!!!Note:

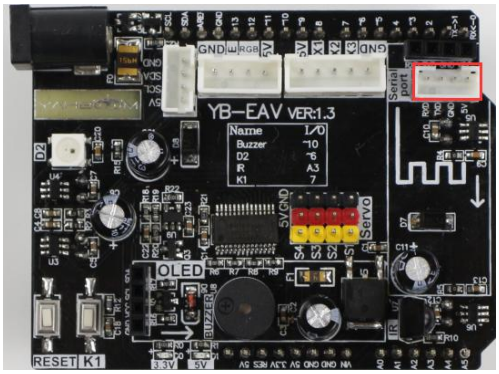
If you need to upload the code, you need to remove the WiFi camera module wiring.

1. Learning goal

In this lesson, we will learn how to control the car by WIFI camera.

2. Preparation

2.1 The position of the infrared receiver on the robot car. As shown below.



2.2 The pin of UNO board is connected the infrared receiver.

3. Principle of experimental

From the hardware interface manual, we can know that WIFI camera module are driven by serial port.

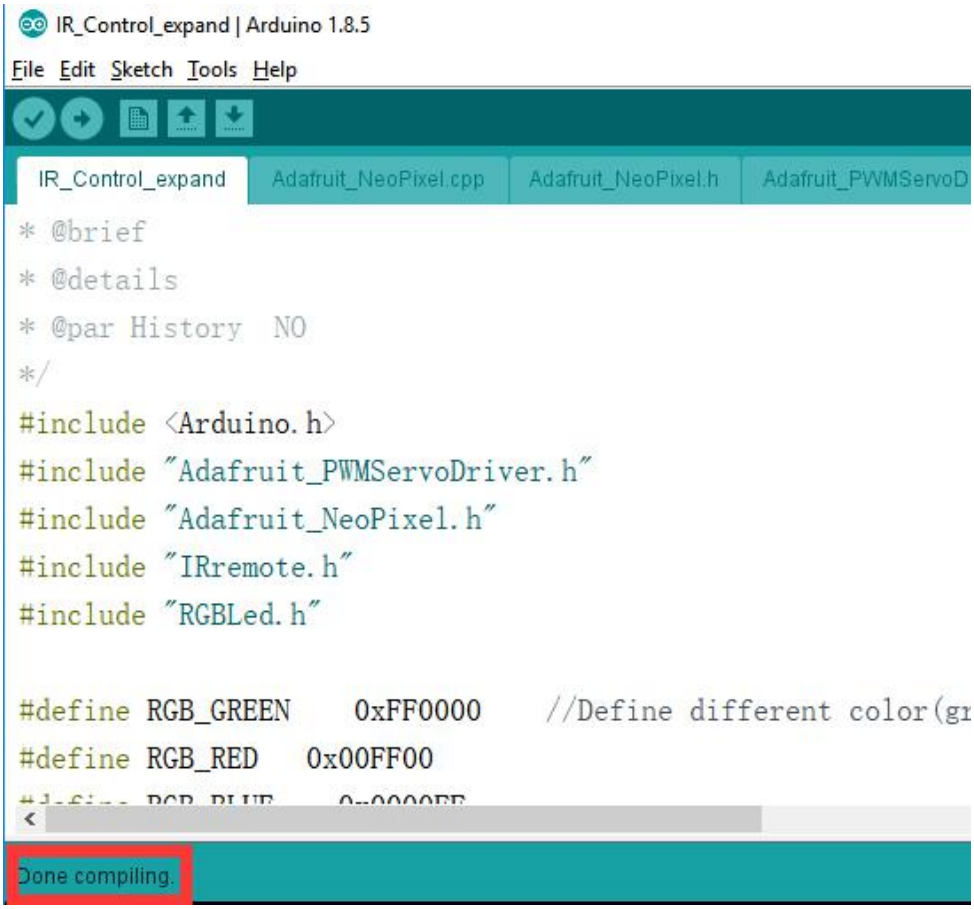
Classification	Function	The number of Drive chip PCA9685	Drive Method	Connection with CPU	Uno boar
Left Motor	Left front motor forward	LINB(13)	PCA9685	I2C_SDA/I2C_SCL	A4/A5
	Left front motor reverse	LINA(12)			
	Left rear motor forward	RINB(15)			
	Left rear motor reverse	RINA(14)			
Right Motor	Right front motor forward	LED10			
	Right front motor reverse	LED11			
	Right rear motor forward	LED8			
	Right rear motor reverse	LED9			
Servo	Control S1	LED0			
	Control S2	LED1			
	Control S3	LED2			
	Control S4	S1(3)			
LOGO light	Control bluelight	LED7			
Tarcking sensor	Left tracking sensor	Uno board drive directly			A0
	Middle tracking sensor				A1
	Right tracking sensor				A2
Ultrasonic sensor	Ultrasonic Echo				12
	Ultrasonic RGB light				11
Key	K1				7
IR	IR control				A3
Bluetooth/WIFI camera interface	RX				0
	TX				1
On board RGB Light	RGB Light on expansion board				6
Buzzer	Control buzzer				10

