Data Structures 11/28/2016

0145-343-001

Note Taker: Jai Punjwani

ANNOUNCEMENTS

* Last programming assignment due Friday December 2nd

Notes:

PowerPoint: <http://home.adelphi.edu/~siegfried/cs343/343l7.pdf>

Topic: Searching

* Searching is normally done when a collection has been sorted
* Best case: ***O***(1), and worse case is ***O***(n). When a collection is sorted, ***O***(log n) is a common time complexity of searching.

Linear Search

* traverse through collection in order
* ***O***(n)
* improved version of linear search – if collection is sorted, and we look for ‘k’, we only search till we reach ‘k’

Binary Search

* ***O***(log n)

Binary Search Tree

* a balanced binary tree is usually beneficial to keep the time complexity stable. If a tree is not balanced and is very *skewed*, then searching for an element will become more like a linear search in its complexity
* **AVL Tree** – a self-balancing binary tree in which the heights/depths of two child subtrees differ by at most **1**.