

These slides serve as a visual aid for the lecture, not as a comprehensive document or script.

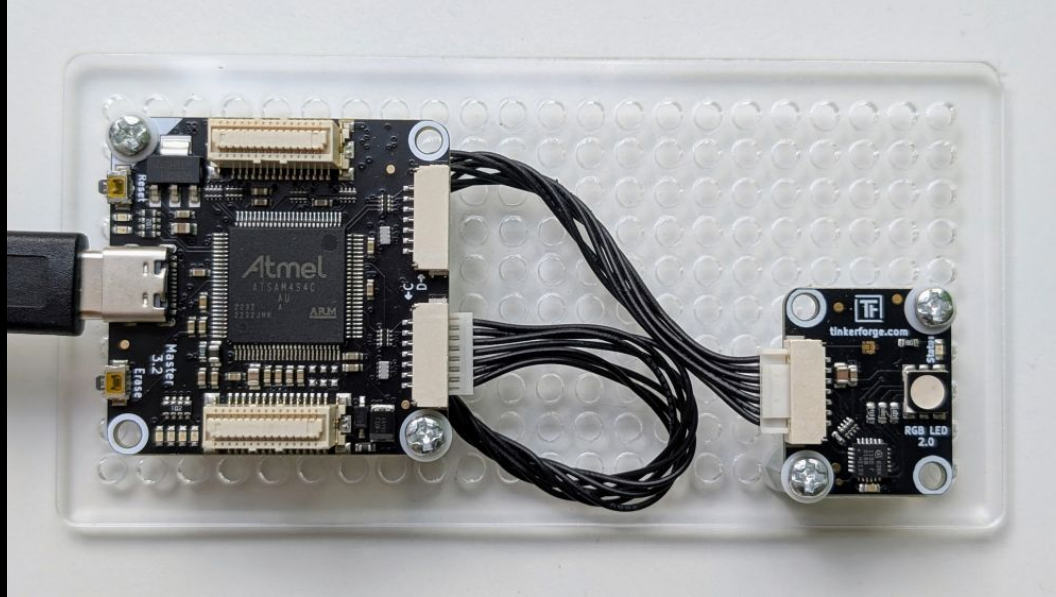
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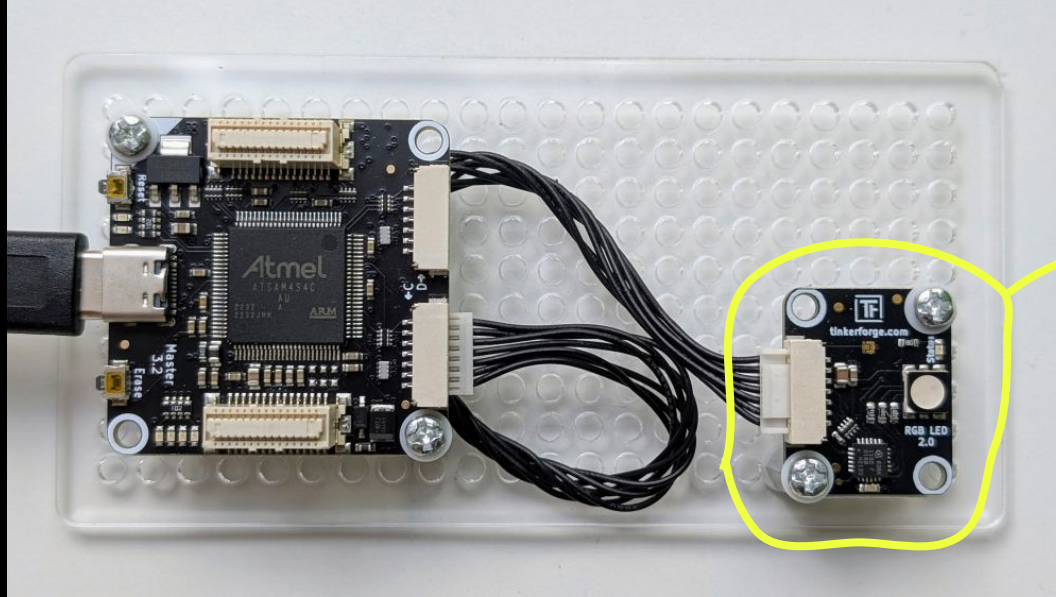
For any comments or feedback, please contact n.meseth@hs-osnabrueck.de.



