

8.Driver library and communication

In order to facilitate control, the underlying firmware of the robot arm expansion board is developed separately and provides interface calls to control bus servos, PWM servos, RGB lights and buzzers.

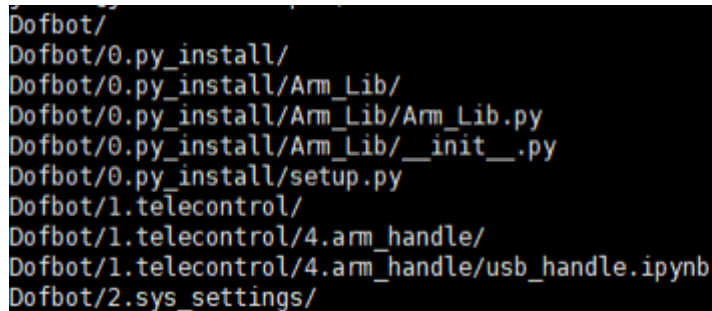
The relevant underlying driver source code has been packaged into a python library, and the system files provided by Yahboom have already installed this library file.

If you want to transplant it to your own system, you can find Dofbot.zip in the code folder of the course materials, and then put the compressed package into the user directory of the virtual machine.

Open a terminal and enter the following command to decompress.

```
unzip Dofbot.zip
```

After successful decompression, the following interface will appear

A terminal window with a black background and yellow text showing the directory structure of the Dofbot.zip file. The paths are listed line by line, starting from the root of the zip file and going down to specific files and subdirectories.

```
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/
```

Enter the following command to install it on your system.

```
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.

```
yahboom@yahboom-virtual-machine: ~/Dofbot/0.py_install
copying build/lib/Arm_Lib/__init__.py -> build/bdist.linux-x86_64/egg/Arm_Lib
byte-compiling build/bdist.linux-x86_64/egg/Arm_Lib/Arm_Lib.py to Arm_Lib.cpython-38.pyc
byte-compiling build/bdist.linux-x86_64/egg/Arm_Lib/__init__.py to __init__.cpython-38.pyc
creating build/bdist.linux-x86_64/egg/EGG-INFO
copying Arm_Lib.egg-info/PKG-INFO -> build/bdist.linux-x86_64/egg/EGG-INFO
copying Arm_Lib.egg-info/SOURCES.txt -> build/bdist.linux-x86_64/egg/EGG-INFO
copying Arm_Lib.egg-info/dependency_links.txt -> build/bdist.linux-x86_64/egg/EGG-INFO
copying Arm_Lib.egg-info/top_level.txt -> build/bdist.linux-x86_64/egg/EGG-INFO
zip_safe flag not set; analyzing archive contents...
creating 'dist/Arm_Lib-0.0.5-py3.8.egg' and adding 'build/bdist.linux-x86_64/egg'
to it
removing 'build/bdist.linux-x86_64/egg' (and everything under it)
Processing Arm_Lib-0.0.5-py3.8.egg
Removing /usr/local/lib/python3.8/dist-packages/Arm_Lib-0.0.5-py3.8.egg
Copying Arm_Lib-0.0.5-py3.8.egg to /usr/local/lib/python3.8/dist-packages
Arm-Lib 0.0.5 is already the active version in easy-install.pth

Installed /usr/local/lib/python3.8/dist-packages/Arm_Lib-0.0.5-py3.8.egg
Processing dependencies for Arm-Lib==0.0.5
Finished processing dependencies for Arm-Lib==0.0.5
```