4. About code

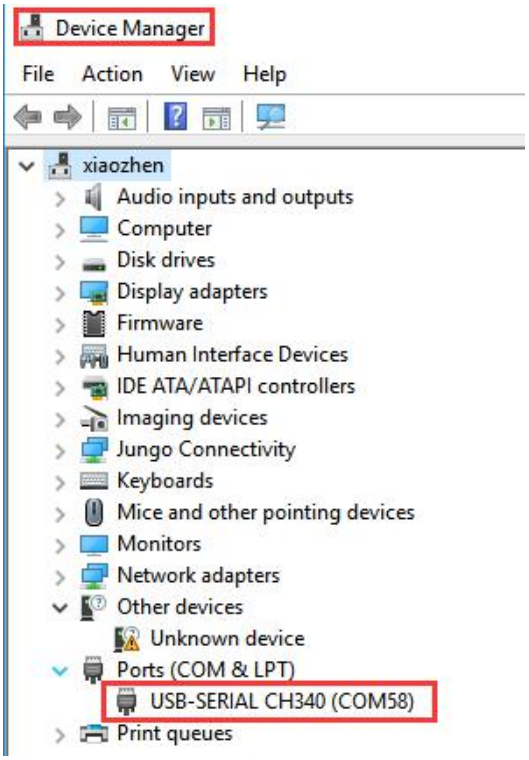
For the code of this course, please refer to: **WIFI_control_car.ino** in the **WIFI_control_car** folder.

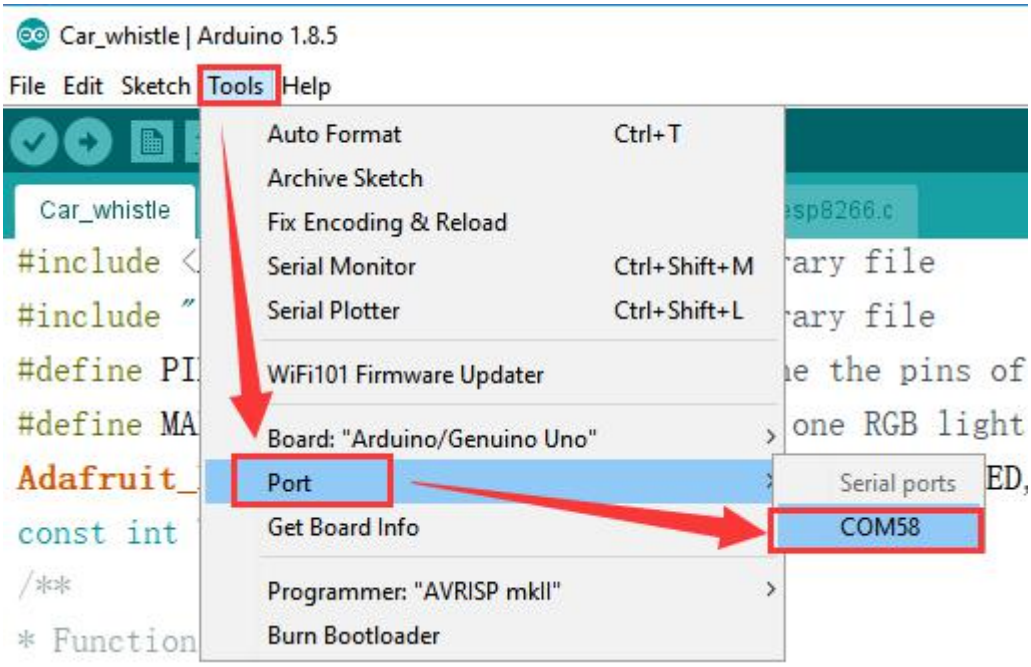
5. Compiling and downloading code

5.1 We need to open the **WIFI_control_car.ino** file by Arduino IDE software. Then click"**√**"under the menu bar to compile the code, and wait for the word "**Done compiling** " in the lower left corner, as shown in the figure below.

