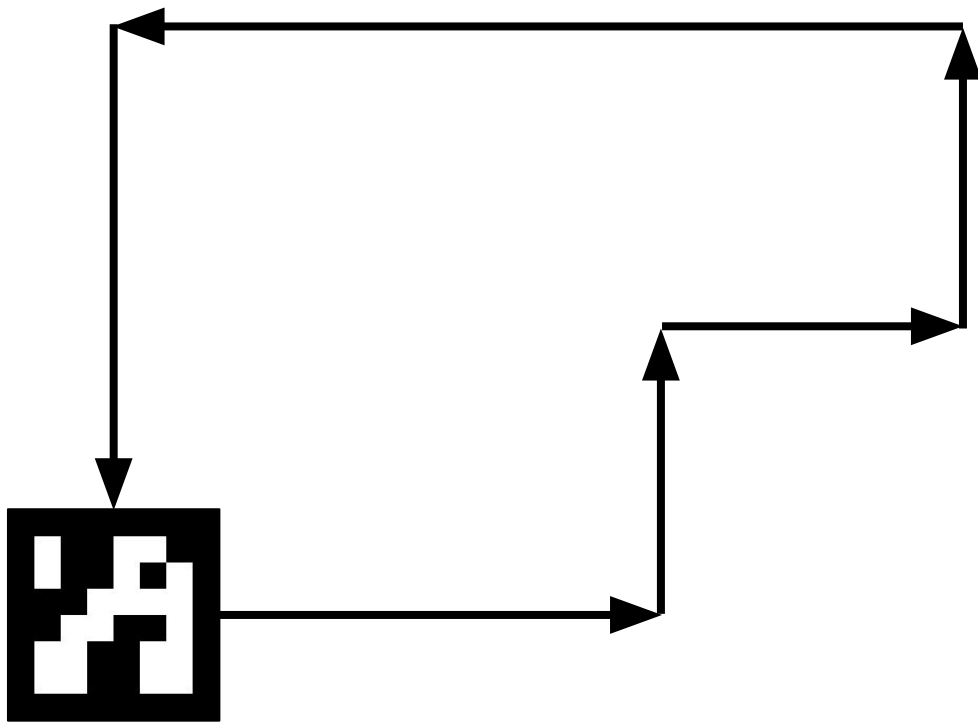


# Lab09

追線

# 追線

- 起飛看aruco對齊
- 沿著黑線走，注意不可回頭
- 最後看到aruco降落
- 不限制任何方式



# 參考方法

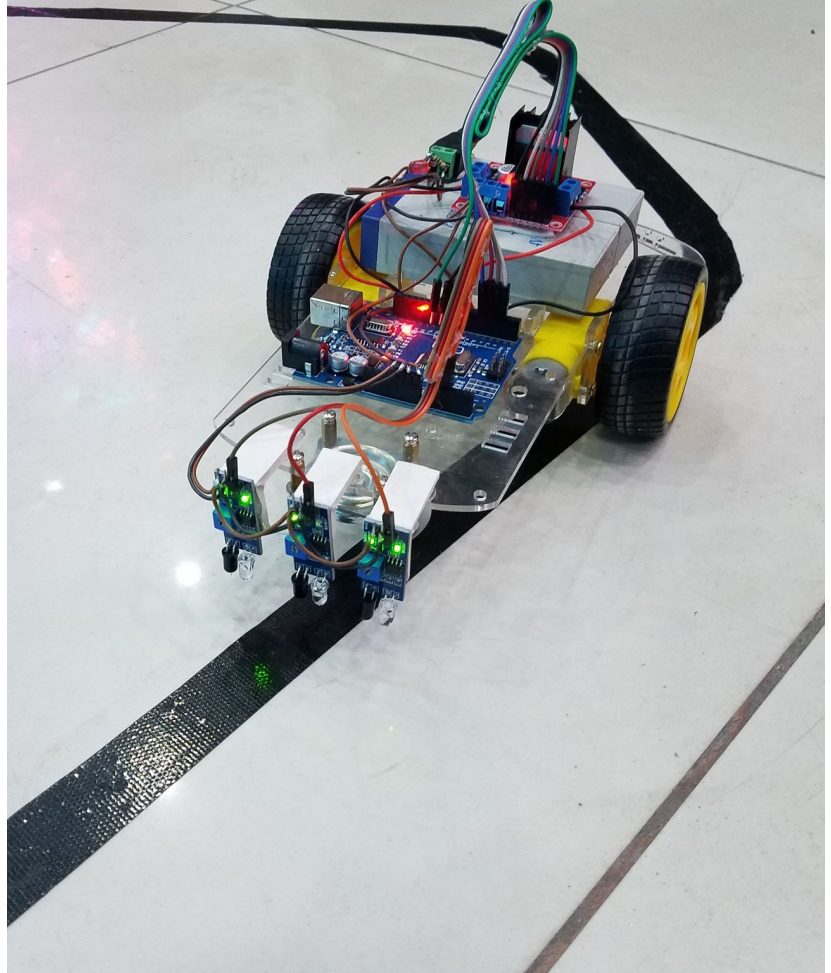
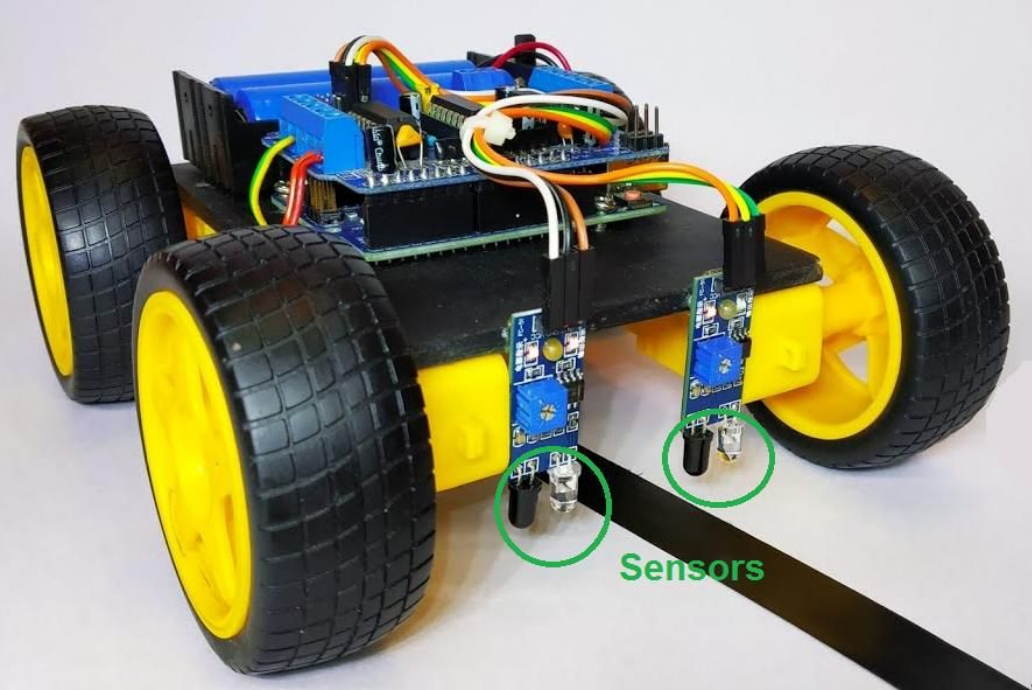
## 1. 判斷顏色