COLORS

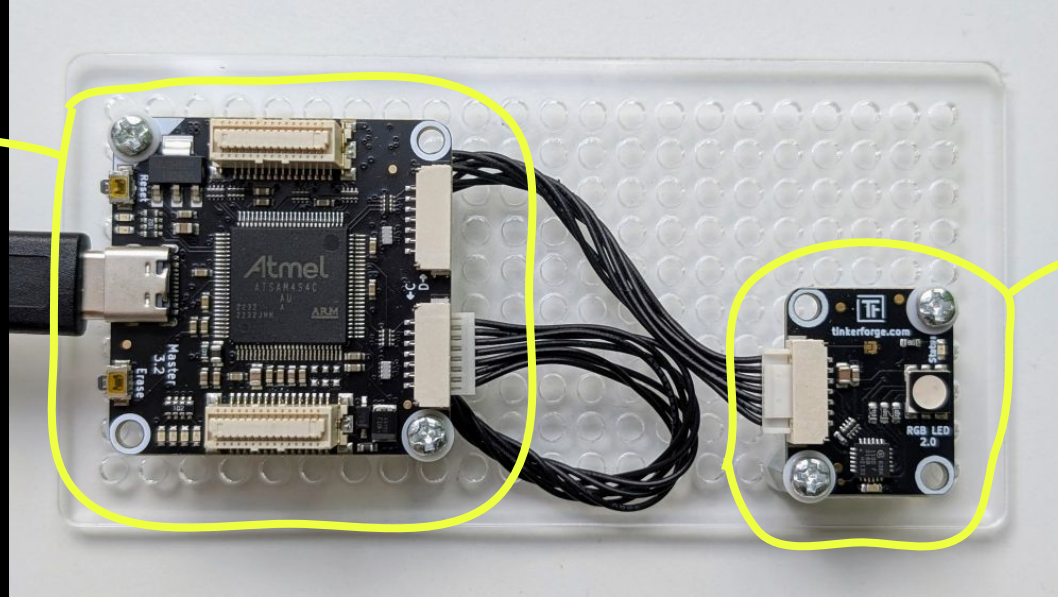
Supporting slides for chapter 1 of the book
Hands-On Computer Science



