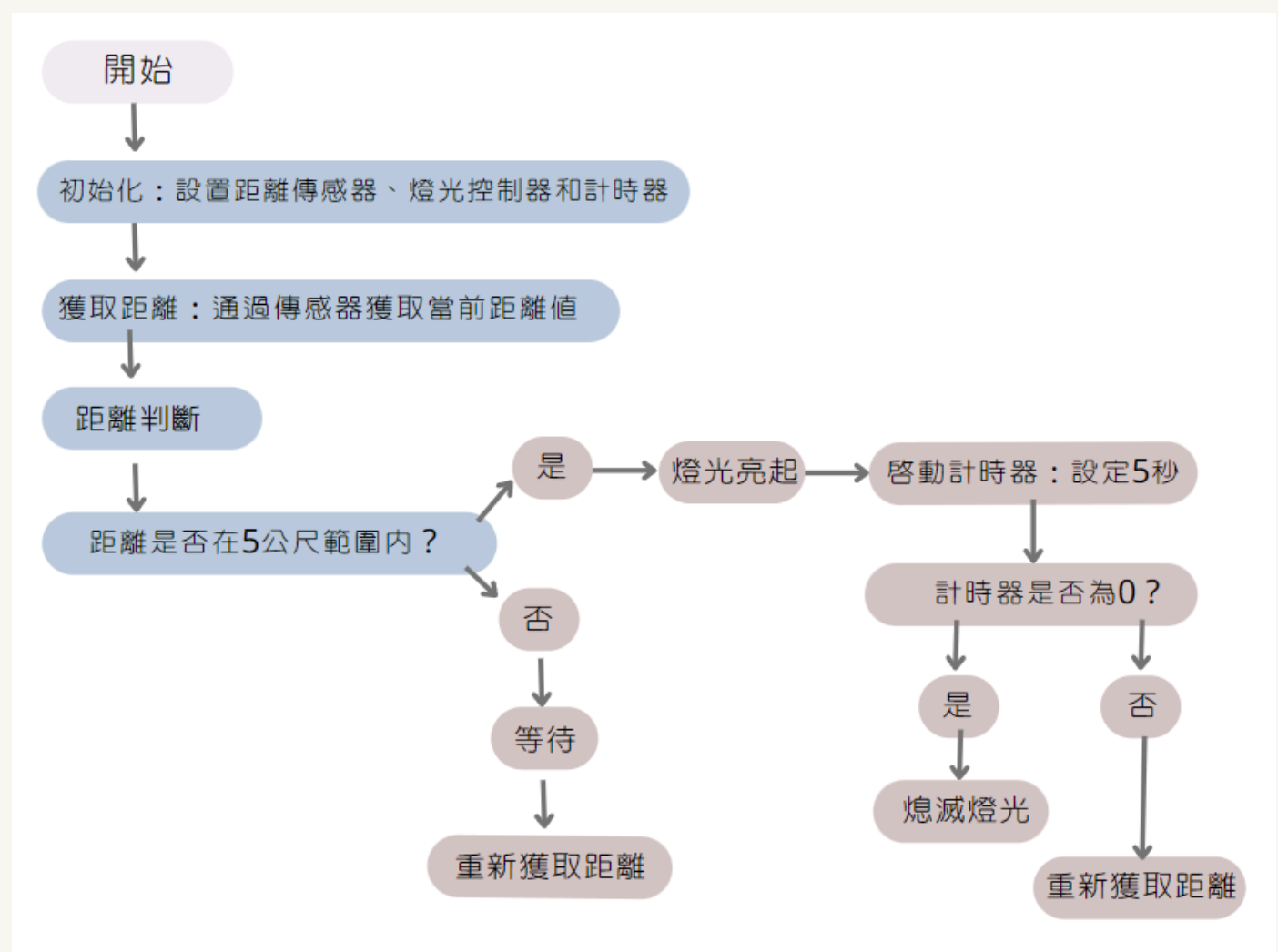# 人來燈亮，離去燈熄

ORID

- 廁所裡面沒有人燈卻是開著的。
- 晚上時樓梯間很暗需要燈光但一直開著燈又很浪費電。
- 覺得這樣很浪費資源，增加用電費用，對地球環境也不良好。
- 一直不關燈讓用電量變高，在校園中隨處可見沒有關的燈需要節省資源幫主解決問題減少用電量，不浪費電利用智能開關。
- 當有人進入偵測範圍時會自動將燈打開無人時燈則會自動關閉。

流程圖

積木堆疊程式

成果說明

- 初始化：在系統啟動時，進行感測器、燈光控制器和計時器的初始化設定。
- 感測人體：程式透過人體感應感測器檢測周圍是否有人體存在。
- 判斷距離：如果偵測到人體，且距離在5公尺範圍內，觸發燈光控製程序。
- 點亮燈光：燈光控製程式將燈光打開，開始計時5秒製程序。
- 等待計時結束：計時器程式進行倒數計時，保持燈光亮起狀態。
- 熄滅燈光：計時器倒數結束後，燈光控製程式關閉燈光。
- 等待新的檢測：等待下一次人體檢測，回到第2步。

