Pemrograman Raspberry-pi

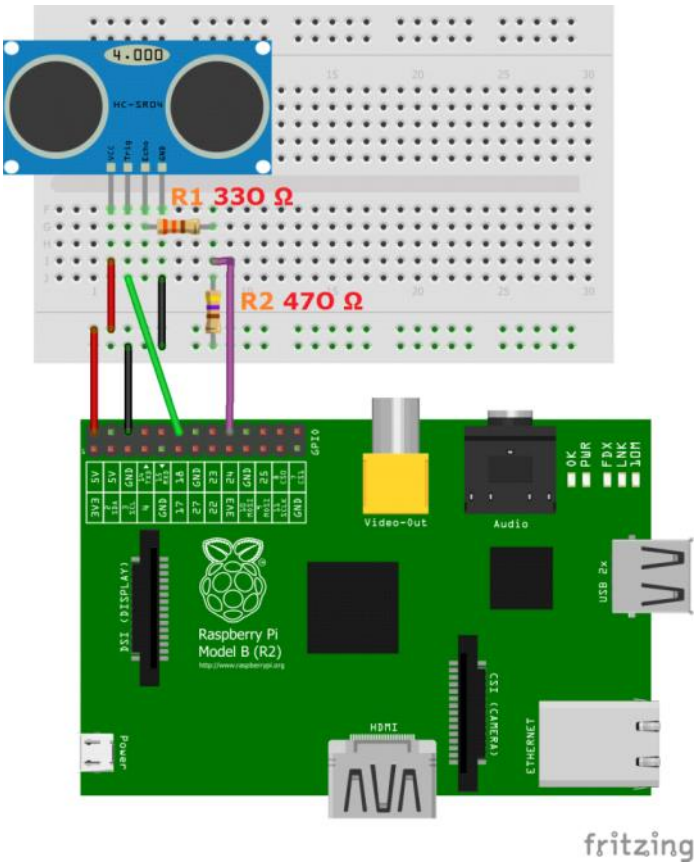
15 May 2018 7:35

Contoh kasus:

Mengukur Jarak dengan Raspberry Pi menggunakan sensor (ultrasonic sensor HC-SR04)

Sensor Jarak: Ultrasonic HC-SRO4
Interface: 4 pin

- Vcc (5V+)
- Trigger (input, pulse min 10us)
- Echo (Output, default 0, setelah ada trigger akan berubah menjadi 1, menunggu sinyal pantul dari obyek, untuk kembali ke 0)
- Gnd



Rangkain STEP-DOWN (5V to 3.3V) dari pin ECHO (sensor) ke GPIO Raspberry.

```python
#Libraries
import RPi.GPIO as GPIO
import time

#GPIO Mode (BOARD / BCM)
GPIO.setmode(GPIO.BCM)

#set GPIO Pins
GPIO_TRIGGER = 18
GPIO_ECHO = 24

#set GPIO direction (IN / OUT)
GPIO.setup(GPIO_TRIGGER, GPIO.OUT)
GPIO.setup(GPIO_ECHO, GPIO.IN)

def distance():
    # set Trigger to HIGH
    GPIO.output(GPIO_TRIGGER, True)

    # set Trigger after 0.01ms to LOW
    time.sleep(0.00001)
    GPIO.output(GPIO_TRIGGER, False)

    StartTime = time.time()
    StopTime = time.time()

    # save StartTime
    while GPIO.input(GPIO_ECHO) == 0:
        StartTime = time.time()

    # save time of arrival
    while GPIO.input(GPIO_ECHO) == 1:
        StopTime = time.time()

    # time difference between start and arrival
    TimeElapsed = StopTime - StartTime
    # multiply with the sonic speed (34300 cm/s)
    # and divide by 2, because there and back
    distance = (TimeElapsed * 34300) / 2

    return distance

if __name__ == '__main__':
    try:
        while True:
            dist = distance()
            print ("Measured Distance = %.1f cm" % dist)
            time.sleep(1)

        # Reset by pressing CTRL + C
    except KeyboardInterrupt:
        print("Measurement stopped by User")
        GPIO.cleanup()
```