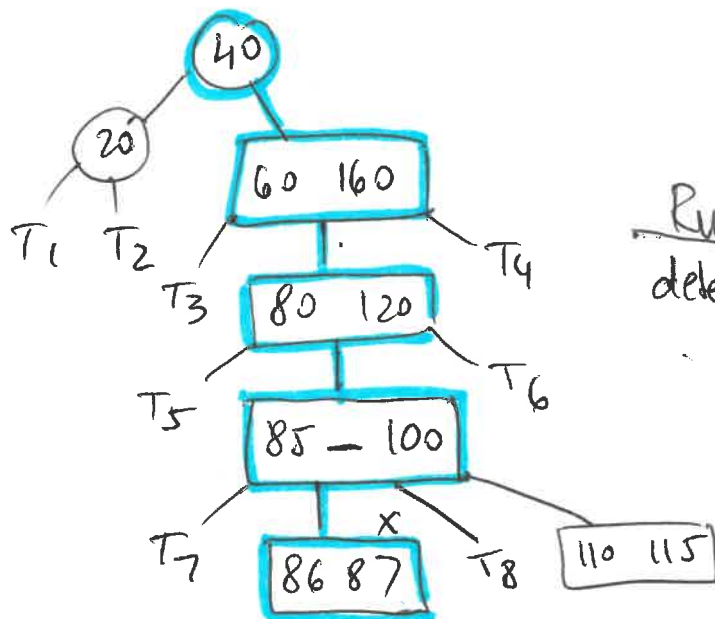
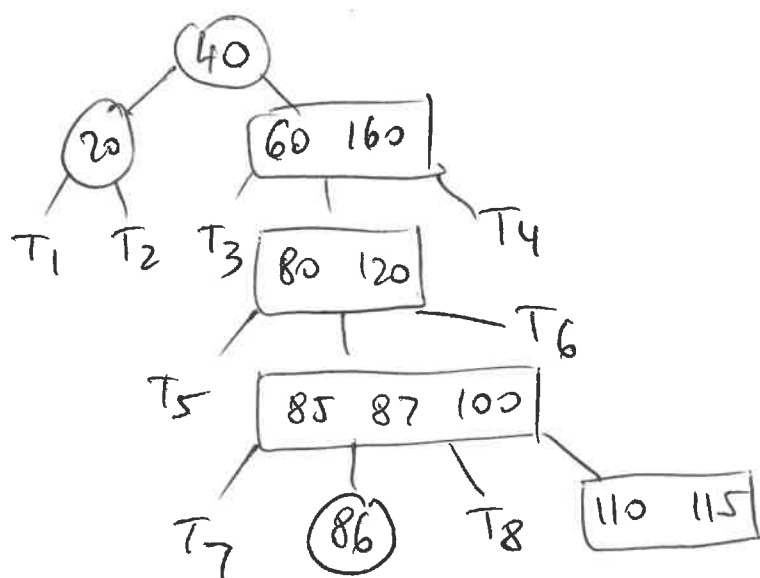


2.1.2017

Rule 2a
delete-max(y)



Rule 1
delete-max(x)



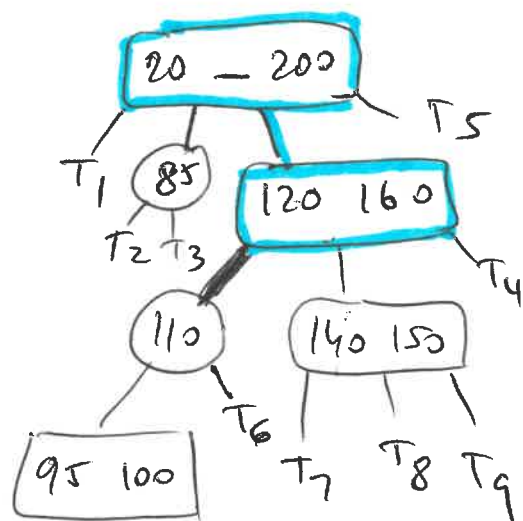
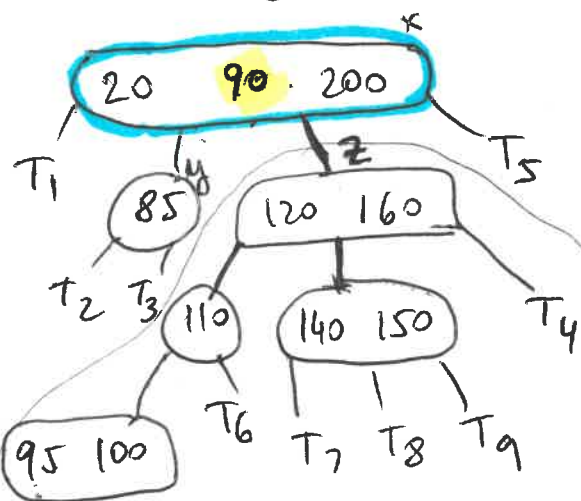
delete Key 90 from the B-tree:

