



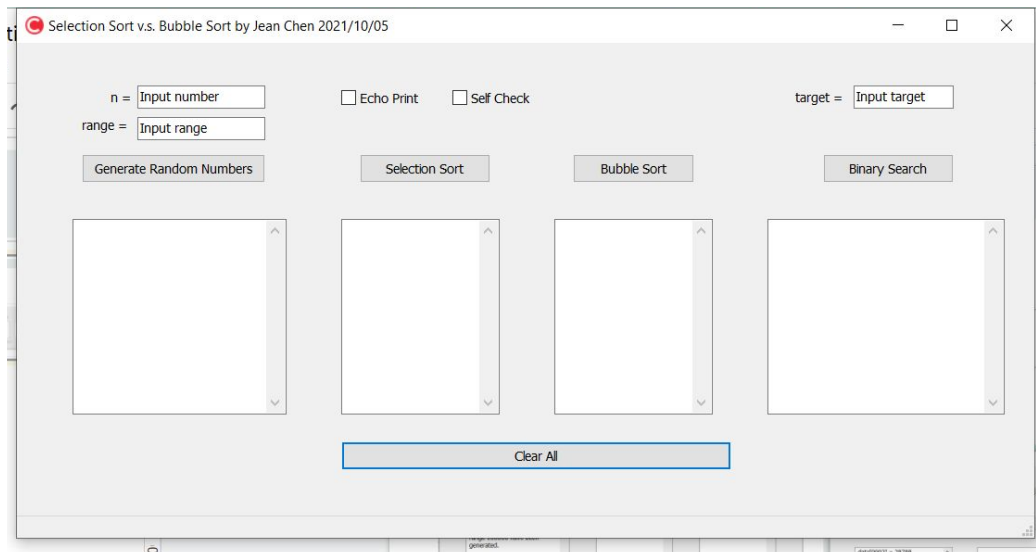
HW1 - Selection Sort, Bubble Sort, and Binary Search

資財系 109705011 陳盈均

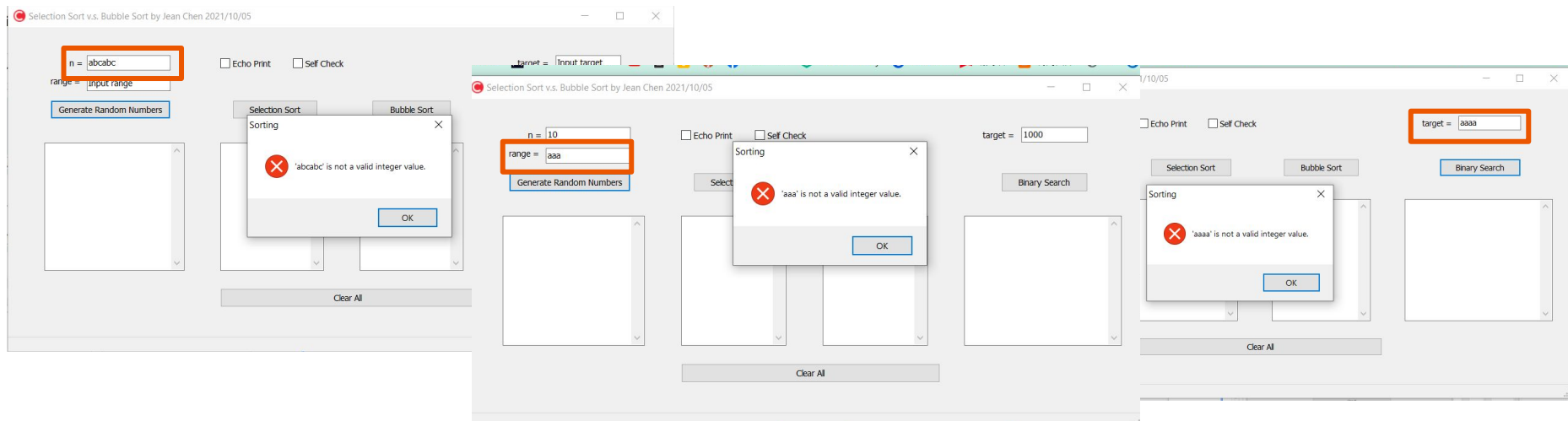
初始畫面

Selection Sort V.S. Bubble Sort

n, range, target 的 Edit 框中有提示讓使用者在此輸入數字。



填入非數字的會跳出警告



Generate Random Numbers

Selection Sort v.s. Bubble Sort by Jean Chen 2021/10/05

n = 10000
range = 100000

☐ Echo Print ☐ Self Check

Generate Random Numbers

Selection Sort

Bubble Sort

10000 random numbers with
range 100000 have been
generated.

Generate後會顯示已完成

Selection Sort v.s. Bubble Sort by Jean Chen 2021/10/05

n = 10000
range = 100000

☒ Echo Print ☐ Self Check

target = Input target

Generate Random Numbers

Selection Sort

Bubble Sort

Binary Search

data[9992] = 28788
data[9993] = 11099
data[9994] = 4962
data[9995] = 25357
data[9996] = 1468
data[9997] = 26929
data[9998] = 21746
data[9999] = 18492
10000 random numbers with
range 100000 have been
generated.

