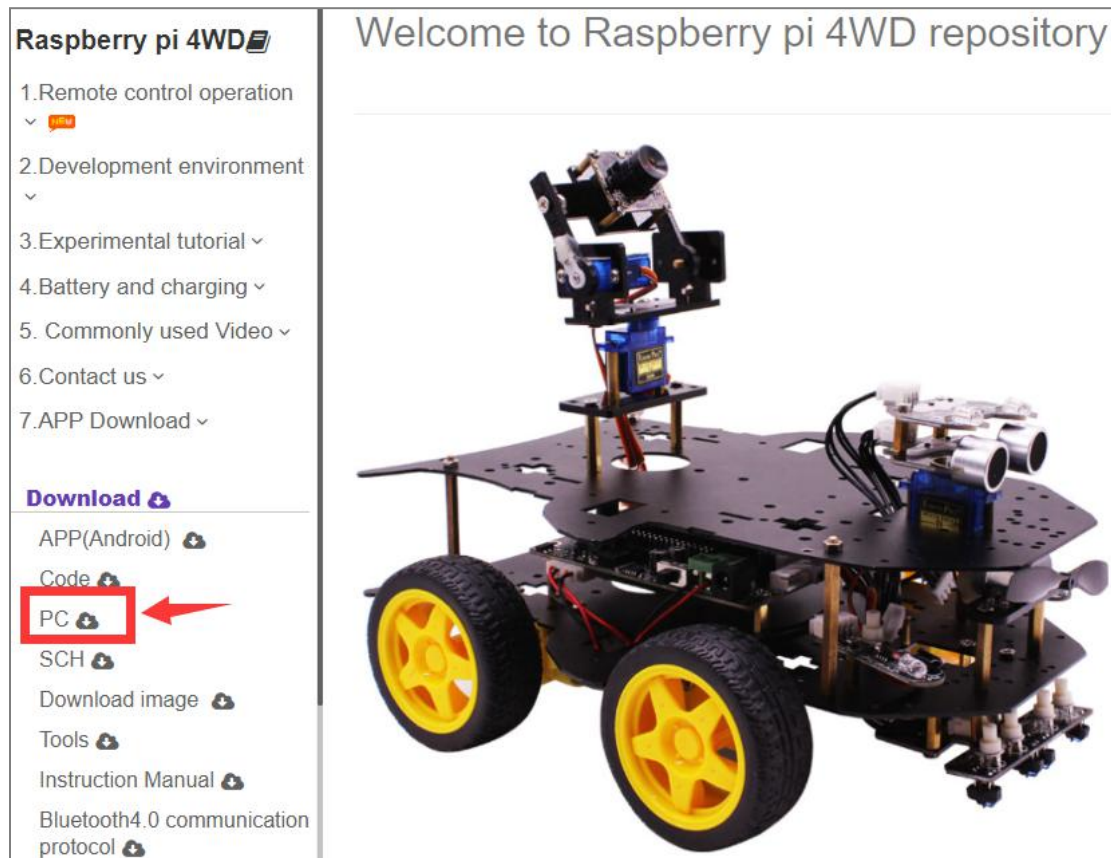


12.Raspberry Pi platform ----- TCP_control

Download Yahboom_PC software.



About the code

A. For .c code

(1) We need to compile this file in the Raspberry Pi system. (Note: we need to add -lwiringPi to the library file.)

We need to input: `gcc TCP_Control.c -o TCP_Control -lwiringPi -lpthread`

(2) We need to run the compiled executable file in the Raspberry Pi system. We need to input: `./TCP_Control`

As shown in the figure below.

```
pi@yahboom4wd:~/SmartCar $ gcc TCP_Control.c -o TCP_Control -lwiringPi -lpthread
TCP_Control.c: In function 'do_client_recv':
TCP_Control.c:1060:2: warning: implicit declaration of function 'close'; did you mean 'pclose'? [-Wimplicit-function-declaration]
    close(sockfd);
    ~~~~
    pclose
TCP_Control.c: In function 'servo_control':
TCP_Control.c:1099:7: warning: implicit declaration of function 'sleep' [-Wimplicit-function-declaration]
    sleep(1);
    ~~~~
pi@yahboom4wd:~/SmartCar $ ./TCP_Control
```

(3) We can input: `ctrl+c` to stop this process, which mean is send a signal to the linux kernel to terminate the current process, but the state of the relevant pin is uncertain at this time, we also need to run a script to initialize all pins.

