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NeoColab_REC_CS23231_DATA STRUCTURES

REC_DS using C_Week 7_MCQ_Updated

Attempt : 1
Total Mark : 20
Marks Obtained : 18

Section 1 : MCQ

1.   Which of the following values of 'm' is recommended for the division method in hashing?

Answer

A prime number

Status : Correct   *Marks : 1/1*

2.   What is the initial position for a key k in a linear probing hash table?

Answer

k % table_size

Status : Correct   *Marks : 1/1*

3. In the division method of hashing, the hash function is typically written as:

Answer

h(k) = k % m

Status : Correct   *Marks : 1/1*

4. What does a deleted slot in linear probing typically contain?

Answer

A special "deleted" marker

Status : Correct   *Marks : 1/1*

5. Which of the following statements is TRUE regarding the folding method?

Answer

It divides the key into parts and adds them.

Status : Correct   *Marks : 1/1*

6. Which folding method divides the key into equal parts, reverses some of them, and then adds all parts?

Answer

Folding reversal method

Status : Correct   *Marks : 1/1*

7. In linear probing, if a collision occurs at index i, what is the next index checked?

Answer

(i + 1) % table_size

8.   In division method, if key = 125 and m = 13, what is the hash index?

Answer

8

9.   Which of these hashing methods may result in more uniform distribution with small keys?

Answer

Mid-Square

10.   What is the output of the mid-square method for a key k = 123 if the hash table size is 10 and you extract the middle two digits of k * k?

Answer

1

11.   In the folding method, what is the primary reason for reversing alternate parts before addition?

Answer

To reduce the chance of collisions caused by similar digit patterns

12.   What happens if we do not use modular arithmetic in linear probing?

Answer

Index goes out of bounds

Status : Correct   *Marks : 1/1*

13.   What is the primary disadvantage of linear probing?

Answer

Clustering

Status : Correct   *Marks : 1/1*

14.   Which data structure is primarily used in linear probing?

Answer

Array

Status : Correct   *Marks : 1/1*

15.   Which of the following best describes linear probing in hashing?

Answer

Resolving collisions by linearly searching for the next free slot

Status : Correct   *Marks : 1/1*

16.   What is the worst-case time complexity for inserting an element in a hash table with linear probing?

Answer

O(n)

Status : Correct   *Marks : 1/1*

17.   Which C statement is correct for finding the next index in linear probing?

Answer

index = (index + 1) % size;

Status : Correct   *Marks : 1/1*

18. What would be the result of folding 123456 into three parts and summing: (12 + 34 + 56)?

Answer

102

Status : Correct   *Marks : 1/1*

19. In C, how do you calculate the mid-square hash index for a key k, assuming we extract two middle digits and the table size is 100?

Answer

((k * k) / 10) % 100

Status : Wrong   *Marks : 0/1*

20. Which situation causes clustering in linear probing?

Answer

Sequential key insertion

Status : Wrong   *Marks : 0/1*