



12th Summer  
School on  
**SCIENTIFIC**  
VISUALIZATION

## Tutorial: PyQt

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## PyQt Tutorial

- In this tutorial you have to implement a program with PyQt4 that can be able to:
  - Read a file in .csv format
  - Populate a list of checkable data series
  - Plot the selected data in a matplotlib widget
- Use QtDesigner to design the *MainWindow*
- Use the code produce by QtDesigner, translate it into python code using pyuic4 script and implement the required functionalities.



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- A screen-shot of the desired MainWindow

The screenshot shows a window titled "MainWindow" with a standard menu bar containing "File". Below the menu bar is a toolbar with icons for home, back, forward, and other navigation functions. The main area is divided into two parts: a large MatplotlibWidget on the left displaying a grid with axes from 0.0 to 1.0, and a QListWidget on the right titled "Data Series" containing four items: "1990 Sales", "1991 Sales", "1992 Sales", and "1993 Sales". Below the list is a "Show" button and a "Show Legend" checkbox. The "X from" field is set to 0 and 11. Blue arrows point from text labels to these specific UI elements.

actionOpen,  
actionClose

MatplotlibWidget

QListWidget

NavigationToolBar

OnShow



## PyQt Tutorial

- Use `DataHolder` class to read and manage `.csv` file
- Define the connection `actionOpen` for opening and read `.csv` file, `actionClose` for closing the main window, `OnShow` for plotting selected data item.
- Use a `QListWidget`, insert data item read from `.csv` file.
- Visualize selected data in the `matplotWidget` using `plot` function.
- Use the code produce by QtDesigner and implement the required functionalities