(Note:The initpin.sh script file is included in the SmartCar/python directory.)

You need to input: `chmod 777 initpin.sh`
`./initpin.sh`

```
pi@yahboom4wd:~/SmartCar $ sudo chmod 777 initpin.sh
pi@yahboom4wd:~/SmartCar $ ./initpin.sh
```

B. For python code

(1) We need to input following command to run python code.

python TCP_Control.py

```
pi@yahboom4wd:~/python $ python TCP_Control.py
```

(2) We can input: **ctrl+c** to stop this process, which mean is send a signal to the linux kernel to terminate the current process, but the state of the relevant pin is uncertain at this time, we also need to run a script to initialize all pins.

(3) You need to input: **sudo chmod 777 initpin.sh**
./initpin.sh

```
pi@yahboom4wd:~/SmartCar $ sudo chmod 777 initpin.sh
pi@yahboom4wd:~/SmartCar $ ./initpin.sh
```



About using Yahboom_PC software

1) We need to open the host computer software to choose BST_4WD_Raspberry Pi.

Please select the product type first: ✕

Development Board

☐ V51 Development Board
 ☐ Mini51 Development Board

Development Kit

☐ 51 Development Kit (Smart tmetal)
 ☐ Arduino Basic Kit
 ☐ Arduino Sensor Kit

Smart Robot Car

☐ Arduino Smart Robot Car
 ☐ Arduino Bat Robot Car
 ☐ 51 Smart Robot Car

Balance Car

☐ Arduino Balance Car
 ☐ STM32 Balance Car

4WD Smart Robot Car

☐ BST_4WD_Arduino
 ☐ BST_4WD_51
 ☐ BST_4WD_STM32
 ☒ BST_4WD_Raspberry Pi

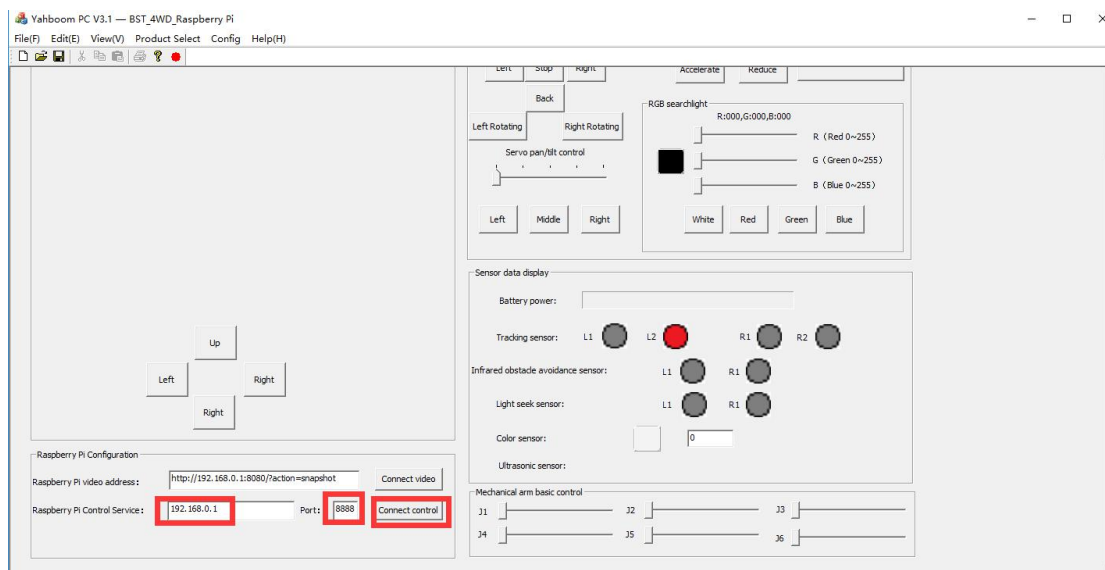
TrikeBot Smart Robot Car

☐ TrikeBot Smart Robot Car-STM32
 ☐ TrikeBot Smart Robot Car-Raspberry Pi

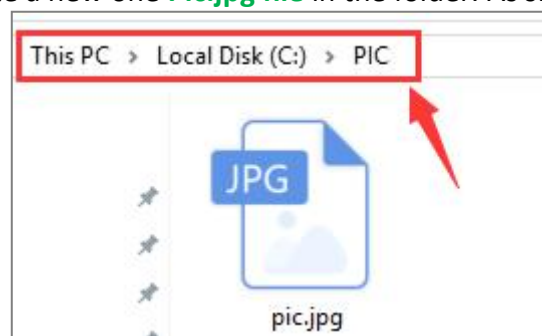
OK

CANCEL

2) Click **[Connect Video]** to see the video picture captured by the camera.



