

DrawingTests-Copy2

September 2, 2017

1 Drawing Tests

1.1 Object

- Play around with drawing things.

2 Code:

```
In [18]: import GCode
import GRBL
import numpy as np
from utils import picture
cnc = GRBL.GRBL(port="/dev/cnc_3018")

print("Laser Mode: {}".format(cnc.laser_mode))

from enum import IntEnum
class Tool(IntEnum):
    SPINDLE = 0
    LASER = 1

from enum import IntEnum
class LaserPower(IntEnum):
    CONSTANT = 0
    DYNAMIC = 1

LaserPower.CONSTANT

def init(power = LaserPower(0), feed = 200, laser = 1):
    program = GCode.GCode()
    program.G20() # Metric Units
    program.G91() # Absolute positioning.
    program.G1(F=feed) #
    if power==LaserPower.CONSTANT:
        program.M3(S=laser) # Laser settings
    else:
```

```

        program.M4(S=laser) # Laser settings
    return program

def end():
    program = GCode.GCode()
    program.M5() # Laser settings.
    return program

def square(size=0.25):
    program = GCode.GCode()
    program.G1(X=size)
    program.G1(Y=-size)
    program.G1(X=-size)
    program.G1(Y=size)
    return program

```

Laser Mode: 1.0

2.1 Test Setup

Power Supply: - CiciutSpecialists CSI3010SW @ 12V - PostIt Note Grid notes. .25" grid.
Position the paper & other things.

```

In [44]: def laser_on(pwm):
        if int(pwm) != np.uint8(pwm):
            raise(Exception("UINT8! {}".format(pwm)))
        # Set minimal power setting to focus and position laser
        cnc.cmd("M3 S{:03d}".format(np.uint8(pwm)))
        cnc.cmd("G1 F10") # Laser On

        def laser_off():
            cnc.cmd("M5") # Laser off

```

```
In [51]: cnc.cmd("$X")
```

```
Out[51]: ['ok', 'ok']
```

```
In [52]: laser_on(1) # Position the axis by hand
```

```
In [53]: laser_off()
```

```
In [54]: tests_x = 10
        tests_y = 7
```

```
In [55]: cnc.run(init(laser=0.1)+square(0.25))
```

```
Out[55]: 0.8327279090881348
```

```
In [56]: def jogx(x=10):
          program = GCode.GCode()
          program.G0(X=x)
          cnc.run(program)
        def jogy(y=10):
          program = GCode.GCode()
          program.G0(Y=y)
          cnc.run(program)
        def jogz(z=10):
          program = GCode.GCode()
          program.G0(Z=z)
          cnc.run(program)
```

```
In [ ]: square_size = 0.25
```

3 Test Setup

```
In [57]: cnc.cmd("$G")
```

```
Out[57]: ['ok', '[GC:G1 G54 G17 G20 G91 G94 M3 M9 T0 F5080 S0]', 'ok']
```

```
In [58]: cnc.cmd("$#")
```

```
Out[58]: ['ok',
          '[G54:0.000,0.000,0.000]',
          '[G55:0.000,0.000,0.000]',
          '[G56:0.000,0.000,0.000]',
          '[G57:0.000,0.000,0.000]',
          '[G58:0.000,0.000,0.000]',
          '[G59:0.000,0.000,0.000]',
          '[G28:0.000,0.000,0.000]',
          '[G30:0.000,0.000,0.000]',
          '[G92:0.000,0.000,0.000]',
          '[TL0:0.000]',
          '[PRB:0.000,0.000,0.000:0]',
          'ok']
```

```
In [59]: cnc.cmd("$")
```

```
Out[59]: ['ok',
          '$0=10',
          '$1=25',
          '$2=0',
          '$3=5',
          '$4=0',
          '$5=0',
          '$6=0',
          '$10=3',
```

```
'$11=0.010',
'$12=0.002',
'$13=0',
'$20=0',
'$21=1',
'$22=0',
'$23=0',
'$24=25.000',
'$25=500.000',
'$26=250',
'$27=1.000',
'$30=1000',
'$31=0',
'$32=1',
'$100=800.000',
'$101=800.000',
'$102=800.000',
'$110=800.000',
'$111=800.000',
'$112=500.000',
'$120=10.000',
'$121=10.000',
'$122=10.000',
'$130=200.000',
'$131=200.000',
'$132=200.000',
'ok']
```

```
In [60]: cnc.cmd("$I")
```

```
Out[60]: ['ok', '[VER:1.1f.20170801:]', '[OPT:V,15,128]', 'ok']
```

```
In [61]: picture()
```


.....


```
In [66]: cnc.reset()
```