

Interview Questions: Quicksort

[Help Center](#)

The **hard deadline** for this homework is **Mon 2 Nov 2015 10:29 AM IST**.

These interview questions are for your own enrichment and are not assessed. If you click the *Submit Answers* button, you will get a hint.

☐ In accordance with the Coursera Honor Code, I (abhijit taware) certify that the answers here are my own work.

Question 1

Nuts and bolts. A disorganized carpenter has a mixed pile of N nuts and N bolts. The goal is to find the corresponding pairs of nuts and bolts. Each nut fits exactly one bolt and each bolt fits exactly one nut. By fitting a nut and a bolt together, the carpenter can see which one is bigger (but the carpenter cannot compare two nuts or two bolts directly). Design an algorithm for the problem that uses $N \log N$ compares (probabilistically).

Question 2

Selection in two sorted arrays. Given two sorted arrays $a[]$ and $b[]$, of sizes N_1 and N_2 , respectively, design an algorithm to find the k^{th} largest key. The order of growth of the worst case running time of your algorithm should be $\log N$, where $N = N_1 + N_2$.

- Version 1: $N_1 = N_2$ and $k = N/2$
- Version 2: $k = N/2$
- Version 3: no restrictions

Question 3

Decimal dominants. Given an array with N keys, design an algorithm to find all values that occur more than $N/10$ times. The expected running time of your algorithm should be linear.

- ☐ In accordance with the Coursera Honor Code, I (abhijit taware) certify that the answers here are my own work.

Submit Answers

Save Answers

You cannot submit your work until you agree to the Honor Code. Thanks!