

Quiz 1

This is the first of several Google Quiz to replace Midterm Exam by google multiple choice quizzes in combination with a take home exercise on November 5-6.

True and False questions: Answer True or False to each question below. Answer true only if it is true as stated with no additional assumptions. Adding a short explanation will give you partial credit even if your answer is wrong. All questions have equal points.

* Required

1. First provide your Name and ID *

2. The sum total height $TH(N)$ and total depth $TD(N)$ of N nodes in a binary tree is HN only if the tree is perfect.

3. Given an array of N integers, the best algorithm has a worst case time to build the heap $\Theta(N\log(N))$.

4. It is possible to formulate Quick Sort to be worst case $O(N \log N)$ including the cost of picking suitable pivot.

5. For the master equation $T(n) = aT(n/b) + n^k$ with $\gamma = \log(a)/\log(b)$ the solution is always a sum of terms powers n^γ and n^k .
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6. Consider a binary search tree with n keys. Finding whether a key value is already in the tree can be done in $O(\log(n))$.
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