Attempt

Attempt 1

Attempt 1

Due on Sep 1, 2024 11:59 PM

Available on Aug 29, 2024 12:01 AM until Sep 4, 2024 11:59 PM

Written: Sep 4, 2024 12:09 PM - Sep 4, 2024 12:26 PM

Quizzes Event Log

Timing

No Time Limit

Submitted Late: 2 days past the due date

Evaluation Summary

Reset Evaluation

Attempt Grade

25 / 25

Student View Preview

25 / 25 - 100 %

Attempt Feedback

Quiz Results

Question 1

Reorder the following efficiencies or complexity functions from smallest to largest(specify the required value of n to maintain the order):

a)$n \log n$

b) $n + n^2 + n^3 + n^4$

c)n^3

d)$n^5 \log n$

e) 7

f)n

Answer: e < f < a < c < b < d ✖ **(7, n nlogn ..... for n>7)**

Save Time

12:26 PM

Score

5 / 5 (graded by Md Amjad Hossain)

▷ Expand question 1 feedback

Question 2

What will be the efficiency/time complexity of the following nested for loop?

```
for (i =1; i<=n; i=i*2)
    for (j =1; j<=n; j=j*2)
            the loop body
```

- $O(\log n)$
- $O(n \log n)$
- ✓ $O(\log^2 n)$

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Score

4 / 4 (graded by Md Amjad Hossain)

Expand question 2 feedback

Question 3

Indicate constant time complexity in terms of Big-O notation.

Note: ^ represents the power.

- O(n)
- O(nlogn)
- O(n^2)
- ✓ O(1)

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Score

Expand question 3 feedback

Question 4

If $f(n) = 3n^3 + 2n^2 + n + 1$, what is the Big-O notation of $f(n)$?

- O(n)
- O(n^2)
- ✓ O(n^3)
- O(1)

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Score

3 / 3 (graded by Md Amjad Hossain)

Expand question 4 feedback

Question 5

Big-Omega notation provides which type of bound?

- Upper bound
- ✓ Lower bound
- Average bound
- one of the above

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Score

3 / 3 (graded by Md Amjad Hossain)

Expand question 5 feedback

Question 6

If $f(n)$ is $O(n^2)$, then $f(n)$ can also be $O(n^3)$.

- ✔ True
- False

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Score

3 / 3 (graded by Md Amjad Hossain)

Expand question 6 feedback

Question 7

What is the efficiency or time complexity of the following code in Big-oh notation?

```
int a = 0, b = 0;
for (i = 0; i < N; i++) {
    a = a + rand();
}
for (j = 0; j < M; j++) {
    b = b + rand();
}
```

- O(N * M)

O(M)

Update Retract

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Score

3 / 3 (graded by Md Amjad Hossain)

Expand question 7 feedback

Question 8

Algorithm A and B have a worst-case running time of O(n) and O(logn), respectively. Therefore, algorithm B always(for any value of n) runs faster than algorithm A.

- True
- ✓ False

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Score

2 / 2 (graded by Md Amjad Hossain)

Expand question 8 feedback