displays four empty plots arranged in a 2x2 grid, each with axes ranging from 0 to 1. The plots are labeled 'BIS', 'MOTOR', and 'PRECUNEUS' in the top-left corner. The bottom-right plot is empty. The IDE's left pane shows the source code for 'controlador.py' and 'modelo.py'. The right pane shows a file explorer with a table of files and folders.

Source Code (controlador.py):

```

5 @author: Neuroingenieria
6 """
7 from PyQt5.QtWidgets import
8 from PyQt5.uic import loadU
9 import sys
10 from PyQt5.QtWidgets import
11 import pyqtgraph as pg
12
13 from PyQt5.QtWidgets import
14
15 class VentanaAnestesia(QMai
16     def __init__(self, ppal=
17         super(VentanaAneste
18         loadUi('anestesia.u
19         self.setup()
20
21     def asignarControlador(
22         pass;
23
24     def setup(self):
25         pass;
26
27     def salir(self):
28         self.close()
29         msg = QMessageBox(se
30         msg.setIcon(QMessage
31         msg.setText("Hasta L
32         msg.setWindowTitle("
33         msg.show()
34
35 if __name__ == "__main__":

```

File Explorer Table:

Tamaño	Tipo	Última r
	Nueva carpeta	29/10/20
162 bytes	Archivo docx	29/10/20
444 KiB	Archivo tmp	29/10/20
4 KiB	Archivo ui	29/10/20
18,7 MiB	Archivo zip	30/11/20
1,6 MiB	Archivo docx	29/10/20
1 KiB	Archivo py	21/02/20
1 KiB	Archivo ui	21/02/20
970 bytes	Archivo py	29/10/20

Terminal de IPython:

```

G:/Mi unidad/informatica/pyqtgraph/
G:/Mi unidad/informatica/pyqtgraph/

```

Status Bar:

Permisos: RW | Fin de línea: CRLF | Codificación: UTF-8 | Línea: 11 | Columna: 14 | Memoria: 78 %

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Spyder (Python 3.7)

Archivo Editar Buscar Código fuente Ejecutar Depurar Terminales Proyectos Herramientas Ver Ayuda

Editor - G:\Mi unidad\mis_exposiciones\informatica\pyqtgraph\Vista.py

controlador.py modelo.py Vista.py

```

7 from PyQt5.QtWidgets import QMainWindow, QDialog
8 from PyQt5.uic import loadUi
9 import sys
10 from PyQt5.QtWidgets import QApplication
11 import pyqtgraph as pg
12
13 from PyQt5.QtWidgets import QMessageBox
14
15 class VentanaAnestesia(QMainWindow):
16     def __init__(self, ppal=None):
17         super(VentanaAnestesia, self).__init__(ppal)
18         loadUi('anestesia.ui', self)
19         self.setup()
20
21     def asignarControlador(self, c):
22         pass;
23
24     def setup(self):
25         L = [1, 2, 3, 4 ]
26
27         self.eeg_bis_montage_left.plot(L)
28         self.eeg_bis_montage_left.setRange(xRange=[-500, 500], yRange=[-500, 500])
29         #self.eeg_bis_montage_left.clear()
30         curve = pg.ScatterPlotItem(x=data[ptr%50], y=data[(ptr+1)%50],
31                                   pen='w', brush='b', size=size,
32                                   pxMode=ui.pixelModeCheck.isChecked())
33         self.eeg_bis_montage_left.addItem(curve)
34
35         self.eeg_bis_montage_left.setTitle('%0.2f fps' % fps)
36         self.eeg_bis_montage_left.repaint()

```

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PYQTGRAPH AND QT

Spyder (Python 3.7)

Archivo Editar Buscar Código fuente Ejecutar

Editor - G:\Mi unidad\mis_exposiciones\informatica\pyqtgraph\controlador.py modelo.py Vista.py

```

9 import sys
10 from PyQt5.QtWidgets import
11 import pyqtgraph as pg
12
13 from PyQt5.QtWidgets import
14
15 class VentanaAnestesia(QMain
16     def __init__(self, ppa1=
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21     def asignarControlador(
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25         L = [1, 2, 3, 4]
26         self.eeg_bis_montag
27
28     def salir(self):
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```

Anesthesiology Monitor

BIS MOTOR PRECUNEUS

Explorador de archivos

Tamaño	Tipo	Última r
	Nueva carpeta	29/10/20
162 bytes	Archivo docx	29/10/20
444 KiB	Archivo tmp	29/10/20
4 KiB	Archivo ui	29/10/20
18,7 MiB	Archivo zip	30/11/20
1,6 MiB	Archivo docx	29/10/20
1 KiB	Archivo py	21/02/20
1 KiB	Archivo ui	21/02/20
970 bytes	Archivo py	29/10/20

Ayuda

```

G:/Mi unidad/
informatica/pyqtgraph/
G:/Mi unidad/
informatica/pyqtgraph')
G:/Mi unidad/
informatica/pyqtgraph/
G:/Mi unidad/
mis_exposiciones/informatica/pyqtgraph')

```

Terminal de IPython Historial de comandos

Permisos: RW Fin de línea: CRLF Codificación: UTF-8 Línea: 37 Columna: 32 Memoria: 78 %

CONTENT

1. **Numpy**
2. **Scipy**
3. **Matplotlib**