6.Infrared remote control car

1. Learning objectives

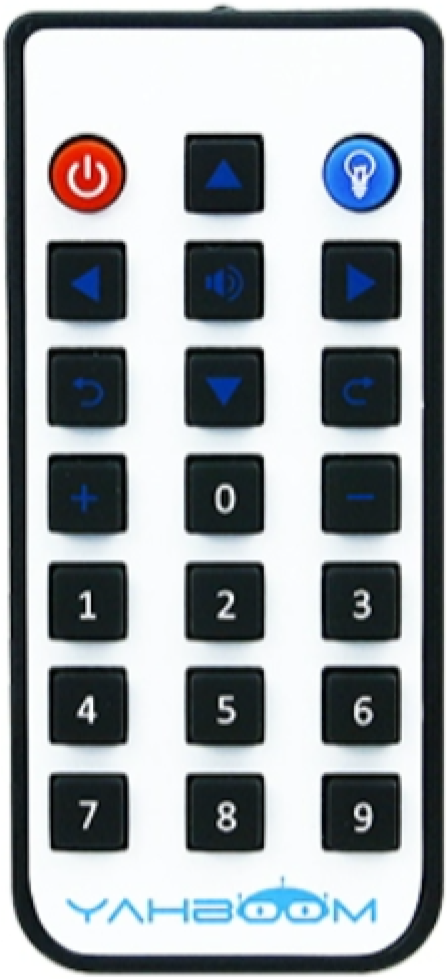
Control the car with an infrared remote control

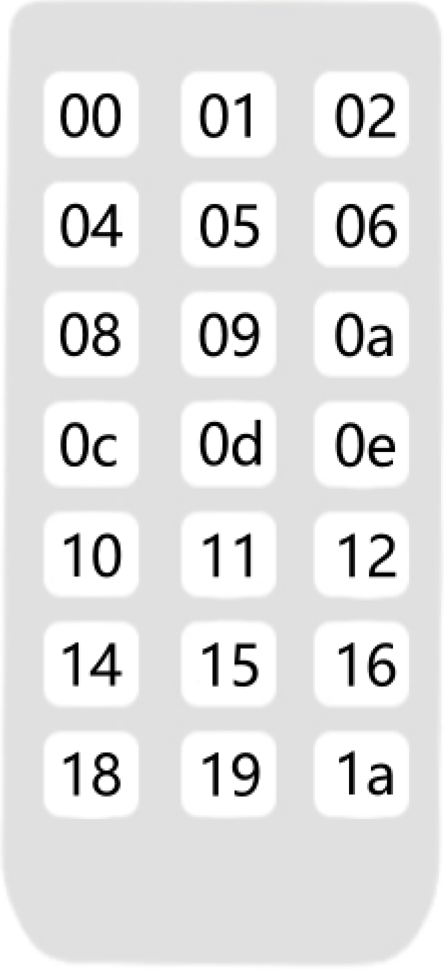
2. Experimental preparation

1. The car wiring has been installed and installed correctly
2. Infrared remote control

3. Implementation principle

Control the car to perform different functions by receiving different key values sent by the infrared remote control.





00	01	02
04	05	06
08	09	0a
0c	0d	0e
10	11	12
14	15	16
18	19	1a

4. Code analysis

Source code path:

