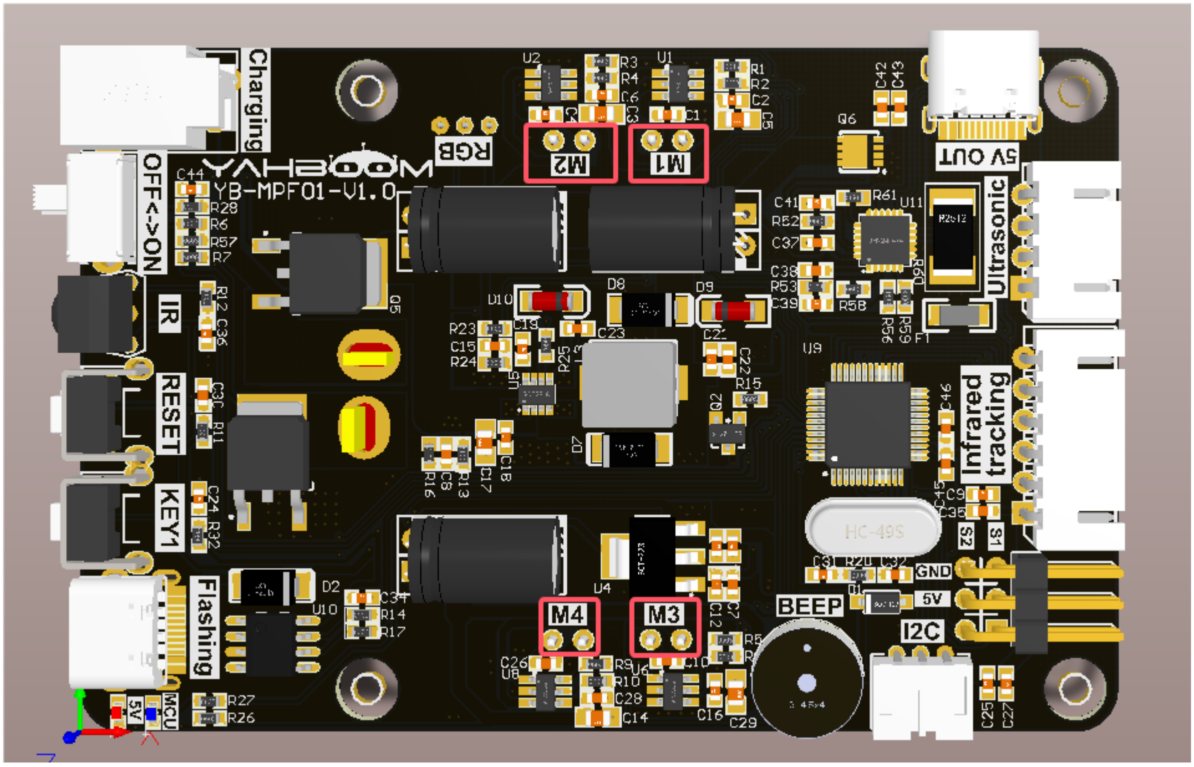
5. Motor control

1. Learning objectives

Control the TT motor connected to the expansion board.

2. Experimental preparation

As shown in the figure below, connect the motor to the motor interface.



3. Core code analysis

Raspbot_Lib library functions needed to control the motor:

```
Ctrl_Muto(motor_id, motor_speed)
```

Parameter explanation: Control the forward and reverse rotation and speed of the motor

motor_id=[1,4]: 1: M1 motor, 2: M2 motor, 3: M3 motor, 4: M4 motor

motor_speed=[-255,255], positive number means forward rotation, negative number means backward rotation, 0 means stop

Return value: None.

```
Ctrl_Car(motor_id, motor_dir, motor_speed):
```

Parameter explanation: Control the forward and reverse rotation and speed of the motor. You need to use an additional judgment parameter to control the forward and reverse rotation

motor_id=[1,4]: 1: M1 motor, 2: M2 motor, 3: M3 motor, 4: M4 motor

motor_dir=[0,1]: 0: forward rotation, 1: reverse rotation

motor_speed=[0,255], the larger the value, the faster the motor speed, 0 means stop.

