ODT WEEK 5:

INTERACTIVE SYSTEM CODE:

```
from machine import Pin
import time
import neopixel
import random
ir = Pin(13, Pin.IN,Pin.PULL_UP)
neo=neopixel.NeoPixel(Pin(12),16) #12 is the GPIO Pin, 16 is the number of LEDs in the
neopixel
red = 0
blue = 0
green = 0
while True:
    ir_val = ir.value()
    if ir_val == 0:
        r=random.randint(10,100)
        r1=random.randint(10,100)
        r2=random.randint(10,100)
        r==red
        r1==blue
        r2==green
        for i in range (0,16):
            neo[i]=(r,r1,r2)
            neo.write()
            time.sleep(0.1)
```

LED BRIGHTNESS CODE:

```
from machine import Pin,PWM
import time

led=PWM(Pin(18)) #PWM is alr an output based thing so we dont write pin.out
led.freq(1000)
# led.duty(1023) #you write the value of the duty cycle
pb = Pin(33, Pin.IN,Pin.PULL_UP)

while True:
    pb_val = pb.value()
    if pb_val == 0:
        time.sleep(0.2)
        for i in range (0,1023,10):
            led.duty(i)
```

```
        time.sleep(0.01)

    for i in range(1023,0,-10):
        led.duty(i)
        time.sleep(0.01)
```

NEOPIXEL CODE:

```
from machine import Pin
import time
import neopixel
import random
neo=neopixel.NeoPixel(Pin(12),16) #12 is the GPIO Pin, 16 is the number of LEDs in the
neopixel
red = 0
blue = 0
green = 0
while True:
    r=random.randint(10,100)
    r1=random.randint(10,100)
    r2=random.randint(10,100)
    r==red
    r1==blue
    r2==green

    for i in range (0,16):
        neo[i]=(r,r1,r2)
        neo.write()
        time.sleep(0.1)
```