5、Control body posture

5.1 Experimental goals

This course mainly learns how to control the height of the robot's body, raising its head and lowering its head, etc.

5.2 Experiment preparation

The functions of the Muto hexapod robot Python library involved in this course are as follows:

height(level)：Body height adjustment, level=1 means low height, level=2 means medium height, and level=3 means the highest height.

head_move(level)：Control the robot to raise and lower its head. The level value range is [0-10], and the default is 5.

5.3 Experiment procedure

Open the jupyterLab client and find the code path:

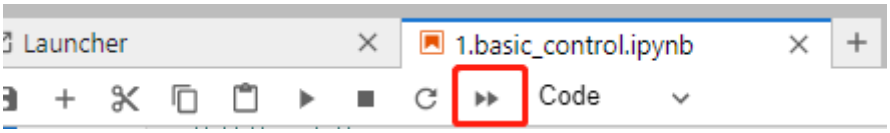
```
muto/Samples/Control/5.control_body.ipynb
```

By default g_ENABLE_CHINESE=False, if you need to display Chinese, please set g_ENABLE_CHINESE=True.

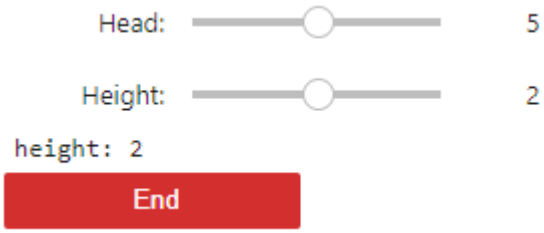
```
# 中文开关，默认为英文 Chinese switch. The default value is English
g_ENABLE_CHINESE = False

Name_widgets = {
    'End': ("End", "结束")
}
```

Click to run all cells, and then scroll to the bottom to see the generated controls.



You can control different functions by operating different controls separately.



Each time you slide the Head slider, when the value of the slider changes, the robot will immediately be controlled to raise or lower its head.

```
def on_slider_height(value):
    global g_start
    if g_start:
        g_bot.height(value)
        print("height:", value)
    else:
        g_start = True
```

Each time you slide the Height slider, when the slider value changes, the robot's body height will be controlled immediately.

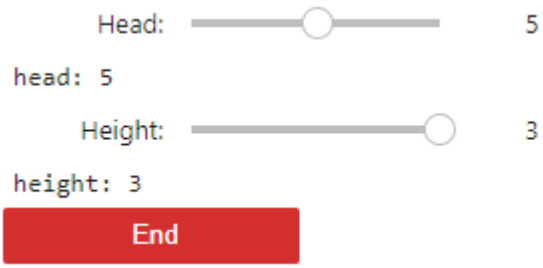
```
def on_slider_head(value):
    global g_start
    if g_start:
        g_bot.head_move(value)
        print("head:", value)
    else:
        g_start = True
```

The g_start variable is to avoid the problem of too fast movement caused by two data operating the robot at the same time during initialization.So one of the actions is blocked during initialization.

Note: The height of the robot's body and the movements of raising and lowering the head cannot be superimposed. Muto can only maintain one posture at the same time.

5.4 Experiment summary

This time, the JupyterLab control is used to control the body height or head-up and head-down functions of the six-legged robot. For example, if Height is set to 3, the robot will immediately adjust its body height to the highest level.



To exit the program, press the End button to exit the program.