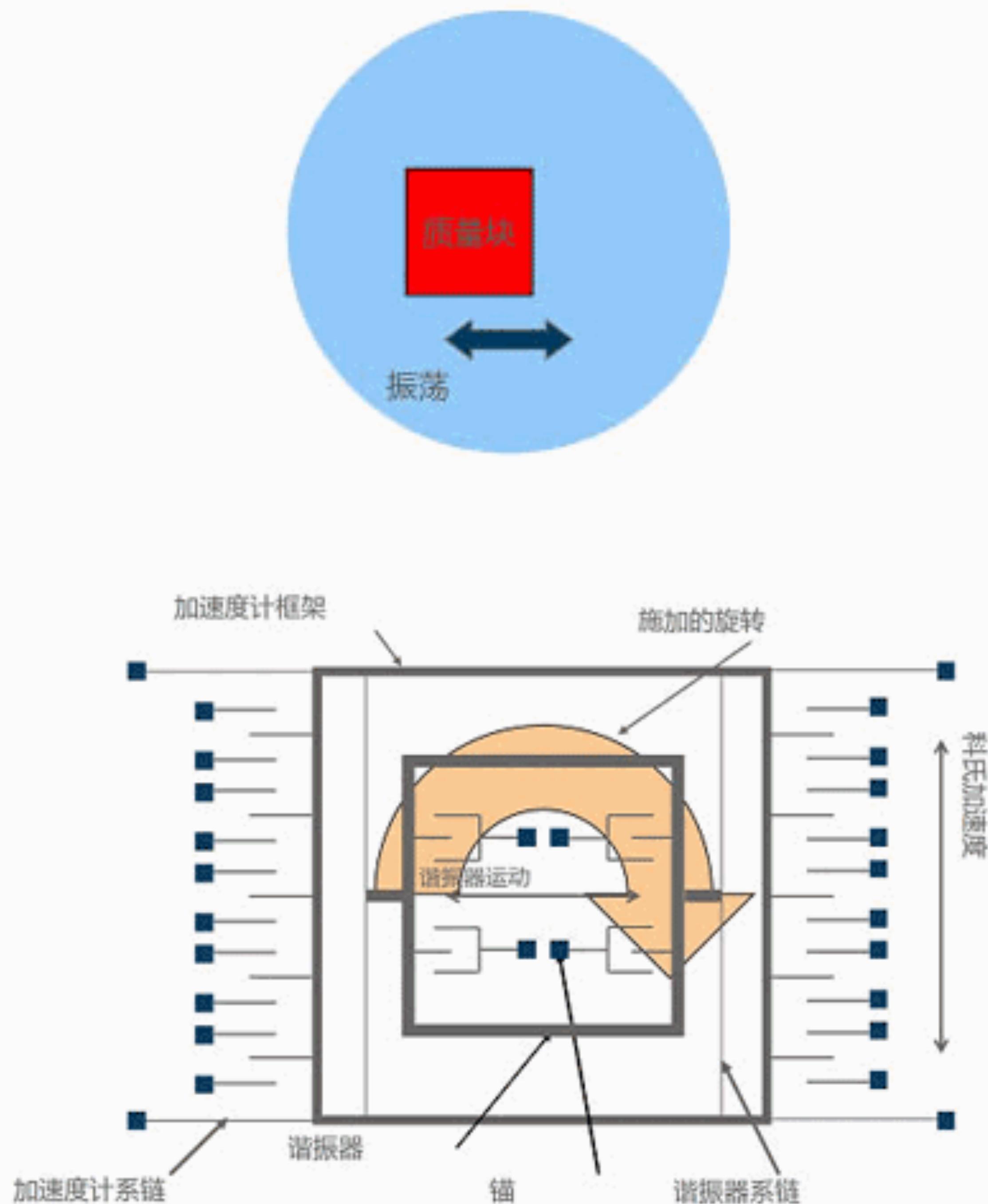


# 智慧手錶六軸感測數據處理

Chyijiunn

# MEMS陀螺儀 工作原理



+Z = xyz[2]

+X = xyz[0]

+Y = xyz [1]

+Z = xyz[5]

+Y = xyz[4]