3) Click **[Connect Video]** again to close the video picture captured by the camera. If you cannot see the video, you need to manually create a **PIC folder** in the **C** drive, and then create a new one **Pic.jpg** file in the folder. As shown below.

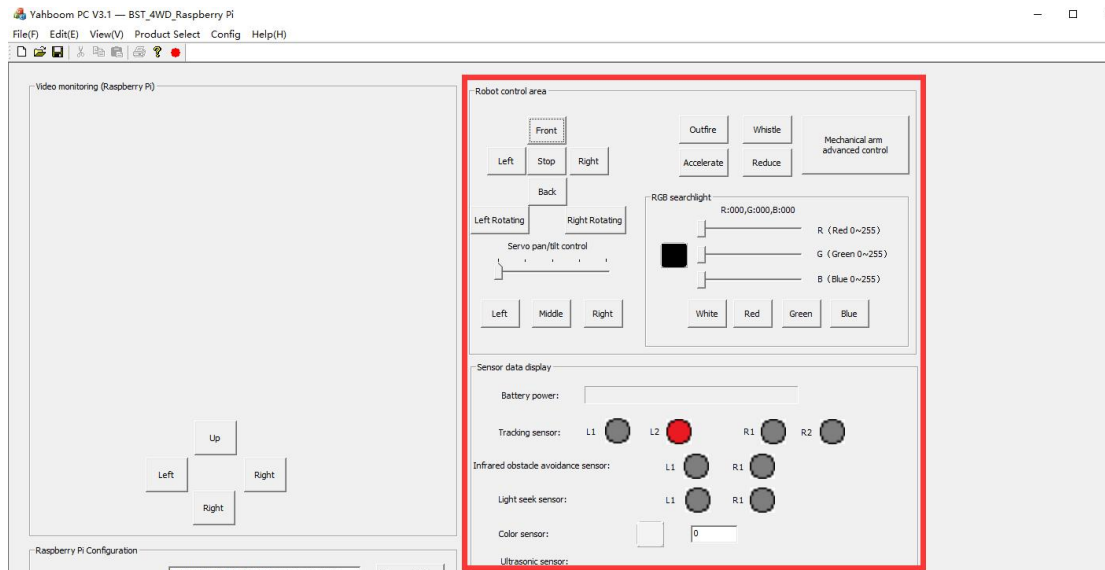


Then, you must open this file read and write permissions.

4) Click **[Connect control]** to enter remote control car mode.



5) You can control the car in the area on the right.



6) Click [**Connect control**] again to launch remote control car mode.
At the same time, the Raspberry Pi system will have the following tips.

```
pi@raspberrypi:~/SmartCar $ ./TCP_Control
Listen....

connect_fd : 5
client IP : 192.168.0.11
client port : 57819
$4WD,CSB0,PV8.4,GS0,LF1101,HW10,GM00#
send 37 bytes : $4WD,CSB0,PV8.4,GS0,LF1101,HW10,GM00#
Recv 19 bytes : $0,0,0,0,0,0,2,0,0#
Recv 19 bytes : $0,0,0,0,0,0,1,0,0#
█
```

```
pi@yahboom4wd:~/python $ python TCP_Control.py
TCP_Control.py:636: SyntaxWarning: name 'g_ServoState' is assigned to before global declaration
    global g_ServoState
TCP_Control.py:673: SyntaxWarning: name 'recvbuf' is assigned to before global declaration
    global recvbuf
waiting for connection...
distance is 125
ReturnTemp: $4WD,CSB125,PV8.4,GS0,LF1111,HW11,GM00#
distance is 144
ReturnTemp: $4WD,CSB144,PV8.4,GS0,LF1111,HW11,GM00#
distance is 126
ReturnTemp: $4WD,CSB126,PV8.4,GS0,LF1111,HW11,GM00#
distance is 143
ReturnTemp: $4WD,CSB143,PV8.4,GS0,LF1111,HW11,GM00#
distance is 143
ReturnTemp: $4WD,CSB143,PV8.4,GS0,LF1111,HW11,GM00#
distance is 125
ReturnTemp: $4WD,CSB125,PV8.4,GS0,LF1111,HW11,GM00#
```