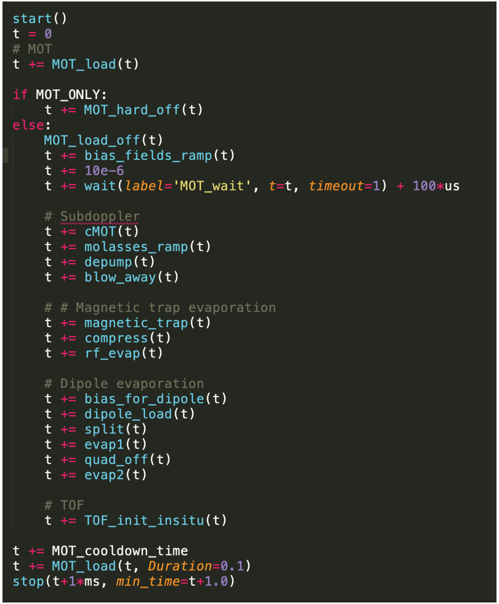
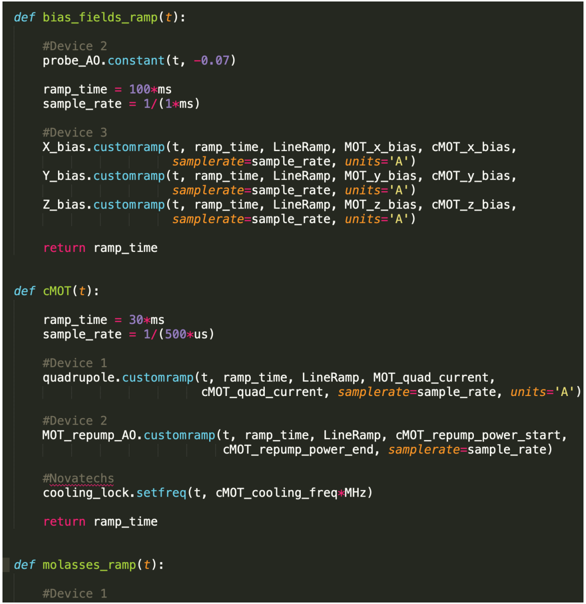
a. Labscript experimental sequence



```
start()
t = 0
# MOT
t += MOT_load(t)

if MOT_ONLY:
    t += MOT_hard_off(t)
else:
    MOT_load_off(t)
    t += bias_fields_ramp(t)
    t += 10e-6
    t += wait(label='MOT_wait', t=t, timeout=1) + 100*us

    # Subdoppler
    t += cMOT(t)
    t += molasses_ramp(t)
    t += depump(t)
    t += blow_away(t)

    # # Magnetic trap evaporation
    t += magnetic_trap(t)
    t += compress(t)
    t += rf_evap(t)

    # Dipole evaporation
    t += bias_for_dipole(t)
    t += dipole_load(t)
    t += split(t)
    t += evap1(t)
    t += quad_off(t)
    t += evap2(t)

    # TOF
    t += TOF_init_insitu(t)

t += MOT_cooldown_time
t += MOT_load(t, Duration=0.1)
stop(t+1*ms, min_time=t+1.0)
```

b. Sample functions



```
def bias_fields_ramp(t):

    #Device 2
    probe_AO.constant(t, -0.07)

    ramp_time = 100*ms
    sample_rate = 1/(1*ms)

    #Device 3
    X_bias.customramp(t, ramp_time, LineRamp, MOT_x_bias, cMOT_x_bias,
                      samplerate=sample_rate, units='A')
    Y_bias.customramp(t, ramp_time, LineRamp, MOT_y_bias, cMOT_y_bias,
                      samplerate=sample_rate, units='A')
    Z_bias.customramp(t, ramp_time, LineRamp, MOT_z_bias, cMOT_z_bias,
                      samplerate=sample_rate, units='A')

    return ramp_time


def cMOT(t):

    ramp_time = 30*ms
    sample_rate = 1/(500*us)

    #Device 1
    quadrupole.customramp(t, ramp_time, LineRamp, MOT_quad_current,
                          cMOT_quad_current, samplerate=sample_rate, units='A')

    #Device 2
    MOT_repump_AO.customramp(t, ramp_time, LineRamp, cMOT_repump_power_start,
                             cMOT_repump_power_end, samplerate=sample_rate)

    #Novatechs
    cooling_lock.setfreq(t, cMOT_cooling_freq*MHz)

    return ramp_time


def molasses_ramp(t):

    #Device 1
```