$t = 2$

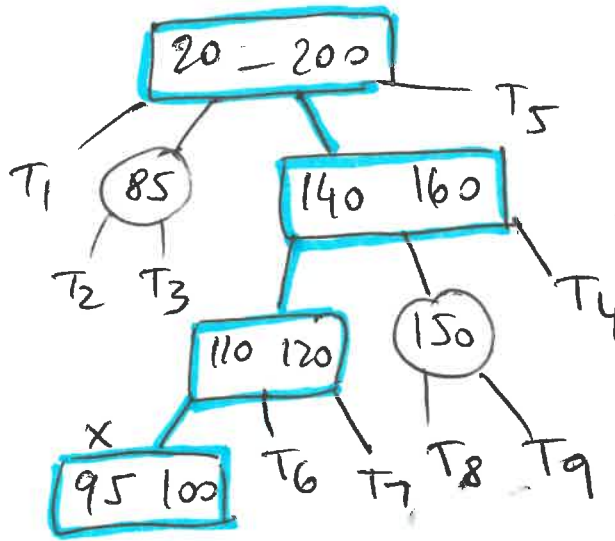
#Keys: 1...3

Rule 2b

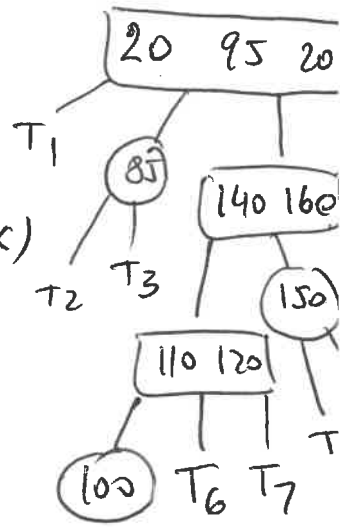
delete-min(z)



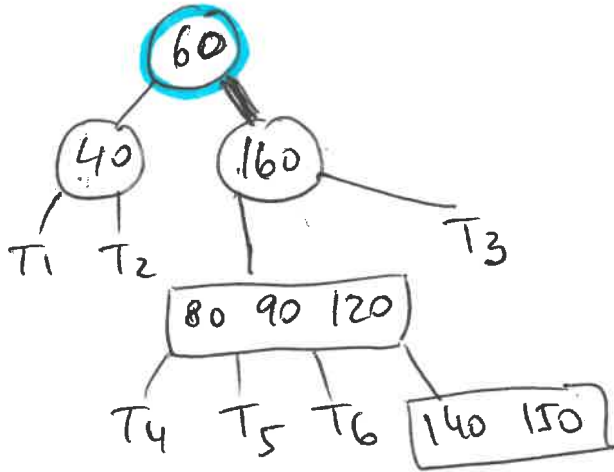
Rule 3a
delete-min(x)



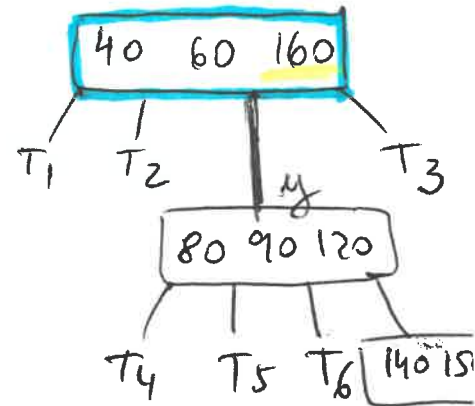
Rule 1
delete-min(x)



