

Homework : Hashing

Insert 2341, 4234, 2839, 430, 22, 397, 3920 into a hash table of size 7 in the given order.

Hash function $h(x) = x \bmod 7$.

Show the resulting tables after all data have been inserted into the table with each of these collision strategies :

- separate chaining
- linear probing
- quadratic probing and
- double hashing with second hash function
 $h'(x) = (2x - 1) \bmod 7$.

$$h(x) = x \bmod 7$$

separate chaining

0	3920	
1	22	
2		
3	2341	430
4	2839	
5	397	
6	4234	

linear probing

2341	4234	2839	430
0			430
1			
2			
3	2341	2341	2341
4		2839	2839
5			
6	4234	4234	4234

22	397	3920
0	430	430
1	22	22
2		3920
3	2341	2341
4	2839	2839
5	397	397
6	4234	4234

double hashing $h'(x) = (2x - 1) \bmod 7$

$h' = [5, 4, 0, 5, 1, 2, 6]$

2341

0

1

2

3

4

5

6

2341

4234

0

1

2

3

4

5

6

2341

4234

2839

0

1

2

3

4

5

6

2341

2839

4234

430

0

1

2

3

4

5

6

430

2341

2839

4234

22

0

1

2

3

4

5

6

430

22

2341

2839

4234

397

0

1

2

3

4

5

6

430

22

2341

2839

397

4234

3920

0

1

2

3

4

5

6

3920

430

22

2341

2839

397

4234