Hardware Control course--Drive motor

1. Learning target

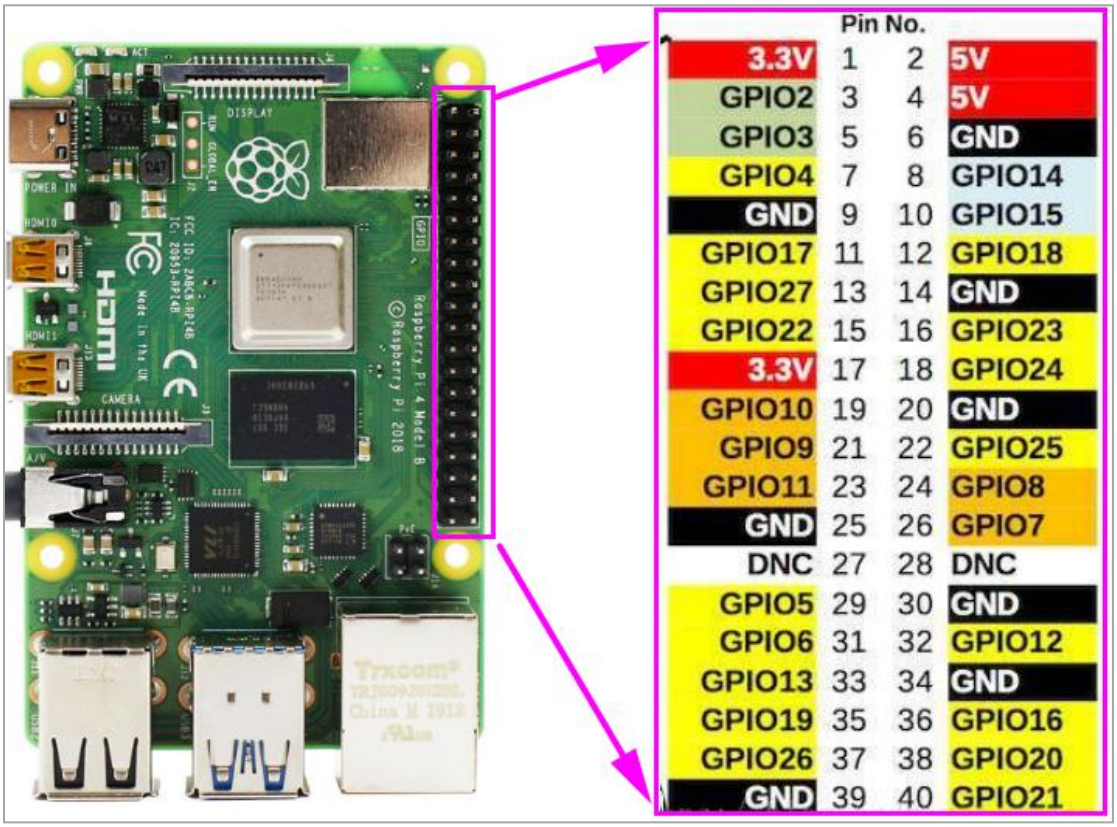
In this course, we will learn how to drive motor of car.

2. Principle

For the Raspbot car, we use 4 TT DC gear motors. They are driven by the TB6612 chip. The driver chip is not directly connected to the Raspberry Pi pins.
Raspberry Pi communicates with STM8 MUC through IIC, and then STM8 MCU drives TB6612 chip to drive the motor.

3. Coding method

In this course, we use BOARD coding method.
STM8 is connected to SDA.1, SCL.1 on the Raspberry Pi board.
The pin comparison table of Raspberry Pi as shown below.



wiringPi	BCM	Function	BOARD		Function	BCM	wiringPi
		3.3V	1	2	5V		
8	2	SDA.1	3	4	5V		
9	3	SCL.1	5	6	GND		
7	4	GPIO.7	7	8	TXD	14	15
		GND	9	10	RXD	15	16
0	17	GPIO.0	11	12	GPIO.1	18	1
2	27	GPIO.2	13	14	GND		
3	22	GPIO.3	15	16	GPIO.4	23	4
		3.3V	17	18	GPIO.5	24	5
12	10	MOSI	19	20	GND		
13	9	MISO	21	22	GPIO.6	25	6
14	11	SCLK	23	24	CE0	8	10
		GND	25	26	CE1	7	11
30	0	SDA.0	27	28	SCL.0	1	31
21	5	GPIO.21	29	30	GND		
22	6	GPIO.22	31	32	GPIO.26	12	26
23	13	GPIO.23	33	34	GND		
24	19	GPIO.24	35	36	GPIO.27	16	27
25	26	GPIO.25	37	38	GPIO.28	20	28
		GND	39	40	GPIO.29	21	29

We have provided a library text dedicated to driving motors and servos
--YB_Pcb_Car.py.
It is located in the same directory as the motor driver.

4. About code

Path: /home/pi/Yahboom_project/Raspbot/2.Hardware Control course/2.Drive motor

1) Import time and YB_Pcb_Car library

```
import YB_Pcb_Car
import time

car = YB_Pcb_Car.YB_Pcb_Car()
```

2) Control the car advance with a speed of 150 for two seconds (speed range:

0~255).

```
car.Car_Run(150, 150)
time.sleep(2)
car.Car_Stop()
```

3) 3) Control the car back with a speed of 150 for two seconds (speed range: 0~255).

```
car.Car_Back(150, 150)
time.sleep(2)
car.Car_Stop()
```

.....

4) Car stop

```
car.Car_Stop()
```

5) After using, we need to release the car object, otherwise, when the next program needs to use the object, it will be unusable due to it is occupied.

```
del car
```

5. Running code

Click the button shown in the figure below to run the program on the Jupyter Lab interface

6. Experimental phenomena

Car will complete some actions.