2. Voice control car movement

Raspberry Pi PI5 master controller needs to check this step, Orin master controller does not need it

Before running this program, it is necessary to bind the port number of the voice board and the port number of the ROS extension board on the host computer, which can be bound by referring to the previous chapter; When entering the docker, you need to mount the voice board to recognize the voice board in the docker.

2.1. Description

Realize voice control car forward, backward, parking, turn left, turn right and light strip effects.

2.2. Start function

2.2.1. function package path

Raspberry Pi PI5 master control needs to enter the docker container first, Orin master control does not need to enter,

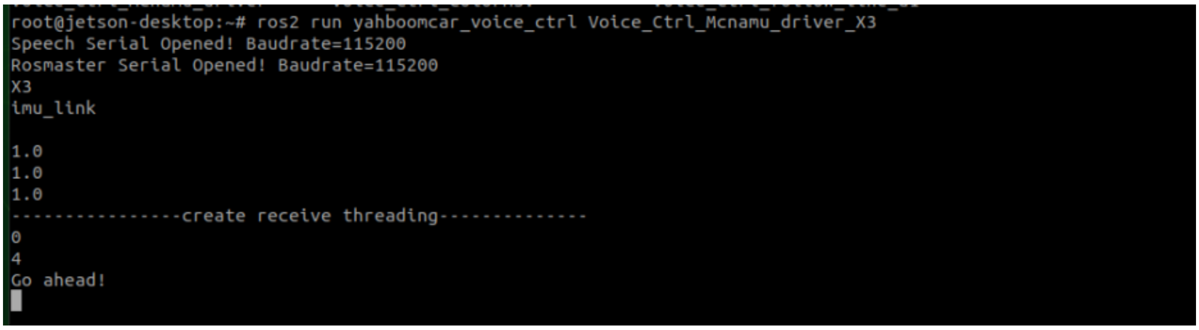
the location of the feature source code is located

```
~/yahboomcar_ros2_ws/yahboomcar_ws/src/yahboomcar_voice_ctrl/yahboomcar_voice_ctrl/Voice_Ctrl_Mcnamu_driver_X3.py
```

2.2.2. start

enter the terminal according to the actual robot type

```
ros2 run yahboomcar_voice_ctrl Voice_Ctrl_Mcnamu_driver_X3
```



```
root@jetson-desktop:~# ros2 run yahboomcar_voice_ctrl Voice_Ctrl_Mcnamu_driver_X3
Speech Serial Opened! Baudrate=115200
Rosmaster Serial Opened! Baudrate=115200
X3
imu_link

1.0
1.0
1.0
---------------create receive threading-------------
0
4
Go ahead!
```

Core code analysis:

```
#Import the corresponding speech library
from Speech_Lib import Speech
#Import the corresponding underlying driver library
from Rosmaster_Lib import Rosmaster
#Create a voice control object
spe = Speech()
#Create objects for underlying control
self.car = Rosmaster()
#Read the results of voice board recognition, speech_r is the result of
recognition, a number is returned after parsing, the instructions are identified
by this number
speech_r = spe.speech_read()
if speech_r == 2 or speech_r == 0 :
    ....
#Write instruction, broadcast speech result, when the voice board receives the
command, emit relative audio files
spe.void_write(speech_r)
#Control robot movement and light belt, directly interconnect with the underlying
library, not published via ros
self.car.set_car_motion(vx, vy, angular)    #motion
self.car.set_colorful_effect(6, 6, parm=1)  #RGB effect
```

2.3. Voice control car

Say "Hi Yahboom" to ROSMASTER.

Waiting until the voice module reply "Hi , I'm here.".

We can control the car according to the commands in the table below.

2.3.1. Movement state

function word	Speech Module Recognition Results	Voice broadcast content
Robot stop	2	OK , I'm stop.
Go ahead	4	OK , let's go.
Back	5	OK , I'm back.
Turn left	6	OK , I'm turning left.
Turn right	7	OK , I'm turning right.
Enter A mode	8	OK, I'm working on A mode.
Enter B mode	9	OK, I'm working on B mode.

2.3.2. Light strip effect

function word	Speech Module Recognition Results	Voice broadcast content
Close light	10	OK, light is closed.
Red light up	11	OK, red light is on.

function word	Speech Module Recognition Results	Voice broadcast content
Green light up	12	OK, green light is on.
Blue light up	13	OK, blue light is on.
Yellow light up	14	OK, yellow light is on.
light A	15	OK, light A is on.
light B	16	OK, light B is on.
light C	17	OK, light C is on.
Display battery value	18	OK, battery value has been display.