

# Python and PyQt

Instructor, Nero Chan Zhen Yu



# Outcome

- Create Graphical User Interfaces with Python and PyQt
- Give life to your applications by connecting user events to concrete actions
- Create fully-functional GUI applications to solve real-world problems

# Understand PyQt

- PyQt is a Python binding for Qt
- Platform-independent abstractions for GUI
- Networking, threads, regular expression, SQL databases, SVG, OpenGL, XML, and many other powerful features

# PyQt5

- Graphical User Interfaces as well as XML handling, network communication, regular expressions, threads, SQL databases, multimedia, web browsing, and etc.
- Compatible with Windows, Unix, Linux, macOS, iOS & Android
- PyQt5 is available under two licenses:
  1. The Riverbank Commercial License
  2. The General Public License (GPL), version 3

# Installation

- Build from source
- Use Binary Wheel  
(Wheels are a very popular way to manage the installation of Python Package)
- Package Manager from Linux and MacOS
- Anaconda Distribution

# Anaconda Installation

- **pyqt:** a Python binding for the cross-platform GUI toolkit Qt (Commercial, GPL-2.0, GPL-3.0 licenses)
- **anyqt:** a compatibility layer for PyQt4/PyQt5 (GPL-3.0 license)
- **qtPy:** an abstraction layer PyQt5/PyQt4/PySide (MIT license)
- **qtpygraph:** a Python library for Scientific Graphics (MIT license)

# Create First PyQt Application

Here are the steps you'll follow:

- 1.Import QApplication and all the required widgets from PyQt5.QtWidgets.
- 2.Create an instance of QApplication.
- 3.Create an instance of your application's GUI.
- 4.Show your application's GUI.
- 5.Run your application's event loop (or main loop).

# Step 1

```
# Filename: hello.py

"""Simple Hello World example with PyQt5."""

import sys

# 1. Import `QApplication` and all the required widgets
from PyQt5.QtWidgets import QApplication
from PyQt5.QtWidgets import QLabel
from PyQt5.QtWidgets import QWidget
```



# Step 2 and Step 3

```
# 2. Create an instance of QApplication  
app = QApplication(sys.argv)
```

```
# 3. Create an instance of your application's GUI  
window = QWidget()  
window.setWindowTitle('PyQt5 App')  
window.setGeometry(100, 100, 280, 80)  
window.move(60, 15)  
helloMsg = QLabel('<h1>Hello World!</h1>', parent=window)  
helloMsg.move(60, 15)
```

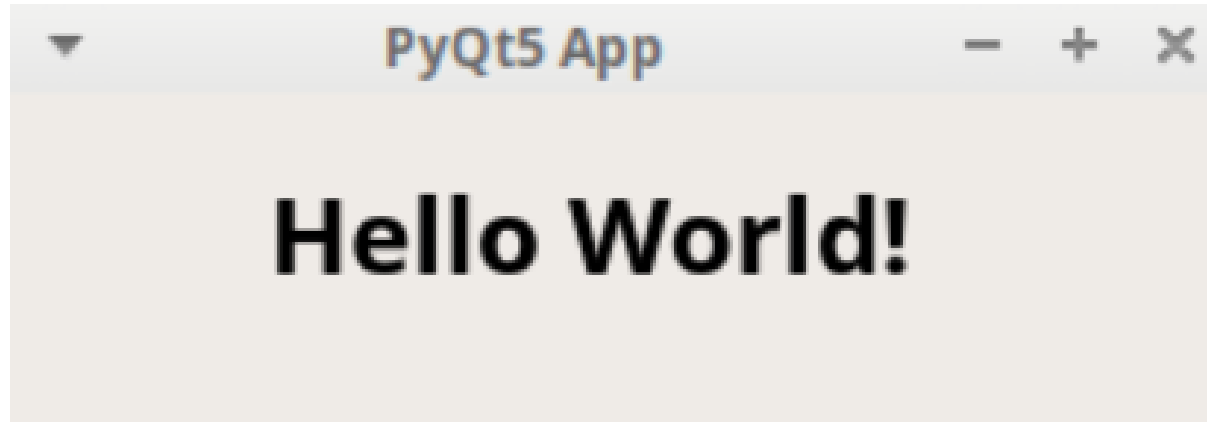
# Step 4 and Step 5

```
# 4. Show your application's GUI  
window.show()
```

```
# 5. Run your application's event loop (or main loop)  
sys.exit(app.exec_())
```

# Execute the Code

```
$ python3 hello.py
```



Run the code with PyCharm