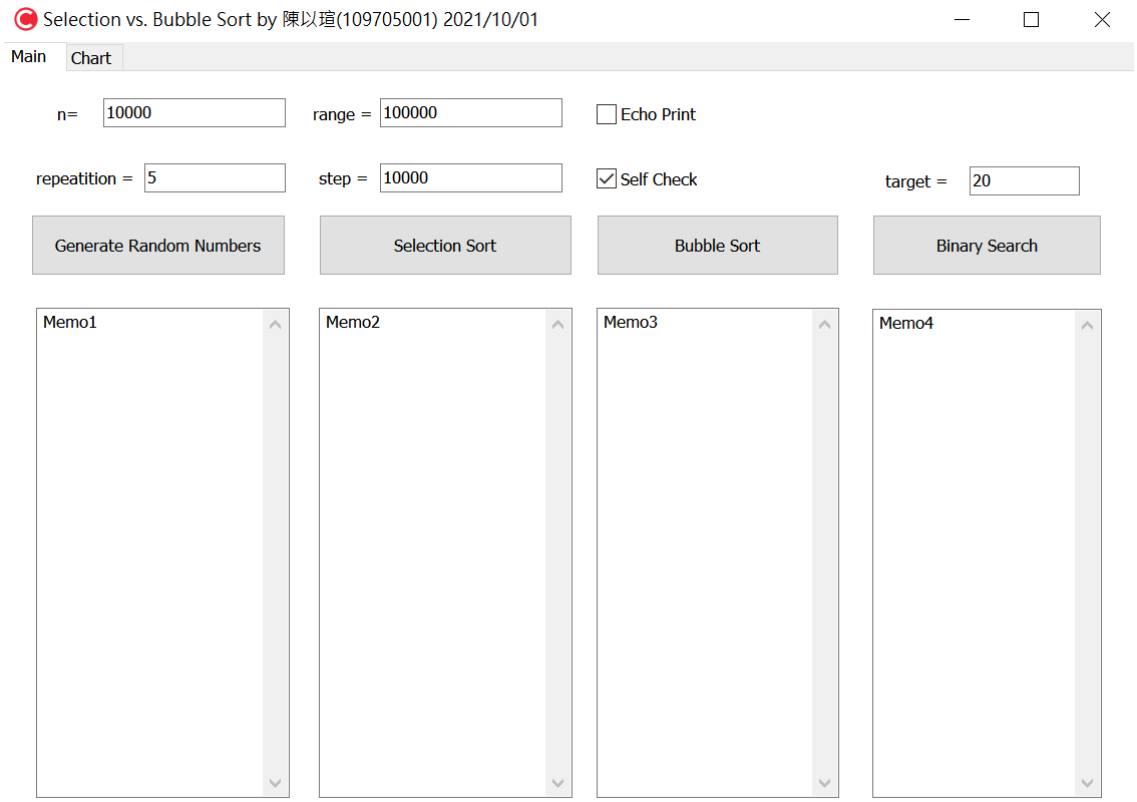
Main



n : 產生多少筆資料

range : 產生的資料的值域(1~range)

repeatition : 重複執行(輸入5就會產生五次資料)

step : 每次重複執行時增加的資料數

target : 做Binary Search時的目標

Generate Random Number : 會產生n+step*repeatition筆資料(當Echo Print打勾時資料會顯示在Memo1)

Selection Sort : 將產生出來的資料做Selection Sort(當Echo Print打勾時排序完資料會顯示在Memo2)