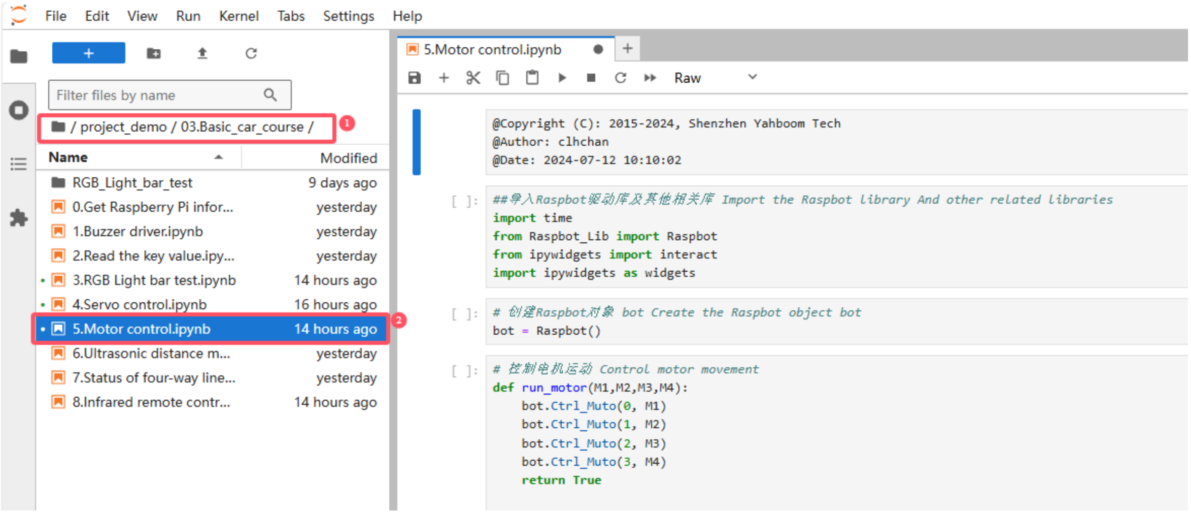
Return value: None.

Source code path: project_demo\03.Basic_car_course

4. Experimental phenomenon

Turn on the robot, open the computer browser to enter the Jupyter lab editor

Enter the source code path and double-click the code to be run


File Edit View Run Kernel Tabs Settings Help
Filter files by name
/ project_demo / 03.Basic_car_course /
1
Name
Modified
RGB_Light_bar_test 9 days ago
0.Get Raspberry Pi infor... yesterday
1.Buzzer driver.ipynb yesterday
2.Read the key value.ipy... yesterday
3.RGB Light bar test.ipynb 14 hours ago
4.Servo control.ipynb 16 hours ago
5.Motor control.ipynb 14 hours ago
2
6.Ultrasonic distance m... yesterday
7.Status of four-way line... yesterday
8.Infrared remote contr... 14 hours ago
5.Motor control.ipynb
Raw

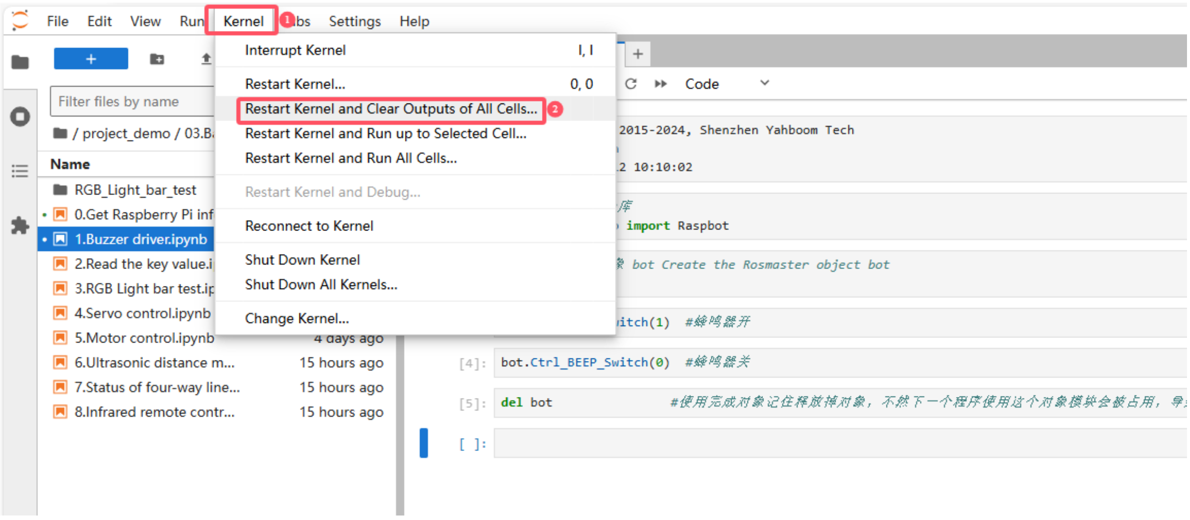
```
@Copyright (C): 2015-2024, Shenzhen Yahboom Tech
@Author: clhchan
@Date: 2024-07-12 10:10:02
```

```
[ ]: ##导入Raspbot驱动库及其他相关库 Import the Raspbot library And other related libraries
     import time
     from Raspbot_Lib import Raspbot
     from ipywidgets import interact
     import ipywidgets as widgets
```

```
[ ]: # 创建Raspbot对象 bot Create the Raspbot object bot
     bot = Raspbot()
```

```
[ ]: # 控制电机运动 Control motor movement
     def run_motor(M1,M2,M3,M4):
         bot.Ctrl_Muto(0, M1)
         bot.Ctrl_Muto(1, M2)
         bot.Ctrl_Muto(2, M3)
         bot.Ctrl_Muto(3, M4)
         return True
```

