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Lab Section: U-2L

CMSC 123 Data Structures Pen-and-Paper Exercise on Hashing

Given the following input: hash table size m = 23 and keys = $\{34, 56, 2, 86, 59, 11, 20, 17, 39, 1, 15\}$, insert them into the hash table using:

Linear Probing: h(k) = (k % m + i) % mQuadratic Probing: $h(k) = (k \% m + i^2) \% m$

Double Hashing: $h(k) = (k \% m + i*h_2(k)) \% m$

 $h_2(k) = 5 - (k \% 5)$

Linear Probing			Quadratic Probing			Double Hashing			
0			0			0	17	17 + 2*3	
1	1		1	1		1	1		
2	2		2	2		2	2		15 + 2*5
3			3			3			
4			4			4			
5			5			5			
6			6			6			
7			7			7	15		15 + 3*5
8			8			8			
9			9			9			
10	56		10	56		10	56		
11	34	11	11	34	11	11	34	11	
12	11	11 + 1	12	11	11 + 1	12			
13	59		13	59		13	59		
14			14			14			
15	15		15	15		15	11	11 + 1*4	15
16	39		16	39		16	39		
17	86	17	17	86	17	17	86	17	
18	17	17 + 1	18	17	17 + 1	18			
19			19			19			
20	20		20	20		20	20	17 + 1*3	15 + 1*5
21			21			21			
22			22			22			