ICA3

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0.1 ICA - Module 3

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September 18th, 2024 Assume the folling hash function: **h(K)= K mod 13**

Insert the following keys into the hash tables below, using each conflict resolution method:

18 | 41 | 22 | 44 | 59 | 32 | 31 | 73

0.1.1 Linear Probing

E	E	41	E	E	18	44	59	32	22	31	73	E
0	1	2	3	4	5	6	7	8	9	10	11	12

h_0(18) = 18 mod 13 = 5

h_0(41) = 41 mod 13 = 2

h_0(22) = 22 mod 13 = 9

h_0(44) = 44 mod 13 = 5 **Collision at bucket 5**

h_1(44) = (44 + 1) mod 13 = 6

h_0(59) = 59 mod 13 = 7

h_0(32) = 32 mod 13 = 6 **Collision at bucket 6**

h_1(32) = (32 + 1) mod 13 = 7 **Collision at bucket 7**

h_2(32) = (32 + 2) mod 13 = 8

h_0(31) = 31 mod 13 = 5 **Collision at bucket 5**

h_1(31) = (31 + 1) mod 13 = 6 **Collision at bucket 6**

h_2(31) = (31 + 2) mod 13 = 7 **Collision at bucket 7**

h_3(31) = (31 + 3) mod 13 = 8 **Collision at bucket 8**

h_4(31) = (31 + 4) mod 13 = 9 **Collision at bucket 9**

h_5(31) = (31 + 5) mod 13 = 10

h_0(73) = 73 mod 13 = 8 **Collision at bucket 8**

h_1(73) = (73 + 1) mod 13 = 9 **Collision at bucket 9**

h_2(73) = (73 + 2) mod 13 = 10 **Collision at bucket 10**

h_3(73) = (73 + 3) mod 13 = 11

0.1.2 Chaining

0	1	2	3	4	5	6	7	8	9	10	11	12
		41			18 44 31	32	59	73	22			

h_0(18) = 18 mod 13 = 5

h_0(41) = 41 mod 13 = 2

h_0(22) = 22 mod 13 = 9

h_0(44) = 44 mod 13 = 5 **Collision add to list outside array**

h_0(59) = 59 mod 13 = 7

h_0(32) = 32 mod 13 = 6

h_0(31) = 31 mod 13 = 5 **Collision add to list outside array**

h_0(73) = 73 mod 13 = 8

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