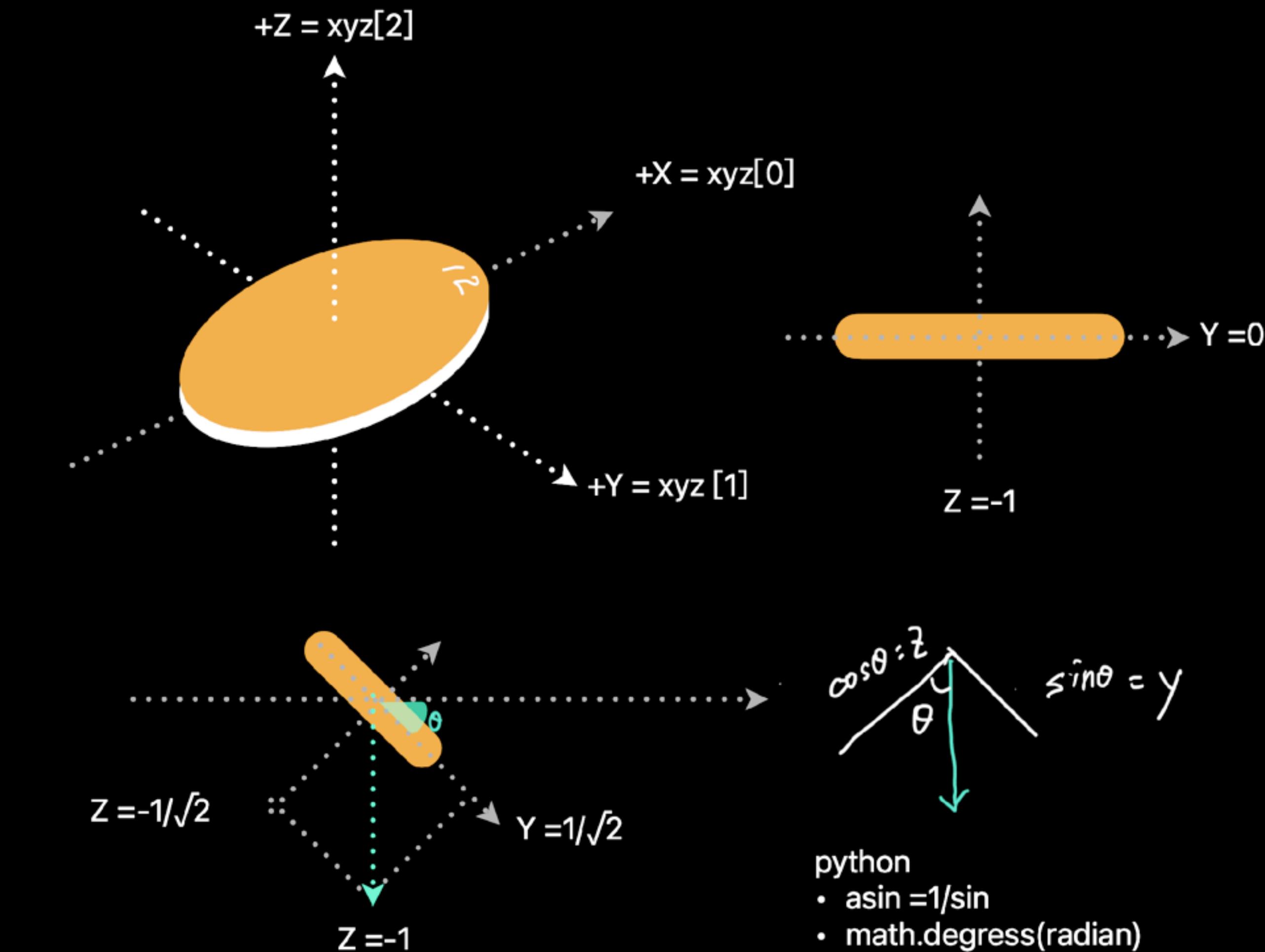
+X = xyz[3]

