

CSE 101 11-18-25

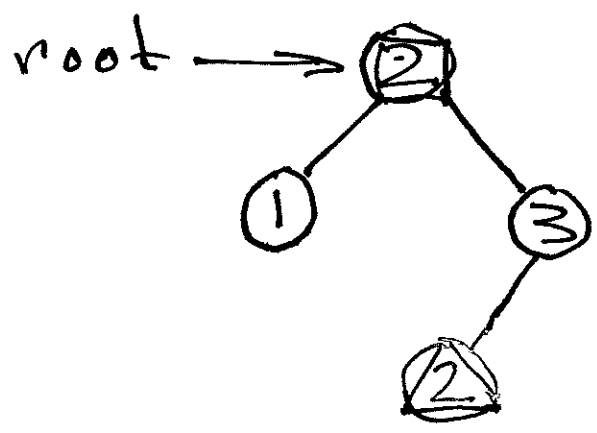
L

mid 2: Thur 11/20

Pa6: ext. 1 last day → Wed. 11/19 10PM

# BST Insert

EX insert  $\boxed{2}$ ,  $1$ ,  $3$ ,  $\triangle 2$



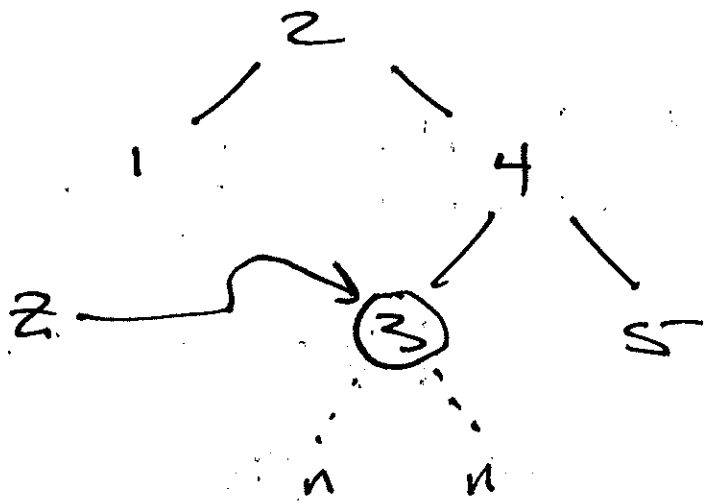
IOTW:  $1, \boxed{2}, \triangle 2, 3$  } stable sort

