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(a) # Device definitions
PulseBlaster(name='pseudoclock_0', board_number=0)
NI_PCIe_6363(name='ni_card_0', parent_device=pseudoclock_0, clock_type='fast clock',
             MAX_name='ni_pcie_6363_0', clock_terminal='/ni_pcie_6363_0/PFI0')

# Channel definitions
Shutter (name='laser_shutter', parent_device=ni_card_0, connection='port0/line13')
AnalogOut(name='quadrupole_field', parent_device=ni_card_0, connection='ao0')
AnalogOut(name='bias_x_field', parent_device=ni_card_0, connection='ao1')

(b) # Experiment logic
start()
t = 0

# first laser pulse at t = 1 second
t += 1; laser_shutter.open(t)
t += 0.5; laser_shutter.close(t)
t += 0.4;

t += quadrupole_field.ramp(t, duration=5, initial=0, final=3, samplerate=4) # samplerate in Hz
# start ramping the bias field 3 seconds before the quadrupole ramp ends
bias_x_field.ramp(t-3, duration=1, initial=0, final=2.731, samplerate=8)
# t is now 6.9s, the end of the quadrupole field ramp

# second laser pulse
t += 0.4; laser_shutter.open(t)
t += 1; bias_x_field.constant(t, value=0.0)
t += 0.5; laser_shutter.close(t)
t += 2

# hold bias field at bias_x_final_field for 2 seconds before finishing shot
bias_x_field.constant(t, value=bias_x_final_field)
t += 2
stop(t)

```