Energy saving and carbon reduction

ORID

- There is no one in the toilet but the light is on
- The stairwell is very dark at night and needs lights, but leaving the lights on is a waste of electricity.
- I think this is a waste of resources, increases electricity costs, and is not good for the global environment.
- Leaving the lights on all the time increases power consumption. You can see lights that are left on everywhere on campus. We need to save resources and help the host solve the problem to reduce power consumption. Use smart switches to avoid wasting electricity.
- When someone enters the detection range, the light will automatically turn on and when no one is around, the light will automatically turn off.
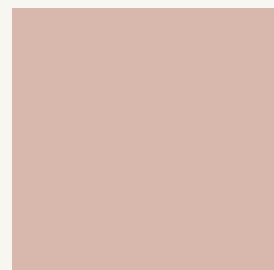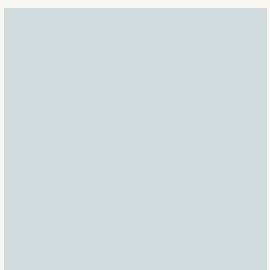
Building block stacking program

flow chart
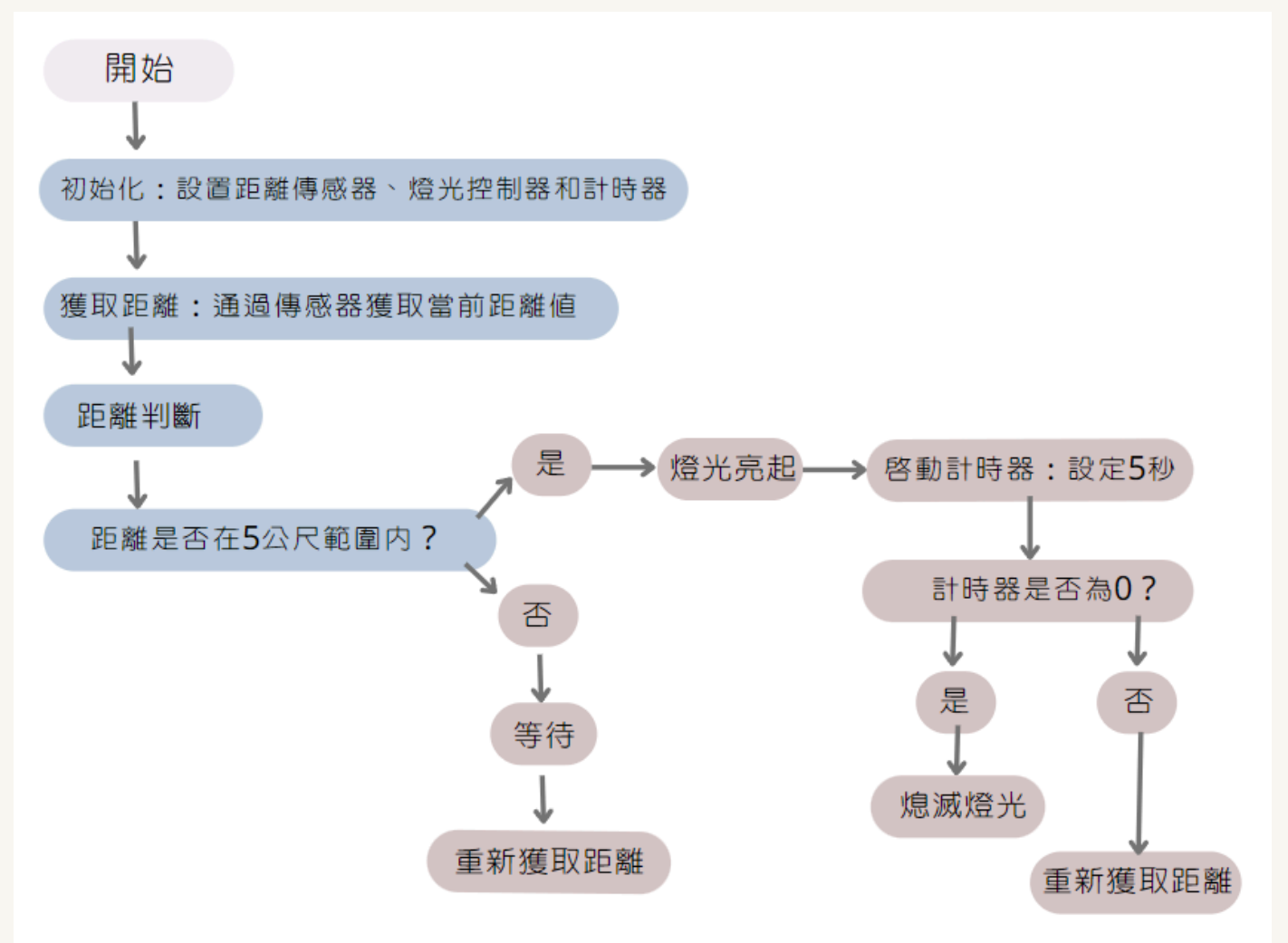
DESCRIPTION OF RESULTS

- Initialization: When the system starts, initialize the sensors, light controllers and timers.
- Detecting human body: The program uses human body sensing sensors to detect whether there is a human body around.
- Determine the distance: If a human body is detected and the distance is within 5 meters, the light control program will be triggered.
- Turn on the lights: The light control program turns on the lights and starts the 5-second timing program.
- Wait for the timer to end: The timer program counts down and keeps the light on.
- Turn off the lights: After the timer counts down, the light control program turns off the lights.
- Waiting for new detection: Waiting for the next human detection, return to step 2.