

Link zur Dokumentation: [API](#)

Primäre Ziele der API:

- Einfach für Hardware Neueinsteiger
- Keine komplizierten C / C++ Schreibweisen
- z.T. Angelehnt an Arduino Funktionen

Intern GPIO Ausgang

```
#define BOARD GNUBLIN
//#define BOARD RASPBERRY_PI

#include "gnublin.h"

int main()
{
    gnublin_gpio gpio;

    gpio.pinMode(3,OUTPUT);

    while(1){
        gpio.digitalWrite(3,HIGH);
        sleep(2);
        gpio.digitalWrite(3,LOW);
        sleep(2);
    }
}
```

Intern GPIO Eingang

```
#define BOARD GNUBLIN
//#define BOARD RASPBERRY_PI

#include "gnublin.h"

int main()
{
    gnublin_gpio gpio;

    gpio.pinMode(3,INPUT);

    while(1){
        if(gpio.digitalRead(3))
```

```
    {
        printf("GPIO is set \n");
    }
    sleep(2);
}
}
```

Intern Analog Eingang

```
#define BOARD GNUBLIN
//#define BOARD RASPBERRY_PI

#include "gnublin.h"

int main()
{
    gnublin_adc ad;

    while(1){
        printf("AD value %i \n",ad.getValue(1));
    }
}
```

Module-Relay (Relaiskarte)

```
#define BOARD GNUBLIN
//#define BOARD RASPBERRY_PI

#include "gnublin.h"

int main()
{
    gnublin_module_relay relay;

    relay.setAddress(0x72);

    relay.switchPin(1,0N);
}
```

Module-Display (2x16 Zeichen)

```

#define BOARD GNUBLIN
//#define BOARD RASPBERRY_PI

#include "gnublin.h"

int main()
{
    gnublin_module_dogm dogm;

    dogm.init();
    dogm.setRsPin(14);
    dogm.setCS(11);

    dogm.print("Hallo Welt");

    sleep(2);

    dogm.clear();
    dogm.print("Zeile 1", 1);
    dogm.print("Zeile 2", 2);
    dogm.shift(5);

    sleep(2);

    dogm.returnHome();
    dogm.clear();
    dogm.print("Zeile 1, Offset 2", 1, 2);

    sleep(2);

    dogm.controlDisplay(0,1,0);
}

```

Module-Temperature (Temperatursensor)

```

#define BOARD GNUBLIN
//#define BOARD RASPBERRY_PI

#include "gnublin.h"

int main()
{
    gnublin_module_lm75 lm75;

    lm75.setAddress(0x4f);

```

```
printf("Temperature %i \n", lm75.getTemp());
printf("Raw Value %i \n",lm75.getValue());
printf("Temperature Float Value %f \n",lm75.getTempFloat());

}
```

Module-Step (Schrittmotor)

```
#define BOARD_GNUBLIN
//#define BOARD RASPBERRY_PI

#include "gnublin.h"

int main()
{
    gnublin_module_step motor;

    motor.setAddress(0x76);
    motor.getFullStatus1();
    motor.runInit();
    motor.resetPosition();
    motor.setPosition(1000);
    return 0;

}
```

Module-RTC (Uhrzeit)

```
#define BOARD_GNUBLIN
//#define BOARD RASPBERRY_PI

#include "gnublin.h"

int main()
{
    gnublin_module_rtc rtc;

    rtc.setAddress(0x72);

    while(1){
        printf("Timestamp %i \n",rtc.getTimestamp());
    }
}
```

I2C

```
#define BOARD GNUBLIN
//#define BOARD RASPBERRY_PI

#include "gnublin.h"

int main()
{
    gnublin_i2c i2c;

    i2c.setAddress(0x42);

    char buffer[8];
    char RxBuf[8];

    buffer[0]=0x22;

    i2c.send(buffer,5);
    i2c.send(0x12, buffer, 2); //sende 2 byte aus buffer an Register-Adresse
0x12

    i2c.receive(RxBuf, 3); // lese 3 bytes und speichere sie in RxBuf
    i2c.receive(0x23, RxBuf, 3); // lese von Register-Adresse 0x23 3 bytes
und speichere sie in RxBuf

}
```

SPI

```
#define BOARD GNUBLIN
//#define BOARD RASPBERRY_PI

#include "gnublin.h"

int main()
{
    gnublin_spi spi;

    spi.setSpeed(10000);
    spi.setCS(14);
    unsigned char send_buffer[9] = "getValue";
    char buffer[9];
    while(1){
        spi.send(sendbuffer,8);
        sleep(2);
    }
}
```

```
    spi.receive(buffer,8);
  }
}
```

Wrapper for Webcam

```
#define BOARD GNUBLIN
//#define BOARD RASPBERRY_PI

#include "gnublin.h"

int main()
{
    gnublin_cam cam;

    cam.doSnapshot("/tmp/test.jpg");
}
```

Allgemeine Funktionen

- Dateien lesen / schreiben
- CSV Parser
- MySQL / sqlite
- Threads

Ordner Struktur

- examples *Beispielprogramme*
- modules *Klassen für Module*
- boards *Defintion für Boards*
- common *Allgemeine Funktionen wie println, delay, ...*
- drivers *I2C, UART, SPI, ... Funktionen dienen als Basis für Module & Co.*