Review Test Submission: Week 06 Quiz

User	Dong Gao
Subject	Algorithms and Complexity
Test	Week 06 Quiz
Started	15/04/16 4:31 PM
Submitted	15/04/16 4:48 PM
Due Date	20/04/16 11:59 PM
Status	Completed
Attempt Score	4 out of 4 points
Time Elapsed	17 minutes
Instructions	You should attempt the quiz after the lecture and your tutorial. • The quiz is available for a period of 10 days. • You may attempt the quiz multiple times (if you happen to get a question wrong, you can do it again) • 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 • The quiz might not display equations correctly in some browsers. If you experience problems, we recommend that you use Firefox. 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.

Saturday, 4 June 2016 11:15:40 PM EST

← OK