# BST Delete : node z

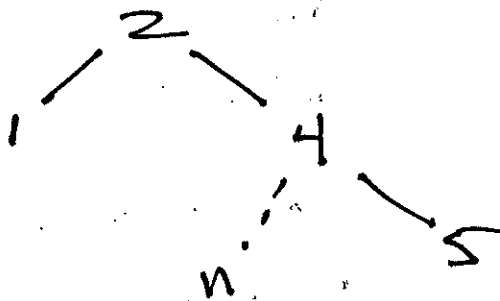
3 cases

case 1 : z is a leaf

detach z from its parent



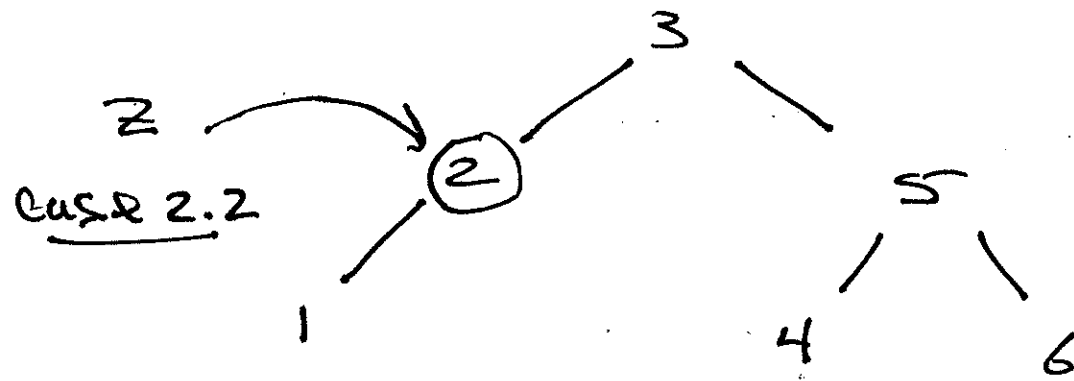
Result



Case 2: z has 1 child

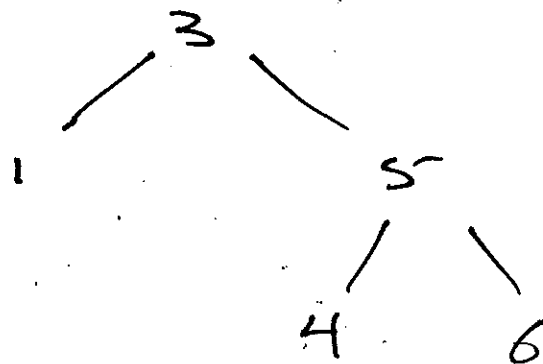
Subcase 2.1: z has right but no left

Subcase 2.2: z has left but no right



splice z out of local list

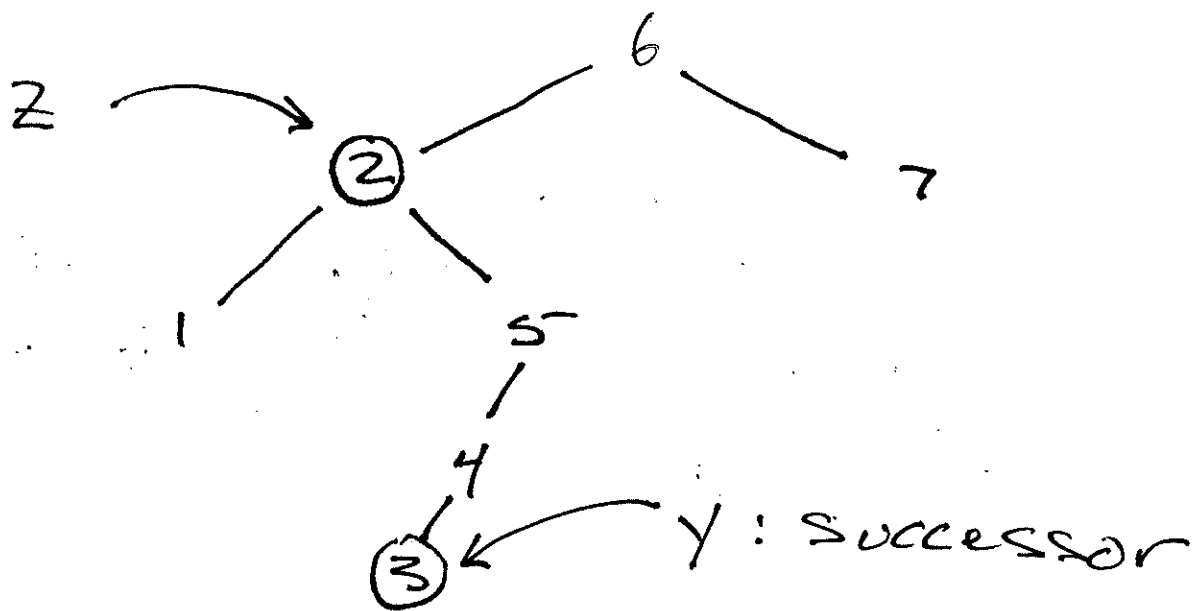
Result



