CS590 Assignment #7

1.1. (C) and (E)

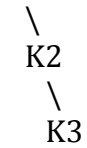
1.2.
Can be:
4,2,3,1,6,7,5
4,2,3,1,6,5,7
4,2,1,3,6,5,7
4,2,1,3,6,7,5
…

1.3.

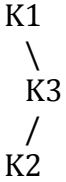
No, for counter-example:
A binary search tree: 9,7,2,8,1
Delete 7 then delete 1, should be 9,2,8
If wen delete 1 then delete 7, the tree could be 9,8,2.
So, it is not the same.

1.4.

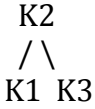
(1)



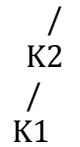
(2)



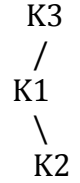
(3)



(4)



(5)



2.1.

Linear probing:

22, 88, empty, empty, 4, 15, 28, 17, 59, 31, 10

Quadratic probing:

22, empty, 88, 17, 4, empty, 28, 59, 15, 31, 10

2.2.
The Strategy 1 should be better, because as a good hash function, the strategy should distribute the keys evenly among the buckets. So, when compare with the second strategy, the strategy 1 is better.

2.3.
Suppose the array Char_Com[2] stand for the Combination of 2 characters.
Then the hash function can be:
Char_Com [0] - 'A') * 10 + Char_Com [1] - 'A'