CSE 222 Midterm Examination

Muhammed Bedir
ULUCAY
130104269

I hereby pledge on my honor that I will strictly adhere to academic integrity codes and the work done on this examination is solely my own and I will not receive/give any help from to anybody or source during this examination.

1-a) for open adressing Load factor must be 0.75

$$L_o = \frac{n}{s} \Rightarrow 0,75 = \frac{400}{size} \qquad \frac{3}{4} = \frac{400}{size} \qquad size = \frac{1600}{3}$$

$$\boxed{size = 533}$$

1-b) for chaning Load factor^{max} must be 3.0

$$L_c = \frac{400}{s} = 3 \qquad s = \frac{400}{3} \qquad \boxed{s = 134}$$

2) 4, 14, 24, 6

hash = %10

Linear probing

4	4
5	14
6	24
7	6

quadratic probing

4	4
5	14
6	6
7	
8	
9	24

- quaratic probing is increasing the randomize inserting if we want to insert a coupe of similar numbers in linear probing this couse alot of collision because of their hash code. But when we turn it to quadratic probing we are distribute the numbers in table much more easily

3-) [3, 4, 7, 6, 9]

a) 3 | 4 7 6 9

3 4 | 7 6 9

3 4 7 | 6 9

3 4 6 7 | 9

3 4 6 7 9

b) 3 4 7 6 9 — out of size

gap = 7/2.2

gap = 3

3 4 7 6 9

3 4 7 6 9

gap = 3/2.2

gap = 1

3 4 7 6 9

3 4 6 7 9

c) ③ 4 7 6 9

3 ④ 6 7 9

4 6 7 9

6 7 9

7 9

9

3 4 6 7 9

according to the implementation swap could be in 4th step

d) 3 4 7 6 9

divide

3 4 7 | 6 9

3 4 | 7 | 6 | 9

3 | 4 | 6 | 9

3 | 4 | 6 | 9

3 4 | 7 | 6 | 9

3 4 6 7 9

conquer