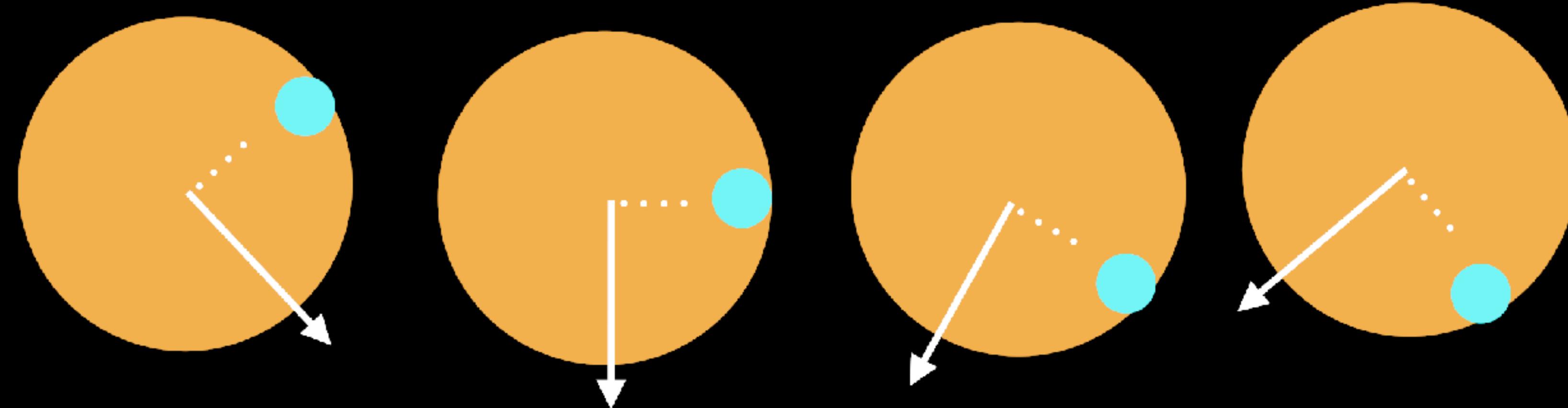
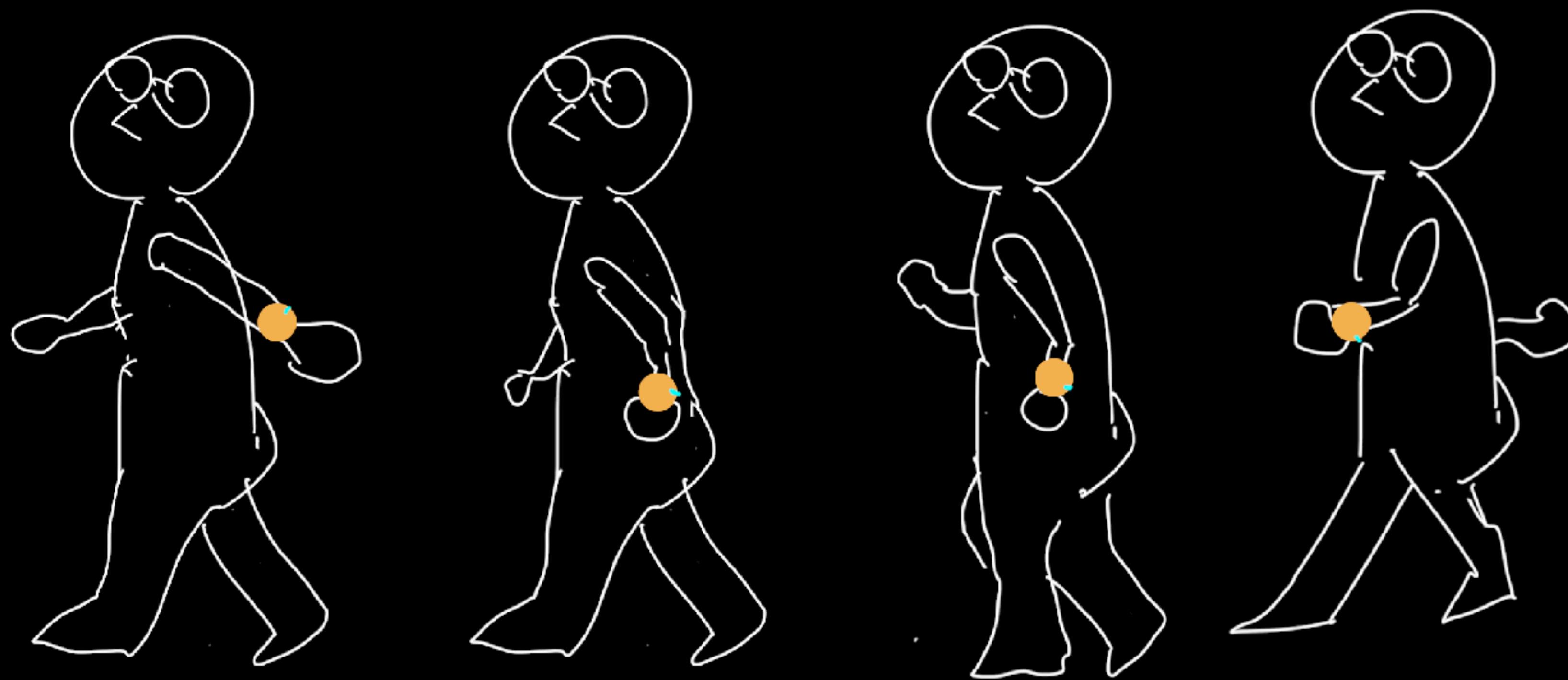
資料來自重力，可當傾角