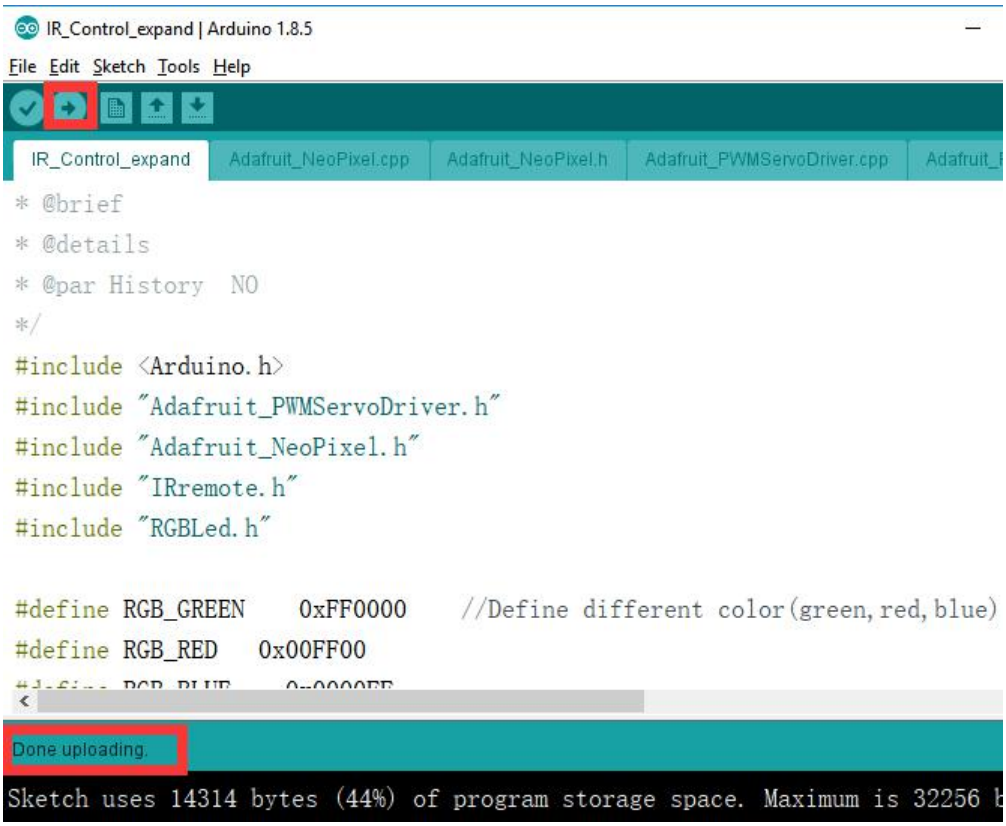


5.2 In the menu bar of Arduino IDE, we need to select 【Tools】--- 【Port】--- selecting the port that the serial number displayed by the device manager just now, as shown in the figure below.





5.3 After the selection is completed, you need to click "→"under the menu bar to upload the code to the UNO board. When the word "**Done uploading**" appears in the lower left corner, the code has been successfully uploaded to the UNO board, as shown in the figure below.



6. Experimental phenomena

After the program is downloaded, we can control robot car by WIFI APK.

The specific steps are as follows:

1) After the program download is complete, plug in the WiFI camera wiring.

2) Turn on the car power switch, you can see that the red indicator light on the WIFI camera module is flashing.