Restart the kernel and clear all outputs


File Edit View Run Kernel Tabs Settings Help
1
Filter files by name
/ project_demo / 03.B
Name
RGB_Light_bar_test
0.Get Raspberry Pi inf
1.Buzzer driver.ipynb
2.Read the key value.i
3.RGB Light bar test.ip
4.Servo control.ipynb
5.Motor control.ipynb 4 days ago
6.Ultrasonic distance m... 15 hours ago
7.Status of four-way line... 15 hours ago
8.Infrared remote contr... 15 hours ago
Interrupt Kernel I, I
Restart Kernel... 0, 0
Restart Kernel and Clear Outputs of All Cells...
2
Restart Kernel and Run up to Selected Cell...
Restart Kernel and Run All Cells...
Restart Kernel and Debug...
Reconnect to Kernel
Shut Down Kernel
Shut Down All Kernels...
Change Kernel...
Code

```
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2 10:10:02
```

```
库
 import Raspbot
```

```
象 bot Create the Rosmaster object bot
```

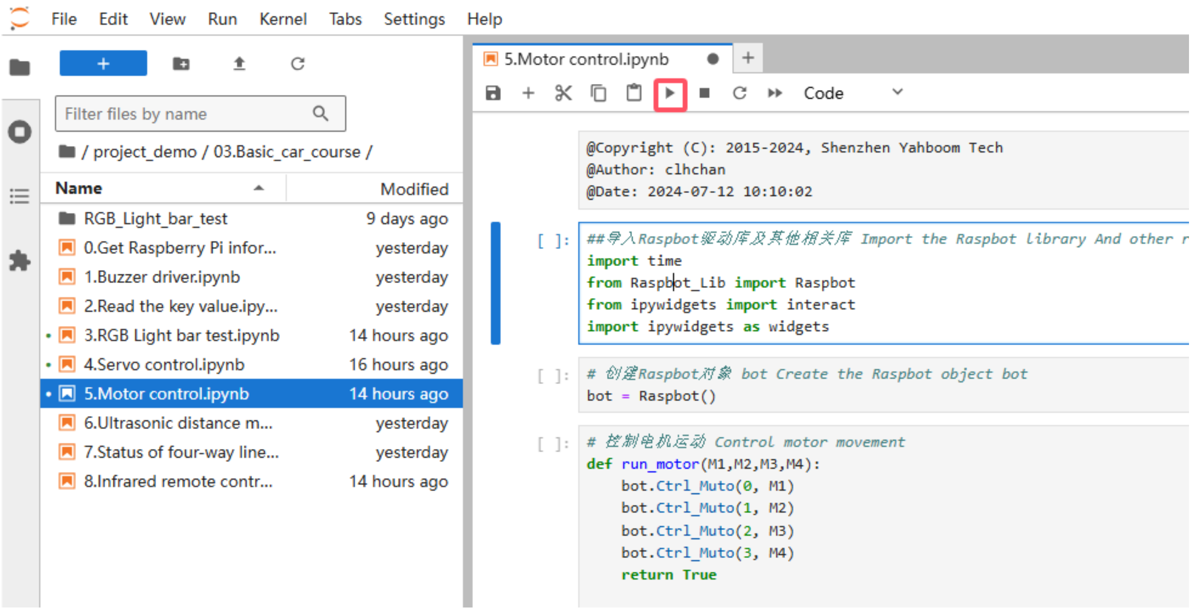
```
itch(1)  #蜂鸣器开
```

```
[4]: bot.Ctrl_BEEP_Switch(0)  #蜂鸣器关
```

```
[5]: del bot             #使用完成对象记住释放掉对象，不然下一个程序使用这个对象模块会被占用，导
```

```
[ ]:
```

Click the first code block, then click the run button to start running one by one



/ project_demo / 03.Basic_car_course /

Name	Modified
RGB_Light_bar_test	9 days ago
0.Get Raspberry Pi infor...	yesterday
1.Buzzer driver.ipynb	yesterday
2.Read the key value.ipy...	yesterday
3.RGB Light bar test.ipynb	14 hours ago
4.Servo control.ipynb	16 hours ago
5.Motor control.ipynb	14 hours ago
6.Ultrasonic distance m...	yesterday
7.Status of four-way line...	yesterday
8.Infrared remote contr...	14 hours ago

```
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@Author: clhchan
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```

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         bot.Ctrl_Muto(2, M3)
         bot.Ctrl_Muto(3, M4)
         return True
```

After the program runs, as the code blocks run, we can control the speed and forward and reverse rotation of the motor.