

1. Experimental objectives

In this course, DOFBOT will clamp blocks in the order of yellow, red, green, and blue and stack them in the gray area in the middle of the map.

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/dofbot/Dofbot/3.ctrl_Arm/11.heap_up.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))
        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)

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]

arm_clamp_block(0)
arm_move(p_mould, 1000)

```

```
time.sleep(1)
```

```
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)
```

```
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)
```

```
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)
```

```
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
```