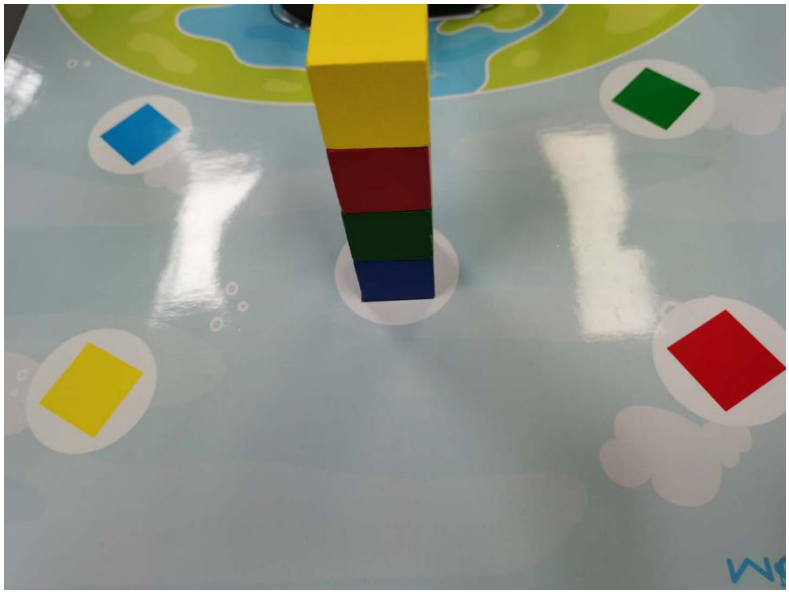
1. Experimental objectives

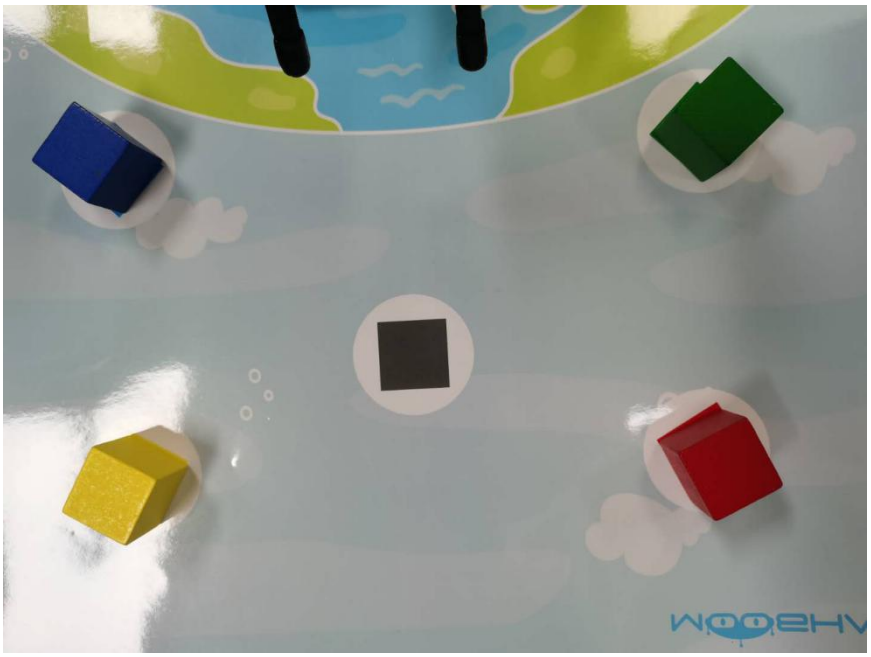
In this course, DOFBOT will stack four different colors blocks from bottom to top in the order of blue, green, red and yellow and place them in the middle gray area on the map.

Then, DOFBOT will clamp the fourth layer of block and place it in the yellow area on map; clamp the third layer of block and place it in the red area on map; clamp the second layer of squares and place it in the green area; clamp the second layer of squares and place it in the red area,

Before the experiment, we need to place the blocks, as shown below.



After the code be executed , the DOFBOT will move the blocks to the corresponding position, as shown below.



2. About code

Path: /home/jetson/Dofbot/3.ctrl_Arm/10.move_block.ipynb

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

Arm = Arm_Device()
time.sleep(.1)
```

```
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)

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))
        else :
            Arm.Arm_serial_servo_write(id, p[i], s_time)
        time.sleep(.01)
    time.sleep(s_time/1000)

def arm_move_up():
    Arm.Arm_serial_servo_write(2, 90, 1500)
    Arm.Arm_serial_servo_write(3, 90, 1500)
    Arm.Arm_serial_servo_write(4, 90, 1500)
    time.sleep(.1)
```

```
p_mould = [90, 130, 0, 0, 90]
p_top = [90, 80, 50, 50, 270]

p_Yellow = [65, 22, 64, 56, 270]
p_Red = [117, 19, 66, 56, 270]

p_Green = [136, 66, 20, 29, 270]
p_Blue = [44, 66, 20, 28, 270]
```

```
p_layer_4 = [90, 72, 49, 13, 270]
p_layer_3 = [90, 66, 43, 20, 270]
p_layer_2 = [90, 63, 34, 30, 270]
p_layer_1 = [90, 53, 33, 36, 270]
```

```
arm_clamp_block(0)
arm_move(p_mould, 1000)
time.sleep(1)
```

```
arm_move(p_top, 1000)
arm_move(p_layer_4, 1000)
arm_clamp_block(1)

arm_move(p_top, 1000)
arm_move(p_Yellow, 1000)
arm_clamp_block(0)

time.sleep(.1)

arm_move_up()
arm_move(p_mould, 1100)

# time.sleep(1)
```

```
arm_move(p_top, 1000)
arm_move(p_layer_3, 1000)
arm_clamp_block(1)

arm_move(p_top, 1000)
arm_move(p_Red, 1000)
arm_clamp_block(0)

time.sleep(.1)

arm_move_up()
arm_move(p_mould, 1100)

# time.sleep(1)
```

```
arm_move(p_top, 1000)
arm_move(p_layer_2, 1000)
arm_clamp_block(1)

arm_move(p_top, 1000)
arm_move(p_Green, 1000)
arm_clamp_block(0)
```

```
time.sleep(.1)

arm_move_up()
arm_move(p_mould, 1100)

# time.sleep(1)
```

```
arm_move(p_top, 1000)
arm_move(p_layer_1, 1000)
arm_clamp_block(1)

arm_move(p_top, 1000)
arm_move(p_Blue, 1000)
arm_clamp_block(0)

time.sleep(.1)

arm_move_up()
arm_move(p_mould, 1100)

# time.sleep(1)
```

```
del Arm
```