Lesson 30 Remote Control - Introduction to APP

30.1 Overview

In this lesson, we will show you how to control the robot via the APP, covering the program service startup, APP connection process and full function introduction — all to make robot control more convenient and intuitive.

30.2 APP Connection Preparation

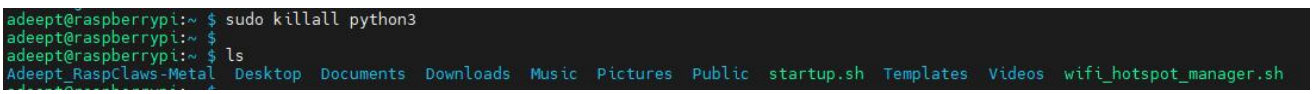
1.Download the APP on your mobile phone: open the app store, search for "**Adeept**", then click to download and install it. (For Android phones, you can obtain the **Adeept.apk** file from the APP directory in the tutorial for installation.)



2.By default, we have configured the **WebServer.py** service program to start automatically. If you want to control the robot via the APP, you must switch to the **APPServer.py** service program.

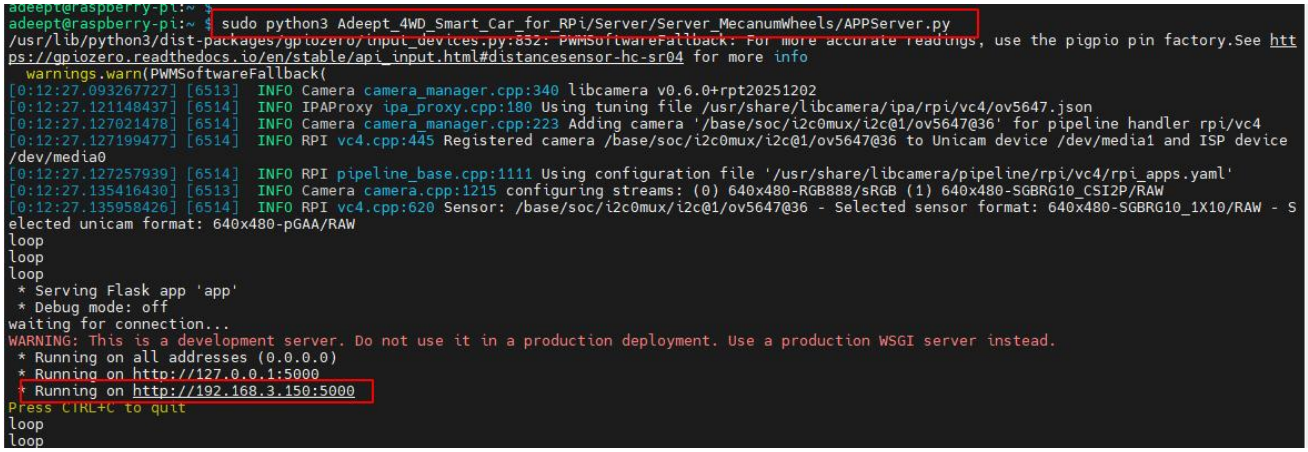
Execute the following command to stop the running program:

```
sudo killall python3
```



Run the **APPServer.py** service program. After successful startup, the Raspberry Pi's IP address will be displayed on the command terminal or OLED screen:

```
sudo python3 Adeept_4WD_Smart_Car_for_RPi/Server/Server_MecanumWheels/APPServer.py
```

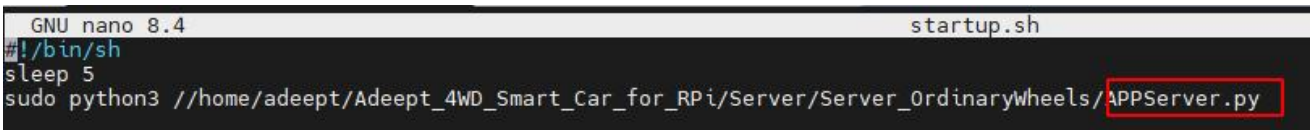


Note: If you want the **APPServer.py** program to run automatically on boot, you only need to modify the startup.sh script.

```
sudo nano startup.sh
```



Change **WebServer.py** to **APPServer.py** in the script.



Press **Ctrl+X**, then enter **Y, Enter** to save and exit.

