

在problem2中 我使用 array 來實踐 Active List (原本用LinkList發現速度太慢, 受不了所以改個方法寫)

雖然說資料結構屬於array, 不過背後精神卻是 Link List 這種實踐法有其特殊性與利弊,且針對此問題較 單純LinkList 來解題會更快特殊性:

- 1.因為這個題目的端點一定是一左一右,所以Active list array可以分配固定大小為端點數/2
- 2.每一個端點都只會對應到一個Active list array中的 key 值
- 3.Front ,Back 指標在array 中只會增大,不會變小

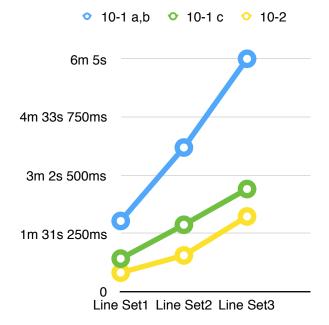
優點:

- 1.一個Active List 只會分配一次空間,overhead 較 LinkList小(假設LinkList分配空間的策略是一次只allocate 一個)
- 2.不需要指標dereference 操作, 感覺好像比較快
- 3. 邏輯較簡單,較LinkList好寫

缺點:

1.佔用空間量較大

速度比較: Adding time



	10-1 a , b	10-1 c	10-2
Line Set 1	111 sec	52 sec	30 sec
Line Set 2	226 sec	105 sec	57 sec
Line Set 3	365 sec	161 sec	118 sec

10-2 使用 題目內測資 運行出來的ActiveList 樣子

```
./04112/6_P10_2 input1.txt
                            front =
              0, back =
                                                       1, prev = 2, prev = 3, prev =
                                                                                         Front
id
          0, point:
                                                                        0, active = 0
                            0, h=
                                        1, next=
2, next=
                                                                       0, active = 0
id
          0, point:
                                                                       1, active = 0
id:
          0, point:
                            0, h=
                                                                        2, active = 0
id
          0, point:
                            0, h=
                                        3, next=
                                                       4, prev =
processing point :000000
                            1, total_active =
5, h= 0, next=
front =
              0, back =
                                                       1, prev = 2, prev = 3, prev =
id:
          1, point:
                                                                        0, active = 1
                                                                                         Front
id:
          0, point :
                            0, h=
                                                                        0, active = 0
                                        1, next=
                                                                                         Back
id
                                        2, next=
                                                          prev =
                                                                       1, active = 0
          0, point:
                            0, h=
                                                                        2, active = 0
id
          0, point:
                            0, h=
                                        3, next=
                                                       4, prev =
                           2, total_active = 5, h= 0, next= 75, h= 1, next=
front =
              0, back =
          1, point:
                                                       1, prev = 2, prev =
id:
                                                                       0, active = 1
                                                                                         Front
          0, point : 0, point :
id
                                                                        0, active =
                            0, h=
                                        2, next=
                                                       3, prev =
                                                                        1, active = 0
id:
                                                                                         Back
id:
          0, point:
                                                          prev =
                                                                        2, active = 0
                            0, h=
                                        3, next=
                            3, total_active = 5, h= 0, next=
front =
              0, back =
                                                       3
                                                       1, prev = 2, prev = 3, prev =
id:
          1, point :
                                                                       0, active = 1
                                                                                         Front
          0, point:
                           75, h=
                                                                        0, active = 1
id:
                                        1, next=
          2, point : 0, point :
                          100, h=
                                                                        1, active =
id
                                        2, next=
                                                                        2, active = 0
id
                                        3, next=
                                                          prev =
                            0, h=
                                                                                         Back
                           3, total_active = 5, h= 0, next=
front =
              1, back =
                                                       2
                                                       1, prev = 2, prev = 3, prev =
          1, point :
id:
                                                                       0, active = 0
                           75, h=
id:
          0, point:
                                                                       0, active = 1
                                        1, next=
                                                                                         Front
          2, point :
0, point :
id:
                          100, h=
                                        2, next=
                                                                        1, active = 1
                            0, h=
                                        3, next=
                                                       4, prev =
                                                                        2, active = 0
id:
                                                                                         Back
          1, back =
1, point :
                            3, total_active = 5, h= 0, next=
front =
                                                       1, prev = 3, prev =
id:
                                                                        0, active = 0
                                                                       0, active = 1
id:
          0, point :
                           75, h=
                                        1, next=
                                                                                         Front
                                                                        1, active = 0
id
                          100, h=
                                                       3, prev =
          2, point:
                                        2, next=
                            0, h=
id
          0, point:
                                        3, next=
                                                          prev =
                                                                        1, active = 0
                                                                                         Back
```