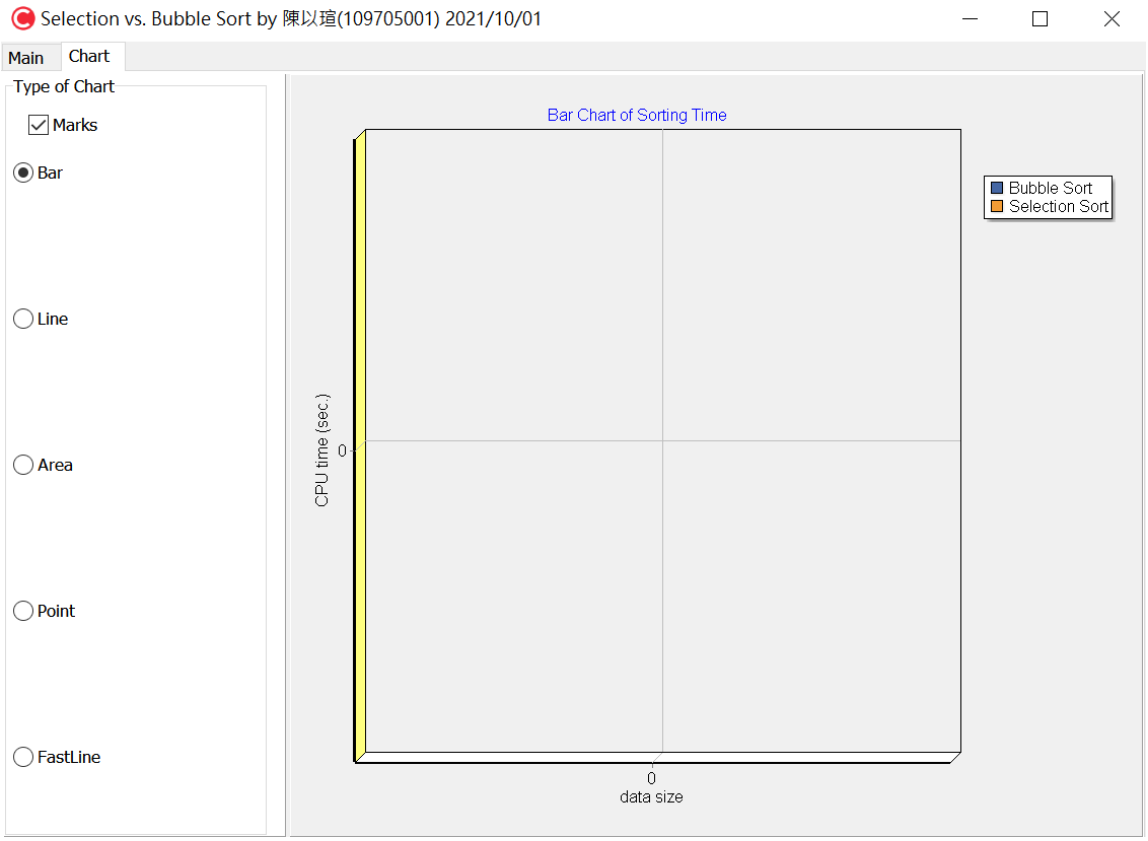
Bubble Sort : 將產生出來的資料做Bubble Sort(當Echo Print打勾時排序完的資料會顯示在Memo3)

Binary Search : 在生產的每筆資料中(已排序)用Binary Search找到target所在的位置(印在Memo4上)

Echo Print : 將生產出或是排序好的資料逐行印在對應的Memo上

Self Check : 自動檢查排序是否正確

Chart



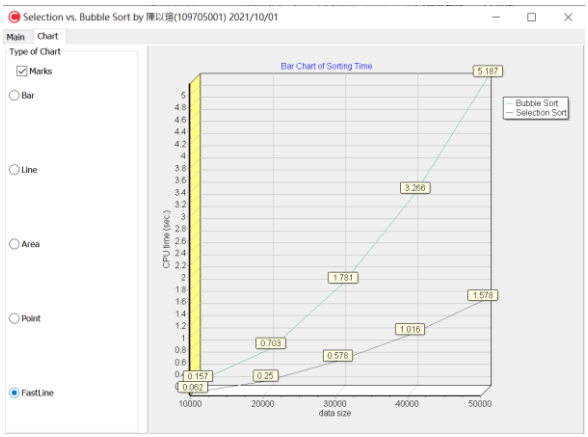
若有已生產好的Selection Sort 耗時資料和Bubble Sort 耗時資料，

