Exercise 9. (Java Collection Binary search tree, 1p)

We studied the principles of binary search in the lab 8 where we implemented the class binary search tree.

Now we want to compare our implementation against the Java Collection TreeSet. Compare the performances of the two tree implementations using the following test procedure:

1. Construct two tree objects BinSTree (your implementation) and TreeSet (Java Collection implementation)
2. Generate 1 000 000 random numbers and add those numbers to both tree objects
3. Generate another set of 100 000 random numbers and store them to an array
4. Query those 100 000 numbers in one for-loop from the object BinSTree and measure the execution time
5. Query those 100 000 numbers in one for-loop from the object TreeSet and measure the execution time
6. Print out the results

After you have found the execution times for those searching operations, analyze the results; what is the reason for the difference?