Problem Set V

Huy Quang Lai
132000359

Texas A&M University

17 October 2022

Problem 1

#	Seperate Chaining	Linear Probing	Quadratic Probing	Double Hashing
0	[]	[9679]	[9679]	[]
1	[4371]	[1989]	[4371]	[4371]
2	[]	[]	[]	[]
3	[1323, 6173]	[4173]	[1323]	[1323]
4	[4344]	[1323]	[6173]	[4344]
5	[]	[6173]	[4344]	[1989]
6	[]	[4344]	[]	[6173]
7	[]	[]	[]	[9679]
8	[]	[]	[1989]	[]
9	[4199, 9679, 1989]	[4199]	[4199]	[4199]

Problem 2

#	Seperate Chaining	Linear Probing	Quadratic Probing	Double Hashing
0	[]	[9679]	[9679]	[]
1	[]	[]	[]	[]
2	[]	[]	[]	[]
3	[1323]	[1323]	[1323]	[1323]
4	[4344]	[4344]	[4344]	[4344]
5	[]	[]	[]	[]
6	[]	[]	[]	[]
7	[]	[]	[]	[]
8	[]	[]	[]	[]
9	[1989]	[1989]	[1989]	[1989]
10	[]	[]	[]	[]
11	[4371]	[4371]	[4371]	[4371]
12	[]	[]	[]	[]
13	[6173]	[6173]	[6173]	[6173]
14	[]	[]	[]	[]
15	[]	[]	[]	[]
16	[]	[]	[]	[9679]
17	[]	[]	[]	[]
18	[]	[]	[]	[]
19	[4199, 9679]	[4199]	[4199]	[4199]

Problem 3

When rehasing to a smaller table, the table should be at least half empty before rehashing. Since when rehasing to a larger table will double the table's capacity, a similar logic should apply to reducing the table's capacity.