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Com S 311

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Homework 1

f(n) ≤ cg(n)

1. Algo(a)
   1. a = Array.length c = 1
   2. for(i=1 to N) c = n
      1. constant op c = 1
   3. for (j=n to 1) c = n
      1. for(k=j to 1) c = n
      2. constant op c= 1

=> O

Algo(b)

* 1. input an array of integers with length n c = 1
  2. for(i=n to 1) c = n
     1. constant op c = 1
     2. i = i/2 c = logn

1. I do not know how to solve this problem.
2. T(n) = 3T(n/2) + T(1) = O(1) use the Master THM case 3 to solve problem: if af(n/b) <= cf(n), f(n) = Ω( for ℰ > 0 then T(n) = Ɵ(f(n))

3 this holds since c must be less than 1

T(n) = Ɵ

1. ith level =

Cost =

Depth = log(n) +1

(log(n) +1) \* (nlogn)

n(log(log(n))) + nlogn

O(nlogn)

Text, letter

Description automatically generated

1. Ran out of time and couldn’t get work in but you would use Master Theorem Case 1 which states that if f(n) = O(

What you would do is keep plugging in As until get a value that isn’t running less than from the problem.