

Yiyun Zhang
7/27/2016

4.1

- a. Union: {1,2,3,4,5}
- b. Intersection: {3}
- c. Difference: {1,2}
- d. Member: 1
- e. Insert: $A = \{1,2,3\}$
- f. Delete: $A = \{2,3\}$
- g. Min: 1

4.7

Open hash table

0	343(342 mod 7=0)					
1	1(1 mod 7=1)	-->	8(8 mod 7=1)	-->	64(64 mod 7=1)	
2						
3						
4						
5						
6	27(27 mod 7=6)	-->	125(125 mod 7=6)	-->	216(216 mod 7=6)	

Closing hash table

0	125
1	1
2	8
3	64
4	216
5	343
6	27

4.10

Table1 = array[0...B₁]

Table2 = array[0...B₂]

procedure REPLACE(t1: Table1, var t2: Table2)

var

 current:↑

begin:

 MAKENULL(t2);

 for i=1 to B₁ do begin

 current↑ = t1[i]

 while current <> nil do begin

 INSERT(current↑.element, t2)

 current = current↑.next

 end

 end

End

4.11

k = 3(11 in binary), 7(111 in binary) or 15(1111 in binary)

When $2d_{i-1} < 16$, d_i has the range [1...14]

When $2d_{i-1} < 16$, if k = 3, 7 or 15, the formula has the range [1...15]

So combine them together, the range is [1...15]