換頁時即會顯示出來

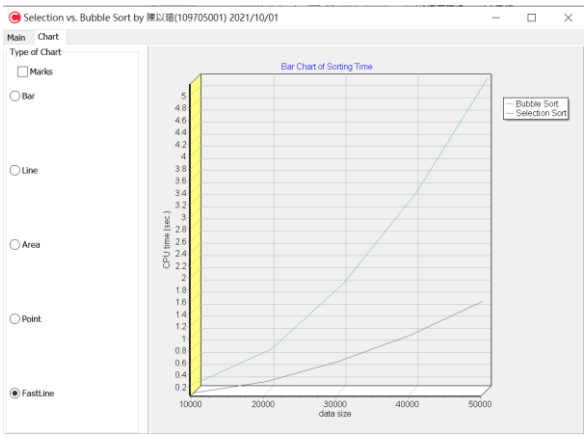
左側有五種圖形供使用

若只想探討趨勢不注重精確的數值，可以取消勾選左上方的Mark

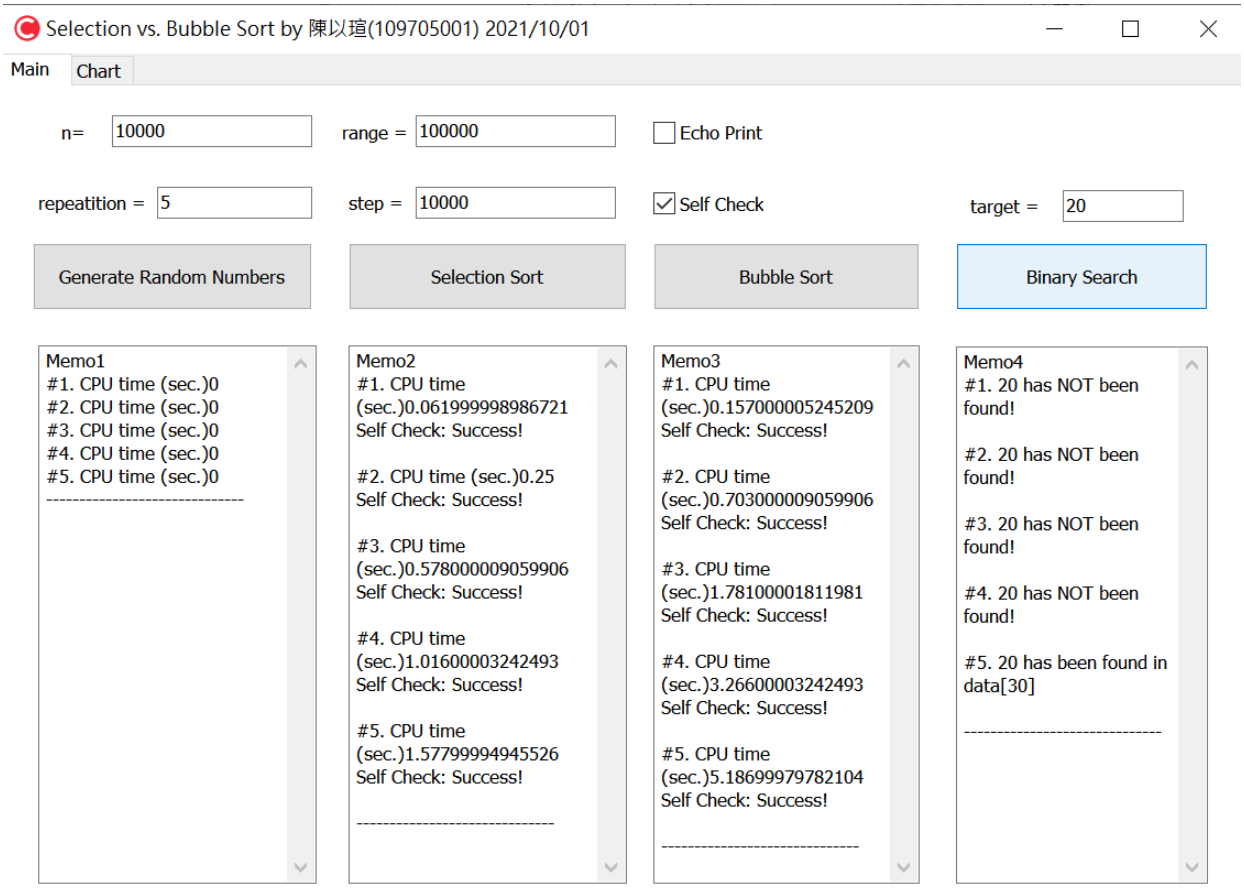
有勾選Mark

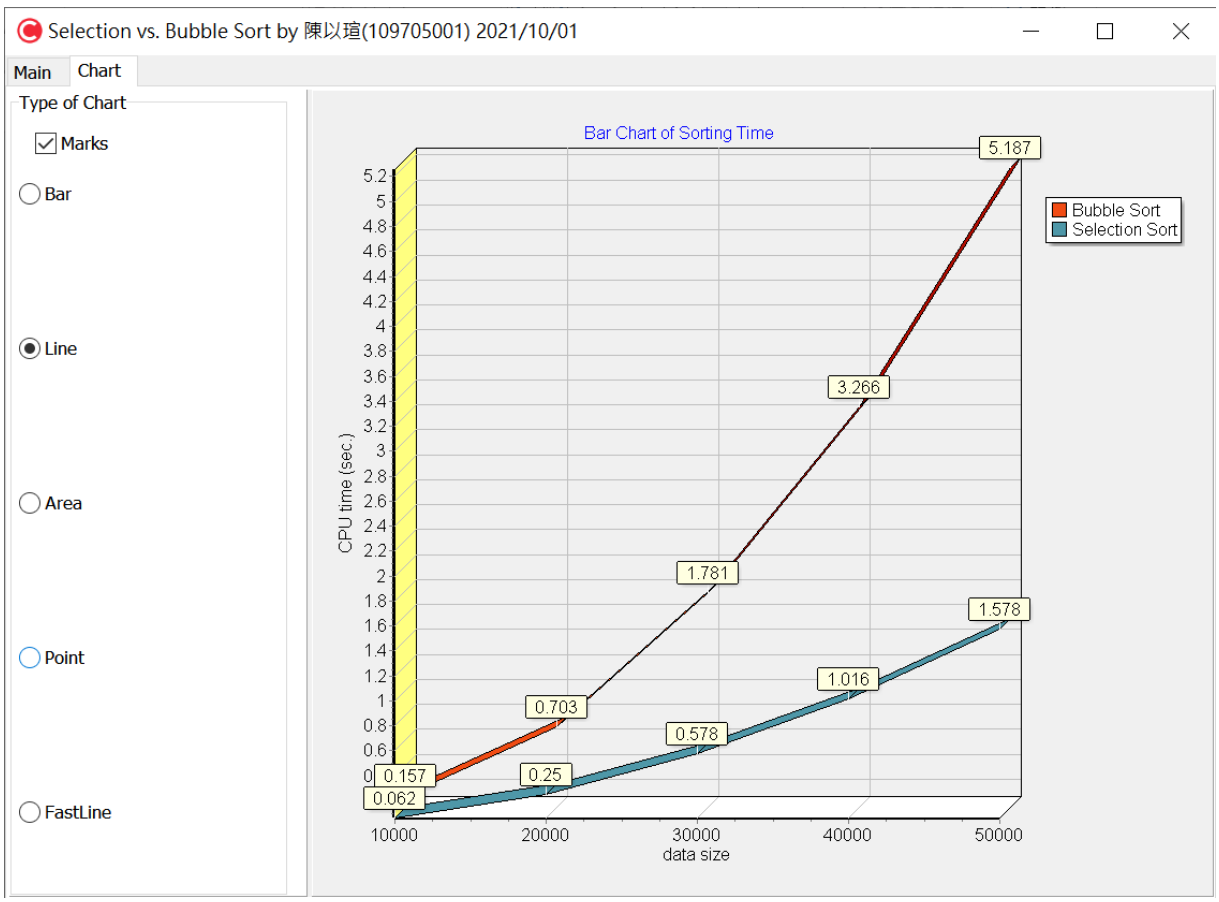


無勾選Mark

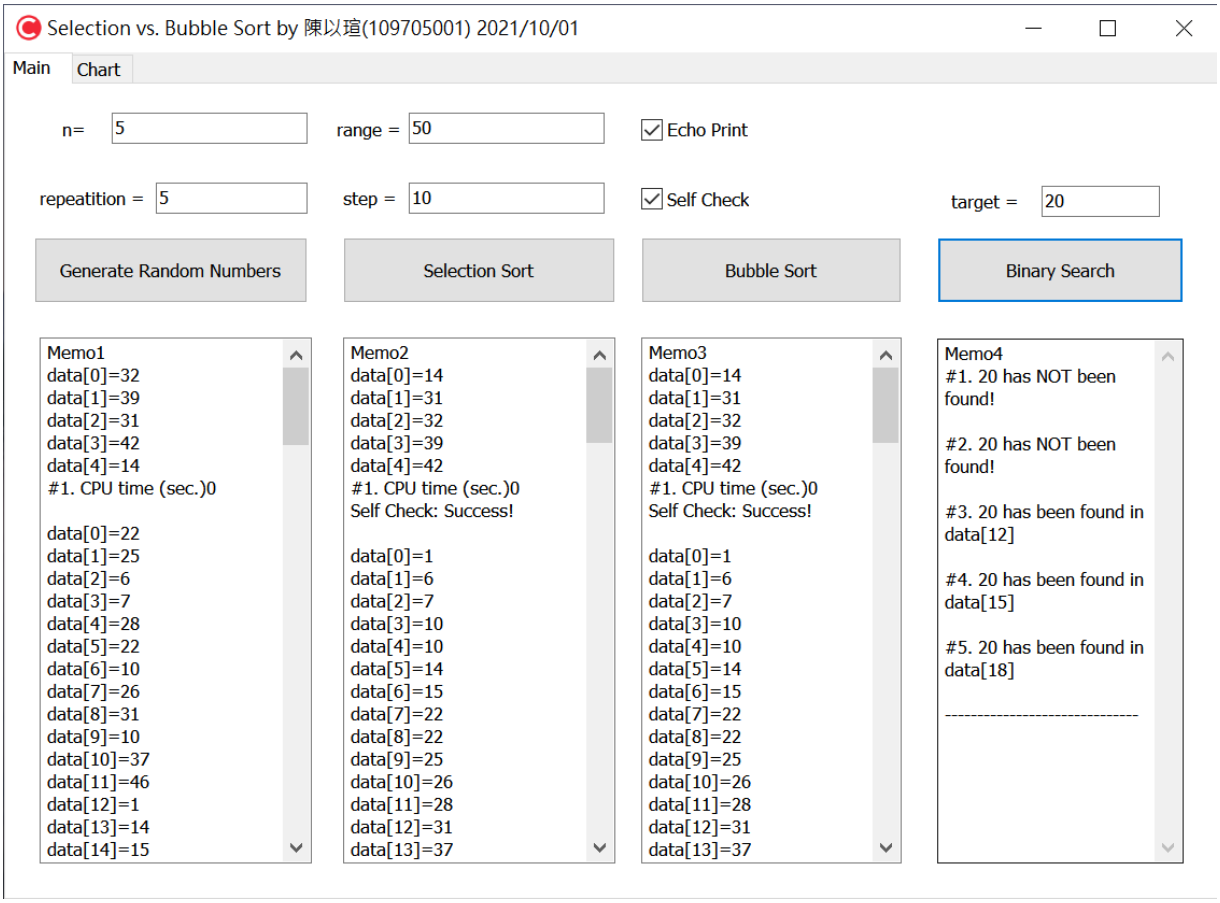


操作截圖


Selection vs. Bubble Sort by 陳以瑄(109705001) 2021/10/01
Main
Chart
n= 10000
range = 100000
Echo Print
repeatition = 5
step = 10000
Self Check
target = 20
Generate Random Numbers
Selection Sort
Bubble Sort
Binary Search
Memo1
#1. CPU time (sec.)0
#2. CPU time (sec.)0
#3. CPU time (sec.)0
#4. CPU time (sec.)0
#5. CPU time (sec.)0
Memo2
#1. CPU time (sec.)0.061999998986721
Self Check: Success!
#2. CPU time (sec.)0.25
Self Check: Success!