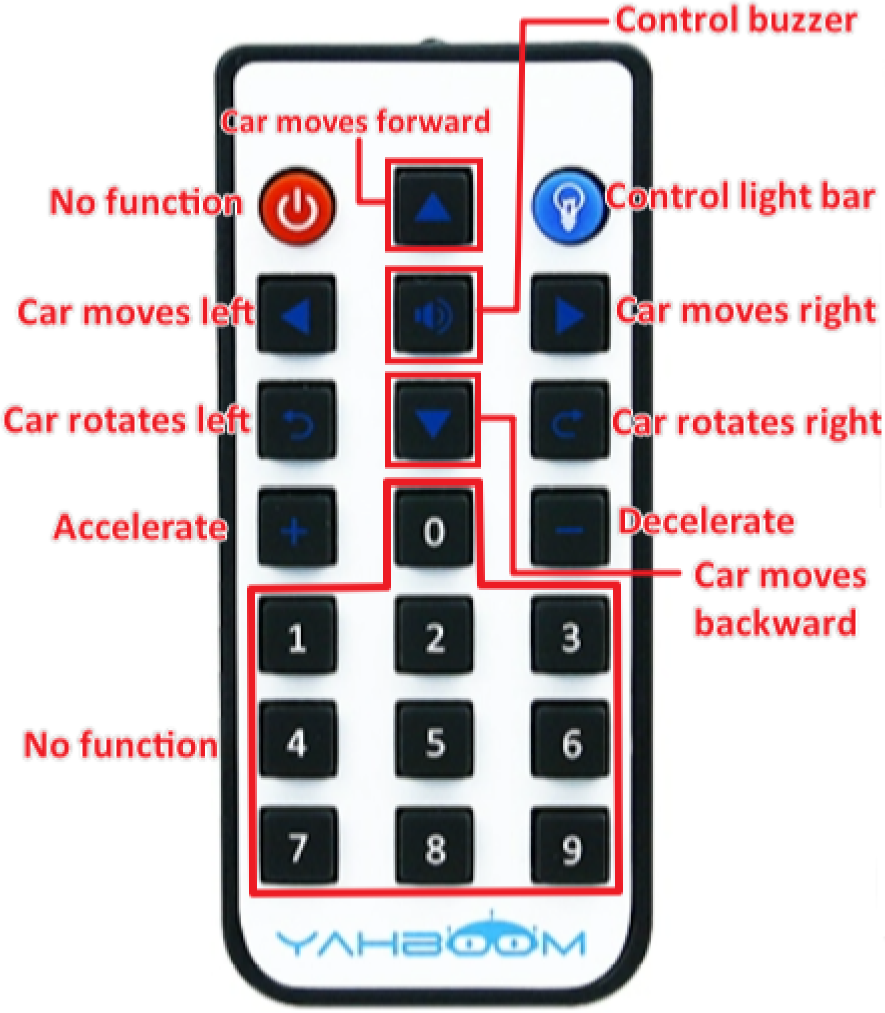
/home/pi/project_demo/05.Comprehensive_gameplay/5.ir_controlled_miniature_car.ipynb

```
#!/usr/bin/python3
# -*- coding: UTF-8 -*-
import sys
sys.path.append('/home/pi/project_demo/lib')
sys.path.append('/home/pi/software/oled_yahboom/')
#Import Mecanum car driver library, oled library
from McLumk_Wheel_Sports import *
from yahboom_oled import *
import time, math

# Create an oled object
oled = Yahboom_OLED(debug=False)
# Infrared data corresponding to infrared key value
ir_values ••= {
'Power': '0x0',
'RGB_Light': '0x2',
'Buzzer': '0x5',
'CarForward': '0x1', 'CarBackward': '0x9', 'CarLeft': '0x4', 'CarRight': '0x6',
'CarLeftSpin': '0x8', 'CarRightSpin': '0xa', 'Add': '0xc', 'Sub': '0xe',
'Number_0': '0xd', 'Number_1': '0x10', 'Number_2 ': '0x11', 'Number_3': '0x12',
'Number_4': '0x14', 'Number_5': '0x15', 'Number_6': '0x16', 'Number_7': '0x18',
'Number_8': '0x19',
'Number_9': '0x1a'
}
# Get infrared value
def get_ir_value():
# Read the value of infrared remote control
data = bot.read_data_array(0x0c, 1)
data2h=hex(data[0])
return data2h

# Control buzzer
buzzer_flag = False # Buzzer flag
def control_buzzer(flag):
if(flag):
bot.Ctrl_BEEP_Switch(1)
elif(flag==False):
bot.Ctrl_BEEP_Switch(0)

# Control RGB lights
```

```
colors = [0, 1, 2, 3, 4, 5, 6, 7] # Red, Green, Blue, Yellow, Purple, Cyan,
White, Off current_color = 0 # Current color index def change_rgb_light(color):
global current_color current_color=color if(current_color==7):
bot.Ctrl_WQ2812_ALL(0,0) else : bot.Ctrl_WQ2812_ALL(1, colors [current_color])
if(current_color==0):color_str='color:red'
if(current_color==1):color_str='color:green'
if(current_color==2):color_str='color:blue'
if(current_color==3):color_str='color:yellow'
if(current_color==4):color_str='color:purple'
if(current_color==5):color_str='color:indigo'
if(current_color==6):color_str='color:white'
if(current_color==7):color_str='color:off' current_color = (current_color + 1) %
len(colors) return color_str # Infrared remote control car speed=50
color_str='color:off' speed_str='speed:50' global ir_value ir_value ='0xff' def
ir_control(ir_value,value_temp): global buzzer_flag,speed,color_str,speed_str if
