The bottom software library of the DOFBOT expansion board is developed separately and we provides interface be used to call, including bus servos, PWM servos, RGB lights and buzzers.
The relevant driver source code has been packaged into a python library, and this library file has been installed in the Yahboom image.
If you want to migrate to your own system, you can find the compressed package **Dofbot-1.0.tar.gz** in **[10. Source code]** summary of the course materials, and then remotely transfer it to the Jetson Nano system through the winscp software.

Input following command in the terminal to extract it.
tar -zxvf Dofbot-1.0.tar.gz

```
jetson@jetson-desktop:~$ tar -zxvf Dofbot-1.0.tar.gz
Dofbot/
Dofbot/0.py_install/
Dofbot/0.py_install/Arm_Lib/
Dofbot/0.py_install/Arm_Lib/Arm_Lib.py
Dofbot/0.py_install/Arm_Lib/__init__.py
Dofbot/0.py_install/setup.py
Dofbot/1.telecontrol/
Dofbot/1.telecontrol/4.arm_handle/
Dofbot/1.telecontrol/4.arm_handle/usb_handle.ipynb
Dofbot/2.sys_settings/
```

Input following command to install it.
cd Dofbot/0.py_install && sudo python3 setup.py install

When the system displays the following prompt, Arm_Lib=x.x.x version number, it means it be installed successfully.

```
Copying Arm_Lib-0.0.3-py3.6.egg to /usr/local/lib/python3.6/dist-packages
Arm-Lib 0.0.3 is already the active version in easy-install.pth

Installed /usr/local/lib/python3.6/dist-packages/Arm_Lib-0.0.3-py3.6.egg
Processing dependencies for Arm-Lib==0.0.3
Finished processing dependencies for Arm-Lib==0.0.3
jetson@jetson-desktop:~/Dofbot/0.py_install$
```

1. Introduction of API

The API corresponding to RGB lights:

Arm_RGB_set(R, G, B)

Function: Set the color of RGB light.

Parameter explanation:

R: Control the brightness of the red RGB light, the range is 0-255, the larger the value, the brighter the brightness.

G: Control the brightness of the green RGB light, the range is 0-255, the larger the value, the brighter the brightness.

B: Control the brightness of RGB light blue, the range is 0-255, the larger the value, the brighter the brightness.

Return value: None.

2. About code

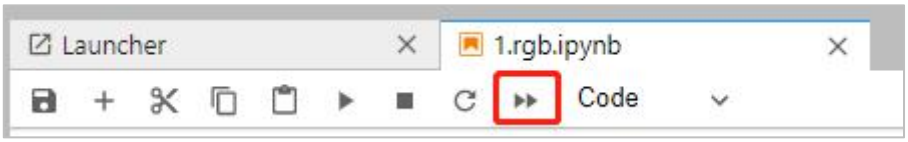
Path:/home/jetson/Dofbot/3.ctrl_Arm/1.rgb.ipynb

Make the RGB lights on the extension board of the DOFBOT become red, green, and blue, and keep this status in loop.

```
#!/usr/bin/env python3
#coding=utf-8
import time
from Arm_Lib import Arm_Device

# Get DOFBOT object
Arm = Arm_Device()
time.sleep(.1)

def main():
    while True:
        Arm.Arm_RGB_set(50, 0, 0) #red
        time.sleep(.5)
        Arm.Arm_RGB_set(0, 50, 0) #green
        time.sleep(.5)
        Arm.Arm_RGB_set(0, 0, 50) #blue
        time.sleep(.5)

        print(" END OF LINE! ")

try :
    main()
except KeyboardInterrupt:
    # Release DOFBOT object
    del Arm
```

```
    print(" Program closed! ")
    pass
```

Open the rgb.ipynb file in jupyter lab, and click the run button on the toolbar, you can see that the RGB lights on the DOFBOT expansion board become red, green, and blue lights in cycles every 0.5 seconds.



Click the stop button on the toolbar to exit this program.