 Collision Resolution – Linear Probing

Exercise: $\text{hash}(\text{key}) = \text{key} \% 13$


0	1	2	3	4	5	6	7	8	9	10	11	12
26	None	54	94	17	31	None	None	None	None	None	None	77

Insert keys 44, 51 into the above hash table using the “plus 3 probe”:

	$44 \bmod 13 = 5$	Collision!	
	$\rightarrow (5+3) \bmod 13 = 8$		
	$51 \bmod 13 = 12$	Collision!	
	$\rightarrow (12+3) \bmod 13 = 2$	Collision!	
	$\rightarrow (12+6) \bmod 13 = 5$	Collision!	
	$\rightarrow (12+9) \bmod 13 = 8$	Collision!	
	$\rightarrow (12+12) \bmod 13 = 11$		

0	1	2	3	4	5	6	7	8	9	10	11	12
26	None	54	94	17	31	None	None	44	None	None	51	77

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 Collision Resolution – Quadratic Probing

Exercise: $\text{hash}(\text{key}) = \text{key} \% 13$

0	1	2	3	4	5	6	7	8	9	10	11	12
26	None	54	94	17	31	None	None	None	None	None	None	77

Insert keys 44, 51 into the above hash table using quadratic probing:

	$44 \bmod 13 = 5$	Collision!	
	$\rightarrow (5+1^2) \bmod 13 = 6$		
	$51 \bmod 13 = 12$	Collision!	
	$\rightarrow (12+1^2) \bmod 13 = 0$	Collision!	
	$\rightarrow (12+2^2) \bmod 13 = 3$	Collision!	
	$\rightarrow (12+3^2) \bmod 13 = 8$		

0	1	2	3	4	5	6	7	8	9	10	11	12
26	None	54	94	17	31	44	None	51	None	None	None	77

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