Progress

Due on 2020-03-04, 23:59 IST.

Mentor

1 point

NPTEL » Introduction to algorithms and analysis

Unit 7 - Week 5 Course outline How does an NPTEL online course work? Week 0 Week 1 Week 2 Week 3 Week 4 Week 5 Lecture 21 : Hash Function Lecture 22 : Open Addressing Lecture 23 : Universal Hashing Lecture 24 : Perfect Hashing Lecture 25 : Binary Search Tree (BST) Sort Week 5: Lecture notes Quiz : Assignment 5 Week 5 Feedback Form Week 6 Week 7 Week 8 Week 9 Week 10 Week 11 Week 12

Details Solution

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Assignment 5

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Which of the following is NOT a dictionary operation (a) Insert (b) Sort

(c) Search (d) Delete

○ a. ○ b. O c. \bigcirc d. No, the answer is incorrect. Score: 0 Accepted Answers:

Given a hash table T with n slots that stores m elements, we define the load factor a for T(a) n/m(b) m/n(c) nm (d) nm

○ a. \bigcirc d. No, the answer is incorrect.

Accepted Answers: Consider we insert the keys 5, 28, 19, 15, 20, 33, 12, 17, 10 into a hash table with collisions resolved by chaining. Let the table have $9(0, 1, \dots, 8)$ slots, and let the hash function be $h(k) = k \mod 9$. Then the 5th slot will contain (a) 3 elements

(b) 2 elements

(c) 1 elements

(d) 0 elements ○ a. ○ b. Ос. ○ d. No, the answer is incorrect. Score: 0

Accepted Answers:

(c) h(k) = m/k(d) $h(k) = m \mod k$ ○ a. ○ b. O c. ○ **d**.

Accepted Answers: auxiliary hash functions., (a) $h(k,i) = (h_1(k) \times ih_2(k)) mod m$ (b) $h(k,i) = (h_1(k) + ih_2(k)) mod m$ (c) $h(k,i) = (h_1(k)/ih_2(k)) mod m$

Score: 0

○ b.

○ c.

○ a.

○ **d**.

○ **d**. Score: 0 (a) $\frac{1}{\alpha} \ln \frac{1}{1+\alpha}$ (b) $\frac{1}{\alpha} \ln \frac{1}{\alpha}$

(c) $\frac{1}{\alpha} \ln \frac{1}{1-\alpha}$

(d) $\frac{1}{1+\alpha} \ln \frac{1}{1+\alpha}$

О c. \bigcirc d. No, the answer is incorrect. Score: 0

○ a.

○ b.

(d) 4 ○ a. ○ b. ○ c. ○ d. Score: 0 Accepted Answers:

(b) 1.998 (c) 1.567 (d) 1.4 ○ b. ○ **d**. No, the answer is incorrect. Score: 0 Accepted Answers:

○ с.

○ a.

(a) 2.377

the load factor is 7/8 is:

(a) 1/2 (b) -0.5(c) 1/4 (d) 0

○ b. Ос. ○ **d**. No, the answer is incorrect. Score: 0 Accepted Answers:

In the division method for creating hash functions, the hash function is (k is the key to be hashed and m is the available slots)(a) $h(k) = k \mod m$ (b) h(k) = k/m

No, the answer is incorrect. Double hashing uses a hash function of the form, where h_1 and h_2 are

(d) None of the above No, the answer is incorrect. Accepted Answers:

Inserting an element into an open-address hash table with load factor α requires at most probes on average, assuming uniform hashing. (a) $\frac{1}{1+\alpha}$ (b) $\frac{1}{1-\alpha}$ (c) $\frac{1}{\alpha}$ (d) α ○ a.

No, the answer is incorrect. Accepted Answers: 7) Given an open-address hash table with load factor $\alpha < 1$, the expected number of probes in a successful search is at most

Accepted Answers: Consider an open-address hash table with uniform hashing. The upper bound on the expected number of probes in an unsuccessful search when the load factor is 3/4 is (a) 1 (b) 2 (c) 3

No, the answer is incorrect.

h randomly chosen from a universal class of hash functions, then the probability of there being any collisions is less than

1 point

1 point

1 point 1 point 1 point

1 point

1 point 1 point 1 point

Consider an open-address hash table with uniform hashing. The upper bound on the expected number of probes in a successful search when 10) If we store n keys in a hash table of size $m = n^2$ using a hash function