不動，理論上為 0

# 利用acos 反求弧度->角度

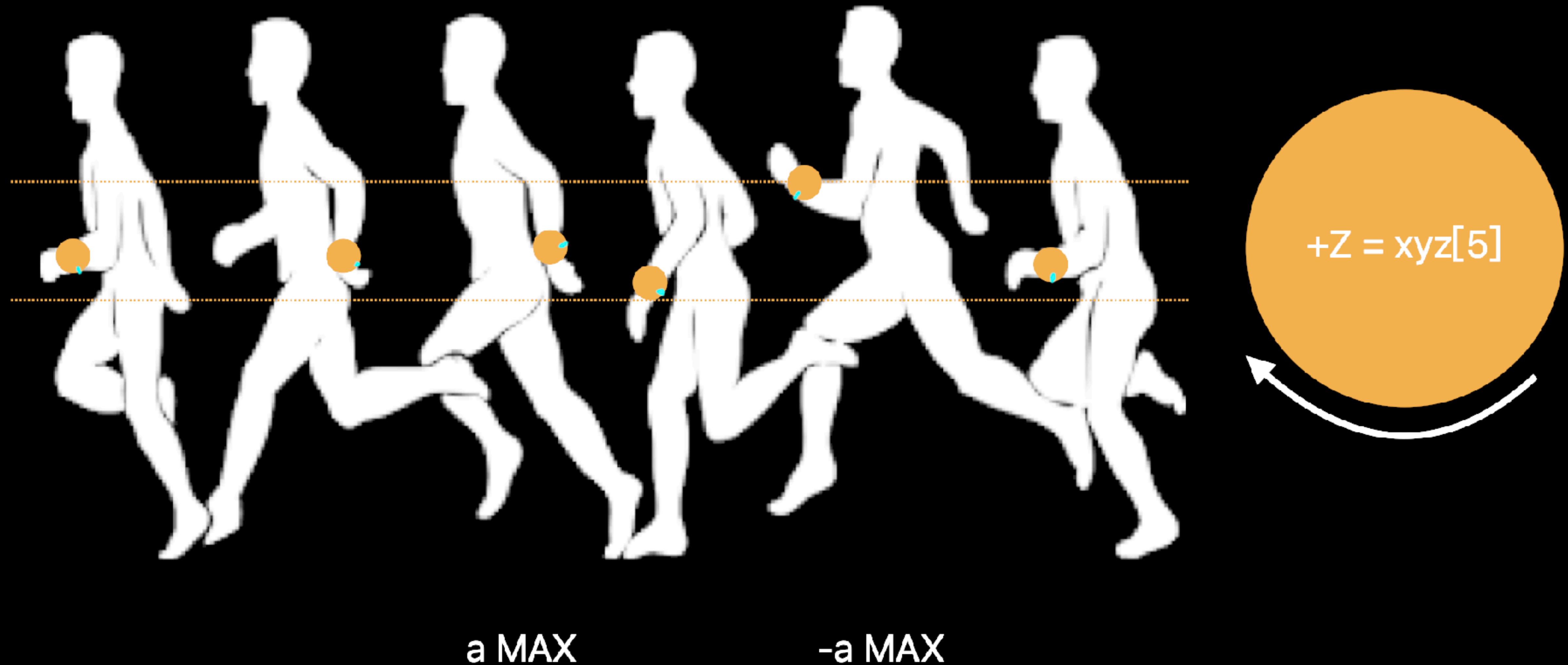
- 用  $\sin$  or  $\arcsin$  , 遇到  $0^\circ$  有問題
- 可引用作為傾角，感知直觀：
  - 水平儀
  - 身體姿勢校正





+Y = xyz [1]

