



Analysis of Algorithms 1

HW Report

HW 4

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150140120

23.12.2017

1) I think I would update the node and sent that node to my makeRBT function again. Or, we can delete the node and insert an updated version of that node but It is more costly , both of these insert and delete operations would take $O(\log n)$ time.

2) By traversing the tree -as we used in the print function-, we can easily increase all node's age value by one.

Program Output at SSH:

```
[sevinca@ssh ~]$ g++ 150140120.cpp -o 150140120
[sevinca@ssh ~]$ ./150140120 input.txt

          |***(r) Alex M 13
        |***(b) Blair F 11
        |____(r) Casey F 35
    |***(b) Dane F 14
        |____(b) Evan M 18
        |____(r) Fran M 30
(b) Glen F 29
        |***(b) Hayden M 28
        |***(b) Izzy M 27
        |____(b) Jude F 26
        |____(r) Kelly F 24
    |____(r) Leah F 23
        |***(b) Morgan M 22
        |____(b) Naomi F 21
            |***(b) Parker M 19
            |____(r) Quinn M 18
        |____(r) Ryan F 17
            |***(r) Shane M 16
            |____(b) Taylor F 14

1st Female: Casey      1st Male: Alex
2nd Female: Blair      2nd Male: Fran
3rd Female: Dane       3rd Male: Evan
4th Female: Kelly      4th Male: Hayden
5th Female: Taylor
[sevinca@ssh ~]$
```