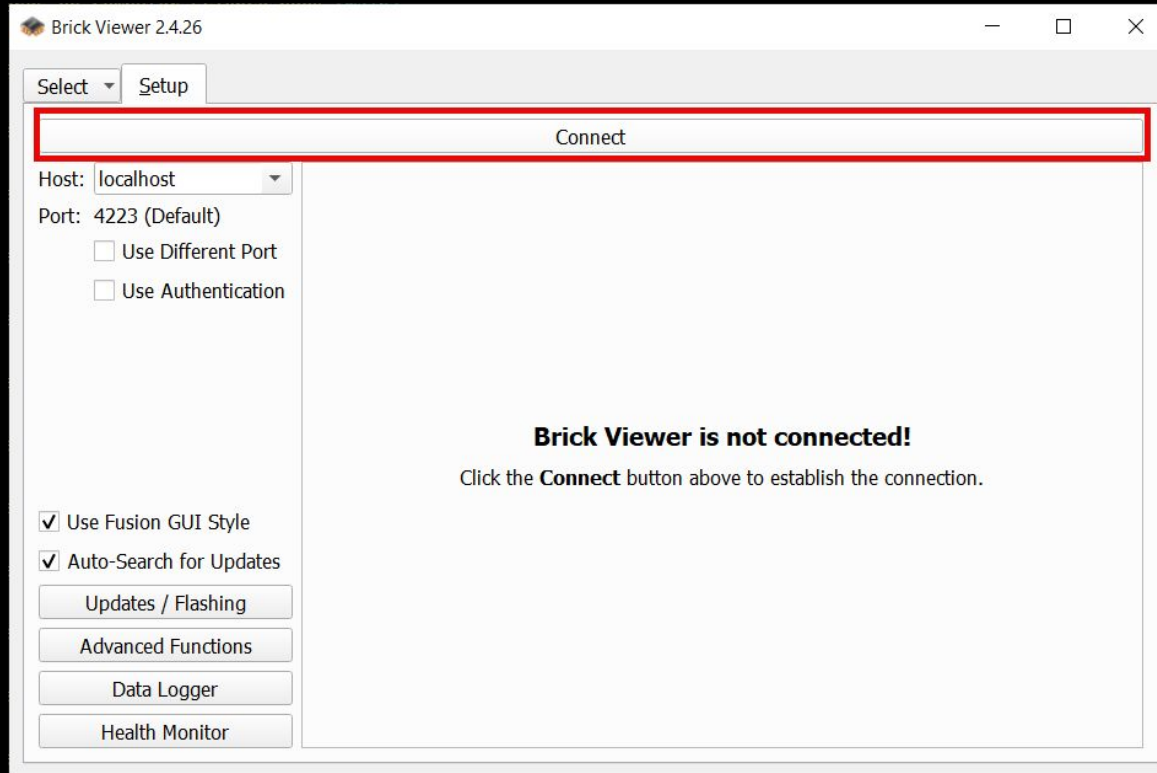


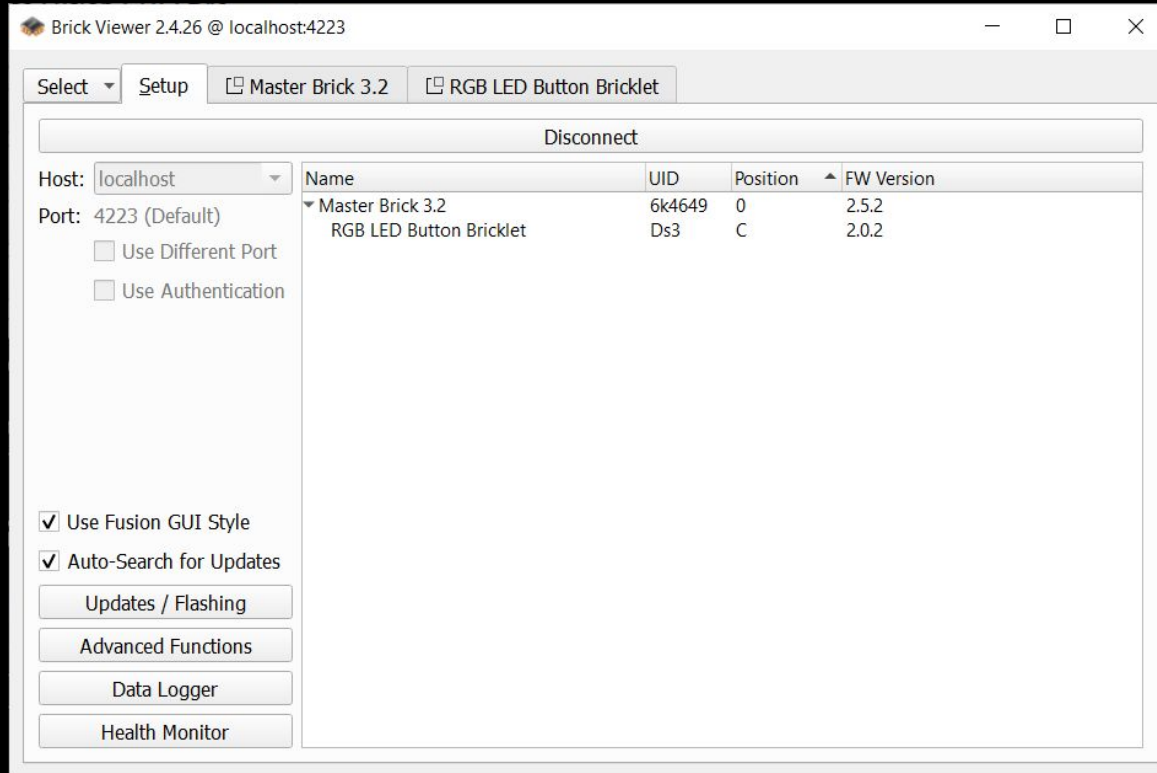
RGB LED

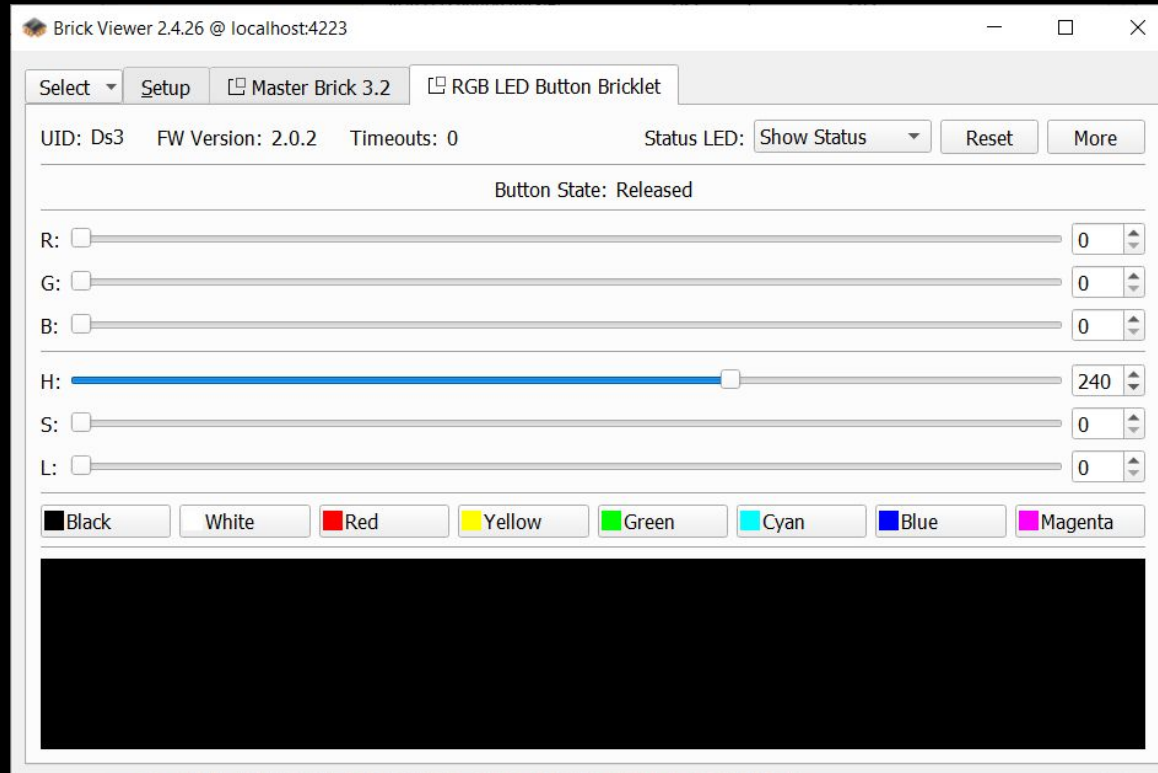
*Master Brick
(Microcontroller)*



RGB LED







boilerplate code

```
from tinkerforge.ip_connection import IPConnection
from tinkerforge.bricklet_rgb_led_v2 import BrickletRGBLEDV2

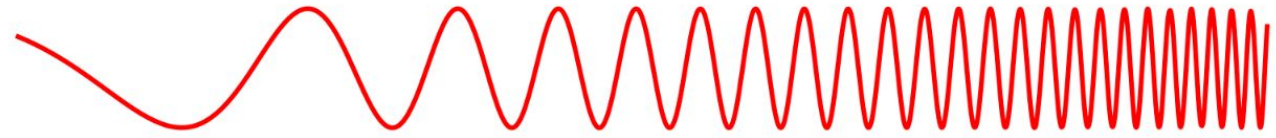
ipcon = IPConnection()
ipcon.connect("localhost", 4223)
led = BrickletRGBLEDV2("ZEP", ipcon)
```

```
led.set_rgb_value(0, 255, 0)
```

LIGHT AND COLORS

Durchdringt die Erdatmosphäre?

Ja Nein Ja Nein



Strahlungstyp
Wellenlänge (m)

Radio
 10^3

Mikrowellen
 10^{-2}

Infrarot
 10^{-5}

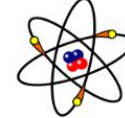
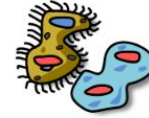
Sichtbar
 0.5×10^{-6}