= 1



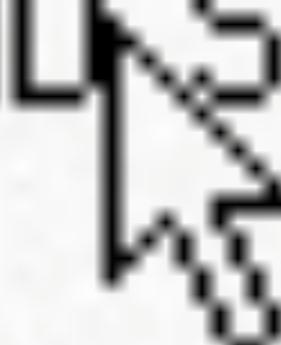
但為反值？

# 設計流程

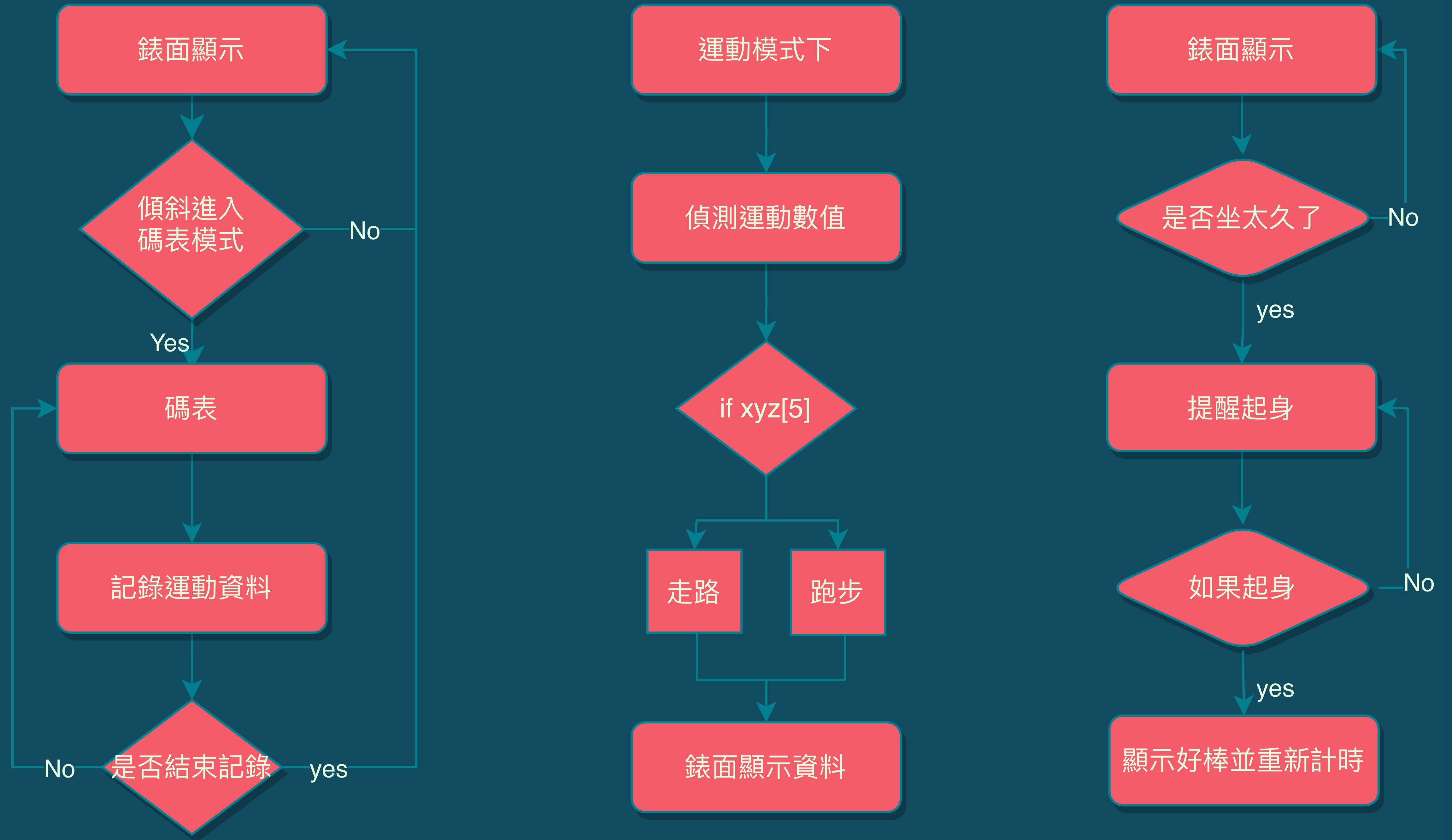
## 挑戰與方向

# WARNING - HEALTH AND SAFETY

BEFORE PLAYING, READ THE HEALTH  
AND SAFETY PRECAUTIONS BOOKLET  
FOR IMPORTANT INFORMATION  
ABOUT YOUR HEALTH AND SAFETY.



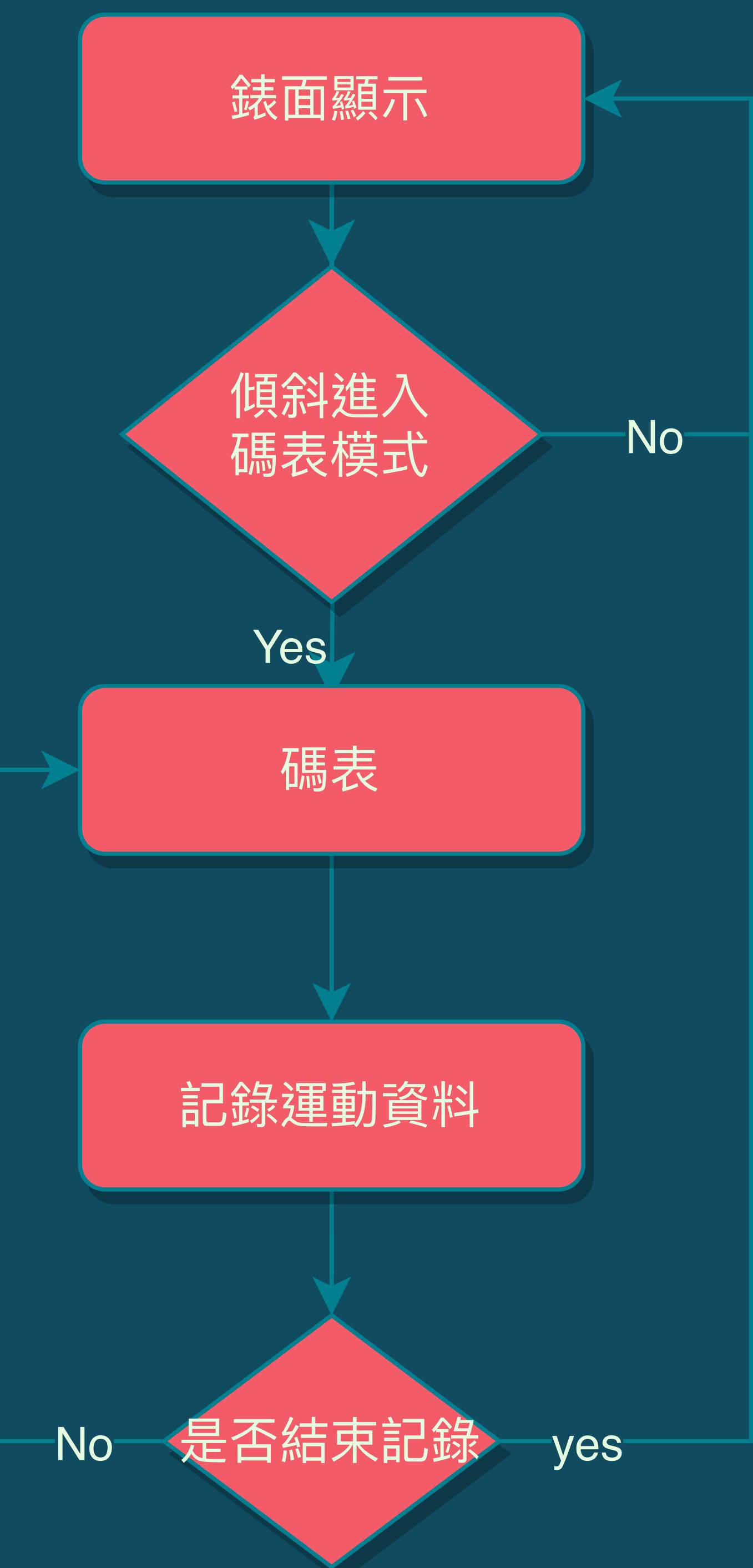
TO GET AN EXTRA COPY FOR YOUR REGION, GO ONLINE AT  
[www.nintendo.com/healthsafety/](http://www.nintendo.com/healthsafety/)



