6.11 Stacked Arhat

1.Introduction to gameplay

The purpose of this experiment is exactly the opposite of the previous lesson "Nature Porter". It is to pick up the building blocks from different sides in the order of yellow, red, green and blue and stack them into the gray area in the middle.

The way to place the building blocks is as shown in the figure below:

After executing the code, the robotic arm will stack the building blocks, and the final effect is as shown in the figure below:

2.Code content

Code path：/home/jetson/Dofbot/3.ctrl_Arm/11.heap_up.ipynb

```
#!/usr/bin/env python3
#coding=utf-8
import time
from Arm_Lib import Arm_Device
# Create robot arm object
Arm = Arm_Device()
time.sleep(.1)
```

```
# Define the function of clamping building blocks,enable=1: clamp, =0: release
def arm_clamp_block(enable):
     if enable == 0:
         Arm.Arm_serial_servo_write(6, 60, 400)
     else:
         Arm.Arm_serial_servo_write(6, 130, 400)
         time.sleep(.5)

# Define the mobile robot arm function and control the movement of servos No. 1-5
at the same time, p=[S1,S2,S3,S4,S5]
def arm_move(p, s_time = 500):
    for i in range(5):
        id = i + 1
        if id == 5:
            time.sleep(.1)
            Arm.Arm_serial_servo_write(id, p[i], int(s_time*1.2))
```

```
        elif id == 1 :
            Arm.Arm_serial_servo_write(id, p[i], int(3*s_time/4))
        else:
            Arm.Arm_serial_servo_write(id, p[i], int(s_time))
        time.sleep(.01)
    time.sleep(s_time/1000)
```

```
# Define variable parameters at different locations
p_mould = [90, 130, 0, 0, 90]
p_top = [90, 80, 50, 50, 270]
p_layer_4 = [90, 76, 40, 17, 270]
p_layer_3 = [90, 65, 44, 17, 270]
p_layer_2 = [90, 65, 25, 36, 270]
p_layer_1 = [90, 48, 35, 30, 270]
p_Yellow = [65, 22, 64, 56, 270]
p_Red = [118, 19, 66, 56, 270]
p_Green = [136, 66, 20, 29, 270]
p_Blue = [44, 66, 20, 28, 270]
```

```
# Let the robotic arm move to a position ready to grab
arm_clamp_block(0)
arm_move(p_mould, 1000)
time.sleep(1)
```

```
# Stack the blocks in the yellow area to the bottom position in the middle.
arm_move(p_top, 1000)
arm_move(p_Yellow, 1000)
arm_clamp_block(1)
arm_move(p_top, 1000)
arm_move(p_layer_1, 1000)
arm_clamp_block(0)
time.sleep(.1)
arm_move(p_mould, 1100)

# time.sleep(1)
```

```
# Stack the blocks in the red area to the second layer in the middle.
arm_move(p_top, 1000)
arm_move(p_Red, 1000)
arm_clamp_block(1)
arm_move(p_top, 1000)
arm_move(p_layer_2, 1000)
arm_clamp_block(0)
time.sleep(.1)
arm_move(p_mould, 1100)
# time.sleep(1)
```

```
# Stack the blocks in the green area to the third layer in the middle.
arm_move(p_top, 1000)
arm_move(p_Green, 1000)
arm_clamp_block(1)
arm_move(p_top, 1000)
arm_move(p_layer_3, 1000)
arm_clamp_block(0)
time.sleep(.1)
arm_move(p_mould, 1100)

# time.sleep(1)
```

```
# Stack the blocks in the blue area to the fourth layer in the middle.
arm_move(p_top, 1000)
arm_move(p_Blue, 1000)
arm_clamp_block(1)
arm_move(p_top, 1000)
arm_move(p_layer_4, 1000)
arm_clamp_block(0)
time.sleep(.1)
arm_move(p_mould, 1100)

# time.sleep(1)
```

```
del Arm # Release Arm object
```