ir_value == ir_values['CarForward']: move_forward(speed) elif ir_value ==
ir_values['CarBackward']: move_backward(speed) elif ir_value ==
ir_values['CarLeft']: move_left(speed) elif ir_value == ir_values['CarRight']:
move_right(speed) elif ir_value == ir_values['CarLeftSpin']: rotate_left(speed)
elif ir_value == ir_values['CarRightSpin']: rotate_right(speed)
if(ir_value!=value_temp):#Short press dog if ir_value == ir_values['Power']:
stop_robot() bot.Ctrl_WQ2812_ALL(0,0) elif ir_value == ir_values['RGB_Light']: #
Control RGB light changes color_str=change_rgb_light(current_color) elif ir_value
== ir_values['Buzzer']: buzzer_flag = not buzzer_flag # Set the flag
control_buzzer(buzzer_flag) elif ir_value == ir_values['Add']: speed += 15 if
(speed > 200):speed=200 elif ir_value == ir_values['Sub']: speed -= 15 if(speed <
50):speed = 50 elif ir_value in [ir_values['Number_0'], ir_values['Number_1'],
ir_values['Number_2'], ir_values['Number_3'], ir_values['Number_4'],
ir_values['Number_5'], ir_values['Number_6'], ir_values['Number_7'],
ir_values['Number_8'],
ir_values['Number_9']]:
# Handling number keys
# process_number_key(ir_value)
pass
elif(ir_value=='0xff'):stop_robot()
speed_str=f'speed:{speed}'
oled.clear()
oled.add_line(color_str, 1)
oled.add_line(speed_str, 2)
oled.add_line(ir_value, 3)
oled.refresh()
# Main Loop
if __name__ == '__main__':
try:
# Turn on infrared remote control reception
bot.Ctrl_IR_Switch(1)
oled.init_oled_process() # Initialize oled process
oled.clear() oled.add_line(color_str, 1) oled.add_line(speed_str, 2)
oled.add_line(ir_value, 3) oled.refresh() while True: value_temp = ir_value
ir_value = get_ir_value() ir_control(ir_value,value_temp) except
KeyboardInterrupt: # Restore basic data display on screen os.system(" 3
/home/pi/software/oled_yahboom/yahboom_oled.py &") bot.Ctrl_IR_Switch(0)
bot.Ctrl_WQ2812_ALL(0,0) stop_robot()
```

5. Experimental results

We put the car on the ground. Point the infrared remote control at the car, and we can control the car by pressing different buttons.


Control buzzer
Car moves forward
No function
Control light bar
Car moves left
Car moves right
Car rotates left
Car rotates right
Accelerate
Decelerate
Car moves backward
No function
0
1
2
3
4
5
6
7
8
9
YAHBOOM