

Assignment 3

csci2200, Algorithms

Instructions:

- HONOR CODE: WORK ON THIS ASSIGNMENT ALONE, OR WITH ONE PARTNER. BETWEEN DIFFERENT TEAMS, COLLABORATION IS AT LEVEL 1 [VERBAL COLLABORATION ONLY]
 - Check out the Homework guidelines on class website.
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For each algorithm below, give their runtime recurrence, and solve it.

We expect: (1) the recurrence (2) two steps of iteration (3) the pattern after i steps of iteration; (4) derivation of the recursion depth; (5) the final $\Theta()$ bound

AlgorithmA(n):
<ul style="list-style-type: none">• Do something that takes $O(1)$• AlgorithmA($n/4$)
1. <ul style="list-style-type: none">• Do something that takes $O(1)$• AlgorithmA($n/4$)• Do something that takes $O(1)$• AlgorithmA($n/4$)

AlgorithmB(n):
<ul style="list-style-type: none">• Do something that takes $O(1)$• AlgorithmB($n/2$)
2. <ul style="list-style-type: none">• Do something that takes $O(n)$• AlgorithmB($n/2$)• Do something that takes $O(n^2)$• AlgorithmB($n/2$)

3.	AlgorithmC(n):	
	<ul style="list-style-type: none">• Do something that takes $O(1)$• AlgorithmC($n/3$)• Do something that takes $O(n)$• AlgorithmC($n/3$)	

Evaluation

This assignment will be evaluated along several criteria:

1. **Correctness:** Is your answer correct?
2. **Justification:** Is your answer justified?
3. **Style:** Does it look professional and neat? Is the explanation written carefully in complete sentences, and well-organized logic? Is it easily human-readable? Is it complete yet concise? Is it easy to understand?