3) Download APK:

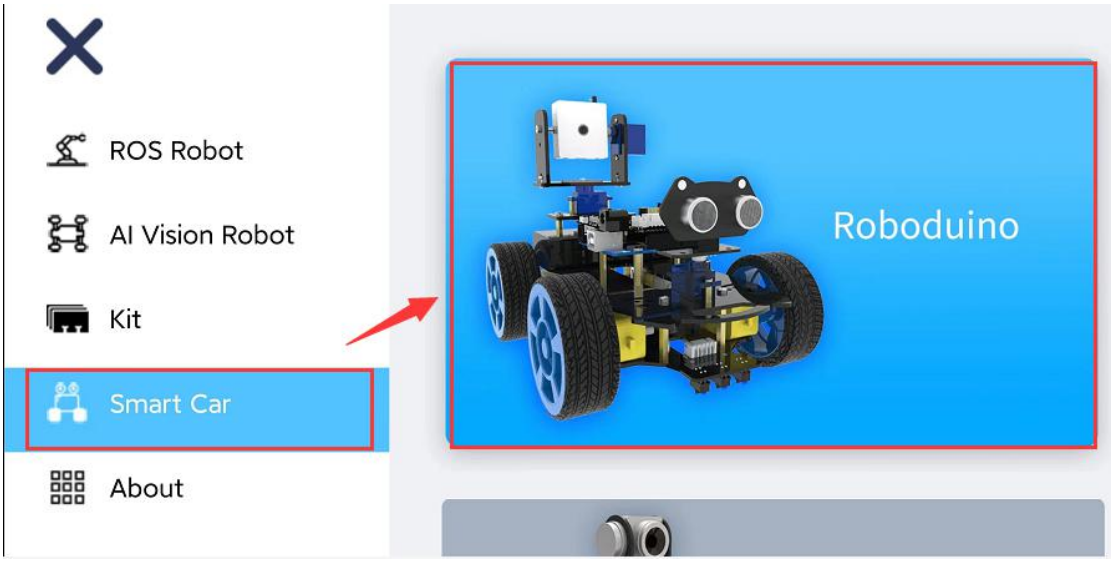
Android Please use the browser to scan the QR code to download and install APK ; Apple please use camera to scan the QR code to enter the APP Store to download and install or search for "**YahboomRobot**" in the APP Store. As shown in figure below.

4) Open the “WIFI” settings of your phone and you will be able to search for “**Yahboom_WIFI**” and connect without entering a password.

5) After connecting Yahboom_WIFI, open **Yahboom_Robot**.apk and follow the steps below to see the camera screen and control the car.

First, we need to click on the top left corner of the APK to select the device as shown below.

Then,Select 【Roboduino】to enter the remote control interface, as shown below:



6)Check the camera packaging sticker, you need to select the corresponding control entrance according to the camera model.

If you choose the wrong control entrance, you will not be able to view the camera image and control the car. If the camera package has no stickers, it will default to a WIFI camera.

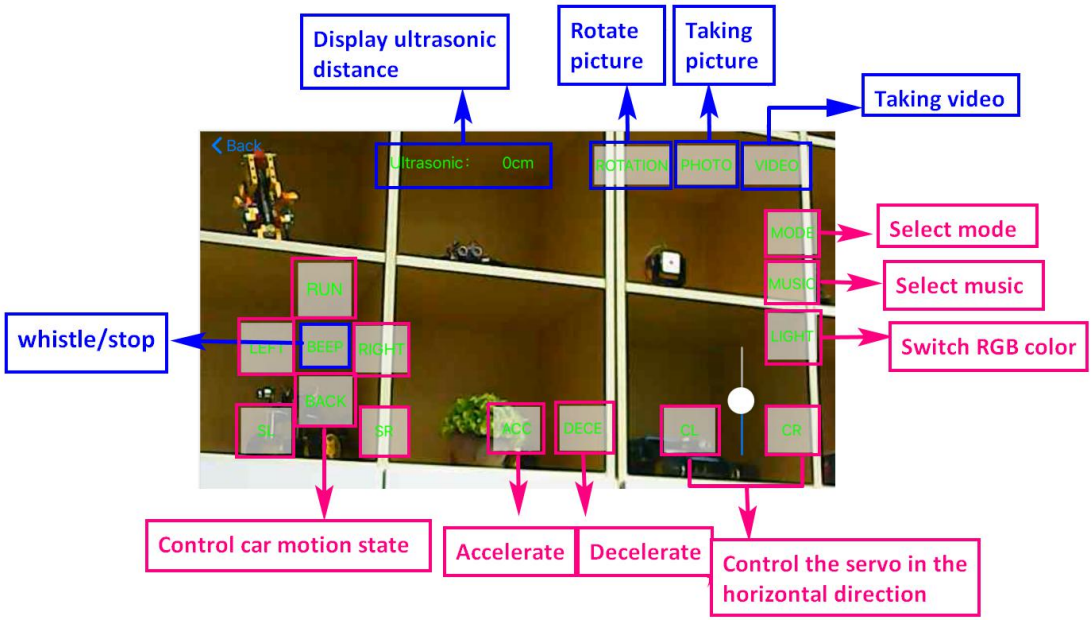
a. Use the ESP32-CAM camera to select the left control entrance, it will enter the WiFi configuration interface, use the default IP, Port, Video, click Connect to enter the main control interface;