# 挑戰一

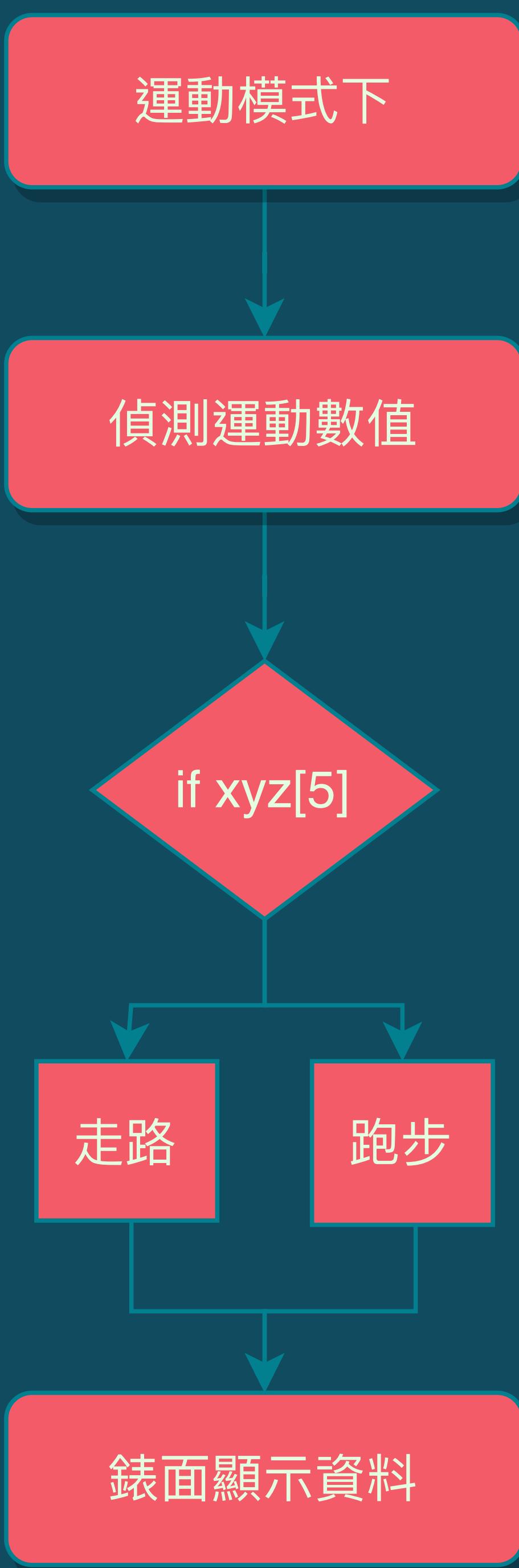
## 程式佈局與連結

- 錶面顯示要兼顧選單？
- 傾斜時或特殊動作？
- 碼表的設計是？
- 記錄什麼值？
- 如何結束？



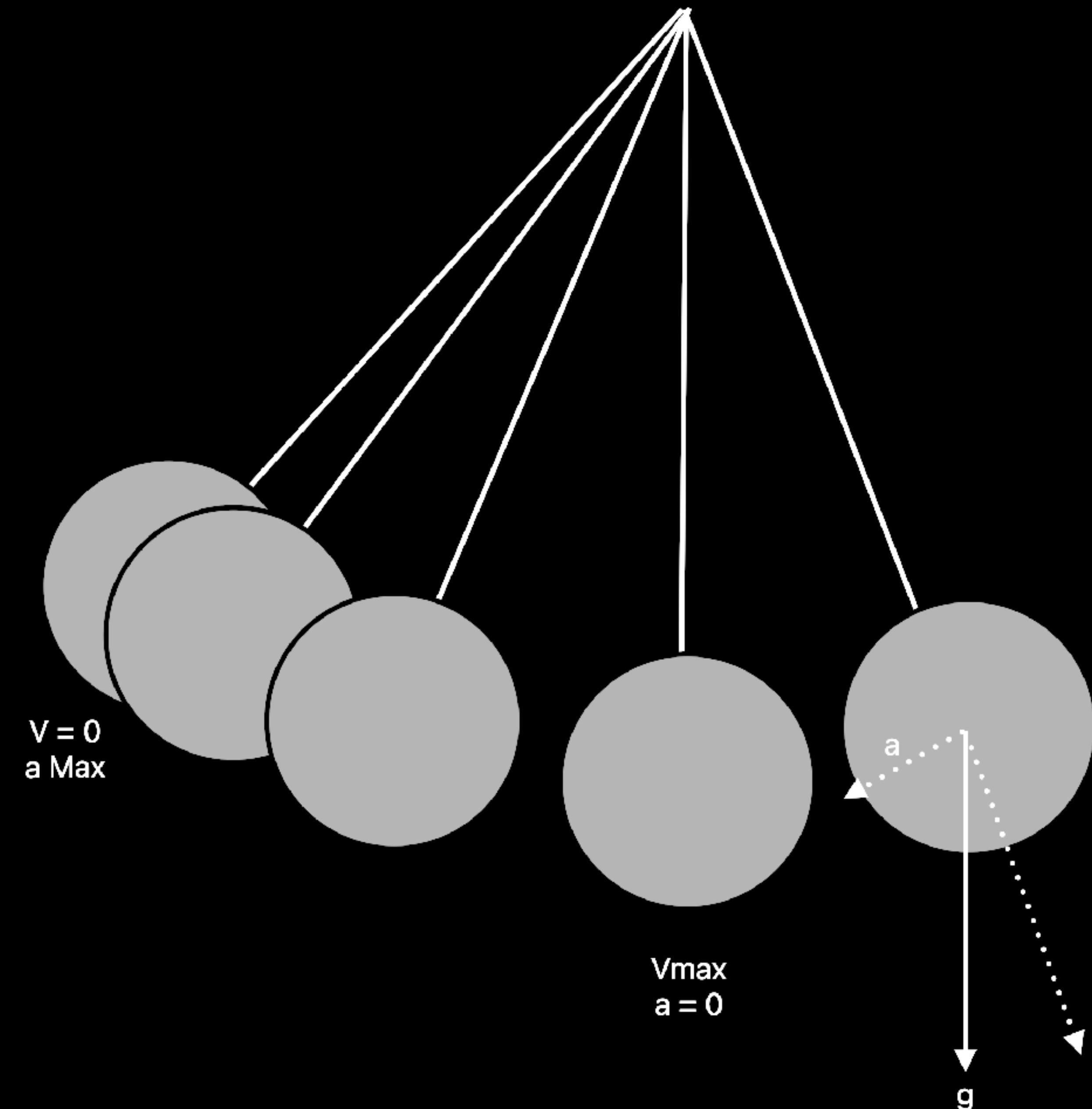
