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SDS Page No. D7A-55 Date

Hashing & Collision resolution Techniques

1. The keys 121, 183, 133, 24, 35, 236, 58 & 157 are inserted into an initially empty hash table of length 100.

a. Show the Hash Table after insertion using mid-square method and wherver collision occurs use Double Hashing (given $h1(k) = k \bmod 100$ and $h2(k) = k \bmod 98$

Ans

$121 \times 121 = 14641$		index - 46
$183 \times 183 = 33489$		index - 34
$133 \times 133 = 17689$		index - 76
$24 \times 24 = 576$		index - 7
$35 \times 35 = 1225$		index - 22
$236 \times 236 = 55696$		index - 56
$58 \times 58 = 3364$		index - 36
$157 \times 157 = 24649$		index - 64

Hash Table

0	
7	24
22	35
34	183
36	58
46	121
56	236
64	157
76	183

b Show the hash table after insertion using Folding method and wherever collision occurs use Quadratic Probing ($c_1 = 1$, $c_2 = 3$)

Ans

Key	121	183	133	24	35	236	58	157
Parts	12 1	18 3	13 3	24	35 5	23 6	5 8	15 7
$h(x)$	13	21	16	6	8	29	13	22

Collision at index 13. $\therefore f(58, 0) = 13 + 1.0 = 14$

Hash table :

0	
6	24
8	35
13	121
14	58
16	133
21	183
22	157
29	256
100	

2. Consider simple hash function "key mod 7" and keys as 50, 700, 76, 85, 92, 73, 101 into Hash table of size 7 using collision resolution techq as seperate chaining. Show final hash table after inserting

Ans

Keys = 50

$h(k) = k \% 7 = 50 \% 7 = 1$

Key = 700
h(k) = 700 % 7 = 0

Key = 76
h(k) = 76 % 7 = 6

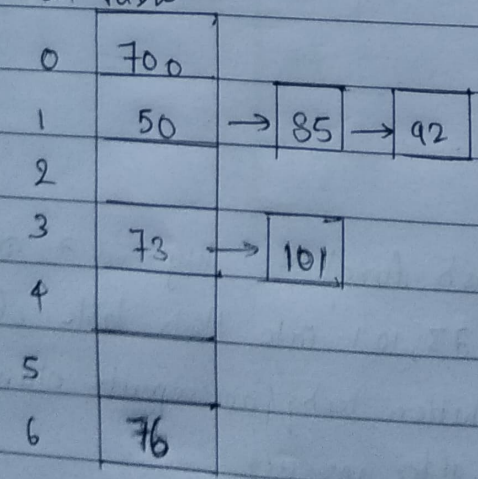
Key = 85
h(k) = 85 % 7 = 1

Key = 92
h(k) = 92 % 7 = 1

Key = 73
h(k) = 73 % 7 = 3

Key = 101
h(k) = 101 % 7 = 3

Hash table



✓ h(k) = k mod m

C h(k) = m/k

D h(k) = m mod k

Biology Questions answers

Question 5 Explanation:
In division method for creating hash functions, k keys are mapped into one of m slots by taking the reminder of k divided by m.

You have completed 5/5 questions.
Your score is 100%.

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Question 10 Explanation:

The hash function can be computed by multiplying m with the fractional part of kA (kA mod 1) and then computing the floor value of the result.

You have completed 5/10 questions.
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Hashing Functions Multiple choi

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Question 15 [CLICK ON ANY CHOICE TO KNOW THE RIGHT ANSWER] CORRECT

Collisions can be reduced by choosing a hash function randomly in a way that is independent of the keys that are actually to be stored.

✓ True

B False

Computer science (GATE/NET) Questions answers

Question 15 Explanation:
Because of randomization, the algorithm can behave differently on each execution, providing good average case performance for any input.

You have completed 5/15 questions.
Your score is 80%.

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