b. Use the WIFI camera to select the control entrance on the right, and click to directly enter the main control interface.

Note: The functions implemented by the two versions are exactly the same, only the camera model is different.

Control Interface ：

Because serial communication may cause lost data, you may encounter this situation during using:
After clicking **RUN/ BACK/ LEFT/ RIGHT/ SL/ SR** to release your hand, the car may not stop. At this time, you need to press the **BEEP** button to stop the car.

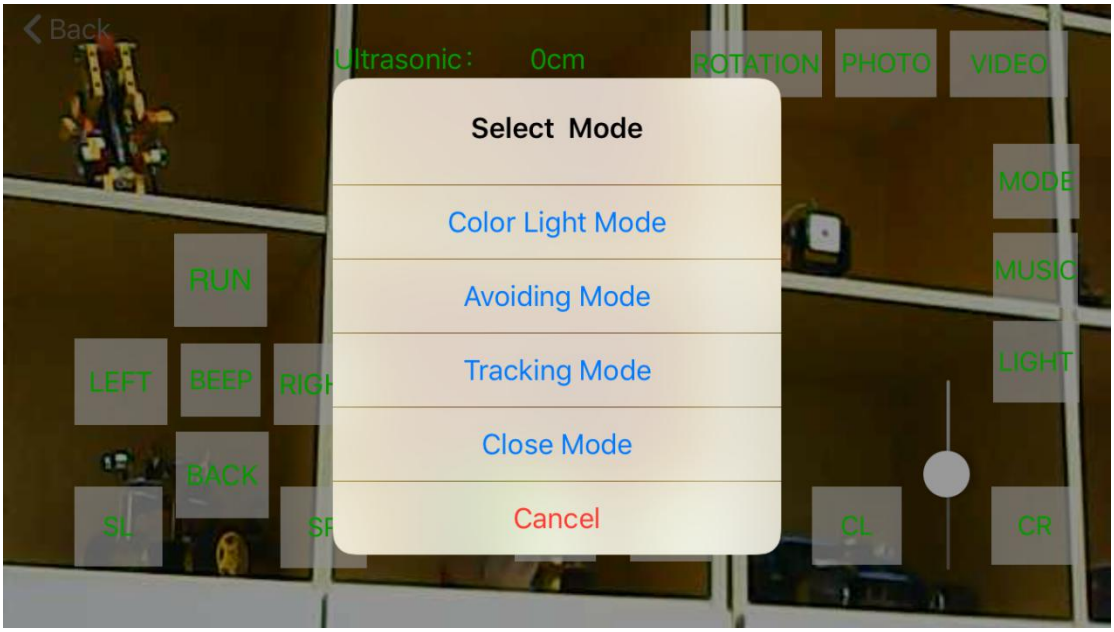


!!!Note: If you find that the video screen is the opposite, click on "ROTATION" to rotate the screen.

Mode selection interface:

The buzzer will sound when you successfully turn on a mode or turn off a mode successfully.