## 挑戰二 資料的決定

- 運動模式顯示碼表和什麼資料？
- 資料加權與向量？
- 需要用到  $A_i$ ？
- 如何區分？
- 呈現出？



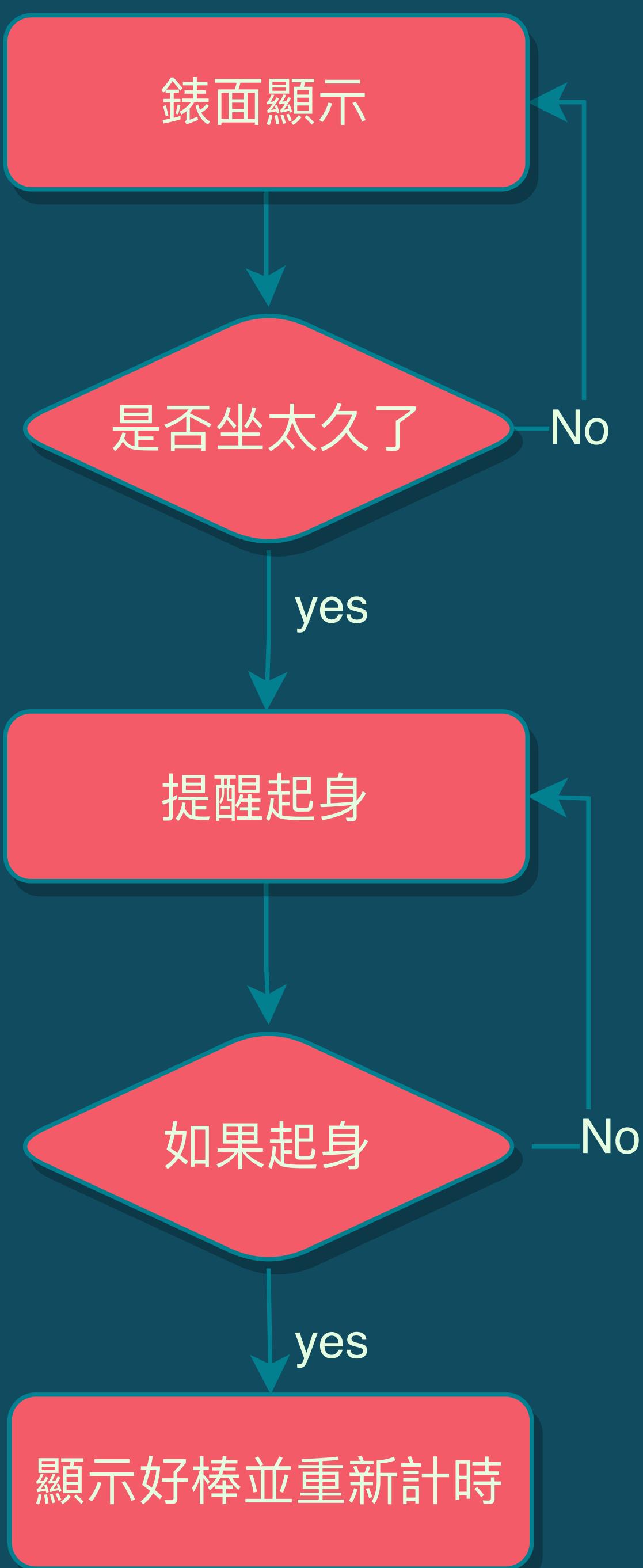
