**Home Work 2:**

1. Hybrid Linked List / Separate Chaining Hash Table

Create a hybrid linked list and use random numbers between 10 -99 for input.

Methods - search ()/sort (), set ()/get (), add ()/remove ()

INCLUDE Sort/search algorithms

Analysis of Time for n= 100 n = 1000, n = 10000

2. Write program to create a Binary Search Tree

a. Write a TreePrinter class that has a method that will print any arbitrary binary tree.

b. Need to print trees with height up to 5, i.e., 32 node value at the bottom row

c. Generate a BST that has height 5 and contains values from 10 through 99, using random numbers.

d. Delete the root of the tree and print the tree after each deletion until tree is empty

3. Create an AVL tree using 35 unique random integers from 10-99 to insert

a. Print the tree after each insertion to verify that tree is balanced.

b. Each time you do a rebalancing, print a message indicating which rotation operation was performed on which node.

c. Repeatedly delete the root and other nodes, print after each deletion to verify that the tree is balanced.