

# Assignment 4 Advanced Batch

## Question Number 3

Test cases are evaluated based on the following strategy described below:

### **Input File Format**

The input consists of multiple lines, each line of the input contains the value to be inserted into the red black tree.

### **Output File Format:**

The output (if any) of each command should be printed on a separate line. If the tree after insertion needs rotation/recoloring it should be printed on the next line. (eg: In the sample output Lines 3 and 4 corresponding to the tree after insertion of 12 and rotation after the insertion of 12 respectively)

#### ***Sample Input:***

4  
7  
12  
15  
3  
5  
14  
18

#### ***Sample Output:***

(4B)  
(4B (7R))(4B(7R (12R)))  
((4R) 7B (12R))  
((4R) 7B(12R (15R)))  
((4B) 7B (12B (15R)))  
(((3R) 4B) 7B (12B (15R)))  
(((3R) 4B (5R)) 7B (12B (15R)))  
(((3R) 4B (5R)) 7B (12B ((14R) 15R)))  
(((3R) 4B (5R)) 7B ((12R) 14B (15R)))  
(((3R) 4B (5R)) 7B ((12R) 14B (15R (18R))))  
(((3R) 4B (5R)) 7B ((12B) 14R (15B (18R))))

### **Note:**

- \* The print function format is not (t(left-subtree)(right-subtree))
- \* It is ((left-subtree)t(right-subtree))
- \* No need of empty paranthesis if subtrees are empty