9/28/24, 3:32 PM

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Computational Complexity

Due: 8/25/2024 10:00 PM • Algorithms Analysis and Design



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Attempt

Attempt 1

Due on Aug 25, 2024 10:00 PM

Available on Aug 22, 2024 12:01 AM until Aug 29, 2024 10:00 PM

Written: Aug 25, 2024 4:35 AM - Aug 25, 2024 4:58 AM

Quizzes Event Log

Timing

Time Spent: 0:22:57

Time Limit: 0:25:00. Not exceeded

Evaluation Summary

Reset Evaluation

Attempt Grade

37 / 37

Student View Preview

37 / 37 - 100 %

Attempt Feedback

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Quiz Results

Question 1

Assume that your computer runs at 1 GHz (so each cycle takes 1/1E9 seconds) and your computer can complete an instruction every cycle. How large of n can an algorithm complete within 1 year, if it requires O(2^n) cycles?

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3E16	
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Save Time	
4:58 AM	
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Expand question 1 feedback

Question 2

Assume that your computer runs at 1 GHz (so each cycle takes 1/1E9 seconds) and your computer can complete an instruction every cycle. How large of n can

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	Due: 8/25/2024 10:00 PM • Algorithms Analysis and Design	OSEI 2 01 20
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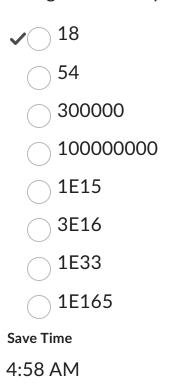
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Computational Complexity Due: 8/25/2024 10:00 PM • Algorithms Analysis and Design Save Time 4:58 AM Score / 5 (graded by Md Amjad Hossain)

Expand question 3 feedback

Question 4

Assume that your computer runs at 1 GHz (so each cycle takes 1/1E9 seconds) and your computer can complete an instruction every cycle. How large of n can an algorithm complete within 1 year, if it requires O(n!) cycles?



Score

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Expand question 4 feedback

Question 5

Assume that your computer runs at 1 GHz (so each cycle takes 1/1E9 seconds) and your computer can complete an instruction every cycle. How large of n can an algorithm complete within 1 year, if it requires O(n^2) cycles?

- 18 54 300000 100000000 1E15 3E16 1E33 1E165 Save Time 4:58 AM
 - Expand question 5 feedback

/ 5 (graded by Md Amjad Hossain)

Question 6

5

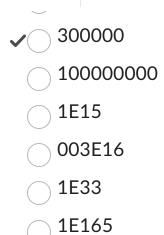
Assume that your computer runs at 1 GHz (so each cycle takes 1/1E9 seconds) and your computer can complete an instruction every cycle. How large of n can an algorithm complete within 1 year, if it requires O(n^3) cycles?

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> Expand question 6 feedback

Qquestion feedback has been set

Question 7

In about three sentence, explain the divide, conquer and combine steps for an algorithm apply to find the maximum subarray (given the array, a lower bound index and an upper bound index).

divide the array into 2 halves

conquer each ones to find the maximum sub-array in the left, the right and the sub-array which spans both of them

combine: compare the maximum sub-array from each of them and the span sub-array to know the maximum value.

Answer Key

1

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Update

Retract