Ultraviolett
 10^{-8}

Röntgenstrahlung
 10^{-10}

Gammastrahlung
 10^{-12}

Größenordnung
der Wellenlänge



Gebäude

Mensch

Schmetterling

Nadelspitze

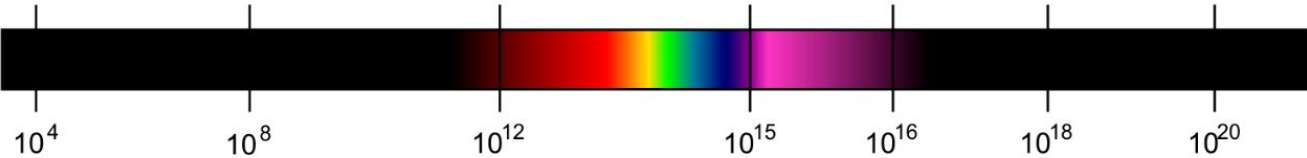
Einzeller

Molküle

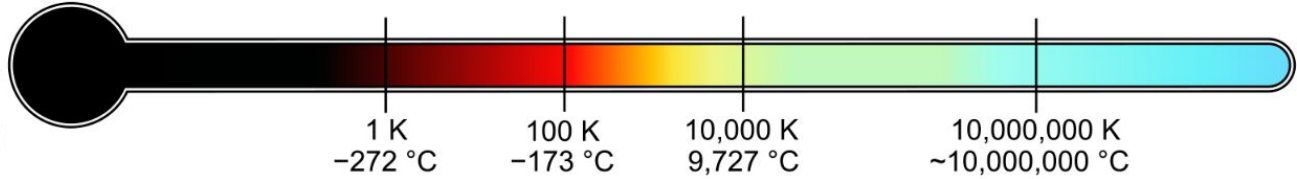
Atome

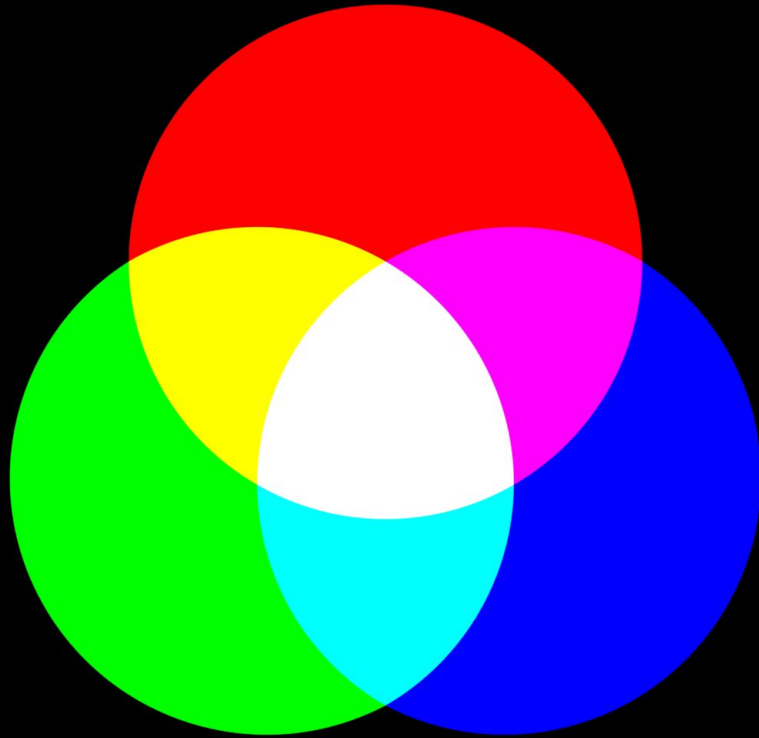
Atomkerne

Frequenz (Hz)

