

Please use Linear Probing to insert the following numbers to hash table (Initial table size is 10).

67 39 40 74 10 54 20 7 87 52 44 23 11 78 98

0	1	2	3	4	5	6	7	8	9	Hash Index	Load Factor
							67			$67 \% 10 = 7$	$1/10 = 10\%$
							67		39	$39 \% 10 = 9$	$2/10 = 20\%$
40										$40 \% 10 = 0$	$3/10 = 30\%$
40				74			67		39	$74 \% 10 = 4$	$4/10 = 40\%$
40				74			67		39	$10 \% 10 = 0$	$5/10 = 50\%$

Hash index for 10 is 0 and 40 is already at index 0, need to double the table size from 10 to 20 because adding 54 would make the loading factor to 60% which is greater than 50%.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Hash Index	Load Factor
							67													$67 \% 20 = 7$	$1/20 = 5\%$
							67												39	$39 \% 20 = 19$	$2/20 = 10\%$
40														74					39	$40 \% 20 = 0$	$3/20 = 15\%$
40							67							74					39	$74 \% 20 = 14$	$4/20 = 20\%$
40							67			10				74					39	$10 \% 20 = 10$	$5/20 = 25\%$
40							67			10				74	54				39	$54 \% 20 = 14$	$6/20 = 30\%$
40	20						67			10				74	54				39	$20 \% 20 = 0$	$7/20 = 35\%$
40	20						67	7		10				74	54				39	$7 \% 20 = 7$	$8/20 = 40\%$
40	20						67	7	87	10				74	54				39	$87 \% 20 = 7$	$9/20 = 45\%$

Need to double table size From 20 to 40

[illegible]

Steps required to find 23: $23 \div 40 = 23$

bucket 23: 23 = 23 found