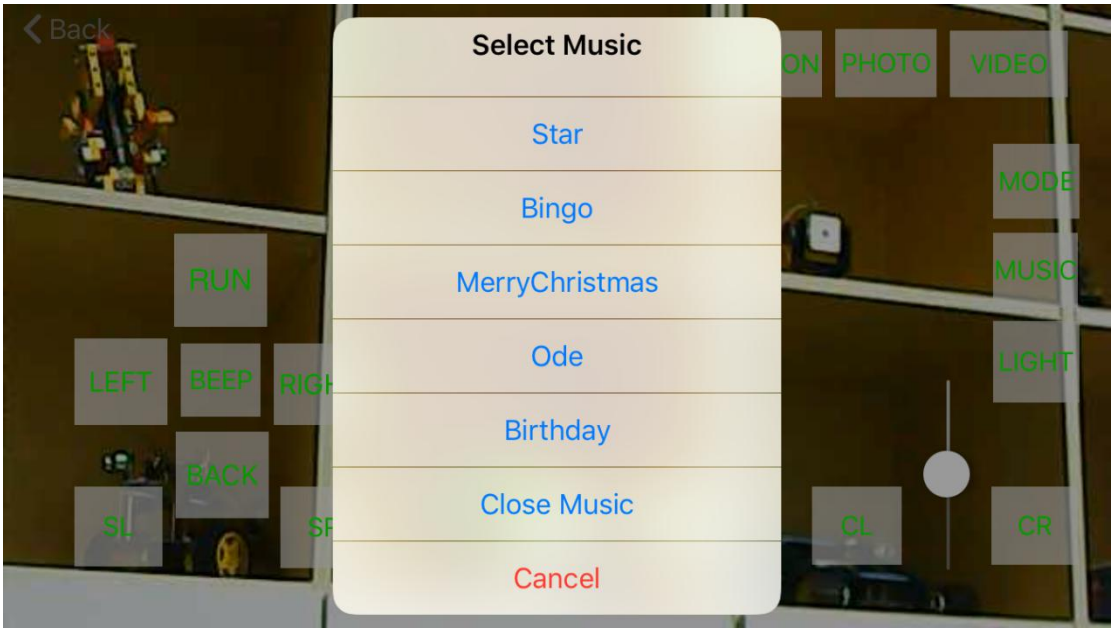
If you don't hear the buzzer sound, please click again.

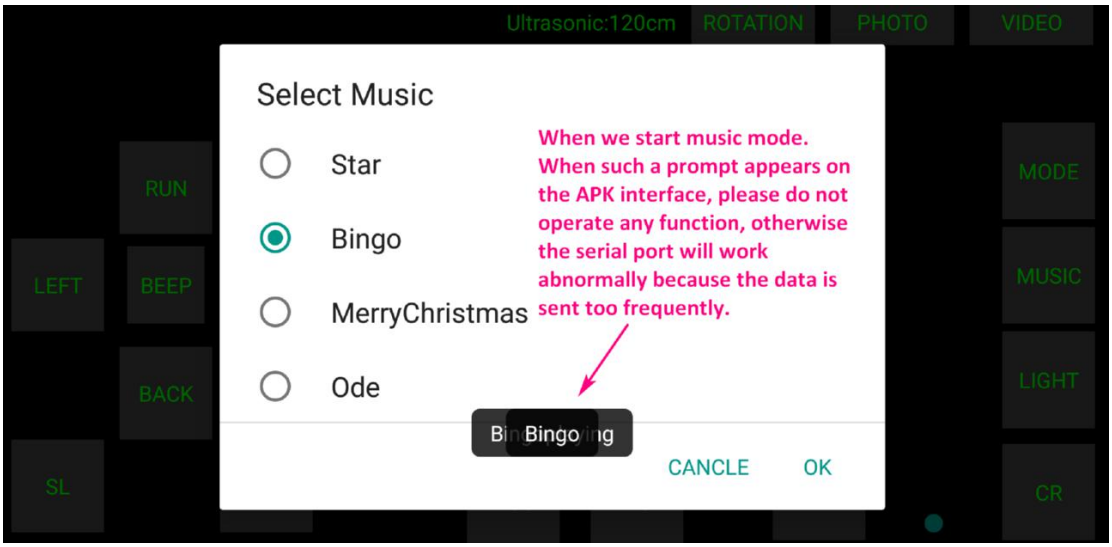


!!!Note:

If the tracking mode experiment is not working well, please check [2.Basic course]--[8.Tracking]. Please read this tutorial to modify the parameters in the program.

Music selection interface:




Ultrasonic:120cm
ROTATION
PHOTO
VIDEO
Select Music
Star
Bingo
MerryChristmas
Ode
When we start music mode. When such a prompt appears on the APK interface, please do not operate any function, otherwise the serial port will work abnormally because the data is sent too frequently.
Bingo
CANCLE
OK
RUN
LEFT
BEEP
BACK
SL
MODE
MUSIC
LIGHT
CR