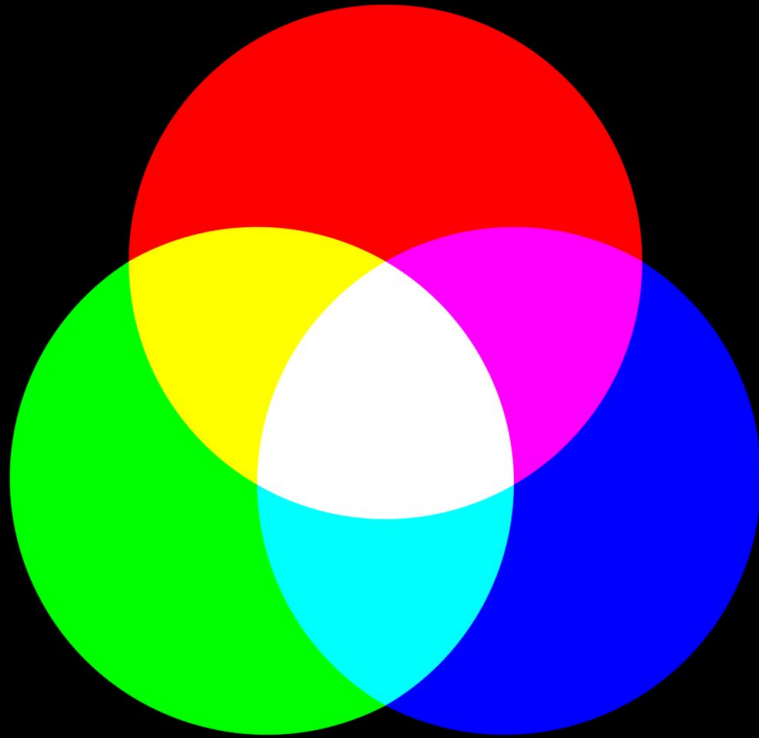


Temperatur von
Körpern, bei denen
diese Wellenlänge
am stärksten
abgestrahlt wird