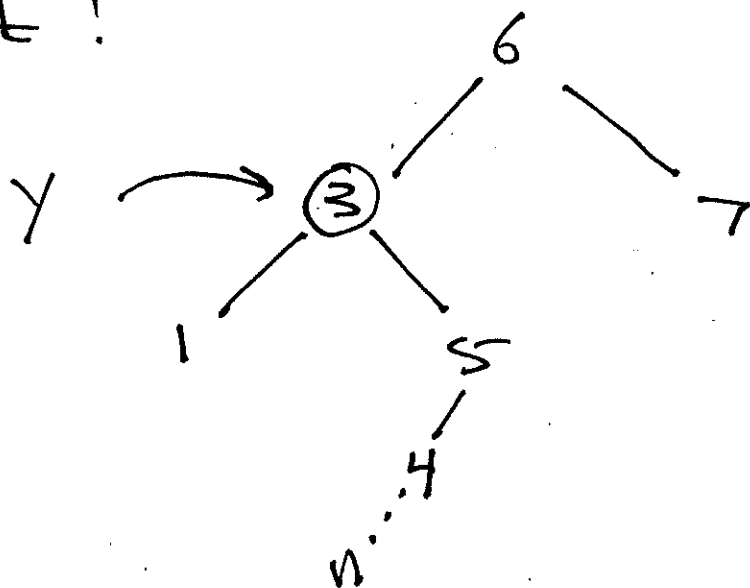
do example: 2.1

Case 3 : z has 2 children

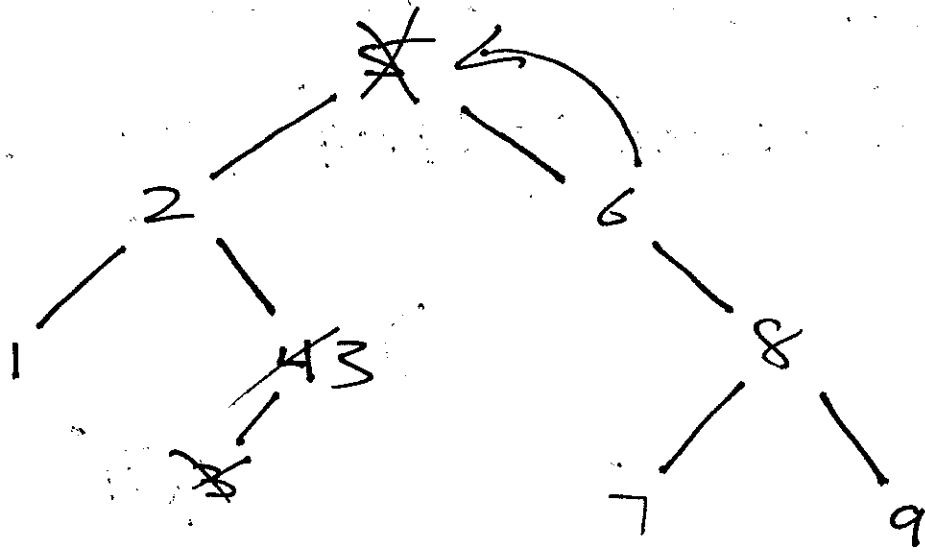
Replace z with its successor,  
call it y. (note: y has no left child)



Result !

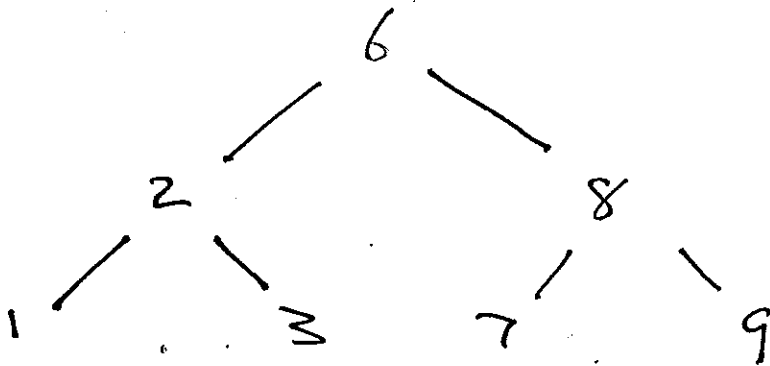


EX. insert: 5, 2, 6, 4, 3, 8, 7, 1, 9



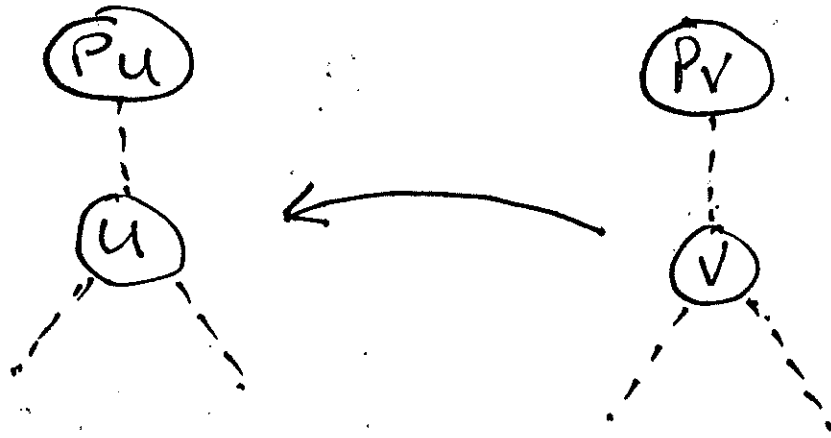
Delete: 4, 5

Result



Pseudo-code for delete:

Transplant (T, u, v)



Delete: Case 3

