Design & Analysis of Algorithms

Monsoon Semester III 2020-21

Lab - 3 Due Date: **21 September 2020**

Topics: Data Structure Binary Search Tree

In the lab, we would be exploring Binary search tree.

EXERCISE

1. Create a binary search tree by reading the inputs from file 'numbers.txt'. Display the inorder walk of the tree. HackerRankProblem
2. Find the max and min depth of binary tree. HackerRank Problem
3. Compute the lowest common ancestor of binary search tree. Take the input from user after displaying the binary tree (in -order walk) HackerRank Problem
4. Implement a heap sort by varying the number of input elements (10, 100, 500, 1000, 10000). Compute the time and memory taken for each of input case.

HELP

To read One dimensional data from txt file

```
# Python program for reading from file
file = open('numbers.txt', 'r')

# Reading from the file
content = file.readlines()

# Array for storing
array = []
# Iterating through the content
for line in content
    array.append(line.rstrip())

print(array)
```