Course outline

Week 0:Prerequisite

Week 1: Introduction to Randomized Algorithms

Week3: Moments and

Week 5: Markov Chains

Week 6: Markov Chains-II

Week 7: Number Theoretic

Week 8: Graph Theoretic

Week 9 : Approximate

Data Structures

Structures

Structures

week 10

Complexity

Week 10: Randomization and

Treaps, Randomization, Data

O Hashing, Randomization, Data

Ouiz: Assignment 10

Weekly feedback form for

Week 11 : Computational

Week 12 : Summary

Download Videos

Deviations

Algorithms

Algorithms

Counting

Week 2: Probability Review

Week4: Probabilistic Method

course work?

How does an NPTEL online

NPTEL » Randomized Algorithms



Announcements

About the Course

Ask a Question

Progress

Mentor

Unit 12 - Week 10: Randomization and Data Structures

| As per our records you have not submitted this assignment. | Due on 2020-04-08, 23:59 | IST. |
|---|--------------------------------------|--------|
| 1) Consider a treap T with 100 elements. Assume that the keys are numbers from 1 to 100. Assume that the priori ne maximum possible height of T is | ties are also numbers from 1 to 100. | 1 poin |
| O 99 | | |
| O 50 | | |
| 07 | | |
| O 100 | | |
| No, the answer is incorrect. | | |
| Score: 0 | | |
| Accepted Answers: 100 | | |
| 2) Consider a treap T with n elements. Assume that the keys are numbers from 1 to n . Assume that the priorities radependently for each key from $[0,1]$. The expected height of T is | andomly chosen, uniformly and | 1 poin |
| O(n) | | |
| \bigcirc | | |
| $O(n^2)$ | | |
| O(1) | | |
| $O(\log n)$ | | |
| No, the answer is incorrect. | | |
| Score: 0 | | |
| Accepted Answers: $O(\log n)$ | | |
| 3) Consider a treap T where the keys are numbers 1 to 15. Assume that the height of T is 4. The key value of the | root node is | 1 poin |
| | | , |
| O1 | | |
| ○ 8 ○ 15 | | |
| ○ 15 ○ 7 | | |
| | | |
| No, the answer is incorrect. Score: 0 | | |
| Accepted Answers: | | |
| 8 | | |
| 4) Let H be a 2-universal family of book functions from set M = (0.1) to M = (0.1) | | |
| 4) Let H be a 2 -universal family of hash functions from set $M=\{0,1,\ldots,m\}$ to $N=\{0,1,\ldots,n\}$, with m | $\geq n$. | 1 poin |
| Let x be any element of M . Let X denote the number of elements y in M such that $h(x) = h(y)$ where h is chosen | | • |
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| at x be any element of M . Let X denote the number of elements y in M such that $h(x) = h(y)$ where h is chosen elements are true? $\mathbb{E}[X] = m \text{ for some } x$ | | • |
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