Recursion-Heaps-Sorting

Due: 9/8/2024 11:59 PM • Algorithms Analysis and Design S

Attempt

Attempt 2

Attempt 2

Available on Sep 1, 2024 10:00 PM until Sep 15, 2024 11:59 PM
Written: Sep 15, 2024 8:15 PM - Sep 15, 2024 8:20 PM Quizzes
Event Log

Timing

Time Spent: 0:05:28

Time Limit: 1:10:00. Not exceeded

Submitted Late: 6 days past the due date

Evaluation Summary

Reset Evaluation

Attempt Grade

31   / 31

Student View Preview

31 / 31 - 100 %

Attempt Feedback

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Quiz Results

Question 1

Is the array with values [23 17 14 16 13 10 1 15 4 1 2] a max heap?

- ( ) Maybe (there's not enough information)
- ( ) No, it fails the heap property
- ( ) No, it fails the structure property
- ( ) No, it has a repeated value

| | Update | Retract |

Save Time

8:20 PM

Score

[5] / 5 (auto-graded)

▷ Expand question 1 feedback

Question 2

Is the array with values [23 17 14 16 13 10 15 4 1 2] a max heap?

- ( ) Maybe (there's not enough information)
- ✓ ( ) No, it fails the heap property
- ( ) No, it fails the structure property
- ( ) No, it has a repeated value
- ( ) No, it has an odd number of values

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Score

| 5 | / 5 (auto-graded)

▷ Expand question 2 feedback

Question 3

From the following choices, what is the most important aspect for Quicksort's partition method?

✓◯ Choosing a number (from the designated portion of the array) as the pivot that is not the minimum nor the maximum

◯ Choosing the number with the maximum value (from the designated portion of the array) as the pivot (otherwise the algorithm will fail)

◯ Choosing the number with the minimum value (from the designated portion of the array) as the pivot (otherwise the algorithm will fail)

◯ Fast execution (partition needs to return as quickly as possible as it called at each level of recursion)

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▷ Expand question 3 feedback

Question 4

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Match the intermediate result on the left with the correct sorting algorithm on the right.

Hint: You can either 1) apply each of the listed sorting algorithms on the right and then look through each of the intermediate results or 2) look at the intermediate results and think each algorithm could have produced it. You may apply the existing code to find these intermediate stages from different sorting algorithms.

✓ __3__   256, 348, 321, 543, 44, 909, 365, 47

✓ __7__   256, 348, 321, 44, 543, 365, 47, 909

✓ __6__   321, 543, 44, 365, 256, 47, 348, 909

✓ __1__   256, 321, 348, 543, 44, 909, 365, 47

✓ __2__   909, 321, 543, 256, 44, 348, 365, 47

✓ __4__   321, 256, 543, 348, 44, 909, 365, 47

1. Insertion sort

2. Heapsort

3. Mergesort

4. Quicksort (pivot chosen as in the video)

5. Bucket sort

6. Radix sort

7. None of the above

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▷ Expand question 4 feedback

○ If-else

○ Switch Case

✓○ Loop

○ Multiplication operation.

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Score

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▷ **Expand question 5 feedback**

Question 6

Which of the following data structure provides an efficient implementation of priority queues.

○ ArrayList

○ Linked List

○ Stack

✓○ Heap

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