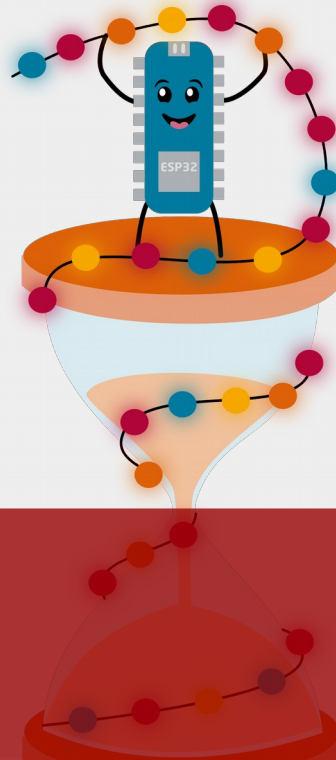


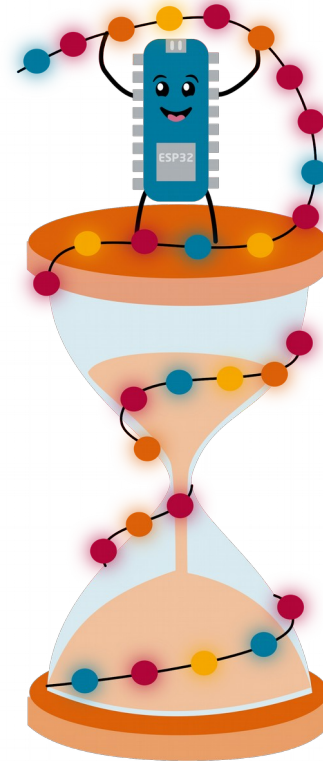


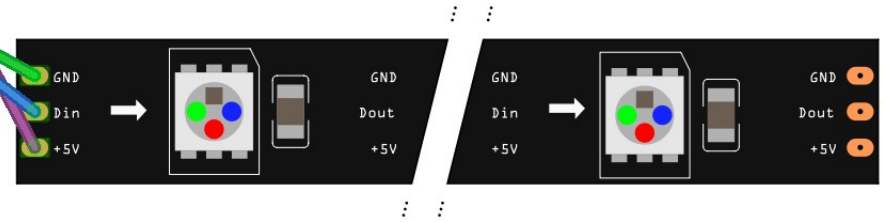
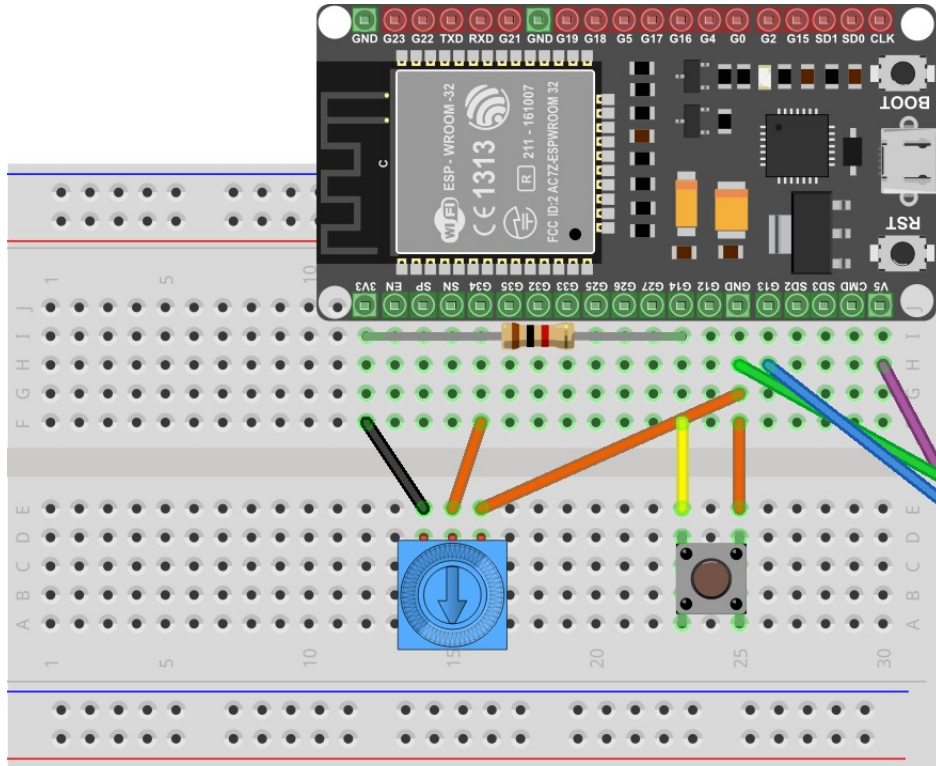
LED-Timer

