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# GUI experience with pyqt

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# Outline

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- Tools I use
- Example application - Recycler tune read back
  - Python code
  - Demo on writing a gui to
    - Read tune
    - Plot currents

# Tools

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- Python3
- Pyqt5
- Qt designer
  - <https://build-system.fman.io/qt-designer-download>
  - Very helpful in designing the gui layout, buttons etc.

# Example application

- Reading/setting the Recycler tune

R2 Tune Control ->Op-Tune Shares: 1.00(QT-60X) + 0.00(QT-30X) ♦Pgm\_Tools♦

CYCLE-E0	p-Comp	pdot-Comp	beam-Comp	Tromb	Parameters	C453 Config	MAIN MENU
Save Before Shutdown 2019							
FILE-2	SAVE	SEND	UNDO	TIMERS	MISC	p	
♦Insert♦Delete							
#	T-Sec	dT-Sec	Q.h	dQ.h	Q.v	dQ.v	
0	.035	.035	25.42	-.0361	24.44	.047401	
1	.8	.765	25.42	-.0361	24.44	.047401	

- Which really means, settings the currents on 9 quads

R14

◆Menu◆

◆Waveforms◆

CAMAC 400 Series Ramp Control

Device [R:QT601] 453, v1.40 MI2, C=64, S=15

◆Pgm\_Tools◆

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♦ dt --- f01()

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2)	0	0
3)	0	0
4)	0	0
5)	0	0
6)	0	0
7)	0	0
8)	0	0
9)	0	0
10)	0	0
11)	0	0
12)	0	0
13)	0	0
14)	0	0
15)	0	0

♦TIC♦ ♦Amps♦

# Example application

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- Aim:
  - Write a gui that will let us read the tune and plot the quad currents using matplotlib
- First, need some python code to talk to acnet to get the quad currents
- Second, write the gui code with the help of qt designer

## rr\_tune.py

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- rr\_tune.py has
  - update\_ramp\_list - sets a list of devices
  - read\_settings - reads a list of devices
  - qt60 class - class for reading/setting the tune