## ASSIGNMENT 2

Write a program in Java using Binary Search Tree data structure to manage information about cars. Variables used to store information about a car are:

- id - the identity of a car (String value) , which is **the key of the tree**.
- price - the price of a car (integer value).

Car information is stored in the input file "car.txt", each car information in one line as format: **id | price**

For example:

A6 | 1
A2 | 4
B6 | 1
A1 | 4
A5 | 5
A4 | 7
A3 | 9
B8 | 3
A7 | 3
A9 | 30
A9 | 6
A8 | 8

You should write the BSTree class, which is a binary search tree data structure to store car information.

**Question 1.** Read each car information from file "car.txt", if the first letter of the id is 'B', or the price > 20, do nothing, otherwirse insert that car information to the tree.

**Question 2**. Save all cars having price in the interval [5,9] of the tree in format (id, price) to the file "q2.out" by post-order traverse.

For example, the content of file "q2.out" must be:

(A3,9) (A4,7) (A5,5) (A8,8) (A9,6)

**Question 3**. Perform breadth-first traverse from the root and delete by copying the first node having both 2 sons and height > 4, write the tree to file “q3.txt”.

For example, the file “q3.txt” must be:

(A5, 5) (A2,4) (A7, 3) (A1, 4) (A4, 7) (A9, 6) (A3, 9) (A8, 8)

**Question 4**. Check if the root having non-empty right-son then rotate it to left about its right-son and display the tree to the output screen by pre-order traverse.

For example, the output must be:

(A7, 3) (A5, 5) (A2, 4) (A1, 4) (A4, 7) (A3, 9) (A9, 6) (A8,8)