Kick sports

1. Introduction

This course mainly controls the steering gear of dogzilla to make kicking movements.

2. Code analysis

The new switch button is used to turn on and off the obstacle crossing mode. 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 = {
    'Stop': ("Stop", "停止"),
    'Play_Ball': ("Play_Ball", "踢球"),
    'Close_Camera': ("Close_Camera", "关闭摄像头")
}
```

When the Play_Ball button is pressed, the robot dog will kick the ball.The action of kicking is relatively simple. You only need to control the robot dog to the corresponding posture by controlling the steering gear, then record the action of the whole process by reading the angle of the steering gear, and then run each action in sequence with the delay time.

```
motor_id = [11, 12, 13, 21, 22, 23, 31, 32, 33, 41, 42, 43]
angle_down=[-16, 66, 1, -17, 66, 1, -14, 74, 1, -14, 72, 1]

motor_1 = [21, 22, 23]

angle_hand = [-15, 51, 2, -13, 33, -1, -15, 64, 3, -19, 59, 0]
angle_play_1 = [10, 0, 0]
angle_play_2 = [27, 0, 0]

play_state = 0

# 执行踢球动作  Execute the kick
def play_ball_task():
    global play_state
    if play_state:
        g_dog.motor(motor_id, angle_down)
        time.sleep(1.5)
    if play_state:
        g_dog.motor(motor_id, angle_hand)
        time.sleep(.5)
    if play_state:
        g_dog.motor_speed(200)
        g_dog.motor(motor_1, angle_play_1)
        time.sleep(.5)
    if play_state:
        g_dog.motor(motor_id, angle_hand)
        time.sleep(.5)
    if play_state:
        g_dog.motor_speed(50)
        g_dog.motor(motor_id, angle_down)
        time.sleep(.5)
    if play_state:
        g_dog.action(0xff)
        play_state = 0
```

Start a daemon thread to run the camera display task. The camera image is only displayed without recognition.

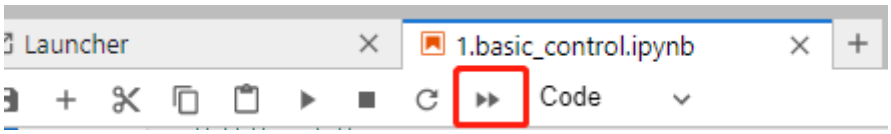
```
# 启动摄像头显示任务  Start the camera display task
thread1 = threading.Thread(target=camera_show_task)
thread1.setDaemon(True)
thread1.start()

output = widgets.Output()
box_btn = widgets.VBox([button_Play_Ball, button_Stop, button_Close_Camera])
box_display = widgets.HBox([image_widget, box_btn, output])
display(box_display)
```

1.3 Steps

Open the jupyterLab client and find following code path

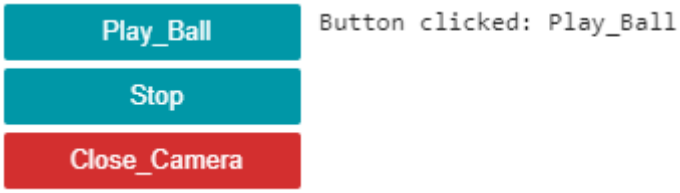
```
DOGZILLA/Samples/3_AI_Visual/10.play_ball.ipynb
```

Click the following icon to run all cells, and then pull to the bottom to see the generated controls.



The camera screen is displayed on the left. Click play_ Ball button, the robot dog makes a kick action.

If you want to stop kicking, click the stop button.



Finally, click close_camera button turns off the camera.