Enter the following commands to test running the program — if it starts normally, the configuration is successful:

```
sudo killall python3
```

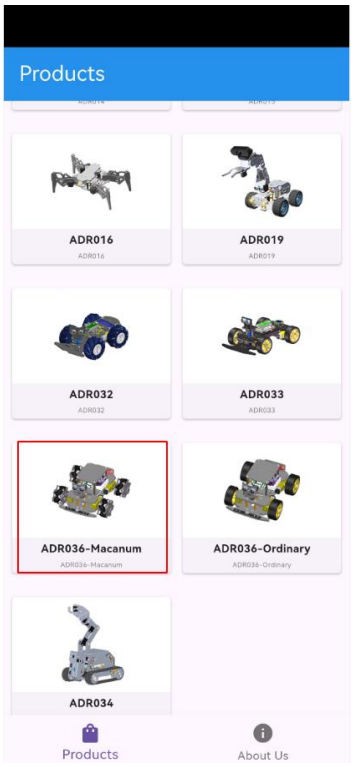
```
./startup.sh
```

```
adeept@raspberry-pi:~ $ sudo killall python3
./startup.sh
python3: no process found
/usr/lib/python3/dist-packages/gpiozero/input_devices.py:852: PWMSoftwareFallback: For more accurate readings, use the pigpio pin factory.See https://gpiozero.readthedocs.io/en/stable/api_input.html#distancesensor-hc-sr04 for more info
  warnings.warn(PWMSoftwareFallback(
[0:14:59.586030501] [7461]  INFO Camera camera_manager.cpp:340 libcamera v0.6.0+rpt20251202
[0:14:59.614015277] [7462]  INFO IPAProxy ipa_proxy.cpp:180 Using tuning file /usr/share/libcamera/ipa/rpi/vc4/ov5647.json
[0:14:59.619915223] [7462]  INFO Camera camera_manager.cpp:223 Adding camera '/base/soc/i2c0mux/i2c@1/ov5647@36' for pipeline handler rpi/vc4
[0:14:59.620020279] [7462]  INFO RPI vc4.cpp:445 Registered camera /base/soc/i2c0mux/i2c@1/ov5647@36 to Unicam device /dev/media1 and ISP device /dev/media0
[0:14:59.620075834] [7462]  INFO RPI pipeline_base.cpp:1111 Using configuration file '/usr/share/libcamera/pipeline/rpi/vc4/rpi_apps.yaml'
[0:14:59.628309330] [7461]  INFO Camera camera.cpp:1215 configuring streams: (0) 640x480-RGB888/sRGB (1) 640x480-SGBRG10_CSI2P/RAW
[0:14:59.628857366] [7462]  INFO RPI vc4.cpp:620 Sensor: /base/soc/i2c0mux/i2c@1/ov5647@36 - Selected sensor format: 640x480-SGBRG10_1X10/RAW - Selected unicam format: 640x480-pGAA/RAW
loop
loop
loop
 * Serving Flask app 'app'
 * Debug mode: off
waiting for connection...
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
 * Running on all addresses (0.0.0.0)
 * Running on http://127.0.0.1:5000
 * Running on http://192.168.3.150:5000
Press CTRL+C to quit
loop
loop
```

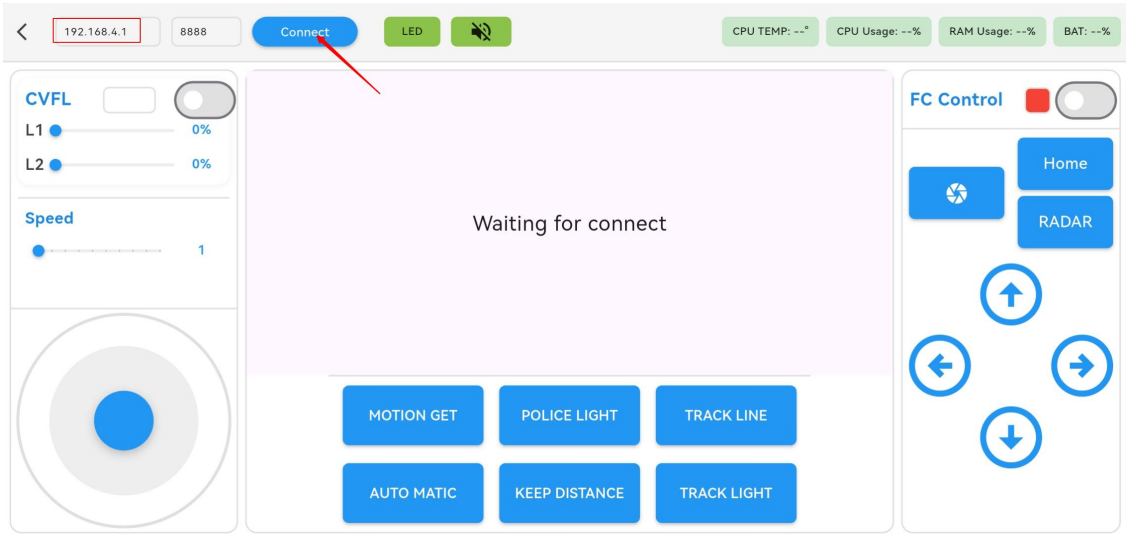
3. Connect to WiFi and ensure that your operating device and the Raspberry Pi are on the same LAN.(I’ m using the office LAN here; you should connect to your own network instead.)