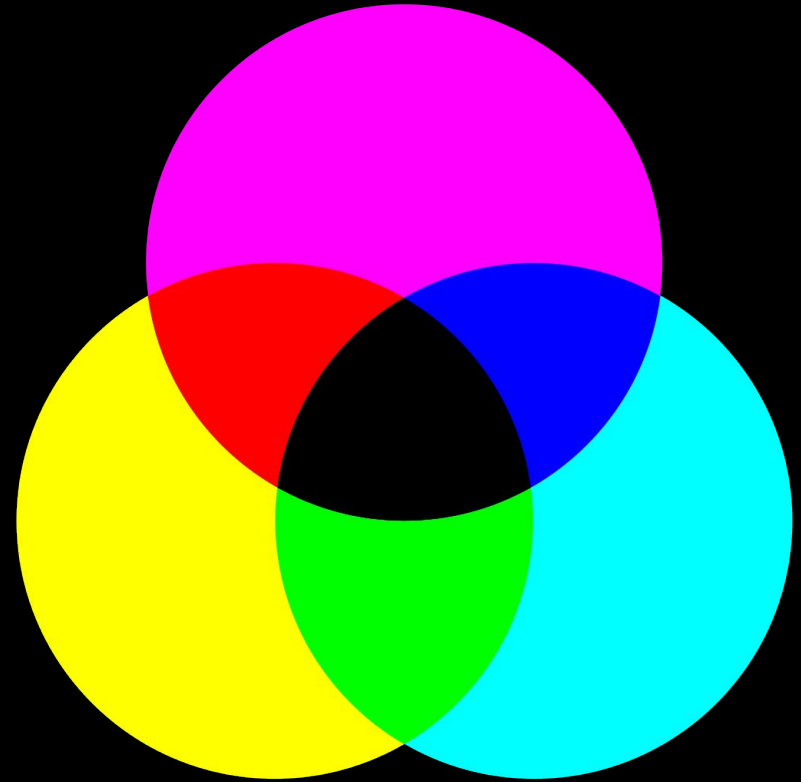




additive color mixing



additive color mixing



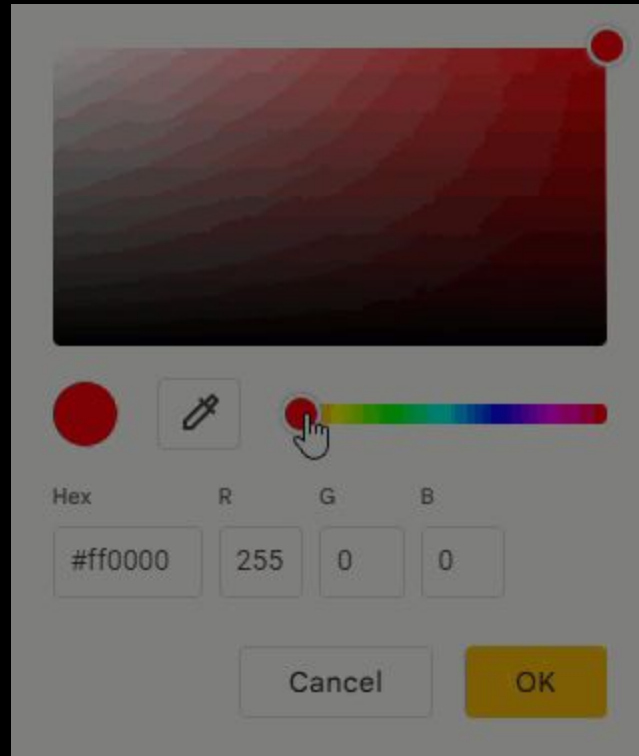
subtractive color mixing

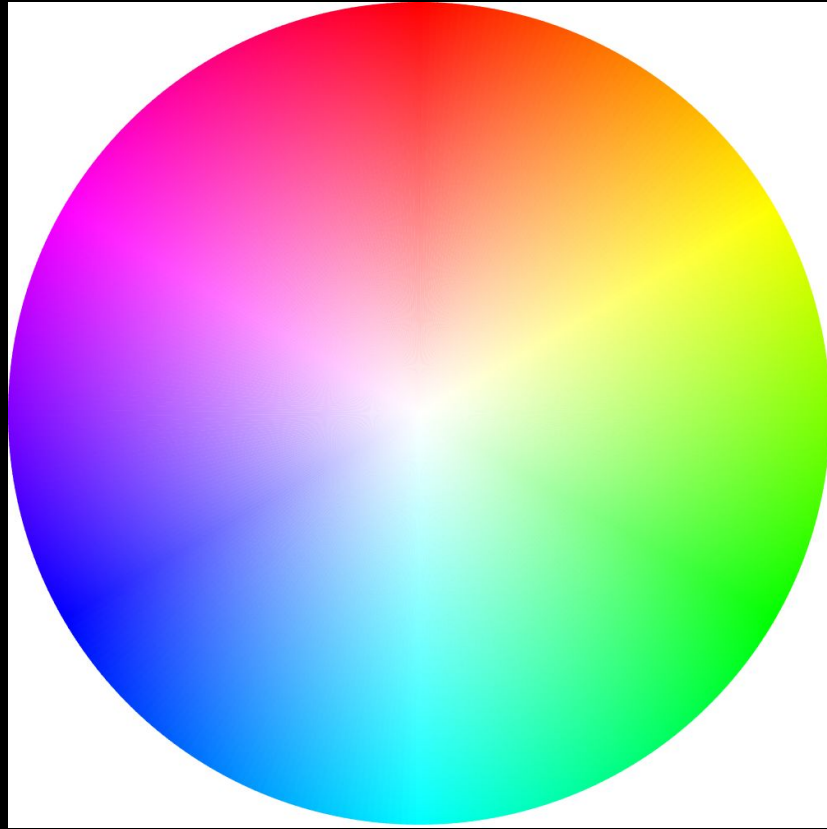


LOOPS


```
for r in range(256):  
    led.set_rgb_value(r, 0, 0)
```

```
while True:  
    print("I will loop forever")  
    time.sleep(1)
```





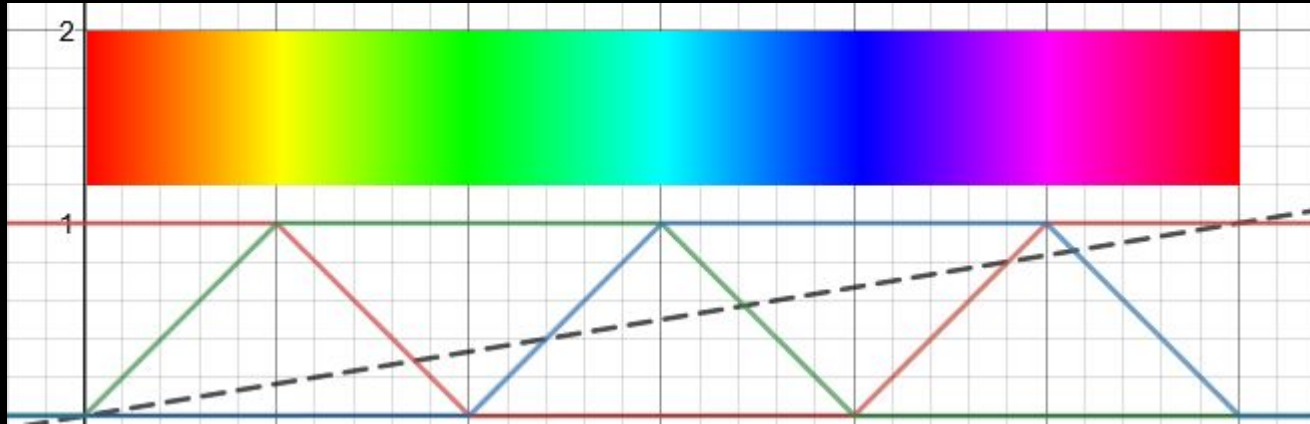


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