

# 遞迴、河內塔與 merge sort 學習單

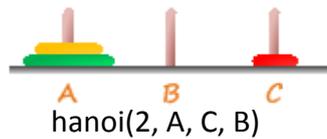
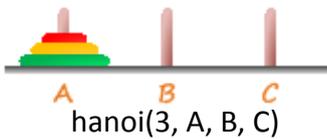
我是\_\_\_\_\_年\_\_\_\_\_班\_\_\_\_\_

1. 請用黑盒子的模型畫出下面這個遞迴式的呼叫過程

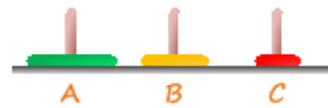
$$L_n := L(n) := \begin{cases} 2 & \text{if } n = 0; \\ 1 & \text{if } n = 1; \\ L(n-1) + L(n-2) & \text{if } n > 1. \end{cases}$$

2. 請在(0)跟(4)上畫出大盤子，並寫出對應的遞迴呼叫參數(如標出來的兩個範例)或單步移動也就是把 pseudo code 標上去。

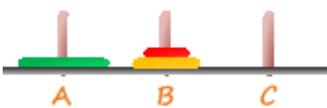
①(1) A 為來源、B 為輔助、C 為目的地 ①



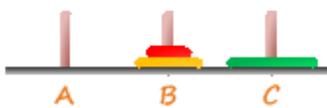
②



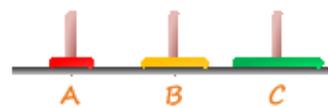
③



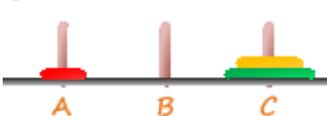
④(2) B 為來源、A 為輔助、C 為目的地



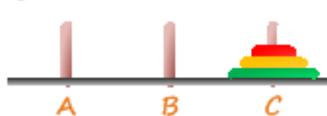
⑤



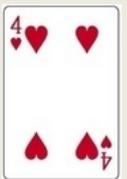
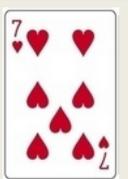
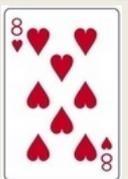
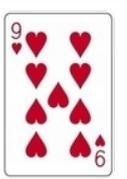
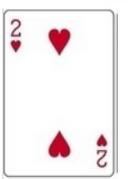
⑥(3) 剩一個、直接搬到目的地

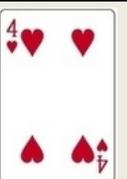
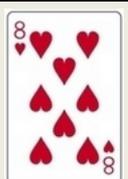


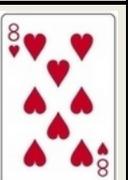
⑦



3. 下面的撲克牌，左半(0~3)已經都用 merge sort 排完了，剩下的請妳完成它吧~

位置	0	1	2	3	4	5	6
卡片							

位置	0	1	2	3	4	5	6
卡片							

位置	0	1	2	3	4	5	6
卡片							

位置	0	1	2	3	4	5	6
卡片							

位置	0	1	2	3	4	5	6
卡片							