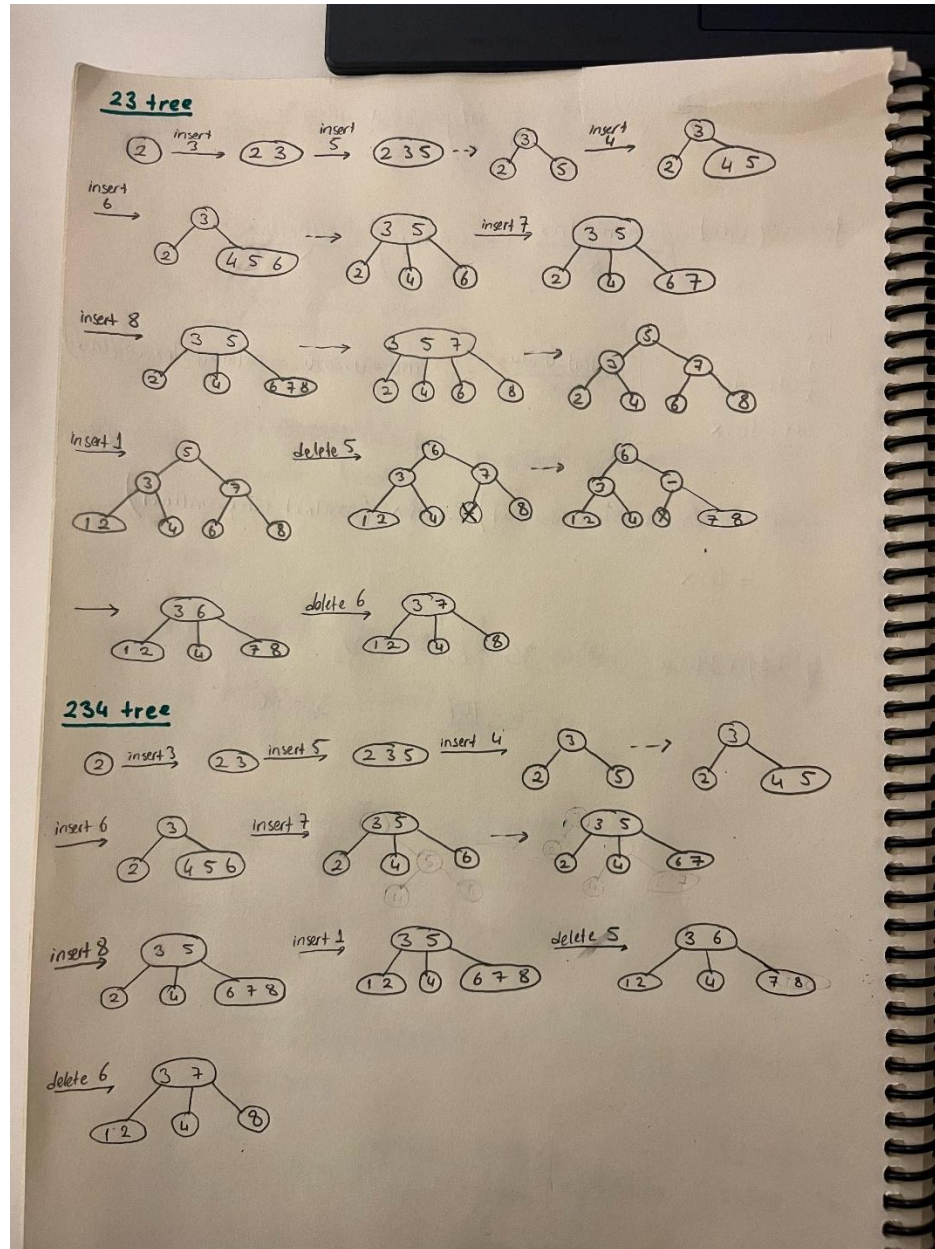


İdil Atmaca 22002491

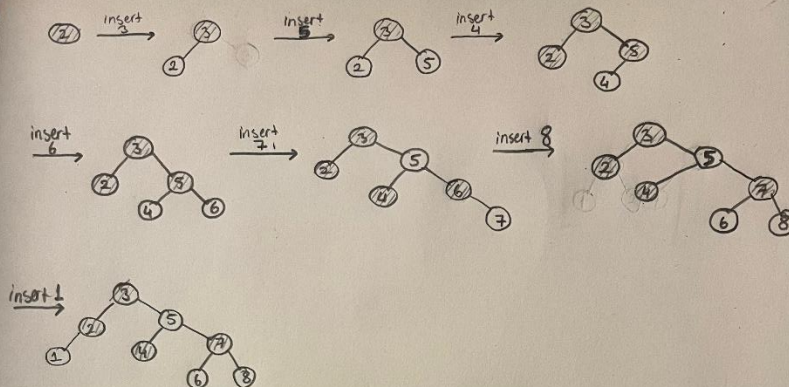
CS202-1

HW4



Red Black Tree

●: black ○: red



Q2) a) Open addressing w/linear probing

$20 \% 17 = 3$
 $36 \% 17 = 2$
 $2 \% 17 = 2 \Rightarrow 2+1 \Rightarrow 2+2=4$
 $19 \% 17 = 2 \Rightarrow 2+1 \Rightarrow 2+2 \Rightarrow 2+3=5$
 $53 \% 17 = 2 \Rightarrow 2+1 \Rightarrow 2+2 \Rightarrow 2+3 \Rightarrow 2+4=6$
 $34 \% 17 = 0$
 $37 \% 17 = 3 \Rightarrow 3+1 \Rightarrow 3+2 \Rightarrow 3+3 \Rightarrow 3+4=7$

0	34
1	
2	36
3	20
4	2
5	19
6	53
7	37
8	!
9	
10	
11	
12	
13	
14	
15	
16	

b) Open addressing w/quadratic probing

$20 \% 17 = 3$
 $36 \% 17 = 2$
 $2 \% 17 = 2 \Rightarrow 2+1^2 \Rightarrow 2+2^2 = 6$
 $19 \% 17 = 2 \Rightarrow 2+1^2 \Rightarrow 2+2^2 \Rightarrow 2+3^2 = 11$
 $53 \% 17 = 2 \Rightarrow 2+1^2 \Rightarrow 2+2^2 \Rightarrow 2+3^2 \Rightarrow 2+4^2 \% 17 = 1$
 $34 \% 17 = 0$
 $37 \% 17 = 3 \Rightarrow 3+1^2 = 4$

0	34
1	53
2	36
3	20
4	37
5	
6	2
7	
8	
9	
10	
11	19
12	
13	
14	
15	
16	

c) Separate Chaining

$20 \% 17 = 3$
 $36 \% 17 = 2$
 $2 \% 17 = 2$
 $19 \% 17 = 2$
 $53 \% 17 = 2$
 $34 \% 17 = 0$
 $37 \% 17 = 3$

