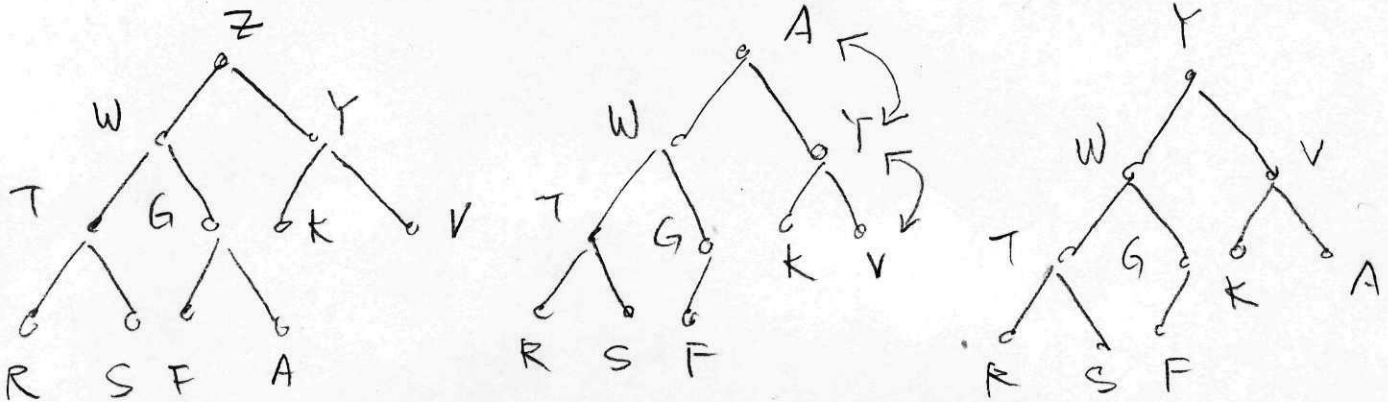


COS226 Group Activity

1. Binary heaps. from Spring 2008 Midterm, Question 5

Consider the following binary heap (i.e., the array-representation of a heap-ordered complete binary tree).

0	1	2	3	4	5	6	7	8	9	10	11	12	13
-	Z	W	Y	T	G	K	V	R	S	F	A	-	-



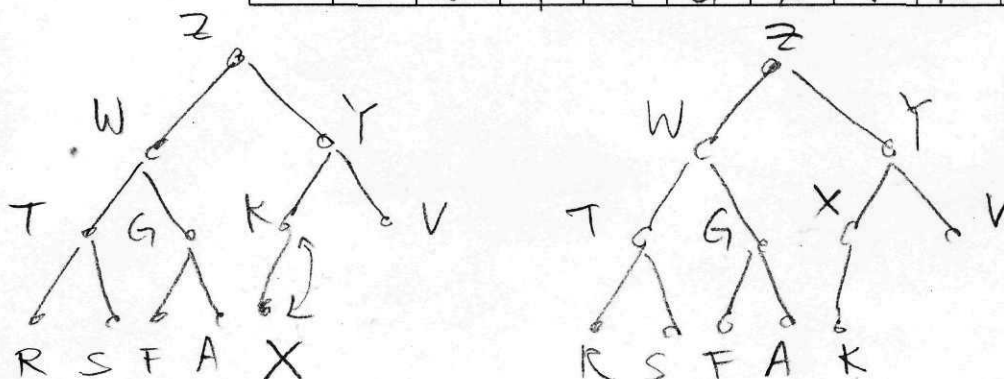
ask: when "sinking", why do we chose bigger value?
otherwise max isn't at front.

- (a) Delete the maximum key. Give the resulting binary heap. Circle those values that changed.

0	1	2	3	4	5	6	7	8	9	10	11	12	13
-	Y	W	V	T	G	K	A	R	S	F			

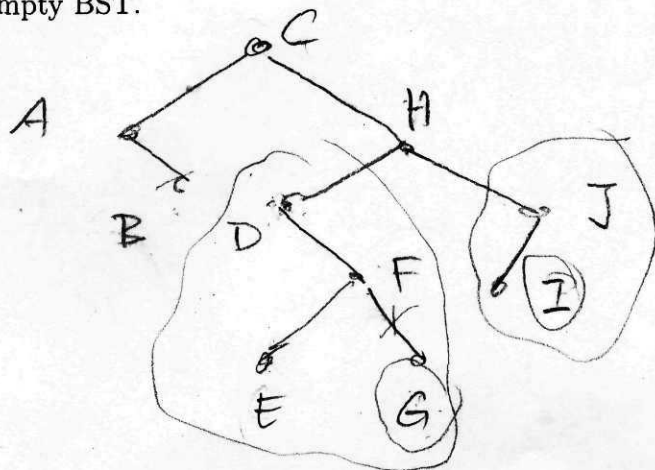
- (b) Insert the key X into the original binary heap. Give the resulting binary heap. Circle those values that changed.

0	1	2	3	4	5	6	7	8	9	10	11	12	13
-	Z	W	Y	T	G	X	V	R	S	F	A	K	



2. Suppose you are given an input file with the keys C A H D J B F I E G.

(a) Draw the BST that results when you insert the keys in that order into an initially empty BST.



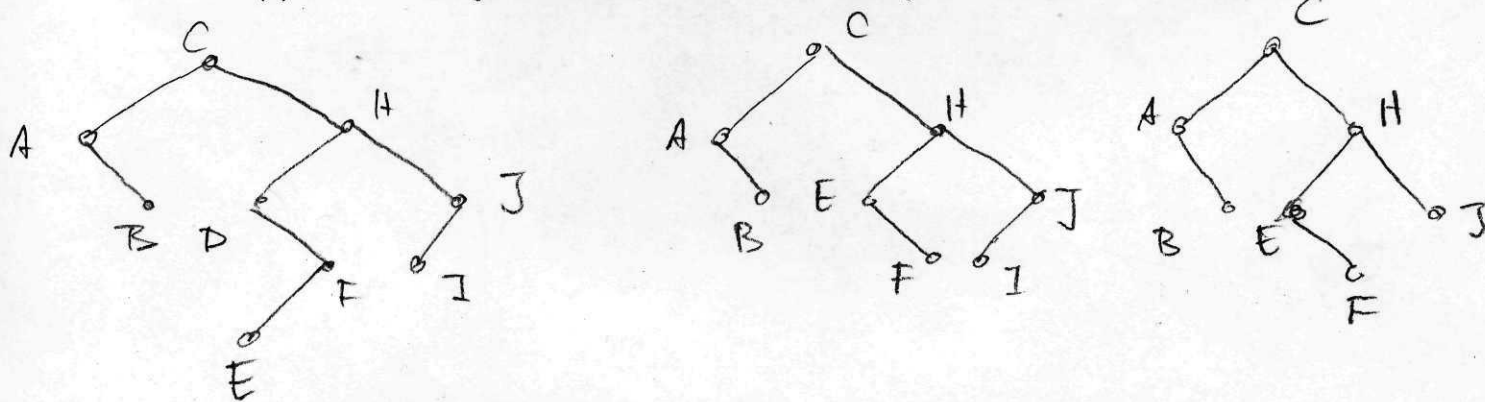
(b) Give the level order traversal of the BST.

C A H B D J F I E G

(\Rightarrow *Be care when reconstructing a tree
a level order with gaps. Have to compare to parent node.*)

3. Start with the BST drawn above.

(a) Draw the sequence of BSTs that result when you delete G then D then H.



(b) Give the level order traversal of the BST.

C A H B E J F