

Data Structure Assignment 5

Programming Homework1

Text P.260 NO.5

5. Write a C function that changes the priority of an arbitrary element in a max heap. The resulting heap must satisfy the max heap definition. What is the computing time of your function?

Program1

1. Read file(**in.txt**) as input to build Max Heap Tree.
2. Set input file : 7,16,49,82,5,31,6,2,44
There is a character ',' between elements(元素之間以逗號隔開)
3. Spend time : calculate the function that changes the priority of an arbitrary element execution time
4. Max Heap 請以每一層為一行，元素之間以空格隔開

Sample

Input: (in.txt)

7,16,49,82,5,31,6,2,44

Output:

Create Max Heap :

Max Heap :

82

49 31

44 5 16 6

2 7

Change priority ? (Y/N) : Y

Choice priority : 16

Change priority to : 38

Max Heap :

82

49 38

44 5 31 6

2 7

Spend time : 0.00123 sec

Change priority ? (Y/N) : N

Press any key to continue...

Data Structure Assignment 5

Programming Homework2

Text P.260 NO.6

6. Write a C function that deletes an arbitrary element from a max heap (the deleted element may be anywhere in the heap). The resulting heap must satisfy the max heap definition. What is the computing time of your function? (Hint: Change the priority of the element to one greater than that of the root, use the change priority function of Exercise 3, and then *pop*.)

Program2

1. Read file(**in.txt**) as input to build Max Heap Tree.
2. Set input file : 7,16,49,82,5,31,6,2,44
There is a character ‘,’ between elements(元素之間以逗號隔開)
3. Spend time : calculate the function that deletes an arbitrary element
execution time
4. Max Heap 請以每一層為一行，元素之間以空格隔開

Sample

Input: (in.txt)

7,16,49,82,5,31,6,2,44

Output:

Create Max Heap :

Max Heap :

82

49 31

44 5 16 6

2 7

Delete element ? (Y/N) : Y

Choice element : 31

Max Heap :

82

49 16

44 5 7 6

2

Spend time : 0.00123 sec

Delete element ? (Y/N) : N

Press any key to continue...

General Information:

- Deadline : 2016/12/14 23:55.
- Upload your assignment to Moodle system.
- Upload file format: Student-Id_Name.rar , Ex.P76991094_王小明.rar
- Your file should consist of the following items: **Source Code** & **Readme file** (Program description)
- Late homework will not be accepted.
- Any copies will be scored as zero. Do not plagiarize