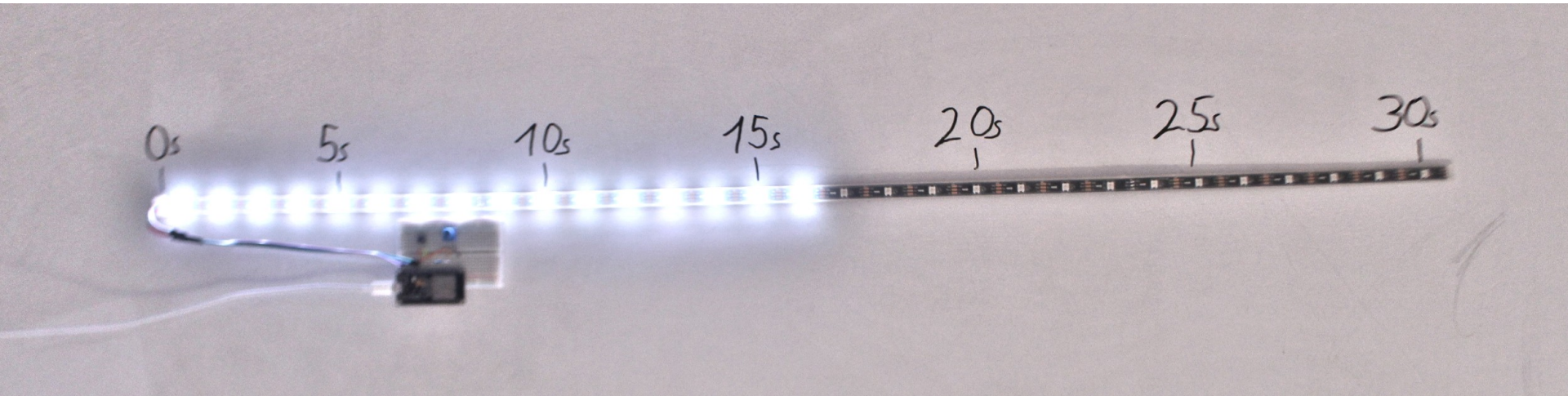
Woche 2 | Lektion 4

Materialliste:

- ESP32 Mikrocontroller
- Steckplatine
- WS2812B LED-Streifen mit 30 LEDs
- Potentiometer
- Taster
- 1 k Ω Widerstand
- 5 Steckbrücken
- 3 Jumperkabel
- Stift