#3. CPU time (sec.)0.578000009059906
Self Check: Success!
#4. CPU time (sec.)1.01600003242493
Self Check: Success!
#5. CPU time (sec.)1.57799994945526
Self Check: Success!
Memo3
#1. CPU time (sec.)0.157000005245209
Self Check: Success!
#2. CPU time (sec.)0.703000009059906
Self Check: Success!
#3. CPU time (sec.)1.78100001811981
Self Check: Success!
#4. CPU time (sec.)3.26600003242493
Self Check: Success!
#5. CPU time (sec.)5.18699979782104
Self Check: Success!
Memo4
#1. 20 has NOT been found!
#2. 20 has NOT been found!
#3. 20 has NOT been found!
#4. 20 has NOT been found!
#5. 20 has been found in data[30]


Selection vs. Bubble Sort by 陳以瑄(109705001) 2021/10/01
Main
Chart
Type of Chart
Marks
Bar
Line
Area
Point
FastLine
Bar Chart of Sorting Time
Bubble Sort
Selection Sort
CPU time (sec.)
data size
10000
20000
30000
40000
50000
5.187
3.266
1.781
0.703
0.157
1.578
1.016
0.578
0.25
0.062

操作截圖


Selection vs. Bubble Sort by 陳以瑄(109705001) 2021/10/01
Main
Chart
n= 5
range = 50
Echo Print
repeatition = 5
step = 10
Self Check
target = 20
Generate Random Numbers
Selection Sort
Bubble Sort
Binary Search
Memo1
data[0]=32
data[1]=39
data[2]=31
data[3]=42
data[4]=14
#1. CPU time (sec.)0
data[0]=22
data[1]=25
data[2]=6
data[3]=7
data[4]=28
data[5]=22
data[6]=10
data[7]=26
data[8]=31
data[9]=10
data[10]=37
data[11]=46
data[12]=1
data[13]=14
data[14]=15
Memo2
data[0]=14
data[1]=31
data[2]=32
data[3]=39
data[4]=42
#1. CPU time (sec.)0
Self Check: Success!
data[0]=1
data[1]=6
data[2]=7
data[3]=10
data[4]=10
data[5]=14
data[6]=15
data[7]=22
data[8]=22
data[9]=25
data[10]=26
data[11]=28
data[12]=31
data[13]=37
Memo3
data[0]=14
data[1]=31
data[2]=32
data[3]=39
data[4]=42
#1. CPU time (sec.)0
Self Check: Success!
data[0]=1
data[1]=6
data[2]=7
data[3]=10
data[4]=10
data[5]=14
data[6]=15
data[7]=22
data[8]=22
data[9]=25
data[10]=26
data[11]=28
data[12]=31
data[13]=37
Memo4
#1. 20 has NOT been found!
#2. 20 has NOT been found!
#3. 20 has been found in data[12]
#4. 20 has been found in data[15]
#5. 20 has been found in data[18]
