HackerRank For Work

Info6205_Summer18_Quiz4 30 minutes

Question - 1
Blackboard

SCORE: **10 points**

Copy the text from the blackboard

Question - 2
Stirling's approximation

SCORE: **15 points**

What is Stirling's approximation for lg(n!) in tilde notation?

- ~ ln(n)
- ~ lg(n)
- ~ n ln(n)
- (•) ~ n lg(n)

Question - 3
BigO

SCORE: **15 points**

The Big O notation is mostly concerned with:

- describing the complexity of for the average case?
- describing the lower bound on complexity?
- (•) describing the upper bound on complexity?

Question - 4
Data Structure

SCORE: **15 points**

You've been asked to program a bag in the knowledge that the number of elements in the bag will always be less than 10,000 and you have whatever memory you need. But the time to add an element must be constant. Also, the total time to iterate forwards or backward must be no worse than O(n). With which data structure would you choose to implement the bag?

- Hash table
- (•) Array
- Doubly-linked list
- Linked list

Question - 5

SCORE: **15 points**

Match the following

Match up the order of growth in terms of n, the size of the problem, with the name used to describe that order of growth.
Match
n^2,
n,
n log n,
log n,
n^0
with following options
A. quadractic
B. linear
C. linearithmic
D. logarithmic
E. constant

- (●) A,B,C,D,E respectively
- ( ) A,D,C,B,E respectively
- ( ) A,B,D,C,E respectively
- ( ) A,C,B,D,E respectively

Question - 6

SCORE: **20 points**

Binary Search

Implement Binary Search, given an array of ints in numerical order.