勾選Echo Print 會印出
Generate出來的Data

Clear All

Selection Sort

V.S.

Bubble Sort

Selection Sort & Bubble Sort

Selection Sort v.s. Bubble Sort by Jean Chen 2021/10/05

n =
range =

☐ Echo Print ☐ Self Check

target =

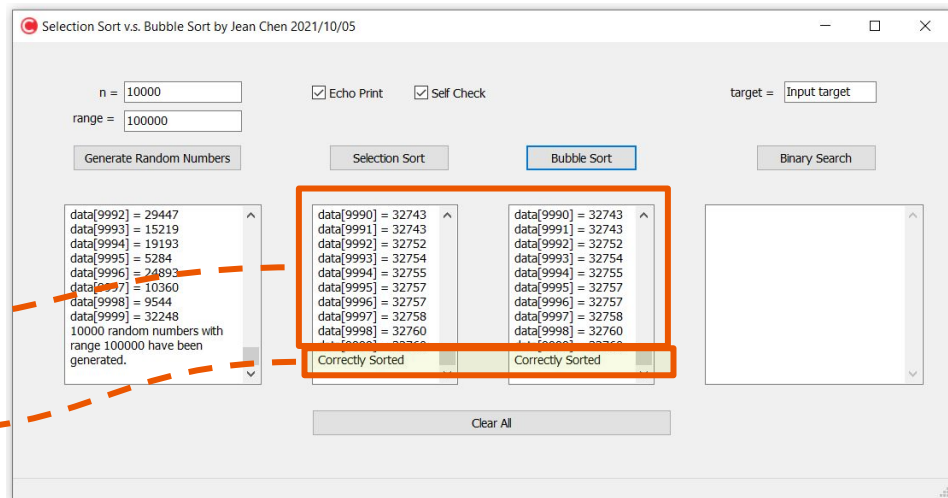
data[9992] = 29447
data[9993] = 15219
data[9994] = 19193
data[9995] = 5284
data[9996] = 24893
data[9997] = 10360
data[9998] = 9544
data[9999] = 32248
10000 random numbers with range 100000 have been generated.

CPU time (sec.) = 0.078 CPU time (sec.) = 0.172

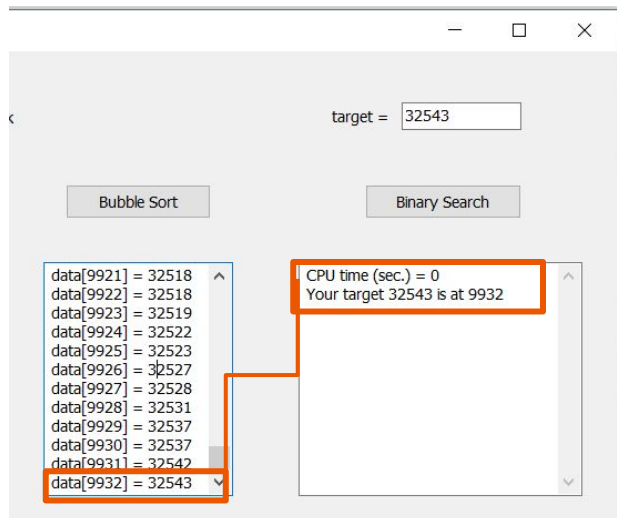
Selection Sort & Bubble Sort with Echo Print and Self Check

當Echo Print 被勾選，會印出Sort完的資料。

當Self Check 被勾選，會檢查已排序的資料是否被正確排序。

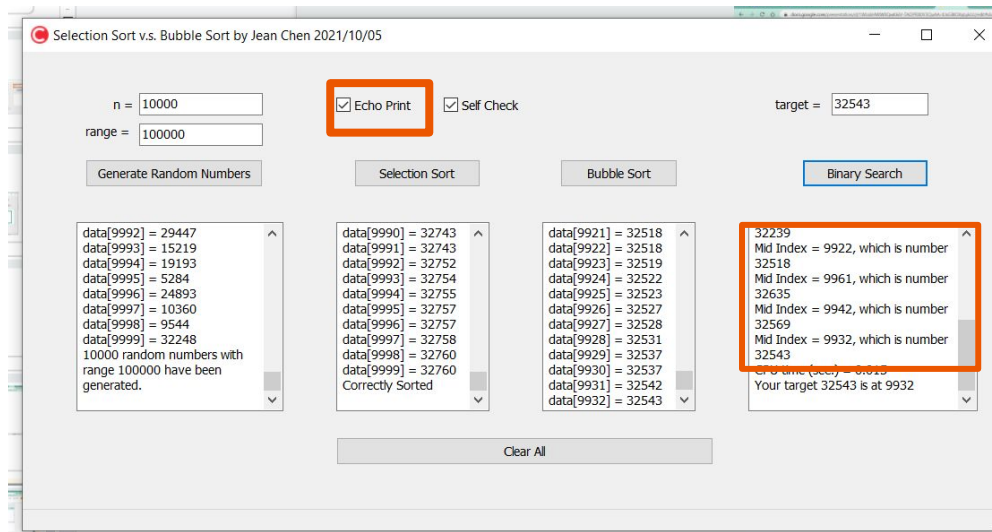


Binary Search



Using "Binary Search" to find the target.

