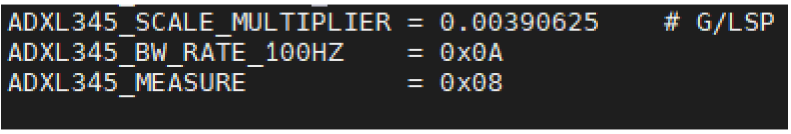
# Discussion3

1-1.



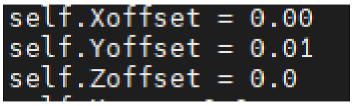
```
ADXL345_SCALE_MULTIPLIER = 0.00390625    # G/LSP
ADXL345_BW_RATE_100HZ    = 0x0A
ADXL345_MEASURE          = 0x08
```

1-2.使用 while(True)

time.sleep(1)

達成無窮迴圈

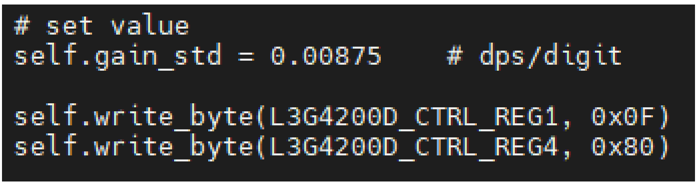
1-3.



```
self.Xoffset = 0.00
self.Yoffset = 0.01
self.Zoffset = 0.0
```

些微調整參數得到正確數值

2-1.



```
# set value
self.gain_std = 0.00875    # dps/digit

self.write_byte(L3G4200D_CTRL_REG1, 0x0F)
self.write_byte(L3G4200D_CTRL_REG4, 0x80)
```

2-2.同 1-2 作法

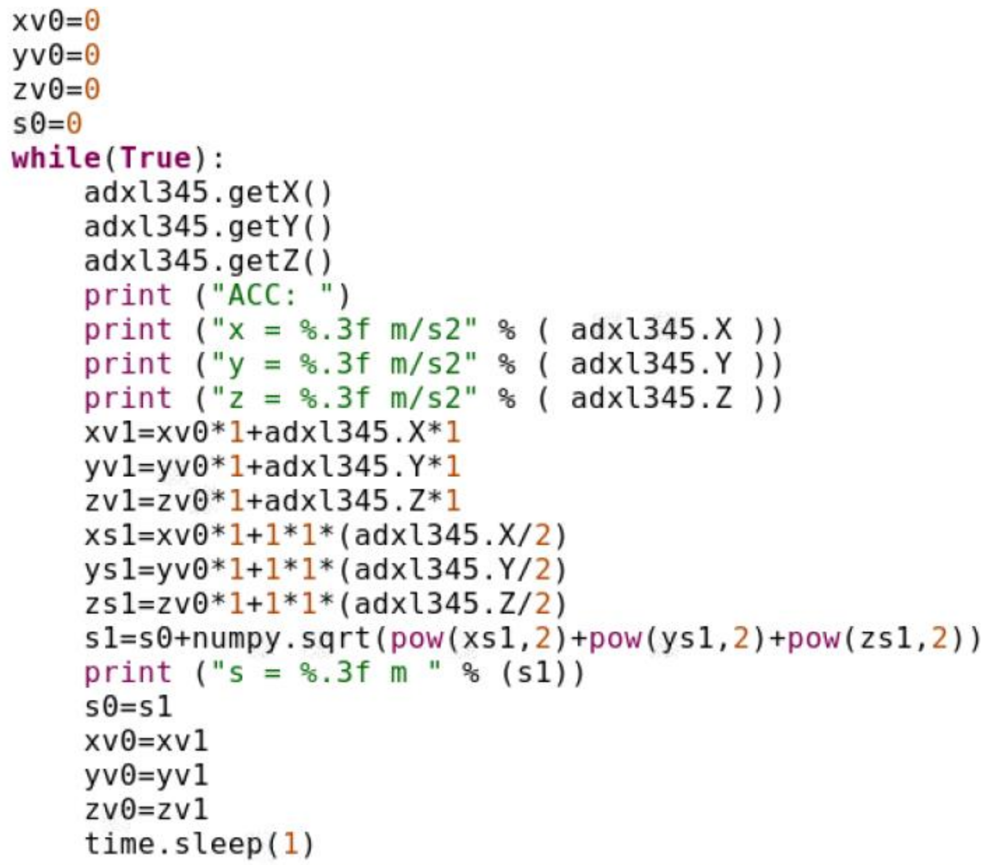
3.每一秒算一次

先利用先前的 v0 和測得的加速度(a)來算出 v(t)，

在按照公式由 v0 ,v(t), a  得出這一秒移動的距離

在與先前移動的距離相加，得到總共移動的距離

Code:



```
xv0=0
yv0=0
zv0=0
s0=0
while(True):
    adxl345.getX()
    adxl345.getY()
    adxl345.getZ()
    print ("ACC: ")
    print ("x = %.3f m/s2" % ( adxl345.X ))
    print ("y = %.3f m/s2" % ( adxl345.Y ))
    print ("z = %.3f m/s2" % ( adxl345.Z ))
    xv1=xv0*1+adxl345.X*1
    yv1=yv0*1+adxl345.Y*1
    zv1=zv0*1+adxl345.Z*1
    xs1=xv0*1+1*1*(adxl345.X/2)
    ys1=yv0*1+1*1*(adxl345.Y/2)
    zs1=zv0*1+1*1*(adxl345.Z/2)
    s1=s0+numpy.sqrt(pow(xs1,2)+pow(ys1,2)+pow(zs1,2))
    print ("s = %.3f m " % (s1))
    s0=s1
    xv0=xv1
    yv0=yv1
    zv0=zv1
    time.sleep(1)
```