

## 2-3 trees :-

insert ( 2-3 node N, compare value )  
locate leaf node to put value  
if leaf is a 2 node make it  
a 3 node then insert value

if leaf is a 3 node  
insert value temporarily &  
split the tree.

split ( 2-3 node N )

if N is root

make middle key into  
a 2 node, then  
make small & large key  
into 2 node

redistribute the children

else : N has parent P  $\rightarrow$  move  
middle key to P, make  
other 2 key to a 2 Node  
redistribute children

delete ( )

{

Assign p to be parent of node  
to be deleted

~~while~~ /

If ~~p~~ is leaf :

move all keys one place  
backwards

If parent is not leaf :  
check the prev and  
next node for ~~at~~ at  
least 2 keys and accordingly  
delete and shift the prev  
or next node.

If both have less keys :  
Shift next to current  
and delete

}