20200507

Donnerstag, 7. Mai 2020 08:17

$U_{LED} = 1{,}6\,V$ $I_{LED} = 50\,mA = 0{,}05\,A$ $R_V = \frac{U_{VOR}}{I_{LED}}$

Ges. Vorwiderstand R_{VOR}

Lsg $U_{VOR} = 5\,V - 1{,}6\,V = 3{,}4\,V$

$R_{VOR} = \frac{3{,}4\,V}{0{,}05\,A} = 68\,\Omega$

Zur Vorbereitung: Übung 2 #6 – 11

#6 (aus Übung 2)

a) Geg $I = 40\,mA = 0{,}04\,A$ $U = 5\,V$

Ges R

Lsg $R = \frac{U}{I} = \frac{5\,V}{0{,}04\,A} = 125\,\Omega$

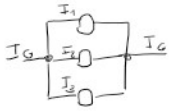
b) Geg $I = 30\,mA = 0{,}03\,A$ $U = 4\,V$

Ges R

Lsg $R = \frac{U}{I} = \frac{4\,V}{0{,}03\,A} = 133{,}\overline{3}\,\Omega$

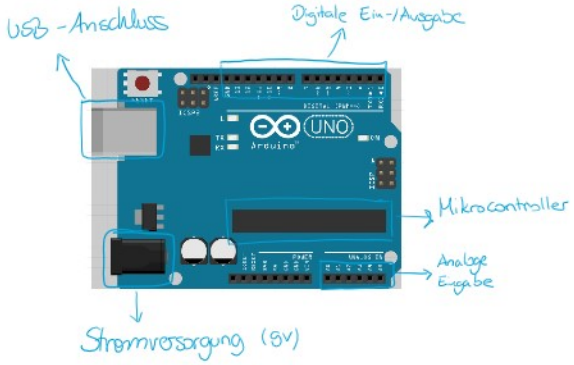
Angenommen: $I_{LED} = 11\,mA$

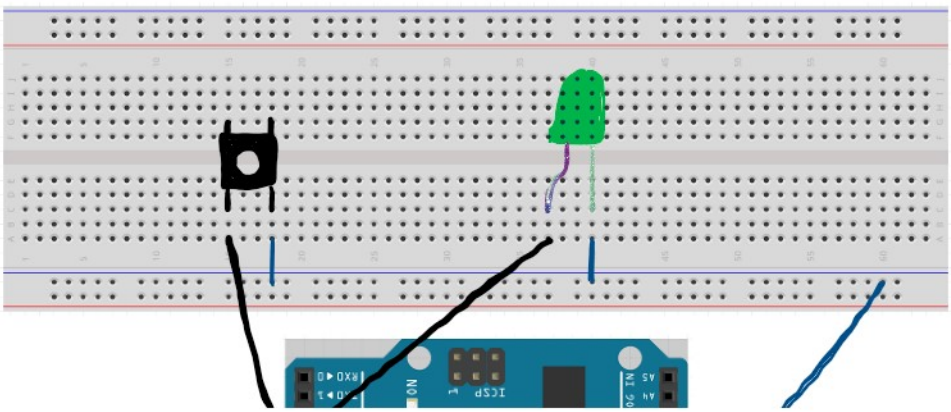
max. Ausgangsstrom $I_G = 32\,mA$



Sch. 4 LED parallel anschließen

Lsg Nein, weil $4 \cdot I_{LED} = 4 \cdot 11\,mA = 44\,mA > 32\,mA$

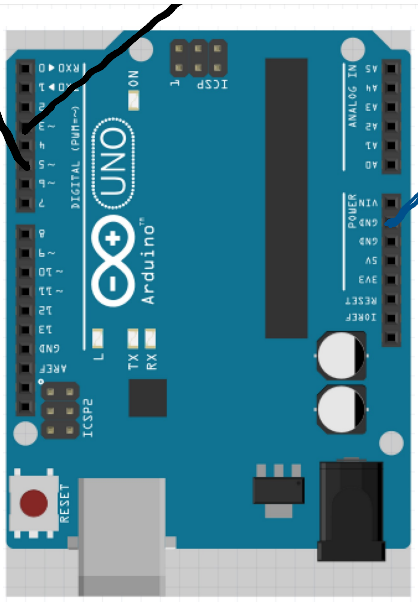




Aufgabe

1 grüne LED an Pin 3

1 Taster an Pin 5



Wir wollen: wenn der Taster betätigt wird leuchtet die LED 3 mal für 1,5 s

```
Void setup () {
    int led = 3;
    int taste = 5;
    pinMode(led, OUTPUT);
    pinMode (taste, INPUT_PULLUP);
}
Void loop () {
    if (taster.digitalRead() == LOW) {
      digitalWrite(led,HIGH);
      delay(1500);
      digitalWrite(led,LOW);
      delay(500);
      digitalWrite(led,HIGH);
      delay(1500);
      digitalWrite(led,LOW);
      delay(500);
      digitalWrite(led,HIGH);
      delay(1500);
      digitalWrite(led,LOW);
    }
}
```