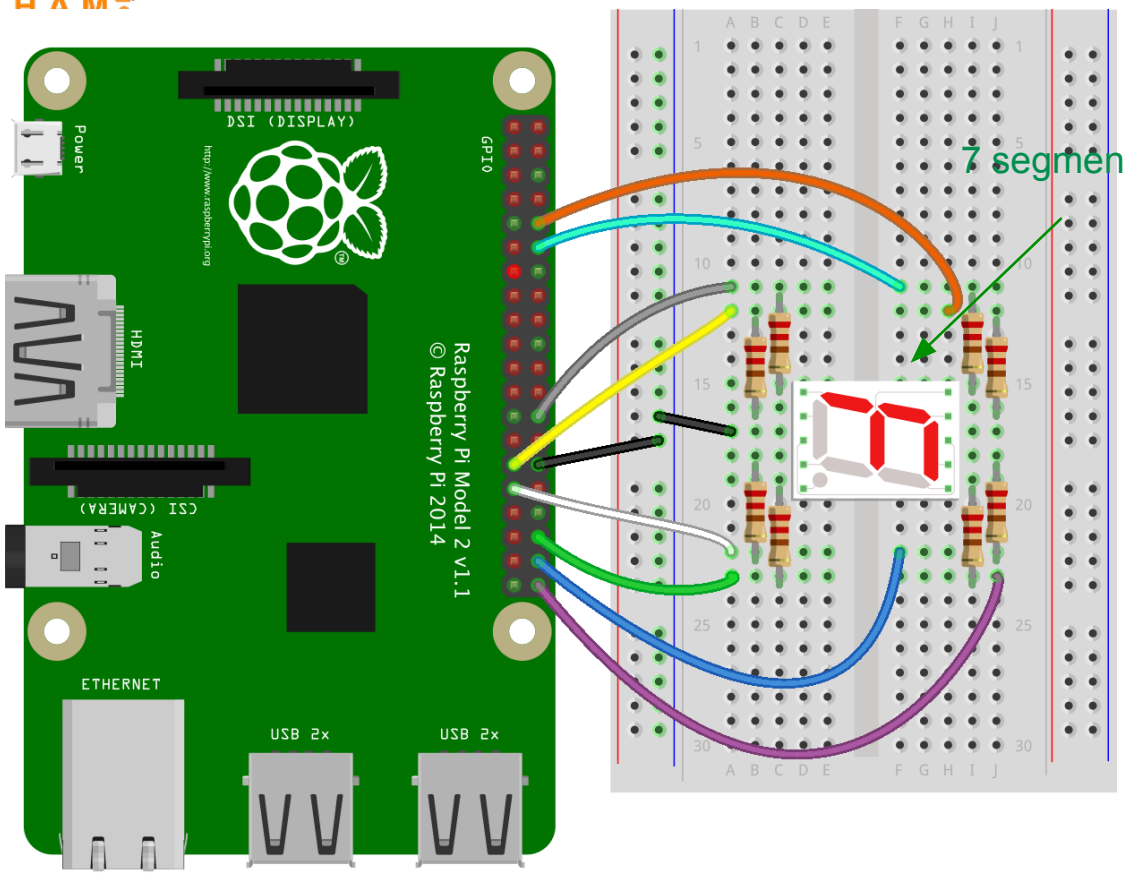
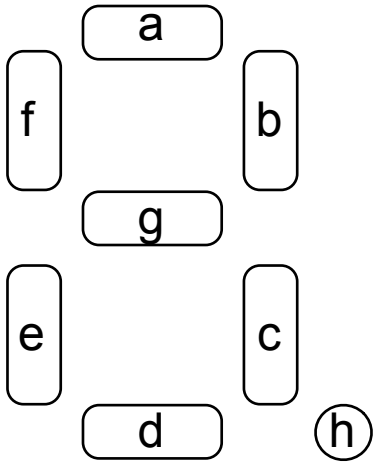
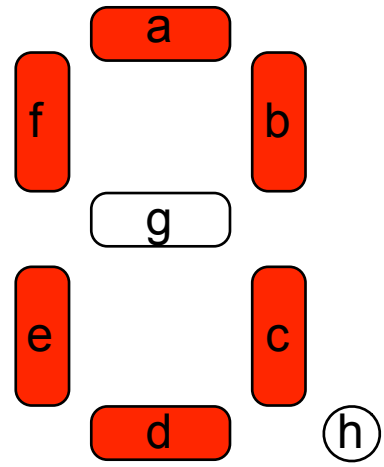
7 SEGMENT DISPLAY WITH python



A seven segment display uses LEDs to show numbers. Each LED element is normally referred to by a letter, and can be switched on or off to make the correct shape.



So by turning on a, b, c, d, e, and f, we can make a zero



The Python code on the next page can be used to control the seven segment display.

```
from gpiozero import LED
import time

# variables to store pins for each segment
led_a = LED(25)# uses BCM numbering
led_b = LED(24)
led_c = LED(23)
led_d = LED(9)
led_e = LED(11)
led_f = LED(8)
led_g = LED(7)
led_h = LED(10)

# Design the patterns for each number
digit_zero = [led_a, led_b, led_c, led_d, led_e, led_f]
digit_one = [led_b, led_c]

# create a list of all the segment variables

leds = [led_a, led_b, led_c, led_d, led_e, led_f, led_g, led_h]

# Create simple function to turn all segments off
def all_off():
        for segment in leds:
            segment.off()

# Create a function to test all segments
def test_segs():
        all_off()
        for segment in leds:
                segment.on()
                time.sleep(0.5)
                segment.off()

# create a function to display a number
def display_num(digit):
        all_off()
        for segment in digit:
                segment.on()

test_segs()
time.sleep(1)
display_num(digit_zero)
time.sleep(1)
display_num(digit_one)
time.sleep(1)
```

Can you add extra patterns for the remaining numbers (2-9) ?

Use the dotted lines to help you get each block of code aligned correctly.

Extend and modify the code so that the leds count down from 9 to 0.
Can you use a loop and another list?