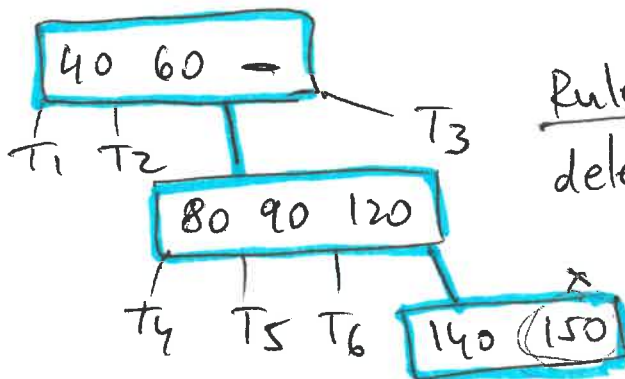
- Delete 160. Take $t = 2$. #Keys: 1..3



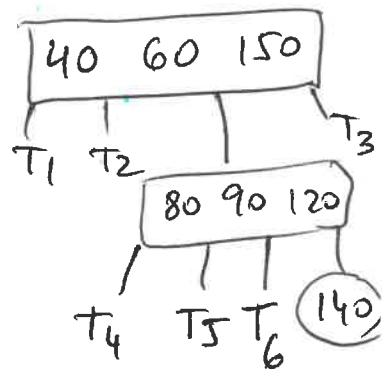
Rule 3b
Merge



Rule 2a
delete-max(y)



Rule 1
delete-max(x)



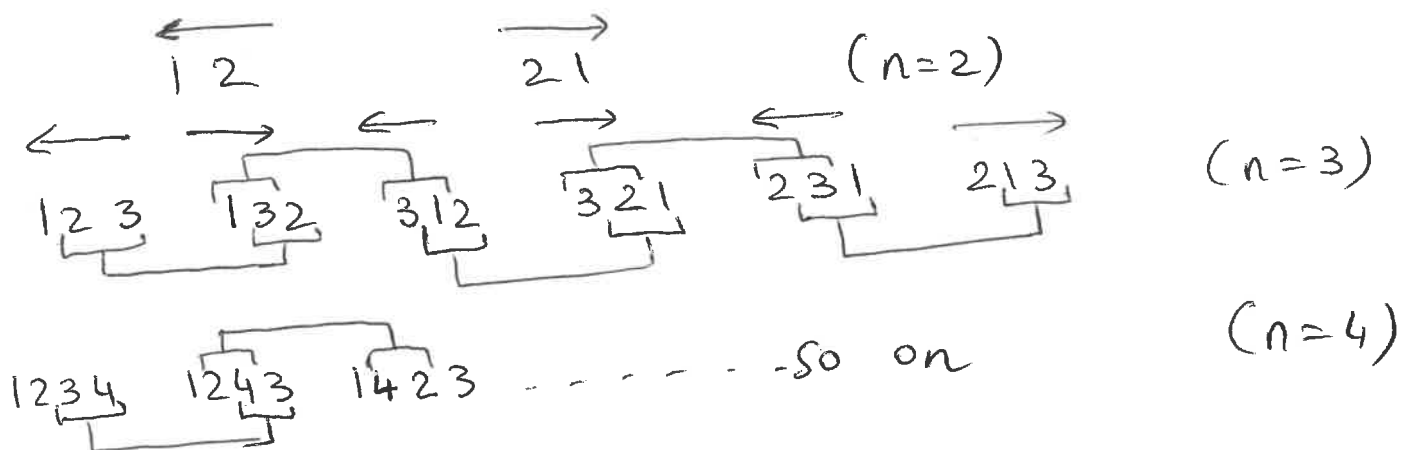
Generating Permutations

• Decrease-by-one technique:



3 1 2 1 3 2 1 2 3 3 2 1 2 3 1 2 1 3 ($n=3$)

• Bottom-up minimal change algorithm



Generating Subsets

• Decrease-by-one technique

example for $n=3$, $\{a_1, a_2, a_3\}$

$n=2$ \emptyset $\{a_1\}$ $\{a_2\}$ $\{a_1, a_2\}$

$n=3$ \emptyset $\{a_1\}$ $\{a_2\}$ $\{a_1, a_2\}$ $\{a_3\}$ $\{a_1, a_3\}$ $\{a_2, a_3\}$ $\{a_1, a_2, a_3\}$