- 可以參考Lab01
- `gray = cv2.cvtColor(frame, cv2.COLOR_RGB2GRAY)`
- `cv2.threshold(gray, threshold, 255, cv2.THRESH_BINARY)`

# 參考方法

## 2. 偵測線

- `gray = cv2.cvtColor(frame, cv2.COLOR_RGB2GRAY)`
- `blur_gray = cv2.GaussianBlur(gray, (kernel_size, kernel_size), 0)`
  - 處理雜訊, `kernel_size` 值越大, 模糊程度越大
- `edges_frame = cv2.Canny(blur_gray, low_threshold, high_threshold)`
  - edge detector, threshold 數字越大, 線條顯示的越少
- `dilation = cv2.dilate(edges_frame, (kernel_size, kernel_size), iteration= 數字)`
  - 增加影像邊緣的厚度
- `erosion = cv2.erode(edges_frame, (kernel_size, kernel_size), iterations= 數字)`
  - 減少影像邊緣的厚度

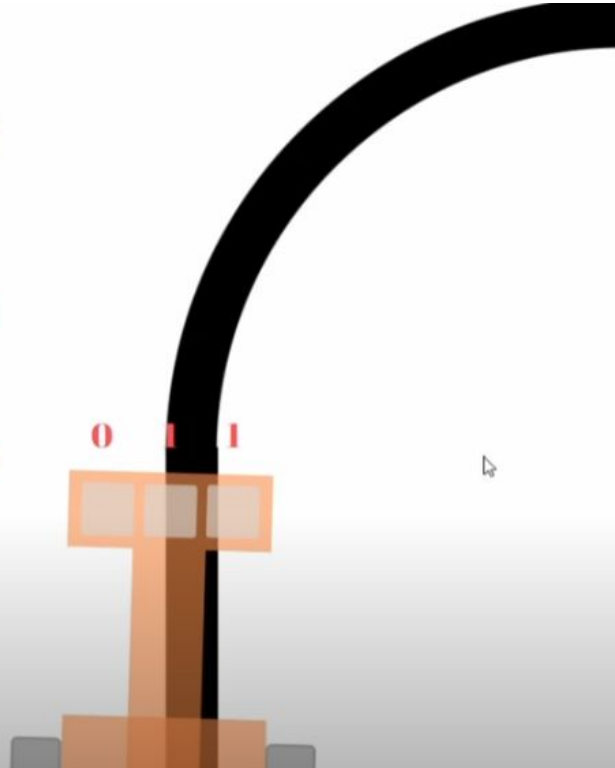


<https://www.youtube.com/watch?v=LmEcyQnfpDA>

## Line Follower

$$2^3 = 8$$

0	1	0	go forward
0	0	1	go right
1	0	0	go left
0	1	1	slight right
1	1	0	slight left
0	0	0	stop
1	1	1	stop
1	0	1	stop



## ROTATION

