QuizW6

2016年5月30日 23:08

by Chris





# Review Test Submission: Week 06 Quiz

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| User | Haoyu Lin |
| Subject | Algorithms and Complexity |
| Test | Week 06 Quiz |
| Started | 11/04/16 9:41 PM |
| Submitted | 17/04/16 11:47 PM |
| Due Date | 20/04/16 11:59 PM |
| Status | Completed |
| Attempt Score | 4 out of 4 points |
| Time Elapsed | 146 hours, 6 minutes |
| Instructions | You should attempt the quiz after the lecture and your tutorial.<br>• The quiz is available for a period of 10 days.<br>• You may attempt the quiz multiple times (if you happen to get a question wrong, you can do it again)<br>• Your score on the quiz will be recorded in the grade book. The score is not used when determining your final mark in this subject<br>• The quiz might not display equations correctly in some browsers. If you experience problems, we recommend that you use Firefox.<br><br>Note: you must complete at least eight of the weekly quizzes to meet one of the hurdle requirements in this subject |
| Results Displayed | All Answers, Submitted Answers, Feedback, Incorrectly Answered Questions |

## Question 1

1 out of 1 points



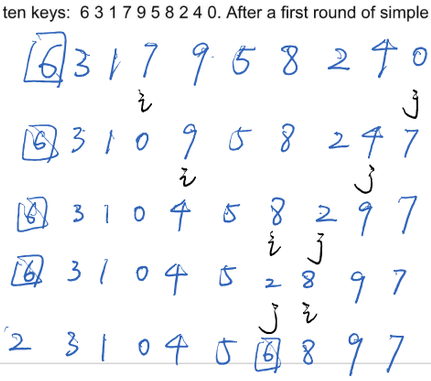


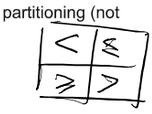
Quicksort uses Hoare partitioning. Assume an array contains ten keys: 6 3 1 7 9 5 8 2 4 0. After a first round of simple Hoare partitioning (not median-of-three), the array looks like so:

Selected Answer: b. 2 3 1 0 4 5 6 8 9 7

Answers:
a. 5 3 1 0 4 2 6 8 9 7
b. 2 3 1 0 4 5 6 8 9 7
c. 3 1 5 2 4 0 6 7 9 8
d. 2 3 0 1 5 4 6 7 8 9
e. 5 3 1 4 0 2 6 7 9 8

Response Feedback: Well done!





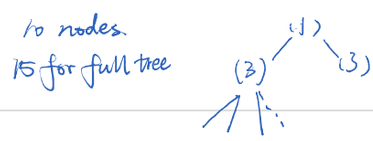
## Question 2

1 out of 1 points

A complete binary tree has this inorder traversal sequence: 7, 4, 1, 0, 8, 5, 6, 3, 9, 2. What is the key at its root?

Selected Answer: 6

Response Feedback: Yes, that's right.



## Question 3

1 out of 1 points

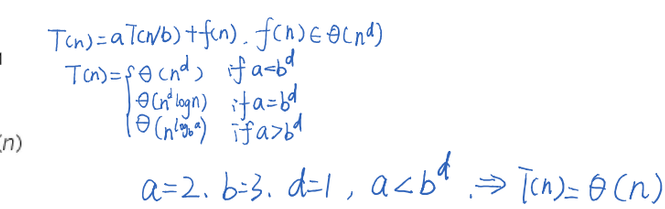
Consider this recurrence relation:

T(1) = 1
T(n) = 2 T(n/3) + 2n + 1 for n>1

The Master Theorem says that

Selected Answer: e. $T(n) \in \Theta(n)$

Answers:



a. $T(n) \in \Theta(n^3)$

b. $T(n) \in \Theta(n^2)$

c. $T(n) \in \Theta(n \log n)$

d. $T(n) \in \Theta(n \log \log n)$

e. $T(n) \in \Theta(n)$

Response Feedback: That's right. In this case we have a=2, b=3, and d=1. And indeed 2 < 3.

**Question 4** 1 out of 1 points

Consider this recurrence relation:

T(1) = 1
T(2) = 1
T(n) = 4 T(n-2) + $2n^2$ for n>2

The Master Theorem tells us

Selected Answer: e. nothing

Answers:

a. $T(n) \in \Theta(n^3)$

b. $T(n) \in \Theta(n^2 \log n)$

c. $T(n) \in \Theta(n^2)$

d. $T(n) \in \Theta(n \log n)$





e. nothing

Response Feedback: That's right, the Master Theorem does not help here, as the recurrence is not of the required form.

Friday, 3 June 2016 9:27:02 AM EST

← OK