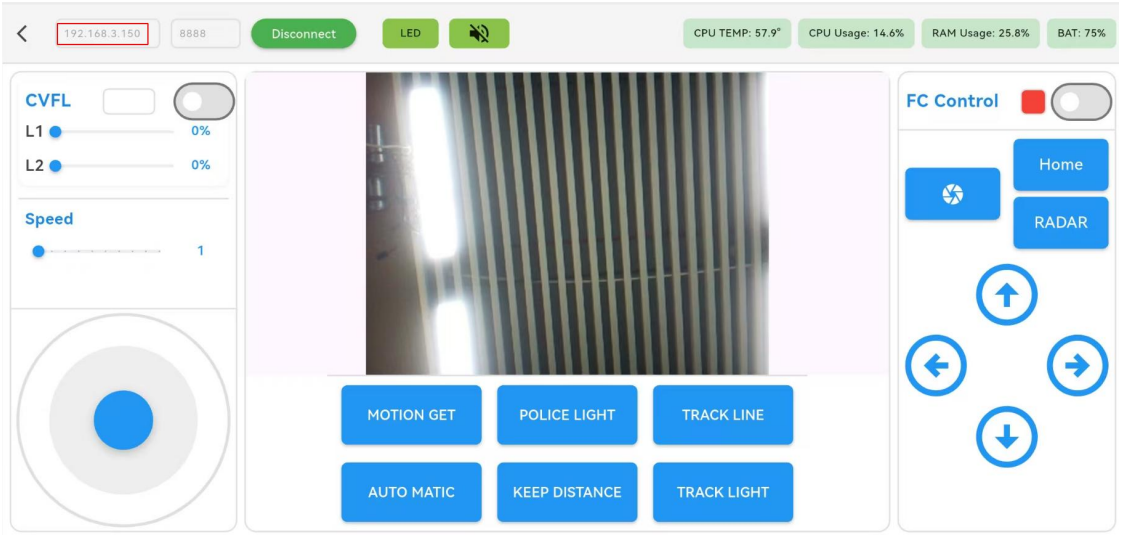
4. Open the APP, enter the product page, tap **ADR036-Macanum** to access the Robot control interface.



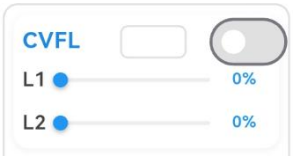
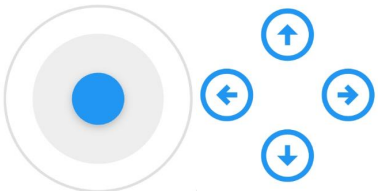
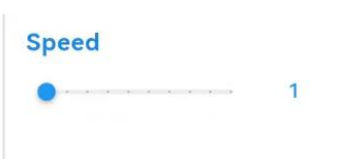
5. Enter the Raspberry Pi's IP address in the IP field (the default port is **8888**), then tap the '**Connect**' button.

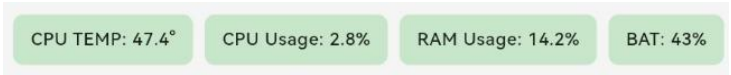


6. After a successful connection, the camera feed will be displayed on your mobile phone, and you can then control the robot normally.



30.3 Function Introduction

	Vision Line-following Function Switch: Enables switching between black and white color modes. L1 and L2 can be used to adjust the positions of the two reference lines in the video feed. The vision line-following function is significantly affected by light conditions.
	Color Recognition Function Switch: Allows selection of the target color for recognition.
	Robot Movement Control Joystick
	Adjust motor speed

	Function Control: e.g., automatic obstacle avoidance, line tracking, light tracking, etc.
	Functions such as photo taking and radar scanning
	WS2812 LED Color & Mode Switch Buzzer Music Playback Switch
	CPU / Memory / Battery Level Display