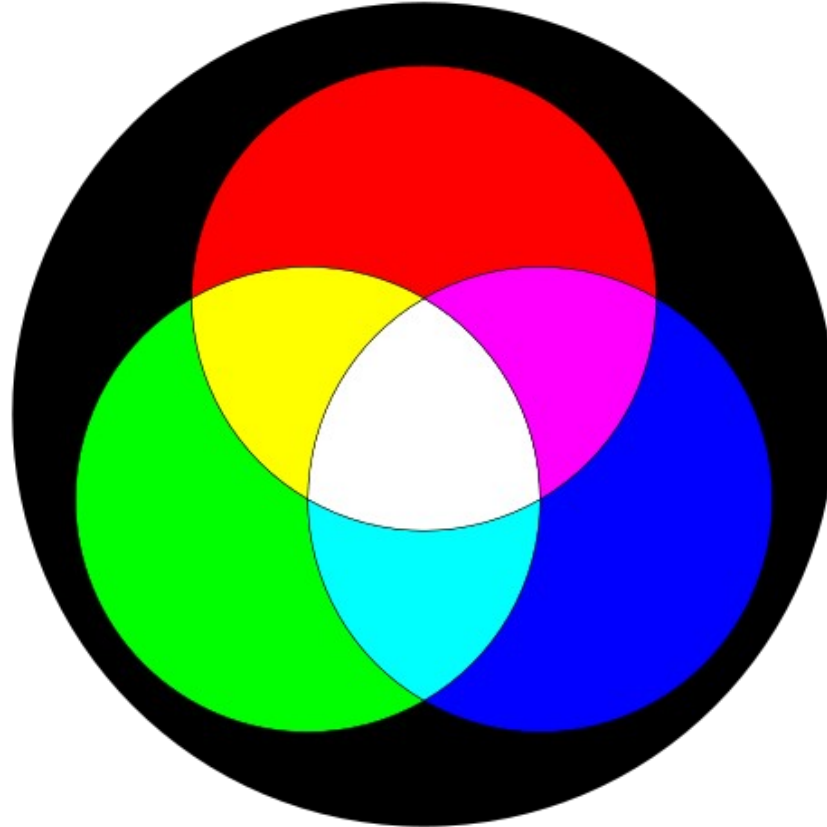






- Adafruit_NeoPixel.h





Arduino run first:

Setup led strip myLedStrip :
Data pin 13
Number of leds 30

Arduino loop forever:

```
set pos to Map read analog pin# 34 from min 0 max 4095 to min 0 max 30  
count with i from 0 to 29 by 1  
do  
  if i < pos  
    do  
      Set RGB LED myLedStrip At position: i Red: 127 Green: 127 Blue: 127  
    else  
      Set RGB LED myLedStrip At position: i Red: 0 Green: 0 Blue: 0  
  wait 30 milliseconds  
  show RGB LEDs myLedStrip
```

Arduino run first:

Setup led strip myLedStrip :
Data pin 13
Number of leds 30

Arduino loop forever:

```
set pos to Map read analog pin# 34 from min 0 max 4095 to min 0 max 30
if read digital pin# 14 == LOW
do
  count with j from pos to 0 by -1
  do
    count with i from 0 to 29 by 1
    do
      if i < j
      do
        Set RGB LED myLedStrip At position: i Red: 255 Green: 0 Blue: 0
      else
        Set RGB LED myLedStrip At position: i Red: 0 Green: 0 Blue: 0
      show RGB LEDs myLedStrip
      wait 1000 milliseconds
    end
  end
end
count with i from 0 to 29 by 1
do
  if i < pos
  do
    Set RGB LED myLedStrip At position: i Red: 127 Green: 127 Blue: 127
  else
    Set RGB LED myLedStrip At position: i Red: 0 Green: 0 Blue: 0
  end
end
wait 30 milliseconds
show RGB LEDs myLedStrip
```


Code - Zeit abgelaufen

Arduino run first:

Setup led strip myLedStrip :
Data pin 13
Number of leds 30

Arduino loop forever:

```
set pos to Map read analog pin# 34 from min 0 max 4095 to min 0 max 30
if read digital pin# 14 == LOW
do
  count with i from pos to 0 by -1
  do
    count with i from 0 to 29 by 1
    do
      if i < i
      do
        Set RGB LED myLedStrip At position: i Red: 255 Green: 0 Blue: 0
      else
        Set RGB LED myLedStrip At position: i Red: 0 Green: 0 Blue: 0
    show RGB LEDs myLedStrip
    wait 1000 milliseconds
```

```
repeat 3 times
do
  count with i from 0 to 29 by 1
  do
    Set RGB LED myLedStrip At position: i Red: 0 Green: 255 Blue: 0
    show RGB LEDs myLedStrip
    wait 500 milliseconds
  count with i from 0 to 29 by 1
  do
    Set RGB LED myLedStrip At position: i Red: 0 Green: 0 Blue: 255
    show RGB LEDs myLedStrip
    wait 500 milliseconds
count with i from 0 to 29 by 1
do
  if i < pos
  do
    Set RGB LED myLedStrip At position: i Red: 127 Green: 127 Blue: 127
  else
    Set RGB LED myLedStrip At position: i Red: 0 Green: 0 Blue: 0
wait 30 milliseconds
show RGB LEDs myLedStrip
```

- Potentiometer kann abfallen
- LED-Streifen braucht 5V
- Stromverbrauch der LEDs
 - Volle Helligkeit -> 2A
 - USB 2.0 -> 0.5A
 - USB 3.0 -> 0.9A
 - USB-Ladegerät/-Powerbank bis zu 2.4A
 - Nachgucken

