**INFO 6205**

**Program Structures & Algorithms**

**Summer Full 2018**

**Assignment 5**

Jianwei Zhang

001447259

In this assignment, we implement delete for BST (Binary Search Tree), and performed experiments to test the relationship between the depth of BST and the size N.

1. **Conclusion:**

As we can see from Figure 1, the height of the tree(h) is basically close to the instead of .

Some useful abbreviations:

* N - the size of the BST
* h – the height/depth of the BST

1. Configuration of Experiments

Number of Insertions/Deletions(M): 10000

Experiment times: 10

Range of keys: 10-1000

1. **Graphs and Conductions.**

Figure 1 Relationships between size and height of BST

1. Magic Numbers

We could notice from the Figure 1 that when N is close to 100, there is a variation, that is what called “Magic number” by professor. We can see that when N reaches to near 100, the height of BST decreased, and this phenomenon never show up again later with the increase of size N.

1. Relationship between height(h) and size(N)

As we can see from the Figure 1 that the height of BST is close to instead of , which is slightly smaller.