# 單擺 物理課

- 速度最大為最低點
- 加速度最大為端點

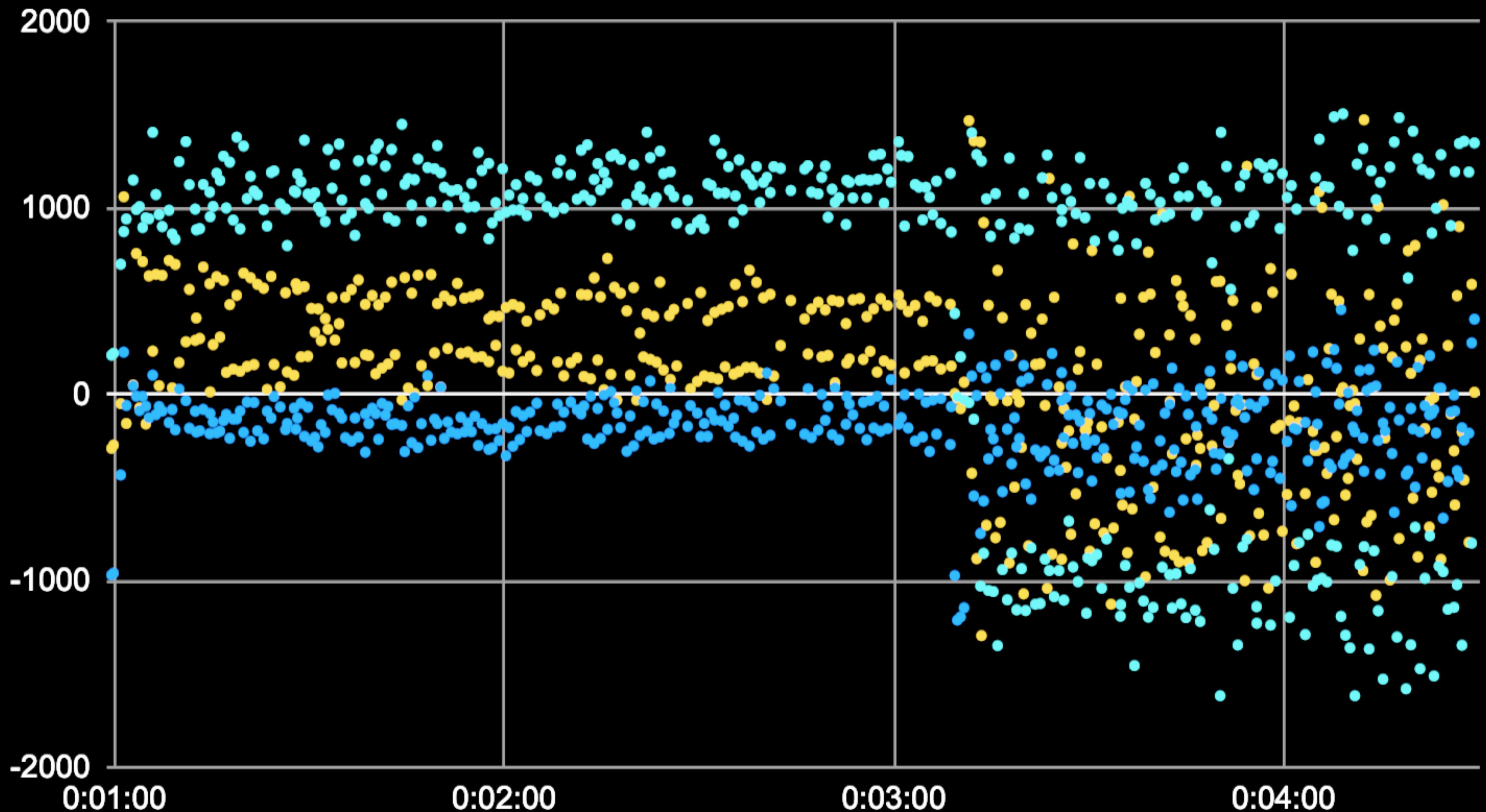


## 挑戰三 模式訓練

- 姿勢變化有什麼資料？
- 提醒的方式是？
- 起身後轉變其他模式？



x y z



XW yw ZW

