

Motorsteuerung

Speichere diesen Code auf dem Pico unter dem Namen "motor.py".

Motorbibliothek

```
from machine import Pin, PWM
import utime
MIN_DUTY = 0
MAX_DUTY = 60000
MAX_SPEED = 100
MIN_SPEED = 30
class Motor:
    '''This class manages the motor. Don't edit!'''
    def __init__(self, pinNo):
        self.gpio = pinNo
        self.speed=0
        self.forward=True
        self.pwm1=PWM(Pin(pinNo))
        self.pwm1.freq(50000)
        self.pwm1.duty_u16(0)
        self.pwm2=PWM(Pin(pinNo+1))
        self.pwm2.freq(50000)
        self.pwm2.duty_u16(0)
        self.speed_offset = 0

    def set_speed(self,s):
        '''Sets the speed of the motor. Checks for sensible input.'''
        if s + self.speed_offset <= MIN_SPEED:
            s = 0
            self.reset_offset()
        elif s + self.speed_offset >= MAX_SPEED:
            s = MAX_SPEED
        self.pwm1.duty_u16(int(MAX_DUTY*(s+self.speed_offset)/100))
        self.speed=s
```

```

def change_speed(self,sc):
    '''This defines an offset to the speed in motor. It is used with the remote control to
    turn the robot.'''
    if self.speed + sc > MIN_SPEED and self.speed + sc < MAX_SPEED:
        self.speed_offset += sc
        self.set_speed(self.speed)

def reset_offset(self):
    self.speed_offset = 0

def off(self):
    self.pwm1.duty_u16(0)
    self.speed = 0

def set_forward(self,forward):
    '''Sets the motor to forward or backward without changing the speed. '''
    if self.forward==forward:
        return
    self.pwm1.duty_u16(0)
    self.pwm1,self.pwm2=self.pwm2,self.pwm1
    self.forward=forward
    self.set_speed(self.speed)

```

Beispiel für die Anwendung dieser Bibliothek

Kopiere diesen Code in eine andere Datei auf dem Pico, z. B. „motortest.py“.

```

from motor import Motor
from utime import sleep, sleep_ms

motor = Motor(12)

motor.set_speed(70)
motor.set_forward(True)
sleep(1)

```

```
motor.off()
```

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