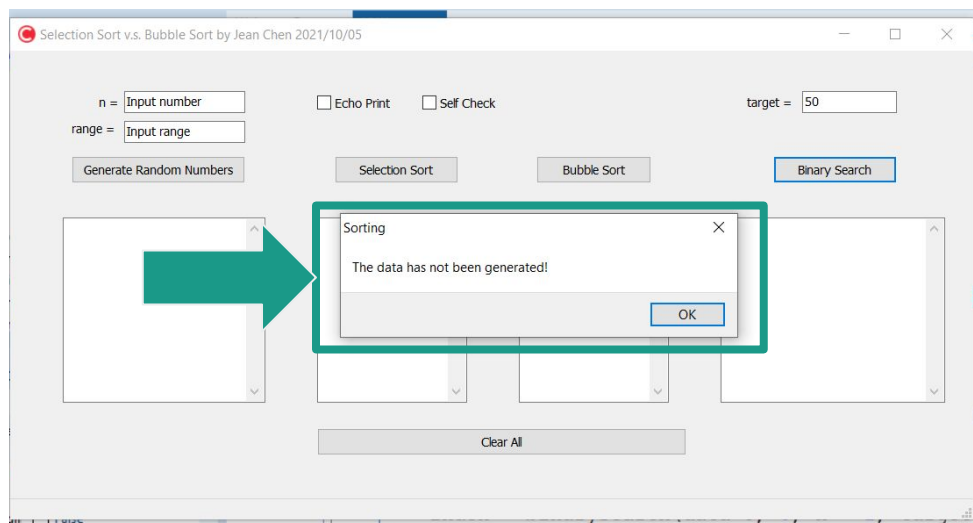
找到後會印出資料的Index



當Echo Print被勾選，會印出每一次Search所切的Mid Index

Binary Search Without Data

當還未Generate Random Numbers卻按下
Binary Search時，會跳出警告



當target不在data中

當欲尋找的數字不在被generated的data中
，Memo中會印出

"Your target is not in the data!"

The screenshot shows a program interface with a target input field set to 32520. Below the input field are two buttons: "Bubble Sort" and "Binary Search". A list of data points is displayed, with the value 32522 highlighted. The program output shows the CPU time (0.016 sec) and the message "Your target is not in the data!".

target = 32520

Bubble Sort Binary Search

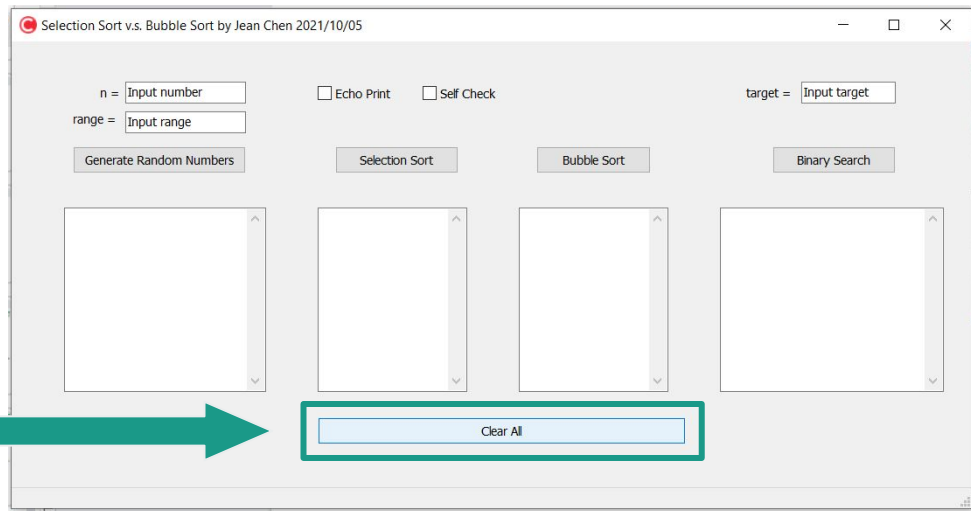
data[9921] = 32518
data[9922] = 32518
data[9923] = 32519
data[9924] = 32522
data[9925] = 32523
data[9926] = 32527
data[9927] = 32528
data[9928] = 32531
data[9929] = 32537
data[9930] = 32537
data[9931] = 32542
data[9932] = 32543

CPU time (sec.) = 0.016
Your target is not in the data!

“Clear All” Button

Click “Clear All” to clear texts on Memos

按下Clear All鍵，會回復到如同剛開啟 application 的介面



Comparison of CPU time of Selection Sort & Bubble Sort

