Control RGB lights

In order to facilitate control, the underlying software of the robot arm expansion board is developed separately and provides interface calls. The control includes bus servos, PWM servos, and RGB lights. The relevant underlying driver source code has been packaged into a python library, and the factory image has been installed. If you want to transplant it to your own system, you can find the Dofbot.zip compressed package in the program source code summary folder.

Decompress the compressed package: You need to copy the compressed package to docker and decompress it. Since the basic control does not involve ROS, users can also install it on the host machine.

```
unzip Dofbot.zip
```

Install the python driver library: Here is just a demonstration of how to install the python driver library

```
cd Dofbot/0.py_install && sudo python3 setup.py install
```

Enter the user password and press Enter to confirm. If you see the installation prompt Arm_Lib=x.x.x version number, the installation is successful.

1. API Introduction

The corresponding API for RGB lights is: Arm_RGB_set(R, G, B)

Function: Set the color of RGB light.

Parameter explanation:

R: Controls the brightness of the red RGB light, ranging from 0-255. The larger the value, the brighter the brightness.

G: Controls the brightness of the green RGB light, ranging from 0-255. The larger the value, the brighter the brightness.

B: Control the brightness of the blue RGB light, ranging from 0-255. The larger the value, the brighter the brightness.

Return value: None.

2. Code content

Code path:/root/Dofbot/3.ctrl_Arm/1.rgb.ipynb

```
Cycle through the RGB lights on the robot arm expansion board to light up red,
green, and blue.
#!/usr/bin/env python3
#coding=utf-8
import time
from Arm_Lib import Arm_Device
# Get the object of the robotic arm
Arm = Arm_Device()
```

```
time.sleep(.1)
def main():
      while True:
      Arm.Arm_RGB_set(50, 0, 0) #RGB light red
      time.sleep(.5)
      Arm.Arm_RGB_set(0, 50, 0) #RGB light green
      time.sleep(.5)
      Arm.Arm_RGB_set(0, 0, 50) #RGB light blue
      time.sleep(.5)
      print("END OF LINE! ")
try:
main()
except KeyboardInterrupt:
      # Release the Arm object
      del Arm
      print("Program closed! ")
      pass
```

Open the 1.rgb.ipynb file from jupyter lab, and click the Run entire notebook button on the jupyter lab toolbar. You can see that the RGB light on the robot arm expansion board lights up red, green, and blue lights in a cycle every 0.5 seconds. .

To exit, click the Stop button on the toolbar.